MEASURE WORKSHEET

This document summarizes the evaluation of the measure as it progresses through NQF's Consensus Development Process (CDP). The information submitted by measure developers/stewards is included after the Brief Measure Information, Preliminary Analysis, and Pre-meeting Public and Member Comments sections.

To navigate the links in the worksheet: Ctrl + click link to go to the link; ALT + LEFT ARROW to return

Brief Measure Information

NQF #: 0326
Measure Title: Advance Care Plan
Measure Steward: National Committee for Quality Assurance
Brief Description of Measure: Percentage of patients aged 65 years and older who have an advance care plan or surrogate decision maker documented in the medical record or documentation in the medical record that an advance care plan was discussed but the patient did not wish or was not able to name a surrogate decision maker or provide an advance care plan.
Developer Rationale: This measure addresses advance care planning as one facet of high quality care for older adults. The aim of advance care planning is to ensure that care near the end of life aligns with the patient's wishes (IOM, 2014). Advanced care planning is associated with improved health outcomes for older adults, including reducing hospitalizations, intensive care unit (ICU) admissions, and hospital and ICU lengths of stay (Brinkman-Stoppelenburg, 2014; Hall et al., 2011; Khandelwal et al., 2015; Martin et al., 2016). However, most older adults do not have advance care planning conversations with their clinicians even though there is consensus among diverse stakeholders that advance care planning is a key component of high quality care (NQF 2006; IOM, 2014). The intent of this measure is to promote advance care planning discussions between older adults and their providers and documentation of that discussion in the patient's record.

As people age, consideration should be given to their treatment wishes in the event that they lose the ability to manage their care. A large discrepancy exists between the wishes of dying patients and their actual end-of-life care. Advance directives (AD) are widely recommended as a strategy to improve compliance with patient wishes at the end of life, and thereby ensure appropriate use of health care resources at the end of life. A recent systematic review found only a few studies, all of which were conducted in the United States concerning advanced care planning in palliative care. Although the results were promising, more high-quality studies need to be conducted (Hall, et al., 2011).

Brinkman-Stoppelenburg, A., Rietjens, J. A., & van der Heide, A. (2014). The effects of advance care planning on end-of-life care: a systematic review. Palliative Medicine, 28(8), 1000-1025.

Hall, S., Kolliakou, A., Petkova, H., Froggatt, K., & Higginson, I. J. (2011). Interventions for improving palliative care for older people living in nursing homes. Cohrane Database of Systematic Reviews, 3.

Institute of Medicine (IOM). (2014). Dying in America: improving quality and honoring individual preferences near the end of life. Washington, DC: The National Academies Press.

Khandelwal, N., Kross, E. K., Engelberg, R. A., Coe, N. B., Long, A. C., & Curtis, J. R. (2015). Estimating the effect of palliative care interventions and advance care planning on ICU utilization: a systematic review. Critical Care Medicine, 43(5), 1102-1111.

Martin, R. S., Hayes, B., Gregorevic, K., & Lim, W. K. (2016). The effects of advance care planning interventions on nursing home residents: a systematic review. Journal of the American Medical Directors Association, 17(4), 284-293.

National Quality Forum. (2006). A National Framework and Preferred Practices for Palliative and Hospice Care Quality. Washington, DC: National Quality Forum.

Numerator Statement: Patients who have an advance care plan or surrogate decision maker documented in the medical record or documentation in the medical record that an advance care plan was discussed but patient did not wish or was not able to name a surrogate decision maker or provide an advance care plan.

Denominator Statement: All patients aged 65 years and older.
Denominator Exclusions: N/A

Measure Type: Process
Data Source: Claims (Only), EHRs Hybrid
Level of Analysis: Clinician : Group/Practice, Clinician : Individual

IF Endorsement Maintenance – Original Endorsement Date: Nov 05, 2007 **Most Recent Endorsement Date:** Aug 10, 2012

Maintenance of Endorsement -- Preliminary Analysis

To maintain NQF endorsement endorsed measures are evaluated periodically to ensure that the measures still meets the NQF endorsement criteria ("maintenance"). The emphasis for maintaining endorsement is focused on how effective the measure is for promoting improvements in quality. Endorsed measures should have some experience from the field to inform the evaluation. The emphasis for maintaining endorsement is noted for each criterion.

Criteria 1: Importance to Measure and Report

1a. Evidence
Maintenance measures – less emphasis on evidence unless there is new information or change in evidence since the prior evaluation.

1a. Evidence. The evidence requirements for a *process or intermediate outcome* measure is that it is based on a systematic review (SR) and grading of the body of empirical evidence where the specific focus of the evidence matches what is being measured.

The developer provides the following evidence for this measure:

- **Systematic Review of the evidence specific to this measure?** ☒ **Yes** ☐ **No**
- **Quality, Quantity and Consistency of evidence provided?** ☒ **Yes** ☐ **No**
- **Evidence graded?** ☒ **Yes** ☐ **No**

Summary of prior review in 2012

- In the prior review, the evidence provided by the developer includes systematic review completed by the National Hospice and Palliative Care Organization.
- Out of the studies conducted, the developer notes the positive correlation between quality efforts to increase Advance Care Plan (ACP) and the compliance of end-of-life care. The studies consistently showed the advantages of ACP, though a single study did note that some patients are reluctant to participate.

Changes to evidence from last review

☒ **The developer attests that there have been no changes in the evidence since the measure was last evaluated.**
☐ **The developer provided updated evidence for this measure:**

Updates:

- The systematic review previously presented to support the evidence was replaced with one from the Palliative Medicine Journal, *"The Effect of Advance Care Planning on End-of Life Care: A Systematic Review"*.
- The developer cited a systematic review added to the evidence designed to review and evaluate evidence but not to grade or provide a recommendation for the evidence.
- The evidence states that 113 studies were included within the systematic review (95% observational and 5% experimental).
- 26 studies evaluated the effect of advance care planning on hospitalization and length of stays (21 concluded that ACP was linked to an decreased rate of hospitalizations, and the other 5 concluded the opposite).
- 13 studies evaluated whether or not ACP has an effect on patients' and families' symptoms (5 studies concluded that ACP decreased symptoms, but none found that ACP increased symptoms).
- No new studies have been conducted that dispute the conclusion that ACPs are a critical piece of high quality

patient care.

- 5% of studies included in drawing the conclusions received Grade I (defined as a randomized controlled trial or RCT review). 59% of the studies included received Grade II (defined as a prospective study with a comparison group, or a retrospective study which controls effectively for confounding variables). 36% of included studies received Grade III (defined as a retrospective, observational, or cross-sectional study).

Exception to evidence: N/A

Questions for the Committee:

- *The developer attests the underlying evidence for the measure has not changed since the last NQF endorsement review. Does the Committee agree the evidence basis for the measure has not changed and there is no need for repeat discussion and vote on Evidence?*
- *For process measures:*
  - *What is the relationship of this measure to patient outcomes?*
  - *How strong is the evidence for this relationship?*
  - *Is the evidence directly applicable to the process of care being measured?*

Guidance from the Evidence Algorithm
Process measure based on systematic review (box 3) → QQC present (box 4) → SR does not concludes QQC (box 5) → Rated Moderate

Preliminary rating for evidence: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

1b. Gap in Care/Opportunity for Improvement and 1b. Disparities
Maintenance measures – increased emphasis on gap and variation

1b. Performance Gap. The performance gap requirements include demonstrating quality problems and opportunity for improvement.

- Although there is consensus amongst a variety of stakeholders that having an advance care plan in place is a critical component of high quality care, most older adults do not have a plan or conversations surrounding advance care planning with their families and physicians. A large discrepancy is noted to exist between elderly dying patients wishes and the actual care received.
- 3,309 Eligible Professionals (EPs) continuously reported individual performance rates from 2012-2014. The table below contains the performance rates for those EPs, showing an improvement rate of almost 4%.

Performance Year	Average Performance Rate
2012	62.3%
2013	63.7%
2014	67.2%

Disparities

- The developer notes there is no stratification of the measure by patient groups or cohorts that could be affected by disparities in care though they (NCQA) has worked with IOM and others at an attempt to include disparities information. Currently the data is not coded in a standardized way, nor is there a standard entity designated to capture and report this partially captured data.

Questions for the Committee:

- *Is there a gap in care that warrants a national performance measure?*

o *If no disparities information is provided, are you aware of evidence that disparities exist in this area of healthcare?*

Preliminary rating for opportunity for improvement: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

Committee pre-evaluation comments

Criteria 1: Importance to Measure and Report (including 1a, 1b, 1c)

1a. Evidence to Support Measure Focus

Comments: **Process measure that has a direct relationship to the health outcomes of patients. No new studies or information that I am aware of the would impact the evidence base. Documentation of ACP in the medical record is specific.

**The updated systematic review is focused directly on the effect of advance care planning on end-of-life care--with advance care planning being process that is being measured. Therefore, the evidence does directly apply. A subset of the studies included in that review find a decreased rate of hospitalizations, which is one desired outcome, linked to the use of advance care planning. A smaller set of studies (5) found a link between advance care planning and effect on patient and family symptoms, which is another desired outcome. I am not aware of any additional studies or information related to the evidence base. Given this--and following algorithm #1, I find that the evidence base is moderate (box 5b).

**A strong body of evidence shows fairly consistently that having an advanced directive documented decreases hospitalizations and other intensive forms of care shortly before death, and improves preference-concordant end-of-life care. This supports the measure focus.

**Moderate

This process measure includes a systematic review of evidence but it was not graded. Recognizing this is a maintenance measure and a prior NQF Committee has reviewed and supported the evidence, I do not believe there is a need for re-review.

**There are a number of new and old studies not cited by the measure developers. The developers cite one systematic review with inconsistent evidence regarding impact on hospital length of stay and patient symptoms (not well defined). No other linkages to important outcomes, such as avoidable hospitalizations & ED visits, ICU utilization, referrals to hospice, increased usage of palliative care services, family and caregiver benefits and declines in end-of-life related issues such as depression, pain control, dyspnea have been cited in the measure submission form. There is also no standardized definition of the necessary components of advanced care planning. Additionally, the baseline and follow on measures were from 2012-2014, which occurred before the institution of Medicare reimbursements for Advanced Care Planning in 2016 via 2 new CPT codes (different from the CPT II codes noted) for advanced care planning. This sounds also like a measure that is mainly applied to inpatient hospital care. Advanced Care Planning should occur well before hospitalizations.

1b. Performance Gap

Comments: **Data was provided and there appears to be consistent participation is reporting overtime. When ACP occurs, it seems to point to improved outcomes, with positive impacts on care and costs. It does seem to be the same group reporting, wonder if the results would be same if a different group reported.

**Yes, data were provided on the gap in care that appear to warrant a national performance measure. However, the measure does not yet include disparities information. The developer notes that they have been working on how to do this. Inclusion of a means of identifying disparities in populations who have an advance care plan would significantly strengthen this measure. I found that the opportunity for improvement is moderate.

**Evidence supports a measure gap both in the process being measured (discussing end-of-life care and documenting wishes through an advanced directive) and in the related outcome of having preference-concordant care at end-of-life. Although the developers state that no disparities should affect this measure, they may wish to consider whether disparities in having a usual doctor/source of care might be associated with disparities in having an advanced directive documented.

**High: Trends in data from PQRS indicate there is still clearly a performance gap and opportunity for improvement

**See 1a. Baseline and follow on measures applied, but may be substantially increased with the institution of the ACP CPT codes by Medicare in 2016.

Criteria 2: Scientific Acceptability of Measure Properties

2a. Reliability

2a1. Reliability Specifications

Maintenance measures – no change in emphasis – specifications should be evaluated the same as with new measures

2a1. Specifications requires the measure, as specified, to produce consistent (reliable) and credible (valid) results about the quality of care when implemented.

Data source(s): Claims (Only), EHRs Hybrid

Specifications:

- Level of analysis: Clinician : Group/Practice, Clinician : Individual
- Numerator: Patients who have an advance care plan or surrogate decision maker documented in the medical record or documentation in the medical record that an advance care plan was discussed but patient did not wish or was not able to name a surrogate decision maker or provide an advance care plan**.**
- Denominator: All patients aged 65 years and older.
- Better quality = Higher score
- The measure is specified for the individual clinician and group/practice level of analysis.
- CPT codes for Numerator
    - NUMERATOR NOTE FROM DEVELOPER: *The CPT Category II codes used for this measure indicate: Advance Care Planning was discussed and documented. The act of using the Category II codes on a claim indicates the provider confirmed that the Advance Care Plan was in the medical record (that is, at the point in time the code was assigned, the Advance Care Plan in the medical record was valid) or that advance care planning was discussed. The codes are required annually to ensure that the provider either confirms annually that the plan in the medical record is still appropriate or starts a new discussion. The provider does not need to review the Advance Care Plan annually with the patient to meet the numerator criteria, documentation of a previously developed advanced care plan that is still valid in the medical record meets numerator criteria.*
- CPT codes for Denominator

Questions for the Committee:

- *Are all the data elements clearly defined?*
- *Is the logic or calculation algorithm clear?*
- *Is it likely this measure can be consistently implemented?*

2a2. Reliability Testing Testing attachment
Maintenance measures – less emphasis if no new testing data provided

2a2. Reliability testing demonstrates if the measure data elements are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period and/or that the measure score is precise enough to distinguish differences in performance across providers.

For maintenance measures, summarize the reliability testing from the prior review:

- Four varying types of practice sites were identified to participate in the measures testing. A random sample of 70 geriatric patient charts were pulled per site resulting in 220 patient records. One practice included paper medical records while the other 3 practices used electronic health records.
- The sample is limited to Medicare patients with dates of physician office visits between January 1, 2009 and December 31, 2009.
- A summary of the various sites is provided in the table:

Site ID	Record Type	Number of Patient Records
Site 1	Paper	2500 patients
Site 2	EHR	1800 patients
Site 3	EHR	3700 outpatients/2000 LTC patients
Site 4	EHR	2500 patients

SUMMARY OF TESTING

Reliability testing level ☐ **Measure score** ☒ **Data element** ☐ **Both**

Reliability testing performed with the data source and level of analysis indicated for this measure ☒ **Yes** ☐ **No**

Method(s) of reliability testing

- The data analysis included both percent agreement and kappa statistic of reliability, and was pulled from randomly sampled patient records from the AMA-PCPI Testing Project to calculate the inter-rater reliability for the measure. The developer lists the Kappa strength of agreement rates.

Results of reliability testing

- The statistical results were as follows with a 95% Confidence Interval (CI):

	N	% Agreement	Kappa (95% CI)
Denominator	116	99.15	Non-calculable*
Numerator	116	98.28	0.95 (0.87 to 1.00)
Overall	116	98.29	0.97 (0.87 to 1.00)

*The limitation of the kappa statistic is shown. While the agreement is greater than 90%, one classification dominates, the kappa can be significantly reduced.

The measure is almost perfect with a kappa score of 0.97.

Questions for the Committee:

- *No updated testing information is presented. The prior testing demonstrated good reliability. Does the Committee think there is a need to re-discuss and re-vote on reliability?*
- *Specific questions on the method and results of reliability testing.*
- *Is the test sample adequate to generalize for widespread implementation?*
- *Do the results demonstrate sufficient reliability so that differences in performance can be identified?*

Guidance from the Reliability Algorithm Performance measure scores computed (box 4) → method described appropriate (box 5) → Moderate certainty scores are reliable (box 6) → Rated Moderate

Preliminary rating for reliability: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

2b. Validity
Maintenance measures – less emphasis if no new testing data provided

2b1. Validity: Specifications

2b1. Validity Specifications. This section should determine if the measure specifications are consistent with the evidence.

Specifications consistent with evidence in 1a. ☒ **Yes** ☐ **Somewhat** ☐ **No**

Question for the Committee:

- *Are the specifications consistent with the evidence?*

2b2. Validity testing

2b2. Validity Testing should demonstrate the measure data elements are correct and/or the measure score correctly reflects the quality of care provided, adequately identifying differences in quality.

For maintenance measures, summarize the validity testing from the prior review:

SUMMARY OF TESTING

Validity testing level ☒ **Measure score** ☐ **Data element testing against a gold standard** ☐ **Both**

Method of validity testing of the measure score:

- ☒ **Face validity only**
- ☐ **Empirical validity testing of the measure score**

Validity testing method:

- Over 200 patient records were abstracted to complete inter-rater reliability of the concept by an expert panel used to assess face validity of the measure concept.
- NCQA and the Physician Consortium for Performance Improvement-convened workgroups assessed the face and content validity of each measure. These groups established the measures ability to capture as designated using a process consisting of multiple stakeholders input and a review of the input received during a public comment period.

Validity testing results:

- An expert panel of 33 judged the measure and was asked to rate their agreement with the statement: "The scores obtained from the measure as specified will accurately differentiate quality across providers."
- Face validity results from the expert panel indicate an average rating of 4.35 on a 5-point scale where 1 is Strongly Disagree and 5 is Strongly Agree.
- The developer interprets the results as indicating multiple experts and stakeholders agree that the measure as specified accurately captures quality and because of that the measure meets the test for face validity.

Questions for the Committee:

- *No updated testing information is presented. The prior testing demonstrated good validity. Does the Committee think there is a need to re-discuss [and re-vote] on validity [testing for validity]?*
- *Is the test sample adequate to generalize for widespread implementation?*
- *Do the results demonstrate sufficient validity so that conclusions about quality can be made?*
- *Do you agree that the score from this measure as specified is an indicator of quality?*

2b3-2b7. Threats to Validity

2b3. Exclusions: N/A

2b4. Risk adjustment: **Risk-adjustment method** ☒ **None** ☐ **Statistical model** ☐ **Stratification**

2b5. Meaningful difference *(can statistically significant and clinically/practically meaningful differences in performance measure scores can be identified)*:

- Meaningful differences is determined by using CMS data on average performance rates by provider. The measure is used in the CMS PQRS claims and registry options.
- Though there is still room for improvement, meaningful differences among reporting EPs have improved between the years 2012 and 2014. In 2014, almost a third of patients reporting EPs didn't have evidence of an advance care plan acknowledged in the medical record or evidence that a plan was discussed.
- Developers mentioned seeing meaningful differences in performance rates in group practices reporting via a registry based on practice size. There was a trend showing better performance rates at 64.5% for the small group practice reporting option in contrast to the large group practice reporting option at 35.6%.

Question for the Committee:

- *Does this measure identify meaningful differences about quality?*

2b6. Comparability of data sources/methods: N/A

2b7. Missing Data

- The developer does not mention there is information on missing data.

Guidance from the Validity Algorithm

Specifications somewhat with evidence (Box 1) >Somewhat assessed potential threats to validity (Box 2) > no empirical testing (Box 3) >face validity assessed (Box 5) > Moderate, assuming potential threats to validity are not a problem or are adequately addressed.

The highest possible rating is Moderate.

Preliminary rating for validity: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

Committee pre-evaluation comments

Criteria 2: Scientific Acceptability of Measure Properties (including all 2a, 2b, and 2d)

2a1. & 2b1. Specifications

Comments: **I could find no inconsistencies.
**The specifications are consistent with the evidence.
**The specifications seem consistent with the evidence.
**specifications are consistent with the evidence
**Specifications are simply for documentation in the EMR.

2a2. Reliability Testing

Comments: **Testing appeared to be adequate and shows reliability.
**Given the kappa statistic provided and that this is a maintenance measure, following algorithm 2, I would rate the reliability as high (box 6a).
**Reliability testing was based on a small sample of records from only 4 sites, which raises questions about generalizability across the U.S. population. However, the reliability testing that was performed shows very strong reliability so only substantial variation among a wider sample of practices would be likely to result in insufficient reliability.
**adequate testing from 2009 in light of continued use of measure to date
**Not clear.

2b2. Validity Testing

Comments: **Testing was adequate and represents quality.
**The approach to validity testing seems sound, with over 200 patient records being reviewed by an expert panel of 33 judges. Therefore, given the evidence provided earlier that indicates a linkage between this process measure and some of the desired outcomes, this measure does appear to demonstrate sufficient validity to draw conclusions about quality.
**In-depth reconsideration of validity testing does not seem warranted unless there is evidence that use of CPT codes for advanced care planning or practice patterns around advanced care planning have changed substantially since testing was first conducted. The updated evidence the authors presented do not suggest either.
**Moderate: would have been nice to see empirical validity testing. for future consideration: a measure that addresses likelihood that having advanced care planning documented in the record aligns with patients' preferences ultimately being met.
**Testing was only for presence or absence of documentation of ACP without any additional detail.

2b3. Exclusions Analysis
2b4. Risk Adjustment/Stratification for Outcome or Resource Use Measures
2b5. Identification of Statistically Significant & Meaningful Differences In Performance
2b6. Comparability of Performance Scores When More Than One Set of Specifications
2b7. Missing Data Analysis and Minimizing Bias

Comments: **Non identified
**It was noted that exclusions are not applicable, which seems appropriate since the measure numerator is focused on having the discussion with the patient, even if the patient decides not to name a surrogate decision maker or an advance care plan. It is also noted that a risk adjustment method has not been conducted. This does appear to be a threat to validity, particularly given that the measure is not able to identify disparities in different patient populations. Also, it would ideally be important to consider SES adjustment at some point in the future. Following the validity algorithm, #3, I would recommend a rating of moderate.
**The observed variation across practices suggests that the measure detects meaningful differences in quality.
**I don't see it as a threat to validity but specifications indicate that clinicians indicating the place of service as the ED are excluded (in S.6) yet no exclusions are listed. Would be interested in hearing from the developer on the rationale and approach to this exclusion, although I can make a good assumption as to why an expert panel would reach consensus about what is seemingly a reasonable exception.

Criterion 3. Feasibility
Maintenance measures – no change in emphasis – implementation issues may be more prominent

3. Feasibility is the extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

- All data elements are in electronically defined fields. They are generated from, collected and used by healthcare personnel during the provision of care.
- The Developer states that exact costs for implementation of the measure have not been determined, but the use of the measure in a federal program, Physician Quality Reporting System (PQRS), support the measures feasibility and usability.

Questions for the Committee:

- o *Are the required data elements routinely generated and used during care delivery?*
- o *Are the required data elements available in electronic form, e.g., EHR or other electronic sources?*
- o *Is the data collection strategy ready to be put into operational use?*

Preliminary rating for feasibility: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

Committee pre-evaluation comments

Criteria 3: Feasibility

3a. Byproduct of Care Processes
3b. Electronic Sources
3c. Data Collection Strategy

Comments: **It appears that the data elements are able to be generated; however, given the evolution of EHRs since this measure was first implemented, it would be ideal for the developer to do some post-market surveillance to determine if this is truly the case. I rate the feasibility as moderate.
**The measure relies on claims data generated during the care process and is in current use. I do not have feasibility concerns.
**high: ultimately the continued use in the PQRS program supports feasibility and usability

Criterion 4: Usability and Use
Maintenance measures – increased emphasis – much greater focus on measure use and usefulness, including both impact /improvement and unintended consequences

4. Usability and Use evaluate the extent to which audiences (e.g., consumers, purchasers, providers, policymakers) use or could use performance results for both accountability and performance improvement activities.

Current uses of the measure The measure is currently in use in the CMS Physician Quality Reporting System (PQRS). PQRS is a nationally recognized program that encourages physicians to report the quality of care to Medicare using a mixture of payment adjustments and incentive payments. Those physicians who successfully report data on quality metrics receive these incentives.

Publicly reported? ☒ **Yes** ☐ **No**

Current use in an accountability program? ☐ **Yes** ☐ **No** ☒ **UNCLEAR**
OR
Planned use in an accountability program? ☐ **Yes** ☒ **No**

Improvement results The Developer states that an increased rate of performance was shown (5%, from 62 percent to 67 percent) of those physicians who reported continuously from 2012-2014. Though a gap in care still exists, the increase suggests that physicians are reporting on the measure or at least initiating and documenting discussion of advance care planning with patients and families at a higher rate than that of previous years.

Unexpected findings (positive or negative) during implementation The Developer states they are not aware of any unexpected consequences.

Potential harms The Developer notes having no awareness of potential harms.

Feedback:
In 2012, the Measure Applications Partnership (MAP) suggested the measure be included in the Families of Measures for Care Coordination, but the developer should expand the measure to include patients under 65 years old.

In 2015, the MAP noted that the measure would need to be re-specified, tested, and endorsed for the Ambulatory Surgical Center (ASC) setting prior to use in this ASC Quality Reporting program. The MAP generally agreed on the importance of advanced care planning, it ultimately did not support this measure. MAP recommended more thought be given to the frequency and structure of the measure in order to better meet the needs of the patient and ensure the measure is specified to ensure it is used appropriately.

***Questions for the Committee**:*

- o *How can the performance results be used to further the goal of high-quality, efficient healthcare?*
- o *Do the benefits of the measure outweigh any potential unintended consequences?*
- o *How has the measure been vetted in real-world settings by those being measure or others?*

Preliminary rating for usability and use: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

Committee pre-evaluation comments

Criteria 4: Usability and Use

4a. Accountability and Transparency
4b. Improvement
4c. Unintended Consequences
Comments: **Reported in PQRS. Not able to identify unintended negative consequences.
**This measure is clearly in use and being used for public reporting. If it is not being use for accountability now, I suspect it will be over time given that CMS is now paying directly for this service and will want to understand its impact and hold clinicians accountable over time. If the evidence continues to grow, then the results from this measure could be used to further the goal of high quality healthcare. There do not appear to be any unintended consequences--except that data collection burden needs to be fully assessed.
**The measure is in use by CMS PQRS program.
**Used for Physician Quality Reporting System, presumably also included in the new QPP. (Need to check)

Criterion 5: Related and Competing Measures

Related or competing measures

- 0647: Transition Record with Specified Elements Received by Discharged Patients (Discharges from an Inpatient Facility to Home/Self Care or Any Site of Care)
- Developer states that measure 0647 focuses on transition of care to another facility or home, but targets a broader population with regards to age. This measure 0326 focuses solely on older adults and creating an advanced plan or identifying a proxy decision maker to give directives (including transitions) on their behalves.

Endorsement + Designation

The "Endorsement +" designation identifies measures that exceed NQF's endorsement criteria in several key areas. After a Committee recommends a measure for endorsement, it will then consider whether the measure also meets the "Endorsement +" criteria.

This measure is a candidate for the "Endorsement +" designation IF the Committee determines that it: meets evidence for measure focus without an exception; is reliable, as demonstrated by score-level testing; is valid, as demonstrated by score-level testing (not via face validity only); and has been vetted by those being measured or other

users.

Eligible for Endorsement + designation: ☐ **Yes** ☒ **No**

Developer is not seeking Endorsement + designation.

RATIONALE IF NOT ELIGIBLE: The measure is not eligible for Endorsement + because it is not demonstrated by reliability testing of the measure score, it is only at the data element level. Additionally, measure does not demonstrate validity empirically, only described by face validity.

Pre-meeting public and member comments

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NATIONAL QUALITY FORUM—Evidence (subcriterion 1a)

Measure Number (*if previously endorsed*)**:** #0326
Measure Title: Advance Care Plan
IF the measure is a component in a composite performance measure, provide the title of the Composite Measure here: Click here to enter composite measure #/ title
Date of Submission: 11/28/2016

Instructions

- *Complete 1a.1 and 1a.12 for all measures.*
- *Complete **EITHER 1a.2, 1a.3 or 1a.4** as applicable for the type of measure and evidence.*
- *For composite performance measures:*
  - *A separate evidence form is required for each component measure unless several components were studied together.*
  - *If a component measure is submitted as an individual performance measure, attach the evidence form to the individual measure submission.*
- All information needed to demonstrate meeting the evidence subcriterion (1a) must be in this form. An appendix of *supplemental* materials may be submitted, but there is no guarantee it will be reviewed.
- If you are unable to check a box, please highlight or shade the box for your response.
- Contact NQF staff regarding questions. Check for resources at Submitting Standards webpage.

Note: The information provided in this form is intended to aid the Standing Committee and other stakeholders in understanding to what degree the evidence for this measure meets NQF's evaluation criteria.

1a. Evidence to Support the Measure Focus

The measure focus is evidence-based, demonstrated as follows:

- Health outcome: [3] a rationale supports the relationship of the health outcome to processes or structures of care. Applies to patient-reported outcomes (PRO), including health-related quality of life/functional status, symptom/symptom burden, experience with care, health-related behavior.
- Intermediate clinical outcome: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured intermediate clinical outcome leads to a desired health outcome.
- Process: [5] a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured process leads to a desired health outcome.
- Structure: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured structure leads to a desired health outcome.
- Efficiency: [6] evidence not required for the resource use component.

Notes

3. Generally, rare event outcomes do not provide adequate information for improvement or discrimination; however, serious reportable events

that are compared to zero are appropriate outcomes for public reporting and quality improvement.

4. The preferred systems for grading the evidence are the U.S. Preventive Services Task Force (USPSTF) grading definitions and methods, or Grading of Recommendations, Assessment, Development and Evaluation (GRADE) guidelines.

5. Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multistep process, the step with the strongest evidence for the link to the desired outcome should be selected as the focus of measurement. Note: A measure focused only on collecting PROM data is not a PRO-PM.

6. Measures of efficiency combine the concepts of resource use and quality (see NQF's Measurement Framework: Evaluating Efficiency Across Episodes of Care; AQA Principles of Efficiency Measures).

1a.1.This is a measure of: (*should be consistent with type of measure entered in De.1*)

Outcome

☐ Health outcome: Click here to name the health outcome

☐Patient-reported outcome (PRO): Click here to name the PRO

PROs include HRQoL/functional status, symptom/symptom burden, experience with care, health-related behaviors. (*A PRO-based performance measure is not a survey instrument. Data may be collected using a survey instrument to construct a PRO measure.)*

☐ Intermediate clinical outcome (*e.g., lab value*): Click here to name the intermediate outcome

☒ Process: The measure assesses whether the patient has an advance care plan or surrogate decision maker documented in the medical record, or documentation that an advance care plan was discussed

☐ Appropriate use measure: Click here to name what is being measured

☐ Structure: Click here to name the structure

☐ Composite: Click here to name what is being measured

1a.12 LOGIC MODEL Diagram or briefly describe the steps between the healthcare structures and processes (e.g., interventions, or services) and the patient's health outcome(s). The relationships in the diagram should be easily understood by general, non-technical audiences. Indicate the structure, process or outcome being measured.

Advance care planning encompasses communication and discussion regarding treatment preferences that should start before a patient is seriously ill. It provides patients with an opportunity to consider, discuss, and plan their future care with health professionals. Numerous policy documents recommend that ACP should be available to all with life-limiting illness (Barnes 2011). Advance care planning can include deciding on a surrogate decision maker and advance directives. Instructional advance directives, such as living wills and do-not-resuscitate orders, specify the types of interventions that a patient does or does not want in particular circumstances. Proxy directives, such as healthcare proxy and a durable power of attorney for health, authorize another person to make medical decisions if the patient is unable (Basanta 2002).

Only a minority of subjects initiated ACP. The findings suggest the need for interventions aimed at enhancing ACP completion rates, particularly among older adults with cognitive impairment, since these individuals may have a time-limited opportunity to plan for future medical, financial, and other major life decisions (Garand 2011). Indeed, for people with severe dementia, advance care planning should be a necessary intervention, and the reluctance of caretakers to write plans should be explored further (Sampson 2011).

This measure would be consistent with a legislative mandate affecting Medicare beneficiaries, the Patient Self Determination Act (PSDA), approved in 1990. The act requires that beneficiaries be informed about their rights to self determination and the use of advance directives, and identifies particular facilities accountable for providing the information. Despite this, a recent cancer research study had found that most patients had not spoken extensively to health professionals or close persons about the future. Patients' concerns related to experiencing distressing symptoms or worrying how family members would cope. Some patients wished for more accurate information and were unaware of their options for care. Many felt it was doctors´ responsibility to initiate such discussions, but perceived that their doctors were reluctant to do so. However, some patients felt that the time was not yet right for these conversations (Barnes 2011). Furthermore, a recent meta-analysis found that awareness of patients´ and

surrogates´ decision-making characteristics and communication styles can help clinicians identify potential barriers and variations in patterns of communication. To that end, the authors contend that initial and ongoing assessments of patients´ and surrogates´ communication style and characteristics must be incorporated into the plan of care (Melhado 2011).

Physicians are often unable to guide patients through the advance care planning (ACP) process due time constraints. A recent interventional study found that when physicians utilized a computerized clinical decision maker at the time of the medical health exam, patients were five times more likely to complete an ACP than those who only received an ACP education packet (Tung 2011). A cross-sectional study out of Oklahoma found that among community dwelling older persons, a living will is a positive first step towards healthcare planning and designating a power of attorney. They also found that the state's effort to increase the use of advance directives among older residents was successful, indicating that organizations have the power to influence people with respect ACP (Mcauley 2008). An observational study from La Crosse County, Wisconsin found that a system for ACP can be managed in a geographic region so that, at the time of death, almost all adults have an advance care plan that is specific and available and treatment is consistent with their plan. The data from this study suggest that quality efforts have improved the prevalence, clarity, and specificity of ACPs (Hammes 2010).

The measure assesses whether the patient has an advance care plan or surrogate decision maker documented in the medical record, or documentation that an advance care plan was discussed. Given the risks of poorly coordinated care at the end of life (e.g., potential to disrespect patient and/or surrogate decision-maker wishes, increased hospitalizations, increased intensive care unit admissions, increased health care spending), prior documentation of patient and family's decision-making is particularly important for ensuring optimal quality of life improved outcomes. The path envisioned is as follows.

Logic Model:
Clinician initates advance care planning discussion with patient >>> Clinician documents patient's decision-making around end of life care >>> Clinician provides end of life care as specified by the patient's advance care plan >>> Patient receives end of life care as specified by his or her advance care plan >>> Patient experiences improved quality of life >>> Patient experiences improved outcomes.

****RESPOND TO ONLY ONE SECTION BELOW -EITHER 1a.2, 1a.3 or 1a.4) ****

1a.2 FOR OUTCOME MEASURES including PATIENT REPORTED OUTCOMES- State the rationale supporting the relationship between the health outcome (or PRO) to at least one healthcare structure, process (e.g., intervention, or service).

N/A

1a.3. SYSTEMATIC REVIEW(SR) OF THE EVIDENCE (for INTERMEDIATE OUTCOME, PROCESS, OR STRUCTURE PERFORMANCE MEASURES) If the evidence is not based on a systematic review go to section 1a.4) If you wish to include more than one systematic review, add additional tables.

What is the source of the systematic review of the body of evidence that supports the performance measure? A systematic review is a scientific investigation that focuses on a specific question and uses explicit, prespecified scientific methods to identify, select, assess, and summarize the findings of similar but separate studies. It may include a quantitative synthesis (meta-analysis), depending on the available data. (IOM)

☐ Clinical Practice Guideline recommendation (with evidence review)

☐ US Preventive Services Task Force Recommendation

☐ X Other systematic review and grading of the body of evidence (*e.g., Cochrane Collaboration, AHRQ Evidence Practice Center*)

☐ Other

Source of Systematic Review: • **Title** • **Author** • **Date** • **Citation, including page number** • **URL**	~~National Hospice and Palliative Care Organization~~ www.caringinfo.org [Note: we have removed prior reference to the NHPCC as this was not a systematic review] The Effects of Advance Care Planning on End-of-Life Care: A Systematic Review. Brinkman-Stoppelenburg A, Rietjens JA, van der Heide A. September 2014 Palliative Medicine, Vol. 28 (No. 8), pages 1000-1025. http://pmj.sagepub.com/content/28/8/1000.short
Quote the guideline or recommendation verbatim about the process, structure or intermediate outcome being measured. If not a guideline, summarize the conclusions from the SR.	"The effects of different types of advance care planning have been studied in various settings and populations using different outcome measures. There is evidence that advance care planning positively impacts the quality of end-of-life care" (page 1000). ~~The National Hospice and Palliative Care Organization provides the Caring Connection web site (www.caringinfo.org). This web site provides resources and information on end-of-life care, including a national repository of state by state advance directives.~~ ~~Advance directives are designed to respect patient's autonomy and determine his/her wishes about future life-sustaining medical treatment if unable to indicate wishes. Key interventions and treatment decisions to include in advance directives are: resuscitation procedures, mechanical respiration, chemotherapy, radiation therapy, dialysis, simple diagnostic tests, pain control, blood products, transfusions, and intentional deep sedation.~~ ~~Oral statements~~ ~~• Conversations with relatives, friends, and clinicians are most common form; should be thoroughly documented in medical record for later reference.~~ ~~• Properly verified oral statements carry same ethical and legal weight as those recorded in writing.~~ ~~Instructional advance directives (DNR orders, living wills)~~ ~~• Written instructions regarding the initiation, continuation, withholding, or withdrawal of particular forms of life-sustaining medical treatment.~~ ~~• May be revoked or altered at any time by the patient.~~ ~~• Clinicians who comply with such directives are provided legal immunity for such actions.~~ ~~Durable power of attorney for health care or health care proxy~~ • A written document that enables a capable person to appoint someone else to make future medical treatment choices for him or her in the event of decisional incapacity.
Grade assigned to the **evidence** associated with the recommendation with the definition of the grade	N/A. This systematic review was designed to review and evaluate evidence, but not to provide a recommendation. N~~/A~~

Provide all other grades and definitions from the evidence grading system	N/A
Grade assigned to the **recommendation** with definition of the grade	N/A. This systematic review was designed to review and evaluate evidence, but not to provide a recommendation.
Provide all other grades and definitions from the recommendation grading system	N/A
Body of evidence: • Quantity – how many studies? • Quality – what type of studies?	• Quantity – 113 studies were included in the systematic review • Quality – Most studies included in the review were observational (95%), while 5 were experimental (5%). The level of evidence for each study was graded on a scale of I, II, or III using criteria proposed by Higginson 2002. 5% of studies included in drawing the conclusions received Grade I (defined as a randomized controlled trial or RCT review). 59% of the studies included received Grade II (defined as a prospective study with a comparison group, or a retrospective study which controls effectively for confounding variables). 36% of included studies received Grade III (defined as a retrospective, observational, or cross-sectional study).
Estimates of benefit and consistency across studies	Out of 26 studies that evaluated the effect of advance care planning (ACP) on hospitalization or length of stay, 21 studies found that ACP was associated with a decreased rate of hospitalization or length of stay, while 5 studies found that ACP was associated with an increased rate of hospitalization or length of stay. Of 13 studies that evaluated the effect of ACP on patients' and families' symptoms, 5 studies found that ACP decreased symptoms, and no studies found that ACP increased symptoms. (the remaining studies found neither an increase nor a decrease). ~~There is a net benefit; studies have demonstrated that quality efforts to increase ACP have been effective and increased the compliance of end-of-life care with the patient's wishes.~~ ~~Studies consistently demonstrated the advantages of advanced care planning, though at least one study noted that some patients are more reluctant to engage in ACP.~~
What harms were identified?	No harms were identified. ~~N/A~~
Identify any new studies conducted since the SR. Do the new studies change the conclusions from the SR?	No new studies have been conducted that contradict the conclusion that advance care plans are a key component of high quality patient care.

1a.4 OTHER SOURCE OF EVIDENCE

If source of evidence is NOT from a clinical practice guideline, USPSTF, or systematic review, please describe the evidence on which you are basing the performance measure.

N/A

1a.4.1 Briefly SYNTHESIZE the evidence that supports the measure. A list of references without a summary is not acceptable.

N/A

1a.4.2 What process was used to identify the evidence?

N/A

1a.4.3. Provide the citation(s) for the evidence.

N/A

1. Evidence, Performance Gap, Priority – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. ***Measures must be judged to meet all sub criteria to pass this criterion and be evaluated against the remaining criteria.***

1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form

0326_Evidence_MSF7.0_Attachment_Final.docx

1a.1 For Maintenance of Endorsement: Is there new evidence about the measure since the last update/submission?

Please update any changes in the evidence attachment in red. Do not remove any existing information. If there have been any changes to evidence, the Committee will consider the new evidence. If there is no new evidence, no updating of the evidence information is needed.

Yes

1b. Performance Gap

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- Disparities in care across population groups.

1b.1. Briefly explain the rationale for this measure *(e.g., how the measure will improve the quality of care, the benefits or improvements in quality envisioned by use of this measure)*

IF a PRO-PM (e.g. HRQoL/functional status, symptom/burden, experience with care, health-related behaviors), provide evidence that the target population values the measured PRO and finds it meaningful. (Describe how and from whom their input was obtained.)

IF a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), SKIP this question and provide rationale for composite in question 1c.3 on the composite tab.

This measure addresses advance care planning as one facet of high quality care for older adults. The aim of advance care planning is to ensure that care near the end of life aligns with the patient's wishes (IOM, 2014). Advanced care planning is associated with improved health outcomes for older adults, including reducing hospitalizations, intensive care unit (ICU) admissions, and hospital and ICU lengths of stay (Brinkman-Stoppelenburg, 2014; Hall et al., 2011; Khandelwal et al., 2015; Martin et al., 2016). However, most older adults do not have advance care planning conversations with their clinicians even though there is consensus among diverse stakeholders that advance care planning is a key component of high quality care (NQF 2006; IOM, 2014). The intent of this measure is to promote advance care planning discussions between older adults and their providers and documentation of that discussion in the patient's record.

As people age, consideration should be given to their treatment wishes in the event that they lose the ability to manage their care. A large discrepancy exists between the wishes of dying patients and their actual end-of-life care. Advance directives (AD) are widely recommended as a strategy to improve compliance with patient wishes at the end of life, and thereby ensure appropriate use of health care resources at the end of life. A recent systematic review found only a few studies, all of which were conducted in the United States concerning advanced care planning in palliative care. Although the results were promising, more high-quality studies

need to be conducted (Hall, et al., 2011).

Brinkman-Stoppelenburg, A., Rietjens, J. A., & van der Heide, A. (2014). The effects of advance care planning on end-of-life care: a systematic review. Palliative Medicine, 28(8), 1000-1025.

Hall, S., Kolliakou, A., Petkova, H., Froggatt, K., & Higginson, I. J. (2011). Interventions for improving palliative care for older people living in nursing homes. Cohrane Database of Systematic Reviews, 3.

Institute of Medicine (IOM). (2014). Dying in America: improving quality and honoring individual preferences near the end of life. Washington, DC: The National Academies Press.

Khandelwal, N., Kross, E. K., Engelberg, R. A., Coe, N. B., Long, A. C., & Curtis, J. R. (2015). Estimating the effect of palliative care interventions and advance care planning on ICU utilization: a systematic review. Critical Care Medicine, 43(5), 1102-1111.

Martin, R. S., Hayes, B., Gregorevic, K., & Lim, W. K. (2016). The effects of advance care planning interventions on nursing home residents: a systematic review. Journal of the American Medical Directors Association, 17(4), 284-293.

National Quality Forum. (2006). A National Framework and Preferred Practices for Palliative and Hospice Care Quality. Washington, DC: National Quality Forum.

1b.2. Provide performance scores on the measure as specified (<u>current and over time</u>) at the specified level of analysis. *(<u>This is required for maintenance of endorsement</u>. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the sub-criterion on improvement (4b) under Usability and Use.*

This measure is used in the CMS Physician Quality Reporting Initiative/System (PQRI/S) in the claims (2007-2016) and registry (2009-2016) options.

The most recent data available from CMS is from 2014. We are including data from the PQRS claims and registry options from 2012-2014 to demonstrate overall performance and reporting trends. CMS is unable to provide us with more detailed data (such as percentiles, as provided in the past). Nevertheless, the new data shows the continued gap in care.

TRENDS IN INDIVIDUAL MEASURE PERFORMANCE RATE, FOR ELIGIBLE PROFESSIONALS (EPS) WHO SUBMITTED THE MEASURE CONTINUOUSLY FROM 2012 TO 2014:

- EPs who Reported Continuously 2012-2014: 3,309
- Average Performance Rate in 2012: 62.3%
- Average Performance Rate in 2013: 63.7%
- Average Performance Rate in 2014: 67.2%
- Improvement Rate: 3.9%

SUBMITTING EPS WITH AT LEAST A 90% PERFORMANCE RATE BY INDIVIDUAL MEASURE (2014)

- Percent of EPs with At Least 90% Performance Rate: 43.0%

AVERAGE PERFORMANCE RATE FOR GROUP PRACTICES REPORTING VIA REGISTRY (2014)

- Small Group Practice Reporting Option: 64.5%
- Medium Group Practice Reporting Option: 52.0%
- Large Group Practice Reporting Option: 35.6%

The most recent performance data available is from the PQRI claims option from 2008. The data below shows the gap in care; approximately 73 percent of patients reported on did not meet the measure.

10th percentile: 0.35%
25th percentile: 3.30%
50th percentile: 14.26%
75th percentile: 44.68%
90th percentile: 75.00%

1b.3. **If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.**
Section 1b.2 references data from the most recent year of measurement for PQRS. The data in Section 1b.2 includes percentiles and mean. Confidential CMS PQRS 2008 Performance Information by Measure. Jan-Sept TAP file.

1b.4. **Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability.** *(This is required for maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included.) For measures that show high levels of performance, i.e., "topped out", disparities data may demonstrate an opportunity for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b) under Usability and Use.*
The measure is not stratified by patient groups or cohorts that could potentially be affected by disparities in care. NCQA has participated with IOM and others in attempting to include information on disparities in measure data collection. However, at the present time, this data at all levels (e.g., claims data, paper chart review, and electronic records), is not coded in a standard manner, and is incompletely captured. There are no consistent standards for what entity (e.g., physician, group, plan, and employer) should capture and report this data. While "requiring" reporting of the data could push the field forward, it has been our position that doing so would create substantial burden without generating meaningful results. We believe that the measure specifications should NOT require this unless absolutely necessary since the data needed to determine disparities cannot be ascertained from the currently available sources.

1b.5. **If no or limited data on disparities from the measure as specified is reported in 1b.4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations. Not necessary if performance data provided in 1b.4**
N/A

2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. ***Measures must be judged to meet the sub criteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.***

2a.1. Specifications The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

De.5. **Subject/Topic Area** *(check all the areas that apply):*

De.6. **Cross Cutting Areas** *(check all the areas that apply):*
«crosscutting_area»

De.7. **Target Population Category** *(Check all the populations for which the measure is specified and tested if any):*
Elderly, Populations at Risk : Dual eligible beneficiaries

S.1. **Measure-specific Web Page** *(Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)*
https://pqrs.cms.gov/dataset/2016-PQRS-Measure-047-11-17-2015/kt3r-29rt/data

S.2a. **If this is an eMeasure**, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)
This is not an eMeasure **Attachment:**

S.2b. **Data Dictionary, Code Table, or Value Sets** *(and risk model codes and coefficients when applicable) must be attached. (Excel or*

csv file in the suggested format preferred - if not, contact staff)
No data dictionary **Attachment:**

S.3.1. **For maintenance of endorsement:** Are there changes to the specifications since the last updates/submission. If yes, update the specifications for S1-2 and S4-22 and explain reasons for the changes in S3.2.
No

S.3.2. **For maintenance of endorsement,** please briefly describe any important changes to the measure specifications since last measure update and explain the reasons.
N/A

S.4. **Numerator Statement** *(Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome) DO NOT include the rationale for the measure.*
IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).
Patients who have an advance care plan or surrogate decision maker documented in the medical record or documentation in the medical record that an advance care plan was discussed but patient did not wish or was not able to name a surrogate decision maker or provide an advance care plan.

S.5. **Numerator Details** *(All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)*
IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).
Report the CPT Category II codes designated for this numerator:
- 1123F: Advance care planning discussed and documented; advance care plan or surrogate decision maker documented in the medical record
- 1124F: Advance care planning discussed and documented in the medical record; patient did not wish or was not able to name a surrogate decision maker or provide an advance care plan

Documentation that patient did not wish or was not able to name a surrogate decision maker or provide an advance care plan may also include, as appropriate, the following: That the patient's cultural and/or spiritual beliefs preclude a discussion of advance care planning, as it would be viewed as harmful to the patient´s beliefs and thus harmful to the physician-patient relationship.

S.6. **Denominator Statement** *(Brief, narrative description of the target population being measured)*
All patients aged 65 years and older.

S.7. **Denominator Details** *(All information required to identify and calculate the target population/denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*
IF an OUTCOME MEASURE, describe how the target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).
Denominator Criteria (Eligible Cases):

Patient encounter during the reporting period (CPT): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99218, 99219, 99220, 99221, 99222, 99223, 99231, 99232, 99233, 99234, 99235, 99236, 99291*, 99304, 99305, 99306, 99307, 99308, 99309, 99310, 99324, 99325, 99326, 99327, 99328, 99334, 99335, 99336, 99337, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350, G0402, G0438, G0439

*Clinicians indicating the place of service as the emergency department will not be included in this measure.

S.8. **Denominator Exclusions** *(Brief narrative description of exclusions from the target population)*
N/A

S.9. **Denominator Exclusion Details** *(All information required to identify and calculate exclusions from the denominator such as*

definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)
N/A

S.10. **Stratification Information** *(Provide all information required to stratify the measure results, if necessary, including the stratification variables, definitions, specific data collection items/responses, code/value sets, and the risk-model covariates and coefficients for the clinically-adjusted version of the measure when appropriate – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b.)*
N/A

S.11. **Risk Adjustment Type** (Select type. Provide specifications for risk stratification in measure testing attachment)
No risk adjustment or risk stratification
If other:

S.12. **Type of score:**
Rate/proportion
If other:

S.13. **Interpretation of Score** *(Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)*
Better quality = Higher score

S.14. **Calculation Algorithm/Measure Logic** (*Diagram or describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; time period for data, aggregating data; risk adjustment; etc.)*
Step 1: Determine the eligible population. The eligible population is all patients aged 65 years and older.

Step 2: Determine number of patients meeting the denominator criteria as specified in Question S.7. above.

Step 3: Determine the number of patients who meet the numerator criteria as specified in Question S.5. above. The numerator includes all patients who have an advance care plan or surrogate decision maker documented in the medical record or documentation in the medical record that an advance care plan was discussed but patient did not wish or was not able to name a surrogate decision maker or provide an advance care plan.

Step 4: Calculate the rate by dividing the total from Step 3 by the total from Step 2.

S.15. **Sampling** *(If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)*
IF a PRO-PM, identify whether (and how) proxy responses are allowed.
N/A

S.16. **Survey/Patient-reported data** *(If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)*
IF a PRO-PM, specify calculation of response rates to be reported with performance measure results.

S.17. **Data Source** *(Check ONLY the sources for which the measure is SPECIFIED AND TESTED).*
If other, please describe in S.18.
Claims (Only), EHRs Hybrid

S.18. **Data Source or Collection Instrument** *(Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data is collected.)*
IF a PRO-PM, identify the specific PROM(s); and standard methods, modes, and languages of administration.
None

S.19. **Data Source or Collection Instrument** *(available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)*
No data collection instrument provided

S.20. **Level of Analysis** *(Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)*
Clinician : Group/Practice, Clinician : Individual

S.21. **Care Setting** *(Check ONLY the settings for which the measure is SPECIFIED AND TESTED)*
Clinician Office/Clinic
If other:

S.22. **COMPOSITE Performance Measure** - Additional Specifications *(Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)*
N/A

2. Validity – See attached Measure Testing Submission Form
0326_MeasureTesting_MSF7.0_Attachment_Final.docx

2.1 For maintenance of endorsement
Reliability testing: If testing of reliability of the measure score was not presented in prior submission(s), has reliability testing of the measure score been conducted? If yes, please provide results in the Testing attachment. (Do not remove prior testing information – include date of new information in red.)
No

2.2 For maintenance of endorsement
Has additional empirical validity testing of the measure score been conducted? If yes, please provide results in the Testing attachment. (Do not remove prior testing information – include date of new information in red.)
No

2.3 For maintenance of endorsement
Risk adjustment: For outcome, resource use, cost, and some process measures, risk-adjustment that includes SDS factors is no longer prohibited during the SDS Trial Period (2015-2016). Please update sections 1.8, 2a2, 2b2, 2b4, and 2b6 in the Testing attachment and S.14 and S.15 in the online submission form in accordance with the requirements for the SDS Trial Period. NOTE: These sections must be updated even if SDS factors are not included in the risk-adjustment strategy. If yes, and your testing attachment does not have the additional questions for the SDS Trial please add these questions to your testing attachment:

What were the patient-level sociodemographic (SDS) variables that were available and analyzed in the data or sample used? For example, patient-reported data (e.g., income, education, language), proxy variables when SDS data are not collected from each patient (e.g. census tract), or patient community characteristics (e.g. percent vacant housing, crime rate).

Describe the conceptual/clinical and statistical methods and criteria used to select patient factors (clinical factors or sociodemographic factors) used in the statistical risk model or for stratification by risk (e.g., potential factors identified in the literature and/or expert panel; regression analysis; statistical significance of p<0.10; correlation of x or higher; patient factors should be present at the start of care)

What were the statistical results of the analyses used to select risk factors?

Describe the analyses and interpretation resulting in the decision to select SDS factors (e.g. prevalence of the factor across measured entities, empirical association with the outcome, contribution of unique variation in the outcome, assessment of between-unit effects and within-unit effects)
No - This measure is not risk-adjusted

NATIONAL QUALITY FORUM—Measure Testing (subcriteria 2a2, 2b2-2b7)

Measure Number (*if previously endorsed*)**:** #0326
Measure Title: Advance Care Plan
Date of Submission: 11/28/2016
Type of Measure:

☐ Outcome (*including PRO-PM*)	☐ Composite – ***STOP – use composite testing form***
☐Intermediate Clinical Outcome	☐ Cost/resource
☒ Process	☐ Efficiency
☐ Structure	

Instructions

- Measures must be tested for all the data sources and levels of analyses that are specified. ***If there is more than one set of data specifications or more than one level of analysis, contact NQF staff*** about how to present all the testing information in one form.
- **For all measures, sections 1, 2a2, 2b2, 2b3, and 2b5 must be completed.**
- **For outcome and resource use measures**, section **2b4** also must be completed.
- If specified for **multiple data sources/sets of specificaitons** (e.g., claims and EHRs), section **2b6** also must be completed.
- Respond to all questions as instructed with answers immediately following the question. All information on testing to demonstrate meeting the subcriteria for reliability (2a2) and validity (2b2-2b6) must be in this form. An appendix for *supplemental* materials may be submitted, but there is no guarantee it will be reviewed.
- If you are unable to check a box, please highlight or shade the box for your response.
- Maximum of 20 pages (*incuding questions/instructions;* minimum font size 11 pt; do not change margins). ***Contact NQF staff if more pages are needed.***
- Contact NQF staff regarding questions. Check for resources at Submitting Standards webpage.
- For information on the most updated guidance on how to address sociodemographic variables and testing in this form refer to the release notes for version 6.6 of the Measure Testing Attachment.

Note: The information provided in this form is intended to aid the Steering Committee and other stakeholders in understanding to what degree the testing results for this measure meet NQF's evaluation criteria for testing.

2a2. Reliability testing [10] demonstrates the measure data elements are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period and/or that the measure score is precise. For **PRO-PMs and composite performance measures**, reliability should be demonstrated for the computed performance score.

2b2. Validity testing [11] demonstrates that the measure data elements are correct and/or the measure score correctly reflects the quality of care provided, adequately identifying differences in quality. For **PRO-PMs and composite performance measures**, validity should be demonstrated for the computed performance score.

2b3. Exclusions are supported by the clinical evidence; otherwise, they are supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion; [12]

AND

If patient preference (e.g., informed decisionmaking) is a basis for exclusion, there must be evidence that the exclusion impacts performance on the measure; in such cases, the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category computed separately, denominator exclusion category computed separately). [13]

2b4. For outcome measures and other measures when indicated (e.g., resource use):

- **an evidence-based risk-adjustment strategy** (e.g., risk models, risk stratification) is specified; is based on patient factors (including clinical and sociodemographic factors) that influence the measured outcome and are present at start of care; [14,15] and has demonstrated adequate discrimination and calibration

OR

- rationale/data support no risk adjustment/ stratification.

2b5. Data analysis of computed measure scores demonstrates that methods for scoring and analysis of the specified measure allow for **identification of statistically significant and practically/clinically meaningful [16] differences in performance**;

OR

there is evidence of overall less-than-optimal performance.

2b6. If multiple data sources/methods are specified, there is demonstration they produce comparable results.

2b7. For **eMeasures, composites, and PRO-PMs** (or other measures susceptible to missing data), analyses identify the extent and distribution of missing data (or nonresponse) and demonstrate that performance results are not biased due to systematic missing data (or differences between responders and nonresponders) and how the specified handling of missing data minimizes bias.

Notes

10. Reliability testing applies to both the data elements and computed measure score. Examples of reliability testing for data elements include, but are not limited to: inter-rater/abstractor or intra-rater/abstractor studies; internal consistency for multi-item scales; test-retest for survey items. Reliability testing of the measure score addresses precision of measurement (e.g., signal-to-noise).

11. Validity testing applies to both the data elements and computed measure score. Validity testing of data elements typically analyzes agreement with another authoritative source of the same information. Examples of validity testing of the measure score include, but are not limited to: testing hypotheses that the measures scores indicate quality of care, e.g., measure scores are different for groups known to have differences in quality assessed by another valid quality measure or method; correlation of measure scores with another valid indicator of quality for the specific topic; or relationship to conceptually related measures (e.g., scores on process measures to scores on outcome measures). Face validity of the measure score as a quality indicator may be adequate if accomplished through a systematic and transparent process, by identified experts, and explicitly addresses whether performance scores resulting from the measure as specified can be used to distinguish good from poor quality.

12. Examples of evidence that an exclusion distorts measure results include, but are not limited to: frequency of occurrence, variability of exclusions across providers, and sensitivity analyses with and without the exclusion.

13. Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.

14. Risk factors that influence outcomes should not be specified as exclusions

15. With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74 percent v. 75 percent) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall less-than-optimal performance may not

demonstrate much variability across providers.

1. DATA/SAMPLE USED FOR ALL TESTING OF THIS MEASURE
Often the same data are used for all aspects of measure testing. In an effort to eliminate duplication, the first five questions apply to all measure testing. If there are differences by aspect of testing,(e.g., reliability vs. validity) be sure to indicate the specific differences in question 1.7.

1.1. What type of data was used for testing? (*Check all the sources of data identified in the measure specifications and data used for testing the measure. Testing must be provided for all the sources of data specified and intended for measure implementation.* ***If different data sources are used for the numerator and denominator, indicate N [numerator] or D [denominator] after the checkbox.***)

Measure Specified to Use Data From: (***must be consistent with data sources entered in S.23***)	**Measure Tested with Data From:**
☐ abstracted from paper record	☐ abstracted from paper record
☒ administrative claims	☒ administrative claims
☐ clinical database/registry	☐ clinical database/registry
☒ abstracted from electronic health record	☒ abstracted from electronic health record
☐ eMeasure (HQMF) implemented in EHRs	☐ eMeasure (HQMF) implemented in EHRs
☐ other: Click here to describe	☐ other: Click here to describe

1.2. If an existing dataset was used, identify the specific dataset (*the dataset used for testing must be consistent with the measure specifications for target population and healthcare entities being measured; e.g., Medicare Part A claims, Medicaid claims, other commercial insurance, nursing home MDS, home health OASIS, clinical registry*).

1.3. What are the dates of the data used in testing? January 1, 2009- December 31, 2009.

1.4. What levels of analysis were tested? (*testing must be provided for all the levels specified and intended for measure implementation, e.g., individual clinician, hospital, health plan*)

Measure Specified to Measure Performance of: (***must be consistent with levels entered in item S.26***)	**Measure Tested at Level of:**
☒ individual clinician	☒ individual clinician
☒ group/practice	☒ group/practice
☐ hospital/facility/agency	☐ hospital/facility/agency
☐ health plan	☐ health plan
☐ other: Click here to describe	☐ other: Click here to describe

1.5. How many and which measured entities were included in the testing and analysis (by level of analysis and data source)? (*identify the number and descriptive characteristics of measured entities included in the analysis (e.g., size, location, type); if a sample was used, describe how entities were selected for inclusion in the sample*)

Four practice sites representing various types, locations and sizes were identified to participate in testing the measures. One practice with paper medical records and three practices with EHR participated in this testing project

o The number of geriatricians per site ranged from 1-16 in number

o The sites were located in four different regions of the United States

o Patient visit volume per site ranged from 500 – 1,000 geriatric patients per month

o Site 1 (Paper): 2,500 patients

o Site 2 (EHR): 1,800 patients

o Site 3 (EHR): 3,700 outpatients/2,000 LTC patients

o Site 4 (EHR): 2,500 patients

1.6. How many and which <u>patients</u> were included in the testing and analysis (by level of analysis and data source)? (*identify the number and descriptive characteristics of patients included in the analysis (e.g., age, sex, race, diagnosis); if a sample was used, describe how patients were selected for inclusion in the sample*)
A random sample of 70 geriatric patient charts were identified per site; resulting in approximately 220 patient records for purposes of this study.

Sample limited to Medicare patient office visits with dates of service between January 1, 2009- December 31, 2009.

1.7. If there are differences in the data or sample used for different aspects of testing (e.g., reliability, validity, exclusions, risk adjustment), identify how the data or sample are different for each aspect of testing reported below.

N/A

1.8 What were the patient-level sociodemographic (SDS) variables that were available and analyzed in the data or sample used? For example, patient-reported data (e.g., income, education, language), proxy variables when SDS data are not collected from each patient (e.g. census tract), or patient community characteristics (e.g. percent vacant housing, crime rate).

N/A

2a2. RELIABILITY TESTING
***<u>Note</u>**: If accuracy/correctness (validity) of data elements was empirically tested, separate reliability testing of data elements is not required – in 2a2.1 check critical data elements; in 2a2.2 enter "see section 2b2 for validity testing of data elements"; and skip 2a2.3 and 2a2.4.*

2a2.1. What level of reliability testing was conducted? (*may be one or both levels*)
☒ **Critical data elements used in the measure** (*e.g., inter-abstractor reliability; data element reliability must address ALL critical data elements*)
☐ **Performance measure score** (e.g., *signal-to-noise analysis*)

2a2.2. For each level checked above, describe the method of reliability testing and what it tests (*describe the steps—do not just name a method; what type of error does it test; what statistical analysis was used*)
<u>Data abstracted from randomly sampled patient records were used from the AMA-PCPI Testing Project to calculate inter-rater reliability for the measure.</u>

Data analysis included:
• Percent agreement
• Kappa statistic of reliability

Kappa: Strength of Agreement
0.00: Poor
0.01 – 0.20: Slight
0.21 – 0.40: Fair
0.41 – 0.60: Moderate
0.61 – 0.80: Substantial
0.81 – 0.99: Almost perfect

2a2.3. For each level of testing checked above, what were the statistical results from reliability testing? (e.*g., percent agreement and kappa for the critical data elements; distribution of reliability statistics from a signal-to-noise analysis*)
Advance Care Plan:
[N, % Agreement, Kappa (95% Confidence Interval)]
Denominator: 116, 99.15%, Kappa is non-calculable*
Numerator: 116, 98.28%, 0.95 (0.87 to 1.00)
Overall: 116, 98.29%, 0.95 (0.87 to 1.00)

*This is an example of the limitation of the Kappa statistic. While the agreement can be 90% or greater, if one classification category dominates, kappa can be significantly reduced. (http://www.ajronline.org/cgi/content/full/184/5/1391)

2a2.4 What is your interpretation of the results in terms of demonstrating reliability? (i.*e., what do the results mean and what are the norms for the test conducted?*)
Overall, this measure is highly reliable.

2b2. VALIDITY TESTING
2b2.1. What level of validity testing was conducted? (*may be one or both levels*)
☐ **Critical data elements** (*data element validity must address ALL critical data elements*)
☐ **Performance measure score**
☐ **Empirical validity testing**
☒ **Systematic assessment of face validity of performance measure score as an indicator** of quality or resource use (*i.e., is an accurate reflection of performance on quality or resource use and can distinguish good from poor performance*)

2b2.2. For each level of testing checked above, describe the method of validity testing and what it tests (*describe the steps—do not just name a method; what was tested, e.g., accuracy of data elements compared to authoritative source, relationship to another measure as expected; what statistical analysis was used)*
The measure focuses on advance care planning in the elderly population. The evidence is consistent with the focus and scope of this measure.

As described in section 1.6, a total of 220 patient records were abstracted to complete inter-rater reliability resting of the measure concept.

An expert panel was used to assess face validity of the measure, based on the data sample. This panel consists of 33 members, whose specialties include internal medicine, geriatrics, anesthesia, orthopedic surgery, physical medicine & rehabilitation, neurology, palliative medicine, urology, geriatric psychiatry, emergency medicine, nephrology, radiation oncology, ophthalmology, medical epidemiology, methodology, hospital medicine, family medicine, and bioethics.

The full list of panel members is provided under the section Additional Information, Ad.1. Workgroup/Expert Panel Involved in Measure Development.

During measure development, the NCQA and PCPI-convened expert work groups assess the face and content validity of each measure. The groups establish the measure's ability to capture what it is designed to capture using a consensus process that consists of input from multiple stakeholders, including practicing physicians and experts with technical measure expertise, as well as a review of additional input received through a public comment period.

2b2.3. What were the statistical results from validity testing? (*e.g., correlation; t-test*)

2b2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

As described in section 2a2.1, a total of 220 patient records were abstracted to complete inter-rater reliability resting of the measure concept.

An expert panel was used to assess face validity of the measure, based on the data sample. This panel consists of 33 members, whose specialties include internal medicine, geriatrics, anesthesia, orthopedic surgery, physical medicine & rehabilitation, neurology, palliative medicine, urology, geriatric psychiatry, emergency medicine, nephrology, radiation oncology, ophthalmology, medical epidemiology, methodology, hospital medicine, family medicine, and bioethics.

The full list of panel members is provided under the section Additional Information, Ad.1. Workgroup/Expert Panel Involved in Measure Development.

2b2.2 Analytic Method *(Describe method of validity testing and rationale; if face validity, describe systematic assessment)*:

During measure development, the NCQA and PCPI-convened expert work groups assess the face and content validity of each measure. The groups establish the measure's ability to capture what it is designed to capture using a consensus process that consists of input from multiple stakeholders, including practicing physicians and experts with technical measure expertise, as well as a review of additional input received through a public comment period.

2b2.3 Testing Results *(Statistical results, assessment of adequacy in the context of norms for the test conducted; if face validity, describe results of systematic assessment)*:

This measure was deemed valid by the expert panel.
The aforementioned panel was asked to rate their agreement with the following statement:
"The scores obtained from the measure as specified will accurately differentiate quality across providers."

Scale 1-5, where 1=Strongly Disagree; 3=Neither Disagree nor Agree; 5=Strongly Agree

The results of the expert panel rating of the validity statement were as follows:

N = 23 Mean rating = 4.35

Frequency Distribution of Ratings

(1) - Strongly Disagree - 0 panel members

(2) - Disagree - 0 panel members

(3) - Neither Disagree nor Agree - 4 panel members

(4) - Agree - 7 panel members

(5) - Strongly Agree - 12 panel members

2b2.4. What is your interpretation of the results in terms of demonstrating validity? (i.*e., what do the results mean and what are the norms for the test conducted?*)

These results indicate that the multiple experts and stakeholders concluded with good agreement that the measure as specified accurately captures quality. Our interpretation of these results is that this measure meets the test for face validity.

2b3. EXCLUSIONS ANALYSIS

NA ☒ no exclusions — *skip to section 2b4*

2b3.1. Describe the method of testing exclusions and what it tests (*describe the steps—do not just name a method; what was tested, e.g., whether exclusions affect overall performance scores; what statistical analysis was used*)

N/A

2b3.2. What were the statistical results from testing exclusions? (*include overall number and percentage of individuals excluded, frequency distribution of exclusions across measured entities, and impact on performance measure scores*)

N/A

2b3.3. What is your interpretation of the results in terms of demonstrating that exclusions are needed to prevent unfair distortion of performance results? (*i.e., the value outweighs the burden of increased data collection and analysis. Note: **If patient preference is an exclusion**, the measure must be specified so that the effect on the performance score is transparent, e.g., scores with and without exclusion*)

N/A

2b4. RISK ADJUSTMENT/STRATIFICATION FOR OUTCOME OR RESOURCE USE MEASURES

If not an intermediate or health outcome, or PRO-PM, or resource use measure, skip to section 2b5.

2b4.1. What method of controlling for differences in case mix is used?

☒ **No risk adjustment or stratification**

☐ **Statistical risk model with** Click here to enter number of factors **risk factors**

☐ **Stratification by** Click here to enter number of categories **risk categories**

☐ **Other,** Click here to enter description

2b4.1.1 If using a statistical risk model, provide detailed risk model specifications, including the risk model method, risk factors, coefficients, equations, codes with descriptors, and definitions.

N/A

2b4.2. If an outcome or resource use component measure is not risk adjusted or stratified, provide rationale and analyses to demonstrate that controlling for differences in patient characteristics (case mix) is not needed to achieve fair comparisons across measured entities.

N/A

2b4.3. Describe the conceptual/clinical and statistical methods and criteria used to select patient factors (clinical factors or sociodemographic factors) used in the statistical risk model or for stratification by risk (*e.g., potential factors identified in the literature and/or expert panel; regression analysis; statistical significance of p<0.10; correlation of x or higher; patient factors should be present at the start of care*)

N/A

2b4.4a. What were the statistical results of the analyses used to select risk factors?

N/A

2b4.4b. Describe the analyses and interpretation resulting in the decision to select SDS factors (e.g. prevalence of the factor across measured entities, empirical association with the outcome, contribution of unique variation in the outcome, assessment of between-unit effects and within-unit effects)
N/A

2b4.5. Describe the method of testing/analysis used to develop and validate the adequacy of the statistical model or stratification approach (*describe the steps—do not just name a method; what statistical analysis was used*)
N/A

Provide the statistical results from testing the approach to controlling for differences in patient characteristics (case mix) below.
If stratified, skip to 2b4.9

2b4.6. Statistical Risk Model Discrimination Statistics (*e.g., c-statistic, R-squared*)**:**
N/A

2b4.7. Statistical Risk Model Calibration Statistics (*e.g., Hosmer-Lemeshow statistic*):
N/A

2b4.8. Statistical Risk Model Calibration – Risk decile plots or calibration curves:
N/A

2b4.9. Results of Risk Stratification Analysis:
N/A

2b4.10. What is your interpretation of the results in terms of demonstrating adequacy of controlling for differences in patient characteristics (case mix)? (i.*e., what do the results mean and what are the norms for the test conducted*)
N/A

2b4.11. Optional Additional Testing for Risk Adjustment (*not required, but would provide additional support of adequacy of risk model, e.g., testing of risk model in another data set; sensitivity analysis for missing data; other methods that were assessed*)
N/A

2b5. IDENTIFICATION OF STATISTICALLY SIGNIFICANT & MEANINGFUL DIFFERENCES IN PERFORMANCE
2b5.1. Describe the method for determining if statistically significant and clinically/practically meaningful differences in performance measure scores among the measured entities can be identified (*describe the steps—do not just name a method; what statistical analysis was used? Do not just repeat the information provided related to performance gap in 1b)*

This measure is used in the CMS Physician Quality Reporting Initiative/System (PQRI/S) in the claims (2007-2016) and registry (2009-2016) options. We are using CMS data on average performance rates by providers to determine if statistically significant and clinically meaningful differences in performance measure scores can be identified.

This measure was used in the CMS Physician Quality Reporting Initiative/System (PQRI/S), in the claims option (2007, 2008, 2009, 2010) and the registry option (2009, 2010).

This measure is part of the CMS Physician Quality Reporting Initiative: 880,190 cases were reported on for the 2008 program, the most recent year for which performance data are available.

For the CMS PQRI the 2009 program, this is the only year for which Quality Data Codes (QDC) and reporting rates are available, not performance data.

2b5.2. What were the statistical results from testing the ability to identify statistically significant and/or clinically/practically meaningful differences in performance measure scores across measured entities? (e.g., *number and percentage of entities with scores that were statistically significantly different from mean or some benchmark, different from expected; how was meaningful difference defined*)

The most recent data available is from 2014. We are including data from the PQRS claims and registry options from 2012-2014 to demonstrate overall performance and reporting trends. CMS is unable to provide us with more detailed data (such as performance at benchmark percentiles, as provided in the past). Nevertheless, the new data shows the continued gap in care.

TRENDS IN INDIVIDUAL MEASURE PERFORMANCE RATE, FOR ELIGIBLE PROFESSIONALS (EPS) WHO SUBMITTED THE MEASURE CONTINUOUSLY FROM 2012 TO 2014:

- EPs who Reported Continuously 2012-2014: 3,309
- Average Performance Rate in 2012: 62.3%
- Average Performance Rate in 2013: 63.7%
- Average Performance Rate in 2014: 67.2%
- Growth Rate: 3.9%

SUBMITTING EPS WITH AT LEAST A 90% PERFORMANCE RATE BY INDIVIDUAL MEASURE (2014)

- Percent of EPs with At Least 90% Performance Rate: 43.0%

AVERAGE PERFORMANCE RATE FOR GROUP PRACTICES REPORTING VIA REGISTRY (2014)

- Small Group Practice Reporting Option: 64.5%
- Medium Group Practice Reporting Option: 52.0%
- Large Group Practice Reporting Option: 35.6%

The most recent performance data are from the CMS PQRI 2008 program in the claims option. There is a gap in care as shown by this 2008 data; 72.99% of patients reported on did not meet the measure.
10th percentile: 0.35 %
25th percentile: 3.30 %
50th percentile: 14.26 %
75th percentile: 44.68 %
90th percentile: 75.00 %

The inter-quartile range (IQR) provides a measure of the dispersion of performance. The IQR is 41.38, and indicates that 50% of physicians have performance on this measure ranging from 3.30% and 44.68%. A quarter of reporting physicians have performance on this measure which is greater than 44.68%, while a quarter have performance on this measure less than 3.30%.

***
The 2009 data is provided below is specific to the QDCs and reporting rates:

Clinical Condition and Measure: #47 Advance Care Plan

Eligible Professionals: 616,182
Professionals Reporting >= 1 Valid QDC: 6,234
% Professionals Reporting >=1 Valid QDC: 1.01%
# Professionals Satisfactorily Reporting: 2,253
% Professionals Satisfactorily Reporting: 36.14%

2b5.3. What is your interpretation of the results in terms of demonstrating the ability to identify statistically significant and/or clinically/practically meaningful differences in performance across measured entities? (i.*e., what do the results mean in terms of statistical and meaningful differences?*)

Our interpretation of the results is that performance among reporting EPs has improved between 2012 and 2014, but there is still more room for improvement. In 2014, almost one-third of patients of reporting EPs did not have evidence of an advance care plan documented in the medical record or evidence that such a plan was discussed.

In addition, we see meaningful differences in performance rates for group practices reporting via a registry based on practice size, with a trend toward better performance (64.5%) for the small group practice reporting option in comparison to the large group practice reporting option (35.6%).

COMPARABILITY OF PERFORMANCE SCORES WHEN MORE THAN ONE SET OF SPECIFICATIONS
If only one set of specifications, this section can be skipped.

Note: *This item is directed to measures that are risk-adjusted (with or without SDS factors)* ***OR*** *to measures with more than one set of specifications/instructions (e.g., one set of specifications for how to identify and compute the measure from medical record abstraction and a different set of specifications for claims or eMeasures). It does not apply to measures that use more than one source of data in one set of specifications/instructions (e.g., claims data to identify the denominator and medical record abstraction for the numerator).* ***Comparability is not required when comparing performance scores with and without SDS factors in the risk adjustment model. However, if comparability is not demonstrated for measures with more than one set of specifications/instructions, the different specifications (e.g., for medical records vs. claims) should be submitted as separate measures.***

2b6.1. Describe the method of testing conducted to compare performance scores for the same entities across the different data sources/specifications (*describe the steps—do not just name a method; what statistical analysis was used*)
N/A

2b6.2. What were the statistical results from testing comparability of performance scores for the same entities when using different data sources/specifications? (*e.g., correlation, rank order*)
N/A

2b6.3. What is your interpretation of the results in terms of the differences in performance measure scores for the same entities across the different data sources/specifications? (i.*e., what do the results mean and what are the norms for the test conducted*)
N/A

2b7. MISSING DATA ANALYSIS AND MINIMIZING BIAS

2b7.1. Describe the method of testing conducted to identify the extent and distribution of missing data (or nonresponse) and demonstrate that performance results are not biased due to systematic missing data (or differences between responders and nonresponders) and how the specified handling of missing data minimizes bias (*describe the steps—do not just name a method; what statistical analysis was used*)
N/A

2b7.2. What is the overall frequency of missing data, the distribution of missing data across providers, and the results from testing related to missing data? (*e.g., results of sensitivity analysis of the effect of various rules for missing data/nonresponse; if no empirical sensitivity analysis, identify the approaches for handling missing data that were considered and pros and cons of each*)
N/A

2b7.3. What is your interpretation of the results in terms of demonstrating that performance results are not biased due to systematic missing data (or differences between responders and nonresponders) and how the specified handling of missing data minimizes bias**?** (i.*e.*, *what do the results mean in terms of supporting the selected approach for missing data and what are the norms for the test conducted; if no empirical analysis, provide rationale for the selected approach for missing data*)
N/A

3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

3a. Byproduct of Care Processes

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).

3a.1. **Data Elements Generated as Byproduct of Care Processes.**
Generated or collected by and used by healthcare personnel during the provision of care (e.g., blood pressure, lab value, diagnosis, depression score), Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims)
If other:

3b. Electronic Sources

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

3b.1. **To what extent are the specified data elements available electronically in defined fields** (*i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields*) Update this field for **maintenance of endorsement**.
ALL data elements are in defined fields in a combination of electronic sources

3b.2. **If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources.** For **maintenance of endorsement**, if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).

3b.3. **If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL. Please also complete and attach the NQF Feasibility Score Card.**
Attachment:

3c. Data Collection Strategy

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements

and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

3c.1. **Required for maintenance of endorsement. Describe difficulties (as a result of testing and/or operational use of the measure) regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.**
IF a PRO-PM, consider implications for both individuals providing PRO data (patients, service recipients, respondents) and those whose performance is being measured.
The specific costs for implementing or using this measure have not been measured. However, the successful use in a national reporting program (PQRS) support the feasibility and utility of the measure concept.

3c.2. **Describe any fees, licensing, or other requirements to use any aspect of the measure as specified** *(e.g., value/code set, risk model, programming code, algorithm)*.
N/A

4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

4.1. **Current and Planned Use**
NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.

Specific Plan for Use	Current Use (for current use provide URL)
	Public Reporting Physician Quality Reporting System (PQRS) (#047 Care Plan) https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/PQRS/ Payment Program Physician Quality Reporting System (PQRS) (#047 Care Plan) https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/PQRS/

4a.1. **For each CURRENT use, checked above (update for maintenance of endorsement), provide:**

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included
- Level of measurement and setting

Physician Quality Reporting System (PQRS): This measure is used in the Center for Medicare and Medicaid Services' PQRS program. PQRS is a national reporting program that uses a combination of incentive payments and payment adjustments to promote reporting of quality information by eligible professionals (EPs). EPs who satisfactorily report data on quality measures for covered Physician Fee Schedule services furnished to Medicare Part B beneficiaries, including Railroad Retirement Board and Medicare Secondary Payer, receive these payment incentives and adjustments.

4a.2. **If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons?** (*e.g., Do policies or actions of the developer/steward or accountable entities restrict*

access to performance results or impede implementation?)
N/A

4a.3. **If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement.** (*Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.*)
N/A

Improvement
Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4b. **Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (trends in performance results, number and percentage of people receiving high-quality healthcare; Geographic area and number and percentage of accountable entities and patients included.)**
If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.
Of the eligible professionals (EPs) who submitted the measure continuously from 2012-2014, the average performance rate increased from 62 percent to 67 percent, or by 5 percent, with a growth rate of approximately 4 percent. Although there is a continued gap in care, this increase suggests that EPs are reporting on the measure and/or initiating and documenting advance care planning discussions and patient and family's decision-making at a higher rate than in previous years.

4c. Unintended Consequences
The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

4c.1. **Please explain any unexpected findings (positive or negative) during implementation of this measure including unintended impacts on patients.**
We are not aware of any unintended consequences related to this measurement.

4c.2. **Please explain any unexpected benefits from implementation of this measure.**
We are unaware of any unexpected benefits related to this measure.

4d1.1. **Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.**
How many and which types of measured entities and/or others were included? If only a sample of measured entities were included, describe the full population and how the sample was selected.
N/A. We are not seeking "Endorsement+" designation.

4d1.2. **Describe the process(es) involved, including when/how often results were provided, what data were provided, what educational/explanatory efforts were made, etc.**
N/A

4d2.1. **Summarize the feedback on measure performance and implementation from the measured entities and others described in 4d.1.**
Describe how feedback was obtained.
N/A

4d2.2. **Summarize the feedback obtained from those being measured.**
N/A

4d2.3. **Summarize the feedback obtained from other users**
N/A

4d.3. **Describe how the feedback described in 4d.2 has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.**
N/A

5. Comparison to Related or Competing Measures

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

5. Relation to Other NQF-endorsed Measures
Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.
Yes

5.1a. **List of related or competing measures (selected from NQF-endorsed measures)**
0647 : Transition Record with Specified Elements Received by Discharged Patients (Discharges from an Inpatient Facility to Home/Self Care or Any Other Site of Care)

5.1b. **If related or competing measures are not NQF endorsed please indicate measure title and steward.**
N/A

5a. Harmonization of Related Measures

The measure specifications are harmonized with related measures;
OR
The differences in specifications are justified

5a.1. **If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):**
Are the measure specifications harmonized to the extent possible?
No

5a.2. **If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.**
NQF#0647 targets all age groups and focuses specifically on transition of care to another facility or to the home. This measure, NQF#0326, focuses specifically on older adults and creating an advanced care plan or identifying a designated surrogate decision maker to dictate care to be provided, including but not limited to transitions.

5b. Competing Measures

The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);
OR
Multiple measures are justified.

5b.1. **If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):**
Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)
N/A

Appendix

A.1 Supplemental materials may be provided in an appendix. All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.

Attachment:

Contact Information

Co.1 **Measure Steward (Intellectual Property Owner):** National Committee for Quality Assurance
Co.2 **Point of Contact:** Bob, Rehm, nqf@ncqa.org, 202-955-1728-
Co.3 **Measure Developer if different from Measure Steward:** National Committee for Quality Assurance
Co.4 **Point of Contact:** Kristen, Swift, swift@ncqa.org, 202-955-5174-

Additional Information

Ad.1 **Workgroup/Expert Panel involved in measure development**
Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
An expert panel was used to assess face validity of the measure. The panel consists of 33 members, whose specialties include internal medicine, geriatrics, anesthesia, orthopedic surgery, physical medicine & rehabilitation, neurology, palliative medicine, urology, geriatric psychiatry, emergency medicine, nephrology, radiation oncology, ophthalmology, medical epidemiology, methodology, hospital medicine, family medicine, and bioethics.

Caroline Blaum, MD (Work Group Co-Chair) (Geriatrics/Internal Medicine) Associate Professor of Internal Medicine, University of Michigan, Ann Arbor, MI
Carol M. Mangione, MD (Work Group Co-Chair) (Internal Medicine) Professor of Medicine, David Geffen School of Medicine at UCLA, Los Angeles, CA
Chris Alexander, III, MD, FACP (Methodology) Social Security Administration, Office of Hearings and Appeals, Earlysville, VA
Patricia P. Barry, MD, MPH (Internal Medicine) American College of Physicians, Gloucester Point, VA
Frederick W. Burgess, MD, PhD (Anesthesia) Rhode Island Hospital, Department of Anesthesia, Providence, RI
Gary S. Clark, MD, MMM, CPE (Physical Medicine & Rehabilitation) Professor and Chair, MetroHealth Medical Center, Dept. of PM&R, Cleveland, OH
Eric Coleman, MD, MPH (Geriatrics) Associate Professor, Division of Health Care Policy and Research, University of Colorado Health Services Center, Aurora, CO
Stephen R. Connor, PhD Vice President, Research and International Development, National Hospice and Palliative Care Organization, Alexandria, VA
Gail A. Cooney, MD (Neurology, Palliative Medicine) Hospice of Palm Beach County, West Palm Beach, FL
Roger Dmochowski, MD (Urology) Department of Urologic Surgery, Vanderbilt University, Nashville, TN
Catherine DuBeau, MD (Geriatrics) Associate Professor of Medicine, University of Chicago, Chicago, IL
Joyce Dubow Associate Director, AARP Policy Institute, Washington, DC
Mary Fermazin, MD, MPA (Internal Medicine) Vice President, Health Policy & Quality Measurement, Health Services Advisory Group, Inc., Phoenix, AZ
Sanford I. Finkel, MD (Geriatric Psychiatry) Professor of Clinical Psychiatry, University of Chicago Medical School, Wilmette, IL
Terry Fulmer, PhD Dean, NYU College of Nursing, New York, NY
Peter Hollmann, MD (Internal Medicine/Geriatrics) Blue Cross Blue Shield, Cranston, RI
David P. John, MD (Emergency Medicine) Chair Geriatric Section, ACEP, North Haven, CT
Peter Johnstone, MD, FACR (Radiation Oncology) Professor and Chair of Radiation Oncology, Indiana University School of Medicine, Department of Radiation Oncology, Indianapolis, IN
Flora Lum, MD American Academy of Ophthalmology, Director, Quality of Care & Knowledge Base Development, San Francisco, CA
Diane E. Meier, MD Professor, Director: Hertzberg Palliative Care Institute, Director: Center to Advance Palliative Care, Mount Sinai School of Medicine, Department of Geriatrics, New York, NY
Alvin "Woody" H. Moss, MD (Nephrology and Palliative Care) Professor of Medicine & Director, Center for Health Ethics & Law, Section of Nephrology, West Virginia University, Morgantown, WV
Jaya Rao, MD, MHS Associate Professor, Pharmaceutical Outcomes and Policy, UNC Eshelman School of Pharmacy, Chapel Hill NC
Sam J. W. Romeo, MD, MBA General Partner, Tower Health & Wellness Center, LP, Turlock, CA
David J. Satin, MD (Family Medicine/Bioethics) Assistant Professor, University of Minnesota, Minneapolis, MN
Gregory B. Seymann, MD (Internal Medicine/Hospital Medicine) Associate Professor, Division of Hospital Medicine, UCSD School of Medicine, San Diego, CA
Knight Steel, MD (Internal Medicine/Geriatrics) Chief, Geriatrics, Internist, Professor of Medicine Emeritus, Hackensack University Medical Center, Hackensack, NJ
Eric Tangalos, MD (Internal Medicine/Geriatrics) Co-Director, Program on Aging, Mayo Clinic, Rochester, MN
Joan M. Teno, MD, MS (Geriatrics/Palliative Care) Professor of Community Health and Medicine, Brown Medical School, Providence,

RI
David J. Thurman, MD, MPH CDC, Atlanta, GA
Mary Tinetti, MD (Internal Medicine/Geriatrics) Gladys Phillips Crofoot Professor of Medicine, Epidemiology and Public Health, Yale University School of Medicine, Section of Geriatrics, New Haven, CT
Laura Tosi, MD (Orthopaedic Surgery) American Academy of Orthopaedic Surgery, Director, Bone Health Program, Washington, DC
Gregg Warshaw, MD Director, Office of Geriatric Medicine, University of Cincinnati College of Medicine, Cincinnati, OH
Neil S. Wenger, MD (Internal Medicine/Geriatrics) Professor of Medicine, UCLA, Los Angeles, CA

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.2 **Year the measure was first released:** 2008
Ad.3 **Month and Year of most recent revision:** 02, 2008
Ad.4 **What is your frequency for review/update of this measure?** As needed based on revisions or updates to applicable clinical guidelines.
Ad.5 **When is the next scheduled review/update for this measure?** 12, 2017

Ad.7 **Disclaimers:** These performance Measures are not clinical guidelines and do not establish a standard of medical care, and have not been tested for all potential applications.

THE MEASURES AND SPECIFICATIONS ARE PROVIDED “AS IS” WITHOUT WARRANTY OF ANY KIND.

Ad.8 **Additional Information/Comments:**

MEASURE WORKSHEET

This document summarizes the evaluation of the measure as it progresses through NQF's Consensus Development Process (CDP). The information submitted by measure developers/stewards is included after the Brief Measure Information, Preliminary Analysis, and Pre-meeting Public and Member Comments sections.

To navigate the links in the worksheet: Ctrl + click link to go to the link; ALT + LEFT ARROW to return

Brief Measure Information

NQF #: 3170
Measure Title: Proportion of Children with ED Visits for Asthma with Evidence of Primary Care Connection Before the ED Visit
Measure Steward: University Hospitals Cleveland Medical Center
Brief Description of Measure: This measure describes the incidence rate of emergency department visits for children ages 2 to 21 who are being managed for identifiable asthma. This measure characterizes care that precedes Emergency Department visits for children ages 2- 21 who can be identified as having asthma, using the specified definitions. We sought to identify children with ongoing asthma who should be able to be identified by their health care providers and/or health care plans as having asthma. The operational definition of an identifiable asthmatic is a child who has utilized health care services that suggest the health care system has enough information to conclude that the child has an asthma diagnosis that requires ongoing care. Specifically, this measure identifies the use of primary care services and medications prior to ED visits and/or hospitalizations for children with asthma.
Developer Rationale: In depth literature reviews indicate that asthma is a prevalent chronic condition in children. Also, ED visits for asthma care are a common, costly, and potentially preventable health service that may serve as a marker for both insufficiency of primary care and insufficiency of clinical management of asthma by the partnership of the family and the health care team. These aspects of the composite measure are key determinants of having care connection prior to an ED visit for primary or secondary diagnosis of asthma. These determinants are also areas that can significantly enhance health outcomes should they be addressed.

Numerator Statement: Evidence of connection to the primary care medical system prior to first ED visit and/or hospitalization that has a primary or secondary diagnosis of asthma among children whom our specifications identify with asthma.
Denominator Statement: All first ED visits and/or hospitalizations, in which asthma was a primary or secondary diagnosis in children age 2-21 who meet criteria for being managed for identifiable asthma in the assessment period and have been enrolled for the 6 consecutive months prior to the ED visit/admission.
Denominator Exclusions: Children with specific concurrent or pre-existing diagnosis, as specified in S.9.

Children who have not been consecutively enrolled with the reporting entity for at least six months prior to the index reporting month.

Children who do not meet the denominator criteria.

Measure Type: Composite
Data Source: Claims (Only)
Level of Analysis: Population : Community, County or City, Population : Regional and State

IF Endorsement Maintenance – Original Endorsement Date: Most Recent Endorsement Date:

New Measure -- Preliminary Analysis

Criteria 1: Importance to Measure and Report

1a. Evidence

1a. Evidence. The evidence requirements for a *process or intermediate outcome* measure is that it is based on a systematic review (SR) and grading of the body of empirical evidence where the specific focus of the evidence matches what is being measured.

The developer provides the following evidence for this measure:

- **Systematic Review of the evidence specific to this measure?** ☐ **Yes** ☒ **No**
- **Quality, Quantity and Consistency of evidence provided?** ☐ **Yes** ☒ **No**
- **Evidence graded?** ☒ **Yes** ☐ **No**

Evidence Summary

Evidence for this Composite measure should identify the "connection" to the primary care system, which includes use of primary care services and medications, prior to a ED/ hospitalizations for children with asthma.

For Composite measures the evidence subcriterion (1a.)for each of the component of the measure must be met unless NQF endorsed.

The composite measure includes three components: that "connections" that can occur (and mitigate the outcome) prior to the Emergency Department (ED)/ hospitalization visits for children with a primary or secondary diagnosis of asthma:

- Visits to a primary care clinician within 6 month prior to ED/hospitalization visit (A)
- Evidence of a medication fill of a short acting beta agonist within 12 months prior to ED/hospitalization visit (B)
- Evidence of a medication fill of a asthma controller medication within 6 months prior to ED/hospitalization visit (C)

The developer provided graded Guidelines from The National Asthma Education and Prevention Program (NAEPP) guidelines for regular follow-up and the medication management approach. However, the developer did not specify which guideline recommendations are the basis for the measure and did not provide grades for the underlying evidence or a summary of the QQC.

NQF staff briefly reviewed the NQEPP document and believe the pertinent "key points" are as follows:

- The staff believe the pertinent "recommendations are as follows:
- The Expert Panel recommends that the frequency of visits to a clinician for review of asthma control is a matter of clinical judgment; in general, patients who have intermittent or mild persistent asthma that has been under control for at least 3 months should be seen by a clinician about every 6 months, and patients who have uncontrolled and/or severe persistent asthma and those who additional supervision to help them follow their treatment plan need to be seen more often.

- Key Point: Periodic assessments (at 1- to 6-month intervals) and ongoing monitoring of asthma control are recommended to determine if the goals of therapy are being met and if adjustments in therapy are needed (Evidence B, extrapolation from clinical trials; and Evidence C, observational studies). (p.76)

- The Expert Panel recommends that long-term control medications be taken daily on a long-term basis to achieve and maintain control of persistent asthma. The most effective long-term-control medications are those that attenuate the underlying inflammation characteristic of asthma (Evidence A). (p239)

- The Expert Panel recommends that SABAs are the drug of choice for treating acute asthma symptoms and exacerbations and for preventing exercise-induced bronchospasm (EIB) (Evidence A). (p258)

The developer provided studies that support the importance of a primary provider visit and management as well as prescribing of appropriate medications to improve asthma care and reduce ED visits and hospitalizations:

- A multisite randomized controlled trial (RCT) demonstrated improvements in asthma care and better health for children with enhanced primary care.
- Another study supports that primary care coordination can reduce asthma-related ED visits and hospitalizations compared to those who only prescribe medications. Primary care coordination is described as better communication and use and implementation of asthma action plans.
- Lastly, a study titled "Use of asthma guidelines by primary care providers to reduce hospitalizations and emergency department visit in poor, minority children" found that better primary care, including asthma action plans and appropriate prescribing reduced ED visits use substantially.

Exception to evidence

N/A

Questions for the Committee:

- *What is the relationship between the measure and the guidelines?*
- *What is the relationship of this measure to patient outcomes?*
- *How strong is the evidence for this relationship between all components of the measure and the overall composite?*
- *Is the evidence directly applicable to the process of care being measured?*

Guidance from the Evidence Algorithm

Process measure (Box 3)>Systematic Review of evidence with NAEPP guideline development and RCT study support guidelines (Box 4)>Class A and B graded support on use of medications and graded

evidence B on importance of regular follow-up(graded B) by primary care provider within 6 months(D).(Box 5)> all guidelines graded A & B and RCT and studies support direction of the measure > Moderate

Preliminary rating for evidence: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

RATIONALE:

Preliminary rating for evidence: ☐ **Pass** ☐ **No Pass**

1b. Gap in Care/Opportunity for Improvement and 1b. Disparities
Maintenance measures – increased emphasis on gap and variation

1b. Performance Gap. The performance gap requirements include demonstrating quality problems and opportunity for improvement.

The developer states that 16.5% of children in NYS Medicaid who had a qualifying ED visit for asthma and met the standards of this measure.

The developer states that their analysis of NY State Medicaid data showed that the proposed measure varies by race, by urbanicity, and by the amount of poverty in the county of residence. This county data and analysis was not provided.

Disparities

The developer presented data and analysis of New York State Medicaid data indicate on ED use as well as criteria on visits and medications use by race, urbanicity and poverty:

- 1) Race/Ethnicity: About a 2.5 fold increase in the rate of using the ED of non-Hispanic Blacks compared to non-Hispanic Whites (non-Hispanic Black > all Hispanic > Non-Hispanic White > Asian). Racial variations showed Black children less likely (21.5%) to have had a controller medication than Whites (23.2%) who were less likely than Hispanics (24.9%). Visits within 6 months: Black children (25.4%) < Whites (28.1%) < Hispanics (33.0%). Meeting criteria for the visits and both medications ranged from 9.9% in Blacks to 11.1% in Whites to 13.7% in Hispanics.

- 2) Urbanicity: higher rates of ED utilization in the most urban areas and lowest in the most rural areas and other areas intermediate between the two. For example, both medication measures and the 6 month primary care visit measure are met for 13.8% (N=806) of those in rural counties, 14.7% (N=4066) of those in suburban counties, and 16.9% (N=26327) of those in urban counties.

- 3) Poverty: associated with increased ED use for children with asthma as higher incomes were associated with better performance on this measure.

Questions for the Committee:

- *Is there a gap in care that warrants a national performance measure?*
- *If no disparities information is provided, are you aware of evidence that disparities exist in this area of healthcare?*
- *Are you aware of any data on primary care connections and use of ED and hospitalizations?*

Preliminary rating for opportunity for improvement: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

1c. Composite - Quality Construct and Rationale
Maintenance measures – same emphasis on quality construct and rationale as for new measures.

1c. Composite Quality Construct and Rationale. The quality construct and rationale should be explicitly articulated and logical; a description of how the aggregation and weighting of the components is consistent with the quality construct and rationale also should be explicitly articulated and logical.

- The developer describes the quality construct as an all or none measure with "essential care processes received or outcomes experienced by each patient". The overall composite is A and B and C.
- The developer states that "*these aspects of the composite measure are key determinants of having care connection prior to an ED visit for primary or secondary diagnosis of asthma"*.
- The developer articulates the construct and describes the measure as "having a care connection prior to an ED visit for primary or secondary diagnosis of asthma". The developer suggests that these connections can enhanced health outcomes when addressed. The connections include visits to a primary care practitioner and clinical management (medication fills).

- The developer did not explain why these particular components were selected for inclusion and why a "all-or-none" scoring approach was used.

Composite Measure components include:

- Visit(s) to a primary care clinician with a primary or secondary diagnosis of asthma that occurred within 6 months prior to an ED visit/hospital admission (but not on the day of the ED visit/admission) (A only)
- Have at least one fill of a short acting beta agonist within 12 months prior to the ED visit/hospital admission (B only)
- Have at least one fill of an asthma controller medication within 6 months prior to the ED visit/hospital admission (C only).

Questions for the Committee:

- *Are the quality construct and a rationale for the composite explicitly stated and logical?*
- *Is the method for aggregation and weighting of the components explicitly stated and logical?*
- Do you think developer provided a rationale for the construction of the measure as stated?

Preliminary rating for composite quality construct and rationale: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**
RATIONALE:

Committee pre-evaluation comments

Criteria 1: Importance to Measure and Report (including 1a, 1b, 1c)

1a. Evidence to Support Measure Focus

Comments: **The focus of the measure appears to looking at the guidelines by NAEPP to see if they are effective/correct. This does support the focus of the measure.

**The guidelines referenced support the focus on regular primary care visits, use of controller medication and availability of rescue medications by patients with asthma. However, much of the evidence cited linking these

elements of care to the outcome of reduce ED visits for asthma focuses on "enhanced primary care" and use of asthma action plans. This raises questions about whether the measure focuses on the most important elements of care coordination for patients with asthma.

**I have rated the evidence as moderate (5b on algorithm 1). The developer has provided significant studies that seem to indicate the evidence level would be high; however, not all of the information has been provided at this point (i.e., systematic review is missing).

1b. Performance Gap

Comments: **The study that was presented out of NY demonstrated gaps with race, poverty and living area. The information was limited to the Medicaid population, would like to see info beyond Medicaid over a comparison of commercial insurance to Medicaid.

**The developers should confirm that the performance gap figure cited: both measure 3170 and 3171 list the current performance in a New York Medicaid sample as 16.5% satisfying the numerator. However, it seems unlikely that these two measures with different focus would have exactly the same performance.

Data presented on disparities focus on variation in ED use. Data on disparities in primary care services for children with asthma and in asthma medication fills would strengthen the case for this measure.

**The evidence lends itself to identifying a performance gap; however, the information provided by the developer makes this less clear. The statement about 16.5% of children only included ED visits and not hospitalizations. Therefore, I have rated this as moderate.

1d. Composite Performance Measure - Quality Construct

Comments: **Understand the components but it seems to be a reach to say that the actions 6 and 12 months before an ED visits means there is a true connection to primary care.

**Further discussion is needed around the choice of an all-or-nothing method for composite construction. This sets a high bar that may not account sufficiently for variation in asthma management practices. In particular, might not patients with well-managed asthma need fewer visits (ie, may not have had visit within 6 months of ED visit) and/or need less frequent refills of short-acting (rescue) medications?

**The quality construct of visits to a primary care clinician + fill of beta agonist + fill of asthma controller is clearly stated and logical, as is the method for weighting and aggregation. However, I'm not fully clear on the rationale for this specific combination of items? It seems logical and the evidence seems to point in this way - but is this the right combination of activities? Also, are the timeframes of 6 months and 12 months the right ones? This is not clear.

Criteria 2: Scientific Acceptability of Measure Properties
2a. Reliability
2a1. Reliability Specifications **Maintenance measures – no change in emphasis – specifications should be evaluated the same as with new measures**
2a1. Specifications requires the measure, as specified, to produce consistent (reliable) and credible (valid) results about the quality of care when implemented. **Specifications:** • Data Source: Administrative data (Claims only) • Better quality=higher score • Level of analysis: measure is specified at the population level (i.e., Community, County, City, Regional or State. NOTE that there are inconsistencies in the submission regarding level of analysis and it is unclear whether the measure is specified only for the state population or also for the health plan level (NOTE the measure must be tested for r/v for all specified levels of analysis)

- Numerator: Evidence of a connection to the primary care medical system (visits to primary care clinician within 6 month prior to ED/hospitalization within 12 months prior to the ED visit/hospital admission, have at least one fill of a short acting beta agonist within 12 months prior to the ED visit/hospital admission, have at least one fill of an asthma controller medication within 6 months prior to the ED visit/hospital admission) prior to the first ED visit that has a primary or secondary diagnosis of asthma among children.
- Denominator: All first ED visits and/or hospitalizations, in which asthma was a primary or secondary diagnosis in children age 2-21 who meet criteria for being managed for identifiable asthma in the assessment period and have been enrolled for the six consecutive months prior to the ED visit/admission.
- Denominator details are outlined further.
- Denominator Exclusions: Children with specific concurrent or pre-existing diagnosis include the diagnostic categories of cystic fibrosis, chronic obstructive lung disease and emphysema; children who have not been consecutively enrolled with the reporting entity for at least six months prior to the index reporting month; and children who do not meet the denominator criteria
- Codes and Definitions identified: for inclusion criteria and exclusion list (ICD-9 and ICD-10); Primary Care Inclusion List; CPT codes to identify Ambulatory and Preventive Care visits; HEDIS 2013 NDC List of Appropriate Medications for people with asthma; and CPT and Revenue codes for Identifiable asthma. (see spreadsheet with codes)

Questions for the Committee:

- *Specific questions on the specifications, codes, definitions, etc.*
- *Are all the data elements clearly defined? Are all appropriate codes included?*
- *Is the logic or calculation algorithm clear?*
- *Is it likely this measure can be consistently implemented?*

2a2. Reliability Testing Testing attachment
Maintenance measures – less emphasis if no new testing data provided

2a2. Reliability testing demonstrates if the measure data elements are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period and/or that the measure score is precise enough to distinguish differences in performance across providers.

SUMMARY OF TESTING

Reliability testing level ☐ **Measure score** ☒ **Data element** ☐ **Both**

Reliability testing performed with the data source and level of analysis indicated for this measure ☒ **Yes** ☐ **No**

Method(s) of reliability testing

For composite performance measure, reliability must be demonstrated for the composite measures score:

- The developer presented numerous studies to support the use of data elements in individual composite measures and the overall composite measure.
- Note that the developer indicated that score-level reliability testing was conducted, but no results were provided.

- Of note is that reliability testing for a composite measure must be at the measure score level and this testing is only at the element level.

Results of reliability testing:

- The developer did not provide testing results at the measure score level for reliability.

Questions for the Committee:

o *Are there Specific questions on the issue of composite reliability at the measure score level?*

o **Guidance from the Reliability Algorithm** Specifications precise (Box 1) > No empirical reliability testing (Box 2) > Empirical testing at the patient level date level using prior research articles (Box 3) cannot be done for a Composite measure > rate as insufficient because testing must be at the measure score level>Insufficient

Preliminary rating for reliability: ☐ **High** ☐ **Moderate** ☐ **Low** ☒ **Insufficient**

RATIONALE: The developer mentions testing at the county level but does not provide any data. If the developer provided testing at the county level than the rating could be elevated to a moderate at the county level of analysis. If the developer had testing at the state levels using multiple states than the rating could be elevated to a moderate rating at the state level of analysis.

2b. Validity
Maintenance measures – less emphasis if no new testing data provided

2b1. Validity: Specifications

2b1. Validity Specifications. This section should determine if the measure specifications are consistent with the evidence.

Specifications consistent with evidence in 1a. ☒ **Yes** ☐ **Somewhat** ☐ **No**
Specification not completely consistent with evidence

Question for the Committee:

o *Are the specifications consistent with the evidence?*

2b2. Validity testing

2b2. Validity Testing should demonstrate the measure data elements are correct and/or the measure score correctly reflects the quality of care provided, adequately identifying differences in quality.

SUMMARY OF TESTING

Validity testing level ☐ **Measure score** ☒ **Data element testing against a gold standard** ☐ **Both**

Method of validity testing of the measure score:

- ☐ **Face validity**
- ☐ **Empirical validity testing of the measure score**

Validity testing method:

The developer stated that they "assessed the stability of measures to changes in their specifications and identified measures that were robust to changes and consistent with recommendation of an expert panel".

The developer outlined information from assessing elements for inclusion in the measure:

- The importance of using revenue codes as well as CPT codes
- Validation of the use of "NCQA code sets into this measure for numerator determinations, unmodified for medication and slightly modified for primary care visits to restrict to outpatient visits.
- The definition of "identifiable asthma was selective but not overly restrictive" and was more inclusive than the HEDIS persistent asthma definition".

The developer presented numerous studies to support the use of data elements in individual composite measures and the overall composite measure.

Validity testing results:

Selected examples of the numerous studies are presented. These studies show testing results for sensitivity, specificity a as well as for outcome for medication fills. Detail of all studies are available.

See selected studies below:

Numerator:

Asthma diagnosis in clinical/outpatient setting:

- Wilchesky compared chart abstraction to diagnoses obtained from administrative database: asthma claims were highly specific, Sp= 96.76 (95%CI 96.5, 97.0). Although sensitivity for most conditions was below 60%, sensitivity was enhanced when all claims for services were assessed.

Filling of short acting beta agonist and asthma controller medication:

- HEDIS criteria using administrative data support peer reviewed research, for example in patients with persistent asthma based on HEDIS criteria in five Medicaid programs (Colorado, Georgia, Indiana, New Jersey, Washington) using ICD-9-CM code 493.x to measure filling prescriptions of asthma control medication and the ratio of controller medication to the total number of medication prescriptions filled within one year.(Samnaliev et al., 2009).

- The Utility of the HEDIS Asthma Measure to predict asthma related outcomes. Low Controller use had an adjusted odds ratio of 1.72 (1.42-2.08) of ED visit or hospitalization. Those with moderate and higher adherence had graded reductions in undesirable outcomes in the predicted fashion (OR, .84 and 0.72 respectively) (Berger WE, Legorreta AP, Blaiss MS, et al. 2004)

Denominator:

Asthma diagnosis in inpatient and Ed settings:

- Wilchesky compared chart abstraction to diagnoses obtained from administrative database: asthma claims were highly specific, Sp= 96.76 (95%CI 96.5, 97.0). Although sensitivity for most conditions was

below 60%, sensitivity was enhanced when all claims for services were assessed.

Asthma diagnosis in ambulatory settings:

- Fowles and colleagues report sensitivity and specificity of claims compared with ambulatory medical records to identify asthma was 0.82 and 0.99, respectively. Sensitivity of .82 using claims was higher than sensitivity using self-report at .64

Prescription of other asthma medications in ambulatory setting (see list above):

- Using complete claims and pharmaceutical data for 19,076 patients with persistent asthma (based on HEDIS criteria) in five Medicaid using ICD-9-CM code 493.x to measure filling prescriptions of asthma control medication. Both administrative measures of asthma care quality were associated with lower odds of ED utilization. The controller medication measure of asthma care quality may be better than the ratio measure in relation to emergency asthma care utilization by Medicaid beneficiaries (Samnaliev, M., Baxter, J. D., & Clark, R. E., 2009).

For exclusions:

Diagnosis of COPD, cystic fibrosis, emphysema

- Quan et al found that claims had a PPV of 91.9, and a negative predictive value of 92.6, with *k* of 0.65 (substantial agreement[1]) compared to chart review for chronic pulmonary disease . ICD 10 performed similarly in this study. Assessing validity of icd-9-cm and icd-10 administrative data in recording clinical conditions in a unique dually coded database Quan, H., Li, B., Saunders, L. D., Parsons, G. A., Nilsson, C. I., Alibhai, A., et al., 2008.

Questions for the Committee:

- *Do the results demonstrate sufficient validity so that conclusions about quality can be made?*
- *Do the research articles demonstrate sufficient validity so that conclusions about quality can be made?*
- *Other specific question of the validity testing?*

2b3-2b7. Threats to Validity

2b3. Exclusions:

The developer identified the diagnostic categories of cystic fibrosis, chronic obstructive lung disease, and emphysema.
Additionally, the developer stated that this was based on clinical reasons and expert panel recommendations.

Questions for the Committee:

- *Are the exclusions consistent with the evidence?*

[1] The *k* value indicates a near perfect agreement (*k*: 0.81-1.0 between coded data and chart review data), substantial agreement (*k*: 0.61-0.80), moderate agreement (*k*: 0.41-0.60), and fair agreement (*k:* 0.21-0.40).

- *Are any patients or patient groups inappropriately excluded from the measure?*
- *Are the exclusions/exceptions of sufficient frequency and variation across providers to be needed (and outweigh the data collection burden)?*

2b4. Risk adjustment: **Risk-adjustment method** ☒ **None** ☐ **Statistical model** ☐ **Stratification**

2b5. Meaningful difference *(can statistically significant and clinically/practically meaningful differences in performance measure scores can be identified)*:

- The developer states that, they have demonstrated statistically significant differences between races, by poverty in the county, and by urbanicity but does not present results for these groups.
- Developer also states that they are analyzing the performance measure at the county level and at the health plan level to confirm that there is significant signal to identify statistically significant differences within the Medicaid health plans and between the counties of NY State.
- It is of note that no performance data has been provided to date by the developer at the county, state or health plan level.
- Developer also states that the measure is sufficiently precise to describe the health care of specified populations and to distinguish such performance and that "*pending data that confirm that at county and health plan levels the measure is significantly granular to identify meaningful differences"*.

Question for the Committee:

- *Does this measure identify meaningful differences about quality?*
- *Do you think that the measure is sufficiently precise to describe the health care for the population of children with asthma?*

2b6. Comparability of data sources/methods:

N/A

2b7. Missing Data

- Developer does not address missing data except to state that "Specifications make including individuals with missing data very unlikely.
- Developer also references the literature review and states that it shows that billing data is reliable".

- **Guidance from the Validity** Measure specification consistent (Box 1)> Some potential threats analyzed (Box 2)>Empirical Validity testing conducted (Box 3)>validity not conducted with performance measure score (Box 6)>Validity tested at patient level data elements (Box 10)>Prior validity studies of the same data elements used (Box 11)> Methods described and appropriate for **all** critical data elements (Box

12)> based on literature review of studies > Moderate

Preliminary rating for validity: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

- **RATIONALE:**

2d. Composite measure: empirical analysis supports construction

2d. Empirical analysis to support composite construction. Empirical analysis should demonstrate that the component measures add value to the composite and that the aggregation and weighting rules are consistent with the quality construct.

The developer states that the stratifications data provided above "demonstrate that the components each add value to the measure. Not all who receive medications receive visits and vice versa. Further while most who receive controller medications receive rescue medications, not all do".
The developer also states that the "composite measure is stronger and more informative than the individual component measures".

Component stratification

(1) Visit(s) to a primary care clinician with a primary or secondary diagnosis of asthma that occurred within 6 months prior to an ED visit/hospital admission (but not on the day of the ED visit/admission) (A only)
- 28.8% had primary care visit with asthma as primary or secondary diagnosis <= 6 months before the ED visit (18.5% <= 4 months and 11.9% <= 3 months)

(2) Have at least one fill of a short acting beta agonist within 12 months prior to the ED visit/hospital admission (B only)
- 72.4% had filled a SABA prescription <= 12 months prior to the visit

(3) Have at least one fill of an asthma controller medication within 6 months prior to the ED visit/hospital admission (C only)
- 25.8% had a filled controller prescription <= 6 months prior to the ED visits

(4) Have a prescription filled for both a rescue medication and a controller medication within the specified time frames (BOTH B and C only)
- 23.3% met both medication criteria

(5)Have no prescriptions filled for rescue medications or controller medications within the specified time frames (NEITHER B nor C)
- 18.7% had prescriptions for neither

(6) Have neither a qualifying primary care visit, nor had fills for both a rescue medication and a controller medication within the specified time frames (Neither A nor at least one of B or C)

64.4% met neither the medication criteria nor the 6 month primary care visit criteria

Questions for the Committee:
- *Do the component measures fit the quality construct?*
- *Are the objectives of parsimony and simplicity achieved while supporting the quality construct?*

- *Do you think the developer provided enough data on the relationship between and three components and the overall composite measure?*

Preliminary rating for composite construction: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

Committee pre-evaluation comments

Criteria 2: Scientific Acceptability of Measure Properties (including all 2a, 2b, and 2d)

2a1. & 2b1. Specifications

Comments: **the specifications do not address asthma action plans or other elements of advanced care coordination that are shown in the evidence to be related to ED visits for asthma among children. This reflects a limitation in using claims data, but also shows a gap between evidence and specifications.
**The specifications seem consistent with the evidence for each component of the composite. However, I'm not fully clear if the specific combination of these three elements is fully consistent with the evidence.

2a2. Reliability Testing

Comments: **Need more information
**Reliability testing data was not provided and testing appears to be conducted at data element level rather than measure score level. Further data and possibly further testing is needed to evaluate reliability.
**The results of score-level reliability are required for a composite measure; however, those results were not provided. Therefore, the reliability rating is insufficient.

2b2. Validity Testing

Comments: **Validity appears strong based on evidence for each data element.
**Validity testing appears to have been conducted by review of extensive studies by an expert panel, and the developer provided details on all of the studies. Based on this gold standard data element testing, I believe that the measure does demonstrate sufficient validity to draw conclusions about quality.

2b3. Exclusions Analysis
2b4. Risk Adjustment/Stratification for Outcome or Resource Use Measures
2b5. Identification of Statistically Significant & Meaningful Differences In Performance
2b6. Comparability of Performance Scores When More Than One Set of Specifications
2b7. Missing Data Analysis and Minimizing Bias

Comments: **Still question the exclusion of children not enrolled with a reporting provider for 6 months.
**No data is presented to demonstrate ability to detect meaningful differences in the measure score. Further evidence is needed to support this.
Further explanation is needed why the developer feels that missing data is not likely to be a problem.
**The exclusions do seem consistent with the evidence. Given the exclusions, it does not appear that risk adjustment is necessary. However, in terms of missing data, this does not seem to be fully addressed by the developer. I rate the validity as moderate, box 12a.

2d. Composite Performance Measure - Composite Analysis

Comments: ** As previously stated, some rationale is needed as to why the composite uses all-or-nothing scoring.
**While there is evidence and explanation provided for each component of the construct, I'm still not clear if this is the right combination of components. It seems quite complex to look across these three elements and to require all three for the measure to be applicable. I rate the composite construction as moderate.

Criterion 3. Feasibility
Maintenance measures – no change in emphasis – implementation issues may be more prominent

3. Feasibility is the extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

- All data elements are in defined fields in electronic form. All data elements are generated, collected by and used by healthcare personnel during the provision of care.
- The Developer states that the measure is based on Administrative data; a feasibility study was conducted – over a dozen hospitals confirm that both data elements are usually found in the hospital chart and often found electronically.

Questions for the Committee

- *Are the use of claims data for pharmacy and diagnosis data feasible for all entities?*
- *Are the required data elements routinely generated and used during care delivery?*
- *Are the required data elements available in electronic form, e.g., EHR or other electronic sources?*

Preliminary rating for feasibility: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

Committee pre-evaluation comments

Criteria 3: Feasibility

3a. Byproduct of Care Processes
3b. Electronic Sources
3c. Data Collection Strategy
Comments: **The proposed elements appear to be available.
**While feasibility appeared good using Medicaid data, can the developers speak to feasibility for commercially insured populations? Would all the necessary data elements be available and feasible to aggregate in calculating the measure?
**I have real concerns about the feasibility of this measure - the data need to come from multiple places - hospital charts, ambulatory claims data, and pharmacy data (and patients use numerous different pharmacies). It seems like it would be very difficult to consistently have all of the data needed to assess this measure for a population. Therefore, I rate the feasibility as low.

Criterion 4: Usability and Use
Maintenance measures – increased emphasis – much greater focus on measure use and usefulness, including both impact /improvement and unintended consequences

4. Usability and Use evaluate the extent to which audiences (e.g., consumers, purchasers, providers, policymakers) use or could use performance results for both accountability and performance improvement activities.

Current uses of the measure [from OPUS]
Publicly reported? ☐ **Yes** ☒ **No**

Current use in an accountability program? ☐ **Yes** ☒ **No** ☐ **UNCLEAR**
OR
Planned use in an accountability program? ☐ **Yes** ☒ **No**

- The Developer states the measure will not be put into use until after it is endorsed by the NQF

and that there aren't any current policies or actions that would obstruct access to results of performance data or hinder implementation.

- **Vetting of the measure** The measures is a straightforward method to identifying effective connection with the health care system prior to visiting the ED visit or hospitalization. The Developer states that after the measure receives endorsement, it will be applicable to a variety of settings and organizations. The Developer also claims that analyses conducted have confirmed feasibility, usability and responsiveness of the measure and based on this data, the measure is both valid and sensitive to actual differences.

Feedback:

N/A

***Questions for the Committee**:*

- o *How can the performance results be used to further the goal of high-quality, efficient healthcare?*
- o *Do the benefits of the measure outweigh any potential unintended consequences?*
- o *How has the measure been vetted in real-world settings by those being measure or others?*

Preliminary rating for usability and use: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**
RATIONALE:

Committee pre-evaluation comments

Criteria 4: Usability and Use

4a. Accountability and Transparency
4b. Improvement
4c. Unintended Consequences
Comments: **What are planned uses for the measure, if it is not yet in use?
**This measure is not being publically reported - and I would recommend that it should not be used for that purpose. It also should not be used for accountability given that no single individual or entity has enough control over all the components of this measure. It could be used for public health purposes - but the data collection approach needs to be fully thought through in order to consistently assess this measure. Therefore, I rate the usability and use of this measure as low.

Criterion 5: Related and Competing Measures

Related or competing measures
No measures were discussed
Harmonization N/A

Endorsement + Designation

The "Endorsement +" designation identifies measures that exceed NQF's endorsement criteria in several key areas. After a Committee recommends a measure for endorsement, it will then consider whether the measure also meets the "Endorsement +" criteria.

This measure is a candidate for the "Endorsement +" designation IF the Committee determines that it: meets evidence for measure focus without an exception; is reliable, as demonstrated by score-level testing; is valid, as demonstrated by score-level testing (not via face validity only); and has been vetted by those being measured or other users.

Eligible for Endorsement + designation: ☐ **Yes** x☐ **No**

RATIONALE IF NOT ELIGIBLE: Reliability and validity testing are not at the measure score level.

Pre-meeting public and member comments

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NATIONAL QUALITY FORUM—Evidence (subcriterion 1a)

Measure Number (*if previously endorsed*)**:** Click here to enter NQF number
Measure Title: CAPQuaM PQMP ASTHMA III: Primary Care Connection Prior to Emergency Department Visits For Children with Identifiable Asthma
IF the measure is a component in a composite performance measure, provide the title of the Composite Measure here: CAPQuaM PQMP ASTHMA III: Primary Care Connection Prior to Emergency Department Visits For Children with Identifiable Asthma (NQF# 3170)
Date of Submission: 11/28/2016

Instructions

- *Complete 1a.1 and 1a.12 for all measures.*
- *Complete **EITHER 1a.2, 1a.3 or 1a.4** as applicable for the type of measure and evidence.*
- *For composite performance measures:*
  - *A separate evidence form is required for each component measure unless several components were studied together.*
  - *If a component measure is submitted as an individual performance measure, attach the evidence form to the individual measure submission.*
- All information needed to demonstrate meeting the evidence subcriterion (1a) must be in this form. An appendix of *supplemental* materials may be submitted, but there is no guarantee it will be reviewed.
- If you are unable to check a box, please highlight or shade the box for your response.
- Contact NQF staff regarding questions. Check for resources at Submitting Standards webpage.

Note: The information provided in this form is intended to aid the Standing Committee and other stakeholders in understanding to what degree the evidence for this measure meets NQF's evaluation criteria.

1a. Evidence to Support the Measure Focus

The measure focus is evidence-based, demonstrated as follows:

- Health outcome: [3] a rationale supports the relationship of the health outcome to processes or structures of care. Applies to patient-reported outcomes (PRO), including health-related quality of life/functional status, symptom/symptom burden, experience with care, health-related behavior.
- Intermediate clinical outcome: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured intermediate clinical outcome leads to a desired health outcome.
- Process: [5] a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured process leads to a desired health outcome.
- Structure: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured structure leads to a desired health outcome.
- Efficiency: [6] evidence not required for the resource use component.

Notes

3. Generally, rare event outcomes do not provide adequate information for improvement or discrimination; however, serious reportable events that are compared to zero are appropriate outcomes for public reporting and quality improvement.

4. The preferred systems for grading the evidence are the U.S. Preventive Services Task Force (USPSTF) grading definitions and methods, or Grading of Recommendations, Assessment, Development and Evaluation (GRADE) guidelines.

5. Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multistep process, the step with the strongest evidence for the link to the desired outcome should be selected as the focus of measurement. Note: A measure focused only on collecting PROM data is not a PRO-PM.

6. Measures of efficiency combine the concepts of resource use and quality (see NQF's Measurement Framework: Evaluating Efficiency Across Episodes of Care; AQA Principles of Efficiency Measures).

1a.1.This is a measure of: (*should be consistent with type of measure entered in De.1*)
Outcome

☐ Health outcome: Click here to name the health outcome

☐Patient-reported outcome (PRO): Click here to name the PRO

PROs include HRQoL/functional status, symptom/symptom burden, experience with care, health-related behaviors. (*A PRO-based performance measure is not a survey instrument. Data may be collected using a survey instrument to construct a PRO measure.)*

☐ Intermediate clinical outcome (*e.g., lab value*): Click here to name the intermediate outcome

☐ Process: Click here to name what is being measured

☐ Appropriate use measure: Click here to name what is being measured

☐ Structure: Click here to name the structure

☒ Composite: Primary Care Connection Prior to Emergency Department Visits For Children with Identifiable Asthma

1a.12 LOGIC MODEL Diagram or briefly describe the steps between the healthcare structures and processes (e.g., interventions, or services) and the patient's health outcome(s). The relationships in the diagram should be easily understood by general, non-technical audiences. Indicate the structure, process or outcome being measured.

Emergency department (ED) visits are often linked to the management of a child's asthma. Emergency Department Asthma was the topic assigned to CAPQuaM for measurement. The research literature suggests that not having a primary care provider (PCP) visit for asthma maintenance, especially in instances where an ED visit is the end result, is a sign of poorly managed asthma and our expert panel agreed. [1]

Two literature reviews as well as focused reviews that we have done to supplement the extensive review of the literature confirms the importance of an integrated approach to managing the health care of children with asthma. Primary care coordination can be critical: better communication, use and implementation of asthma action plans, and other primary care services can reduce asthma-related ED visits and hospitalizations compared to physicians who only prescribe appropriate asthma medication (Cabana, 2005). The action plan becomes a tool that leads the management of care and around which communications occur to improve asthma outcomes. Enhanced primary care has been noted to contribute to improvements in asthma care and better health for asthmatic children).[2] Better primary care, including asthma action plans and appropriate prescribing reduced ED visits substantially.[3]

We highlight that while successful primary care for asthma requires visits with primary care providers, it also includes adherence to an appropriate medication regimen, specifically, filling prescriptions and utilizing them properly. [4] [5-9] The tracking of prescription and pharmaceutical records to show if the asthma medications prescribed are being filled within the recommended amount of time is an accurate way to assess asthma care.[4, 7, 8] Prescription and use of controller medications such as inhaled corticosteroids (ICS) or other long-acting medications, as well as short acting beta-agonist medications, or rescue medications, is one sign of well-managed asthma. [4-6, 10-18] The source for shortcomings in asthma care management may lie with the clinicians (e.g. by failure to prescribe inhaled corticosteroids in a child for whom the standard of care would recommend them), the broader system or context (e.g. when caregivers do not have the resources to purchase potentially valuable preventative medications such as ICS), or the families (e.g. potentially through medication non-adherence for a variety of reasons). Although a PCP may prescribe the combination of ICS and long-acting beta-agonist drugs as one of the more effective methods of asthma control, these medications can go unfilled or not refilled. [4] When prescriptions for both controller and rescue medications are not filled, it can be interpreted as a sign of poorly managed asthma and potentially a failure of the primary care clinician to educate or motivate patients (especially in circumstances such as Medicaid, where there are not profound financial barriers to medication fulfillment). Failure in adequate asthma management can also occur when children with asthma control their condition by relying too heavily on rescue medications as a method of management in preference to controller medications. [4] This also is another aspect that may relate to the issue of communication and relationship between the primary care clinician and the family. This management approach of controller medications for children at risk for ED visits and rescue medications for all children who experience asthma symptoms is supported by the NIH/NHLBI/NAEPP guideline and is a consensus in the field.

After an exacerbation, follow up with the primary care physician is central for ongoing management. [8, 16, 19-24] If the child was in the ED and did not have a meaningful exacerbation, follow up is critical to establishing or re-establishing the centrality of primary care for the management of the asthmatic child. The literature suggests that a PCP follow-up within 30 days of the ED discharge is important.[16, 17, 25-27] Recent literature has identified the potential contribution of the medical home to enhance primary pediatric asthma care. [28-31] The involvement of a primary care provider contributes to the maintenance and control of asthma symptoms and is a characteristic of well-managed asthma.[1, 30, 32-37] Characteristics of sufficient primary care involvement may include having an identified site of regular care, an identified primary care clinician, and regular PCP visits with asthma follow up. [1, 30, 32-34] The medical home model in primary care may contribute to positive outcomes in children with asthma. [29, 31, 38] When children with asthma experience adequate management of chronic conditions and have access to coordinated care, a reduction in

hospital rates is likely to occur. [29] Children who are linked to continuous care utilize less overall care, including ED care. [29] The above cited Guideline also notes that follow up care rates can be enhanced by specific management recommendations and with limited RTC (Class B) evidence supports an asthma follow up visit for children within weeks following an ED visit.

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****RESPOND TO ONLY ONE SECTION BELOW -EITHER 1a.2, 1a.3 or 1a.4) ****

1a.2 FOR OUTCOME MEASURES including PATIENT REPORTED OUTCOMES- State the rationale supporting the relationship between the health outcome (or PRO) to at least one healthcare structure, process (e.g., intervention, or service).

1a.3. SYSTEMATIC REVIEW(SR) OF THE EVIDENCE (for INTERMEDIATE OUTCOME, PROCESS, OR STRUCTURE PERFORMANCE MEASURES) If the evidence is not based on a systematic review go to section 1a.4) If you wish to include more than one systematic review, add additional tables.

What is the source of the systematic review of the body of evidence that supports the performance measure? A systematic review is a scientific investigation that focuses on a specific question and uses explicit, prespecified scientific methods to identify, select, assess, and summarize the findings of similar but separate studies. It may include a quantitative synthesis (meta-analysis), depending on the available data. (IOM)

☐ Clinical Practice Guideline recommendation (with evidence review)

☐ US Preventive Services Task Force Recommendation

☐ Other systematic review and grading of the body of evidence (*e.g., Cochrane Collaboration, AHRQ Evidence Practice Center*)

☐ Other : The National Asthma Education and Prevention Program (NAEPP) guidelines

Source of Systematic Review: • **Title** • **Author** • **Date** • **Citation, including page number** • **URL**	• The National Asthma Education and Prevention Program (NAEPP) guidelines • NAEPP Coordinating Committee • October 2007 • National Asthma Education and Prevention Program. Guidelines for the Diagnosis and Management of Asthma. October 2007. 1-74. • **https://www.nhlbi.nih.gov/files/docs/guidelines/asthsumm.pdf** • **https://www.nhlbi.nih.gov/files/docs/guidelines/asthgdln.pdf**
Quote the guideline or recommendation verbatim about the process, structure or intermediate outcome being measured. If not a guideline, summarize the conclusions from the SR.	The guidelines recommend the identification of that subset of asthmatic children who need ongoing controller medication and those who don't. Those who need controller medication are also recommended to have rescue medications, typically short acting beta agonists. The guidelines and literature highlight the importance of primary care, asthma education, and typically a patient centered asthma action plan. While successful primary care for asthma requires visits with primary care providers, it also includes adherence to an appropriate medication regimen, specifically, filling prescriptions and utilizing them properly.
Grade assigned to the **evidence** associated with the recommendation	The National Asthma Education and Prevention Program (NAEPP) guidelines are the prevailing clinical recommendation for children with asthma. Class A and Class B evidence support medication use and follow up respectively. Class B evidence supports a visit interval no longer than 6

with the definition of the grade	months. These guidelines were derived from several steps and methods (pg. 2-9). The steps used to develop this report include: (1) completing a comprehensive search of the literature; (2) conducting an indepth review of relevant abstracts and articles; (3) preparing evidence tables to assess the weight of current evidence with respect to past recommendations and new and unresolved issues; (4) conducting thoughtful discussion and interpretation of findings; (5) ranking strength of evidence underlying the current recommendations that are made; (6) updating text, tables, figures, and references of the existing guidelines with new findings from the evidence review; (7) circulating a draft of the updated guidelines through several layers of external review, as well as posting it on the NHLBI Web site for review and comment by the public and the NAEPP CC, and (8) preparing a final-report based on consideration of comments raised in the review cycle. Specifically, evidence based on scientific literature in the current evidence review was included. The system used to describe the level of evidence includes the following: • **Evidence Category A: Randomized controlled trials (RCTs), rich body of data.** Evidence is from end points of well-designed RCTs that provide a consistent pattern of findings in the population for which the recommendation is made. Category A requires substantial numbers of studies involving substantial numbers of participants. • **Evidence Category B: RCTs, limited body of data.** Evidence is from end points of intervention studies that include only a limited number of patients, post hoc or subgroup analysis of RCTs, or meta-analysis of RCTs. In general, category B pertains when few randomized trials exist; they are small in size, they were undertaken in a population that differs from the target population of the recommendation, or the results are somewhat inconsistent. • **Evidence Category C: Nonrandomized trials and observational studies.** Evidence is from outcomes of uncontrolled or nonrandomized trials or from observational studies. Evidence • **Category D: Panel consensus judgment.** This category is used only in cases where the provision of some guidance was deemed valuable, but the clinical literature addressing the subject was insufficient to justify placement in one of the other categories. The Panel consensus is based on clinical experience or knowledge that does not meet the criteria for categories A through C.
Provide all other grades and definitions	

from the evidence grading system	
Grade assigned to the **recommendation** with definition of the grade	
Provide all other grades and definitions from the recommendation grading system	
Body of evidence: • Quantity – how many studies? • Quality – what type of studies?	The literature review was conducted in three cycles over an 18-month period (September 2004 to March 2006). Search strategies for the literature review initially were designed to cast a wide net but later were refined by using publication type limits and additional terms to produce results that more closely matched the framework of topics and subtopics selected by the Expert Panel. The searches included human studies with abstracts that were published in English in peer-reviewed medical journals in the MEDLINE database. Two timeframes were used for the searches, dependent on topic: January 1, 2001, through March 15, 2006, for pharmacotherapy (medications), peak flow monitoring, and written action plans, because these topics were recently reviewed in the EPR—Update 2002; and January 1, 1997, through March 15, 2006, for all other topics, because these topics were last reviewed in the EPR—2 1997. The combined number of titles screened from cycles 1, 2, and 3 was 15,444. The number of abstracts and articles reviewed for all three cycles was 4,747. Of these, 2,863 were voted to the abstract Keep list following the abstract-review step. A database of these abstracts is posted on the NHLBI Web site. Of these abstracts, 2,122 were advanced for full-text review, which resulted in 1,654 articles serving as a bibliography of references used to update the guidelines, available on the NHLBI Web site. Articles were selected from this bibliography for evidence tables and/or citation in the text. In addition, articles reporting new and particularly relevant findings and published after March 2006 were identified by Panel members during the writing period (March 2006–December 2006) and by comments received from the public review in February 2007. (Fig 1-2 in url) A series of conference calls for each of the 10 committees as well as four in-person Expert Panel meetings (held in October 2004, April 2005, December 2005, and May 2006) were scheduled to facilitate discussion of findings and to dovetail with the three cycles of literature review that occurred over the 18-month period.
Estimates of benefit and consistency across studies	In summary, the NAEPP "Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma—Full Report 2007" represents the NAEPP's ongoing effort to keep recommendations for clinical practice up to date and based upon a systematic review of the best available scientific

	evidence by a Panel of experts, as well as peer review and critique by the collective expertise of external research/science consultants, the NAEPP CC members, guidelines implementation specialists, and public comment. The relationship between guidelines and clinical research is a dynamic one, and the NAEPP recognizes that the task of keeping guidelines' recommendations up to date is an increasing challenge. In 1991, many recommendations were based on expert opinion because there were only limited randomized clinical trials in adults, and almost none in children, that adequately tested clinical interventions grounded in research findings about the disease process in asthma. The large gaps in the literature defined pressing clinical research questions that have now been vigorously addressed by the scientific community, as the size of the literature reviewed for the current report attests.
What harms were identified?	
Identify any new studies conducted since the SR. Do the new studies change the conclusions from the SR?	

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1a.4 OTHER SOURCE OF EVIDENCE

If source of evidence is NOT from a clinical practice guideline, USPSTF, or systematic review, please describe the evidence on which you are basing the performance measure.

1a.4.1 Briefly SYNTHESIZE the evidence that supports the measure. A list of references without a summary is not acceptable.

1a.4.2 What process was used to identify the evidence?

1a.4.3. Provide the citation(s) for the evidence.

1. Evidence, Performance Gap, Priority – Importance to Measure and Report
Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. ***Measures must be judged to meet all sub criteria to pass this criterion and be evaluated against the remaining criteria.***
1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form NQF_evidence_attachment_FINAL_2016_11_27_16_III.docx **1a.1 For Maintenance of Endorsement: Is there new evidence about the measure since the last update/submission?** Please update any changes in the evidence attachment in red. Do not remove any existing information. If there have been any changes to evidence, the Committee will consider the new evidence. If there is no new evidence, no

updating of the evidence information is needed.

1b. Performance Gap

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- disparities in care across population groups.

1b.1. **Briefly explain the rationale for this measure** *(e.g., how the measure will improve the quality of care, the benefits or improvements in quality envisioned by use of this measure)*
IF a PRO-PM (e.g. HRQoL/functional status, symptom/burden, experience with care, health-related behaviors), provide evidence that the target population values the measured PRO and finds it meaningful. (Describe how and from whom their input was obtained.)
IF a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), SKIP this question and provide rationale for composite in question 1c.3 on the composite tab.
Since this is a composite, see 1c.3

1b.2. **Provide performance scores on the measure as specified (current and over time) at the specified level of analysis**. *(This is required for maintenance of endorsement. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the sub-criterion on improvement (4b) under Usability and Use.*
16.5% of children in NYS Medicaid who had a qualifying ED visit for asthma met the standards of this measure. As noted elsewhere there are systematic variations in performance.

1b.3. **If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.**
Children with asthma comprise a critically important population of high interest to Medicaid. Low income urban minority children are an important component of this population. Our analysis of National Survey of Children's Health data (NSCH, 2011/12), estimates that 10.3 million children in the U.S. have been told that they have asthma. Of these children 7.6 million live in more urban areas that are characterized as metropolitan statistical areas (MSAs), an asthma prevalence rate of 15.4%. These data indicate that an absolute difference of 15.8% fewer parents of children with asthma report that child's health as very good or excellent compared to those with no asthma. Black or Latino children with asthma show an absolute difference of about 13% fewer with very good or excellent health compared to white children with asthma. Effective delivery of guideline-based care can reduce the gap and decrease consequences of uncontrolled asthma, such as emergency room use and hospitalizations; better asthma care is beneficial and needed across the spectrum of children and primary care settings. [1-7] About 60% of these children are low income and have public insurance.

We have done extensive analysis of various approaches to identifying asthmatic children and counting ED visits using New York State Medicaid data. Depending upon specifics of definitional issues, we have found substantial numbers of children that can be identified as having asthma, with more than 196,000 found to have identifiable asthma in 2011 with approximately 40,000 of these eligible children generating nearly 60,000 ED visits for asthma. This is a substantial issue for New York State Medicaid and beyond. Its importance has been validated by a previous measure having been included as a core Medicaid measure and AHRQ and CMS assigning CAPQuaM to enhance the current measure. Our partners in the New York State Medicaid program have been instrumental in the development of this measure set.

The literature provides compelling evidence of the importance of asthma as a clinical and public health concern. Asthma is a prevalent chronic condition in children (typically considered the most prevalent). The National Asthma

Education and Prevention Program (NAEPP) guidelines are a well-constructed integration of key patient centered outcomes research that can enhance outcomes when followed by clinicians and parents/caregivers. The guidelines recommend the identification of that subset of asthmatic children who need ongoing controller medication and those who don't. Those who need controller medication are also recommended to have rescue medications, typically short acting beta agonists. The guidelines and literature highlight the importance of primary care, asthma education, and typically a patient centered asthma action plan. This measure captures care processes that indicate the degree of connection to the primary care system as measured by how recently the child was seen by a primary care physician, and/or the presence of a recently filled prescription for controller and/or rescue medication. The potential for racial and ethnic disparities are high, and this is an important priority for Medicaid.[8] The survey of Children with Special Health Care Needs (CSHCN), conducted by the CDC and available at www.childhealthdata.org, showed that Black children in particular and also Hispanic children are overrepresented with asthma. Thirty eight percent of children with asthma have public insurance. One quarter (26%) live in households under the federal poverty line, with 28% under twice the federal poverty line, and only 24% have incomes more than four times the federal poverty line. Nearly three quarters of these children have at least one sibling and about one-third have a sibling who also has a special health care need, using HRSA's screening tool. Manice's careful analysis of the 2005/2006 survey from which these data are taken also found that racial minorities, lower income, and household educational attainment were independent predictors of ED utilization among children with asthma.[9] Our analysis of New York State Medicaid data shows about a 2.5 fold increase in the rate of using the ED of non Hispanic Blacks compared to non Hispanic Whites (non Hispanic Black > all Hispanic > Non-Hispanic White > Asian).

Our own analysis of NY State Medicaid data showed that the proposed measure varies by race, by urbanicity, and by the amount of poverty in the county of residence.

1. Diette G, Skinner E, Markson L, Algatt-Bergstrom P, Nguyen T, Clark R, et al. Consistency of care with national guidelines for children with asthma in managed care. The Journal of Pediatrics, 2001. 138(1): p. 59-64.
2. Adams R, Fulhbrigge A, Finkelstein J, Lozano P, Livingston J, Weiss K, Weiss S. Impact of Inhaled Antiinflammatory Therapy on Hospitalization and Emergency Department Visits for Children With Asthma. Pediatrics, 2001. 107(4): p. 706-711.
3. Finkelstein J, Lozano P, Farber H, Miroshnik I, Lieu T. Underuse of controller medications among medicaid-insured children with asthma. Archives of Pediatrics & Adolescent Medicine, 2002. 156(6): p. 562-7.
4. Finkelstein J, Lozano P, Shulruff R, Inui T, Soumerai S, Ng M, Weiss K. Self-Reported Physician Practices for Chilren with Asthma: Are National Guidelines Followed? Pediatrics, 2000. 106(Supplement 3): p. 886-96.
5. Bell L, Grundmeier R, Localio R, Zorc J, Fiks A, Zhang Z, et al. Electronic Health Record-Based Decision Support to Improve Asthma Care: A Cluster-Randomized Trial. Pediatrics, 2010. 125(4): p. e770-07.
6. Lob S, Boer J, Porter P, Nunez D, Fox P. Promoting Best-Care Practices in Childhood Asthma: Quality Improvement in Community Health Centers. Pediatrics, 2011. 128(1): p. 20-8.
7. Scott L, Morphew T, Bollinger M, Samuelson S, Galant S, Clement L, O´Cull K, Jones F, Jones C. Achieving and maintaining control in inner-city children. Journal of Allergy and Clinical Immunology, 2011. 128(1): p. 56-63.
8. Oraka E, Iqbal S, Flanders W, Brinker K, Garbe P. Racial and ethnic disparities in current asthma and emergency department visits: findings from the national health interview survey, 2001-2010. J Asthma, 2013. 50(5): p. 488-96.
9. Manice M. Exploring the relationship between parental shared decision-making practices and acute asthma exacerbations among children age 0-17. 2013, Icahn School of Medicine at Mount Sinai: New York, NY.

1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability. *(This is required for maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included.) For measures that show high levels of performance, i.e., "topped out", disparities data may demonstrate an opportunity for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b) under Usability and Use.*

Nationally, Black children and also Hispanic children are overrepresented with asthma (CSHCN). Racial minorities,

lower income, and household educational attainment were independent predictors of ED utilization among children with asthma.

Our analysis of New York State Medicaid data indicate that there are significantly high prevalence of ED visits for asthma: More than 196,000 children had identifiable asthma (using our definition) in NY State Medicaid data in 2011 (almost 11%) and nearly 60,000 ED visits for asthma were from the eligible children. Approximately 76% of asthma admissions were from the ED. ED visits for asthma vary by:

(1) Race / Ethnicity: About a 2.5 fold increase in the rate of using the ED of non-Hispanic Blacks compared to non-Hispanic Whites (non-Hispanic Black > all Hispanic > Non-Hispanic White > Asian). Racial variations showed Black children less likely (21.5%) to have had a controller medication than Whites (23.2%) who were less likely than Hispanics (24.9%). Visits within 6 months: Black children (25.4%) < Whites (28.1%) < Hispanics (33.0%). Meeting criteria for the visits and both medications ranged from 9.9% in Blacks to 11.1% in Whites to 13.7% in Hispanics.
(2) Age: We found meaningful variations by age groups as expected, with peaks in younger children and older adolescents.
(3) Urbanicity: higher rates of ED utilization in the most urban areas and lowest in the most rural areas and other areas intermediate between the two. For example, both medication measures and the 6 month primary care visit measure are met for 13.8% (N=806) of those in rural counties, 14.7% (N=4066) of those in suburban counties, and 16.9% (N=26327) of those in urban counties.
(4) Poverty: associated with increased ED use for children with asthma as higher incomes were associated with better performance on this measure.

ED visits are often linked to the management of a child's asthma

1b.5. **If no or limited data on disparities from the measure as specified is reported in 1b.4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations. Not necessary if performance data provided in 1b.4**

1c. Composite Quality Construct and Rationale

1c.1. **A composite performance measure is a combination of two or more component measures, each of which individually reflects quality of care, into a single performance measure with a single score.**

For purposes of NQF measure submission, evaluation, and endorsement, the following will be considered composites:

- Measures with two or more individual performance measure scores combined into one score for an accountable entity.
- Measures with two or more individual component measures assessed separately for each patient and then aggregated into one score for an accountable entity:
    - all-or-none measures (e.g., all essential care processes received, or outcomes experienced, by each patient);

1c.1. Please identify the composite measure construction: all-or-none measures (e.g., all essential care processes received, or outcomes experienced, by each patient)

1c.2. **Describe the quality construct, including:**

- the overall area of quality
- included component measures and
- the relationship of the component measures to the overall composite and to each other.

Component measures include:

(1) Visit(s) to a primary care clinician with a primary or secondary diagnosis of asthma that occurred within 6

months prior to an ED visit/hospital admission (but not on the day of the ED visit/admission) (A only)

(2) Have at least one fill of a short acting beta agonist within 12 months prior to the ED visit/hospital admission (B only)

(3) Have at least one fill of an asthma controller medication within 6 months prior to the ED visit/hospital admission (C only)

The overall composite is A and B and C.

1c.3. **Describe the rationale for constructing a composite measure, including how the composite provides a distinctive or additive value over the component measures individually.**
In depth literature reviews indicate that asthma is a prevalent chronic condition in children. Also, ED visits for asthma care are a common, costly, and potentially preventable health service that may serve as a marker for both insufficiency of primary care and insufficiency of clinical management of asthma by the partnership of the family and the health care team. These aspects of the composite measure are key determinants of having care connection prior to an ED visit for primary or secondary diagnosis of asthma. These determinants are also areas that can significantly enhance health outcomes should they be addressed.

1c.4. **Describe how the aggregation and weighting of the component measures are consistent with the stated quality construct and rationale.**

2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. ***Measures must be judged to meet the sub criteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.***

2a.1. Specifications The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

De.5. **Subject/Topic Area** *(check all the areas that apply):*

De.6. **Cross Cutting Areas** *(check all the areas that apply):*
«crosscutting_area»

De.7. **Target Population Category** *(Check all the populations for which the measure is specified and tested if any):*

S.1. **Measure-specific Web Page** *(Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)*
n/a

S.2a. **If this is an eMeasure**, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)
This is not an eMeasure **Attachment:**

S.2b. **Data Dictionary, Code Table, or Value Sets** *(and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)*
Attachment **Attachment:** Asthma_III_11_23_16.xlsx

S.3.1. **For maintenance of endorsement:** Are there changes to the specifications since the last updates/submission. If yes, update the specifications for S1-2 and S4-22 and explain reasons for the changes in S3.2.
No

S.3.2. **For maintenance of endorsement,** please briefly describe any important changes to the measure specifications since last measure update and explain the reasons.
Initial submission

S.4. **Numerator Statement** *(Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome) DO NOT include the rationale for the measure.*
IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).
Evidence of connection to the primary care medical system prior to first ED visit and/or hospitalization that has a primary or secondary diagnosis of asthma among children whom our specifications identify with asthma.

S.5. **Numerator Details** *(All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)*
IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).
Evidence of connection to the primary care medical system prior to first ED visit and/or hospitalization that has a primary or secondary diagnosis of asthma among children whom our specifications identify with asthma, includes the following:

(A)Visit(s) to a primary care clinician with a primary or secondary diagnosis of asthma that occurred within 6 months prior to an ED visit/hospital admission (but not on the day of the ED visit/admission,

(B)Have at least one fill of a short acting beta agonist within 12 months prior to the ED visit/hospital admission and

(C)Have at least one fill of an asthma controller medication within 6 months prior to the ED visit/hospital admission.

This numerator excludes events occurring in patients who meet numerator but not denominator criteria (including 6 months of continuous enrollment).

S.6. **Denominator Statement** *(Brief, narrative description of the target population being measured)*
All first ED visits and/or hospitalizations, in which asthma was a primary or secondary diagnosis in children age 2-21 who meet criteria for being managed for identifiable asthma in the assessment period and have been enrolled for the 6 consecutive months prior to the ED visit/admission.

S.7. **Denominator Details** *(All information required to identify and calculate the target population/denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*

IF an OUTCOME MEASURE, describe how the target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).
The assessment period includes the full year before the reporting year and each full calendar month before the month in which the ED visit (which is referred to as the reporting month).

Descriptive definitions of identifiable asthma management are in S.2b. Specifications follow the descriptive definitions in S.2b.

- Any prior hospitalization with asthma as primary or secondary diagnosis
- Other qualifying events after the fifth birthday at time of event:
  a. One or more prior ambulatory visits with asthma as the primary diagnosis (this criterion implies an asthma ED visit in the reporting month), OR
  b. Two or more ambulatory visits with asthma as a diagnosis, OR
  c. One ambulatory visit with asthma as a diagnosis AND at least One asthma related prescription, OR
  d. Two or more ambulatory visits with a diagnosis of bronchitis
- Other qualifying events, any age:
  a. Three or more ambulatory visits with diagnosis of asthma or bronchitis, OR
  b. Two or more ambulatory visits with a diagnosis of asthma and/or bronchitis AND one or more asthma related prescriptions

For eligibility purposes, asthma-related medicine refers to long acting beta agonist (alone or in combination) or inhaled corticosteroid (alone or in combination), anti- asthmatic combinations, methylxanthines (alone or in combination), and/or mast cell stabilizers.

S.8. **Denominator Exclusions** *(Brief narrative description of exclusions from the target population)*
Children with specific concurrent or pre-existing diagnosis, as specified in S.9.

Children who have not been consecutively enrolled with the reporting entity for at least six months prior to the index reporting month.

Children who do not meet the denominator criteria.

S.9. **Denominator Exclusion Details** *(All information required to identify and calculate exclusions from the denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*
Excluded are children who have NOT been continuously enrolled in the index plan for the 6 months immediately prior to the reporting month. Change(s) in eligibility criteria and/or benefit package or plan do(es) not relieve the reporting entity of the need to determine denominator eligibility – all available sources should be linked. For health plans, this includes utilizing any existing data sharing arrangements. For State Medicaid plans, this requires that the unit of analysis for eligibility assessment is the child, not the child-insurer pair.

Children with concurrent or pre-existing: Chronic Obstructive Pulmonary Disease (COPD) diagnosis; Cystic Fibrosis diagnosis; Emphysema diagnosis

Children who have not been consecutively enrolled with the reporting entity for at least six months prior to the index reporting month.

Children who do not meet the denominator criteria.

S.10. **Stratification Information** *(Provide all information required to stratify the measure results, if necessary, including the stratification variables, definitions, specific data collection items/responses, code/value sets, and the*

risk-model covariates and coefficients for the clinically-adjusted version of the measure when appropriate – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b.)
Stratification includes:

(1) Visit(s) to a primary care clinician with a primary or secondary diagnosis of asthma that occurred within 6 months prior to an ED visit/hospital admission (but not on the day of the ED visit/admission) (A only)

(2) Have at least one fill of a short acting beta agonist within 12 months prior to the ED visit/hospital admission (B only)

(3) Have at least one fill of an asthma controller medication within 6 months prior to the ED visit/hospital admission (C only)

(4) Have a prescription filled for both a rescue medication and a controller medication within the specified time frames (BOTH B and C only)

(5)Have no prescriptions filled for rescue medications or controller medications within the specified time frames (NEITHER B nor C)

(6) Have neither a qualifying primary care visit, nor had fills for both a rescue medication and a controller medication within the specified time frames (Neither A nor B nor C: Failure)

Stratifications 4-6 could be calculated internally if desired.

S.11. **Risk Adjustment Type** (Select type. Provide specifications for risk stratification in measure testing attachment)
Other
If other: Stratification for reasons beyond risk adjustment

S.12. **Type of score:**
Rate/proportion
If other:

S.13. **Interpretation of Score** *(Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)*
Better quality = Higher score

S.14. **Calculation Algorithm/Measure Logic** (*Diagram or describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; time period for data, aggregating data; risk adjustment; etc.)*
Step 1: Assess eligibility. For any given reporting month, assess eligibility on 2 criteria. Eligible children are those that meet both of the following:

A.Identify the assessment period. We classify children as having identifiable asthma by evaluating services used during what we call the assessment period. The analysis period consists of the 2 year look back period plus all prior months in the Reporting Year. In other words if calendar year 2012 is the Reporting Year, the look back period would include calendar years 2010 and 2011. When looking for events in January 2011, the assessment period would include only CY 2009 and CY 2010. For February 2011, the assessment period would include CY 2010, CY 2011 and January 2012, and so on until for December the look back period would include CY 2010, CY 2011 and January-November, 2012.

B. Analyze the data month by month in chronological order.

1.Exclude those children who have not been enrolled in the health plan for six consecutive months before the month of the ED visit;

2.Evaluate for the presence of identifiable asthma if any of the criteria described in a, b, or c below are satisfied, (along with an ED visit with the primary or secondary diagnosis of asthma):

a.Any prior hospitalization with asthma as primary or secondary diagnosis

b.Qualifying events after the fifth birthday at time of event:

i.One or more prior ambulatory visits with asthma as the primary diagnosis OR

ii.Two or more ambulatory visits with asthma as a diagnosis, OR

iii.One ambulatory visit with asthma as a diagnosis AND at least One asthma related prescription, OR

iv.Two or more ambulatory visits with a diagnosis of bronchitis

c. Qualifying events, any age:

i.Three or more ambulatory visits with diagnosis of asthma or bronchitis, OR

ii.Two or more ambulatory visits with a diagnosis of asthma AND/OR

iii.Bronchitis AND one or more asthma related prescriptions

Step 2: Look for any qualifying events (eligible events) using the criteria for hospitalization and/or ED visits.

For months in which each child is found to be eligible using both the criteria for identifiable asthma and the continuous enrollment criteria (Step 1), identify whether that is the first eligible event for the child in the reporting year. If so, include in the denominator.

Step 3: The denominator is the number of children with identifiable asthma who had qualifying events. Use the first such event for each child when assessing each numerator.

Step 4: Identify Numerator A. Numerator A is the number of eligible children with an ED visit and/or hospitalization who had a visit with primary care doctor with primary or secondary diagnosis of asthma within 6 months prior to the ED visit and/or hospitalization (and not including the day of the ED visit/admission).

Step 5: Identify Numerator B. Numerator B is the number of eligible children with an ED visit and/or hospitalization who filled a prescription for a short acting beta agonist within the prior 12 months before the ED visit and/or hospitalization (and not including the day of the ED visit/admission).

Step 6: Identify Numerator C. Numerator C is the number of eligible children with an ED visit and/or hospitalization who filled a prescription for a controller medication prescription within the prior 6 months before the ED visit and/or hospitalization (and not including the day of the ED visit/admission).

Step 7: Identify Numerator D. Numerator D is a composite of Numerator B and Numerator C.

i. Criteria are satisfied for both B and C.

ii. Criteria are satisfied for neither B nor C.

Step 8: Identify Numerator E. Numerator E is a composite of Numerator A and Numerator D.
i. Criteria are satisfied for both A and D.
ii. Criteria are satisfied for neither A nor D.

** For Steps 4-8, report as 100 x (numerator/denominator) to 2 decimal place.

Step 9. Repeat by strata: age, race/ethnicity, Urban Influence Code (UIC), county poverty level, insurance type, benefit type. Report by race/ethnicity within age strata and repeat that analysis by UIC, and by county poverty level. Report by insurance type and benefit type within race/ethnicity.
Eliminate any strata with less than 50 person-months in any month's denominator.

Step 10. Specification of Stratification Variables:
i. Identify County equivalent of child's residence. If County and State or FIPS code are not in the administrative data, the zip codes can be linked to County indirectly, using the Missouri Census Data Center (http://mcdc.missouri.edu/). These data will link to County or County equivalents as used in various states.

ii.Identify the Urban Influence Code[1] or UIC for the County of child's residence. (2013 urban influence codes available at: http://www.ers.usda.gov/data-products/urban-influence- codes.aspx#.UZUvG2cVoj8 .

iii.Identify the Level of Poverty in the child's county of residence. The percent of all residents in poverty by county or county equivalent are available from the US Department of Agriculture at http://www.ers.usda.gov/data- products/county-level-data-sets/download-data.aspx . Our stratification standards are based on 2011 US population data that we have analyzed with SAS 9.3. Using child's state and county of residence (or equivalent) or FIPS code, use the variable PCTPOVALL_2011 to categorize into one of 5 Strata:

1.Lowest Quartile of Poverty if percent in poverty is <=12.5%
2.Second Quartile of Poverty if percent in poverty is >12.5% and <=16.5%
3.Third Quartile of poverty if percent in poverty is >16.5% and <=20.7%
4.First upper quartile (75th-90th) if percent in poverty is >20.7% and <=25.7%
5.Second upper quartile (>90th percentile)

iv.Categorize age by age at the last day of the prior month. Aggregate into age categories ages 2-4, ages 5 through 11, ages 12-18, ages 19-21.

v.Categorize Race/Ethnicity as Hispanic, non-Hispanic White, Non- Hispanic Black, non-Hispanic Asian/Pacific Islander, and Non-Hispanic Other.

vi.Insurance as Private (Commercial), Public, None or Other

vii.Benefit Type as HMO, PPO, FFS, PCCM, Other

S.15. **Sampling** *(If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)*
IF a PRO-PM, identify whether (and how) proxy responses are allowed.

n/a

S.16. **Survey/Patient-reported data** *(If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)*
IF a PRO-PM, specify calculation of response rates to be reported with performance measure results.
n/a

S.17. **Data Source** *(Check ONLY the sources for which the measure is SPECIFIED AND TESTED).*
If other, please describe in S.18.
Claims (Only)

S.18. **Data Source or Collection Instrument** *(Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data is collected.)*
IF a PRO-PM, identify the specific PROM(s); and standard methods, modes, and languages of administration.
n/a

S.19. **Data Source or Collection Instrument** *(available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)*
No data collection instrument provided

S.20. **Level of Analysis** *(Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)*
Population : Community, County or City, Population : Regional and State

S.21. **Care Setting** *(Check ONLY the settings for which the measure is SPECIFIED AND TESTED)*
Clinician Office/Clinic, Emergency Department, Hospital
If other:

S.22. **COMPOSITE Performance Measure** - Additional Specifications *(Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)*
n/a

2. Validity – See attached Measure Testing Submission Form
lk_Composite_Testing_Attachhment_12_16_16.docx

2.1 For maintenance of endorsement
Reliability testing: If testing of reliability of the measure score was not presented in prior submission(s), has reliability testing of the measure score been conducted? If yes, please provide results in the Testing attachment. (Do not remove prior testing information – include date of new information in red.)

2.2 For maintenance of endorsement
Has additional empirical validity testing of the measure score been conducted? If yes, please provide results in the Testing attachment. (Do not remove prior testing information – include date of new information in red.)

2.3 For maintenance of endorsement
Risk adjustment: For outcome, resource use, cost, and some process measures, risk-adjustment that includes SDS factors is no longer prohibited during the SDS Trial Period (2015-2016). Please update sections 1.8, 2a2, 2b2, 2b4, and 2b6 in the Testing attachment and S.14 and S.15 in the online submission form in accordance with the requirements for the SDS Trial Period. NOTE: These sections must be updated even if SDS factors are not included in the risk-adjustment strategy. If yes, and your testing attachment does not have the additional questions for the SDS Trial please add these questions to your testing attachment:

What were the patient-level sociodemographic (SDS) variables that were available and analyzed in the data or sample used? For example, patient-reported data (e.g., income, education, language), proxy variables when SDS data are not collected from each patient (e.g. census tract), or patient community characteristics (e.g. percent vacant housing, crime rate).

Describe the conceptual/clinical and statistical methods and criteria used to select patient factors (clinical factors or sociodemographic factors) used in the statistical risk model or for stratification by risk (e.g., potential factors identified in the literature and/or expert panel; regression analysis; statistical significance of p<0.10; correlation of x or higher; patient factors should be present at the start of care)

What were the statistical results of the analyses used to select risk factors?

Describe the analyses and interpretation resulting in the decision to select SDS factors (e.g. prevalence of the factor across measured entities, empirical association with the outcome, contribution of unique variation in the outcome, assessment of between-unit effects and within-unit effects)

NATIONAL QUALITY FORUM—Composite Measure Testing (subcriteria 2a2, 2b2-2b7, 2c)

Measure Number (*if previously endorsed*)**:** Click here to enter NQF number
Composite Measure Title: Proportion of Children with ED Visits for Asthma with Evidence of Primary Care Connection Before the ED Visit
Date of Submission: 12/15/2016
Composite Construction:
☐Two or more individual performance measure scores combined into one score
☒ All-or-none measures (e.g., all essential care processes received or outcomes experienced by each patient)

Instructions: Please contact NQF staff before you begin.

- If a component measure is submitted as an individual performance measure, the non-composite measure testing form must also be completed and attached to the individual measure submission.
- Measures must be tested for all the data sources and levels of analyses that are specified. ***If there is more than one set of data specifications or more than one level of analysis, contact NQF staff*** about how to present all the testing information in one form.
- **Sections 1, 2a2, 2b2, 2b3, 2b5, 2b7, and 2c must be completed.**
- **For composites with outcome and resource use measures**, section **2b4** also must be completed.
- If specified for **multiple data sources/sets of specificaitons** (e.g., claims and EHRs), section **2b6** also must be completed.
- Respond to all questions as instructed with answers immediately following the question. All information on testing to demonstrate meeting the subcriteria for reliability (2a2) and validity (2b2-2b7) and composites (2c) must be in this form. An appendix for *supplemental* materials may be submitted, but there is no guarantee it will be reviewed.
- If you are unable to check a box, please highlight or shade the box for your response.
- Maximum of 25 pages (*incuding questions/instructions;* minimum font size 11 pt; do not change margins). ***Contact NQF staff if more pages are needed.***
- Contact NQF staff regarding questions. Check for resources at Submitting Standards webpage.

- For information on the most updated guidance on how to address sociodemographic variables and testing in this form refer to the release notes for version 7.0 of the Measure Testing Attachment and the 2016 Measure Evaluation Criteria and Guidance.

Note: The information provided in this form is intended to aid the Standing Committee and other stakeholders in understanding to what degree the testing results for this measure meet NQF's evaluation criteria for testing.

2a2. Reliability testing [10] demonstrates the measure data elements are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period and/or that the measure score is precise. For **PRO-PMs and composite performance measures**, reliability should be demonstrated for the computed performance score.

2b2. Validity testing [11] demonstrates that the measure data elements are correct and/or the measure score correctly reflects the quality of care provided, adequately identifying differences in quality. For **PRO-PMs and composite performance measures**, validity should be demonstrated for the computed performance score.

2b3. Exclusions are supported by the clinical evidence; otherwise, they are supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion; [12]

AND

If patient preference (e.g., informed decisionmaking) is a basis for exclusion, there must be evidence that the exclusion impacts performance on the measure; in such cases, the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category computed separately, denominator exclusion category computed separately). [13]

2b4. For outcome measures and other measures when indicated (e.g., resource use):

- **an evidence-based risk-adjustment strategy** (e.g., risk models, risk stratification) is specified; is based on patient factors (including clinical and sociodemographic factors) that influence the measured outcome and are present at start of care; [14,15] and has demonstrated adequate discrimination and calibration

OR

- rationale/data support no risk adjustment/ stratification.

2b5. Data analysis of computed measure scores demonstrates that methods for scoring and analysis of the specified measure allow for **identification of statistically significant and practically/clinically meaningful** [16] **differences in performance**;

OR

there is evidence of overall less-than-optimal performance.

2b6. If multiple data sources/methods are specified, there is demonstration they produce comparable results.

2b7. For **eMeasures, composites, and PRO-PMs** (or other measures susceptible to missing data), analyses identify the extent and distribution of missing data (or nonresponse) and demonstrate that performance results are not biased due to systematic missing data (or differences between responders and nonresponders) and how the specified handling of missing data minimizes bias.

2c. For composite performance measures, empirical analyses support the composite construction approach and demonstrate that:

2c1. the component measures fit the quality construct and add value to the overall composite while achieving the related objective of parsimony to the extent possible; and

2c2.the aggregation and weighting rules are consistent with the quality construct and rationale while achieving the related objective of simplicity to the extent possible.

(*if not conducted or results not adequate, justification must be submitted and accepted)*

Notes

10. Reliability testing applies to both the data elements and computed measure score. Examples of reliability testing for data elements include, but are not limited to: inter-rater/abstractor or intra-rater/abstractor studies; internal consistency for multi-item scales; test-retest for survey items. Reliability testing of the measure score addresses precision of measurement (e.g., signal-to-noise).

11. Validity testing applies to both the data elements and computed measure score. Validity testing of data elements typically analyzes agreement with another authoritative source of the same information. Examples of validity testing of the measure score include, but are not limited to: testing hypotheses that the measures scores indicate quality of care, e.g., measure scores are different for groups known to have differences in quality assessed by another valid quality measure or method; correlation of measure scores with another valid indicator of quality for the specific topic; or relationship to conceptually related measures (e.g., scores on process measures to scores on outcome measures). Face validity of the measure score as a quality indicator may be adequate if accomplished through a systematic and transparent process, by identified experts, and explicitly addresses whether performance scores resulting from the measure as specified can be used to distinguish good from poor quality.

12. Examples of evidence that an exclusion distorts measure results include, but are not limited to: frequency of occurrence, variability of exclusions across providers, and sensitivity analyses with and without the exclusion.
13. Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.

14. Risk factors that influence outcomes should not be specified as exclusions.
15. With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74 percent v. 75 percent) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall less-than-optimal performance may not demonstrate much variability across providers.

1. DATA/SAMPLE USED FOR ALL TESTING OF THIS MEASURE

Often the same data are used for all aspects of measure testing. In an effort to eliminate duplication, the first five questions apply to all measure testing. If there are differences by aspect of testing,(e.g., reliability vs. validity) be sure to indicate the specific differences in question 1.7.

1.1. What type of data was used for testing? (*Check all the sources of data identified in the measure specifications and data used for testing the measure. Testing must be provided for all the sources of data specified and intended for measure implementation.* ***If different data sources are used for different components in the composite, indicate the component after the checkbox. If different data sources are used for the numerator and denominator, indicate N [numerator] or D [denominator] after the checkbox.***)

Measure Specified to Use Data From: **(*must be consistent with data sources entered in S.23*)**	**Measure Tested with Data From:**
☐ abstracted from paper record	☐ abstracted from paper record
☒ administrative claims	☒ administrative claims
☐ clinical database/registry	☐ clinical database/registry
☐ abstracted from electronic health record	☐ abstracted from electronic health record
☐ eMeasure (HQMF) implemented in EHRs	☐ eMeasure (HQMF) implemented in EHRs
☐ other: Click here to describe	☐ other: Click here to describe

1.2. If an existing dataset was used, identify the specific dataset (*the dataset used for testing must be consistent with the measure specifications for target population and healthcare entities being measured; e.g., Medicare Part A claims, Medicaid claims, other commercial insurance, nursing home MDS, home health OASIS, clinical registry*).

Analysis conducted in New York State Medicaid administrative and encounter data. Reliable source of information for population level quality measurement. Most databases contain consistent elements, are available in a timely manner, provide information about large numbers of individuals, and are relatively inexpensive to obtain and use

1.3. What are the dates of the data used in testing? 2010 and 2011

1.4. What levels of analysis were tested? (*testing must be provided for all the levels specified and intended for measure implementation, e.g., individual clinician, hospital, health plan*)

Measure Specified to Measure Performance of: **(*must be consistent with levels entered in item S.26*)**	**Measure Tested at Level of:**
☐ individual clinician	☐ individual clinician

☐ group/practice	☐ group/practice
☐ hospital/facility/agency	☐ hospital/facility/agency
☒ health plan	☐ health plan
☒ other: Population, state, county, urbanicity and poverty levels	☒ other: Population, state, urbanicity and poverty levels

1.5. How many and which <u>measured entities</u> were included in the testing and analysis (by level of analysis and data source)? (*identify the number and descriptive characteristics of measured entities included in the analysis (e.g., size, location, type); if a sample was used, describe how entities were selected for inclusion in the sample*)

We used New York State Medicaid data. We analyzed the data by race/ethnicity, urbanicity, and poverty levels. Data analyses are now being performed at the county and health plan levels.

1.6. How many and which <u>patients</u> were included in the testing and analysis (by level of analysis and data source)? (*identify the number and descriptive characteristics of patients included in the analysis (e.g., age, sex, race, diagnosis); if a sample was used, describe how patients were selected for inclusion in the sample*)

All New York State Medicaid patients were included in the testing and analysis. More than 196,000 children had identifiable asthma (using our definition) in NY State Medicaid data in 2011 (almost 11% of all children) and nearly 60,000 ED visits for asthma were from the eligible children.

1.7. If there are differences in the data or sample used for different aspects of testing (e.g., reliability, validity, exclusions, risk adjustment), identify how the data or sample are different for each aspect of testing reported below.
The measure is specified at the county and health plan levels but reliability testing for those levels is pending We do not own the data and it has taken some time to negotiate further analysis, which should be completed shortly.

1.8 What were the patient-level sociodemographic (SDS) variables that were available and analyzed in the data or sample used? For example, patient-reported data (e.g., income, education, language), proxy variables when SDS data are not collected from each patient (e.g. census tract), or patient community characteristics (e.g. percent vacant housing, crime rate).

We analyzed race/ethnicity, urbanicity and level of poverty.

2a2. RELIABILITY TESTING

2a2.1. What level of reliability testing was conducted? (*may be one or both levels*)
***<u>Note</u>**: Current guidance for composite measure evaluation states that reliability must be demonstrated for the composite performance measure score.*

☒ **Performance measure score** (e.g., *signal-to-noise analysis*)

2a2.2. Describe the method of reliability testing and what it tests (*describe the steps—do not just name a method; what type of error does it test; what statistical analysis was used*)
A series of detailed literature reviews (scoping reviews) were conducted including regarding the capacity to use administrative data and ICD codes to identify asthma. We confirmed that administrative data were reliable and more so when two years of data were used to identify asthma. We assessed the importance of including hospitalization as denominator events to complement ED visits and found that reliability and sensitivity were improved when both ED visits and hospitalizations were included. This analysis was undertaken using both HCUP national data and the NY State data. We reported these findings at AcademyHealth, that since the vast majority of visits with primary or secondary diagnoses of asthma are from the ED and that not all ED visits are coded for when the child is admitted, that the loss of sensitivity of not including admissions is far worse that than the loss of specificity when including hospitalizations.

We assessed using billing data that revenue codes when used with procedure codes enhanced the already excellent capacity of billing codes to identify the occurrence of events.

We further tested the validity of the measure and are currently awaiting our reliability tests in New York State Medicaid. These tests will consider the extent of statistically significant variation between health plans and between counties, adding those levels to our analyses.

2a2.3. What were the statistical results from reliability testing? (e.*g., percent agreement and kappa for the critical data elements; distribution of reliability statistics from a signal-to-noise analysis*)

We have found statistically significant ($P<0.05$) differences by race of the individual (performance worse in blacks than in whites than in Hispanics), by level of poverty in the county (more poverty worse performance), and by level of urbanicity (cities with worse performance than rural areas). Overall, 16.5% met criteria for both medications and a primary care visit within 6 months. The signal is sufficient that these data reveal meaningful differences between these groups in the hypothesized direction, and consistent with expectations based upon the literature.

- **2a2.4 What is your interpretation of the results in terms of demonstrating reliability**? (i.*e., what do the results mean and what are the norms for the test conducted?*)

We find these data and their consistency with expected findings to be persuasive that the measure is both valid and sensitive to real differences. We await similar data to demonstrate that the measure is reliable both at the county and plan levels.

2b2. VALIDITY TESTING

***Note**: Current guidance for composite measure evaluation states that validity should be demonstrated for the composite performance measure score. If not feasible for initial endorsement, acceptable alternatives include assessment of content or face validity of the composite OR demonstration of validity for each component. Empirical validity testing of the composite measure score is expected by the time of endorsement maintenance.*

2b2.1. What level of validity testing was conducted?

☒ **Composite performance measure score**

- ☒ **Empirical validity testing**
- ☐ **Systematic assessment of face validity of performance measure score as an indicator** of quality or resource use (*i.e., is an accurate reflection of performance on quality or resource use and can distinguish good from poor performance*)
- ☒ **Systematic assessment of content validity**

☒ **Validity testing for component measures** *(check all that apply)*

***Note**: applies to ALL component measures, unless already endorsed or are being submitted for individual endorsement.*

- ☐ **Endorsed (or submitted) as individual performance measures**
- ☒ **Critical data elements** (*data element validity must address ALL critical data elements*)
- ☐ **Empirical validity testing of the component measure score(s)**
- ☒ **Systematic assessment of face validity of component measure score(s) as an indicator** of quality or resource use (*i.e., is an accurate reflection of performance on quality or resource use and can distinguish good from poor performance*)

2b2.2. For each level of testing checked above, describe the method of validity testing and what it tests (*describe the steps—do not just name a method; what was tested, e.g., accuracy of data elements compared to authoritative source, relationship to another measure as expected; what statistical analysis was used)*

We utilized a peer reviewed method the 360 degree approach that was incorporated by the CAPQuaM, an AHRQ-CMS CHIPRA Center of Excellence. It incorporates the findings of a RAND modified Delphi panel. For this measure we accepted median scores of 8 or 9 out of 9 to incorporate any element into measure. This is a more conservative rubric than the literature which often includes those rated 7 of 9.

The composite elements of this measure were derived from the findings of the panel as was guidance for stratification. Examples of specific ratings abstracted from the hundreds reviewed include...

3.30	Not having had a primary care or asthma specialist visit within 1 month of the ED visit suggests that the asthma was not well managed.		3
3.31	Not having had a primary care or asthma specialist visit within 2 months of the ED visit suggests that the asthma was not well managed.		3
3.32	Not having had a primary care or asthma specialist visit within 3 months of the ED visit suggests that the asthma was not well managed.		4
3.33	Not having had a primary care or asthma specialist visit within 4 months of the ED visit suggests that the asthma was not well managed.		5

3.34	Not having had a primary care or asthma specialist visit within 6 months of the ED visit suggests that the asthma was not well managed.		8
3.35	Not having had a primary care or asthma specialist visit within 12 months of the ED visit suggests that the asthma was not well managed.		8
3.38	Prescription of controller medications is indicative of well managed asthma.		8
3.39	Regular use of controller medications is indicative of well managed asthma		8
3.63	A lack of filled prescription of a controller medications for a child with persistent symptoms is suggestive of poorly managed asthma.		9
3.64	At least one prescription for a short acting beta agonist within the previous 12 months is essential for the management of a child with asthma		9

- We assessed how stable various measures were to small changes in their specifications and have identified measures that we found to be robust to such changes and consistent with the recommendations of our Expert Panel.
    - Testing revealed the importance of using revenue codes as well as CPT codes
    - We incorporate validated NCQA code sets into this measure for numerator determinations, unmodified for medication and slightly modified for primary care visits to restrict to outpatient visits.
- Our definition of identifiable asthma was selective but not overly restrictive
    - It identified nearly 200,000 children, eliminating about 13% of children with any asthma codes in New York State Medicaid, and as intended it was far more inclusive than the HEDIS persistent asthma definition.
    - It achieves our dual goals of selecting from among all children who show signs or symptoms of asthma and being more inclusive than existing measures.

As noted above in reliability, the measure identified theoretically sound and predicted differences among groups of children.

The literature supports the use of our data elements.

Our literature review found that while there is moderate agreement (kappa = 0.45 - 0.50) when comparing administrative data regarding the presence of constructs such as recent asthma attacks, use of asthma medications, attack or medication, attack and medication, using 1 year of administrative claims data to parent report, the agreement improves from 0.55 to 0.60 when using two years of data.(1) We expect that these kappas would be significantly higher were the analyses restricted to children with disease that met our construct criteria for identifiable asthma.

ICD-9 and ICD-10 codes for asthma on patients' medical charts typically match claims data. ICD-9-CM administrative data have been validated using various methodologies for various purposes (2-10). As examples: Jollis et. al. compared insurance claims data to the clinical database data to identify patients using ICD-9-CM codes for selected diagnoses and found that when all diagnoses were included, overall kappa agreement was .75 (2). Lee et. al. compared heart failure diagnoses identified in ICD-9 to the Framingham clinical criteria as the gold standard and found a positive predictive value of 94.3% (3). Muhajarine et. al. compared self-reported heart health survey data to physician claims from a database registry and found an

overall agreement for hypertension of 81.7% indicating moderate to high agreement(4).Quan et. al. tested administrative discharge data to chart data for recording of comorbidity information using a Charlson index for measurement. Overall agreement of the Charlson index was good between databases but decreased as burden of comorbidity increased. Despite the differences, the Charlson index score derived from the administrative data had an identical ability of predicting in-hospital mortality to the score derived from chart data (5). Weiner and colleagues advocate a broad use of administrative data for monitoring quality and our uses fall within their recommendations (6). Romano and Mark assessed the sensitivity and reliability of coding for common diagnoses and procedures using California discharge abstracts and found in 7 of 8 comorbidity categories, sensitivity exceeded 85% (7). Weingart et. al. used administrative data, specifically a complications screening algorithm to identify inpatient complications using physician judgment as the gold standard and found flagged complications in 68.4% of surgical cases and 27.2% of medical cases (8). Yasmeen et. al. examined the sensitivity and positive predictive value to validate the coding of obstetric diagnoses and procedures in hospital-reported data using the medical record as the gold standard and found that surgical procedures and birth deliveries were accurately reported with sensitivities and PPVs exceeding 90% (9). Quam et.al. found that claims data that includes diagnostic and pharmacy data yields a high level of concordance with the medical record and survey data in the identification of a specific medical condition (10). Studies have shown high sensitivity of 72% and specificity of 95% for high risk conditions with overall accuracy of 90% obtained from administrative billing data among children with high-risk conditions including asthma which made up 87% of the high risk conditions (11), and high predictive value among adolescents and adults with asthma (12). Twiggs et. al. found that the combined use of both medical and pharmaceutical claims was more effective in identifying asthmatics than either one by itself (13). HEDIS criteria using administrative data support peer reviewed research, for example in patients with persistent asthma based on HEDIS criteria in five Medicaid programs (Colorado, Georgia, Indiana, New Jersey, Washington) using ICD-9-CM code 493.x to measure filling prescriptions of asthma control medication and the ratio of controller medication to the total number of medication prescriptions filled within one year (14). Fowles and colleagues report sensitivity and specificity of claims compared with ambulatory medical records to identify asthma was 0.82 and 0.99, respectively. Sensitivity of .82 using claims was higher than sensitivity using self-report at .64 (15). Wilchesky compared chart abstraction to diagnoses obtained from administrative database: asthma claims were highly specific, Sp= 96.76 (95%CI 96.5, 97.0). Although sensitivity for most conditions was below 60%, sensitivity was enhanced when all claims for services were assessed, as we propose to do (16). Bronstein et al found that 88.3% of diagnoses asthma on claims agreed with medical record, with a negative predictive value of 0.85 and a positive predictive value of 0.88.They conclude that claims are generally an accurate indicator of the content of a patient encounter. (17) Steinwachs et al. compared billed claims to medical records based on date of visit and diagnosis, on average, 90% of billed visits were documented in the medical record, for asthma there was 90.9 percent of billed visits in record on same date and 82.8 percent of billed visits with same diagnosis in record on same date. (18) Quan et al documented the validity of ICD-9-CM and ICD-10 coding systems in coding clinical information and found that ICD-10 data was generally comparable with that of ICD-9-CM data in recording clinical information (19). Regarding our capacity to identify exclusions, Quan et al found that claims had a PPV of

91.9, and a negative predictive value of 92.6, with *k* of 0.65 (substantial agreement[2]) compared to chart review for chronic pulmonary disease . ICD 10 performed similarly in this study (19).

From a public health perspective, asthma surveillance systems in several states, including Maine, North Carolina, Connecticut and Michigan, have shown the feasibility of using administrative data to identify children having asthma, based on primary and secondary diagnosis codes reported on inpatient and outpatient claims. In addition to identifying asthma, important demographic data such as gender, race/ethnicity, program of enrollment and county of residence (urbanicity) can be used to assess associations between utilization services for asthma, including ED visits or hospitalizations, and demographic characteristics. Risk factor information from administrative data can be used to target educational programs, clinical assessments, and treatment programs (20-23).

Researchers also classified children with evidence of persistent asthma using HEDIS criteria, (24). Another study showed the usefulness of ICD9 493.x to identify asthma for a quality measure using Maryland Medicaid Claims data (25). Like our measure, those researchers excluded children with a diagnosis of cystic fibrosis (ICD9 277) (25). Schneeweiss commented that misclassification errors from claims data are asymmetric, with specificity typically exceeding 95% and sensitivity often less (26). Such a pattern makes it unlikely that an accountable entity would be held accountable for patients that do not actually have asthma.

As part of an alpha test for our measure we used a contractor to survey more than a dozen hospitals across three CAPQuaM measure sets. Responses from 10 hospitals were specific to asthma. We found that variables including date of birth, race, ethnicity, county of residence, primary and secondary diagnosis of asthma in the ED, hospitalizations, payment source, and others were reported to be readily available and easy to within the medical record.

In light of the literature review and our alpha test, we attest that the data elements for the measure match those assessed in the literature and our alpha test, with most being supported by both the literature review and the alpha test.

To summarize please see table below:

[2] The *k* value indicates a near perfect agreement (*k*: 0.81-1.0 between coded data and chart review data), substantial agreement (*k*: 0.61-0.80), moderate agreement (*k*: 0.41-0.60), and fair agreement (*k:* 0.21-0.40).

Data element	**Reference** (e.g., Quam, et al., 1993)	**Data source** (e.g., Medicare FFS outpatient data)	**Statistical results** (e.g., kappa, sensitivity, specificity, etc.)
Numerator			
Asthma diagnosis in clinic/outpatient setting	Wilchesky, M., Tamblyna, R. M., & Huang, A. (2004). Validation of diagnostic codes within medical services claims. Journal of Clinical Epidemiology, 57, 131-141.	Drug utilization review, the Charlson comorbidity index and the Johns Hopkins Adjusted Care Group Case-Mix profile (ADGs).	Asthma claims were highly specific, Sp= 96.76 (95%CI 96.5, 97.0).
Fill of short acting beta agonist Fill of asthma controller medication • anti- asthmatic combination • antibody inhibitor • inhaled steroid combinations • inhaled corticosteroids (alone or in combination) • leukotriene modifiers • methylxanthines (alone or in combination) • mast cell stabilizers	Samnaliev, M., Baxter, J. D., & Clark, R. E. (2009). Comparative evaluation of two asthma care quality measures among Medicaid beneficiaries. Chest, 135(5), 1193-1196. Mudd KE, Bollinger ME, Hus VD, et al. Concordance of Mediaciad and pharmacy record data in inner-city children with asthma. Contemporary Clinical Trials 29(2008) 13-20 Grymonpre R, Xheang M, Fraser M, et al. cvalidity of Precritpion Claims Database to Estimate Medication Adherence in Older Persons	Using complete claims and pharmaceutical data for 19,076 patients with persistent asthma (based on Health Effectiveness and Data Information Set criteria) in five Medicaid populations (Colorado, Georgia, Indiana, New Jersey, Washington) using ICD-9-CM code 493.x to measure filling prescriptions of asthma control medication. Comparison of pharmacy records and Medicaid clams Manitoba prescription claims and pill	Sensitivity and specificity were combined into one statistic, the area under the ROC curve. For controller medications, the area under ROC curve is 0.705, which represents good agreement. For inner city children on Medicaid, Medicaid claims was sensitive compared to pharmacy records, identifying 91.3% of pharmacy claims for ICS, 94.7% for SABA and 90.4% for leukotriene modifiers (Table 2)

	e.g. Samnaliev M, Baxter JD, and Clark RE. Comparative Evaluation of Two Asthma Care Quality Measure Among Medicaid Beneficiaries. Berger WE, Legorreta AP, Blaiss MS, et al. The Utility of the HEDIS Asthma Measure to predict asthma related outcomes. Annals of Allergy, Asthma, and Immunology. 93:538-545. 2004.	count for medication adherence A number of studies found that asthma drug data using the similar HEDIS data elements that we propose were valid for predicting things like emergency department use in asthma patients. As indicated in this article: "HEDIS has become an important industry standard…adopted by regulators, consumers, and public purchasers of health care" Commercial claims	Using a much stronger standard of actual compliance, this study found for multiple condition for two conditions in adults that there was strong concordance (79% and 88% respectively) between pill counts and admisntrative claims data. Not specific for asthma meds Controller medication use was associated with fewer ED visits across 5 states, with OR ranging from 0.30 to 0.47, all significant, overall 0.34 (0.32-0.36). Used actual HEDIS pharmacy code set as do we. Low Controller use had an adjusted odds ratio of 1.72 (1.42-2.08) of ED visit or hospitalization. Those with moderate and higher adherence had graded reductions in undesirable outcomes in the predicted fashion (OR, .84 and 0.72 respectively)
Denominator			
Asthma diagnosis in inpatient/ED settings	Wilchesky, M., Tamblyna, R. M., & Huang, A. (2004). Validation of diagnostic codes within medical services claims. Journal of Clinical Epidemiology, 57, 131-141.	Drug utilization review, the Charlson comorbidity index and the Johns Hopkins Adjusted Care Group Case-Mix profile (ADGs).	Asthma claims were highly specific, Sp= 96.76 (95%CI 96.5, 97.0).
Asthma diagnosis in ambulatory setting	Fowles, J. B., Fowler, E. J., & Craft, C. (1998). Validation of claims diagnoses and self-reported conditions compared with medical records for selected chronic diseases. Journal of Ambulatory Care	Multispecialty group practice in Minneapolis, Minnesota	Sensitivity and specificity was 0.82 and 0.99, respectively. Sensitivity of .82 using claims was higher than sensitivity using self-report at .64

	Management, 21(1), 24-34.		
Bronchitis diagnosis in ambulatory setting	Improving Healthcare for the Common Good (IPRO). Avoidance of Antibiotic Treatment in Adults with Acute Bronchitis. May 2011. http://www.health.ny.gov/health_care/managed_care/reports/docs/adults_antibiotic.pdf	New York Medicaid managed care members	An IPRO analysis of ambulatory claims data in NY State Medicaid found that of 651 individuals with an administrative claim for bronchitis, 629 (96.6%) were confirmed by chart review.
Prescription of short acting beta agonist in ambulatory setting	Samnaliev, M., Baxter, J. D., & Clark, R. E. (2009). Comparative evaluation of two asthma care quality measures among Medicaid beneficiaries. Chest, 135(5), 1193-1196.	Using complete claims and pharmaceutical data for 19,076 patients with persistent asthma (based on Health Effectiveness and Data Information Set criteria) in five Medicaid populations (Colorado, Georgia, Indiana, New Jersey, Washington) using ICD-9-CM code 493.x to measure filling prescriptions of asthma control medication.	Sensitivity and specificity were combined into one statistic, the area under the ROC curve. For controller medications, the area under ROC curve is 0.705 and the Deviance is 21,749.
Prescription of other asthma medications in ambulatory setting (see list above)	Samnaliev, M., Baxter, J. D., & Clark, R. E. (2009). Comparative evaluation of two asthma care quality measures among Medicaid beneficiaries. Chest, 135(5), 1193-1196.	Using complete claims and pharmaceutical data for 19,076 patients with persistent asthma (based on Health Effectiveness and Data Information Set criteria) in five Medicaid populations (Colorado, Georgia, Indiana, New Jersey, Washington) using ICD-9-CM code 493.x to measure filling prescriptions of asthma control medication.	Both administrative measures of asthma care quality were associated with lower odds of ED utilization. The controller medication measure of asthma care quality may be better than the ratio measure in relation to emergency asthma care utilization by Medicaid beneficiaries.
Age	NYSDOH CAPQuaM Analysis – internal testing	NY State Medicaid Data	Meaningful variation by age groups as predicted, with peaks in younger children and older adolescents.
	CMS MMIS data requirements Exemplar specifications at https://www.cms.gov/Research-Statistics-Data-and-Systems/Computer-Data-and-Systems/MSIS/downloads/msis	State Medicaid MMIS systems	States are required to submit validated claims data including age or date of birth. With tolerance of 0.1%

	dd2010.pdf		
Exclusions			
Diagnosis of COPD	Rawson NS, Malcolm E., validity of the recording of ischaemic heart disease and chronic obstructive pulmonary disease in the Saskatchewan health care datafiles. State Med. 1995. Dec 30: 14 (24):2627-43.	Administrative health care datafiles of the Canadian province of Saskatchewan	Comparisons between hospital data and medical charts for chronic airways obstruction patients showed excellent diagnostic agreement at 94%. In other words, the charted discharge diagnosis from the patient's medical record showed exact agreement for 94.2% of these patients.
	Ginde AA, Tsai CL, Blanc PG, Camargo CA Jr. Positive predictive value of ICD-9-CM codes to detect acute exacerbation of COPD in the emergency department. Jt Comm J Qual Patient Saf.2008;34(11):678–680.	Two academic emergency departments.	The overall positive predictive value for the presence of any of the specified codes, including COPD, was 97%. The positive predictive value for a code of 496 alone was 60% (95% CI 32-84%).
	Gershon AS, Wang C, Guan J, Vasilevska-Ristovska J, Cicutto L, To T. Identifying individuals with physician diagnosed COPD in health administrative databases. Copd. 2009;6(5):388 –394. doi: 10.1080/15412550903140865.	Claims in Ontario, Canada	The combination of one or more outpatient ICD-9 codes (491.xx, 492.xx, 496.xx) and ICD-10 inpatient ICD-10 codes (J41, J43, J44) had a sensitivity of 85% and specificity of 78.4% among 113 patients with COPD and 329 patients without COPD.
Diagnosis of COPD Diagnosis of cystic fibrosis Diagnosis of emphysema	Quan, H., Li, B., Saunders, L. D., Parsons, G. A., Nilsson, C. I., Alibhai, A., et al. (2008). Assessing validity of icd-9-cm and icd-10 administrative data in recording clinical conditions in a unique duallycoded database. HSR: Health Services Research, 43(4), 1424.	Four teaching hospitals in Alberta, Canada	Claims had a PPV of 91.9, and a negative predictive value of 92.6, with *k* of 0.65 (substantial agreement[3]) compared to chart review for chronic pulmonary disease. ICD 10 performed similarly in this study

[3] The *k* value indicates a near perfect agreement (*k*: 0.81-1.0 between coded data and chart review data), and substantial agreement (*k*: 0.61-0.80).

(Exclusions identified anywhere are excluded. The measure is written to over exclude if need be, but our data suggest that exclusions are uncommon.	NCQA: http://www.qualityforum.org/QPS/QPSTool.aspx?m=367&e=1	The presence of diagnostic exclusions was extensively tested on the entire field test population (>82,000 members) to determine the effect on eligible population and the measure results experienced as a result of the application of clinical exclusions.	This measure was deemed valid by the expert panel and approved by NCQA's Committee on Performance Measurement (CPM) for continued inclusion in HEDIS[4]

[4] We note that 1799 and 1800 are not directly applicable because they were tested at the score level. However, the scores were dependent upon definitions which use the same data element level as our measure and thus provide indirect evidence of the capacity of a measure using such data elements to produce valid scores.

Thus we cite them not as specific evidence of our score level performance of the submitted measure, but as evidence that the HEDIS measures that rely on the same administrative data elements for their denominator have the capacity to distinguish signal to noise at a very high level. While the evidence is indirect it is dispositive. That is, we assert that had the data elements been inadequate it would result in non-differential misclassification error which is a major bias towards the null thus introducing noise and reducing signal. That this does not happen to an appreciable degree specifically implies that the data elements function well – indeed this could be one rationale for why NQF allows the use of performance score level analysis in the first place. <u>These findings provide strong indirect evidence of the validity of our approach to capturing the measure's denominator.</u>

There is nearly complete overlap of the denominator codes and there is overlap of the denominator elements. Where codes differ it is specific to decisions made by the CAPQuaM expert panel which was aware of the NCQA measures. Review of the medication lists for 0036 reveal that all medication used by the submitted CAPQuaM measure are also in the HEDIS measure. The CAPQuaM measure excludes specifically short acting beta agonists and leukotriene inhibitors at the specific direction of the CAPQuaM expert panel. We also specify exclude indacaterol from the list of "asthma specific medications" since it is a long acting beta agonist which is only indicated in the USA for treatment of COPD, which is a specific exclusion criterion for this measure.

Further, we identify asthma visits and medications using the same data that an insurance company or Medicaid would use for payment, including ICD codes, CPT codes, and revenue codes. We have had conversations with expert coders and New York State Department of Health Office of Health Insurance Programs to confirm our choices. Our literature review found that while there is moderate agreement (kappa = 0.45 - 0.50) when comparing administrative data regarding the presence of constructs such as recent asthma attacks, use of asthma medications, attack or medication, attack and medication, using 1 year of administrative claims data to parent report, the agreement improves from 0.55 to 0.60 when using two years of data.(1) We expect that these kappas would be significantly higher were the analyses restricted to children with disease that met our construct criteria for identifiable asthma.

The literature further supports our work as highlighted above in the table and in more detail in our testing form 2b2.3 (validity testing).

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2b2.3. What were the statistical results from validity testing? (*e.g., correlation; t-test*)

Chi square analyses support group to group differences were significant when studying race/ethnicity, level of poverty, and level of urbanicity in our data.

2b2.4. What is your interpretation of the results in terms of demonstrating validity? (i.*e., what do the results mean and what are the norms for the test conducted?*)
Meaningful differences among groups in predicted and theoretically sound directions were observed. Those known or believed to receive lower quality care had lower performance scores. There is a broad evidence and consensus that data elements can be used as we propose to use them.

2b3. EXCLUSIONS ANALYSIS
Note: *Applies to the composite performance measure, as well all component measures unless they are already endorsed or are being submitted for individual endorsement.*
NA ☐ no exclusions — *skip to section 2b4*

2b3.1. Describe the method of testing exclusions and what it tests (*describe the steps—do not just name a method; what was tested, e.g., whether exclusions affect overall performance scores; what statistical analysis was used*)
For clinical reasons and based upon expert panel recommendations we identified few diagnostic categories (cystic fibrosis, chronic obstructive lung disease, and emphysema). These represent clinically distinct groups who do not belong in a measure of asthma performance. Fortunately all are rare in children.

2b3.2. What were the statistical results from testing exclusions? (*include overall number and percentage of individuals excluded, frequency distribution of exclusions across measured entities, and impact on performance measure scores*)
This analysis is pending.

2b3.3. What is your interpretation of the results in terms of demonstrating that exclusions are needed to prevent unfair distortion of performance results? (*i.e., the value outweighs the burden of increased data collection and analysis. Note: **If patient preference is an exclusion**, the measure must be specified so that the effect on the performance score is transparent, e.g., scores with and without exclusion*)

Exclusions enhance the face validity of the measure meaningfully. The analytical time to create the exclusions is small and does not impact feasibility.

2b4. RISK ADJUSTMENT/STRATIFICATION FOR OUTCOME OR RESOURCE USE MEASURES
Note: *Applies to all outcome or resource use component measures, unless already endorsed or are being submitted for individual endorsement.*
If not an intermediate or health outcome, or PRO-PM, or resource use measure, skip to section 2b5.

2b4.1. What method of controlling for differences in case mix is used? *(check all that apply)*
☐ **Endorsed (or submitted) as individual performance measures**
☒ **No risk adjustment or stratification**
☐ **Statistical risk model**
☐ **Stratification by risk categories**

☒ **Other,** Stratification by race to elucidate findings but not to risk adjust. Also report stratification by components achieved.

2b4.1.1 If using statistical risk models, provide detailed risk model specifications, including the risk model method, risk factors, coefficients, equations, codes with descriptors, and definitions.

2b4.2. If an outcome or resource use component measure is <u>not risk adjusted or stratified</u>, provide <u>rationale and analyses</u> to demonstrate that controlling for differences in patient characteristics (case mix) is not needed to achieve fair comparisons across measured entities.

2b4.3. Describe the conceptual/clinical <u>and</u> statistical methods and criteria used to select patient factors (clinical factors or sociodemographic factors) used in the statistical risk model or for stratification by risk (*e.g., potential factors identified in the literature and/or expert panel; regression analysis; statistical significance of p<0.10; correlation of x or higher; patient factors should be present at the start of care*)

2b4.4a. What were the statistical results of the analyses used to select risk factors?

2b4.4b. Describe the analyses and interpretation resulting in the decision to select SDS factors (e.g. prevalence of the factor across measured entities, empirical association with the outcome, contribution of unique variation in the outcome, assessment of between-unit effects and within-unit effects)

The NIH Guideline specifically recommends against risk adjustment when considering asthma with similar expectations for the management of all children. These metrics should be equal across strata.

2b4.5. Describe the method of testing/analysis used to develop and validate the adequacy of the statistical model <u>or</u> stratification approach (*describe the steps—do not just name a method; what statistical analysis was used*)

Provide the statistical results from testing the approach to controlling for differences in patient characteristics (case mix) below.
If stratified, skip to <u>2b4.9</u>

2b4.6. Statistical Risk Model Discrimination Statistics (*e.g., c-statistic, R-squared*)**:**

2b4.7. Statistical Risk Model Calibration Statistics (*e.g., Hosmer-Lemeshow statistic*):

2b4.8. Statistical Risk Model Calibration – Risk decile plots or calibration curves:

2b4.9. Results of Risk Stratification Analysis:

Component stratification
(1) Visit(s) to a primary care clinician with a primary or secondary diagnosis of asthma that occurred within 6 months prior to an ED visit/hospital admission (but not on the day of the ED visit/admission) (A only)

- 28.8% had primary care visit with asthma as primary or secondary diagnosis <= 6 months before the ED visit (18.5% <= 4 months and 11.9% <= 3 months)

(2) Have at least one fill of a short acting beta agonist within 12 months prior to the ED visit/hospital admission (B only)

- 72.4% had filled a SABA prescription <= 12 months prior to the visit

(3) Have at least one fill of an asthma controller medication within 6 months prior to the ED visit/hospital admission (C only)

- 25.8% had a filled controller prescription <= 6 months prior to the ED visits

(4) Have a prescription filled for both a rescue medication and a controller medication within the specified time frames (BOTH B and C only)

- 23.3% met both medication criteria

(5)Have no prescriptions filled for rescue medications or controller medications within the specified time frames (NEITHER B nor C)

- 18.7% had prescriptions for neither

(6) Have neither a qualifying primary care visit, nor had fills for both a rescue medication and a controller medication within the specified time frames (Neither A nor at least one of B or C)

- 64.4% met neither the medication criteria nor the 6 month primary care visit criteria

2b4.10. What is your interpretation of the results in terms of demonstrating adequacy of controlling for differences in patient characteristics (case mix)? (i.*e., what do the results mean and what are the norms for the test conducted*)

2b4.11. Optional Additional Testing for Risk Adjustment (*not required, but would provide additional support of adequacy of risk model, e.g., testing of risk model in another data set; sensitivity analysis for missing data; other methods that were assessed*)

2b5. IDENTIFICATION OF STATISTICALLY SIGNIFICANT & MEANINGFUL DIFFERENCES IN PERFORMANCE

Note: *Applies to the composite performance measure.*

2b5.1. Describe the method for determining if statistically significant and clinically/practically meaningful differences in performance measure scores among the measured entities can be identified (*describe the steps—do not just name a method; what statistical analysis was used? Do not just repeat the information provided related to performance gap in 1b)*

We have demonstrated statistically significant differences between races, by poverty in the county, and by urbanicity.

We currently are analyzing the performance measure at the county level and at the health plan level to confirm that there is significant signal to identify statistically significant differences within the Medicaid health plans and between the counties of NY State.

2b5.2. What were the statistical results from testing the ability to identify statistically significant and/or clinically/practically meaningful differences in performance measure scores across measured entities?

(e.g., *number and percentage of entities with scores that were statistically significantly different from mean or some benchmark, different from expected; how was meaningful difference defined*)

See above and pending per above.

2b5.3. What is your interpretation of the results in terms of demonstrating the ability to identify statistically significant and/or clinically/practically meaningful differences in performance across measured entities? (i.*e., what do the results mean in terms of statistical and meaningful differences?*)
The measure is sufficiently precise to describe the health care of specified populations and to distinguish such performance. We are pending data that confirm that at county and health plan levels the measure is significantly granular to identify meaningful differences.

2b6. COMPARABILITY OF PERFORMANCE SCORES WHEN MORE THAN ONE SET OF SPECIFICATIONS
Note: *Applies to all component measures, unless already endorsed or are being submitted for individual endorsement.*
If only one set of specifications, this section can be skipped.

Note*: This item is directed to measures that are risk-adjusted (with or without SDS factors)* ***OR*** *to measures with more than one set of specifications/instructions (e.g., one set of specifications for how to identify and compute the measure from medical record abstraction and a different set of specifications for claims or eMeasures). It does not apply to measures that use more than one source of data in one set of specifications/instructions (e.g., claims data to identify the denominator and medical record abstraction for the numerator).* ***Comparability is not required when comparing performance scores with and without SDS factors in the risk adjustment model. However, if comparability is not demonstrated for measures with more than one set of specifications/instructions, the different specifications (e.g., for medical records vs. claims) should be submitted as separate measures.***

2b6.1. Describe the method of testing conducted to compare performance scores for the same entities across the different data sources/specifications (*describe the steps—do not just name a method; what statistical analysis was used*)

2b6.2. What were the statistical results from testing comparability of performance scores for the same entities when using different data sources/specifications? (*e.g., correlation, rank order*)

2b6.3. What is your interpretation of the results in terms of the differences in performance measure scores for the same entities across the different data sources/specifications? (i.*e., what do the results mean and what are the norms for the test conducted?*)

2b7. MISSING DATA ANALYSIS AND MINIMIZING BIAS
Note: *Applies to the overall composite measure.*

2b7.1. Describe the method of testing conducted to identify the extent and distribution of missing data (or nonresponse) and demonstrate that performance results are not biased due to systematic missing data (or differences between responders and nonresponders) and how the specified handling of missing data

minimizes bias (*describe the steps—do not just name a method; what statistical analysis was used*)

Specifications make including individuals with missing data very unlikely. Our literature review shows that billing data is reliable.

2b7.2. What is the overall frequency of missing data, the distribution of missing data across providers, and the results from testing related to missing data? (*e.g., results of sensitivity analysis of the effect of various rules for missing data/nonresponse; if no empirical sensitivity analysis, identify the approaches for handling missing data that were considered and pros and cons of each*)

2b7.3. What is your interpretation of the results in terms of demonstrating that performance results are not biased due to systematic missing data (or differences between responders and nonresponders) and how the specified handling of missing data minimizes bias**?** (i.*e., what do the results mean in terms of supporting the selected approach for missing data and what are the norms for the test conducted; if no empirical analysis, provide rationale for the selected approach for missing data*)

2c. EMPIRICAL ANALYSIS TO SUPPORT COMPOSITE CONSTRUCTION APPROACH
Note: *If empirical analyses do not provide adequate results—or are not conducted—justification must be provided and accepted in order to meet the must-pass criterion of Scientific Acceptability of Measure Properties. Each of the following questions has instructions if there is no empirical analysis.*

2d1. Empirical analysis demonstrating that the component measures fit the quality construct, add value to the overall composite, and achieve the object of parsimony to the extent possible.

2d1.1 Describe the method used (*describe the steps—do not just name a method; what statistical analysis was used; if no empirical analysis, provide justification)*

Components vary by categorical groups as described above in a manner similar to the over measure. Components were identified during a formal RAND style expert Delphi process.

2d1.2. What were the statistical results obtained from the analysis of the components? (e.g., *correlations, contribution of each component to the composite score, etc.*; *if no empirical analysis, identify the components that were considered and the pros and cons of each*)

2d1.3. What is your interpretation of the results in terms of demonstrating that the components included in the composite are consistent with the described quality construct and add value to the overall composite? (i.*e., what do the results mean in terms of supporting inclusion of the components; if no empirical analysis, provide rationale for the components that were selected)*

The stratifications data provided above demonstrate that the components each add value to the measure. Not all who receive medications receive visits and vice versa. Further while most who receive controller medications receive rescue medications, not all do.

The composite measure is stronger and more informative than the individual component measures.

2d2. Empirical analysis demonstrating that the aggregations and weighting rules are consistent with the quality construct and achieve the objective of simplicity to the extent possible

2d2.1 Describe the method used (*describe the steps—do not just name a method; what statistical analysis was used; if no empirical analysis, provide justification)*

2d2.2. What were the statistical results obtained from the analysis of the aggregation and weighting rules? (e.g., *results of sensitivity analysis of effect of different aggregations and/or weighting rules; if no empirical analysis, identify the aggregation and weighting rules that were considered and the pros and cons of each*)

2d2.3. What is your interpretation of the results in terms of demonstrating the aggregation and weighting rules are consistent with the described quality construct? (i.e., *what do the results mean in terms of supporting the selected rules for aggregation and weighting; if no empirical analysis, provide rationale for the selected rules for aggregation and weighting*)

3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

3a. Byproduct of Care Processes

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).

3a.1. **Data Elements Generated as Byproduct of Care Processes.**
Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims)
If other:

3b. Electronic Sources

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

3b.1. **To what extent are the specified data elements available electronically in defined fields** (*i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields*) Update this field for **maintenance of endorsement**.
ALL data elements are in defined fields in a combination of electronic sources

3b.2. **If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources.** For **maintenance of endorsement**, if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).

3b.3. **If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL. Please also complete and attach the NQF Feasibility Score Card.**
Attachment:

3c. Data Collection Strategy

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements

and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

3c.1. **Required for maintenance of endorsement. Describe difficulties (as a result of testing and/or operational use of the measure) regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.**
IF a PRO-PM, consider implications for both individuals providing PRO data (patients, service recipients, respondents) and those whose performance is being measured.
Measure is based on administrative data and therefore is very feasible with generally available data. A feasibility study was conducted at more than a dozen hospitals that confirms that both data elements are generally available in the hospital chart, frequently electronically

3c.2. **Describe any fees, licensing, or other requirements to use any aspect of the measure as specified** *(e.g., value/code set, risk model, programming code, algorithm)*.
There are no fees, licensing or other requirements to use any aspect of the measure as specified at this time.

4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

4.1. **Current and Planned Use**
NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.

Specific Plan for Use	Current Use (for current use provide URL)
Not in use	

4a.1. **For each CURRENT use, checked above (update for maintenance of endorsement), provide:**

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included
- Level of measurement and setting

4a.2. **If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons?** (*e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?*)
We are awaiting NQF endorsement for use. There are no policies or actions of the developer/steward or accountable entities that would restrict access to performance results or impeded implementation.

4a.3. **If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement.** (*Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.*)
The measure is a straightforward approach to identifying effective connection with the health care system prior to the ED visit and/or hospitalization. Our analyses in NY State Medicaid data confirmed feasibility, usability, and responsiveness of the measures to substantive constructs including race/ethnicity, and county level measures of poverty and urbanicity. We find these data and their

consistency with expected findings to be persuasive that the measure is both valid and sensitive to real differences. Therefore when this measure is endorsed by NQF, it will be applicable to a variety of settings and organizations.

Improvement
Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4b. **Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (trends in performance results, number and percentage of people receiving high-quality healthcare; Geographic area and number and percentage of accountable entities and patients included.)**
If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4c. Unintended Consequences

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

4c.1. **Please explain any unexpected findings (positive or negative) during implementation of this measure including unintended impacts on patients.**

4c.2. **Please explain any unexpected benefits from implementation of this measure.**

4d1.1. **Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.**
How many and which types of measured entities and/or others were included? If only a sample of measured entities were included, describe the full population and how the sample was selected.

4d1.2. **Describe the process(es) involved, including when/how often results were provided, what data were provided, what educational/explanatory efforts were made, etc.**

4d2.1. **Summarize the feedback on measure performance and implementation from the measured entities and others described in 4d.1.**
Describe how feedback was obtained.

4d2.2. **Summarize the feedback obtained from those being measured.**

4d2.3. **Summarize the feedback obtained from other users**

4d.3. **Describe how the feedback described in 4d.2 has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.**

5. Comparison to Related or Competing Measures

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

5. Relation to Other NQF-endorsed Measures
Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.
No

5.1a. **List of related or competing measures (selected from NQF-endorsed measures)**

5.1b. **If related or competing measures are not NQF endorsed please indicate measure title and steward.**

5a. Harmonization of Related Measures

The measure specifications are harmonized with related measures;
OR
The differences in specifications are justified

5a.1. **If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):**
Are the measure specifications harmonized to the extent possible?

5a.2. **If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.**

5b. Competing Measures

The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);
OR
Multiple measures are justified.

5b.1. **If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):**
Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)

Appendix

A.1 Supplemental materials may be provided in an appendix. All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.
Attachment **Attachment:** Appendix_Evidence.pdf

Contact Information

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Co.3 **Measure Developer if different from Measure Steward:** University Hospitals Cleveland Medical Center
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Additional Information

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Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.

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Measure Developer/Steward Updates and Ongoing Maintenance Ad.2 **Year the measure was first released:** Ad.3 **Month and Year of most recent revision:** Ad.4 **What is your frequency for review/update of this measure?** Ad.5 **When is the next scheduled review/update for this measure?**
Ad.6 **Copyright statement:** Ad.7 **Disclaimers:**
Ad.8 **Additional Information/Comments:**

MEASURE WORKSHEET

This document summarizes the evaluation of the measure as it progresses through NQF's Consensus Development Process (CDP). The information submitted by measure developers/stewards is included after the Brief Measure Information, Preliminary Analysis, and Pre-meeting Public and Member Comments sections.

To navigate the links in the worksheet: Ctrl + click link to go to the link; ALT + LEFT ARROW to return

Brief Measure Information

NQF #: 3171
Measure Title: Percentage of Asthma ED visits followed by Evidence of Care Connection
Measure Steward: University Hospitals Cleveland Medical Center
Brief Description of Measure: This measure seeks to capture important aspects of follow up after ED visits for asthma, including prompt follow up with primary care clinicians and prescription fills for controller medications. This measure characterizes care that follows Emergency Department (ED) visits with a primary or secondary diagnosis of asthma for children ages 2-21 that occur in the Reporting Year and who are enrolled in the health plan for two consecutive months following the ED visit.

We further stratify those visits into those that occurred for children who can or cannot be identified as having asthma, using the specified definitions. We are operationalizing an identifiable asthmatic as a child who has utilized health care services that suggest the health care system has enough information to conclude that the child has an asthma diagnosis that requires ongoing care. We incorporate a 2 year look back period before the reporting year.

Specifically, this measure describes the connection with the primary care system (timely visits to primary care providers and filling of controller asthma medications) following ED visits for children with asthma.
Developer Rationale: In-depth literature reviews indicate that asthma is a prevalent chronic condition in children. Also, ED visits for asthma care are a common, costly, and potentially preventable health service that may serve as a marker for both insufficiency of primary care and insufficiency of clinical management of asthma by the partnership of the family and the health care team. These aspects of the composite measure are key determinants of having care coordination after an ED visit for primary or secondary diagnosis of asthma. These determinants are also areas that can significantly enhance health outcomes should they be addressed.

Numerator Statement: Evidence of connection to the primary care medical system following ED visits that have a primary or secondary diagnosis of asthma among children, overall and stratified by whether the child had identifiable asthma at the time of the ED visit.
Denominator Statement: All ED visits in which asthma was a primary or secondary diagnosis in children who are continuously enrolled for at least the 2 months following the ED visit.
Denominator Exclusions: Children with concurrent or pre-existing diagnosis.

Children who have not been consecutively enrolled with the reporting entity for at least two months following the ED visit.

Children who do not meet the denominator criteria.

Measure Type: Composite

Data Source: Claims (Only) **Level of Analysis:** Population : Community, County or City, Population : Regional and State
IF Endorsement Maintenance – Original Endorsement Date: Most Recent Endorsement Date:
Composite Measure Construction: all-or-none measures (e.g., all essential care processes received, or outcomes experienced, by each patient)

New Measure -- Preliminary Analysis

Criteria 1: Importance to Measure and Report
1a. Evidence
1a. Evidence. The evidence requirements for a *process or intermediate outcome* measure is that it is based on a systematic review (SR) and grading of the body of empirical evidence where the specific focus of the evidence matches what is being measured. • **Systematic Review of the evidence specific to this measure?** ☐ **Yes** ☒ **No** • **Quality, Quantity and Consistency of evidence provided?** ☐ **Yes** ☒ **No** • **Evidence graded?** ☒ **Yes** ☐ **No** **Evidence Summary** Evidence for this composite measure should identify the "connection" with the primary care system (timely visits to primary care providers and filling of controller asthma medications) following ED visits for children with asthma. For Composite measures the evidence subcriterion (1a.) for each of the component of the measure must be met unless NQF endorsed. The composite measure includes two components identify the "connection" with the primary care system (timely visits to primary care providers and filling of controller asthma medications) following ED visits for children with asthma • Visit(s) to a primary care provider that occurred within 14 days following the ED visit. (A only) • Have at least one fill of an asthma controller medication within 2 months after the ED visit (including the day of visit). (B only) The developer provided graded Guidelines from The National Asthma Education and Prevention Program (NAEPP) guidelines for regular follow-up and the medication management approach. However, the developer did not specify which guideline recommendations are the basis for the measure and did not provide grades for the underlying evidence or a summary of the QQC. NQF staff briefly reviewed the NQEPP document and believe the pertinent "key points" are as follows: • The staff believe the pertinent "recommendations are as follows: • The Expert Panel recommends that the frequency of visits to a clinician for review of asthma control is a matter of clinical judgment; in general, patients who have intermittent or mild persistent asthma that has been under control for at least 3 months should be

seen by a clinician about every 6 months, and patients who have uncontrolled and/or severe persistent asthma and those who additional supervision to help them follow their treatment plan need to be seen more often. (79)

- Key Point: Periodic assessments (at 1- to 6-month intervals) and ongoing monitoring of asthma control are recommended to determine if the goals of therapy are being met and if adjustments in therapy are needed (Evidence B, extrapolation from clinical trials; and Evidence C, observational studies). [p.76]

- The Expert Panel recommends that long-term control medications be taken daily on a long-term basis to achieve and maintain control of persistent asthma. The most effective long-term-control medications are those that attenuate the underlying inflammation characteristic of asthma (Evidence A). (p2392 d)

- The Expert Panel recommends that SABAs are the drug of choice for treating acute asthma symptoms and exacerbations and for preventing EIB (Evidence A). (p258)

The developer provided studies that support the importance of a primary provider visit and management as well as prescribing of appropriate medications to improve asthma care and reduce ED visits and hospitalizations:

A multisite randomized controlled trial (RCT) demonstrated improvements in asthma care and better health for children with enhanced primary care.

- Another study supports that primary care coordination can reduce asthma-related ED visits and hospitalizations compared to those who only prescribe medications. Primary care coordination is described as better communication and use and implementation of asthma action plans.
- Lastly, a study titled "Use of asthma guidelines by primary care providers to reduce hospitalizations and emergency department visit in poor, minority children" found that better primary care, including asthma action plans and appropriate prescribing reduced ED visits substantially.
- Several studies support that after an exacerbation, follow-up with a primary care physician is central for ongoing management.

Questions for the Committee:

- *What is the relationship between the measure and the guidelines?*
- *What is the relationship of this measure to patient outcomes?*
- *How strong is the evidence for this relationship between all components of the measure and the overall composite?*
- *Is the evidence directly applicable to the process of care being measured?*

Guidance from the Evidence Algorithm

Process measure (Box 3)>Systematic Review of evidence with NAEPP guideline development and RCT study support guidelines (Box 4)>Class A and B graded support on use of medications and graded evidence B & D on importance of regular follow-up(graded B) follow-up by primary provider within 1-4 weeks after exacerbation Grade B (Box 5)> Moderate

Preliminary rating for evidence: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

1b. Gap in Care/Opportunity for Improvement and 1b. Disparities

1b. Performance Gap. The performance gap requirements include demonstrating quality problems and opportunity for improvement.

The developer states that 16.5% of children in NYS Medicaid who had a qualifying ED visit for asthma and met the standards of this measure.

The developer states that their analysis of NY State Medicaid data showed that the proposed measure varies by race, by urbanicity, and by the amount of poverty in the county of residence. This county data and analysis was not provided.

Disparities

The developer presented data and analysis of New York State Medicaid data indicate on ED use as well as criteria on visits and medications use by race, urbanicity and poverty:

- 1) Race/Ethnicity: About a 2.5 fold increase in the rate of using the ED of non-Hispanic Blacks compared to non-Hispanic Whites (non-Hispanic Black > all Hispanic > Non-Hispanic White > Asian). Racial variations showed Black children less likely (21.5%) to have had a controller medication than Whites (23.2%) who were less likely than Hispanics (24.9%). Visits within 6 months: Black children (25.4%) < Whites (28.1%) < Hispanics (33.0%). Meeting criteria for the visits and both medications ranged from 9.9% in Blacks to 11.1% in Whites to 13.7% in Hispanics.

- 2) Urbanicity: higher rates of ED utilization in the most urban areas and lowest in the most rural areas and other areas intermediate between the two. For example, both medication measures and the 6 month primary care visit measure are met for 13.8% (N=806) of those in rural counties, 14.7% (N=4066) of those in suburban counties, and 16.9% (N=26327) of those in urban counties.

- 3) Poverty: associated with increased ED use for children with asthma as higher incomes were associated with better performance on this measure.

Questions for the Committee:

- *Is there a gap in care that warrants a national performance measure?*
- *If no disparities information is provided, are you aware of evidence that disparities exist in this area of healthcare?*
- *Are you aware of any data on primary care connections and use of ED and hospitalizations?*

Preliminary rating for opportunity for improvement: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

1c. Composite - Quality Construct and Rationale

1c. Composite Quality Construct and Rationale. The quality construct and rationale should be explicitly articulated and logical; a description of how the aggregation and weighting of the components is consistent with the quality construct and rationale also should be explicitly articulated and logical.

- The developer describes the quality construct as an all-or-none measures (e.g., all essential care processes received, or outcomes experienced, by each patient). The overall composite is A and B.
- The developer states that: these "aspects of the composite measure are key determinants of having care coordination after an ED visit for primary or secondary diagnosis of asthma". The developer suggest that determinants are also areas that can significantly enhance health outcomes should they be addressed.
- The developer articulate the construct and describes the measure as the connection with the primary care system (timely visits to primary care providers and filling of controller asthma medications) following ED visits for children with asthma. The developer suggests that these connections are "key determinants of having care coordination after an ED visit for primary or secondary diagnosis of asthma" and these determinants are also areas that can significantly enhance health outcomes should they be addressed.
- The developer did not explain why these particular components were selected for inclusion and why a "all-or-none" scoring approach was used.

Component measures include:

- Visit(s) to a primary care provider that occurred within 14 days following the ED visit. (A only)
- Have at least one fill of an asthma controller medication within 2 months after the ED visit (including the day of visit). (B only)

Questions for the Committee:

- *Do you think developer provided a rationale for the construction of the measure as stated?*
- *Are the quality construct and a rationale for the composite explicitly stated and logical?*
- *Is the method for aggregation and weighting of the components explicitly stated and logical?*

Preliminary rating for composite quality construct and rationale: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

Committee pre-evaluation comments

Criteria 1: Importance to Measure and Report (including 1a, 1b, 1c)

***1a. Evidence** to Support Measure Focus*

Comments: **Question the component of at least one fill of an asthma controller medication within 2 months after ED visit - within 2 months seems to be long time and would like the rationale for the time frame

**Evidence supports the measure focus.

**sufficient/high

**As with 3170, I have rated the evidence as moderate (5b on algorithm 1). The developer has provided significant studies that seem to indicate the evidence level would be high; however, not all of the information has been provided at this point (i.e., systematic review is missing).

1b. Performance Gap

Comments: **Information provided on the NY Medicaid population - would like to see other population information that included commercial insurance. The data provided did indicate disparities.
**The developer should confirm the current measure performance: the figure cited of 16.5% satisfying the measure is identical to measure 3170, which has a different focus. Which is correct? It seems unlikely that both are the same.
Evidence on disparities in follow-up care after an ED visit for asthma would be useful (or statement no such disparities exist).
**sufficient
**The evidence lends itself to identifying a performance gap; however, the information provided by the developer makes this less clear. The statement about 16.5% of children with ED visits is the same one used for 3270--it seems odd that both measures would use the exact same data point for the performance gap. However, useful and relevant disparities data are provided. Therefore, I have rated this as moderate.

1d. Composite Performance Measure - Quality Construct

Comments: **What is the importance of the child being enrolled for 2 consecutive months?
**Specifications seem well defined and clear.
**variables clearly defined
**The codes and specifications do seem detailed enough to consistently implement this measure; however, it is not clear if this is specified for the state population or at a health plan level - or both.

Criteria 2: Scientific Acceptability of Measure Properties
2a. Reliability
2a1. Reliability Specifications **Maintenance measures – no change in emphasis – specifications should be evaluated the same as with new measures**
2a1. Specifications requires the measure, as specified, to produce consistent (reliable) and credible (valid) results about the quality of care when implemented. **Specifications:** • Data Source: Administrative data (Claims only) • Better quality=higher score • Level of analysis: measure is specified at the population level (i.e., Community, County, City, Regional or State. NOTE that there are inconsistencies in the submission regarding level of analysis and it is unclear whether the measure is specified only for the state population or also for the health plan level (NOTE the measure must be tested for r/v for all specified levels of analysis) • Numerator Statement: Evidence of connection to the primary care medical system following ED visits that have a primary or secondary diagnosis of asthma among children, overall and stratified by whether the child had identifiable asthma at the time of the ED visit. • Denominator Statement: All ED visits in which asthma was a primary or secondary diagnosis in children who are continuously enrolled for at least the 2 months following the ED visit.

Denominator details are outlined further.

- Denominator Exclusions: Children with specific concurrent or pre-existing diagnosis include the diagnostic categories of cystic fibrosis, chronic obstructive lung disease and emphysema; and children who do not meet the denominator criteria; children who have not been consecutively enrolled with the reporting entity for at least two months following the ED visit.
- Codes and Definitions identified: for inclusion criteria and exclusion list (ICD-9 and ICD-10); Primary Care Inclusion List; CPT codes to identify Ambulatory and Preventive Care visits; HEDIS 2013 NDC List of Appropriate Medications for people with asthma; and CPT and Revenue codes for Identifiable asthma.
-

Questions for the Committee:

- *Specific questions on the specifications, codes, definitions, etc.*
- *Are all the data elements clearly defined? Are all appropriate codes included?*
- *Is the logic or calculation algorithm clear?*
- *Is it likely this measure can be consistently implemented?*

2a2. Reliability Testing Testing attachment

2a2. Reliability testing demonstrates if the measure data elements are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period and/or that the measure score is precise enough to distinguish differences in performance across providers.

For maintenance measures, summarize the reliability testing from the prior review:

SUMMARY OF TESTING

Reliability testing level ☐ **Measure score** ☒ **Data element** ☐ **Both**

Reliability testing performed with the data source and level of analysis indicated for this measure ☐ **Yes** ☐ **No**

Method(s) of reliability testing

For composite performance measure, reliability must be demonstrated for the composite measures score:

- The developer presented numerous studies to support the use of data elements in individual composite measures and the overall composite measure.
- Note that the developer indicated that score-level reliability testing was conducted, but no results were provided.
- Of note is that reliability testing for a composite measure must be at the measure score level and this testing is only at the data element level.

Results of reliability testing

- The developer did not provide testing results at the measure score level for reliability.

Questions for the Committee:

- *No updated testing information is presented. The prior testing demonstrated good reliability. Does the Committee think there is a need to re-discuss and re-vote on reliability?*
- *Specific questions on the method and results of reliability testing.*
- *Is the test sample adequate to generalize for widespread implementation?*
- *Do the results demonstrate sufficient reliability so that differences in performance can be identified?*

Guidance from the Reliability Algorithm

Preliminary rating for reliability: ☐ High ☐ Moderate ☐ Low ☒ Insufficient
RATIONALE: The developer mentions testing at the county level but does not provide any data. If the developer provided testing at the across county level than the rating could be elevated to a moderate at the county level of analysis. Of if the developer had testing at the state levels using multiple states than the rating could be elevated to a moderate rating at the state level of analysis.

2b. Validity

2b1. Validity: Specifications

2b1. Validity Specifications. This section should determine if the measure specifications are consistent with the evidence.

Specifications consistent with evidence in 1a. ☒ Yes ☐ Somewhat ☐ No
Specification not completely consistent with evidence

Question for the Committee:

- *Are the specifications consistent with the evidence?*

2b2. Validity testing

2b2. Validity Testing should demonstrate the measure data elements are correct and/or the measure score correctly reflects the quality of care provided, adequately identifying differences in quality.

SUMMARY OF TESTING
Validity testing level ☐ Measure score ☒ Data element testing against a gold standard ☐ Both

Method of validity testing of the measure score:

- **☐ Face validity only**
- **☐ Empirical validity testing of the measure score**

Validity testing method:

The developer stated that they "assessed the stability of measures to changes in their specifications and identified measures that were robust to changes and consistent with recommendation of an expert panel".

The developer outlined information from assessing elements for inclusion in the measure:

- The importance of using revenue codes as well as CPT codes
- Validation of the use of "NCQA code sets into this measure for numerator determinations, unmodified for medication and slightly modified for primary care visits to restrict to outpatient visits.
- The definition of "identifiable asthma was selective but not overly restrictive" and was more inclusive than the HEDIS persistent asthma definition".

The developer presented numerous studies to support the use of data elements in individual composite measures and the overall composite measure.

Validity testing results:

Selected examples of the numerous studies are presented. These studies show testing results for sensitivity, specificity a as well as for outcome for medication fills. Detail of all studies are available.

Validity testing results:

Selected examples of the numerous studies are presented below:

Numerator:

Asthma diagnosis in clinical/outpatient setting:

- Wilchesky compared chart abstraction to diagnoses obtained from administrative database: asthma claims were highly specific, Sp= 96.76 (95%CI 96.5, 97.0). Although sensitivity for most conditions was below 60%, sensitivity was enhanced when all claims for services were assessed.

Filling of short acting beta agonist and asthma controller medication:

- HEDIS criteria using administrative data support peer reviewed research, for example in patients with persistent asthma based on HEDIS criteria in five Medicaid programs (Colorado, Georgia, Indiana, New Jersey, Washington) using ICD-9-CM code 493.x to measure filling prescriptions of asthma control medication and the ratio of controller medication to the total number of medication prescriptions filled within one year.(Samnaliev et al., 2009).

- The Utility of the HEDIS Asthma Measure to predict asthma related outcomes. Low Controller use had an adjusted odds ratio of 1.72 (1.42-2.08) of ED visit or hospitalization. Those with moderate and higher adherence had graded reductions in undesirable outcomes in the predicted fashion (OR, .84 and 0.72 respectively) (Berger WE, Legorreta AP, Blaiss MS, et al. 2004)

Denominator:

Asthma diagnosis in inpatient and Ed settings:

- Wilchesky compared chart abstraction to diagnoses obtained from administrative database: asthma claims were highly specific, Sp= 96.76 (95%CI 96.5, 97.0). Although sensitivity for most conditions was below 60%, sensitivity was enhanced when all claims for services were assessed.

Asthma diagnosis in ambulatory settings:

- Fowles and colleagues report sensitivity and specificity of claims compared with ambulatory medical records to identify asthma was 0.82 and 0.99, respectively. Sensitivity of .82 using claims was higher than sensitivity using self-report at .64

Prescription of other asthma medications in ambulatory setting (see list above):

- Using complete claims and pharmaceutical data for 19,076 patients with persistent asthma (based on HEDIS criteria) in five Medicaid using ICD-9-CM code 493.x to measure filling prescriptions of asthma control medication. Both administrative measures of asthma care quality were associated with lower odds of ED utilization. The controller medication measure of asthma care quality may be better than the ratio measure in relation to emergency asthma care utilization by Medicaid beneficiaries (Samnaliev, M., Baxter, J. D., & Clark, R. E., 2009).

For exclusions:

Diagnosis of COPD, cystic fibrosis, emphysema

- Quan et al found that claims had a PPV of 91.9, and a negative predictive value of 92.6, with *k* of 0.65 (substantial agreement[1]) compared to chart review for chronic pulmonary disease . ICD 10 performed similarly in this study. Assessing validity of icd-9-cm and icd-10 administrative data in recording clinical conditions in a unique dually coded database Quan, H., Li, B., Saunders, L. D., Parsons, G. A., Nilsson, C. I., Alibhai, A., et al., 2008.

Questions for the Committee:

- *Do the results demonstrate sufficient validity so that conclusions about quality can be made?*
- *Do the research articles demonstrate sufficient validity so that conclusions about quality can be made?*
- *Other specific question of the validity testing?*

2b3-2b7. Threats to Validity

2b3. Exclusions:

The developer identified the diagnostic categories of cystic fibrosis, chronic obstructive lung disease, and emphysema.

Additionally, the developer stated that this was based on clinical reasons and expert panel recommendations.

Questions for the Committee:

[1] The *k* value indicates a near perfect agreement (*k*: 0.81-1.0 between coded data and chart review data), substantial agreement (*k*: 0.61-0.80), moderate agreement (*k*: 0.41-0.60), and fair agreement (*k:* 0.21-0.40).

- *Are the exclusions consistent with the evidence?*
- *Are any patients or patient groups inappropriately excluded from the measure?*
- *Are the exclusions/exceptions of sufficient frequency and variation across providers to be needed (and outweigh the data collection burden)?*

2b4. Risk adjustment: **Risk-adjustment method** ☒ **None** ☐ **Statistical model** ☐ **Stratification**

2b5. Meaningful difference *(can statistically significant and clinically/practically meaningful differences in performance measure scores can be identified)*:

- The developer states that, they have demonstrated statistically significant differences between races, by poverty in the county, and by urbanicity but does not present results for these groups
- Developer also states that they are analyzing the performance measure at the county level and at the health plan level to confirm that there is significant signal to identify statistically significant differences within the Medicaid health plans and between the counties of NY State.
- It is of note that no performance data has been provided to date by the developer.
- Developer also states that the measure is sufficiently precise to describe the health care of specified populations and to distinguish such performance and that "*pending data that confirm that at county and health plan levels the measure is significantly granular to identify meaningful differences"*.

Question for the Committee:

- *Does this measure identify meaningful differences about quality?*

2b6. Comparability of data sources/methods:

N/A

2b7. Missing Data

- Developer does not address missing data except to state that "Specifications make including individuals with missing data very unlikely.
- Developer also references the literature review and states that it shows that billing data is reliable".

Guidance from the Validity Algorithm

- **Guidance from the Validity** Measure specification consistent (Box 1)> Some potential threats analyzed (Box 2)>Empirical Validity testing conducted (Box 3)>validity not conducted with performance measure score (Box 6)>Validity tested at patient level data elements (Box 10)>Prior validity studies of the same data elements used (Box 11)> Methods described and appropriate for **all** critical data elements (Box 12)> based on literature > Moderate

Preliminary rating for validity: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

2d. Composite measure: empirical analysis supports construction

2d. Empirical analysis to support composite construction. Empirical analysis should demonstrate that the component measures add value to the composite and that the aggregation and weighting rules are consistent with the quality construct.

The developer states that the stratifications data provided below demonstrate that the components each add value to the measure. Not all who receive medications receive visits and vice versa. Further while most who receive controller medications receive rescue medications, not all do.

The composite measure is stronger and more informative than the individual component measures. Stratification includes:

The stratification data:

(1) Visit(s) to a primary care provider that occurred within 14 days following the ED visit.

- 5.0% of ED visits for asthma had follow up visits with primary care within 14 days after the visit.
  - 4.7% of visits for Black children
  - 5.1% of visits for Hispanic children
  - 5.5% of visits for White children

- 7.7% of ED visits for asthma had follow up visits with primary care within 30 days after the visit
  - 7.6% of visits for Black children
  - 7.6% of visits for Hispanic children
  - 8.3% of visits for White children

- Children age 7-18 were most likely to have 14 day follow up visits (5.4%)
  - Other age groups (2-4, 4-7, 18-21) range from 4.5 - 4.9%
  - 30 day f/u shows similar pattern

(2) Have at least one fill of an asthma controller medication within 2 months after the ED visit (including the day of visit). (B only)

- Controller medications were filled within 2 months after the ED visit for 34.4% of visits for children with and 13.5% of those without identifiable asthma. This helps to confirm that clinician behavior moves in the expected direction for our definition.

  - ED visits for White children were more likely to have associated fills for controllers within 2 months after the visit and those for Black children least

(3) No visit(s) to a primary care provider that occurred within 14 days following the ED visit and having no fills of an asthma controller medication within 2 months after the ED visit (including the day of the visit) (Neither A or B) (Failure)

(4) No Visit(s)to a primary care provider that occurred within 30 days following the ED visit. (Failure)

30 day follow up was most common in children who lived in rural counties (10.4%) compared to suburban (8.2%) compared to urban (7.7%).

Nearly 97% of visits are in urban children

Questions for the Committee:

- *Do you think the developer provided enough data on the relationship between and two components and the overall composite measure?*
- *Do the component measures fit the quality construct?*
- *Are the objectives of parsimony and simplicity achieved while supporting the quality construct?*

Preliminary rating for composite construction: ☐ High ☒ Moderate ☐ Low ☐ Insufficient

Committee pre-evaluation comments

Criteria 2: Scientific Acceptability of Measure Properties (including all 2a, 2b, and 2d)

2a1. & 2b1. Specifications

Comments: **Specifications seem consistent with evidence.
**sufficient
**The specifications seem consistent with the evidence for each component of the composite. However, I'm not fully clear if the specific combination of these three elements is fully consistent with the evidence.

2a2. Reliability Testing

Comments: **Need more information
**Reliability at the measure score level is needed. If the measure is intended for use with health plan as unit of analysis in addition to geographic area, then testing is needed for both.
**testing data at population level not yet available
**The results of score-level reliability are required for a composite measure; however, those results were not provided. Therefore, the reliability rating is insufficient.

2b2. Validity Testing

Comments: **Evidence supports validity of data elements.
**comprehensive literature review
**As with 3170, validity testing appears to have been conducted by review of extensive studies by an expert panel, and the developer provided details on all of the studies. Based on this gold standard data element testing, I believe that the measure does demonstrate sufficient validity to draw conclusions about quality.

2b3. Exclusions Analysis
2b4. Risk Adjustment/Stratification for Outcome or Resource Use Measures
2b5. Identification of Statistically Significant & Meaningful Differences In Performance
2b6. Comparability of Performance Scores When More Than One Set of Specifications
2b7. Missing Data Analysis and Minimizing Bias

Comments: **Further explanation is needed as to why developer feels missing data is not a problem.
**The exclusions do seem consistent with the evidence. Given the exclusions, it does not appear that risk adjustment is necessary. However, in terms of missing data, this does not seem to be fully addressed by the developer. I rate the validity as moderate, box 12a.

2d. Composite Performance Measure - Composite Analysis

Comments: ** the composite fits the quality construct.
**While there is evidence and explanation provided for each component of the construct, I'm still not clear if this is the right combination of components. It seems quite complex to look across these two elements and to require all two for the measure to be applicable (although this is less complex than 3170). I rate the composite construction as moderate.

Criterion 3. Feasibility

3. Feasibility is the extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

- All data elements are in defined fields in a combinations of electronic formats and generated or collected and used by healthcare personnel during the provision of care.
- The Developer states the measure is based on administrative claims, so in general, feasible. The feasibility study that was conducted with more than one dozen hospitals showed that both data elements are usually available in the hospital chart and are also frequently found electronically.

Questions for the Committee:

- *Are the required data elements routinely generated and used during care delivery?*
- *Are the required data elements available in electronic form, e.g., EHR or other electronic sources?*
- *Is the data collection strategy ready to be put into operational use?*

Preliminary rating for feasibility: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

Committee pre-evaluation comments

Criteria 3: Feasibility

3a. Byproduct of Care Processes
3b. Electronic Sources
3c. Data Collection Strategy
Comments: **Feasibility appears good.
**high: administrative data readily available
**Like with 3170, I have real concerns about the feasibility of this measure - the data need to come from multiple places - hospital charts, ambulatory claims data, and pharmacy data (and patients use numerous different pharmacies). It seems like it would be very difficult to consistently have all of the data needed to assess this measure for a population. Therefore, I rate the feasibility as low.

Criterion 4: Usability and Use

4. Usability and Use evaluate the extent to which audiences (e.g., consumers, purchasers, providers, policymakers) use or could use performance results for both accountability and performance improvement activities.

Current uses of the measure [from OPUS]
Publicly reported? ☐ **Yes** ☒ **No**

Current use in an accountability program? ☐ **Yes** ☒ **No** ☐ **UNCLEAR**
OR
Planned use in an accountability program? ☐ **Yes** ☒ **No**

The Developer states the measure will not be put into use until after it is endorsed by the NQF and that there aren't any current policies or actions that would obstruct access to results of performance data or hinder implementation.

Vetting of the measure The measure is a straightforward approach to identifying effective connection with the health care system after visits to the ED or hospitalization. The Developer states that after the measure receives endorsement, it will be applicable to a variety of settings and organizations. The Developer also claims that analyses conducted have confirmed feasibility, usability and responsiveness of the measure and based on this data, the measure is both valid and sensitive to actual differences.

***Questions for the Committee**:*

- o *How can the performance results be used to further the goal of high-quality, efficient healthcare?*
- o *Do the benefits of the measure outweigh any potential unintended consequences?*
- o *How has the measure been vetted in real-world settings by those being measure or others?*

Preliminary rating for usability and use: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

Committee pre-evaluation comments

Criteria 4: Usability and Use

4a. Accountability and Transparency
4b. Improvement
4c. Unintended Consequences

Comments: **Developer should explain plans for use.
**more discussion required, developer's responses incomplete
**This measure is not being publically reported - and I would recommend that it should not be used for that purpose. It also should not be used for accountability given that no single individual or entity has enough control over both ofl the components of this measure. It could be used for public health purposes (as it is proposed to be used for, as I understand) - but the data collection approach needs to be fully thought through in order to consistently assess this measure. Therefore, I rate the usability and use of this measure as low.

Criterion 5: Related and Competing Measures

Related or competing measures

No measures were identified.

Harmonization N/A

Endorsement + Designation

The "Endorsement +" designation identifies measures that exceed NQF's endorsement criteria in several key areas. After a Committee recommends a measure for endorsement, it will then consider whether the measure also meets the "Endorsement +" criteria.

This measure is a candidate for the "Endorsement +" designation IF the Committee determines that it: meets evidence for measure focus without an exception; is reliable, as demonstrated by score-level

testing; is valid, as demonstrated by score-level testing (not via face validity only); and has been vetted by those being measured or other users.

Eligible for Endorsement + designation: ☐ **Yes** ☒ **No**

RATIONALE IF NOT ELIGIBLE: Reliability and validity testing are not at the measure score level.

Pre-meeting public and member comments

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NATIONAL QUALITY FORUM—Evidence (subcriterion 1a)

Measure Number (*if previously endorsed*)**:** Click here to enter NQF number

Measure Title: CAPQuaM PQMP Asthma IV: Primary Care Connection After Emergency Department Visits for Asthma

IF the measure is a component in a composite performance measure, provide the title of the Composite Measure here: CAPQuaM PQMP Asthma IV: Primary Care Connection After Emergency Department Visits for Asthma (NQF# 3171)

Date of Submission: 11/28/2016

Instructions

- *Complete 1a.1 and 1a.12 for all measures.*
- *Complete **EITHER 1a.2, 1a.3 or 1a.4** as applicable for the type of measure and evidence.*
- *For composite performance measures:*
  - *A separate evidence form is required for each component measure unless several components were studied together.*
  - *If a component measure is submitted as an individual performance measure, attach the evidence form to the individual measure submission.*
- All information needed to demonstrate meeting the evidence subcriterion (1a) must be in this form. An appendix of *supplemental* materials may be submitted, but there is no guarantee it will be reviewed.
- If you are unable to check a box, please highlight or shade the box for your response.
- Contact NQF staff regarding questions. Check for resources at Submitting Standards webpage.

Note: The information provided in this form is intended to aid the Standing Committee and other stakeholders in understanding to what degree the evidence for this measure meets NQF's evaluation criteria.

Evidence to Support the Measure Focus

The measure focus is evidence-based, demonstrated as follows:

- Health outcome: [3] a rationale supports the relationship of the health outcome to processes or structures of care. Applies to patient-reported outcomes (PRO), including health-related quality of life/functional status, symptom/symptom burden, experience with care, health-related behavior.
- Intermediate clinical outcome: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured intermediate clinical outcome leads to a desired health outcome.
- Process: [5] a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured process leads to a desired health outcome.
- Structure: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured structure leads to a desired health outcome.
- Efficiency: [6] evidence not required for the resource use component.

Notes

3. Generally, rare event outcomes do not provide adequate information for improvement or discrimination; however, serious reportable events that are compared to zero are appropriate outcomes for public reporting and quality improvement.

4. The preferred systems for grading the evidence are the U.S. Preventive Services Task Force (USPSTF) grading definitions and methods, or Grading of Recommendations, Assessment, Development and Evaluation (GRADE) guidelines.

5. Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multistep process, the step with the strongest evidence for the link to the desired outcome should be selected as the focus of measurement. Note: A measure focused only on collecting PROM data is not a PRO-PM.

6. Measures of efficiency combine the concepts of resource use and quality (see NQF's Measurement Framework: Evaluating Efficiency Across Episodes of Care; AQA Principles of Efficiency Measures).

1a.1.This is a measure of: (*should be consistent with type of measure entered in De.1*)

Outcome

☐ Health outcome: Click here to name the health outcome

☐Patient-reported outcome (PRO): Click here to name the PRO

PROs include HRQoL/functional status, symptom/symptom burden, experience with care, health-related behaviors. (A PRO-based performance measure is not a survey instrument. Data may be collected using a survey instrument to construct a PRO measure.)

☐ Intermediate clinical outcome (*e.g., lab value*): Click here to name the intermediate outcome

☐ Process: Click here to name what is being measured

☐ Appropriate use measure: Click here to name what is being measured

☐ Structure: Click here to name the structure

☒ Composite: Primary Care Connection After Emergency Department Visits for Asthma

1a.12 LOGIC MODEL Diagram or briefly describe the steps between the healthcare structures and processes (e.g., interventions, or services) and the patient's health outcome(s). The relationships in the diagram should be easily understood by general, non-technical audiences. Indicate the structure, process or outcome being measured.

Emergency department (ED) visits are often linked to the management of a child's asthma. Emergency Department Asthma was the topic assigned to CAPQuaM for measurement. The research literature suggests that not having a primary care provider (PCP) visit for asthma maintenance, especially in instances where an ED visit is the end result, is a sign of poorly managed asthma and our expert panel agreed. [1]

Two literature reviews as well as focused reviews that we have done to supplement the extensive review of the literature confirms the importance of an integrated approach to managing the health care of children with asthma. Primary care coordination can be critical: better communication, use and implementation of asthma action plans, and other primary care services can reduce asthma-related ED visits and hospitalizations compared to physicians who only prescribe appropriate asthma medication (Cabana, 2005). The action plan becomes a tool that leads the management of care and around which communications occur to improve asthma outcomes. Enhanced primary care has been noted to contribute to improvements in asthma care and better health for asthmatic children).[2] Better primary care, including asthma action plans and appropriate prescribing reduced ED visits substantially.[3]

We highlight that while successful primary care for asthma requires visits with primary care providers, it also includes adherence to an appropriate medication regimen, specifically, filling prescriptions and utilizing them properly. [4] [5-9] The tracking of prescription and pharmaceutical records to show if the asthma medications prescribed are being filled within the recommended amount of time is an accurate way to assess asthma care.[4, 7, 8] Prescription and use of controller medications such as inhaled corticosteroids (ICS) or other long-acting medications, as well as short acting beta-agonist medications, or rescue medications, is one sign of well-managed asthma. [4-6, 10-18] The source for shortcomings in asthma care management may lie with the clinicians (e.g. by failure to prescribe inhaled corticosteroids in a child for whom the standard of care would recommend them), the broader system or context (e.g. when caregivers do not have the resources to purchase potentially valuable preventative medications such as ICS), or the families (e.g. potentially through medication non-adherence for a variety of reasons). Although a PCP may prescribe the combination of ICS and long-acting beta-agonist drugs as one of the more effective methods of asthma control, these medications can go unfilled or not refilled. [4] When prescriptions for both controller and rescue medications are not filled, it can be interpreted as a sign of poorly managed asthma and potentially a failure of the primary care clinician to educate or motivate patients (especially in circumstances such as Medicaid, where there are not profound financial barriers to medication fulfillment). Failure in adequate asthma management can also occur when children with asthma control their condition by relying too heavily on rescue medications as a method of management in preference to controller medications. [4] This also is another aspect that may relate to the issue of communication and relationship between the primary care clinician and the family. This management approach of controller medications for children at risk for ED visits and rescue medications for all children who experience asthma symptoms is supported by the NIH/NHLBI/NAEPP guideline and is a consensus in the field.

After an exacerbation, follow up with the primary care physician is central for ongoing management. [8, 16, 19-24] If the child was in the ED and did not have a meaningful exacerbation, follow up is critical to establishing or re-establishing the centrality of primary care for the management of the asthmatic child. The literature suggests that a PCP follow-up within 30 days of the ED discharge is important.[16, 17, 25-27] Recent literature has identified the potential contribution of the medical home to enhance primary pediatric asthma care. [28-31] The involvement of a primary care provider contributes to the maintenance and control of asthma symptoms and is a characteristic of well-managed asthma.[1, 30, 32-37] Characteristics of sufficient primary care involvement may include having an identified site of regular care, an identified primary care clinician, and regular PCP visits with asthma follow up. [1, 30, 32-34] The medical home model in primary care may contribute to positive outcomes in children with asthma. [29, 31, 38] When children with asthma experience adequate management of chronic conditions and have access to coordinated care, a reduction in hospital rates is likely to occur. [29] Children who are linked to continuous care utilize less overall care, including ED care. [29] The above cited Guideline also notes that follow up care rates can be enhanced by specific management recommendations and with limited RTC (Class B) evidence supports an asthma follow up visit for children within weeks following an ED visit.

Once an ED visit for asthma occurs, it may be considered a trigger that should stimulate a prompt follow up with a primary care physician as well ongoing management, often including controller medications. The current measure captures connection with primary care after an ED visit. This measure considers prompt follow up with a primary care provider after an ED visit, and filling a prescription for controller medication as suggestive that appropriate connections may have been made. In an effective system of care, the ED will arrange for appropriate and prompt follow-up with primary care for most patients who present with asthma in the ED. This is not typical in the US or for Medicaid patients. Guided by our expert panel, this measure considers prompt follow up with a primary care provider after an ED visit, and filling a prescription for controller medication as suggestive that appropriate connections may have been made. Absence of these processes of care suggests insufficient coordination of care, especially in known asthmatics. ED visits for asthma with or without identifiable asthma at the time of the visit is an important driver of utilization and costs and can serve as a trigger to integrate the child into the primary care system for comprehensive management, including asthma care.

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26. Children's Health Council. *Few children in HUSKY A received care after an emergency visit or hospitalization for asthma.* 2002.
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28. National Center for Medical Home Implementation. *Family-Centered Medical Home Overview* [cited 2013 10/28]; Available from: http://www.medicalhomeinfo.org/about/medical_home/index.aspx.
29. Cooley W, McAllister J, Sherrieb K, Kuhlthau K. *Improved outcomes associated with medical home implementation in pediatric primary care.* Pediatrics, 2009. **124**(1): p. 358-364.

****RESPOND TO ONLY ONE SECTION BELOW -EITHER 1a.2, 1a.3 or 1a.4) ****

1a.2 FOR OUTCOME MEASURES including PATIENT REPORTED OUTCOMES- State the rationale supporting the relationship between the health outcome (or PRO) to at least one healthcare structure, process (e.g., intervention, or service).

1a.3. SYSTEMATIC REVIEW(SR) OF THE EVIDENCE (for INTERMEDIATE OUTCOME, PROCESS, OR STRUCTURE PERFORMANCE MEASURES) If the evidence is not based on a systematic review go to section 1a.4) If you wish to include more than one systematic review, add additional tables.

What is the source of the systematic review of the body of evidence that supports the performance measure? A systematic review is a scientific investigation that focuses on a specific question and uses explicit, prespecified scientific methods to identify, select, assess, and summarize the findings of similar but separate studies. It may include a quantitative synthesis (meta-analysis), depending on the available data. (IOM)

☐ Clinical Practice Guideline recommendation (with evidence review)

☐ US Preventive Services Task Force Recommendation

☐ Other systematic review and grading of the body of evidence (*e.g., Cochrane Collaboration, AHRQ Evidence Practice Center*)

☐ Other : The National Asthma Education and Prevention Program (NAEPP) guidelines

Source of Systematic Review: • **Title** • **Author** • **Date** • **Citation, including page number** • **URL**	• The National Asthma Education and Prevention Program (NAEPP) guidelines • NAEPP Coordinating Committee • October 2007 • National Asthma Education and Prevention Program. Guidelines for the Diagnosis and Management of Asthma. October 2007. 1-74. • **https://www.nhlbi.nih.gov/files/docs/guidelines/asthsumm.pdf** • **https://www.nhlbi.nih.gov/files/docs/guidelines/asthgdln.pdf**
Quote the guideline or recommendation verbatim about the process, structure	The guidelines recommend the identification of that subset of asthmatic children who need ongoing controller medication and those who don't. Those who need controller medication are also recommended to have rescue medications, typically short acting beta agonists. The guidelines

or intermediate outcome being measured. If not a guideline, summarize the conclusions from the SR.	and literature highlight the importance of primary care, asthma education, and typically a patient centered asthma action plan. While successful primary care for asthma requires visits with primary care providers, it also includes adherence to an appropriate medication regimen, specifically, filling prescriptions and utilizing them properly.
Grade assigned to the **evidence** associated with the recommendation with the definition of the grade	The National Asthma Education and Prevention Program (NAEPP) guidelines are the prevailing clinical recommendation for children with asthma. Class A and Class B evidence support medication use and follow up respectively. Class B evidence supports a visit interval no longer than 6 months. These guidelines were derived from several steps and methods (pg. 2-9). The steps used to develop this report include: (1) completing a comprehensive search of the literature; (2) conducting an indepth review of relevant abstracts and articles; (3) preparing evidence tables to assess the weight of current evidence with respect to past recommendations and new and unresolved issues; (4) conducting thoughtful discussion and interpretation of findings; (5) ranking strength of evidence underlying the current recommendations that are made; (6) updating text, tables, figures, and references of the existing guidelines with new findings from the evidence review; (7) circulating a draft of the updated guidelines through several layers of external review, as well as posting it on the NHLBI Web site for review and comment by the public and the NAEPP CC, and (8) preparing a final-report based on consideration of comments raised in the review cycle. Specifically, evidence based on scientific literature in the current evidence review was included. The system used to describe the level of evidence includes the following: • **Evidence Category A: Randomized controlled trials (RCTs), rich body of data.** Evidence is from end points of well-designed RCTs that provide a consistent pattern of findings in the population for which the recommendation is made. Category A requires substantial numbers of studies involving substantial numbers of participants. • **Evidence Category B: RCTs, limited body of data.** Evidence is from end points of intervention studies that include only a limited number of patients, post hoc or subgroup analysis of RCTs, or meta-analysis of RCTs. In general, category B pertains

	when few randomized trials exist; they are small in size, they were undertaken in a population that differs from the target population of the recommendation, or the results are somewhat inconsistent. • **Evidence Category C: Nonrandomized trials and observational studies.** Evidence is from outcomes of uncontrolled or nonrandomized trials or from observational studies. Evidence • **Category D: Panel consensus judgment.** This category is used only in cases where the provision of some guidance was deemed valuable, but the clinical literature addressing the subject was insufficient to justify placement in one of the other categories. The Panel consensus is based on clinical experience or knowledge that does not meet the criteria for categories A through C.
Provide all other grades and definitions from the evidence grading system	
Grade assigned to the **recommendation** with definition of the grade	
Provide all other grades and definitions from the recommendation grading system	
Body of evidence: • Quantity – how many studies? • Quality – what type of studies?	The literature review was conducted in three cycles over an 18-month period (September 2004 to March 2006). Search strategies for the literature review initially were designed to cast a wide net but later were refined by using publication type limits and additional terms to produce results that more closely matched the framework of topics and subtopics selected by the Expert Panel. The searches included human studies with abstracts that were published in English in peer-reviewed medical journals in the MEDLINE database. Two timeframes were used for the searches, dependent on topic: January 1, 2001, through March 15, 2006, for pharmacotherapy (medications), peak flow monitoring, and written action plans, because these topics were recently reviewed in the EPR—Update 2002; and January 1, 1997, through March 15, 2006, for all

	other topics, because these topics were last reviewed in the EPR—2 1997. The combined number of titles screened from cycles 1, 2, and 3 was 15,444. The number of abstracts and articles reviewed for all three cycles was 4,747. Of these, 2,863 were voted to the abstract Keep list following the abstract-review step. A database of these abstracts is posted on the NHLBI Web site. Of these abstracts, 2,122 were advanced for full-text review, which resulted in 1,654 articles serving as a bibliography of references used to update the guidelines, available on the NHLBI Web site. Articles were selected from this bibliography for evidence tables and/or citation in the text. In addition, articles reporting new and particularly relevant findings and published after March 2006 were identified by Panel members during the writing period (March 2006–December 2006) and by comments received from the public review in February 2007. (Fig 1-2 in url) A series of conference calls for each of the 10 committees as well as four in-person Expert Panel meetings (held in October 2004, April 2005, December 2005, and May 2006) were scheduled to facilitate discussion of findings and to dovetail with the three cycles of literature review that occurred over the 18-month period.
Estimates of benefit and consistency across studies	In summary, the NAEPP "Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma—Full Report 2007" represents the NAEPP's ongoing effort to keep recommendations for clinical practice up to date and based upon a systematic review of the best available scientific evidence by a Panel of experts, as well as peer review and critique by the collective expertise of external research/science consultants, the NAEPP CC members, guidelines implementation specialists, and public comment. The relationship between guidelines and clinical research is a dynamic one, and the NAEPP recognizes that the task of keeping guidelines' recommendations up to date is an increasing challenge. In 1991, many recommendations were based on expert opinion because there were only limited randomized clinical trials in adults, and almost none in children, that adequately tested clinical interventions grounded in research findings about the disease process in asthma. The large gaps in the literature defined pressing clinical research questions that have now been vigorously addressed by the scientific community, as the size of the literature reviewed for the current report attests.
What harms were identified?	

Identify any new studies conducted since the SR. Do the new studies change the conclusions from the SR?	

1a.4 OTHER SOURCE OF EVIDENCE

If source of evidence is NOT from a clinical practice guideline, USPSTF, or systematic review, please describe the evidence on which you are basing the performance measure.

1a.4.1 Briefly SYNTHESIZE the evidence that supports the measure. A list of references without a summary is not acceptable.

1a.4.2 What process was used to identify the evidence?

1a.4.3. Provide the citation(s) for the evidence.

1. Evidence, Performance Gap, Priority – Importance to Measure and Report
Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. ***Measures must be judged to meet all sub criteria to pass this criterion and be evaluated against the remaining criteria.***
1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form NQF_evidence_attachment_FINAL_2016_11_28_16_IV.docx **1a.1 For Maintenance of Endorsement: Is there new evidence about the measure since the last update/submission?** Please update any changes in the evidence attachment in red. Do not remove any existing information. If there have been any changes to evidence, the Committee will consider the new evidence. If there is no new evidence, no updating of the evidence information is needed.
1b. Performance Gap Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating: • considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or • disparities in care across population groups. **1b.1. Briefly explain the rationale for this measure** *(e.g., how the measure will improve the quality of care, the benefits or improvements in quality envisioned by use of this measure)*

IF a PRO-PM (e.g. HRQoL/functional status, symptom/burden, experience with care, health-related behaviors), provide evidence that the target population values the measured PRO and finds it meaningful. (Describe how and from whom their input was obtained.)
IF a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), SKIP this question and provide rationale for composite in question 1c.3 on the composite tab.
Since this is a composite, please see 1c.3

1b.2. **Provide performance scores on the measure as specified (current and over time) at the specified level of analysis**. *(This is required for maintenance of endorsement. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the sub-criterion on improvement (4b) under Usability and Use.*

1b.3. **If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.**
Children with asthma comprise a critically important population of high interest to Medicaid. Low income urban minority children are an important component of this population.Our analysis of National Survey of Children's Health data (NSCH, 2011/12), estimates that 10.3 million children in the U.S. have been told that they have asthma. Of these children 7.6 million live in more urban areas that are characterized as metropolitan statistical areas (MSAs), an asthma prevalence rate of 15.4%. These data indicate that an absolute difference of 15.8% fewer parents of children with asthma report that child's health as very good or excellent compared to those with no asthma. Black or Latino children with asthma show an absolute difference of about 13% fewer with very good or excellent health compared to white children with asthma. Effective delivery of guideline-based care can reduce the gap and decrease consequences of uncontrolled asthma, such as emergency room use and hospitalizations; better asthma care is beneficial and needed across the spectrum of children and primary care settings.(1-7) About 60% of these children are low income and have public insurance.

We have done extensive analysis of various approaches to identifying asthmatic children and counting ED visits using New York State Medicaid data. Depending upon specifics of definitional issues, we have found substantial numbers of children that can be identified as having asthma, with more than 196,000 found to have identifiable asthma in 2011 and nearly 60,000 ED visits for asthma by these eligible children. This is a substantial issue for New York State Medicaid and beyond. Its importance has been validated by a previous measure having been included as a core Medicaid measure. Our partners in the New York State Medicaid program have been instrumental in the development of this measure set.

The literature provides compelling evidence of the importance of asthma as a clinical and public health concern. Asthma is a prevalent chronic condition in children (typically considered the most prevalent). The National Asthma Education and Prevention Program *(NAEPP) guidelines are a well-constructed integration of key patient centered outcomes research that can enhance outcomes when followed by clinicians and parents/caregivers. The guidelines recommend the identification of that subset of asthmatic children who need ongoing controller medication and those who don't. Those who need controller medication are also recommended to have rescue medications, typically short acting beta agonists. The guidelines and literature highlight the importance of primary care, asthma education, and typically a patient centered asthma action plan. While successful primary care for asthma requires visits with primary care providers, it also includes adherence to an appropriate medication regimen, specifically, filling prescriptions and utilizing them properly. The potential for racial and ethnic disparities are high, and this is an important priority for Medicaid.(8) The survey of Children with Special Health Care Needs (CSHCN), conducted by the CDC and available at www.childhealthdata.org, showed that Black children in particular and also Hispanic children are overrepresented with asthma. Thirty eight percent of children with asthma have public insurance. One quarter (26%) live in households under the federal poverty line, with 28% under twice the federal poverty line, and only

24% have incomes more than four times the federal poverty line. Nearly three quarters of these children have at least one sibling and nearly one-third have a sibling who also has a special health care need, using HRSA's screening tool. Manice's careful analysis of the 2005/2006 survey from which these data are taken also found that racial minorities, lower income, and household educational attainment were independent predictors of ED utilization among children with asthma.(9) Our analysis of New York State Medicaid data shows about a 2.5 fold increase in the rate of using the ED of non Hispanic Blacks compared to non Hispanic Whites (non Hispanic Black > all Hispanic > Non- Hispanic White > Asian).

Our own analysis of NY State Medicaid data showed that the proposed measure varies by race/ethnicity, and county level measures of poverty and urbanicity.

1. Diette G, Skinner E, Markson L, Algatt-Bergstrom P, Nguyen T, Clark R, et al. Consistency of care with national guidelines for children with asthma in managed care. The Journal of Pediatrics, 2001. 138(1): p. 59-64.
2. Adams R, Fulhbrigge A, Finkelstein J, Lozano P, Livingston J, Weiss K, Weiss S. Impact of Inhaled Antiinflammatory Therapy on Hospitalization and Emergency Department Visits for Children With Asthma. Pediatrics, 2001. 107(4): p. 706-711.
3. Finkelstein J, Lozano P, Farber H, Miroshnik I, Lieu T. Underuse of controller medications among medicaid-insured children with asthma. Archives of Pediatrics & Adolescent Medicine, 2002. 156(6): p. 562-7.
4. Finkelstein J, Lozano P, Shulruff R, Inui T, Soumerai S, Ng M, Weiss K. Self-Reported Physician Practices for Chilren with Asthma: Are National Guidelines Followed? Pediatrics, 2000. 106(Supplement 3): p. 886-96.
5. Bell L, Grundmeier R, Localio R, Zorc J, Fiks A, Zhang Z, et al. Electronic Health Record-Based Decision Support to Improve Asthma Care: A Cluster-Randomized Trial. Pediatrics, 2010. 125(4): p. e770-07.
6. Lob S, Boer J, Porter P, Nunez D, Fox P. Promoting Best-Care Practices in Childhood Asthma: Quality Improvement in Community Health Centers. Pediatrics, 2011. 128(1): p. 20-8.
7. Scott L, Morphew T, Bollinger M, Samuelson S, Galant S, Clement L, O´Cull K, Jones F, Jones C. Achieving and maintaining control in inner-city children. Journal of Allergy and Clinical Immunology, 2011. 128(1): p. 56-63.
8. Oraka E, Iqbal S, Flanders W, Brinker K, Garbe P. Racial and ethnic disparities in current asthma and emergency department visits: findings from the national health interview survey, 2001-2010. J Asthma, 2013. 50(5): p. 488-96.
9. Manice M. Exploring the relationship between parental shared decision-making practices and acute asthma exacerbations among children age 0-17. 2013, Icahn School of Medicine at Mount Sinai: New York, NY.

1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability. *(This is required for maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included.) For measures that show high levels of performance, i.e., "topped out", disparities data may demonstrate an opportunity for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b) under Usability and Use.*

Nationally, Black children and also Hispanic children are overrepresented with asthma (CSHCN). Racial minorities, lower income, and household educational attainment were independent predictors of ED utilization among children with asthma.

Our analysis of New York State Medicaid data indicate that there are significantly high prevalence of ED visits for asthma: More than 196,000 children had identifiable asthma (using our definition) in NY State Medicaid data in 2011 (almost 11%) and nearly 60,000 ED visits for asthma were from the eligible children. Approximately 76% of asthma admissions were from the ED. ED visits for asthma vary by:

(1) Race / Ethnicity: About a 2.5 fold increase in the rate of using the ED of non-Hispanic Blacks compared to non-Hispanic Whites (non-Hispanic Black > all Hispanic > Non-Hispanic White > Asian). For example for the 30 day follow up measure, Hispanics and Blacks are similar with 7.6 % performance and Whites at 8.3%. Using New

York State Medicaid data for reporting year 2011 and look back year 2010, we found that the measure is practical, and sensitive to small racial variations.
(2) Age: Rates of asthma ED use vary by age group, with younger children and adolescents predominant.
(3) Urbanicity: higher rates of ED utilization in the most urban areas and lowest in the most rural areas and other areas intermediate between the two. For example, 30 day follow up rates ranged from 10.4% for ED visits by children who live in rural counties , 8.2% in suburban counties, and 7.7% in urban counties.
(4) Poverty: associated with increased ED use for children with asthma as higher incomes were associated with better performance on this measure.

ED visits are often linked to the management of a child's asthma

Overall, we have found statistically significant ($P<0.05$) differences by race of the individual (performance worse in blacks than in whites than in Hispanics), by level of poverty in the county (more poverty worse performance), and by level of urbanicity (cities with worse performance than rural areas). 76.7% of ED visits occurred in children who met the criteria for identifiable asthma

1b.5. **If no or limited data on disparities from the measure as specified is reported in 1b.4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations. Not necessary if performance data provided in 1b.4**

1c. Composite Quality Construct and Rationale

1c.1. **A composite performance measure is a combination of two or more component measures, each of which individually reflects quality of care, into a single performance measure with a single score.**

For purposes of NQF measure submission, evaluation, and endorsement, the following will be considered composites:

- Measures with two or more individual performance measure scores combined into one score for an accountable entity.
- Measures with two or more individual component measures assessed separately for each patient and then aggregated into one score for an accountable entity:
    - all-or-none measures (e.g., all essential care processes received, or outcomes experienced, by each patient);

1c.1. Please identify the composite measure construction: all-or-none measures (e.g., all essential care processes received, or outcomes experienced, by each patient)

1c.2. **Describe the quality construct, including:**

- the overall area of quality
- included component measures and
- the relationship of the component measures to the overall composite and to each other.

Component measures include:

(1) Visit(s) to a primary care provider that occurred within 14 days following the ED visit. (A only)

(2) Have at least one fill of an asthma controller medication within 2 months after the ED visit (including the day of visit). (B only)\

The developer details the calibration of the algorithm for the composite measure into 9 steps:

Step 1: Look for any qualifying events (eligible events) using the criteria for ED visits.

Step 2: Assess eligibility for events that occur in each month by confirming that the child was continuously enrolled for 2 months following the month in which the ED visit occurs (3 months total including the index month).

Step 3: The denominator is all events identified in Step 1 who meet the continuous enrollment criteria in

Step 4: Find children with identifiable asthma among those with eligible events. Use the presence or absence of identifiable asthma as a stratification variable as specified below.

- Identify the assessment period. We classify children as having identifiable asthma by evaluating services used during what we call the assessment period. The analysis period consists of the 2 year look back period plus all prior months in the Reporting Year.
- Analyze the data month by month in chronological order.

Step 5: Identify Numerator A. Numerator A is the number of eligible children seen in an outpatient visit by a primary care physician among those with primary care visits (See Table 1 and 2 for primary care physicians and PCP visit codes) within 14 days following the ED visit (plus some inpatient codes).
Step 6: Identify Numerator B. Numerator B is the number of eligible children seen in an outpatient visit by a primary care physician among those with primary care visits (See Table 1 and 2 for primary care physicians and PCP visit codes) within 30 days following the ED visit (plus some inpatient codes).
Step 7: Identify Numerator C. Numerator C is the number of eligible children that have at least one fill of a controller medication within 2 months following the ED visit (including the day of the visit)
** For Steps 5-7, report as 100 x (numerator/denominator) to 2 decimal place. **
Step 8: Repeat by strata: presence of identifiable asthma, and both overall and within identifiable asthma category by age, race/ethnicity, Urban Influence Code (UIC), county poverty level, insurance type, benefit type. Report by race/ethnicity within age strata and repeat that analysis by UIC, and by county poverty level. Report by insurance type and benefit type within race/ethnicity.
Step 9: Specification of Stratification Variables: Specifications and calculations are detailed:

1c.3. Describe the rationale for constructing a composite measure, including how the composite provides a distinctive or additive value over the component measures individually.
Indepth literature reviews indicate that asthma is a prevalent chronic condition in children. Also, ED visits for asthma care are a common, costly, and potentially preventable health service that may serve as a marker for both insufficiency of primary care and insufficiency of clinical management of asthma by the partnership of the fmaily and the health care team. These aspects of the composite measure are key determinants of having care coordination after an ED visit for primary or secondary diagnosis of asthma. These determinants are also areas that can significantly enhance health outcomes should they be addressed.

1c.4. **Describe how the aggregation and weighting of the component measures are consistent with the stated quality construct and rationale.**

2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. ***Measures must be judged to meet the sub criteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.***

2a.1. Specifications The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

De.5. **Subject/Topic Area** *(check all the areas that apply):*

De.6. **Cross Cutting Areas** *(check all the areas that apply):*
«crosscutting_area»

De.7. **Target Population Category** *(Check all the populations for which the measure is specified and tested if any):*

S.1. **Measure-specific Web Page** *(Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)*

S.2a. **If this is an eMeasure**, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)
This is not an eMeasure **Attachment:**

S.2b. **Data Dictionary, Code Table, or Value Sets** *(and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)*
Attachment **Attachment:** Asthma_IV_11_27_16.xlsx

S.3.1. **For maintenance of endorsement:** Are there changes to the specifications since the last updates/submission. If yes, update the specifications for S1-2 and S4-22 and explain reasons for the changes in S3.2.

S.3.2. **For maintenance of endorsement,** please briefly describe any important changes to the measure specifications since last measure update and explain the reasons.

S.4. **Numerator Statement** *(Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome) DO NOT include the rationale for the measure.*
IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).
Evidence of connection to the primary care medical system following ED visits that have a primary or secondary diagnosis of asthma among children, overall and stratified by whether the child had identifiable asthma at the time of the ED visit.

S.5. **Numerator Details** *(All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)*

IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).
Numerator includes (1) Visit(s) to a primary care provider that occurred within 14 days following the ED visit. and (2) Have at least one fill of an asthma controller medication within 2 months after the ED visit (including the day of visit).

Numerator Exclusions: Events occurring in patients who meet numerator but not denominator criteria (including 2 months of continuous enrollment following the month in which the ED visit occurred (minimum is 3 months total).

S.6. **Denominator Statement** *(Brief, narrative description of the target population being measured)*
All ED visits in which asthma was a primary or secondary diagnosis in children who are continuously enrolled for at least the 2 months following the ED visit.

S.7. **Denominator Details** *(All information required to identify and calculate the target population/denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*
IF an OUTCOME MEASURE, describe how the target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).
Change(s) in eligibility criteria and/or benefit package or plan do(es) not relieve the reporting entity of the need to determine denominator eligibility – all available sources should be linked. For health plans, this includes utilizing any existing data sharing arrangements. For State Medicaid plans, this requires that the unit of analysis for eligibility assessment is the child, not the child-insurer pair.

Descriptive definitions of identifiable asthma management are as follows. Specifications follow the descriptive definitions:

- Any prior hospitalization with asthma as primary or secondary diagnosis
- Other qualifying events after the fifth birthday at time of event:
  a. One or more prior ambulatory visits with asthma as the primary diagnosis (this criterion implies an asthma ED visit in the reporting month), OR
  b. Two or more ambulatory visits with asthma as a diagnosis, OR
  c. One ambulatory visit with asthma as a diagnosis AND at least One asthma related prescription, OR
  d. Two or more ambulatory visits with a diagnosis of bronchitis
- Other qualifying events, any age:
  a. Three or more ambulatory visits with diagnosis of asthma or bronchitis, OR
  b. Two or more ambulatory visits with a diagnosis of asthma and/or bronchitis AND one or more asthma related prescriptions

S.8. **Denominator Exclusions** *(Brief narrative description of exclusions from the target population)*
Children with concurrent or pre-existing diagnosis.

Children who have not been consecutively enrolled with the reporting entity for at least two months following the ED visit.

Children who do not meet the denominator criteria.

S.9. **Denominator Exclusion Details** *(All information required to identify and calculate exclusions from the denominator such as definitions, time period for data collection, specific data collection items/responses,*

code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)
Children with concurrent or pre-existing: Chronic Obstructive Pulmonary Disease (COPD) diagnosis; Cystic Fibrosis diagnosis; Emphysema diagnosis

Children who have not been consecutively enrolled with the reporting entity for at least two months following the ED visit.

Children who do not meet the denominator criteria.

S.10. **Stratification Information** *(Provide all information required to stratify the measure results, if necessary, including the stratification variables, definitions, specific data collection items/responses, code/value sets, and the risk-model covariates and coefficients for the clinically-adjusted version of the measure when appropriate – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b.)*
Stratification includes:

(1) Visit(s) to a primary care provider that occurred within 14 days following the ED visit. (A only)

(2) Have at least one fill of an asthma controller medication within 2 months after the ED visit (including the day of visit). (B only)

(3) No visit(s) to a primary care provider that occurred within 14 days following the ED visit and having no fills of an asthma controller medication within 2 months after the ED visit (including the day of the visit) (Neither A or B) (Failure)

(4) No Visit(s)to a primary care provider that occurred within 30 days following the ED visit and having no fills of an asthma controller medication within 2 months after the ED visit (including the day of the visit) (Failure)

Stratifications 3 and 4 could be calculated internally if desired.

S.11. **Risk Adjustment Type** (Select type. Provide specifications for risk stratification in measure testing attachment)
Other
If other: Strtification for reasons other then risk adjustment

S.12. **Type of score:**
Rate/proportion
If other:

S.13. **Interpretation of Score** *(Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)*
Better quality = Higher score

S.14. **Calculation Algorithm/Measure Logic** (*Diagram or describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; time period for data, aggregating data; risk adjustment; etc.)*
Step 1: Look for any qualifying events (eligible events) using the criteria for ED visits.

Step 2: Assess eligibility for events that occur in each month by confirming that the child was continuously enrolled for 2 months following the month in which the ED visit occurs (3 months total including the index month).

Step 3: The denominator is all events identified in Step 1 who meet the continuous enrollment criteria in Step 2.

Step 4: Find children with identifiable asthma among those with eligible events. Use the presence or absence of identifiable asthma as a stratification variable as specified below.

A. Identify the assessment period. We classify children as having identifiable asthma by evaluating services used during what we call the assessment period. The analysis period consists of the 2 year look back period plus all prior months in the Reporting Year. In other words if calendar year 2012 is the Reporting Year, the look back period would include calendar years 2010 and 2011. When looking for events in January 2011, the assessment period would include only CY 2009 and CY 2010. For February 2011, the assessment period would include CY 2010, CY 2011 and January 2012, and so on until for December the look back period would include CY 2010, CY 2011 and January-November, 2012.

B. Analyze the data month by month in chronological order.

1.Exclude those children who have not been enrolled in the health plan for the two months following the month of the ED visit;

2.Evaluate for the presence of identifiable asthma if any of the criteria described in a, b, or c below are satisfied, (along with an ED visit with the primary or secondary diagnosis of asthma):

a.Any prior hospitalization with asthma as primary or secondary diagnosis

b.Qualifying events after the fifth birthday at time of event:

i.One or more prior ambulatory visits with asthma as the primary diagnosis OR

ii.Two or more ambulatory visits with asthma as a diagnosis, OR

iii.One ambulatory visit with asthma as a diagnosis AND at least One asthma related prescription, OR

iv.Two or more ambulatory visits with a diagnosis of bronchitis

c. Qualifying events, any age:

i.Three or more ambulatory visits with diagnosis of asthma or bronchitis, OR

ii.Two or more ambulatory visits with a diagnosis of asthma AND/OR

iii.Bronchitis AND one or more asthma related prescriptions

NOTE: For eligibility purposes, asthma-related medicine refers to long acting beta agonist (alone or in combination) or inhaled corticosteroid (alone or in combination), anti-asthmatic combinations, methylxanthines (alone or in combination), and/or mast cell stabilizers. Leukotriene inhibitors are excluded for this purpose.

3. Classify by yes or no whether or not the child met the criteria for identifiable asthma during the month of the visit.

Step 5: Identify Numerator A. Numerator A is the number of eligible children seen in an outpatient visit by a primary care physician among those with primary care visits (See Table 1 and 2 for primary care physicians and PCP visit codes) within 14 days following the ED visit (plus some inpatient codes).

Step 6: Identify Numerator B. Numerator B is the number of eligible children seen in an outpatient visit by a primary care physician among those with primary care visits (See Table 1 and 2 for primary care physicians and PCP visit codes) within 30 days following the ED visit (plus some inpatient codes).

Step 7: Identify Numerator C. Numerator C is the number of eligible children that have at least one fill of a controller medication within 2 months following the ED visit (including the day of the visit) (See Table 3 for medications).

** For Steps 5-7, report as 100 x (numerator/denominator) to 2 decimal place. **

Step 8: Repeat by strata: presence of identifiable asthma, and both overall and within identifiable asthma category by age, race/ethnicity, Urban Influence Code (UIC), county poverty level, insurance type, benefit type. Report by race/ethnicity within age strata and repeat that analysis by UIC, and by county poverty level. Report by insurance type and benefit type within race/ethnicity.

Eliminate any strata with less than 50 children.

See Step 9 for specification of stratifying variables.

Step 9: Specification of Stratification Variables:

i. Record status with regard to having identifiable asthma as described in Step 4.

ii. Identify County equivalent of child's residence. If County and State or FIPS code are not in the administrative data, the zip codes can be linked to County indirectly, using the Missouri Census Data Center (http://mcdc.missouri.edu/). These data will link to County or County equivalents as used in various states.

iii. Identify the Urban Influence Code or UIC for the County of child's residence. (2013 urban influence codes available at: http://www.ers.usda.gov/data-products/urban-influence- codes.aspx#.UZUvG2cVoj8 .

iv. Identify the Level of Poverty in the child's county of residence. The percent of all residents in poverty by county or county equivalent are available from the US Department of Agriculture at http://www.ers.usda.gov/data-products/county-level-data- sets/download-data.aspx . Our stratification standards are based on 2011 US population data that we have analyzed with SAS 9.3. Using child's state and county of residence (or equivalent) or FIPS code, use the variable PCTPOVALL_2011 to categorize into one of 5 Strata:

1. Lowest Quartile of Poverty if percent in poverty is <=12.5%
2. Second Quartile of Poverty if percent in poverty is >12.5% and <=16.5%
3. Third Quartile of poverty if percent in poverty is >16.5% and <=20.7%
4. First upper quartile (75th-90th) if percent in poverty is >20.7% and <=25.7%
5. Second upper quartile (>90th percentile)

v. Categorize age by age at the last day of the prior month. Aggregate into age categories ages 2-4, ages 5-11, ages 12-18, ages 19-21.

vi. Categorize Race/Ethnicity as Hispanic, non-Hispanic White, Non-Hispanic Black, non-Hispanic Asian/Pacific Islander, and Non- Hispanic Other.

vii. Insurance as Private (Commercial), Public, None or Other

viii. Benefit Type as HMO, PPO, FFS, PCCM, Other

S.15. Sampling *(If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)*
IF a PRO-PM, identify whether (and how) proxy responses are allowed.

S.16. Survey/Patient-reported data *(If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)*
IF a PRO-PM, specify calculation of response rates to be reported with performance measure results.

S.17. Data Source *(Check ONLY the sources for which the measure is SPECIFIED AND TESTED).*
If other, please describe in S.18.
Claims (Only)

S.18. Data Source or Collection Instrument *(Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data is collected.)*
IF a PRO-PM, identify the specific PROM(s); and standard methods, modes, and languages of administration.
Administrative data with billing and diagnosis codes.

S.19. **Data Source or Collection Instrument** *(available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)*
No data collection instrument provided

S.20. **Level of Analysis** *(Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)*
Population : Community, County or City, Population : Regional and State

S.21. **Care Setting** *(Check ONLY the settings for which the measure is SPECIFIED AND TESTED)*
Clinician Office/Clinic, Emergency Department, Hospital
If other:

S.22. **COMPOSITE Performance Measure** - Additional Specifications *(Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)*

2. Validity – See attached Measure Testing Submission Form
Composite_Testing_Attachhment-_12_16_16.docx

2.1 For maintenance of endorsement
Reliability testing: If testing of reliability of the measure score was not presented in prior submission(s), has reliability testing of the measure score been conducted? If yes, please provide results in the Testing attachment. (Do not remove prior testing information – include date of new information in red.)

2.2 For maintenance of endorsement
Has additional empirical validity testing of the measure score been conducted? If yes, please provide results in the Testing attachment. (Do not remove prior testing information – include date of new information in red.)

2.3 For maintenance of endorsement
Risk adjustment: For outcome, resource use, cost, and some process measures, risk-adjustment that includes SDS factors is no longer prohibited during the SDS Trial Period (2015-2016). Please update sections 1.8, 2a2, 2b2, 2b4, and 2b6 in the Testing attachment and S.14 and S.15 in the online submission form in accordance with the requirements for the SDS Trial Period. NOTE: These sections must be updated even if SDS factors are not included in the risk-adjustment strategy. If yes, and your testing attachment does not have the additional questions for the SDS Trial please add these questions to your testing attachment:

What were the patient-level sociodemographic (SDS) variables that were available and analyzed in the data or sample used? For example, patient-reported data (e.g., income, education, language), proxy variables when SDS data are not collected from each patient (e.g. census tract), or patient community characteristics (e.g. percent vacant housing, crime rate).

Describe the conceptual/clinical and statistical methods and criteria used to select patient factors (clinical factors or sociodemographic factors) used in the statistical risk model or for stratification by risk (e.g., potential factors identified in the literature and/or expert panel; regression analysis; statistical significance of p<0.10; correlation of x or higher; patient factors should be present at the start of care)

What were the statistical results of the analyses used to select risk factors?

Describe the analyses and interpretation resulting in the decision to select SDS factors (e.g. prevalence of the factor across measured entities, empirical association with the outcome, contribution of unique variation in the

outcome, assessment of between-unit effects and within-unit effects)

NATIONAL QUALITY FORUM—Composite Measure Testing (subcriteria 2a2, 2b2-2b7, 2c)

Measure Number (*if previously endorsed*)**:** Click here to enter NQF number
Composite Measure Title: Percentage of Asthma ED visits followed by Evidence of Care Connection
Date of Submission: 12/16/2016
Composite Construction:
☐Two or more individual performance measure scores combined into one score
☒ All-or-none measures (e.g., all essential care processes received or outcomes experienced by each patient)

Instructions: Please contact NQF staff before you begin.

- If a component measure is submitted as an individual performance measure, the non-composite measure testing form must also be completed and attached to the individual measure submission.
- Measures must be tested for all the data sources and levels of analyses that are specified. ***If there is more than one set of data specifications or more than one level of analysis, contact NQF staff*** about how to present all the testing information in one form.
- **Sections 1, 2a2, 2b2, 2b3, 2b5, 2b7, and 2c must be completed.**
- **For composites with outcome and resource use measures**, section **2b4** also must be completed.
- If specified for **multiple data sources/sets of specificaitons** (e.g., claims and EHRs), section **2b6** also must be completed.
- Respond to all questions as instructed with answers immediately following the question. All information on testing to demonstrate meeting the subcriteria for reliability (2a2) and validity (2b2-2b7) and composites (2c) must be in this form. An appendix for *supplemental* materials may be submitted, but there is no guarantee it will be reviewed.
- If you are unable to check a box, please highlight or shade the box for your response.
- Maximum of 25 pages (*incuding questions/instructions;* minimum font size 11 pt; do not change margins). ***Contact NQF staff if more pages are needed.***
- Contact NQF staff regarding questions. Check for resources at Submitting Standards webpage.
- For information on the most updated guidance on how to address sociodemographic variables and testing in this form refer to the release notes for version 7.0 of the Measure Testing Attachment and the 2016 Measure Evaluation Criteria and Guidance.

Note: The information provided in this form is intended to aid the Standing Committee and other stakeholders in understanding to what degree the testing results for this measure meet NQF's evaluation criteria for testing.

2a2. Reliability testing [10] demonstrates the measure data elements are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period and/or that the measure score is precise. For **PRO-PMs and composite performance measures**, reliability should be demonstrated for the computed performance score.

2b2. Validity testing [11] demonstrates that the measure data elements are correct and/or the measure score correctly reflects the quality of care provided, adequately identifying differences in quality. For **PRO-PMs and composite performance measures**, validity should be demonstrated for the computed performance score.

2b3. Exclusions are supported by the clinical evidence; otherwise, they are supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion; [12]

AND

If patient preference (e.g., informed decisionmaking) is a basis for exclusion, there must be evidence that the exclusion impacts performance on the measure; in such cases, the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category computed separately, denominator exclusion category computed separately). [13]

2b4. For outcome measures and other measures when indicated (e.g., resource use):

- **an evidence-based risk-adjustment strategy** (e.g., risk models, risk stratification) is specified; is based on patient factors (including clinical and sociodemographic factors) that influence the measured outcome and are present at start of care; [14,15] and has demonstrated adequate discrimination and calibration

OR

- rationale/data support no risk adjustment/ stratification.

2b5. Data analysis of computed measure scores demonstrates that methods for scoring and analysis of the specified measure allow for **identification of statistically significant and practically/clinically meaningful** [16] **differences in performance**;

OR

there is evidence of overall less-than-optimal performance.

2b6. If multiple data sources/methods are specified, there is demonstration they produce comparable results.

2b7. For **eMeasures, composites, and PRO-PMs** (or other measures susceptible to missing data), analyses identify the extent and distribution of missing data (or nonresponse) and demonstrate that performance results are not biased due to systematic missing data (or differences between responders and nonresponders) and how the specified handling of missing data minimizes bias.

2c. For composite performance measures, empirical analyses support the composite construction approach and demonstrate that:

2c1. the component measures fit the quality construct and add value to the overall composite while achieving the related objective of parsimony to the extent possible; and

2c2.the aggregation and weighting rules are consistent with the quality construct and rationale while achieving the related objective of simplicity to the extent possible.

(*if not conducted or results not adequate, justification must be submitted and accepted)*

Notes

10. Reliability testing applies to both the data elements and computed measure score. Examples of reliability testing for data elements include, but are not limited to: inter-rater/abstractor or intra-rater/abstractor studies; internal consistency for multi-item scales; test-retest for survey items. Reliability testing of the measure score addresses precision of measurement (e.g., signal-to-noise).

11. Validity testing applies to both the data elements and computed measure score. Validity testing of data elements typically analyzes agreement with another authoritative source of the same information. Examples of validity testing of the measure score include, but are not limited to: testing hypotheses that the measures scores indicate quality of care, e.g., measure scores are different for groups known to have differences in quality assessed by another valid quality measure or method; correlation of measure scores with another valid indicator of quality for the specific topic; or relationship to conceptually related measures (e.g., scores on process measures to scores on outcome measures). Face validity of the measure score as a quality indicator may be adequate if accomplished through a systematic and transparent process, by identified experts, and explicitly addresses whether performance scores resulting from the measure as specified can be used to distinguish good from poor quality.

12. Examples of evidence that an exclusion distorts measure results include, but are not limited to: frequency of occurrence, variability of exclusions across providers, and sensitivity analyses with and without the exclusion.
13. Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.

14. Risk factors that influence outcomes should not be specified as exclusions.
15. With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74 percent v. 75 percent) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall less-than-optimal performance may not demonstrate much variability across providers.

1. DATA/SAMPLE USED FOR ALL TESTING OF THIS MEASURE

Often the same data are used for all aspects of measure testing. In an effort to eliminate duplication, the first five questions apply to all measure testing. If there are differences by aspect of testing,(e.g., reliability vs. validity) be sure to indicate the specific differences in question 1.7.

1.1. What type of data was used for testing? (*Check all the sources of data identified in the measure specifications and data used for testing the measure. Testing must be provided for all the sources of data specified and intended for measure implementation.* ***If different data sources are used for different components in the composite, indicate the component after the checkbox. If different data sources are used for the numerator and denominator, indicate N [numerator] or D [denominator] after the checkbox.***)

Measure Specified to Use Data From:	Measure Tested with Data From:

(*must be consistent with data sources entered in S.23*)	
☐ abstracted from paper record	☐ abstracted from paper record
☒ administrative claims	☒ administrative claims
☐ clinical database/registry	☐ clinical database/registry
☐ abstracted from electronic health record	☐ abstracted from electronic health record
☐ eMeasure (HQMF) implemented in EHRs	☐ eMeasure (HQMF) implemented in EHRs
☐ other: Click here to describe	☐ other: Click here to describe

1.2. If an existing dataset was used, identify the specific dataset (*the dataset used for testing must be consistent with the measure specifications for target population and healthcare entities being measured; e.g., Medicare Part A claims, Medicaid claims, other commercial insurance, nursing home MDS, home health OASIS, clinical registry*).

Analysis conducted in New York State Medicaid administrative and encounter data. Reliable source of information for population level quality measurement. Most databases contain consistent elements, are available in a timely manner, provide information about large numbers of individuals, and are relatively inexpensive to obtain and use.

1.3. What are the dates of the data used in testing? 2010 and 2011

1.4. What levels of analysis were tested? (*testing must be provided for <u>all</u> the levels specified and intended for measure implementation, e.g., individual clinician, hospital, health plan*)

Measure Specified to Measure Performance of: (***must be consistent with levels entered in item S.26***)	**Measure Tested at Level of:**
☐ individual clinician	☐ individual clinician
☐ group/practice	☐ group/practice
☐ hospital/facility/agency	☐ hospital/facility/agency
☒ health plan	☐ health plan
☒ other: Population, State, County, Urbancity and Poverty Levels	☒ other: Population, State, Urbancity and Poverty Levels

1.5. How many and which <u>measured entities</u> were included in the testing and analysis (by level of analysis and data source)? (*identify the number and descriptive characteristics of measured entities included in the analysis (e.g., size, location, type); if a sample was used, describe how entities were selected for inclusion in the sample*)

We used New York State Medicaid data. We analyzed the data by race/ethnicity, urbanicity, and poverty levels. Data analyses are now being performed at the county and health plan levels.

1.6. How many and which <u>patients</u> were included in the testing and analysis (by level of analysis and data source)? (*identify the number and descriptive characteristics of patients included in the analysis (e.g., age, sex, race, diagnosis); if a sample was used, describe how patients were selected for inclusion in the sample*)

All New York State Medicaid patients were included in the testing and analysis. More than 196,000 children had identifiable asthma (using our definition) in NY State Medicaid data in 2011 (almost 11% of all children) and nearly 60,000 ED visits for asthma were from the eligible children.

1.7. If there are differences in the data or sample used for different aspects of testing (e.g., reliability, validity, exclusions, risk adjustment), identify how the data or sample are different for each aspect of testing reported below.

The measure is specified at the county and health plan levels but reliability testing for those levels is pending We do not own the data and it has taken some time to negotiate further analysis, which should be completed shortly.

1.8 What were the patient-level sociodemographic (SDS) variables that were available and analyzed in the data or sample used? For example, patient-reported data (e.g., income, education, language), proxy variables when SDS data are not collected from each patient (e.g. census tract), or patient community characteristics (e.g. percent vacant housing, crime rate).

We analyzed race/ethnicity, urbanicity and level of poverty.

2a2. RELIABILITY TESTING

2a2.1. What level of reliability testing was conducted? (*may be one or both levels*)
***<u>Note</u>**: Current guidance for composite measure evaluation states that reliability must be demonstrated for the composite performance measure score.*
☒ **Performance measure score** (e.g., *signal-to-noise analysis*)

2a2.2. Describe the method of reliability testing and what it tests (*describe the steps—do not just name a method; what type of error does it test; what statistical analysis was used*)

A series of detailed literature reviews (scoping reviews) were conducted including regarding the capacity to use administrative data and ICD codes to identify asthma. We confirmed that administrative data were reliable and more so when two years of data were used to identify asthma. We assessed the importance of including hospitalization as denominator events to complement ED visits and found that reliability and sensitivity were improved when both ED visits and hospitalizations were included. This analysis was undertaken using both HCUP

national data and the NY State data. We reported these findings at AcademyHealth, that since the vast majority of visits with primary or secondary diagnoses of asthma are from the ED and that not all ED visits are coded for when the child is admitted, that the loss of sensitivity of not including admissions is far worse that than the loss of specificity when including hospitalizations.

We assessed using billing data that revenue codes when used with procedure codes enhanced the already excellent capacity of billing codes to identify the occurrence of events.

We further tested the validity of the measure and are currently awaiting our reliability tests in New York State Medicaid. These tests will consider the extent of statistically significant variation between health plans and between counties, adding those levels to our analyses.

2a2.3. What were the statistical results from reliability testing? (e.*g., percent agreement and kappa for the critical data elements; distribution of reliability statistics from a signal-to-noise analysis*)

2a2.4 What is your interpretation of the results in terms of demonstrating reliability? (i.*e., what do the results mean and what are the norms for the test conducted?*)

Stratification to evaluate separately only those children who were known to be asthmatic prior to the index ED visit can contribute to both understandability and acceptability. We find these data and their consistency with expected findings to be persuasive that the measure is both valid and sensitive to real differences. We await similar data to demonstrate that the measure is reliable both at the county and plan levels.

2b2. VALIDITY TESTING

Note*: Current guidance for composite measure evaluation states that validity should be demonstrated for the composite performance measure score. If not feasible for initial endorsement, acceptable alternatives include assessment of content or face validity of the composite OR demonstration of validity for each component. Empirical validity testing of the composite measure score is expected by the time of endorsement maintenance.*

2b2.1. What level of validity testing was conducted?

☒ **Composite performance measure score**

☒ **Empirical validity testing**

☐ **Systematic assessment of face validity of performance measure score as an indicator** of quality or resource use (*i.e., is an accurate reflection of performance on quality or resource use and can distinguish good from poor performance*)

☒ **Systematic assessment of content validity**

☒ **Validity testing for component measures** *(check all that apply)*

Note*: applies to ALL component measures, unless already endorsed or are being submitted for individual endorsement.*

☐ **Endorsed (or submitted) as individual performance measures**

☒ **Critical data elements** (*data element validity must address ALL critical data elements*)
☐ **Empirical validity testing of the component measure score(s)**
☒ **Systematic assessment of face validity of component measure score(s) as an indicator** of quality or resource use (*i.e., is an accurate reflection of performance on quality or resource use and can distinguish good from poor performance*)

2b2.2. For each level of testing checked above, describe the method of validity testing and what it tests (*describe the steps—do not just name a method; what was tested, e.g., accuracy of data elements compared to authoritative source, relationship to another measure as expected; what statistical analysis was used)*

We utilized a peer reviewed method the 360 degree approach that was incorporated by the CAPQuaM, an AHRQ-CMS CHIPRA Center of Excellence. It incorporates the findings of a RAND modified Delphi panel. For this measure we accepted median scores of 8 or 9 out of 9 to incorporate any element into measure. This is a more conservative rubric than the literature which often includes those rated 7 of 9.

The composite elements of this measure were derived from the findings of the panel as was guidance for stratification.

- We assessed how stable various measures were to small changes in their specifications and have identified measures that we found to be robust to such changes and consistent with the recommendations of our Expert Panel.
    - Testing revealed the importance of using revenue codes as well as CPT codes
    - We incorporate validated NCQA code sets into this measure for numerator determinations, unmodified for medication and slightly modified for primary care visits to restrict to outpatient visits.
- Our definition of identifiable asthma was selective but not overly restrictive
    - It identified nearly 200,000 children with approximately 87% of anticipated asthmatics in New York State Medicaid, far more than the HEDIS identifiable asthma definition.
    - It achieves our dual goals of selecting from among all children who show signs or symptoms of asthma and being more inclusive than existing measures.

As noted above in reliability, the measure identified theoretically sound and predicted differences among groups of children.

The literature supports the use of our data elements.

Our literature review found that while there is moderate agreement (kappa = 0.45 - 0.50) when comparing administrative data regarding the presence of constructs such as recent asthma attacks, use of asthma medications, attack or medication, attack and medication, using 1 year of administrative claims data to parent report, the agreement improves from 0.55 to 0.60 when using two years of

data.(1) We expect that these kappas would be significantly higher were the analyses restricted to children with disease that met our construct criteria for identifiable asthma.

ICD-9 and ICD-10 codes for asthma on patients' medical charts typically match claims data. ICD-9-CM administrative data have been validated using various methodologies for various purposes (2-10). As examples: Jollis et. al. compared insurance claims data to the clinical database data to identify patients using ICD-9-CM codes for selected diagnoses and found that when all diagnoses were included, overall kappa agreement was .75 (2). Lee et. al. compared heart failure diagnoses identified in ICD-9 to the Framingham clinical criteria as the gold standard and found a positive predictive value of 94.3% (3). Muhajarine et. al. compared self-reported heart health survey data to physician claims from a database registry and found an overall agreement for hypertension of 81.7% indicating moderate to high agreement(4).Quan et. al. tested administrative discharge data to chart data for recording of comorbidity information using a Charlson index for measurement. Overall agreement of the Charlson index was good between databases but decreased as burden of comorbidity increased. Despite the differences, the Charlson index score derived from the administrative data had an identical ability of predicting in-hospital mortality to the score derived from chart data (5). Weiner and colleagues advocate a broad use of administrative data for monitoring quality and our uses fall within their recommendations (6). Romano and Mark assessed the sensitivity and reliability of coding for common diagnoses and procedures using California discharge abstracts and found in 7 of 8 comorbidity categories, sensitivity exceeded 85% (7). Weingart et. al. used administrative data, specifically a complications screening algorithm to identify inpatient complications using physician judgment as the gold standard and found flagged complications in 68.4% of surgical cases and 27.2% of medical cases (8). Yasmeen et. al. examined the sensitivity and positive predictive value to validate the coding of obstetric diagnoses and procedures in hospital-reported data using the medical record as the gold standard and found that surgical procedures and birth deliveries were accurately reported with sensitivities and PPVs exceeding 90% (9). Quam et.al. found that claims data that includes diagnostic and pharmacy data yields a high level of concordance with the medical record and survey data in the identification of a specific medical condition (10). Studies have shown high sensitivity of 72% and specificity of 95% for high risk conditions with overall accuracy of 90% obtained from administrative billing data among children with high-risk conditions including asthma which made up 87% of the high risk conditions (11), and high predictive value among adolescents and adults with asthma (12). Twiggs et. al. found that the combined use of both medical and pharmaceutical claims was more effective in identifying asthmatics than either one by itself (13). HEDIS criteria using administrative data support peer reviewed research, for example in patients with persistent asthma based on HEDIS criteria in five Medicaid programs (Colorado, Georgia, Indiana, New Jersey, Washington) using ICD-9-CM code 493.x to measure filling prescriptions of asthma control medication and the ratio of controller medication to the total number of medication prescriptions filled within one year (14). Fowles and colleagues report sensitivity and specificity of claims compared with ambulatory medical records to identify asthma was 0.82 and 0.99, respectively. Sensitivity of .82 using claims was higher than sensitivity using self-report at .64 (15). Wilchesky compared chart abstraction to diagnoses obtained from administrative database: asthma claims were highly specific, Sp= 96.76 (95%CI 96.5, 97.0). Although sensitivity for most conditions was below 60%, sensitivity was enhanced when all claims for services were assessed, as we propose to do (16). Bronstein et al found that 88.3% of diagnoses asthma on claims agreed

with medical record, with a negative predictive value of 0.85 and a positive predictive value of 0.88.They conclude that claims are generally an accurate indicator of the content of a patient encounter. (17) Steinwachs et al. compared billed claims to medical records based on date of visit and diagnosis, on average, 90% of billed visits were documented in the medical record, for asthma there was 90.9 percent of billed visits in record on same date and 82.8 percent of billed visits with same diagnosis in record on same date. (18) Quan et al documented the validity of ICD-9-CM and ICD-10 coding systems in coding clinical information and found that ICD-10 data was generally comparable with that of ICD-9-CM data in recording clinical information (19). Regarding our capacity to identify exclusions, Quan et al found that claims had a PPV of 91.9, and a negative predictive value of 92.6, with *k* of 0.65 (substantial agreement[2]) compared to chart review for chronic pulmonary disease . ICD 10 performed similarly in this study (19).

From a public health perspective, asthma surveillance systems in several states, including Maine, North Carolina, Connecticut and Michigan, have shown the feasibility of using administrative data to identify children having asthma, based on primary and secondary diagnosis codes reported on inpatient and outpatient claims. In addition to identifying asthma, important demographic data such as gender, race/ethnicity, program of enrollment and county of residence (urbanicity) can be used to assess associations between utilization services for asthma, including ED visits or hospitalizations, and demographic characteristics. Risk factor information from administrative data can be used to target educational programs, clinical assessments, and treatment programs (20-23).

Researchers also classified children with evidence of persistent asthma using HEDIS criteria, (24). Another study showed the usefulness of ICD9 493.x to identify asthma for a quality measure using Maryland Medicaid Claims data (25). Like our measure, those researchers excluded children with a diagnosis of cystic fibrosis (ICD9 277) (25). Schneeweiss commented that misclassification errors from claims data are asymmetric, with specificity typically exceeding 95% and sensitivity often less (26). Such a pattern makes it unlikely that an accountable entity would be held accountable for patients that do not actually have asthma.

As part of an alpha test for our measure we used a contractor to survey more than a dozen hospitals across three CAPQuaM measure sets. Responses from 10 hospitals were specific to asthma. We found that variables including date of birth, race, ethnicity, county of residence, primary and secondary diagnosis of asthma in the ED, hospitalizations, payment source, and others were reported to be readily available and easy to within the medical record.

In light of the literature review and our alpha test, we attest that the data elements for the measure match those assessed in the literature and our alpha test, with most being supported by both the literature review and the alpha test.

To summarize please see table below:

[2] The *k* value indicates a near perfect agreement (*k*: 0.81-1.0 between coded data and chart review data), substantial agreement (*k*: 0.61-0.80), moderate agreement (*k*: 0.41-0.60), and fair agreement (*k:* 0.21-0.40).

Data element	**Reference** (e.g., Quam, et al., 1993)	**Data source** (e.g., Medicare FFS outpatient data)	**Statistical results** (e.g., kappa, sensitivity, specificity, etc.)
Numerator			
Asthma diagnosis in clinic/outpatient setting	Wilchesky, M., Tamblyna, R. M., & Huang, A. (2004). Validation of diagnostic codes within medical services claims. Journal of Clinical Epidemiology, 57, 131-141.	Drug utilization review, the Charlson comorbidity index and the Johns Hopkins Adjusted Care Group Case-Mix profile (ADGs).	Asthma claims were highly specific, Sp= 96.76 (95%CI 96.5, 97.0).
Fill of short acting beta agonist Fill of asthma controller medication • anti- asthmatic combination • antibody inhibitor • inhaled steroid combinations • inhaled corticosteroids (alone or in combination) • leukotriene modifiers • methylxanthines (alone or in combination) • mast cell stabilizers	Samnaliev, M., Baxter, J. D., & Clark, R. E. (2009). Comparative evaluation of two asthma care quality measures among Medicaid beneficiaries. Chest, 135(5), 1193-1196. Mudd KE, Bollinger ME, Hus VD, et al. Concordance of Mediaciad and pharmacy record data in inner-city children with asthma. Contemporary Clinical Trials 29(2008) 13-20 Grymonpre R, Xheang M, Fraser M, et al. cvalidity of Precritpion Claims Database to Estimate Medication Adherence in Older Persons	Using complete claims and pharmaceutical data for 19,076 patients with persistent asthma (based on Health Effectiveness and Data Information Set criteria) in five Medicaid populations (Colorado, Georgia, Indiana, New Jersey, Washington) using ICD-9-CM code 493.x to measure filling prescriptions of asthma control medication. Comparison of pharmacy records and Medicaid clams	Sensitivity and specificity were combined into one statistic, the area under the ROC curve. For controller medications, the area under ROC curve is 0.705, which represents good agreement. For inner city children on Medicaid, Medicaid claims was sensitive compared to pharmacy records, identifying 91.3% of pharmacy claims for ICS, 94.7% for SABA and 90.4% for leukotriene modifiers (Table 2)

	e.g. Samnaliev M, Baxter JD, and Clark RE. Comparative Evaluation of Two Asthma Care Quality Measure Among Medicaid Beneficiaries. Berger WE, Legorreta AP, Blaiss MS, et al. The Utility of the HEDIS Asthma Measure to predict asthma related outcomes. Annals of Allergy, Asthma, and Immunology. 93:538-545. 2004.	Manitoba prescription claims and pill count for medication adherence A number of studies found that asthma drug data using the similar HEDIS data elements that we propose were valid for predicting things like emergency department use in asthma patients. As indicated in this article: "HEDIS has become an important industry standard…adopted by regulators, consumers, and public purchasers of health care" Commercial claims	Using a much stronger standard of actual compliance, this study found for multiple condition for two conditions in adults that there was strong concordance (79% and 88% respectively) between pill counts and admisntrative claims data. Not specific for asthma meds Controller medication use was associated with fewer ED visits across 5 states, with OR ranging from 0.30 to 0.47, all significant, overall 0.34 (0.32-0.36). Used actual HEDIS pharmacy code set as do we. Low Controller use had an adjusted odds ratio of 1.72 (1.42-2.08) of ED visit or hospitalization. Those with moderate and higher adherence had graded reductions in undesirable outcomes in the predicted fashion (OR, .84 and 0.72 respectively)
Denominator			
Asthma diagnosis in inpatient/ED settings	Wilchesky, M., Tamblyna, R. M., & Huang, A. (2004). Validation of diagnostic codes within medical services claims. Journal of Clinical Epidemiology, 57, 131-141.	Drug utilization review, the Charlson comorbidity index and the Johns Hopkins Adjusted Care Group Case-Mix profile (ADGs).	Asthma claims were highly specific, Sp= 96.76 (95%CI 96.5, 97.0).
Asthma diagnosis in ambulatory setting	Fowles, J. B., Fowler, E. J., & Craft, C. (1998). Validation of claims diagnoses and self-reported conditions compared with medical records for selected chronic diseases.	Multispecialty group practice in Minneapolis, Minnesota	Sensitivity and specificity was 0.82 and 0.99, respectively. Sensitivity of .82 using claims was higher than sensitivity using self-report at .64

	Journal of Ambulatory Care Management, 21(1), 24-34.		
Bronchitis diagnosis in ambulatory setting	Improving Healthcare for the Common Good (IPRO). Avoidance of Antibiotic Treatment in Adults with Acute Bronchitis. May 2011. http://www.health.ny.gov/health_care/managed_care/reports/docs/adults_antibiotic.pdf	New York Medicaid managed care members	An IPRO analysis of ambulatory claims data in NY State Medicaid found that of 651 individuals with an administrative claim for bronchitis, 629 (96.6%) were confirmed by chart review.
Prescription of short acting beta agonist in ambulatory setting	Samnaliev, M., Baxter, J. D., & Clark, R. E. (2009). Comparative evaluation of two asthma care quality measures among Medicaid beneficiaries. Chest, 135(5), 1193-1196.	Using complete claims and pharmaceutical data for 19,076 patients with persistent asthma (based on Health Effectiveness and Data Information Set criteria) in five Medicaid populations (Colorado, Georgia, Indiana, New Jersey, Washington) using ICD-9-CM code 493.x to measure filling prescriptions of asthma control medication.	Sensitivity and specificity were combined into one statistic, the area under the ROC curve. For controller medications, the area under ROC curve is 0.705 and the Deviance is 21,749.
Prescription of other asthma medications in ambulatory setting (see list above)	Samnaliev, M., Baxter, J. D., & Clark, R. E. (2009). Comparative evaluation of two asthma care quality measures among Medicaid beneficiaries. Chest, 135(5), 1193-1196.	Using complete claims and pharmaceutical data for 19,076 patients with persistent asthma (based on Health Effectiveness and Data Information Set criteria) in five Medicaid populations (Colorado, Georgia, Indiana, New Jersey, Washington) using ICD-9-CM code 493.x to measure filling prescriptions of asthma control medication.	Both administrative measures of asthma care quality were associated with lower odds of ED utilization. The controller medication measure of asthma care quality may be better than the ratio measure in relation to emergency asthma care utilization by Medicaid beneficiaries.
Age	NYSDOH CAPQuaM Analysis – internal testing	NY State Medicaid Data	Meaningful variation by age groups as predicted, with peaks in younger children and older adolescents.
	CMS MMIS data requirements Exemplar specifications at https://www.cms.gov/Research-Statistics-Data-and-Systems/Computer-Data-and-	State Medicaid MMIS systems	States are required to submit validated claims data including age or date of birth. With tolerance of 0.1%

	Systems/MSIS/downloads/msisdd2010.pdf		
Exclusions			
Diagnosis of COPD	Rawson NS, Malcolm E., validity of the recording of ischaemic heart disease and chronic obstructive pulmonary disease in the Saskatchewan health care datafiles. State Med. 1995. Dec 30: 14 (24):2627-43.	Administrative health care datafiles of the Canadian province of Saskatchewan	Comparisons between hospital data and medical charts for chronic airways obstruction patients showed excellent diagnostic agreement at 94%. In other words, the charted discharge diagnosis from the patient's medical record showed exact agreement for 94.2% of these patients.
	Ginde AA, Tsai CL, Blanc PG, Camargo CA Jr. Positive predictive value of ICD-9-CM codes to detect acute exacerbation of COPD in the emergency department. Jt Comm J Qual Patient Saf.2008;34(11):678–680.	Two academic emergency departments.	The overall positive predictive value for the presence of any of the specified codes, including COPD, was 97%. The positive predictive value for a code of 496 alone was 60% (95% CI 32-84%).
	Gershon AS, Wang C, Guan J, Vasilevska-Ristovska J, Cicutto L, To T. Identifying individuals with physician diagnosed COPD in health administrative databases. Copd. 2009;6(5):388–394. doi: 10.1080/15412550903140865.	Claims in Ontario, Canada	The combination of one or more outpatient ICD-9 codes (491.xx, 492.xx, 496.xx) and ICD-10 inpatient ICD-10 codes (J41, J43, J44) had a sensitivity of 85% and specificity of 78.4% among 113 patients with COPD and 329 patients without COPD.
Diagnosis of COPD Diagnosis of cystic fibrosis Diagnosis of emphysema	Quan, H., Li, B., Saunders, L. D., Parsons, G. A., Nilsson, C. I., Alibhai, A., et al. (2008). Assessing validity of icd-9-cm and icd-10 administrative data in recording clinical conditions in a unique duallycoded database. HSR: Health Services Research, 43(4), 1424.	Four teaching hospitals in Alberta, Canada	Claims had a PPV of 91.9, and a negative predictive value of 92.6, with *k* of 0.65 (substantial agreement[3]) compared to chart review for chronic pulmonary disease. ICD 10 performed similarly in this study

[3] The *k* value indicates a near perfect agreement (*k*: 0.81-1.0 between coded data and chart review data), and substantial agreement (*k*: 0.61-0.80).

(Exclusions identified anywhere are excluded. The measure is written to over exclude if need be, but our data suggest that exclusions are uncommon.	NCQA: http://www.qualityforum.org/QPS/QPSTool.aspx?m=367&e=1	The presence of diagnostic exclusions was extensively tested on the entire field test population (>82,000 members) to determine the effect on eligible population and the measure results experienced as a result of the application of clinical exclusions.	This measure was deemed valid by the expert panel and approved by NCQA's Committee on Performance Measurement (CPM) for continued inclusion in HEDIS[4]

[4] We note that 1799 and 1800 are not directly applicable because they were tested at the score level. However, the scores were dependent upon definitions which use the same data element level as our measure and thus provide indirect evidence of the capacity of a measure using such data elements to produce valid scores.

Thus we cite them not as specific evidence of our score level performance of the submitted measure, but as evidence that the HEDIS measures that rely on the same administrative data elements for their denominator have the capacity to distinguish signal to noise at a very high level. While the evidence is indirect it is dispositive. That is, we assert that had the data elements been inadequate it would result in non-differential misclassification error which is a major bias towards the null thus introducing noise and reducing signal. That this does not happen to an appreciable degree specifically implies that the data elements function well – indeed this could be one rationale for why NQF allows the use of performance score level analysis in the first place. These findings provide strong indirect evidence of the validity of our approach to capturing the measure's denominator.

There is nearly complete overlap of the denominator codes and there is overlap of the denominator elements. Where codes differ it is specific to decisions made by the CAPQuaM expert panel which was aware of the NCQA measures. Review of the medication lists for 0036 reveal that all medication used by the submitted CAPQuaM measure are also in the HEDIS measure. The CAPQuaM measure excludes specifically short acting beta agonists and leukotriene inhibitors at the specific direction of the CAPQuaM expert panel. We also specify exclude indacaterol from the list of "asthma specific medications" since it is a long acting beta agonist which is only indicated in the USA for treatment of COPD, which is a specific exclusion criterion for this measure.

Further, we identify asthma visits and medications using the same data that an insurance company or Medicaid would use for payment, including ICD codes, CPT codes, and revenue codes. We have had conversations with expert coders and New York State Department of Health Office of Health Insurance Programs to confirm our choices. Our literature review found that while there is moderate agreement (kappa = 0.45 - 0.50) when comparing administrative data regarding the presence of constructs such as recent asthma attacks, use of asthma medications, attack or medication, attack and medication, using 1 year of administrative claims data to parent report, the agreement improves from 0.55 to 0.60 when using two years of data.(1) We expect that these kappas would be significantly higher were the analyses restricted to children with disease that met our construct criteria for identifiable asthma.

The literature further supports our work as highlighted above in the table and in more detail in our testing form 2b2.3 (validity testing).

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2b2.3. What were the statistical results from validity testing? (*e.g., correlation; t-test*)

Chi square analyses support group to group differences were significant when studying race/ethnicity, level of poverty, and level of urbanicity in our data.

2b2.4. What is your interpretation of the results in terms of demonstrating validity? (i.*e., what do the results mean and what are the norms for the test conducted?*)

Meaningful differences among groups in predicted and theoretically sound directions were observed. Those known or believed to receive lower quality care had lower performance scores. There is a broad evidence and consensus that data elements can be used as we propose to use them.

2b3. EXCLUSIONS ANALYSIS

Note: *Applies to the composite performance measure, as well all component measures unless they are already endorsed or are being submitted for individual endorsement.*

NA ☐ no exclusions — *skip to section 2b4*

2b3.1. Describe the method of testing exclusions and what it tests (*describe the steps—do not just name a method; what was tested, e.g., whether exclusions affect overall performance scores; what statistical analysis was used*)

For clinical reasons and based upon expert panel recommendations we identified few diagnostic categories (cystic fibrosis, chronic obstructive lung disease, and emphysema). These represent clinically distinct groups who do not belong in a measure of asthma performance. Fortunately all are rare in children.

2b3.2. What were the statistical results from testing exclusions? (*include overall number and percentage of individuals excluded, frequency distribution of exclusions across measured entities, and impact on performance measure scores*)

This analysis is pending.

2b3.3. What is your interpretation of the results in terms of demonstrating that exclusions are needed to prevent unfair distortion of performance results? (*i.e., the value outweighs the burden of increased data collection and analysis. Note: **If patient preference is an exclusion**, the measure must be specified so that the effect on the performance score is transparent, e.g., scores with and without exclusion*)

Exclusions enhance the face validity of the measure meaningfully. The analytical time to create the exclusions is small and does not impact feasibility.

2b4. RISK ADJUSTMENT/STRATIFICATION FOR OUTCOME OR RESOURCE USE MEASURES

Note: *Applies to all outcome or resource use component measures, unless already endorsed or are being submitted for individual endorsement.*

If not an intermediate or health outcome, or PRO-PM, or resource use measure, skip to section 2b5.

2b4.1. What method of controlling for differences in case mix is used? *(check all that apply)*

☐ **Endorsed (or submitted) as individual performance measures**

☒ **No risk adjustment or stratification**

☐ **Statistical risk model**

☐ **Stratification by risk categories**
☒ **Other,** Stratification by race to elucidate findings but not to risk adjust. Also report stratification by components achieved.

2b4.1.1 If using statistical risk models, provide detailed risk model specifications, including the risk model method, risk factors, coefficients, equations, codes with descriptors, and definitions.

2b4.2. If an outcome or resource use component measure is not risk adjusted or stratified, provide rationale and analyses to demonstrate that controlling for differences in patient characteristics (case mix) is not needed to achieve fair comparisons across measured entities.

2b4.3. Describe the conceptual/clinical and statistical methods and criteria used to select patient factors (clinical factors or sociodemographic factors) used in the statistical risk model or for stratification by risk (*e.g., potential factors identified in the literature and/or expert panel; regression analysis; statistical significance of p<0.10; correlation of x or higher; patient factors should be present at the start of care*)

2b4.4a. What were the statistical results of the analyses used to select risk factors?

2b4.4b. Describe the analyses and interpretation resulting in the decision to select SDS factors (e.g. prevalence of the factor across measured entities, empirical association with the outcome, contribution of unique variation in the outcome, assessment of between-unit effects and within-unit effects)

The NIH Guideline specifically recommends against risk adjustment when considering asthma with similar expectations for the management of all children. These metrics should be equal across strata.

2b4.5. Describe the method of testing/analysis used to develop and validate the adequacy of the statistical model or stratification approach (*describe the steps—do not just name a method; what statistical analysis was used*)

Provide the statistical results from testing the approach to controlling for differences in patient characteristics (case mix) below.
If stratified, skip to 2b4.9

2b4.6. Statistical Risk Model Discrimination Statistics (*e.g., c-statistic, R-squared*)**:**

2b4.7. Statistical Risk Model Calibration Statistics (*e.g., Hosmer-Lemeshow statistic*):

2b4.8. Statistical Risk Model Calibration – Risk decile plots or calibration curves:

2b4.9. Results of Risk Stratification Analysis:

Stratification includes:

(1) Visit(s) to a primary care provider that occurred within 14 days following the ED visit.

- 5.0% of ED visits for asthma had follow up visits with primary care within 14 days after the visit.
  - 4.7% of visits for Black children
  - 5.1% of visits for Hispanic children
  - 5.5% of visits for White children

- 7.7% of ED visits for asthma had follow up visits with primary care within 30 days after the visit
  - 7.6% of visits for Black children
  - 7.6% of visits for Hispanic children
  - 8.3% of visits for White children

- Children age 7-18 were most likely to have 14 day follow up visits (5.4%)
  - Other age groups (2-4, 4-7, 18-21) range from 4.5 - 4.9%
  - 30 day f/u shows similar pattern

(2) Have at least one fill of an asthma controller medication within 2 months after the ED visit (including the day of visit). (B only)

- Controller medications were filled within 2 months after the ED visit for 34.4% of visits for children with and 13.5% of those without identifiable asthma. This helps to confirm that clinician behavior moves in the expected direction for our definition.

  - ED visits for White children were more likely to have associated fills for controllers within 2 months after the visit and those for Black children least

(3) No visit(s) to a primary care provider that occurred within 14 days following the ED visit and having no fills of an asthma controller medication within 2 months after the ED visit (including the day of the visit) (Neither A or B) (Failure)

(4) No Visit(s)to a primary care provider that occurred within 30 days following the ED visit. (Failure)

30 day follow up was most common in children who lived in rural counties (10.4%) compared to suburban (8.2%) compared to urban (7.7%).

- Nearly 97% of visits are in urban children

2b4.10. What is your interpretation of the results in terms of demonstrating adequacy of controlling for differences in patient characteristics (case mix)? (i.*e., what do the results mean and what are the norms for the test conducted*)

2b4.11. Optional Additional Testing for Risk Adjustment (*not required, but would provide additional support of adequacy of risk model, e.g., testing of risk model in another data set; sensitivity analysis for missing data; other methods that were assessed*)

2b5. IDENTIFICATION OF STATISTICALLY SIGNIFICANT & MEANINGFUL DIFFERENCES IN PERFORMANCE

Note: *Applies to the composite performance measure.*

2b5.1. Describe the method for determining if statistically significant and clinically/practically meaningful differences in performance measure scores among the measured entities can be identified (*describe the steps—do not just name a method; what statistical analysis was used? Do not just repeat the*

information provided related to performance gap in 1b)

We have demonstrated statistically significant differences between races, by poverty in the county, and by urbanicity.

We currently are analyzing the performance measure at the county level and at the health plan level to confirm that there is significant signal to identify statistically significant differences within the Medicaid health plans and between the counties of NY State.

2b5.2. What were the statistical results from testing the ability to identify statistically significant and/or clinically/practically meaningful differences in performance measure scores across measured entities? (e.g., *number and percentage of entities with scores that were statistically significantly different from mean or some benchmark, different from expected; how was meaningful difference defined*)

See above and pending per above.

2b5.3. What is your interpretation of the results in terms of demonstrating the ability to identify statistically significant and/or clinically/practically meaningful differences in performance across measured entities? (i.*e., what do the results mean in terms of statistical and meaningful differences?*)

The measure is sufficiently precise to describe the health care of specified populations and to distinguish such performance. We are pending data that confirm that at county and health plan levels the measure is significantly granular to identify meaningful differences.

2b6. COMPARABILITY OF PERFORMANCE SCORES WHEN MORE THAN ONE SET OF SPECIFICATIONS

Note: *Applies to all component measures, unless already endorsed or are being submitted for individual endorsement.*

If only one set of specifications, this section can be skipped.

Note: *This item is directed to measures that are risk-adjusted (with or without SDS factors)* ***OR*** *to measures with more than one set of specifications/instructions (e.g., one set of specifications for how to identify and compute the measure from medical record abstraction and a different set of specifications for claims or eMeasures). It does not apply to measures that use more than one source of data in one set of specifications/instructions (e.g., claims data to identify the denominator and medical record abstraction for the numerator).* ***Comparability is not required when comparing performance scores with and without SDS factors in the risk adjustment model. However, if comparability is not demonstrated for measures with more than one set of specifications/instructions, the different specifications (e.g., for medical records vs. claims) should be submitted as separate measures.***

2b6.1. Describe the method of testing conducted to compare performance scores for the same entities across the different data sources/specifications (*describe the steps—do not just name a method; what statistical analysis was used*)

2b6.2. What were the statistical results from testing comparability of performance scores for the same entities when using different data sources/specifications? (*e.g., correlation, rank order*)

2b6.3. What is your interpretation of the results in terms of the differences in performance measure scores for the same entities across the different data sources/specifications? (i.*e., what do the results mean and what are the norms for the test conducted?*)

2b7. MISSING DATA ANALYSIS AND MINIMIZING BIAS
Note: *Applies to the overall composite measure.*

2b7.1. Describe the method of testing conducted to identify the extent and distribution of missing data (or nonresponse) and demonstrate that performance results are not biased due to systematic missing data (or differences between responders and nonresponders) and how the specified handling of missing data minimizes bias (*describe the steps—do not just name a method; what statistical analysis was used*)

Specifications make including individuals with missing data very unlikely. Our literature review shows that billing data is reliable.

2b7.2. What is the overall frequency of missing data, the distribution of missing data across providers, and the results from testing related to missing data? (*e.g., results of sensitivity analysis of the effect of various rules for missing data/nonresponse; if no empirical sensitivity analysis, identify the approaches for handling missing data that were considered and pros and cons of each*)

2b7.3. What is your interpretation of the results in terms of demonstrating that performance results are not biased due to systematic missing data (or differences between responders and nonresponders) and how the specified handling of missing data minimizes bias**?** (i.*e., what do the results mean in terms of supporting the selected approach for missing data and what are the norms for the test conducted; if no empirical analysis, provide rationale for the selected approach for missing data*)

2c. EMPIRICAL ANALYSIS TO SUPPORT COMPOSITE CONSTRUCTION APPROACH
Note: *If empirical analyses do not provide adequate results—or are not conducted—justification must be provided and accepted in order to meet the must-pass criterion of Scientific Acceptability of Measure Properties. Each of the following questions has instructions if there is no empirical analysis.*

2d1. Empirical analysis demonstrating that the component measures fit the quality construct, add value to the overall composite, and achieve the object of parsimony to the extent possible.

2d1.1 Describe the method used (*describe the steps—do not just name a method; what statistical analysis was used; if no empirical analysis, provide justification)*

Components vary by categorical groups as described above in a manner similar to the over measure. Components were identified during a formal RAND style expert Delphi process.

2d1.2. What were the statistical results obtained from the analysis of the components? (e.g., *correlations, contribution of each component to the composite score, etc.; if no empirical analysis, identify the components that were considered and the pros and cons of each*)

2d1.3. What is your interpretation of the results in terms of demonstrating that the components included in the composite are consistent with the described quality construct and add value to the overall

composite? (i.*e.*, *what do the results mean in terms of supporting inclusion of the components; if no empirical analysis, provide rationale for the components that were selected)*

The stratifications data provided above demonstrate that the components each add value to the measure. Not all who receive medications receive visits and vice versa. Further while most who receive controller medications receive rescue medications, not all do.

The composite measure is stronger and more informative than the individual component measures.

2d2. Empirical analysis demonstrating that the aggregations and weighting rules are consistent with the quality construct and achieve the objective of simplicity to the extent possible

2d2.1 Describe the method used (*describe the steps—do not just name a method; what statistical analysis was used; if no empirical analysis, provide justification)*

2d2.2. What were the statistical results obtained from the analysis of the aggregation and weighting rules? (e.g., *results of sensitivity analysis of effect of different aggregations and/or weighting rules; if no empirical analysis, identify the aggregation and weighting rules that were considered and the pros and cons of each*)

2d2.3. What is your interpretation of the results in terms of demonstrating the aggregation and weighting rules are consistent with the described quality construct? (i.*e.*, *what do the results mean in terms of supporting the selected rules for aggregation and weighting; if no empirical analysis, provide rationale for the selected rules for aggregation and weighting*)

3. Feasibility
Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.
3a. Byproduct of Care Processes For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order). 3a.1. **Data Elements Generated as Byproduct of Care Processes.** Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims) If other:
3b. Electronic Sources The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified. 3b.1. **To what extent are the specified data elements available electronically in defined fields** (*i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields*) Update this field for **maintenance of endorsement**. ALL data elements are in defined fields in a combination of electronic sources 3b.2. **If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources.** For **maintenance of endorsement**, if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).

3b.3. **If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL. Please also complete and attach the NQF Feasibility Score Card.**
Attachment:

3c. Data Collection Strategy

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

3c.1. **Required for maintenance of endorsement. Describe difficulties (as a result of testing and/or operational use of the measure) regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.**
IF a PRO-PM, consider implications for both individuals providing PRO data (patients, service recipients, respondents) and those whose performance is being measured.
Measure is based on administrative data and therefore is very feasible with generally available data. A feasibility study was conducted at more than a dozen hospitals that confirms that both data elements are generally available in the hospital chart, frequently electronically

3c.2. **Describe any fees, licensing, or other requirements to use any aspect of the measure as specified** *(e.g., value/code set, risk model, programming code, algorithm)*.
There are no fees, licensing or other requirements to use any aspect of the measure as specified at this time.

4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

4.1. **Current and Planned Use**
NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.

Specific Plan for Use	Current Use (for current use provide URL)
Not in use	

4a.1. **For each CURRENT use, checked above (update for maintenance of endorsement), provide:**

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included
- Level of measurement and setting

4a.2. **If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons?** (*e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?*)

We are awaiting NQF endorsement for use. There are no policies or actions of the developer/steward or accountable entities that would restrict access to performance results or impede implementation.

4a.3. **If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement.** (*Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.*)
The measure is a straightforward approach to identifying effective connection with the health care system after to the ED visit and/or hospitalization. Our analyses in NY State Medicaid data confirmed feasibility, usability, and responsiveness of the measures to substantive constructs. We find these data and their consistency with expected findings to be persuasive that the measure is both valid and sensitive to real differences. Therefore, when this measure is endorsed by NQF, it will be applicable to a variety of settings and organizations.

Improvement
Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4b. **Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (trends in performance results, number and percentage of people receiving high-quality healthcare; Geographic area and number and percentage of accountable entities and patients included.)**
If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4c. Unintended Consequences
The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

4c.1. **Please explain any unexpected findings (positive or negative) during implementation of this measure including unintended impacts on patients.**

4c.2. **Please explain any unexpected benefits from implementation of this measure.**

4d1.1. **Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.**
How many and which types of measured entities and/or others were included? If only a sample of measured entities were included, describe the full population and how the sample was selected.

4d1.2. **Describe the process(es) involved, including when/how often results were provided, what data were provided, what educational/explanatory efforts were made, etc.**

4d2.1. **Summarize the feedback on measure performance and implementation from the measured entities and others described in 4d.1.**
Describe how feedback was obtained.

4d2.2. **Summarize the feedback obtained from those being measured.**

4d2.3. **Summarize the feedback obtained from other users**

4d.3. **Describe how the feedback described in 4d.2 has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.**

5. Comparison to Related or Competing Measures

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

5. Relation to Other NQF-endorsed Measures

Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.

No

5.1a. **List of related or competing measures (selected from NQF-endorsed measures)**

5.1b. **If related or competing measures are not NQF endorsed please indicate measure title and steward.**

5a. Harmonization of Related Measures

The measure specifications are harmonized with related measures;

OR

The differences in specifications are justified

5a.1. **If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):**
Are the measure specifications harmonized to the extent possible?

5a.2. **If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.**

5b. Competing Measures

The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);

OR

Multiple measures are justified.

5b.1. **If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):**
Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)

Appendix

A.1 Supplemental materials may be provided in an appendix. All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.
Attachment **Attachment:** Appendix_Evidence.docx

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Co.3 **Measure Developer if different from Measure Steward:** University Hospitals Cleveland Medical Center
Co.4 **Point of Contact:** Lawrence, Kleinman, drlarrykleinman@gmail.com, 216-286-6969-

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Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 **Year the measure was first released:**

Ad.3 **Month and Year of most recent revision:**

Ad.4 **What is your frequency for review/update of this measure?**

Ad.5 **When is the next scheduled review/update for this measure?**

Ad.6 **Copyright statement:**

Ad.7 **Disclaimers:**

Ad.8 **Additional Information/Comments:**

MEASURE WORKSHEET

This document summarizes the evaluation of the measure as it progresses through NQF's Consensus Development Process (CDP). The information submitted by measure developers/stewards is included after the Brief Measure Information, Preliminary Analysis, and Pre-meeting Public and Member Comments sections.

To navigate the links in the worksheet: Ctrl + click link to go to the link; ALT + LEFT ARROW to return

Brief Measure Information

NQF #: 0646
Measure Title: Reconciled Medication List Received by Discharged Patients (Discharges from an Inpatient Facility to Home/Self Care or Any Other Site of Care)
Measure Steward: PCPI
Brief Description of Measure: Percentage of discharges from an inpatient facility (eg, hospital inpatient or observation, skilled nursing facility, or rehabilitation facility) to home or any other site of care, in which the patient, regardless of age, or their caregiver(s) received a reconciled medication list at the time of discharge including, at a minimum, medications in the specified categories.
Developer Rationale: The Institute of Medicine (IOM) estimates that 1.5 million preventable adverse drug events (ADEs) occur in the United States each year. In-hospital ADEs cost $3.5 billion annually and account for approximately 26% of all preventable ADEs (1). Within the ambulatory care setting, patients may be more likely to encounter ADEs as their care may be managed by multiple physicians and with less monitoring than that of hospitalized patients (2).

The IOM concludes that poor communication of medication-related information is the cause of as many as 50% of all medication errors and up to 20% of ADEs (1). The goal of medication reconciliation is to prevent communication errors and ensure the patient as a list of correct medication to prevent unintended changes, dosage, omission and, ultimately, adverse drug events.

According to the Centers for Disease Control and Prevention, ADEs result in 700,000 emergency department visits and 120,000 hospitalizations each year (3).

The CDC expects the numbers of ADEs to increase due to:
- Development of new medications
- Discovery of new uses for older medications
- Aging American population
- Increase in the use of medications for disease prevention
- Increased coverage for prescription medications

1. Institute of Medicine. Preventing Medication Errors. Washington, DC: National Academies Press; 2006.
2. Shehab N, Lovegrove MC, Geller AI, et al. US emergency department visits for outpatient adverse drug events, 2013-2014. JAMA. 2016;316(20):2115-2125.
3. US Centers for Disease Control and Prevention. Medication safety basics. http://www.cdc.gov/medicationsafety/basics.html. Accessed November 17, 2016.

Numerator Statement: Discharges in which the patient or their caregiver(s) received a reconciled medication list at the time of discharge including, at a minimum, medications in the following categories:

Medications TO BE TAKEN by Patient
- Continued*
Medications prescribed before inpatient stay that patient should continue to take after discharge, AND
- Changed*
Medications prescribed before inpatient stay with a change in dosage or directions after discharge that differs from what the patient was taking prior to the inpatient stay, AND
- New*

Medications started during inpatient stay that are to be continued after discharge and newly prescribed medications that patient should begin taking after discharge

* Prescribed dosage, instructions, and intended duration must be included for each continued, changed and new medication listed

Medications NOT TO BE TAKEN by Patient
- Discontinued
Medications taken by patient before the inpatient stay that should be discontinued or held after discharge, AND
- Allergies and Adverse Reactions
Medications administered during the inpatient stay that caused an allergic reaction or adverse event and were therefore discontinued

Denominator Statement: All discharges for patients, regardless of age, from an inpatient facility (eg, hospital inpatient or observation, skilled nursing facility, or rehabilitation facility) to home/self care or any other site of care

Denominator Exclusions: Patients who died
Patients who left against medical advice (AMA) or discontinued care

Measure Type: Process
Data Source: EHRs Hybrid, Paper Records
Level of Analysis: Facility, Integrated Delivery System

IF Endorsement Maintenance – Original Endorsement Date: May 05, 2010 **Most Recent Endorsement Date:** Aug 10, 2012

Maintenance of Endorsement -- Preliminary Analysis

To maintain NQF endorsement endorsed measures are evaluated periodically to ensure that the measures still meets the NQF endorsement criteria ("maintenance"). The emphasis for maintaining endorsement is focused on how effective the measure is for promoting improvements in quality. Endorsed measures should have some experience from the field to inform the evaluation. The emphasis for maintaining endorsement is noted for each criterion.

Criteria 1: Importance to Measure and Report

1a. Evidence
Maintenance measures – less emphasis on evidence unless there is new information or change in evidence since the prior evaluation.

1a. Evidence. The evidence requirements for a *process or intermediate outcome* measure is that it is based on a systematic review (SR) and grading of the body of empirical evidence where the specific focus of the evidence matches what is being measured.

The developer provides the following evidence for this measure:

- **Systematic Review of the evidence specific to this measure?** ☐ **Yes** ☒ **No**
- **Quality, Quantity and Consistency of evidence provided?** ☐ **Yes** ☒ **No**
- **Evidence graded?** ☐ **Yes** ☒ **No**

Summary of prior review in 2012

In the prior year review, the developer cites evidence from the 2006 Transitions of Care Consensus Conference (TOCCC) development of principles, guidelines, and standards. The referenced standards were a direct result of the conference convened by the American College of Physicians (ACP), the Society of General Internal Medicine (SGIM), and the Society of Hospital Medicine (SHM), with representation after the conference from the Emergency Medicine community in 2006. The output from the consensus conference was a set of 8 standards for care transitions based on a systematic review of the evidence.

- The developer did not provide a systematic review of the body of evidence that matches the measure focus, reconciled medication lists at the time of discharge. No quantity, quality, or consistency (QQC) of the evidence provided.

- The Transitions of Care Consensus Conference (TOCCC), 2007 includes 8 standards for care transitions including 1) transition record and 2) medication reconciliation.
    - The body of evidence was not graded
    - The TOCCC focuses only on the transitions between the inpatient and outpatient settings and does not address the equally important transitions between the many other different care settings such as hospital to nursing home, or rehabilitation facility.

Changes to evidence from last review

☒ **The developer attests that there have been no changes in the evidence since the measure was last evaluated.**

☐ **The developer provided updated evidence for this measure:**

Questions for the Committee:

- *The developer attests the underlying evidence for the measure has not changed since the last NQF endorsement review. Does the Committee agree the evidence basis for the measure has not changed and there is no need for repeat discussion and vote on Evidence?*

Preliminary rating for evidence: ☒ Pass ☐ No Pass

1b. Gap in Care/Opportunity for Improvement and 1b. Disparities
Maintenance measures – increased emphasis on gap and variation

1b. Performance Gap. The performance gap requirements include demonstrating quality problems and opportunity for improvement.

- The developer states there are no available performance scores, but to demonstrate the opportunity for improvement a literature review summary was provided.
- **Per NQF criteria, performance scores on the measure as specified (current and over time) at the specified level of analysis is required for maintenance of endorsement.**

Disparities

- There was not information provided on disparities care. NQF encourages disparities data from the measure as specified.

Questions for the Committee:

- *Is the Standing Committee aware of recent data that demonstrates a gap in care related to medication reconciliation at discharge?*
- *Is the Standing Committee aware of evidence that disparities exist in this area of healthcare?*

Preliminary rating for opportunity for improvement: ☐ High ☐ Moderate ☐ Low ☒ Insufficient
RATIONALE: Per NQF criteria, performance scores on the measure at the specified level of analysis is required for maintenance of endorsement – data from the literature is not sufficient.

Committee pre-evaluation comments

Criteria 1: Importance to Measure and Report (including 1a, 1b, 1c)

1a. Evidence to Support Measure Focus

Comments: **Insufficient evidence provided. The developer provided a review of systematic evidence, but not details or grading. No quantity, quality, or consistency of the evidence provided. Surprisingly with all of the literature available, there were no updates provided.

**There are no studies that directly link the transfer of this information to lower ADEs, ED visits or total costs of care.

**Evidence is not strong, although notably it sounds like there will be data available in the near future based on measure's use in the CMS PRIME Program. The focus and topic are of the utmost importance to care coordination and I appreciate the patient-centered approach of ensuring the patient is engaged in discussions about their medications (beyond existing measures that simply look at what is documented in the health record). I will be interested to hear from my fellow committee members. If the measure cannot be reviewed based on insufficient evidence, I would ask/question NQF about whether the measure could come back sooner than 3 years if better data becomes available.

**No new evidence. Data are 100 patients in 2011

From evidence algorithm is "insufficient" but with exception

**The most recent references cited by the measure developers were from 2006, with lack of clarity as to whether or not these were systematic reviews with explicit evaluation of evidence. I was able to identify several new and extensive systematic reviews that met these criteria. One demonstrated 15 of 26 studies reported on pharmacist-related interventions, 6 evaluated IT interventions, and 5 studied other interventions. 6 studies were classified as good quality. The comparison group for all studies was usual care, with no direct comparisons of different types of interventions. Studies consistently demonstrated a reduction in medication discrepancies (17/17 studies), potential adverse drug events (5/6 studies), and adverse drug events (2/3 studies), but showed inconsistent reduction in post-discharge healthcare utilization (improvement in 2/8studies). Key aspects of successful interventions included intensive pharmacy staff involvement and targeting the intervention to a 'high-risk' patient population.

The conclusions—There is a paucity of rigorously designed studies comparing different inpatient medication reconciliation practices and their effects on clinical outcomes. Available evidence supports medication reconciliation interventions that heavily utilize pharmacy staff and focus on patients at high-risk for adverse events. Higher quality studies are needed to determine the most effective approaches to inpatient medication reconciliation.

Most of these studies seem to be focused on the inpatient setting. Outpatient settings are equally, if not more important for MR. Initial evidence review was based on one study that relied on inter-rater reliability of expert opinion done in 2007.

**According to the preliminary analysis, there has been no new evidence or changes to the evidence since 2012.

1b. Performance Gap

Comments: **Insufficient

Again, information not provided but surprised. I will do some searches this weekend and try to bring for on-site meeting as there is research on discharge instructions/med rec/readmission.

**No data on variability or disparities but personal experience makes it likely that there is wide variability and that significant disparities exist. Would be better, however, to have real data.

**No new data I am aware of regarding performance gap or disparities.

30-50% of discharges met measure criteria from the 2011 data set presented, so there does appear to be a gap.

**Unable to locate, although there were data on inter-rater reliability of MR components.

**The developer stated that there are no available performance scores. No information on disparities in the care..

Criteria 2: Scientific Acceptability of Measure Properties

2a. Reliability

2a1. Reliability Specifications

Maintenance measures – no change in emphasis – specifications should be evaluated the same as with new measures

2a1. Specifications requires the measure, as specified, to produce consistent (reliable) and credible (valid) results about the quality of care when implemented.

Data source(s): The data sources specified in the submission form include electronic clinical data and paper records.

Specifications:

- The measure is specified for the facility and integrated delivery systems levels of analysis.
- The unit of measurement was changed from patients to discharges to clarify that the intent of the measure is to assess an individual discharge, because patients may have more than one discharge within a period of measurement.
- The numerator statement includes all instances of discharges in which the patient or their caregiver was given a list of all medications prescribed at the time of discharge.
- The denominator statement includes all discharges for a patient, regardless of age from an inpatient facility to any site of care.
- Measures exclusions include: patients who died (death is not a discharge) and patients who left on their own will or against medical advice (AMA).
- The measure is not risk-adjusted.
- A logic algorithm is provided.

Questions for the Committee:

- *Are all the data elements clearly defined? Are all appropriate codes included?*
- *Is the logic or calculation algorithm clear?*
- *Is it likely this measure can be consistently implemented?*

2a2. Reliability Testing Testing attachment
Maintenance measures – less emphasis if no new testing data provided

2a2. Reliability testing demonstrates if the measure data elements are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period and/or that the measure score is precise enough to distinguish differences in performance across providers.

For maintenance measures, summarize the reliability testing from the prior review:

- In the prior review, data from a report automatically generated report from an EHR was compared to manual abstraction from patient records to calculate parallel forms of reliability for the measure.

SUMMARY OF TESTING

Reliability testing level ☐ **Measure score** ☒ **Data element** ☐ **Both**

Reliability testing performed with the data source and level of analysis indicated for this measure ☐ **Yes** ☐ **No**

Method(s) of reliability testing

- Data from an automatically-generated report from the EHR was compared to manual abstraction from patient records to calculate reliability for the measure. . The sample was taken from one multi-specialty, medium-sized health practice.

Results of reliability testing

- The developer only provided an overall score rather than statistics for each data element.

	N	% Agreement	Kappa (95% CI)
Overall	100	91.00	0.81 (0.70 to 0.93)

NQF guidance indicates that data element testing should be conducted for all critical data elements, although at minimum, results about the numerator, denominator, and exclusions should be provided. Only a single kappa value was reported – this is insufficient

Questions for the Committee:

- *No updated testing information is presented. The prior testing demonstrated good reliability. Does the Committee think there is a need to re-discuss and re-vote on reliability?*
- *Specific questions on the method and results of reliability testing.*
- *Is the test sample adequate to generalize for widespread implementation?*
- *Do the results demonstrate sufficient reliability so that differences in performance can be identified?*

Guidance from the Reliability Algorithm Precise specifications (Box 1) → Empirical reliability testing with measure as specified (Box 2) → Empirical validity testing of patient-level data conducted (Box 3) → **Validity** testing conducted with patient-level data elements (Box 10) → Statistical results for all critical data elements not provided separately (Box 11) → Insufficient

Preliminary rating for reliability: ☐ **High** ☐ **Moderate** ☐ **Low** ☒ **Insufficient**

RATIONALE: All critical data elements must be assessed separately (minimum numerator, denominator, exclusions).

2b. Validity
Maintenance measures – less emphasis if no new testing data provided

2b1. Validity: Specifications

2b1. Validity Specifications. This section should determine if the measure specifications are consistent with the evidence.

Specifications consistent with evidence in 1a. ☒ **Yes** ☐ **Somewhat** ☐ **No**

Question for the Committee:

o *Are the specifications consistent with the evidence?*

2b2. Validity testing

2b2. Validity Testing should demonstrate the measure data elements are correct and/or the measure score correctly reflects the quality of care provided, adequately identifying differences in quality.

For maintenance measures, summarize the validity testing from the prior review:

- In the prior review, the developers tested data element validity for 100 patients by comparing data from a report automatically generated from an EHR to a visual inspection of the full EHR. The sample was taken from one multi-specialty, medium-sized health practice. Developers also provide results from a systematic assessment of face validity.
- In the prior review, Committee members were concerned that the sample size used for testing the validity of the measure was too small (n=100); that empirical testing was completed with EHR data from only one site; that the validity using chart abstraction from paper records was not tested; and the none of the sampled records included patients discharged from a nursing home facility.

Describe any updates to validity testing:

- Updated face validity testing results were included.

SUMMARY OF TESTING

Validity testing level ☒ **Measure score** ☐ **Data element testing against a gold standard** ☒ **Both**

Method of validity testing of the measure score:

☒ **Face validity only**

☐ **Empirical validity testing of the measure score**

Validity testing method:

- Face validity of the measure score as an indicator of quality was assessed by a technical expert panel (TEP) of 11 members. After the measure was fully specified, the expert panel was asked to rate agreement with the following statement: "The scores obtained from the measure as specified will provide an accurate reflection of quality and can be used to distinguish good and poor quality."
- Note: Face validity of the measure score as a quality indicator may be adequate if accomplished through a systematic and transparent process, by identified experts, and explicitly addresses whether performance scores resulting from the measure as specified can be used to distinguish good from poor quality.

Validity testing results:

- On a grading scale of 1-5 where 1 is Strongly Disagree and 5 is Strongly Agree, the panelists responses had an average of 4.09.
- The EHR measure validity was also calculated on a strength of agreement by data analysis from a performance report. The percent agreement at the denominator, numerator and the measure overall.

	N	% Agreement	Kappa (95% CI)
Overall	100	91.00	0.81 (0.70 to 0.93)

- The kappa shows an almost perfect level of agreement.

Questions for the Committee:

- *Is the test sample adequate to generalize for widespread implementation?*
- *Do the results demonstrate sufficient validity so that conclusions about quality can be made?*
- *Do you agree that the score from this measure as specified is an indicator of quality?*

2b3-2b7. Threats to Validity

2b3. Exclusions:

- Exclusions include patients who have died and patients who have gone against medical advice (AMA) or discontinued care. The developer did not provide a statistical analysis demonstrating that exclusions are needed to prevent unfair distortion of performance results.

Questions for the Committee:

- *Are the exclusions consistent with the evidence?*
- *Are any patients or patient groups inappropriately excluded from the measure?*
- *Are the exclusions/exceptions of sufficient frequency and variation across providers to be needed (and outweigh the data collection burden)?*

2b4. Risk adjustment: **Risk-adjustment method** ☒ **None** ☐ **Statistical model** ☐ **Stratification**

The measure is not risk-adjusted.

2b5. Meaningful difference *(can statistically significant and clinically/practically meaningful differences in performance measure scores can be identified)*:

- The developer did not provide any data on meaningful differences about quality from the measure.

Question for the Committee:

- *Does this measure identify meaningful differences about quality?*

2b6. Comparability of data sources/methods:

- N/A

2b7. Missing Data

No information on missing data is provided.

Guidance from the Validity Algorithm

Specifications somewhat consistent with evidence (Box 1) >Somewhat assessed potential threats to validity (Box 2) > face validity and empirical testing (NOTE: all critical data elements were not assessed separately) (Box 3) >face validity assessed (Box 5) > Moderate, assuming potential threats to validity are not a problem or are adequately addressed.

The highest possible rating is Moderate.

Preliminary rating for validity: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

Committee pre-evaluation comments

Criteria 2: Scientific Acceptability of Measure Properties (including all 2a, 2b, and 2d)

2a1. & 2b1. Specifications

Comments: **Also missing some important components. There should be an "indication" for each medication and there should be an explanation for every dose change and discontinued medication. Without these data elements the value of the med list is diminished.

**not sure how to evaluate in light of "new maintenance process" guidance, which suggests decreased evidence on testing for maintenance measures. the testing is not strong and face validity was completed with a group of only 11 TEP members. Would be nice to hear from the developer on why they chose this approach to validity testing (perhaps resource constraints were an issue?).

**consistent

2a2. Reliability Testing

Comments: **A single kappa value (K=.81 - which is acceptable) was reported – but this is insufficient according to NQF guidelines. No updated testing information is presented. Can we ask that additional testing be completed. this measure is important and warrants more testing to ensure sample size is adequate an strong enough to ensure reliability.

**No studies

**same as above.

**No new testing.
91% agreement with kappa 0.81 on prior reliability testing
No need for review or revote on reliability
**Insufficient data element testing

2b2. Validity Testing
Comments: **Face validity acceptable
**Face validity only. No demonstration of relationship of med list to outcomes
**same as above.
**Face validity testing is provided.
9 of 11 experts agreed that this measure accurately reflects quality and can be used to distinguish good from poor quality.
**Method of testing was face validity only.

2b3. Exclusions Analysis
2b4. Risk Adjustment/Stratification for Outcome or Resource Use Measures
2b5. Identification of Statistically Significant & Meaningful Differences In Performance
2b6. Comparability of Performance Scores When More Than One Set of Specifications
2b7. Missing Data Analysis and Minimizing Bias
Comments: **Expired and AMA patients excluded - consistent with evidence; however, still concerned with potential variation between adult and pediatric - would like developer to address this question. No statistical analysis demonstrating that exclusions are needed to prevent unfair distortion of performance results. Would be helpful to know an average for the frequency of the exclusions and possibly factor into reporting. Not risk adjusted.
**If one takes a broader look at responsibility for care, even patients who sign out AMA should have a reconciled med list. Until the pre-admit list issue is addressed, this measure has limited value and will be unlikely to significant impact the outcomes that it references (ADEs, ED visits, costs)
**same as above.
**Exclusions are consistent with evidence
**Not risk adjusted, no information on missing data was provided. Need to know how exclusions affect performance results, or IF they affect the results.

Criterion 3. Feasibility
Maintenance measures – no change in emphasis – implementation issues may be more prominent

3. Feasibility is the extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

- The measure is coded and abstracted from a record by someone other than the person obtaining the original information.
- No data elements are in defined fields in electronic sources.
- The developer notes that, "This measure does not lend itself to a "traditional specification" for EHR reporting, where data elements, logic and clinical coding are identified to calculate the measure, due to the fact the fact that every facility may have a different template for a transition record and the information required for this measure is based on individualized patient information unique to one episode of care (i.e., inpatient stay). However, we have provided guidance on how a facility should query the electronic health record for the information required for this measure, within the numerator details."

Questions for the Committee:
- *Are the required data elements routinely generated and used during care delivery?*
- *Is the data collection strategy ready to be put into operational use?*

Preliminary rating for feasibility: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

Committee pre-evaluation comments
Criteria 3: Feasibility

3a. Byproduct of Care Processes
3b. Electronic Sources

3c. Data Collection Strategy

Comments: **Low - as is; Mod-High with suggestions below.

The measure is coded and abstracted from a record by someone other than the person obtaining the original information. Concern that this is not defined as an electronic process. Need more definition of the fields -- exactly how this extraction occurs. Appears to be a process that could be simplified for the facilities once "reconciliation" is clearly defined. The required data elements are routinely generated and used during care delivery; however, definitions need to be specific and measurable - retesting of reliability will then strengthen the measure.

**Reconciliation is not an electronic or automated process. It requires clinical review and decision making. It has huge value but it also has significant resource costs. The benefits likely outweigh the costs but no data to support that.

**seemingly feasible despite no defined field for this data in EHRs. would like to hear from providers with sophisticated EHRs.

**Most data elements are routinely generated. Capturing "adverse reaction" as compared with allergy may be a challenge.

**The fact that there isn't a standard template across facilities gives concern about subject data collection.

Criterion 4: Usability and Use

Maintenance measures – increased emphasis – much greater focus on measure use and usefulness, including both impact /improvement and unintended consequences

4. Usability and Use evaluate the extent to which audiences (e.g., consumers, purchasers, providers, policymakers) use or could use performance results for both accountability and performance improvement activities.

Current uses of the measure

- **T**he measure is currently used in the CMS Public Hospital Redesign and Incentives in Medi-Cal (PRIME). This program is administered by the California Department of Health Care Services (DHCS).

Publicly reported? ☒ **Yes** ☐ **No**

Improvement results Performance data are not readily available for the measure as it is in its initial year of use within the PRIME program - This measure was initially endorsed in 2010 – NQF guidance states that performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available).

Unexpected findings (positive or negative) during implementation and Potential harms The developer states no awareness of unintended consequences or potential harms related to measurement.

Feedback:

No feedback was provided.

Questions for the Committee:

- o *Is the measure useful considering it was endorsed in 2010 and not implemented until ~2015/2016?*
- o *How can the performance results be used to further the goal of high-quality, efficient healthcare?*
- o *Do the benefits of the measure outweigh any potential unintended consequences?*
- o *How has the measure been vetted in real-world settings by those being measure or others?*

Preliminary rating for usability and use: ☐ **High** ☐ **Moderate** ☒ **Low** ☐ **Insufficient**

RATIONALE: The measure was endorsed in 2010 but was not implemented until ~2015-2016.

Committee pre-evaluation comments

Criteria 4: Usability and Use

4a. Accountability and Transparency

4b. Improvement

4c. Unintended Consequences

Comments: **Moderate
Can we secure pre-lim information on current use with PRIME hospitals? Unclear if it is presently being reported. This would help to assess the rating above. I am unclear why the measure was endorsed in 2010 and not implemented until ~2015/2016? This measure is the beginning of an accountability of the discharge provider to provide some level of communication about the med list. Performance results can be used to further the goal of high-quality, efficient healthcare by incentives/penalties by facility, provider, ACO. It could potentially used in hospital (and other site) compare. The list is between facilities so it can be from a home care agency to a hospital - so the more standardized between settings, the better. The reviewer believes the benefits of the measure outweigh any potential unintended consequences. Integrating this measure into CAHPS maybe helpful to integrate a patient perspective.
**Previously noted deficiencies limit the value. Correct those and this becomes an extremely valuable measure
**Being implemented in CA 2015-2016.
Data not yet available.
**Being publicly reported through CMS, Medi-Cal. Obvious benefits in this metric if the data collection can be standardized....

Criterion 5: Related and Competing Measures

Related or competing measures

- 0097: Medication Reconciliation Post-Discharge
- 0293: Medication Information
- 0419: Documentation of Current Medications in the Medical Record
- 0553: Care for Older Adults (COA) – Medication Review

Harmonization

- The measure differs from existing medication reconciliation measures in that its focus is on whether or not a reconciled list of medications was provided to the discharged patient rather than if medication reconciliation was performed.

Endorsement + Designation

The "Endorsement +" designation identifies measures that exceed NQF's endorsement criteria in several key areas. After a Committee recommends a measure for endorsement, it will then consider whether the measure also meets the "Endorsement +" criteria.

This measure is a candidate for the "Endorsement +" designation IF the Committee determines that it: meets evidence for measure focus without an exception; is reliable, as demonstrated by score-level testing; is valid, as demonstrated by score-level testing (not via face validity only); and has been vetted by those being measured or other users.

Eligible for Endorsement + designation: ☐ **Yes** ☒ **No**

RATIONALE IF NOT ELIGIBLE: The measure is not eligible for Endorsement + because it is not demonstrated by reliability testing of the measure score, it is only at the data element level.

Pre-meeting public and member comments

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NQF #: 0646 NQF Project: Care Coordination 2016-2017 Project

1. IMPACT, OPPORTUITY, EVIDENCE - IMPORTANCE TO MEASURE AND REPORT

Importance to Measure and Report is a threshold criterion that must be met in order to recommend a measure for endorsement. All three subcriteria must be met to pass this criterion. See guidance on evidence.

Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria. (evaluation criteria)

1c.1 Structure-Process-Outcome Relationship *(Briefly state the measure focus, e.g., health outcome, intermediate clinical outcome, process, structure; then identify the appropriate links, e.g., structure-process-health outcome; process-health outcome; intermediate clinical outcome-health outcome)*:

Since the last update/submission, no contradictory evidence has emerged that would prompt changes to this measure.

The measure focus is the process of providing a reconciled medication list to patients at the time of discharge from an inpatient facility (eg, hospital inpatient or observation, skilled nursing facility, or rehabilitation facility) to home or any other site of care. This process is directly related to preventing medication errors, adverse drug events, patient harm, and hospital readmissions. The Institute of Medicine estimated that medication errors harm 1.5 million people each year in the United States, at an annual cost of at least $3.5 billion. Many of these medication errors (approximately 60% in one study) occur during times of transition, when patients receive medications from different prescribers who lack access to patients' comprehensive medication list. Providing patients with a comprehensive, reconciled medication list at each care transition (eg, inpatient discharge) may improve patients' ability to manage their medication regimen properly and reduce the number of medication errors. A recent study in Sweden found that providing elderly patients with a structured, comprehensive summary of their medications at discharge significantly reduced the risk of adverse clinical consequences due to medication errors.

Preventable adverse events from medication errors affect approximately 2 out of every 100 patients admitted to the hospital, and adverse events outside the hospital are estimated to account for 4.7 percent of hospital admissions. [Leape, 1994; Kanjanarat, 2003; Lazarou, 1998] Effective preventability strategies for the reduction of medication errors and subsequent ADEs have been found through successful medication reconciliation processes. [Nickerson, 2005; Bartick, 2006; Boockvar, 2006; Vira, 2006]

Citations:

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Midlöv P et. al. Clinical outcomes from the use of Medication Report when elderly patients are discharged from hospital. Pharm World Sci. 2008;30:840-845.

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Nickerson A, MacKinnon NJ, Roberts N, et al. Drug-therapy problems, inconsistencies and omissions identified during a medication reconciliation and seamless care service. Healthc Q 2005;8 Spec No:65-72. Available at http://www.longwoods.com/product.php?productid=17667. Last accessed October 8, 2009.

Bartick M, Baron D. Medication reconciliation at Cambridge Health Alliance: experiences of a 3-campus health system in Massachusetts. Am J Med Qual 2006 SepOct;21(5):304-6.

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Vira T, Colquhoun M, Etchells E. Reconcilable differences: correcting medication errors at hospital admission and discharge. Qual Saf Health Care 2006 Apr;15(2):122-6. Available at http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=2464829&blobtype=pdf. Last accessed October 8, 2009.

1c.2-3 Type of Evidence *(Check all that apply)*:

Clinical Practice Guideline

Systematic review of body of evidence (other than within guideline development)

1c.4 Directness of Evidence to the Specified Measure *(State the central topic, population, and outcomes addressed in the body of evidence and identify any differences from the measure focus and measure target population)*:

The evidence cited for this measure is directly related to medication reconciliation for all ages, during transitions of care from inpatient to outpatient settings. There are no differences from the measure focus and measure target population.

1c.5 Quantity of Studies in the Body of Evidence *(Total number of studies, not articles)*: The quantity of studies reviewed was not stated, but the guideline paper references 21 articles.

1c.6 Quality of Body of Evidence (*Summarize the certainty or confidence in the estimates of benefits and harms to patients across studies in the body of evidence resulting from study factors. Please address: a) study design/flaws; b) directness/indirectness of the evidence to this measure (e.g., interventions, comparisons, outcomes assessed, population included in the evidence); and c) imprecision/wide confidence intervals due to few patients or events):* The quality of the evidence was not discussed; however, the guideline paper provided the following summary:

Summary: This guideline is the result of a consensus conference convened in 2006 by the American College of Physicians (ACP), the Society of General Internal Medicine (SGIM), and the Society of Hospital Medicine (SHM), with representation

from the Emergency Medicine community added subsequent to the conference. The participating organizations focused specifically on the development of principles and standards for transitions of care between the inpatient and outpatient settings, in preparation for the development of performance measures. The standards development of the Transitions of Care Consensus Conference (TOCCC) built upon the earlier work of the Stepping Up to the Plate (SUTTP) Alliance established by the ABIM Foundation.

Guideline development methodology: The TOCCC developed its principles and standards based on a systematic review of the evidence related to transitions of care between the inpatient and outpatient settings. After initial discussion in breakout groups, the conference participants refined the principles and standards through a group consensus process. Participants then prioritized the standards using a group consensus voting process. The final summary paper was subsequently reviewed and approved by all participating organizations.

Evidence base: The TOCCC developed 8 standards for care transitions, based on cohort, observational, and cross-sectional studies and expert opinion. The standards/ recommendations were developed and prioritized by a group consensus process.

1c.7 Consistency of Results across Studies *(Summarize the consistency of the magnitude and direction of the effect):* Again, the consistency of results across studies was not discussed, but the number of people and organizations involved in the development of the consensus statement suggest great consistency in the evidence base. The TOCCC was held over two days on July 11-12, 2007 at ACP Headquarters in Philadelphia, PA. There were 51 participants representing over thirty organizations. Participating organizations included medical specialty societies from internal medicine as well as family medicine and pediatrics, governmental agencies, such as the AHRQ and CMS, performance measure developers, such as the NCQA and AMA PCPI, nurses associations, such as the VNAA and Home Care and Hospice, pharmacists groups, and patient groups such as the Institute for Family-Centered Care. The TOCCC developed 8 standards for care transitions, based on cohort, observational, and cross-sectional studies and expert opinion. The standards/ recommendations were developed and prioritized by a group consensus process.

In addition, multiple studies have consistently shown that successful medication reconciliation processes are effective preventability strategies for the reduction of medication errors and subsequent adverse drug events. [Nickerson, 2005; Bartick, 2006; Boockvar, 2006; Vira, 2006]

1c.8 Net Benefit *(Provide estimates of effect for benefit/outcome; identify harms addressed and estimates of effect; and net benefit - benefit over harms)*:

There are no potential harms discussed in this guideline or in the evidence, only the harm caused by not conducting medication reconciliation. The TOCCC focuses only on the transitions between the inpatient and outpatient settings and does not address the equally important transitions between the many other different care settings such as hospital to nursing home, or rehabilitation facility. The intent of the TOCCC is to provide this document to national measure developers such as the Physician Consortium for Performance Improvement and others in order to guide measure development and ultimately lead to improvement in quality and safety in care transitions.

1c.9 Grading of Strength/Quality of the Body of Evidence. Has the body of evidence been graded? No

1c.10 If body of evidence graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias: N/A

1c.11 System Used for Grading the Body of Evidence: Other

1c.12 If other, identify and describe the grading scale with definitions: The body of evidence was not graded.

1c.13 Grade Assigned to the Body of Evidence: N/A

1c.14 Summary of Controversy/Contradictory Evidence: No areas of controversy.

1c.15 Citations for Evidence other than Guidelines*(Guidelines addressed below)*:

1c.16 Quote verbatim, the specific guideline recommendation *(Including guideline # and/or page #)*:

The following evidence statements are quoted verbatim:

Transition record

All transitions must include a transition record. There is a minimal set of data elements that should always be part of the transition record:

– Principal diagnosis and problem list
– Medication list (reconciliation) including OTC/herbals, allergies and drug interactions
– Clearly identifies the medical home/transferring coordinating physician/institution and their contact information
– Patient's cognitive status
– Test results/pending results

(TOCCC, 2009)

Medication reconciliation

Reconcile discharge orders with the nursing medication administration record:

After discharge from the hospital, a patient may continue taking some medications at home, but not perhaps all of them. Therefore, it is extremely important to compare the discharge medication orders with the nursing medication administration record (MAR) to check for any discrepancies. If a medication the patient has been receiving in the hospital is not in the discharge orders, and there is no adequate documentation indicating why that medication has been omitted, then a nurse or pharmacist should contact the patient's physician to verify whether or not the patient should discontinue use of the medication.

- Create a standardized form that lists all the medications the patient has been receiving in the hospital, and include space on the form for physicians to document the reasons for omitting certain medications upon discharge from the hospital. Physicians can also use this form for ordering medications.
- Attach the pre-admission medication list to the discharge orders form — the patient may need to discontinue some medications that were being taken at home.
- Provide the patient with a comprehensive list of all medications — those being taken before admission plus the new medications from the discharge orders. Clearly indicate the name of each drug, its purpose, and the instructions for taking the medication, as well as any instructions for discontinuing use. (IHI)

NPSG.08.01.01

A process exists for comparing the [patient]'s current medications with those ordered for the [patient] while under the care of the [organization].

1. At the time the patient enters the hospital or is admitted, a complete list of the medications the patient is taking at home (including dose, route, and frequency) is created and documented. The patient and, as needed, the family are involved in creating this list.

2. The medications ordered for the patient while under the care of the hospital are compared to those on the list created at the time of entry to the hospital or admission.

3. Any discrepancies (that is, omissions, duplications, adjustments, deletions, additions) are reconciled and documented while the patient is under the care of the hospital.

4. When the patient's care is transferred within the hospital (for example, from the ICU to a floor), the current provider(s) informs the receiving provider(s) about the up-to-date reconciled medication list and documents the communication. (See also NPSG.02.05.01, EP 2)

Note: Updating the status of a patient's medications is also an important component of all patient care hand-offs. (Joint Commission National Patient Safety Goals, 2009)

NPSG.08.02.01

When a [patient] is referred to or transferred from one [organization] to another, the complete and reconciled list of medications is communicated to the next provider of service, and the communication is documented. Alternatively, when a [patient] leaves the [organization]'s care to go directly to his or her home, the complete and reconciled list of medications is provided to the [patient]'s known primary care provider, the original referring provider, or a known next provider of service.

Note: When the next provider of service is unknown or when no known formal relationship is planned with a next provider, giving the [patient] and, as needed, the family the list of reconciled medications is sufficient.

1. The patient's most current reconciled medication list is communicated to the next provider of service, either within or outside the hospital. The communication between providers is documented.

2. At the time of transfer, the transferring hospital informs the next provider of service how to obtain clarification on the list of reconciled medications. (Joint Commission National Patient Safety Goals, 2009)

NPSG.08.03.01

When a [patient] leaves the [organization]'s care, a complete and reconciled list of the [patient]'s medications is provided directly to the [patient] and, as needed, the family, and the list is explained to the [patient] and/or family.

1. When the patient leaves the hospital's care, the current list of reconciled medications is provided and explained to the patient and, as needed, the family. This interaction is documented.

Note: Patients and families are reminded to discard old lists and to update any records with all medication providers or retail pharmacies. (Joint Commission National Patient Safety Goals, 2009)

NPSG.03.06.01

Maintain and communicate accurate patient medication information. (Joint Commission National Patient Safety Goals, 2012)

Rationale for NPSG.03.06.01

There is evidence that medication discrepancies can affect patient outcomes. Medication reconciliation is intended to identify and resolve discrepancies—it is a process of comparing the medications a patient is taking (and should be taking) with newly ordered medications. The comparison addresses duplications, omissions, and interactions, and the need to continue current medications. The types of information that clinicians use to reconcile medications include (among others) medication name, dose, frequency, route, and purpose. Organizations should identify the information that needs to be collected to reconcile current and newly ordered medications and to safely prescribe medications in the future.

Elements of Performance for NPSG.03.06.01

1. Obtain information on the medications the patient is currently taking when he or she is admitted to the hospital or is seen in an outpatient setting. This information is documented in a list or other format that is useful to those who manage medications.

Note 1: Current medications include those taken at scheduled times and those taken on an as needed basis. See the Glossary for a definition of medications.

Note 2: It is often difficult to obtain complete information on current medications from a patient. A good faith effort to obtain this information from the patient and/or other sources will be considered as meeting the intent of the EP.

2. Define the types of medication information to be collected in non–24-hour settings and different patient circumstances.

Note 1: Examples of non–24-hour settings include the emergency department, primary care, outpatient radiology, ambulatory surgery, and diagnostic settings.

Note 2: Examples of medication information that may be collected include name, dose, route, frequency, and purpose.

3. Compare the medication information the patient brought to the hospital with the medications ordered for the patient by the hospital in order to identify and resolve discrepancies.

Note: Discrepancies include omissions, duplications, contraindications, unclear information, and changes. A qualified individual, identified by the hospital, does the comparison. (See also HR.01.06.01, EP 1)

4. Provide the patient (or family as needed) with written information on the medications the patient should be taking when he or she is discharged from the hospital or at the end of an outpatient encounter (for example, name, dose, route, frequency, purpose).

Note: When the only additional medications prescribed are for a short duration, the medication information the hospital provides may include only those medications. For more information about communications to other providers of care when the patient is discharged or transferred, refer to Standard PC.04.02.01.

5. Explain the importance of managing medication information to the patient when he or she is discharged from the hospital or at the end of an outpatient encounter.

Note: Examples include instructing the patient to give a list to his or her primary care physician; to update the information when medications are discontinued, doses are changed, or new medications (including over-the-counter products) are added; and to carry medication information at all times in the event of emergency situations. (For information on patient education on medications, refer to Standards MM.06.01.03, PC.02.03.01, and PC.04.01.05.)

(Joint Commission National Patient Safety Goals, 2012)

Safe Practice 17: Medication Reconciliation

The healthcare organization must develop, reconcile, and communicate an accurate patient medication list throughout the continuum of care. (NQF Safe Practices for Better Healthcare–2010 Update)

-Educate clinicians upon hire on the importance of medication reconciliation; frequency of ongoing education is based on the risk of noncompliance and adverse drug events as determined by the organization.

-Providers receiving the patient in a transition of care should check the medication reconciliation list to make sure it is accurate and in concert with any new medications that are ordered/prescribed.

-The list should include the full range of medications as defined by accrediting organizations such as The Joint Commission. At a minimum, the list should include the following: • prescription medications; • sample medications; • vitamins; • nutriceuticals; • over-the-counter drugs;

• complementary and alternative medications; • radioactive medications;

• respiratory therapy-related medications; • parenteral nutrition; • blood derivatives; • intravenous solutions (plain or with additives);

• investigational agents; and • any product designated by the Food and Drug Administration (FDA) as a drug.

-At the time the patient enters the organization or is admitted, a complete list of medications the patient is taking at home (including dose, route, and frequency) is created and documented. The patient, and family, as needed, are involved in creating this list.

-The medications ordered for the patient while under the care of the organization are compared to those on the list created at the time of entry to the organization or admission. According to The Joint Commission's FAQ, organizations should keep two lists during the hospitalization. The "home medications" list should be maintained unchanged and available for subsequent use in the reconciliation process. The list of the patient's current medications while in the hospital is a dynamic document that will require updating whenever changes are made to the patient's medication regimen. Both lists should be considered whenever reconciliation is carried out. The reason for referring to the "home" medication list is that some "home" medications may be held when a patient is admitted or goes to surgery. They may need to be resumed upon transfer to a different level of care, return from the operating room, or at discharge.

-Any discrepancies (i.e., omissions, duplications, adjustments, deletions, additions) are reconciled and documented while the patient is under the care of the organization.

-When the patient's care is transferred within the organization (e.g., from the ICU to a floor), the current provider(s) inform(s) the receiving provider(s) about the up-to-date reconciled medication list and documents the communication.

-The patient's most current reconciled medication list is communicated to the next provider of service, either within or outside the organization. The communication between providers is documented.

-At the time of transfer, the transferring organization informs the next provider of service of how to obtain clarification on the list of reconciled medications.

-When the patient leaves the organization's care, the current list of reconciled medications is provided to the patient, and family, as needed, and is explained to the patient and/or family, and the interaction is documented. [Jack, 2009: Jack BW, Chetty VK, Anthony D, et al. A reengineered hospital discharge program to decrease rehospitalization: a randomized trial. Ann Intern Med 2009 Feb 3;150(3):178-87.]

-In settings where medications are used minimally, or are prescribed for a short duration, modified medication reconciliation processes are performed:

• The organization obtains and documents an accurate list of the patient's current medications and known allergies in order to safely prescribe any setting-specific medications (e.g., IV contrast, local anesthesia, antibiotics) and to assess for potential allergic or adverse drug reactions.

• If no changes are made to the patient's current medication list, or when only short-term medications (e.g., a preprocedure medication or a short-term course of an antibiotic) will be prescribed, the patient, and family, as needed, are provided with a list containing the short-term medication additions that the patient will continue after leaving the organization.

• In these settings, there is a complete, documented medication reconciliation process when: – Any new long-term (chronic) medications are prescribed. – There is a prescription change for any of the patient's current known long-term medications. – The patient is required to be subsequently admitted to an organization from these settings for ongoing care.

• When a complete, documented, medication reconciliation is required in any of these settings, the complete list of reconciled medications is provided to the patient and the patient's family, as needed, and to the patient's known primary care provider or original referring provider, or a known next provider of service. (NQF Safe Practices for Better Healthcare–2010 Update)

The discharge process must effectively address the patient's needs for continuing care and treatment and must effectively communicate this information to patients and responsible caregivers in a timely fashion. [Greenwald JL, Denham CRD, Jack BW. The Hospital Discharge: A Review of a Care Transition with a High Potential for Errors and Highlights of a Re-Engineered Discharge Process. J Patient Saf 2007 Jun;3(2):97-106] As part of this process, hospitals should identify the critical components of the discharge plan that pose the greatest patient safety risks; typically, these exist in the area of medication reconciliation. [Williams TA, Leslie GD, Elliott N, et al. Introduction of discharge plan to reduce adverse events within 72 hours of discharge from the ICU. J Nurs Care Qual 2009 Jul 3 (Epub ahead of print)] (NQF Safe Practices for Better Healthcare–2010 Update)

1c.17 Clinical Practice Guideline Citation: Snow V, Beck D, Budnitz T, Miller DC, Potter J, Wears RL, Weiss KB, Williams MV. Transitions of Care Consensus Policy Statement: American College of Physicians-Society of General Internal Medicine-Society of Hospital Medicine-American Geriatrics Society-American College of Emergency Physicians-Society of Academic Emergency Medicine. J Gen Intern Med 2009 Apr 3.

Institute for Healthcare Improvement. Reconcile medications at all transition points: Reconcile discharge orders with the nursing medication administration record. Available at: www.ihi.org. Also available: How-to Guide: Prevent Adverse Drug Events by Implementing Medication Reconciliation. Cambridge, MA:

Institute for Healthcare Improvement; 2011.

Joint Commission on Accreditation of Healthcare Organizations. 2009 Hospital Accreditation Standards. Oakbrook Terrace, IL: Joint Commission Resources, Inc.

Joint Commission on Accreditation of Healthcare Organizations. National Patient Safety Goals Effective January 1, 2012. Hospital Accreditation Program. Oakbrook Terrace, IL: Joint Commission Resources, Inc.

National Quality Forum (NQF). Safe Practices for Better Healthcare–2010 Update: A Consensus Report. Washington, DC: NQF; 2010.

1c.18 National Guideline Clearinghouse or other URL:

1c.19 Grading of Strength of Guideline Recommendation. Has the recommendation been graded? No

1c.20 If guideline recommendation graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias:

1c.21 System Used for Grading the Strength of Guideline Recommendation: Other

1c.22 If other, identify and describe the grading scale with definitions: The guideline recommendations were not graded.

1c.23 Grade Assigned to the Recommendation: N/A

1c.24 Rationale for Using this Guideline Over Others: It is the PCPI policy to use guidelines, which are evidence-based, applicable to physicians and other health-care providers, and developed by a national specialty organization or government agency. In addition, the PCPI has now expanded what is acceptable as the evidence base for measures to include documented quality improvement (QI) initiatives or implementation projects that have demonstrated improvement in quality of care.

Based on the NQF descriptions for rating the evidence, what was the developer's assessment of the quantity, quality, and consistency of the body of evidence?

1c.25 Quantity: Moderate 1c.26 Quality: Moderate1c.27 Consistency: Moderate

1. Evidence, Performance Gap, Priority – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. ***Measures must be judged to meet all sub criteria to pass this criterion and be evaluated against the remaining criteria.***

1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form

0646_Evidence_Measure_Submission_Form.doc

1a.1 For Maintenance of Endorsement: Is there new evidence about the measure since the last update/submission?

Please update any changes in the evidence attachment in red. Do not remove any existing information. If there have been any changes to evidence, the Committee will consider the new evidence. If there is no new evidence, no updating of the evidence information is needed.

No

1b. Performance Gap

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- Disparities in care across population groups.

1b.1. **Briefly explain the rationale for this measure** *(e.g., how the measure will improve the quality of care, the benefits or improvements in quality envisioned by use of this measure)*

IF a PRO-PM (e.g. HRQoL/functional status, symptom/burden, experience with care, health-related behaviors), provide evidence that the target population values the measured PRO and finds it meaningful. (Describe how and from whom their input was obtained.)

IF a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), SKIP this question and provide rationale for composite in question 1c.3 on the composite tab.

The Institute of Medicine (IOM) estimates that 1.5 million preventable adverse drug events (ADEs) occur in the United States each year. In-hospital ADEs cost $3.5 billion annually and account for approximately 26% of all preventable ADEs (1). Within the ambulatory care setting, patients may be more likely to encounter ADEs as their care may be managed by multiple physicians and with less monitoring than that of hospitalized patients (2).

The IOM concludes that poor communication of medication-related information is the cause of as many as 50% of all medication errors and up to 20% of ADEs (1). The goal of medication reconciliation is to prevent communication errors and ensure the patient as a list of correct medication to prevent unintended changes, dosage, omission and, ultimately, adverse drug events.

According to the Centers for Disease Control and Prevention, ADEs result in 700,000 emergency department visits and 120,000 hospitalizations each year (3).

The CDC expects the numbers of ADEs to increase due to:
- Development of new medications
- Discovery of new uses for older medications
- Aging American population
- Increase in the use of medications for disease prevention
- Increased coverage for prescription medications

1. Institute of Medicine. Preventing Medication Errors. Washington, DC: National Academies Press; 2006.
2. Shehab N, Lovegrove MC, Geller AI, et al. US emergency department visits for outpatient adverse drug events, 2013-2014. JAMA. 2016;316(20):2115-2125.
3. US Centers for Disease Control and Prevention. Medication safety basics. http://www.cdc.gov/medicationsafety/basics.html. Accessed November 17, 2016.

1b.2. **Provide performance scores on the measure as specified (current and over time) at the specified level of analysis**. *(This is required for maintenance of endorsement. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the sub-criterion on improvement (4b) under Usability and Use.*

No performance scores are available for the measure, at this time.

1b.3. **If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.**
Hospital discharges are situations in which patients are at risk of medication discrepancies that may contribute to drug-related problems, medication errors, and adverse drug events (1).

One prospective analysis estimated that about 71% of patients had at least one actual or potential unintentional medication discrepancy. Approximately 41% had at least one actual unintentional medication discrepancy at hospital discharge and 55% of patients had at least one potential unintentional discrepancy. Incomplete prescription requiring clarification and causing a delay in obtaining medication (50%) and the omission of medications (23%)were the most common unintentional discrepancies (1).

1. Wong JD, Bajcar JM, Wong GG, et al. Medication reconciliation at hospital discharge: evaluating discrepancies. Ann Pharmacother. 2008;42(10):1373–1379.

1b.4. **Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability.** *(This is required for maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included.) For measures that show high levels of performance, i.e., "topped out", disparities data may demonstrate an opportunity for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b) under Usability and Use.*
We are not aware of any publications or evidence outlining disparities in this area.

1b.5. **If no or limited data on disparities from the measure as specified is reported in 1b.4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations. Not necessary if performance data provided in 1b.4**
N/A

2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. ***Measures must be judged to meet the sub criteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.***

2a.1. Specifications The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

De.5. **Subject/Topic Area** *(check all the areas that apply):*

De.6. **Cross Cutting Areas** *(check all the areas that apply):*
«crosscutting_area»

De.7. **Target Population Category** *(Check all the populations for which the measure is specified and tested if any):*
Elderly

S.1. **Measure-specific Web Page** *(Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)*
The measure specifications are included in this submission. Additional measure details may be found at:
http://www.thepcpi.org/pcpi/media/documents/Care-Transitions-updated-measures-112016.pdf

S.2a. **If this is an eMeasure**, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)
This is not an eMeasure **Attachment:**

S.2b. **Data Dictionary, Code Table, or Value Sets** *(and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)*
No data dictionary **Attachment:**

S.3.1. **For maintenance of endorsement:** Are there changes to the specifications since the last updates/submission. If yes, update the specifications for S1-2 and S4-22 and explain reasons for the changes in S3.2.
Yes

S.3.2. **For maintenance of endorsement,** please briefly describe any important changes to the measure specifications since last measure update and explain the reasons.
For measure 0646, the unit of measurement was changed from patients to discharges to clarify that the intent of this measure is to assess each individual discharge as a patient may have more than one discharge within a measurement period.

S.4. **Numerator Statement** *(Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome) DO NOT include the rationale for the measure.*
IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).
Discharges in which the patient or their caregiver(s) received a reconciled medication list at the time of discharge including, at a minimum, medications in the following categories:

Medications TO BE TAKEN by Patient
- Continued*
Medications prescribed before inpatient stay that patient should continue to take after discharge, AND
- Changed*
Medications prescribed before inpatient stay with a change in dosage or directions after discharge that differs from what the patient was taking prior to the inpatient stay, AND
- New*
Medications started during inpatient stay that are to be continued after discharge and newly prescribed medications that patient should begin taking after discharge

* Prescribed dosage, instructions, and intended duration must be included for each continued, changed and new medication listed

Medications NOT TO BE TAKEN by Patient
- Discontinued
Medications taken by patient before the inpatient stay that should be discontinued or held after discharge, AND
- Allergies and Adverse Reactions
Medications administered during the inpatient stay that caused an allergic reaction or adverse event and were therefore discontinued

S.5. **Numerator Details** *(All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)*
IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).
Time Period for Data Collection: At each discharge during measurement period

Numerator Instructions:
• For the purposes of this measure, "medications" includes prescription, over-the-counter, and herbal products. Generic and proprietary names should be provided for each medication, when available.

• Given the complexity of the medication reconciliation process and variability across inpatient facilities in documentation of that process, this measure does not require that the medication list be organized under the "taken/NOT taken" headings OR the specified sub-categories, provided that the status of each medication (continued, changed, new, or discontinued) is specified within the list AND any allergic reactions are identified.

For Administrative:
Numerator Elements to be identified through medical record abstraction: see Sample Data Collection Tool attached in Appendix A.1.

This measure may also be implemented in EHRs:
This measure does not lend itself to a "traditional specification" for EHR reporting, where data elements, logic and clinical coding are identified to calculate the measure, due to the fact that every facility may have a different template for medication reconciliation and the information required for this measure is based on individualized patient information unique to one episode of care (i.e., inpatient stay). We have provided guidance on how a facility should query the electronic health record for the information required for this measure.

Producing the Reconciled Medication List:
Facilities that have implemented an EHR system should utilize their system to develop a standardized template for the Reconciled Medication List. A standardized template will ensure that all required data elements specified in the measure are included whenever a Reconciled Medication List is generated from the EHR. Each facility has the autonomy to customize the format of the Reconciled Medication List, based on clinical workflow, policies and procedures, and the patient population treated at the individual institution.

Systematic External Reporting that the Reconciled Medication List was provided to patient:
In order to report, at the facility level, which of the discharged patients have received a Reconciled Medication List, a discrete data field and code indicating the patient received a reconciled medication list at discharge may be needed in the EHR. Each facility should determine the most effective way to identify whether or not the patient received the reconciled medication list.

Transmitting the Reconciled Medication List:
This performance measure does not require that the Reconciled Medication List be transmitted to the next provider(s) of care. However, if it is transmitted to the next provider(s) of care, it should be done so in accordance with established approved standards for interoperability. The ONC Health IT Standards Committee (HITSC) has recommended that certain vocabulary standards are used for quality measure reporting, in accordance with the Quality Data Model (https://ecqi.healthit.gov/qdm). RxNorm has been named as the recommended vocabulary for medications and can be used to identify the medications to which the allergies exist. Allergies (non-substance) and Adverse Reactions to medications should be expressed using SNOMED-CT. The use of recognized interoperability standards for the transmission of the Reconciled Medication List information will ensure that the information can be received into the destination EHR.

S.6. **Denominator Statement** *(Brief, narrative description of the target population being measured)*
All discharges for patients, regardless of age, from an inpatient facility (eg, hospital inpatient or observation, skilled nursing facility, or rehabilitation facility) to home/self care or any other site of care

S.7. **Denominator Details** *(All information required to identify and calculate the target population/denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*
IF an OUTCOME MEASURE, describe how the target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).
Time Period for Data Collection: At each discharge during measurement period

Note: Facilities are responsible for determining the appropriate use of codes.
For Administrative:
Identify patients discharged from inpatient facility using the following:
UB-04 (Form Locator 04 - Type of Bill):
- 0111 (Hospital Inpatient (Including Medicare Part A), Admit through Discharge Claim)
- 0114 (Hospital Inpatient (Including Medicare Part A), Interim - Last Claim)
- 0121 (Hospital Inpatient (Medicare Part B only), Admit through Discharge Claim)

- 0124 (Hospital Inpatient (Medicare Part B only), Interim - Last Claim)
- 0181 (Hospital - Swing Beds, Admit through Discharge Claim)
- 0184 (Hospital - Swing Beds, Interim - Last Claim)
- 0211 (Skilled Nursing-Inpatient (Including Medicare Part A), Admit through Discharge Claim)
- 0214 (Skilled Nursing-Inpatient (Including Medicare Part A), Interim - Last Claim)
- 0221 (Skilled Nursing-Inpatient (Medicare Part B only), Admit through Discharge Claim)
- 0224 (Skilled Nursing- Inpatient (Medicare Part B only), Interim - Last Claim)
- 0281 (Skilled Nursing-Swing Beds, Admit through Discharge Claim)
- 0284 (Skilled Nursing-Swing Beds, Interim - Last Claim)

AND

Discharge Status (Form Locator 17)

- 01 (Discharged to home or self care (routine discharge)
- 02 (Discharged/transferred to a short term general hospital for inpatient care)
- 03 (Discharged/transferred to skilled nursing facility (SNF) with Medicare certification in anticipation of skilled care)
- 04 (Discharged/transferred to a facility that provides custodial or supportive care)
- 05 (Discharged/transferred to a designated cancer center or children's hospital)
- 06 (Discharged/transferred to home under care of an organized home health service organization in anticipation of covered skilled care)
- 21 (Discharged/transferred to court/law enforcement)
- 43 (Discharged/transferred to a federal health care facility)
- 50 (Hospice – home)
- 51 (Hospice - medical facility (certified) providing hospice level of care)
- 61 (Discharged/transferred to hospital-based Medicare approved swing bed)
- 62 (Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital)
- 63 (Discharged/transferred to a Medicare certified long term care hospital (LTCH))
- 64 (Discharged/transferred to a nursing facility certified under Medicaid but not certified under Medicare)
- 65 (Discharged/transferred to a psychiatric hospital or psychiatric distinct part unit of a hospital)
- 66 (Discharged/transferred to a Critical Access Hospital (CAH))
- 69 (Discharged/transferred to a designated disaster alternative care site)
- 70 (Discharged/transferred to another type of health care institution not defined elsewhere in this code list)
- 81 (Discharged to home or self care with a planned acute care hospital inpatient readmission)
- 82 (Discharged/transferred to a short term general hospital for inpatient care with a planned acute care hospital inpatient readmission)
- 83 (Discharged/transferred to a skilled nursing facility (SNF) with Medicare certification with a planned acute care hospital inpatient readmission)
- 84 (Discharged/transferred to a facility that provides custodial or supportive care with a planned acute care hospital inpatient readmission)
- 85 (Discharged/transferred to a designated cancer center or children's hospital with a planned acute care hospital inpatient readmission)
- 86 (Discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission)
- 87 (Discharged/transferred to court/law enforcement with a planned acute care hospital inpatient readmission)
- 88 (Discharged/transferred to a federal health care facility with a planned acute care hospital inpatient readmission
- 89 (Discharged/transferred to a hospital-based Medicare approved swing bed with a planned acute care hospital inpatient readmission)
- 90 (Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission)
- 91 (Discharged/transferred to a Medicare certified long term care hospital (LTCH) with a planned acute care hospital inpatient readmission)
- 92 (Discharged/transferred to nursing facility certified under Medicaid but not certified under Medicare with a planned acute care hospital inpatient readmission)
- 93 (Discharged/transferred to a psychiatric hospital or psychiatric distinct part unit of a hospital with a planned acute care hospital inpatient readmission)
- 94 (Discharged/transferred to a critical access hospital (CAH) with a planned acute care hospital inpatient readmission)
- 95 (Discharged/transferred to another type of health care institution not defined elsewhere in this code list with a planned acute care hospital inpatient readmission)

OR

UB-04 (Form Locator 04 - Type of Bill):
- 0131 (Hospital Outpatient, Admit through Discharge Claim)
- 0134 (Hospital Outpatient, Interim - Last Claim)

AND
UB-04 (Form Locator 42 - Revenue Code):
- 0762 (Hospital Observation)
- 0490 (Ambulatory Surgery)
- 0499 (Other Ambulatory Surgery)

AND
Discharge Status (Form Locator 17)
- 01 (Discharged to home or self care (routine discharge)
- 02 (Discharged/transferred to a short term general hospital for inpatient care)
- 03 (Discharged/transferred to skilled nursing facility (SNF) with Medicare certification in anticipation of skilled care)
- 04 (Discharged/transferred to a facility that provides custodial or supportive care)
- 05 (Discharged/transferred to a designated cancer center or children's hospital
- 06 (Discharged/transferred to home under care of an organized home health service organization in anticipation of covered skilled care)
- 21 (Discharged/transferred to court/law enforcement)
- 43 (Discharged/transferred to a federal health care facility)
- 50 (Hospice – home)
- 51 (Hospice - medical facility (certified) providing hospice level of care)
- 61 (Discharged/transferred to hospital-based Medicare approved swing bed)
- 62 (Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital)
- 63 (Discharged/transferred to a Medicare certified long term care hospital (LTCH))
- 64 (Discharged/transferred to a nursing facility certified under Medicaid but not certified under Medicare)
- 65 (Discharged/transferred to a psychiatric hospital or psychiatric distinct part unit of a hospital)
- 66 (Discharged/transferred to a Critical Access Hospital (CAH))
- 69 (Discharged/transferred to a designated disaster alternative care site)
- 70 (Discharged/transferred to another type of health care institution not defined elsewhere in this code list)
- 81 (Discharged to home or self-care with a planned acute care hospital inpatient readmission)
- 82 (Discharged/transferred to a short term general hospital for inpatient care with a planned acute care hospital inpatient readmission)
- 83 (Discharged/transferred to a skilled nursing facility (SNF) with Medicare certification with a planned acute care hospital inpatient readmission)
- 84 (Discharged/transferred to a facility that provides custodial or supportive care with a planned acute care hospital inpatient readmission)
- 85 (Discharged/transferred to a designated cancer center or children's hospital with a planned acute care hospital inpatient readmission)
- 86 (Discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission)
- 87 (Discharged/transferred to court/law enforcement with a planned acute care hospital inpatient readmission)
- 88 (Discharged/transferred to a federal health care facility with a planned acute care hospital inpatient readmission
- 89 (Discharged/transferred to a hospital-based Medicare approved swing bed with a planned acute care hospital inpatient readmission)
- 90 (Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission)
- 91 (Discharged/transferred to a Medicare certified long term care hospital (LTCH) with a planned acute care hospital inpatient readmission)
- 92 (Discharged/transferred to nursing facility certified under Medicaid but not certified under Medicare with a planned acute care hospital inpatient readmission)
- 93 (Discharged/transferred to a psychiatric hospital or psychiatric distinct part unit of a hospital with a planned acute care hospital inpatient readmission)

- 94 (Discharged/transferred to a critical access hospital (CAH) with a planned acute care hospital inpatient readmission)
- 95 (Discharged/transferred to another type of health care institution not defined elsewhere in this code list with a planned acute care hospital inpatient readmission)

This measure may also be implemented in EHRs:
Eligible discharges for the denominator should be identified through the Admission, Discharge, Transfer (ADT) system, or from another electronic system where this information is stored.

S.8. **Denominator Exclusions** *(Brief narrative description of exclusions from the target population)*
Patients who died
Patients who left against medical advice (AMA) or discontinued care

S.9. **Denominator Exclusion Details** *(All information required to identify and calculate exclusions from the denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*
Time Period for Data Collection: At each discharge during measurement period

According to the PCPI methodology, exclusions arise when the intervention required by the numerator is not appropriate for a group of patients who are otherwise included in the initial patient or eligible population of a measure (i.e., the denominator). Exclusions are absolute and are to be removed from the denominator of a measure and therefore clinical judgment does not enter the decision. For measure Reconciled Medication List Received by Discharged Patients, exclusions include patients who died and patients who left against medical advice or discontinued care. Exclusions, including applicable value sets, are included in the measure specifications.

Additional details by data source are as follows:

For Administrative Data:
UB-04 (Form Locator 17 - Discharge Status):
- 07 (Left against medical advice or discontinued care)
- 20 (Expired)
- 40 (Expired at home)
- 41 (Expired in a medical facility (e.g. hospital, SNF, ICF, or free standing hospice))
- 42 (Expired - place unknown)

This measure may also be implemented in EHRs:
Discharges meeting denominator exclusions criteria should be identified through the Admission, Discharge, Transfer (ADT) system, or from another electronic system where this information is stored.

S.10. **Stratification Information** *(Provide all information required to stratify the measure results, if necessary, including the stratification variables, definitions, specific data collection items/responses, code/value sets, and the risk-model covariates and coefficients for the clinically-adjusted version of the measure when appropriate – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b.)*
Consistent with CMS' Measures Management System Blueprint and recent national recommendations put forth by the IOM and NQF to standardize the collection of race and ethnicity data, we encourage the results of this measure to be stratified by race, ethnicity, administrative sex, and payer.

S.11. **Risk Adjustment Type** (Select type. Provide specifications for risk stratification in measure testing attachment)
No risk adjustment or risk stratification
If other:

S.12. **Type of score:**
Rate/proportion
If other:

S.13. **Interpretation of Score** *(Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)*
Better quality = Higher score

S.14. **Calculation Algorithm/Measure Logic** (*Diagram or describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; time period for data, aggregating data; risk adjustment; etc.)*
To calculate performance rates:
1. Find the patients who meet the initial population (i.e., the general group of patients that a set of performance measures is designed to address).
2. From the patients within the initial population criteria, find the patients who qualify for the denominator. (i.e., the specific group of patients for inclusion in a specific performance measure based on defined criteria). Note: in some cases the initial population and denominator are identical.
3. Find the patients who qualify for denominator exclusions and subtract from the denominator.
4. From the patients within the denominator, find the patients who meet the numerator criteria (i.e., the group of patients in the denominator for whom a process or outcome of care occurs). Validate that the number of patients in the numerator is less than or equal to the number of patients in the denominator

If the patient does not meet the numerator, this case represents a quality failure.

S.15. **Sampling** *(If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)*
IF a PRO-PM, identify whether (and how) proxy responses are allowed.
Not applicable. The measure is not based on a sample.

S.16. **Survey/Patient-reported data** *(If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)*
IF a PRO-PM, specify calculation of response rates to be reported with performance measure results.
Not applicable. The measure is not based on a survey.

S.17. **Data Source** *(Check ONLY the sources for which the measure is SPECIFIED AND TESTED).*
If other, please describe in S.18.
EHRs Hybrid, Paper Records

S.18. **Data Source or Collection Instrument** *(Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data is collected.)*
IF a PRO-PM, identify the specific PROM(s); and standard methods, modes, and languages of administration.
See attached data collection tool.

S.19. **Data Source or Collection Instrument** *(available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)*
Available in attached appendix at A.1

S.20. **Level of Analysis** *(Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)*
Facility, Integrated Delivery System

S.21. **Care Setting** *(Check ONLY the settings for which the measure is SPECIFIED AND TESTED)*
Ambulatory Surgery Center, Behavioral Health : Inpatient, Hospital, Hospital : Acute Care Facility, Hospital : Critical Care, Inpatient Rehabilitation Facility, Long Term Acute Care, Nursing Home / SNF
If other:

S.22. **COMPOSITE Performance Measure** - Additional Specifications *(Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)*
Not applicable. The measure is not a composite.

2. Validity – See attached Measure Testing Submission Form
0646_Reconciled_Medication_List_Received_by_Discharged_Patients.doc

2.1 For maintenance of endorsement
Reliability testing: If testing of reliability of the measure score was not presented in prior submission(s), has reliability testing of the measure score been conducted? If yes, please provide results in the Testing attachment. (Do not remove prior testing information – include date of new information in red.)
Yes

2.2 For maintenance of endorsement

Has additional empirical validity testing of the measure score been conducted? If yes, please provide results in the Testing attachment. (Do not remove prior testing information – include date of new information in red.)

Yes

2.3 For maintenance of endorsement

Risk adjustment: For outcome, resource use, cost, and some process measures, risk-adjustment that includes SDS factors is no longer prohibited during the SDS Trial Period (2015-2016). Please update sections 1.8, 2a2, 2b2, 2b4, and 2b6 in the Testing attachment and S.14 and S.15 in the online submission form in accordance with the requirements for the SDS Trial Period. NOTE: These sections must be updated even if SDS factors are not included in the risk-adjustment strategy. If yes, and your testing attachment does not have the additional questions for the SDS Trial please add these questions to your testing attachment:

What were the patient-level sociodemographic (SDS) variables that were available and analyzed in the data or sample used? For example, patient-reported data (e.g., income, education, language), proxy variables when SDS data are not collected from each patient (e.g. census tract), or patient community characteristics (e.g. percent vacant housing, crime rate).

Describe the conceptual/clinical and statistical methods and criteria used to select patient factors (clinical factors or sociodemographic factors) used in the statistical risk model or for stratification by risk (e.g., potential factors identified in the literature and/or expert panel; regression analysis; statistical significance of p<0.10; correlation of x or higher; patient factors should be present at the start of care)

What were the statistical results of the analyses used to select risk factors?

Describe the analyses and interpretation resulting in the decision to select SDS factors (e.g. prevalence of the factor across measured entities, empirical association with the outcome, contribution of unique variation in the outcome, assessment of between-unit effects and within-unit effects)

No - This measure is not risk-adjusted

NATIONAL QUALITY FORUM

Measure missing data in MSF 6.5 from MSF 5.0

NQF #: 0646 NQF Project: Care Coordination Project

2. RELIABILITY & VALIDITY - SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)

Measure testing must demonstrate adequate reliability and validity in order to be recommended for endorsement. Testing may be conducted for data elements and/or the computed measure score. Testing information and results should be entered in the appropriate field. Supplemental materials may be referenced or attached in item 2.1. See guidance on measure testing.

2a2. Reliability Testing. (*Reliability testing was conducted with appropriate method, scope, and adequate demonstration of reliability*.)

2a2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

Refer to the validity section for a description of the data sample for our EHR testing project.

2a2.2 Analytic Method *(Describe method of reliability testing & rationale)*:

Refer to the validity section for a description of the analytic methods for our EHR testing project.

2a2.3 Testing Results *(Reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:

Refer to the validity section for the testing results for our EHR testing project.

2b. VALIDITY. Validity, Testing, including all Threats to Validity: H☐ M☐ L☐ I ☐

2b1.1 Describe how the measure specifications *(measure focus, target population, and exclusions)* are consistent with the evidence cited in support of the measure focus (*criterion 1c)* and identify any differences from the evidence:

The evidence cited for this measure is directly related to medication reconciliation for all ages, during transitions of care from inpatient to outpatient settings. There are no differences from the measure focus, target population, or exclusions.

2b2. Validity Testing. (*Validity testing was conducted with appropriate method, scope, and adequate demonstration of validity.)*

2b2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

EHR Measure Validity

AMA-PCPI Testing Project

o This project identified a sample of patients taken from one multi-specialty, medium-sized health practice in Southeast Texas.

o This health practice has been designated by the NCQA as a Tier III Medical Home, and has made it a priority to create coordinated transitions in care across the continuum of care.

o This proactive oversees approximately 7-8,000 hospital discharges per year.

o Measure implementation began in July of 2009.

o Manually abstracted sample included 100 patients from the inpatient setting.

Face Validity

The measures were pilot tested via focus group discussion and surveys in six Midwestern healthcare facilities between December 2009 and February 2010. Participants included front line caregivers as well as administrators and leadership. Approximately 65% of the 81 focus group participants also provided written surveys and feedback for analysis.

Face Validity Assessment

Face validity of the measure score as an indicator of quality was systematically assessed, by members of the PCPI Care Coordination Technical Expert Panel, which included 11 members. The list of expert panel members that participated in the assessment is as follows:

Samuel M. Bierner, MD (Co-Chair)

Mary L. Casper, MA, CCC-SLP

Scottie B. Day, BS, MD, FAAP

Michael J. Fischer, MD, MSPH

Selena L. Hariharan, MD, MHSA

Roger G. Kathol, MD

Marjorie L. King, MD, FACC

Ioannis Koutroulis, MD, PhD, MBA

Claranne P. Mathiesen, RN, MSN, CNN, SCRN

Paul E. Miller, MD

Connie White-Williams, PhD, RN, NE-BC, FAAN

2b2.2 Analytic Method *(Describe method of validity testing and rationale; if face validity, describe systematic assessment)*:

EHR Measure Validity

Data from a performance report for the measure automatically-generated from the EHR (designed to collect the necessary data elements to identify eligible cases and calculate the performance score) were compared to data elements found and scores calculated manually on visual inspection of the medical record by trained abstractors.

Data analysis included:

• Percent agreement at the denominator, numerator, (exception - for those measures with exception) and the measure overall.

• Kappa statistic to ensure that agreement rates are not a phenomenon of chance

Face Validity

The clarity and face validity of measures was assessed using numeric surveys and focused discussion.

The survey asked a panel consisting of 81 individuals including front line caregivers, administrators and leadership.

The aforementioned panel was asked to rate the following aspects of this measure:

Clarity of Numerator Statement

Clarity of Denominator Statement

Clarity of Denominator Exclusions

Overall Understanding of the Information in the Measure Specification Document

The rating scale ranged from 1-5, where 1=Very Poor; 3=Average; 5=Very Good

Face Validity Assessment

Face validity of the measure score as an indicator of quality was systematically assessed as follows.

After the measure was fully specified, the expert panel was asked to rate their agreement with the following statement:

The scores obtained from the measure as specified will provide an accurate reflection of quality and can be used to distinguish good and poor quality.

Scale 1-5, where 1= Strongly Disagree; 2= Disagree 3= Neither Agree nor Disagree; 4=Agree

5= Strongly Agree

2b2.3 Testing Results *(Statistical results, assessment of adequacy in the context of norms for the test conducted; if face validity, describe results of systematic assessment)*:

EHR Measure Validity

Overall Reliability*: N, % Agreement, Kappa (95% Confidence Interval)

100, 91.00%, 0.81 (0.70 - 0.93)

This kappa shows an almost perfect level of agreement.

*Visual inspection of the medical record compared to the automatically generated report of the data elements.

Face Validity

For this measure, 73% of respondents indicated a rating of 4 or 5 for the clarity of the numerator statement. Overall understanding of information in the measure specifications document received a score of 84% in the top 2 boxes for this measure. 95% of the 63 individuals providing feedback in the form of a numeric survey submitted a rating of 4 or 5 for the clarity of exceptions with a slightly lower percentage of respondents rating the clarity of denominator statements in the top 2 boxes (84%).

Face Validity Assessment

The results of the expert panel rating of the validity statement were as follows: N = 11; Mean rating = 4.09 and 81.8% of respondents either agree or strongly agree that this measure can accurately distinguish good and poor quality.

Frequency Distribution of Ratings

1 – 1 response (Strongly Disagree)

2 – 0 responses

3 – 1 responses (Neither Agree nor Disagree)

4 – 4 responses

5 – 5 responses (Strongly Agree)

POTENTIAL THREATS TO VALIDITY. (*All potential threats to validity were appropriately tested with adequate results.*)

2b3. Measure Exclusions. (*Exclusions were supported by the clinical evidence in 1c or appropriately tested with results demonstrating the need to specify them.*)

2b3.1 Data/Sample for analysis of exclusions *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

AMA-PCPI Testing Project

- This project identified a sample of patients taken from a multi-specialty, medium-sized health practice in Southeast Texas.
- This health practice has been designated by the NCQA as a Tier III Medical Home, and has made it a priority to create coordinated transitions in care across the continuum of care.

- This proactive oversees approximately 7-8,000 hospital discharges per year.
- Measure implementation began in July of 2009.
- Manually abstracted sample included 100 patients from the inpatient setting.

2b3.2 Analytic Method (*Describe type of analysis and rationale for examining exclusions, including exclusion related to patient preference)*:

Data from an automatically-generated report from the EHR was compared to manual abstraction from patient records to calculate parallel forms reliability for the measure.

Data analysis included:

- Percent agreement
- Kappa statistic to adjust for chance agreement

2b3.3 Results *(Provide statistical results for analysis of exclusions, e.g., frequency, variability, sensitivity analyses):*

Overall Reliability: N, % Agreement, Kappa (95% Confidence Interval)

100, 100.00%, Kappa Not Calculable*

* Kappa statistics cannot be calculated because of complete agreement. Confidence intervals cannot be calculated because to do so would involve dividing by zero which cannot be done.

2b4. Risk Adjustment Strategy. (*For outcome measures, adjustment for differences in case mix (severity) across measured entities was appropriately tested with adequate results.*)

2b4.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

This measure is not risk adjusted.

2b4.2 Analytic Method (*Describe methods and rationale for development and testing of risk model or risk stratification including selection of factors/variables)*:

This measure is not risk adjusted.

2b4.3 Testing Results *(Statistical risk model: Provide quantitative assessment of relative contribution of model risk factors; risk model performance metrics including cross-validation discrimination and calibration statistics, calibration curve and risk decile plot, and assessment of adequacy in the context of norms for risk models. Risk stratification: Provide quantitative assessment of relationship of risk factors to the outcome and differences in outcomes among the strata)*:

This measure is not risk adjusted.

2b4.4 If outcome or resource use measure is not risk adjusted, provide rationale and analyses to justify lack of adjustment: As a process measure, no risk adjustment is necessary.

2b5. Identification of Meaningful Differences in Performance. (*The performance measure scores were appropriately analyzed and discriminated meaningful differences in quality.*)

2b5.1 Data/Sample *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

Highmark Quality Blue Hospital Pay-for-Performance Program

63 participating hospitals implemented Care Coordination measures as part of a "defect-free care transitions bundle"

2b5.2 Analytic Method *(Describe methods and rationale to identify statistically significant and practically/meaningfully differences in performance)*:

Highmark Quality Blue Hospital Pay-for-Performance Program

Participant performance was assessed quarterly over the course of Fiscal Year 2011

2b5.3 Results *(Provide measure performance results/scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:

Highmark Quality Blue Hospital Pay-for-Performance Program

Participant performance on this measure, by quarter is as follows:

FY 2011, Quarter 1: 35%

FY 2011, Quarter 2: 42%

FY 2011, Quarter 3: 50%

2b6. Comparability of Multiple Data Sources/Methods. (*If specified for more than one data source, the various approaches result in comparable scores.*)

2b6.1 Data/Sample *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

AMA-PCPI Testing Project

o This project identified a sample of patients taken from one multi-specialty, medium-sized health practice in Southeast Texas.

o This health practice has been designated by the NCQA as a Tier III Medical Home, and has made it a priority to create coordinated transitions in care across the continuum of care.

o This proactive oversees approximately 7-8,000 hospital discharges per year.

o Measure implementation began in July of 2009.

o Manually abstracted sample included 100 patients from the inpatient setting.

2b6.2 Analytic Method *(Describe methods and rationale for testing comparability of scores produced by the different data sources specified in the measure)*:

Data from a performance report for the measure automatically-generated from the EHR (designed to collect the necessary data elements to identify eligible cases and calculate the performance score) were compared to data elements found and scores calculated manually on visual inspection of the medical record by trained abstractors.

Data analysis included:

• Percent agreement at the denominator, numerator, (exception - for those measures with exception) and the measure overall.

• Kappa statistic to ensure that agreement rates are not a phenomenon of chance

2b6.3 Testing Results *(Provide statistical results, e.g., correlation statistics, comparison of rankings; assessment of adequacy in the context of norms for the test conducted)*:

Overall Reliability*: N, % Agreement, Kappa (95% Confidence Interval)

100, 91.00%, 0.81 (0.70 - 0.93)

This kappa shows an almost perfect level of agreement.

*Visual inspection of the medical record compared to the automatically generated report of the data elements.

2c. Disparities in Care: H☐ M☐ L☐ I ☐ NA☐ (*If applicable, the measure specifications allow identification of disparities.*)

2c.1 If measure is stratified for disparities, provide stratified results *(Scores by stratified categories/cohorts)*: We encourage the results of this measure to be stratified by race, ethnicity, gender, and primary language, and have included these variables as recommended data elements to be collected.

2c.2 If disparities have been reported/identified (e.g., in 1b), but measure is not specified to detect disparities, please explain:

The PCPI advocates that performance measure data should, where possible, be stratified by race, ethnicity, and primary language to assess disparities and initiate subsequent quality improvement activities addressing identified disparities, consistent with recent national efforts to standardize the collection of race and ethnicity data. A 2008 NQF report endorsed 45 practices including stratification by the aforementioned variables.(1) A 2009 IOM report "recommends collection of the existing Office of Management and Budget (OMB) race and Hispanic ethnicity categories as well as more fine-grained categories of ethnicity(referred to as granular ethnicity and based on one's ancestry) and language need (a rating of

spoken English language proficiency of less than very well and one's preferred language for health-related encounters)."(2)

References:

(1)National Quality Forum Issue Brief (No.10). Closing the Disparities Gap in Healthcare Quality with Performance Measurement and Public Reporting. Washington, DC: NQF, August 2008.

(2)Race, Ethnicity, and Language Data: Standardization for Health Care Quality Improvement. March 2010. AHRQ Publication No. 10-0058-EF. Agency for Healthcare Research and Quality, Rockville, MD. Available at:

http://www.ahrq.gov/research/iomracereport. Accessed May 25, 2010.

2.1-2.3 Supplemental Testing Methodology Information:

Steering Committee: Overall, was the criterion, *Scientific Acceptability of Measure Properties*, met?

(*Reliability and Validity must be rated moderate or high*) Yes☐ No☐

Provide rationale based on specific subcriteria:

If the Committee votes No, STOP

3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

3a. Byproduct of Care Processes

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).

3a.1. **Data Elements Generated as Byproduct of Care Processes.**
Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims), Abstracted from a record by someone other than person obtaining original information (e.g., chart abstraction for quality measure or registry)
If other:

3b. Electronic Sources

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

3b.1. **To what extent are the specified data elements available electronically in defined fields** (*i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields*) Update this field for **maintenance of endorsement**.
No data elements are in defined fields in electronic sources

3b.2. **If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources.** For **maintenance of endorsement**, if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).
This measure does not lend itself to a "traditional specification" for EHR reporting, where data elements, logic and clinical coding are identified to calculate the measure, due to the fact the fact that every facility may have a different template for a transition record and the information required for this measure is based on individualized patient information unique to one episode of care (i.e., inpatient stay). However, we have provided guidance on how a facility should query the electronic health record for the information required for this measure, within the numerator details.

3b.3. **If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL. Please also complete and attach the NQF Feasibility Score Card.**
Attachment:

3c. Data Collection Strategy

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

3c.1. **Required for maintenance of endorsement. Describe difficulties (as a result of testing and/or operational use of the measure) regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.**
IF a PRO-PM, consider implications for both individuals providing PRO data (patients, service recipients, respondents) and those whose performance is being measured.
The unit of measurement was changed from patients to discharges to clarify that the intent of this measure is to assess each individual discharge as a patient may have more than one discharge within a measurement period. This measure was found to be reliable and feasible for implementation.

3c.2. **Describe any fees, licensing, or other requirements to use any aspect of the measure as specified** *(e.g., value/code set, risk model, programming code, algorithm)*.
The Measures, while copyrighted, can be reproduced and distributed, without modification, for noncommercial purposes, e.g., use by health care providers in connection with their practices. Commercial use is defined as the sale, license, or distribution of the Measures for commercial gain, or incorporation of the Measures into a product or service that is sold, licensed or distributed for commercial gain.

Commercial uses of the Measures require a license agreement between the user and the PCPI® Foundation (PCPI®) or the American Medical Association (AMA). Neither the American Medical Association (AMA), nor the AMA-convened Physician Consortium for Performance Improvement® (AMA-PCPI), now known as the PCPI, nor their members shall be responsible for any use of the Measures.

4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

4.1. **Current and Planned Use**

NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.

Specific Plan for Use	Current Use (for current use provide URL)
Public Reporting	Payment Program http://www.dhcs.ca.gov/provgovpart/Pages/PRIME.aspx CMS Public Hospital Redesign and Incentives in Medi-Cal (PRIME)

4a.1. **For each CURRENT use, checked above (update for maintenance of endorsement), provide:**

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included
- Level of measurement and setting

The Public Hospital Redesign and Incentives in Medi-Cal (PRIME) Medicaid waiver program is sponsored by CMS and administered by the California Department of Health Care Services (DHCS).

On December 30, 2015, CMS approved Medi-Cal 2020 – a five year renewal of California's Section 1115 Medicaid Waiver, which could provide California with new federal funding through programs that will shift the focus away from hospital-based and inpatient care, towards outpatient, primary and preventative care.

California's 17 designated public hospitals and health systems and some of its 38 district hospitals are in the process of implementing and reporting this measure to DHCS. The PRIME measures are pay for reporting (P4R) the first year (2015-2016) and pay-for-performance (P4P) the following four years. Reporting and performance data are not yet available for this facility-level measure.

4a.2. **If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons?** (*e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?*)

4a.3. **If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement.** (*Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.*)

Improvement

Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4b. **Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (trends in performance results, number and percentage of people receiving high-quality healthcare; Geographic area and number and percentage of accountable entities and patients included.)**
If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.
Performance data are not yet available for this measure as it is in the initial year of use within the PRIME program.

4c. Unintended Consequences

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

4c.1. **Please explain any unexpected findings (positive or negative) during implementation of this measure including unintended impacts on patients.**
We are not aware of any unintended consequences related to this measurement.

4c.2. **Please explain any unexpected benefits from implementation of this measure.**
We are not yet aware of any unexpected benefits related to this measurement.

4d1.1. **Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.**
How many and which types of measured entities and/or others were included? If only a sample of measured entities were included, describe the full population and how the sample was selected.
Currently, assistance has been provided with the implementation of the measure as it is in the initial year of use within the PRIME program.

4d1.2. **Describe the process(es) involved, including when/how often results were provided, what data were provided, what educational/explanatory efforts were made, etc.**
Not applicable

4d2.1. **Summarize the feedback on measure performance and implementation from the measured entities and others described in 4d.1.**
Describe how feedback was obtained.
Not applicable

4d2.2. **Summarize the feedback obtained from those being measured.**
Not applicable

4d2.3. **Summarize the feedback obtained from other users**
DHCS staff have sought clarification of the measure intent but not yet provided feedback regarding the use of this measure.

4d.3. **Describe how the feedback described in 4d.2 has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.**
Based on user feedback to change the unit of measurement, the measure language was updated as reflected in this submission form.

5. Comparison to Related or Competing Measures

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

5. Relation to Other NQF-endorsed Measures
Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.
Yes

5.1a. **List of related or competing measures (selected from NQF-endorsed measures)**
0097 : Medication Reconciliation Post-Discharge
0293 : Medication Information
0419 : Documentation of Current Medications in the Medical Record
0553 : Care for Older Adults (COA) – Medication Review

5.1b. **If related or competing measures are not NQF endorsed please indicate measure title and steward.**

5a. Harmonization of Related Measures
The measure specifications are harmonized with related measures;
OR
The differences in specifications are justified

5a.1. **If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):**
Are the measure specifications harmonized to the extent possible?
No

5a.2. **If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.**
Overall, our measure differs from existing medication reconciliation measures in that it focuses on whether or not a reconciled medication list was provided to discharged patients rather than just on whether or not reconciliation was performed. We feel that our measure better reflects the patient-focused aspect of medication reconciliation. In addition, our measure is intended for implementation at the facility-level, whereas 0097 and 0553 are intended for use at the health plan and integrated delivery system-level, while 0419 is intended for EP-level reporting. In addition, 0553 focuses on elderly patients, whereas our measure includes all adult patients. Given the differences in focus and measurement-level, we feel that our measure is complementary to other measures related to medication reconciliation and management by focusing on the patient receipt of a reconciled medication list.

5b. Competing Measures
The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);
OR
Multiple measures are justified.

5b.1. **If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):**
Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)
Not applicable. There are no existing NQF-endorsed measures that address both the same target population and measure focus.

Appendix

A.1 Supplemental materials may be provided in an appendix. All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.
Attachment **Attachment:** NQF0646_MedReconciliation_DataCollectionFlowsheet-636159514168380000.pdf

Contact Information

Co.1 **Measure Steward (Intellectual Property Owner):** PCPI
Co.2 **Point of Contact:** PCPI, Measures, pcpimeasures@ama-assn.org, 312-464-5709-
Co.3 **Measure Developer if different from Measure Steward:** PCPI
Co.4 **Point of Contact:** Elvia, Chavarria, elvia.chavarria@ama-assn.org, 312-464-5709-

Additional Information

Ad.1 **Workgroup/Expert Panel involved in measure development**
Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
PCPI measures are developed through cross-specialty, multi-disciplinary work groups. All medical specialties and other health care professional disciplines participating in patient care for the clinical condition or topic under study must be equal contributors to the measure development process. In addition, the PCPI strives to include on its work groups individuals representing the perspectives of patients, consumers, private health plans, and employers. This broad-based approach to measure development ensures buy-in on the measures from all stakeholders and minimizes bias toward any individual specialty or stakeholder group. All work groups have at least two co-chairs who have relevant clinical and/or measure development expertise and who are responsible for ensuring that consensus is achieved and that all perspectives are voiced.

Co-chairs:
Robert M. Palmer, MD, MPH (Co-Chair) (Geriatrics/Gerontology)
Mark V. Williams, MD, FACP (Co-Chair) (Hospital medicine)

Work Group members:
Dennis M. Beck, MD, FACEP (Emergency medicine)
Judith S. Black, MD, MHA (Blue Cross and Blue Shield Association)
Caroline Blaum, MD (Geriatrics)
Clair M. Callan, MD, MBA, CPE (American College of Physician Executives)
Jayne Hart Chambers, MBA (Federation of American Hospitals)
Steven Chen, MD, MBA (Surgical oncology)
Kenneth D. Coburn, MD, MPH (Health Quality Partners)
Mirean Fisher Coleman, MSW, LICSW, CT (National Association of Social Workers)
Sydney Dy, MD, MSc (Hospice and palliative medicine)
Scott Endsley, MD, MSc (Health Services Advisory Group)
David A. Etzioni, MD, MSHS (Colon and rectal surgery)
Beth Feldpush, MPH (American Hospital Association)
Rita Munley Gallagher, PhD, RN (American Nurses Association)
G. Scott Gazelle, MD, MPH, PhD (Radiology)
Robert W. Gilmore, MD (Clinical surgery)
Eric S. Holmboe, MD, FACP (Internal medicine)
Mary Ann Kliethermes, B.S., Pharm.D. (American Society of Health System Pharmacists)
James E. Lett, II, MD (American Medical Directors Association)
Janet R. Maurer, MD, MBA, FCCP (Pulmonology)
Andie Melendez, RN, MSN, HTPC (Academy of Medical-Surgical Nurses)
Donise Mosebach, RN, MS, CEN (The Joint Commission)
Michael O´Dell, MD, MSHA, FAAFP (Family medicine)
Eric D. Peterson, MD, MPH, FAHA, FACC (American Heart Association/Cardiology)
Mark Redding MD. FAAP (Pediatrics)
Michael Ries, MD, MBA, FCCM (Critical care medicine)
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Karen Kmetik, PhD
Joanne G. Schwartzberg, MD
Patricia Sokol, RN, JD
Chyna Wilcoxson

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 **Year the measure was first released:** 2009

Ad.3 **Month and Year of most recent revision:** 04, 2016

Ad.4 **What is your frequency for review/update of this measure?** Supporting guidelines, specifications and coding for this measure are reviewed annually

Ad.5 **When is the next scheduled review/update for this measure?** 12, 2017

THE MEASURES AND SPECIFICATIONS ARE PROVIDED “AS IS” WITHOUT WARRANTY OF ANY KIND.
Ad.8 **Additional Information/Comments:**

MEASURE WORKSHEET

This document summarizes the evaluation of the measure as it progresses through NQF's Consensus Development Process (CDP). The information submitted by measure developers/stewards is included after the Brief Measure Information, Preliminary Analysis, and Pre-meeting Public and Member Comments sections.

To navigate the links in the worksheet: Ctrl + click link to go to the link; ALT + LEFT ARROW to return

Brief Measure Information

NQF #: 0647

Measure Title: Transition Record with Specified Elements Received by Discharged Patients (Discharges from an Inpatient Facility to Home/Self Care or Any Other Site of Care)

Measure Steward: PCPI

Brief Description of Measure: Percentage of discharges from an inpatient facility (eg, hospital inpatient or observation, skilled nursing facility, or rehabilitation facility) to home or any other site of care, in which the patient, regardless of age, or their caregiver(s), received a transition record (and with whom a review of all included information was documented) at the time of discharge including, at a minimum, all of the specified elements

Developer Rationale: Providing detailed discharge information enhances patients' preparation to self-manage post-discharge care and comply with treatment plans. Additionally, studies have shown that many hospital readmissions can be prevented by patient education, predischarge assessment, and domiciliary aftercare (1). One study found that patients participating in a hospital program providing detailed, personalized instructions at discharge, including a review of medication routines and assistance with arranging follow-up appointments, had 30% fewer subsequent emergency visits and hospital readmissions than patients who received usual care at discharge (2).

By requiring the completion and prompt transmission of a detailed "transition record" for discharged patients, this measure is promoting a significant enhancement to the customary use of the discharge summary. Numerous studies have documented the prevalence of communication gaps and discontinuities in care for patients after discharge, and the significant effect of these lapses on hospital readmissions and other indicators of the quality of transitional care (3-5). Current information and communication technology can facilitate the routine completion and transmission of a transition record within 24 hours of discharge, which could greatly reduce communication gaps and help improve patient outcomes.

1. Benbassat J, Taragin M. Hospital readmissions as a measure of quality of healthcare. Archives Internal Medicine. 2000;160:1074-81.
2. Jack BW, Chetty VK, Anthony D, et al. A reengineered hospital discharge program to decrease rehospitalization. Ann Intern Med 2009; 150:178-187.
3. Sabogal F, Coots-Miyazaki M, Lett JE. Effective care transitions interventions: Improving patient safety and healthcare quality. CAHQ Journal 2007 (Quarter 2).
4. Moore C, Wisnevesky J, Williams S, McGinn T. 2003. Medical errors related to discontinuity of care from an inpatient to an outpatient setting. Journal of General Internal Medicine 18:646–651.
5. Roy CL, Poon EG, Karson AS, et al. Patient safety concerns arising from test results that return after hospital discharge. Ann Intern Med 2005;143(2):121-128.

Numerator Statement: Discharges in which the patient or their caregiver(s) received a transition record (and with whom a review of all included information was documented) at the time of discharge including, at a minimum, all of the following elements:

Inpatient Care
- Reason for inpatient admission, AND
- Major procedures and tests performed during inpatient stay and summary of results, AND
- Principal diagnosis at discharge

Post-Discharge/ Patient Self-Management
- Current medication list, AND

- Studies pending at discharge (eg, laboratory, radiological), AND
- Patient instructions

Advance Care Plan
- Advance directives or surrogate decision maker documented OR
- Documented reason for not providing advance care plan

Contact Information/Plan for Follow-up Care
- 24-hour/7-day contact information including physician for emergencies related to inpatient stay, AND
- Contact information for obtaining results of studies pending at discharge, AND
- Plan for follow-up care, AND
- Primary physician, other health care professional, or site designated for follow-up care

Denominator Statement: All discharges for patients, regardless of age, from an inpatient facility (eg, hospital inpatient or observation, skilled nursing facility, or rehabilitation facility) to home/self care or any other site of care

Denominator Exclusions: Patients who died
Patients who left against medical advice (AMA) or discontinued care

Measure Type: Process
Data Source: EHRs Hybrid, Paper Records
Level of Analysis: Facility, Integrated Delivery System

IF Endorsement Maintenance – Original Endorsement Date: May 05, 2010 **Most Recent Endorsement Date:** Aug 10, 2012

Maintenance of Endorsement -- Preliminary Analysis

To maintain NQF endorsement endorsed measures are evaluated periodically to ensure that the measures still meets the NQF endorsement criteria ("maintenance"). The emphasis for maintaining endorsement is focused on how effective the measure is for promoting improvements in quality. Endorsed measures should have some experience from the field to inform the evaluation. The emphasis for maintaining endorsement is noted for each criterion.

Criteria 1: Importance to Measure and Report

1a. Evidence
Maintenance measures – less emphasis on evidence unless there is new information or change in evidence since the prior evaluation.

1a. Evidence. The evidence requirements for a *process or intermediate outcome* measure is that it is based on a systematic review (SR) and grading of the body of empirical evidence where the specific focus of the evidence matches what is being measured.

The developer provides the following evidence for this measure:

- **Systematic Review of the evidence specific to this measure?** ☒ **Yes** ☐ **No**
- **Quality, Quantity and Consistency of evidence provided?** ☐ **Yes** ☒ **No**
- **Evidence graded?** ☐ **Yes** ☒ **No**

Summary of prior review in 2012

- In the prior review, the evidence provided by the developer included the 2009 Transitions of Care Consensus Conference (TOCCC) development of standards. The standards were a result of a consensus conference convened in 2006 by the American College of Physicians (ACP), the Society of General Internal Medicine (SGIM), and the Society of Hospital Medicine (SHM), with representation from the Emergency Medicine community.
- The standards were developed by a group consensus process and were based on a systematic review of the evidence and evidence related to transitions of care between the inpatient and outpatient settings. The TOCCC document referenced "Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies", developed by Agency for Healthcare Research and Quality. The evidence in the "Closing the Quality Gap" document appeared to focus more on multidisciplinary teams and was not as specific to transition records.
- In addition, the developers cited references linking provision of discharge information/patient education to improved patient self-management /compliance and reduced hospital readmissions.

Changes to evidence from last review

☒ **The developer attests that there have been no changes in the evidence since the measure was last evaluated.**

☐ **The developer provided updated evidence for this measure:**

Questions for the Committee:

- *The developer attests the underlying evidence for the measure has not changed since the last NQF endorsement review. Does the Committee agree the evidence basis for the measure has not changed and there is no need for repeat discussion and vote on Evidence?*

Preliminary rating for evidence: ☒ Pass ☐ No Pass

1b. Gap in Care/Opportunity for Improvement and 1b. Disparities
Maintenance measures – increased emphasis on gap and variation

1b. Performance Gap. The performance gap requirements include demonstrating quality problems and opportunity for improvement.

- No data on current performance were provided.
- A summary of data from the literature showing that delayed or insufficient transfer of discharge information between hospital-based providers and primary care physicians remains common was provided to demonstrate there is opportunity for improvement.

Disparities

- Information on disparities of care was not provided. NQF encourages disparities data from the measure as specified.

Questions for the Committee:

- *Is there a gap in care that warrants a national performance measure?*
- *If no disparities information is provided, are you aware of evidence that disparities exist in this area of healthcare?*

Preliminary rating for opportunity for improvement: ☐ High ☐ Moderate ☐ Low ☒ Insufficient
RATIONALE: Performance scores on the measure as specified (current and over time) at the specified level of analysis are required for maintenance of endorsement.

Committee pre-evaluation comments

Criteria 1: Importance to Measure and Report (including 1a, 1b, 1c)

1a. Evidence to Support Measure Focus

Comments: **In prior 2012 review, the developer provided systematic review of the evidence, which included the 2009 Transitions of Care Consensus Conference development of standards. Evidence related to transitions of care between the inpatient and outpatient settings and was based on expert opinions. Developer also provided reference citations.

Communication of essential patient information is critical to continuity of appropriate and quality care. This should be a basic standard of practice. In this reviewer's opinion is acceptable to hold providers accountable without having further empirical evidence.

Agree that the evidence basis has not changed and no need for repeat vote.

Developer indicated no changes to the evidence since initial evaluation of the measure.

**Evidence supporting the measure does not directly evaluate the measure. It does support that the process indicated by the measure (providing an inclusive discharge summary and reviewing the content with the patient/care giver) is one component of programs that are successful in reducing negative post-discharge events.

**No change in evidence base. Mostly consensus opinion with face validity. Given the absence of more data this is sufficient. Agree "insufficient with exception"

**Insufficient - the evidence is based only on expert opinion; however, i would argue for an exception may be warranted. I am also surprised that the developer was not able to provide updated literature on this topic. I will try and search over the next week. this would be the equivalent of a discharge instruction for the patient (not discharge summary). I am a strong proponent of the need of

a transition record however, i believe we need empirical evidence.

**No new evidence presented.

Prior determination was "insufficient evidence with exception".

It is concerning, if we are granting that exception, that agreement regarding face validity by experts is not greater (see below)

**in light of unchanging evidence Committee may not need to re-review

**Allen et al. BMC Health Services Research 2014, 14:346

http://www.biomedcentral.com/1472-6963/14/346

Abstract

Background: Provision of high quality transitional care is a challenge for health care providers in many western countries. This systematic review was conducted to (1) identify and synthesise research, using randomised control trial designs, on the quality of transitional care interventions compared with standard hospital discharge for older people with chronic illnesses, and (2) make recommendations for research and practice.

Methods: Eight databases were searched; CINAHL, Psychinfo, Medline, Proquest, Academic Search Complete, Masterfile Premier, SocIndex, Humanities and Social Sciences Collection, in addition to the Cochrane Collaboration, Joanna Briggs Institute and Google Scholar. Results were screened to identify peer reviewed journal articles reporting analysis of quality indicator outcomes in relation to a transitional care intervention involving discharge care in hospital and follow-up support in the home. Studies were limited to those published between January 1990 and May 2013. Study participants included people 60 years of age or older living in their own homes who were undergoing care transitions from hospital to home. Data relating to study characteristics and research

findings were extracted from the included articles. Two reviewers independently assessed studies for risk of bias.

Results: Twelve articles met the inclusion criteria. Transitional care interventions reported in most studies reduced re-hospitalizations, with the exception of general practitioner and primary care nurse models. All 12 studies included outcome measures of re-hospitalization and length of stay indicating a quality focus on effectiveness, efficiency, and safety/risk. Patient satisfaction was assessed in six of the 12 studies and was mostly found to be

high. Other outcomes reflecting person and family centred care were limited including those pertaining to the patient and carer experience, carer burden and support, and emotional support for older people and their carers. Limited outcome measures were reported reflecting timeliness, equity, efficiencies for community providers, and symptom management.

Conclusions: Gaps in the evidence base were apparent in the quality domains of timeliness, equity, efficiencies for community providers, effectiveness/symptom management, and domains of person and family centred care. Further research that involves the person and their family/caregiver in transitional care interventions

is needed.

Keywords: Transitional care, Discharge care, Discharge planning, Older person care, Aging, Systematic review

Evidence documentation by measure developer misstates the presence of systematic review based upon the references provided in the document. Not updated since 2009.

**Evidence provided is based on existing standard of care and is from 2009 based on 2006 information. Evidence has not changed. Impact of measure unclear. Measure addresses delivery of record to patient and/or provider.A summary of data from the literature showing that delayed or insufficient transfer of discharge information between hospital-based providers and primary care physicians remains common was provided to demonstrate there is opportunity for improvement. Evidence is weak and rated insufficient by NQF HOWEVER this measure is focused on the delivery of the discharge information to the patient. The first step in getting to a point of evaluating the impact of that information which as a measure has yet to be developed though must be developed. Delivery of the data absent any followup on impact is a waste of time. If the measure developer intends to evaluate the impact of this measure going forward then this measure could and should be considered an appropriate BRIDGE measure and should be approved pending development of the outcome measure. Absent that commitment, then measure is limited in its utility and should not be advanced.

1b. Performance Gap

Comments: **No data on current performance was provided. Nor was data provided on disparities by population subgroups. However, the summary of data that was provided indicates delayed or insufficient transfer of discharge information between hospital-based providers and primary care physicians persists.

Although I was unable to identify concrete empirical evidence of a performance gap by sub population group, I did see where the literature makes reference to differences in transmission of discharge information in cases where patients did not have a usual source of care. This same reference also pointed out the possible impacts of discharge information transmission rates in settings that use hospitalists, indicating the need for greater focus on coordination and communication.

**Performance data on the measure is not yet available. Literature supports the need for a timely and complete discharge summary.

**Noted wide variability in current transition processes (discharge summary) making it reasonable to conclude that similar variability would exist in an enhanced process. Although not published, we have 12 years of experience at Partners HealthCare System in

which we tracked a similar data set for completeness and timeliness in discharges from six hospitals with varying EHR sophistication. There was wide variability across individual measures and across overall hospital performance. We were able to improve completeness from 33% at the start to 96% of all discharge packets before we changed data elements. There is no question that there is a significant performance gap and no question that it can be closed. Of note, in order to be "complete" the packet had to contain all of the data elements AND be received at the time of discharge.
Disparities were not specifically measured although the developer references suggestions about collecting those data. Furthermore, based on personal experience it is likely that there are significant disparities in measure performance
**insufficient
**No data presented.
**no data provided - not much research in this area and not surprising. I believe the concept itself does address an issue where the system definitely has a performance gap - that is enabling patients, families and caregivers with information to support self-care
**Performance data on the measure was not provided. No subgroup analyses provided. Providing detailed discharge information enhances patients' preparation to self-manage post-discharge care and comply with treatment plans. Additionally, studies have shown that many hospital readmissions can be prevented by patient education, predischarge assessment, and domiciliary aftercare (1). One study found that patients participating in a hospital program providing detailed, personalized instructions at discharge, including a review of medication routines and assistance with arranging follow-up appointments, had 30% fewer subsequent emergency visits and hospital readmissions than patients who received usual care at discharge. By requiring the completion and prompt transmission of a detailed "transition record" for discharged patients, this measure is promoting a significant enhancement to the customary use of the discharge summary. Numerous studies have documented the 17
prevalence of communication gaps and discontinuities in care for patients after discharge, and the significant effect of these lapses on hospital readmissions and other indicators of the quality of transitional care (3-5). Current information and communication technology can facilitate the routine completion and transmission of a transition record within 24 hours of discharge, which could greatly reduce communication gaps and help improve patient outcomes.

Criteria 2: Scientific Acceptability of Measure Properties

2a. Reliability

2a1. Reliability Specifications
Maintenance measures – no change in emphasis – specifications should be evaluated the same as with new measures

2a1. Specifications requires the measure, as specified, to produce consistent (reliable) and credible (valid) results about the quality of care when implemented.
Data source(s): Electronic clinical data, Paper Records
Specifications:

- The level of analysis is the facility and is specified for use in the hospital inpatient or observation, skilled nursing facility, or rehabilitation facility settings. A higher score indicates better quality.
- The unit of measurement was changed from patients to discharges to clarify that the intent of this measure is to assess each individual discharge as a patient may have more than one discharge within a measurement period.
- The numerator for this measure includes discharges in which the patient or their caregiver(s) received a transition record (and with whom a review of all included information was documented) at the time of discharge including, at a minimum, all of the following elements:
    - Inpatient Care
        - Reason for inpatient admission, AND
        - Major procedures and tests performed during inpatient stay and summary of results, AND
        - Principal diagnosis at discharge
    - Post-Discharge/ Patient Self-Management
        - Current medication list, AND
        - Studies pending at discharge (eg, laboratory, radiological), AND
        - Patient instructions
    - Advance Care Plan
        - Advance directives or surrogate decision maker documented OR
        - Documented reason for not providing advance care plan
    - Contact Information/Plan for Follow-up Care

- 24-hour/7-day contact information including physician for emergencies related to inpatient stay, AND
- Contact information for obtaining results of studies pending at discharge, AND
- Plan for follow-up care, AND
- Primary physician, other health care professional, or site designated for follow-up care

- The denominator includes all discharges for patients, regardless of age, from an inpatient facility (eg, hospital inpatient or observation, skilled nursing facility, or rehabilitation facility) to home/self care or any other site of care
- Exclusions include:
  - Patients who died
  - Patients who left against medical advice (AMA) or discontinued care
- A sample data collection is provided to identify discharges through medical record abstraction. Guidance is also provided on how a facility should query the electronic health records for the information required for this measure.
- This measure is not risk-adjusted.

Questions for the Committee:

- *Are all the data elements clearly defined?*
- *Is the logic or calculation algorithm clear?*
- *Is it likely this measure can be consistently implemented?*

2a2. Reliability Testing Testing attachment
Maintenance measures – less emphasis if no new testing data provided

2a2. Reliability testing demonstrates if the measure data elements are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period and/or that the measure score is precise enough to distinguish differences in performance across providers.

For maintenance measures, summarize the reliability testing from the prior review:

- In the prior review, the developers tested data element validity for 100 patients by comparing data from a report automatically generated from an EHR to a visual inspection of the full EHR.

SUMMARY OF TESTING

Reliability testing level ☐ **Measure score** ☒ **Data element** ☐ **Both**

Reliability testing performed with the data source and level of analysis indicated for this measure ☒ **Yes** ☐ **No**

Method(s) of reliability testing

- Data from an automatically-generated report from the EHR was compared to manual abstraction from patient records to calculate reliability for the measure.

Results of reliability testing

- The developer only provided overall statistics (88% agreement, kappa=.69) rather than statistics for each data element. It is not clear what this statistic is referring to.
- The kappa value represents the proportion of agreement between two raters/abstractors that is not explained by chance alone. A value of 1.0 reflects perfect agreement; a value of 0 reflects agreement that is no better than what would be expected by chance alone. A kappa of 1.0 means that the raters agreed 100% of the time over and above what would be expected by chance alone.
- NQF guidance indicates that data element testing should be conducted for all critical data elements, although at minimum, results about the numerator, denominator, and exclusions should be provided. Only a single kappa value was reported – this is insufficient.

Questions for the Committee:

- *Is the test sample adequate to generalize for widespread implementation?*
- *Do the results demonstrate sufficient reliability so that differences in performance can be identified?*

Guidance from the Reliability Algorithm Precise specifications (Box 1) → Empirical reliability testing with measure as specified (Box 2) → Empirical validity testing of patient-level data conducted (Box 3) → **Validity** testing conducted with patient-level data elements (Box 10) → Statistical results for all critical data elements not provided separately (Box 11) → Insufficient

Preliminary rating for reliability: ☐ **High** ☐ **Moderate** ☐ **Low** ☒ **Insufficient**

RATIONALE: All critical data elements must be assessed separately (minimum numerator, denominator, exclusions).

2b. Validity
Maintenance measures – less emphasis if no new testing data provided

2b1. Validity: Specifications

2b1. Validity Specifications. This section should determine if the measure specifications are consistent with the evidence.

Specifications consistent with evidence in 1a. ☐ **Yes** ☒ **Somewhat** ☐ **No**

Questions Raised During the Previous Review:

In the previous review, the committee asked and received clarification that, to be counted in the numerator, the transition record must include all of the specified data elements, and the transition record must be reviewed with the patient and then given to the patient.

Question for the Committee:

- *Are the specifications consistent with the evidence?*

2b2. Validity testing

2b2. Validity Testing should demonstrate the measure data elements are correct and/or the measure score correctly reflects the quality of care provided, adequately identifying differences in quality.

For maintenance measures, summarize the validity testing from the prior review:

- In the previous review, the developers tested data element validity for 100 patients by comparing data from a report automatically generated from an EHR to a visual inspection of the full EHR. The sample was taken from one multi-specialty, medium-sized health practice. The developers also provided results of a systematic assessment of face validity.
- Voting results on validity was split due to two mains concerns. First, the empirical testing of the measure was done using data from only one site's EHR, which was customized to facilitate the review and printing of the transition record (note that e-measure specifications have not been provided because every facility may have a different template for a transition record in their EHR). Second, there was some uncertainty among Committee members as to whether additional testing is needed to illustrate measure validity if data are collected via manual abstraction from paper records. Committee members suggested that developers be cautious about the terminology used in the measure specifications (particularly the term "inpatient", which some may erroneously interpret as hospital inpatient only).

Previous data element validity testing results:

	N	% Agreement	Kappa (95% CI)
Overall	100	88%	0.69 (0.52 to 0.85)

Describe any updates to validity testing:

- Updated face validity testing results were included.

SUMMARY OF TESTING

Validity testing level ☐ **Measure score** ☐ **Data element testing against a gold standard** ☒ **Both**

Method of validity testing of the measure score:

☒ **Face validity**

☐ **Empirical validity testing of the measure score**

Updated validity testing method:
Face validity of the measure score was systematically assessed by 11 members of an expert panel who were asked to rate their agreement with the following statement:

"The scores obtained from the measure as specified will provide an accurate reflection of quality and can be used to distinguish good and poor quality."

Scale 1-5, where 1= Strongly Disagree; 2= Disagree 3= Neither Agree nor Disagree; 4=Agree
5= Strongly Agree

Note: Face validity of the measure score as a quality indicator may be adequate if accomplished through a systematic and transparent process, by identified experts, and explicitly addresses whether performance scores resulting from the measure as specified can be used to distinguish good from poor quality.

Updated validity testing results:
The results of the expert panel rating of the validity statement were as follows: N = 11; Mean rating = 3.82 and 72.7% of respondents either agree or strongly agree that this measure can accurately distinguish good and poor quality.

Frequency Distribution of Ratings
1 – 1 response (Strongly Disagree)
2 – 0 responses
3 – 2 responses (Neither Agree nor Disagree)
4 – 5 responses
5 – 3 responses (Strongly Agree)

Questions for the Committee:
- *Is the test sample adequate to generalize for widespread implementation?*
- *Do the results demonstrate sufficient validity so that conclusions about quality can be made?*
- *Do you agree that the score from this measure as specified is an indicator of quality?*

2b3-2b7. Threats to Validity

2b3. Exclusions:
- Exclusions include:
  - Patients who died
  - Patients who left against medical advice (AMA) or discontinued care
- The developer did not provide a statistical analysis demonstrating that exclusions are needed to prevent unfair distortion of performance results.

Questions for the Committee:
- *Are the exclusions consistent with the evidence?*
- *Are any patients or patient groups inappropriately excluded from the measure?*
- *Are the exclusions/exceptions of sufficient frequency and variation across providers to be needed (and outweigh the data collection burden)? Note: Since this information is not provided – do you think it is necessary to inform your rating of the validity?*

2b4. Risk adjustment: **Risk-adjustment method** ☒ **None** ☐ **Statistical model** ☐ **Stratification**
This measure is not risk adjusted.

2b5. Meaningful difference *(can statistically significant and clinically/practically meaningful differences in performance measure scores can be identified)*:

- The developer did not provide any data on meaningful differences about quality from the measure.

Question for the Committee:

- *Does this measure identify meaningful differences about quality?*

2b6. Comparability of data sources/methods:
N/A

2b7. Missing Data
No information on missing data was presented.

Guidance from the Validity Algorithm
Specifications somewhat consistent with evidence (Box 1) >Somewhat assessed potential threats to validity (Box 2) > face validity and empirical testing (NOTE: all critical data elements were not assessed separately) (Box 3) **>**face validity assessed (Box 5) > Moderate, assuming potential threats to validity are not a problem or are adequately addressed.

The highest possible rating is Moderate.

Preliminary rating for validity: ☐ High ☒ Moderate ☐ Low ☐ Insufficient

Committee pre-evaluation comments

Criteria 2: Scientific Acceptability of Measure Properties (including all 2a, 2b, and 2d)

2a1. & 2b1. Specifications
Comments: **Specifications are consistent with the evidence. There is a body of evidence supporting inclusion of all of the mandated elements of the discharge summary.
**Agree that element level scores are needed. Furthermore, these data elements were derived from an expert panel rather than from a group of patients. How do we know this is the information that patients want (rather than what the facilities want to send)?
**Somewhat -- face validity
The score from this measure will be a process indicator of quality
**Specification are consistent with the limited evidence available.
**face validity only - only 11 members. insufficient
**Face validity by expert panel.

2a2. Reliability Testing
Comments: **Each element of the measure was not tested, which is recommended for NQF endorsement. Recommend testing each element of this measure with a larger sample size. Further testing with a larger sample should enhance assessment of the measure's reliability and enable consistent identification of differences in performance across providers.
**Reliability testing information does not include testing on each element. Additionally, the kappa value of 0.69 demonstrates only moderate concurrence.
**Inadequate testing
**insufficient - no additional comments
**No new testing - prior reliability testing was in 100 patients in a single multi-specialty practice.
Individual data element testing not reported.
Only one kappa value was reported. Unclear which data element this reflects.
**low/insufficient

2b2. Validity Testing
Comments: **As noted above, testing each element of this measure with a larger sample size is recommended. Doing so, should strengthen the assessment of the measure's generalizability for broader implementation.
**Face validity results were 72% (with two of eleven individuals indicating neither agreement nor disagreement)
**Inadequate testing
**low - face; updated
**Additional data (more than one setting, or additional reported data) would help to better assess validity. Given the "exception" to empirical evidence that was invoked, I am concerned that the face validity testing with the 11 experts only reflects 72% agreement that the measure.
**Face validity by expert panel of 11

2b3. Exclusions Analysis
2b4. Risk Adjustment/Stratification for Outcome or Resource Use Measures
2b5. Identification of Statistically Significant & Meaningful Differences In Performance
2b6. Comparability of Performance Scores When More Than One Set of Specifications

2b7. Missing Data Analysis and Minimizing Bias
Comments: **Two exclusions are noted for this measure--cancer patients who died and patients who left against medical advice. It is unclear, why only cancer patients who died, rather than all patients who died are not excluded.
The measure is not risk-adjusted.
**Exclusion criteria - as amended (patients who died and patients who left against medical advice) are appropriate exclusions and do not pose a threat to validity
**Exclusions (death and AMA) are fine. The devil is in specifying the details around the process for collecting each data element and validating that the information provided is accurate. Insufficient on both counts.
**need to better understand the cancer death patient exclusion
**Exclusions are consistent with existing evidence. There is insufficient evidence to draw any further conclusions about the exclusions.
**The developer did not provide any data on meaningful differences about quality from the measure

Criterion 3. Feasibility
Maintenance measures – no change in emphasis – implementation issues may be more prominent

3. Feasibility is the extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

- This measure is coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims), Abstracted from a record by someone other than person obtaining original information (e.g., chart abstraction for quality measure or registry).
- The developer notes: *"This measure does not lend itself to a "traditional specification" for EHR reporting, where data elements, logic and clinical coding are identified to calculate the measure, due to the fact the fact that every facility may have a different template for a transition record and the information required for this measure is based on individualized patient information unique to one episode of care (i.e., inpatient stay). However, we have provided guidance on how a facility should query the electronic health record for the information required for this measure, within the numerator details."*

Questions for the Committee:
- o *Are the required data elements routinely generated and used during care delivery?*
- o *Are the required data elements available in electronic form, e.g., EHR or other electronic sources?*
- o *Is the data collection strategy ready to be put into operational use?*

Preliminary rating for feasibility: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

Committee pre-evaluation comments
Criteria 3: Feasibility

3a. Byproduct of Care Processes
3b. Electronic Sources
3c. Data Collection Strategy
Comments: **The required data elements are routinely generated and used during care delivery.
**Data elements are routinely generated during care delivery, however the lack of standardization of these elements in both the production/labeling of discharge summary content areas and capture in an electronic medical record (EMR) create challenges for data collection.
**It will be easier to generate the data elements from an EHR than it will be to demonstrate that those elements were received in a timely manner. That will require a survey until the day everyone has a portal and generates an acknowledgement electronically when the message is opened.
**Moderate
The required data elements are routinely generated and used during care delivery. The required data elements are available in electronic form within the systems that I am familiar. The data collection strategy will need details factors in for operational use.
**Most data elements for this measure are routinely generated with the possible exception of documenting a reason for not having and advance care may be added work not in current EHR workflow.
**feasble
**data elements are identified

Criterion 4: Usability and Use
Maintenance measures – increased emphasis – much greater focus on measure use and usefulness, including both impact /improvement and unintended consequences

4. Usability and Use evaluate the extent to which audiences (e.g., consumers, purchasers, providers, policymakers) use or could use performance results for both accountability and performance improvement activities.

Current uses of the measure
Publicly reported? ☒ **Yes** ☐ **No**

- This measure is in use in the CMS Inpatient Psychiatric Facility Quality Reporting Program (IPFQR). The IPFQR is a pay-for-reporting program and this measure was added in 2016. The reporting period for FY 2018 Payment Determination is between July 1–December 31, 2016 and the data submission period will be July 1–August 15, 2017.
- The developer indicated that CMS plans to include this facility-level measure within the Hospital Compare public reporting program sometime after the first submission period.

Improvement results
- The developer reports that performance data are not yet available for this measure as it is in the initial year of use within the IPFQR.

Unexpected findings (positive or negative) during implementation
- None identified

Potential harms
- None identified

Vetting of the measure None reported.

Feedback:

- In 2016, the MAP Dual Eligible Beneficiaries workgroup voted to include this measure in the starter set of measures, which are a subset of measures that are considered most ready for implementation as currently specified. Members expressed how these measures cumulatively address important aspects of care transitions, such as patients' experience of care, whether patients receive essential information, and whether providers transfer information.

***Questions for the Committee**:*
- o *How can the performance results be used to further the goal of high-quality, efficient healthcare?*
- o *Do the benefits of the measure outweigh any potential unintended consequences?*
- o *How has the measure been vetted in real-world settings by those being measure or others?*

Preliminary rating for usability and use: ☐ **High** ☐ **Moderate** ☒ **Low** ☐ **Insufficient**
RATIONALE: NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement. Improvement results were not provided.

Committee pre-evaluation comments
Criteria 4: Usability and Use

4a. Accountability and Transparency
4b. Improvement
4c. Unintended Consequences
Comments: **The measure is being used in the CMS Inpatient Psychiatric Facility Quality Reporting Program (IPFQR) and the Hospital Compare public reporting program. In 2016 the MAP Dual Eligible Beneficiaries workgroup voted to include this measure in

the starter set of measures.
The developer does not report how the measure has been vetted in real world setting.
Performance results can be used to assess communications between providers, patient experience relative to receipt of essential information, patient experiences relative to continuity and appropriateness of care. Communications via the transmittal of essential health information can also help to reduce medical errors.
**Measure is scheduled to be publicly reported later this year as part of the CMS Inpatient Psychiatric Facility Quality Reporting Program (IPFQR).
**Unintended consequence, spending lots of effort (which could be better spent on something else) sending information of questionable accuracy and of questionable value.
**Low-Mod
Prelim info for the facility using the measure would be helpful - if only anecdotal - would still be helpful.
Most data to support the outcome would enhance performance. The benefits of the measure outweigh any potential unintended consequences. Facilities should minimally be providing this information to patients. this measure really needs to advance to an outcome measure where the patient is able to read-back the instructions and apply to, possibly, a few what if scenarios. In my world, we provide an After visit summary to patients with these information. Again, the true measure is the applicability of the data. For example, having a followup physician name on a form is helpful - ONLY - if this physician knows the patient and is familiar with their health care situation.
**now in use. question for developer: i'm not clear on the use/need for this measure AND 0646. Can it not be assumed that the transition record and discussion that accompanies it would include a discussion of the medication list?
**This measure is in use in the CMS Inpatient Psychiatric Facility Quality Reporting Program (IPFQR). The IPFQR is a pay-for-reporting program and this measure was added in 2016. The reporting period for FY 2018 Payment Determination is between July 1–December 31, 2016 and the data submission period will be July 1–August 15, 2017.

Criterion 5: Related and Competing Measures

Related or competing measures

- 0291 : Emergency Transfer Communication Measure
- 0293 : Medication Information
- 0297 : Procedures and Tests
- 0648 : Transition Record with Specified Elements Received by Discharged Patients (Discharges from an Inpatient Facility to Home/Self Care or Any Other Site of Care)
- 0649 : Transition Record with Specified Elements Received by Discharged Patients (Emergency Department Discharges to Ambulatory Care [Home/Self Care] or Home Health Care)

Harmonization

In the prior review, the committee noted a need for different content and presentation (particularly in relation to language and health literacy) in a transition record that is given to the patient compared to one given to the next provider. They also agreed that measures #0647 and #0648 be should be designated as paired measures.

Endorsement + Designation

The "Endorsement +" designation identifies measures that exceed NQF's endorsement criteria in several key areas. After a Committee recommends a measure for endorsement, it will then consider whether the measure also meets the "Endorsement +" criteria.

This measure is a candidate for the "Endorsement +" designation IF the Committee determines that it: meets evidence for measure focus without an exception; is reliable, as demonstrated by score-level testing; is valid, as demonstrated by score-level testing (not via face validity only); and has been vetted by those being measured or other users.

Eligible for Endorsement + designation: ☐ **Yes** ☒ **No**

RATIONALE IF NOT ELIGIBLE: The measure is not eligible for Endorsement + because it is not demonstrated by reliability

testing of the measure score, it is only at the data element level.

Pre-meeting public and member comments

-

NATIONAL QUALITY FORUM

Measure missing data in MSF 6.5 from MSF 5.0

NQF #: 0647 NQF Project: Care Coordination 2016-2017 Project

1. IMPACT, OPPORTUITY, EVIDENCE - IMPORTANCE TO MEASURE AND REPORT

Importance to Measure and Report is a threshold criterion that must be met in order to recommend a measure for endorsement. All three subcriteria must be met to pass this criterion. See guidance on evidence.

Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria. (evaluation criteria)

1c.1 Structure-Process-Outcome Relationship *(Briefly state the measure focus, e.g., health outcome, intermediate clinical outcome, process, structure; then identify the appropriate links, e.g., structure-process-health outcome; process-health outcome; intermediate clinical outcome-health outcome)*:

Since the last update/submission, no contradictory evidence has emerged that would prompt changes to this measure.

The measure focus is the process of providing a detailed transition record to patients at the time of discharge from an inpatient facility (eg, hospital inpatient or observation, skilled nursing facility, or rehabilitation facility) to home or any other site of care. This process is directly related to preventing medication errors, adverse events, patient harm, and hospital readmissions. Providing detailed discharge information enhances patients' preparation to self-manage post-discharge care and comply with treatment plans. Additionally, randomized trials have shown that many hospital readmissions can be prevented by patient education, predischarge assessment, and domiciliary aftercare. One recent study found that patients participating in a hospital program providing detailed, personalized instructions at discharge, including a review of medication routines and assistance with arranging follow-up appointments, had 30% fewer subsequent emergency visits and hospital readmissions than patients who received usual care at discharge.

Citations:

Benbassat J, Taragin M. Hospital readmissions as a measure of quality of healthcare. Archives Internal Medicine 2000; 160:1074-81.

Jack BW, Chetty VK, Anthony D, et al. A reengineered hospital discharge program to decrease rehospitalization. Ann Intern

Med 2009; 150:178-187.

1c.2-3 Type of Evidence *(Check all that apply)*:

Clinical Practice Guideline

Systematic review of body of evidence (other than within guideline development)

1c.4 Directness of Evidence to the Specified Measure *(State the central topic, population, and outcomes addressed in the body of evidence and identify any differences from the measure focus and measure target population)*:

The evidence cited for this measure is directly related to transition records for all ages, during transitions of care from inpatient to outpatient settings. There are no differences from the measure focus and measure target population.

1c.5 Quantity of Studies in the Body of Evidence *(Total number of studies, not articles)*: The quantity of studies reviewed was not stated, but the guideline paper references 21 articles.

1c.6 Quality of Body of Evidence (*Summarize the certainty or confidence in the estimates of benefits and harms to patients across studies in the body of evidence resulting from study factors. Please address: a) study design/flaws; b) directness/indirectness of the evidence to this measure (e.g., interventions, comparisons, outcomes assessed, population included in the evidence); and c) imprecision/wide confidence intervals due to few patients or events):* The quality of the evidence was not discussed; however, the guideline paper provided the following summary:

Summary: This guideline is the result of a consensus conference convened in 2006 by the American College of Physicians (ACP), the Society of General

Internal Medicine (SGIM), and the Society of Hospital Medicine (SHM), with representation from the Emergency Medicine community added subsequent to the conference. The participating organizations focused specifically on the development of principles and standards for transitions of care between the inpatient and outpatient settings, in preparation for the development of performance measures. The standards development of the Transitions of Care Consensus Conference (TOCCC) built upon the earlier work of the Stepping Up to the Plate (SUTTP) Alliance established by the ABIM Foundation.

Guideline development methodology: The TOCCC developed its principles and standards based on a systematic review of the evidence related to transitions of care between the inpatient and outpatient settings. After initial discussion in breakout groups, the conference participants refined the principles and standards through a group consensus process. Participants then prioritized

the standards using a group consensus voting process. The final summary paper was subsequently reviewed and approved by all participating organizations.

Evidence base: The TOCCC developed 8 standards for care transitions, based on cohort, observational, and cross-sectional studies and expert opinion. The standards/ recommendations were developed and prioritized by a group consensus process.

1c.7 Consistency of Results across Studies *(Summarize the consistency of the magnitude and direction of the effect):*

Again, the consistency of results across studies was not discussed, but the number of people and organizations involved in the development of the consensus statement suggest great consistency in the evidence base. The TOCCC was held over two days on July 11-12, 2007 at ACP Headquarters in Philadelphia, PA. There were 51 participants representing over thirty organizations. Participating organizations included medical specialty societies from internal medicine as well as family medicine and pediatrics, governmental agencies, such as the AHRQ and CMS, performance measure developers, such as the NCQA and AMA PCPI, nurses associations, such as the VNAA and Home Care and Hospice, pharmacists groups, and patient groups such as the Institute for Family-

Centered Care. The TOCCC developed 8 standards for care transitions,

based on cohort, observational, and cross-sectional studies and expert opinion. The standards/ recommendations were developed and prioritized by a group consensus process.

In addition, multiple studies have shown that many hospital readmissions can be prevented by patient education, predischarge assessment, and domiciliary aftercare; patients participating in a hospital program providing detailed, personalized instructions at discharge, including a review of medication routines and assistance with arranging follow-up appointments, had 30% fewer subsequent emergency visits and hospital readmissions than patients who received usual care at discharge. [Benbassat, 2000; Jack, 2009]

1c.8 Net Benefit *(Provide estimates of effect for benefit/outcome; identify harms addressed and estimates of effect; and net benefit - benefit over harms)*:

There are no potential harms discussed in this guideline or in the evidence, only the harm caused by not preparing a detailed transition record. The TOCCC focuses only on the transitions between the inpatient and outpatient settings and does not address the equally important transitions between the many other different care settings such as hospital to nursing home, or rehabilitation facility. The intent of the TOCCC is to provide this document to national measure developers such as the Physician Consortium for Performance Improvement and others in order to guide measure development and ultimately lead to improvement in quality and safety in care transitions.

1c.9 Grading of Strength/Quality of the Body of Evidence. Has the body of evidence been graded? No

1c.10 If body of evidence graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias: N/A

1c.11 System Used for Grading the Body of Evidence: Other

1c.12 If other, identify and describe the grading scale with definitions: The body of evidence has not been graded.

1c.13 Grade Assigned to the Body of Evidence: N/A

1c.14 Summary of Controversy/Contradictory Evidence: No areas of controversy.

1c.15 Citations for Evidence other than Guidelines*(Guidelines addressed below)*:

1c.16 Quote verbatim, the specific guideline recommendation *(Including guideline # and/or page #)*:

The following evidence statements are quoted verbatim from the referenced clinical guidelines.

Transition record

All transitions must include a transition record. There is a minimal set of data elements that should always be part of the transition record:

– Principal diagnosis and problem list

– Medication list (reconciliation) including OTC/ herbals, allergies and drug interactions

– Clearly identifies the medical home/transferring coordinating physician/institution and their contact information

– Patient's cognitive status

– Test results/pending results

(TOCCC, 2009)

Patients and/or their family/caregivers must receive, understand and be encouraged to participate in the development of their transition record which should take into consideration the patient´s health literacy, insurance status and be culturally sensitive. (TOCCC, 2009)

Standard PC.04.02.01

When a [patient] is discharged or transferred, the [organization] gives information about the care, treatment, and services provided to the [patient] to other service providers who will provide the [patient] with care, treatment, or services.

• At the time of the patient's discharge or transfer, the hospital informs other service providers who will provide care, treatment, or services to the patient about the following:

- The reason for the patient's discharge or transfer

- The patient's physical and psychosocial status

- A summary of care, treatment, and services it provided to the patient

- The patient's progress toward goals

- A list of community resources or referrals made or provided to the patient

(See also PC.02.02.01, EP 1) (Joint Commission, 2009)

Standard PC.04.01.05

Before the [organization] discharges or transfers a [patient], it informs and educates the [patient] about his or her follow-up care, treatment, and services.

1. When the hospital determines the patient's discharge or transfer needs, it promptly shares this information with the patient.

2. Before the patient is discharged, the hospital informs the patient of the kinds of continuing care, treatment, and services he or she will need.

3. When the patient is discharged or transferred, the hospital provides the patient with information about why he or she is being discharged or transferred.

5. Before the patient is transferred, the hospital provides the patient with information about any alternatives to the transfer.

7. The hospital educates the patient about how to obtain any continuing care, treatment, and services that he or she will need.

8. The hospital provides written discharge instructions in a manner that the patient and/or the patient's family or caregiver can understand. (See also RI.01.01.03, EP 1) (Joint Commission, 2009)

Safe Practice 15: Discharge Systems

A "discharge plan" must be prepared for each patient at the time of hospital discharge, and a concise discharge summary must be prepared for and relayed to the clinical caregiver accepting responsibility for postdischarge care in a timely manner. Organizations must ensure that there is confirmation of receipt of the discharge information by the independent licensed practitioner who will assume the responsibility for care after discharge. [Jack BW, Chetty VK,

Anthony D, et al. A reengineered hospital discharge program to decrease rehospitalization: a randomized trial. Ann Intern Med 2009 Feb 3;150(3):178-87] (NQF Safe Practices for Better Healthcare–2010 Update)

-Discharge policies and procedures should be established and resourced and should address: [Clancy CM. Reengineering hospital discharge: a protocol to improve patient safety, reduce costs, and boost patient satisfaction. Am J Med Qual 2009 Jul-Aug;24(4): 344-6. Epub 2009 Jun 5] • explicit delineation of roles and responsibilities in the discharge process; • preparation for discharge occurring, with documentation, throughout the hospitalization;

• reliable information flow from the primary care physician (PCP) or referring caregiver on admission, to the hospital caregivers, and back to the PCP, after discharge, using standardized communication methods; [Sherman FT. Rehospitalizations: packaging discharge and transition services to prevent "bounce backs". Geriatrics 2009 May;64(5):8-9] • completion of discharge plan and discharge summaries before discharge; [Jack, 2009] • patient or, as appropriate, family perception of coordination of discharge care; and • benchmarking, measurement, and continuous quality improvement of discharge processes.

-A written discharge plan must be provided to each patient at the time of discharge that is understandable to the patient and/or his family or guardian and appropriate to each individual's health literacy and English language proficiency. [Chugh A, Williams MV, Grigsby J, et al. Better transitions: improving comprehension of discharge instructions. Front Health Serv Manage 2009 Spring;25(3):11-32; Were MC, Li X, Kesterson J, et al. Adequacy of hospital discharge summaries in documenting tests with pending results and outpatient follow-up providers. J Gen Intern Med 2009 Sep;24(9):1002-6. Epub 2009 Jul 3]

At a minimum, the discharge plan must include the following: • reason for hospitalization; • medications to be taken postdischarge, including, as appropriate, resumption of pre-admission medications, how to take them, and how to obtain them; • instructions for the patient on what to do if his or her condition changes; and • coordination and planning for follow-up appointments that the patient can keep and follow-up of tests and studies for which confirmed results are not available at

the time of discharge.

-A discharge summary must be provided to the ambulatory clinical provider who accepts the patient's care after hospital discharge. At a minimum, the discharge summary should include the following: • reason for hospitalization; • significant findings; • procedures performed and care, treatment, and services

provided to the patient; • the patient's condition at discharge; • information provided to the patient and family; • a comprehensive and reconciled medication list; and • a list of acute medical issues, tests, and studies for which

confirmed results are unavailable at the time of discharge and require follow-up.

-Original source documents (e.g., laboratory or radiology reports or medication administration records) should be in the transcriber's immediate possession and should be visible when it is necessary to transcribe information from one document to another.

-The organization should ensure and document receipt of discharge information by caregivers who assume responsibility for post-discharge care. This confirmation may occur through telephone, fax, e-mail response, or other electronic response using health information technologies. [Zsenits B, Polashenski WA, Sterns RH, et al. Systematically improving physician assignment during in-hospital transitions of care by enhancing a preexisting hospital electronic health record. J Hosp Med 2009 May;4(5):308-12] (NQF Safe Practices for Better Healthcare–2010 Update)

1c.17 Clinical Practice Guideline Citation: Snow V, Beck D, Budnitz T, Miller DC, Potter J, Wears RL, Weiss KB, Williams MV. Transitions of Care Consensus Policy Statement: American College of Physicians-Society of General Internal Medicine-Society of Hospital Medicine-American Geriatrics Society-American College of Emergency Physicians-Society of Academic Emergency Medicine. J Gen Intern Med 2009 Apr 3.

Joint Commission on Accreditation of Healthcare Organizations. 2009 Hospital Accreditation Standards. Oakbrook Terrace, IL: Joint Commission Resources, Inc.

National Quality Forum (NQF). Safe Practices for Better Healthcare–2010 Update: A Consensus Report. Washington, DC: NQF; 2010.

1c.18 National Guideline Clearinghouse or other URL:

1c.19 Grading of Strength of Guideline Recommendation. Has the recommendation been graded? No

1c.20 If guideline recommendation graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias:

1c.21 System Used for Grading the Strength of Guideline Recommendation: Other

1c.22 If other, identify and describe the grading scale with definitions: The guideline recommendations have not been graded.

1c.23 Grade Assigned to the Recommendation: N/A

1c.24 Rationale for Using this Guideline Over Others: It is the PCPI policy to use guidelines, which are evidence-based, applicable to physicians and other health-care providers, and developed by a national specialty organization or government agency. In addition, the PCPI has now expanded what is acceptable as the evidence base for measures to include documented quality improvement (QI) initiatives or implementation projects that have demonstrated improvement in quality of care.

Based on the NQF descriptions for rating the evidence, what was the developer's assessment of the quantity, quality, and consistency of the body of evidence?

1c.25 Quantity: Moderate 1c.26 Quality: Moderate1c.27 Consistency: Moderate

1. Evidence, Performance Gap, Priority – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. ***Measures must be judged to meet all sub criteria to pass this criterion and be evaluated against the remaining criteria.***

1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form
0647_Evidence_Measure_Submission_Form.doc
1a.1 For Maintenance of Endorsement: Is there new evidence about the measure since the last update/submission?
Please update any changes in the evidence attachment in red. Do not remove any existing information. If there have been any changes to evidence, the Committee will consider the new evidence. If there is no new evidence, no updating of the evidence information is needed.
No

1b. Performance Gap

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- Disparities in care across population groups.

1b.1. **Briefly explain the rationale for this measure** *(e.g., how the measure will improve the quality of care, the benefits or improvements in quality envisioned by use of this measure)*
IF a PRO-PM (e.g. HRQoL/functional status, symptom/burden, experience with care, health-related behaviors), provide evidence that the target population values the measured PRO and finds it meaningful. (Describe how and from whom their input was obtained.)
IF a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), SKIP this question and provide rationale for composite in question 1c.3 on the composite tab.
Providing detailed discharge information enhances patients' preparation to self-manage post-discharge care and comply with treatment plans. Additionally, studies have shown that many hospital readmissions can be prevented by patient education, predischarge assessment, and domiciliary aftercare (1). One study found that patients participating in a hospital program providing detailed, personalized instructions at discharge, including a review of medication routines and assistance with arranging follow-up appointments, had 30% fewer subsequent emergency visits and hospital readmissions than patients who received usual care at discharge (2).

By requiring the completion and prompt transmission of a detailed "transition record" for discharged patients, this measure is promoting a significant enhancement to the customary use of the discharge summary. Numerous studies have documented the prevalence of communication gaps and discontinuities in care for patients after discharge, and the significant effect of these lapses on hospital readmissions and other indicators of the quality of transitional care (3-5). Current information and communication technology can facilitate the routine completion and transmission of a transition record within 24 hours of discharge, which could greatly reduce communication gaps and help improve patient outcomes.

1. Benbassat J, Taragin M. Hospital readmissions as a measure of quality of healthcare. Archives Internal Medicine. 2000;160:1074-

81.
2. Jack BW, Chetty VK, Anthony D, et al. A reengineered hospital discharge program to decrease rehospitalization. Ann Intern Med 2009; 150:178-187.
3. Sabogal F, Coots-Miyazaki M, Lett JE. Effective care transitions interventions: Improving patient safety and healthcare quality. CAHQ Journal 2007 (Quarter 2).
4. Moore C, Wisnevesky J, Williams S, McGinn T. 2003. Medical errors related to discontinuity of care from an inpatient to an outpatient setting. Journal of General Internal Medicine 18:646–651.
5. Roy CL, Poon EG, Karson AS, et al. Patient safety concerns arising from test results that return after hospital discharge. Ann Intern Med 2005;143(2):121-128.

1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis. *(This is required for maintenance of endorsement. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the sub-criterion on improvement (4b) under Usability and Use.*
Performance scores for this measure are not yet available

1b.3. If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.
The delayed or insufficient transfer of discharge information between hospital-based providers and primary care physicians remains common.

- Communication between hospital-based physicians and primary care physicians as part of the discharge process occurs between 3%-20% of the time.
- Discharge summaries were only available between 12%-34% of first postdischarge visit and between 51%-77% within 4 weeks after discharge.
- Discharge summaries often lacked important information including:
  - Diagnostic test results which were missing from 33%-63% of discharge summaries
  - Course of treatment missing from 7%-22%
  - Discharge medications missing from 2%-40%
  - Test results pending at discharge within 65% of discharge summaries
  - Follow-up plans missing from 2%-43%

A retrospective study on discharge summaries found that 21% of discharged patients did not have a discharge summary completed within a week after discharge. The absence of a discharge summary was associated with a 79% increase in the rate of readmission within 7 days and a 37% increased rate of readmission within 28 days (2).

Kripalani S, LeFevre F, Phillips CO, Williams MV, Basaviah P, Baker DW. Deficits in communication and information transfer between hospital-based and primary care physicians: implications for patient safety and continuity of care. JAMA. 2007;297(8):831-841. doi:10.1001/jama.297.8.831
2. Li JYZ, Yong TY, Hakendorf P, Ben-Tovim D, Thompson CH. Timeliness in discharge summary dissemination is associated with patients´ clinical outcomes. Journal of Evaluation in Clinical Practice. 2013;19:76–79. doi:10.1111/j.1365-2753.2011.01772.

1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability. *(This is required for maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included.) For measures that show high levels of performance, i.e., "topped out", disparities data may demonstrate an opportunity for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b) under Usability and Use.*
We are not aware of any publications or evidence outlining disparities in this area.

1b.5. If no or limited data on disparities from the measure as specified is reported in 1b.4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations. Not necessary if performance data provided in 1b.4
N/A

2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. ***Measures must be judged to meet the sub criteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.***

2a.1. Specifications The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

De.5. **Subject/Topic Area** *(check all the areas that apply):*

De.6. **Cross Cutting Areas** *(check all the areas that apply):*
«crosscutting_area»

De.7. **Target Population Category** *(Check all the populations for which the measure is specified and tested if any):*
Elderly

S.1. **Measure-specific Web Page** *(Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)*
The measure specifications are included in this submission. Additional measure details may be found at:
http://www.thepcpi.org/pcpi/media/documents/Care-Transitions-updated-measures-112016.pdf

S.2a. **If this is an eMeasure**, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)
This is not an eMeasure **Attachment:**

S.2b. **Data Dictionary, Code Table, or Value Sets** *(and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)*
No data dictionary **Attachment:**

S.3.1. **For maintenance of endorsement:** Are there changes to the specifications since the last updates/submission. If yes, update the specifications for S1-2 and S4-22 and explain reasons for the changes in S3.2.
Yes

S.3.2. **For maintenance of endorsement,** please briefly describe any important changes to the measure specifications since last measure update and explain the reasons.
For measure 0647, the unit of measurement was changed from patients to discharges to clarify that the intent of this measure is to assess each individual discharge as a patient may have more than one discharge within a measurement period.

S.4. **Numerator Statement** *(Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome) DO NOT include the rationale for the measure.*
IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).
Discharges in which the patient or their caregiver(s) received a transition record (and with whom a review of all included information was documented) at the time of discharge including, at a minimum, all of the following elements:

Inpatient Care
- Reason for inpatient admission, AND
- Major procedures and tests performed during inpatient stay and summary of results, AND
- Principal diagnosis at discharge

Post-Discharge/ Patient Self-Management

- Current medication list, AND
- Studies pending at discharge (eg, laboratory, radiological), AND
- Patient instructions

Advance Care Plan
- Advance directives or surrogate decision maker documented OR
- Documented reason for not providing advance care plan

Contact Information/Plan for Follow-up Care
- 24-hour/7-day contact information including physician for emergencies related to inpatient stay, AND
- Contact information for obtaining results of studies pending at discharge, AND
- Plan for follow-up care, AND
- Primary physician, other health care professional, or site designated for follow-up care

S.5. **Numerator Details** *(All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)*
IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).
Time Period for Data Collection: At each discharge during measurement period

Numerator Element Definitions:
- Transition record: a core, standardized set of data elements related to patient's diagnosis, treatment, and care plan that is discussed with and provided to patient in printed or electronic format at each transition of care, and transmitted to the facility/physician/other health care professional providing follow-up care. Electronic format may be provided only if acceptable to patient.
- Current medication list: all medications to be taken by patient after discharge, including all continued and new medications
- Advance directives: e.g., written statement of patient wishes regarding future use of life-sustaining medical treatment
- Documented reason for not providing advance care plan: documentation that advance care plan was discussed but patient did not wish or was not able to name a surrogate decision maker or provide an advance care plan, OR documentation as appropriate that the patient´s cultural and/or spiritual beliefs preclude a discussion of advance care planning as it would be viewed as harmful to the patient´s beliefs and thus harmful to the physician-patient relationship
- Contact information/ plan for follow-up care: For patients discharged to an inpatient facility, the transition record may indicate that these four elements are to be discussed between the discharging and the "receiving" facilities.
- Plan for follow-up care: may include any post-discharge therapy needed (eg, oxygen therapy, physical therapy, occupational therapy), any durable medical equipment needed, family/psychosocial resources available for patient support, etc.
- Primary physician or other health care professional designated for follow-up care: may be designated primary care physician (PCP), medical specialist, or other physician or health care professional

For Claims/Administrative:
Numerator Elements to be identified through medical record abstraction: see Sample Data Collection Tool attached in Appendix A.1.

For EHR:
This measure does not lend itself to a "traditional specification" for EHR reporting, where data elements, logic and clinical coding are identified to calculate the measure, due to the fact the fact that every facility may have a different template for a transition record and the information required for this measure is based on individualized patient information unique to one episode of care (i.e., inpatient stay). We have provided guidance on how a facility should query the electronic health record for the information required for this measure.

Producing the Transition Record with Specified Elements
Facilities that have implemented an EHR should utilize their system to produce a standardized template that providers will complete to generate the Transition Record. A standardized template will ensure that all data elements specified in the performance measure are included each time a Transition Record is prepared. Each facility has the autonomy to customize the format of the Transition Record, based on clinical workflow, policies and procedures, and the patient population treated at the individual institution

Transmitting the Transition Record with Specified Elements
This performance measure does not require that the Transition Record be transmitted to the next provider(s) of care. However, if the Transition Record is transmitted to the next provider(s) of care, it should be done so in accordance with established approved standards for interoperability. The ONC Health IT Standards Committee (HITSC) has recommended that certain vocabulary standards are used for quality measure reporting, in accordance with the Quality Data Model. In addition, the use of recognized interoperability standards for the transmission of the Transition Record information will ensure that the information can be received into the destination EHR.

Systematic External Reporting of the Transition Record
In order to report, at the facility level, which of the discharged patients have received a Transition Record, a discrete data field and code indicating the patient received a Transition Record at discharge may be needed in the EHR.

S.6. **Denominator Statement** *(Brief, narrative description of the target population being measured)*
All discharges for patients, regardless of age, from an inpatient facility (eg, hospital inpatient or observation, skilled nursing facility, or rehabilitation facility) to home/self care or any other site of care

S.7. **Denominator Details** *(All information required to identify and calculate the target population/denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*
IF an OUTCOME MEASURE, describe how the target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).
Time Period for Data Collection: At each discharge during measurement period

Note: Facilities are responsible for determining the appropriate use of codes.

For Administrative:
Identify patients discharged from inpatient facility using the following:
UB-04 (Form Locator 04 - Type of Bill):

- 0111 (Hospital Inpatient (Including Medicare Part A), Admit through Discharge Claim)
- 0114 (Hospital Inpatient (Including Medicare Part A), Interim - Last Claim)
- 0121 (Hospital Inpatient (Medicare Part B only), Admit through Discharge Claim)
- 0124 (Hospital Inpatient (Medicare Part B only), Interim - Last Claim)
- 0181 (Hospital - Swing Beds, Admit through Discharge Claim)
- 0184 (Hospital - Swing Beds, Interim - Last Claim)
- 0211 (Skilled Nursing-Inpatient (Including Medicare Part A), Admit through Discharge Claim)
- 0214 (Skilled Nursing-Inpatient (Including Medicare Part A), Interim - Last Claim)
- 0221 (Skilled Nursing-Inpatient (Medicare Part B only), Admit through Discharge Claim)
- 0224 (Skilled Nursing- Inpatient (Medicare Part B only), Interim - Last Claim)
- 0281 (Skilled Nursing-Swing Beds, Admit through Discharge Claim)
- 0284 (Skilled Nursing-Swing Beds, Interim - Last Claim)

AND
Discharge Status (Form Locator 17)

- 01 (Discharged to home or self care (routine discharge)
- 02 (Discharged/transferred to a short term general hospital for inpatient care)
- 03 (Discharged/transferred to skilled nursing facility (SNF) with Medicare certification in anticipation of skilled care)
- 04 (Discharged/transferred to a facility that provides custodial or supportive care)
- 05 (Discharged/transferred to a designated cancer center or children's hospital)
- 06 (Discharged/transferred to home under care of an organized home health service organization in anticipation of covered skilled care)
- 21 (Discharged/transferred to court/law enforcement)
- 43 (Discharged/transferred to a federal health care facility)
- 50 (Hospice – home)
- 51 (Hospice - medical facility (certified) providing hospice level of care)
- 61 (Discharged/transferred to hospital-based Medicare approved swing bed)
- 62 (Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital)

- 63 (Discharged/transferred to a Medicare certified long term care hospital (LTCH))
- 64 (Discharged/transferred to a nursing facility certified under Medicaid but not certified under Medicare)
- 65 (Discharged/transferred to a psychiatric hospital or psychiatric distinct part unit of a hospital)
- 66 (Discharged/transferred to a Critical Access Hospital (CAH))
- 69 (Discharged/transferred to a designated disaster alternative care site)
- 70 (Discharged/transferred to another type of health care institution not defined elsewhere in this code list)
- 81 (Discharged to home or self care with a planned acute care hospital inpatient readmission)
- 82 (Discharged/transferred to a short term general hospital for inpatient care with a planned acute care hospital inpatient readmission)
- 83 (Discharged/transferred to a skilled nursing facility (SNF) with Medicare certification with a planned acute care hospital inpatient readmission)
- 84 (Discharged/transferred to a facility that provides custodial or supportive care with a planned acute care hospital inpatient readmission)
- 85 (Discharged/transferred to a designated cancer center or children's hospital with a planned acute care hospital inpatient readmission)
- 86 (Discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission)
- 87 (Discharged/transferred to court/law enforcement with a planned acute care hospital inpatient readmission)
- 88 (Discharged/transferred to a federal health care facility with a planned acute care hospital inpatient readmission
- 89 (Discharged/transferred to a hospital-based Medicare approved swing bed with a planned acute care hospital inpatient readmission)
- 90 (Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission)
- 91 (Discharged/transferred to a Medicare certified long term care hospital (LTCH) with a planned acute care hospital inpatient readmission)
- 92 (Discharged/transferred to nursing facility certified under Medicaid but not certified under Medicare with a planned acute care hospital inpatient readmission)
- 93 (Discharged/transferred to a psychiatric hospital or psychiatric distinct part unit of a hospital with a planned acute care hospital inpatient readmission)
- 94 (Discharged/transferred to a critical access hospital (CAH) with a planned acute care hospital inpatient readmission)
- 95 (Discharged/transferred to another type of health care institution not defined elsewhere in this code list with a planned acute care hospital inpatient readmission)

OR

UB-04 (Form Locator 04 - Type of Bill):
- 0131 (Hospital Outpatient, Admit through Discharge Claim)
- 0134 (Hospital Outpatient, Interim - Last Claim)

AND
UB-04 (Form Locator 42 - Revenue Code):
- 0762 (Hospital Observation)
- 0490 (Ambulatory Surgery)
- 0499 (Other Ambulatory Surgery)

AND
Discharge Status (Form Locator 17)
- 01 (Discharged to home or self care (routine discharge)
- 02 (Discharged/transferred to a short term general hospital for inpatient care)
- 03 (Discharged/transferred to skilled nursing facility (SNF) with Medicare certification in anticipation of skilled care)
- 04 (Discharged/transferred to a facility that provides custodial or supportive care)
- 05 (Discharged/transferred to a designated cancer center or children's hospital
- 06 (Discharged/transferred to home under care of an organized home health service organization in anticipation of covered skilled care)
- 21 (Discharged/transferred to court/law enforcement)
- 43 (Discharged/transferred to a federal health care facility)
- 50 (Hospice – home)
- 51 (Hospice - medical facility (certified) providing hospice level of care)

- 61 (Discharged/transferred to hospital-based Medicare approved swing bed)
- 62 (Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital)
- 63 (Discharged/transferred to a Medicare certified long term care hospital (LTCH))
- 64 (Discharged/transferred to a nursing facility certified under Medicaid but not certified under Medicare)
- 65 (Discharged/transferred to a psychiatric hospital or psychiatric distinct part unit of a hospital)
- 66 (Discharged/transferred to a Critical Access Hospital (CAH))
- 69 (Discharged/transferred to a designated disaster alternative care site)
- 70 (Discharged/transferred to another type of health care institution not defined elsewhere in this code list)
- 81 (Discharged to home or self-care with a planned acute care hospital inpatient readmission)
- 82 (Discharged/transferred to a short term general hospital for inpatient care with a planned acute care hospital inpatient readmission)
- 83 (Discharged/transferred to a skilled nursing facility (SNF) with Medicare certification with a planned acute care hospital inpatient readmission)
- 84 (Discharged/transferred to a facility that provides custodial or supportive care with a planned acute care hospital inpatient readmission)
- 85 (Discharged/transferred to a designated cancer center or children's hospital with a planned acute care hospital inpatient readmission)
- 86 (Discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission)
- 87 (Discharged/transferred to court/law enforcement with a planned acute care hospital inpatient readmission)
- 88 (Discharged/transferred to a federal health care facility with a planned acute care hospital inpatient readmission
- 89 (Discharged/transferred to a hospital-based Medicare approved swing bed with a planned acute care hospital inpatient readmission)
- 90 (Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission)
- 91 (Discharged/transferred to a Medicare certified long term care hospital (LTCH) with a planned acute care hospital inpatient readmission)
- 92 (Discharged/transferred to nursing facility certified under Medicaid but not certified under Medicare with a planned acute care hospital inpatient readmission)
- 93 (Discharged/transferred to a psychiatric hospital or psychiatric distinct part unit of a hospital with a planned acute care hospital inpatient readmission)
- 94 (Discharged/transferred to a critical access hospital (CAH) with a planned acute care hospital inpatient readmission)
- 95 (Discharged/transferred to another type of health care institution not defined elsewhere in this code list with a planned acute care hospital inpatient readmission)

This measure may also be implemented in EHRs:
Eligible discharges for the denominator should be identified through the Admission, Discharge, Transfer (ADT) system, or from another electronic system where this information is stored.

S.8. **Denominator Exclusions** *(Brief narrative description of exclusions from the target population)*
Patients who died
Patients who left against medical advice (AMA) or discontinued care

S.9. **Denominator Exclusion Details** *(All information required to identify and calculate exclusions from the denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*
Time Period for Data Collection: At each discharge during measurement period

According to the PCPI methodology, exclusions arise when the intervention required by the numerator is not appropriate for a group of patients who are otherwise included in the initial patient or eligible population of a measure (i.e., the denominator). Exclusions are absolute and are to be removed from the denominator of a measure and therefore clinical judgment does not enter the decision. For measure Transition Record with Specified Elements Received by Discharged Patients, exclusions include patients who died and patients who left against medical advice or discontinued care. Exclusions, including applicable value sets, are included in the measure specifications.

Additional details by data source are as follows:

For Administrative:
UB-04 (Form Locator 17 - Discharge Status):
• 07 (Left against medical advice or discontinued care)
• 20 (Expired)
• 40 (Expired at home)
• 41 (Expired in a medical facility (e.g. hospital, SNF, ICF, or free standing hospice))
• 42 (Expired - place unknown)

This measure may also be implemented in EHRs:
Discharges meeting denominator exclusions criteria should be identified through the Admission, Discharge, Transfer (ADT) system, or from another electronic system where this information is stored.

S.10. **Stratification Information** *(Provide all information required to stratify the measure results, if necessary, including the stratification variables, definitions, specific data collection items/responses, code/value sets, and the risk-model covariates and coefficients for the clinically-adjusted version of the measure when appropriate – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b.)*
Consistent with CMS' Measures Management System Blueprint and recent national recommendations put forth by the IOM and NQF to standardize the collection of race and ethnicity data, we encourage the results of this measure to be stratified by race, ethnicity, administrative sex, and payer.

S.11. **Risk Adjustment Type** (Select type. Provide specifications for risk stratification in measure testing attachment)
No risk adjustment or risk stratification
If other:

S.12. **Type of score:**
Rate/proportion
If other:

S.13. **Interpretation of Score** *(Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)*
Better quality = Higher score

S.14. **Calculation Algorithm/Measure Logic** (*Diagram or describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; time period for data, aggregating data; risk adjustment; etc.)*
To calculate performance rates:
1. Find the patients who meet the initial population (ie, the general group of patients that a set of performance measures is designed to address).
2. From the patients within the initial population criteria, find the patients who qualify for the denominator. (ie, the specific group of patients for inclusion in a specific performance measure based on defined criteria). Note: in some cases the initial population and denominator are identical.
3. Find the patients who qualify for denominator exclusions and subtract from the denominator.
4. From the patients within the denominator, find the patients who meet the numerator criteria (ie, the group of patients in the denominator for whom a process or outcome of care occurs). Validate that the number of patients in the numerator is less than or equal to the number of patients in the denominator.

If the patient does not meet the numerator, this case represents a quality failure.

S.15. **Sampling** *(If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)*
IF a PRO-PM, identify whether (and how) proxy responses are allowed.
Not applicable. The measure is not based on a sample.

S.16. **Survey/Patient-reported data** *(If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)*
IF a PRO-PM, specify calculation of response rates to be reported with performance measure results.
Not applicable. The measure is not based on a survey

S.17. **Data Source** *(Check ONLY the sources for which the measure is SPECIFIED AND TESTED).*
If other, please describe in S.18.
EHRs Hybrid, Paper Records

S.18. **Data Source or Collection Instrument** *(Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data is collected.)*
IF a PRO-PM, identify the specific PROM(s); and standard methods, modes, and languages of administration.
See attached data collection tool.

S.19. **Data Source or Collection Instrument** *(available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)*

S.20. **Level of Analysis** *(Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)*
Facility, Integrated Delivery System

S.21. **Care Setting** *(Check ONLY the settings for which the measure is SPECIFIED AND TESTED)*
Ambulatory Surgery Center, Behavioral Health : Inpatient, Hospital, Hospital : Acute Care Facility, Hospital : Critical Care, Inpatient Rehabilitation Facility, Long Term Acute Care, Nursing Home / SNF
If other:

S.22. **COMPOSITE Performance Measure** - Additional Specifications *(Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)*
Not applicable. The measure is not a composite.

2. Validity – See attached Measure Testing Submission Form
0647_Transition_Record_with_Specified_Elements_Received_by_Discharged_Patients_Inpatient.doc

2.1 For maintenance of endorsement
Reliability testing: If testing of reliability of the measure score was not presented in prior submission(s), has reliability testing of the measure score been conducted? If yes, please provide results in the Testing attachment. (Do not remove prior testing information – include date of new information in red.)
Yes

2.2 For maintenance of endorsement
Has additional empirical validity testing of the measure score been conducted? If yes, please provide results in the Testing attachment. (Do not remove prior testing information – include date of new information in red.)
Yes

2.3 For maintenance of endorsement
Risk adjustment: For outcome, resource use, cost, and some process measures, risk-adjustment that includes SDS factors is no longer prohibited during the SDS Trial Period (2015-2016). Please update sections 1.8, 2a2, 2b2, 2b4, and 2b6 in the Testing attachment and S.14 and S.15 in the online submission form in accordance with the requirements for the SDS Trial Period. NOTE: These sections must be updated even if SDS factors are not included in the risk-adjustment strategy. If yes, and your testing attachment does not have the additional questions for the SDS Trial please add these questions to your testing attachment:

What were the patient-level sociodemographic (SDS) variables that were available and analyzed in the data or sample used? For example, patient-reported data (e.g., income, education, language), proxy variables when SDS data are not collected from each patient (e.g. census tract), or patient community characteristics (e.g. percent vacant housing, crime rate).

Describe the conceptual/clinical and statistical methods and criteria used to select patient factors (clinical factors or sociodemographic factors) used in the statistical risk model or for stratification by risk (e.g., potential factors identified in the literature and/or expert panel; regression analysis; statistical significance of p<0.10; correlation of x or higher; patient factors should be present at the start of care)

What were the statistical results of the analyses used to select risk factors?

Describe the analyses and interpretation resulting in the decision to select SDS factors (e.g. prevalence of the factor across measured

entities, empirical association with the outcome, contribution of unique variation in the outcome, assessment of between-unit effects and within-unit effects)
No - This measure is not risk-adjusted

NATIONAL QUALITY FORUM

Measure missing data in MSF 6.5 from MSF 5.0

NQF #: 0647 NQF Project: Care Coordination Project

2. RELIABILITY & VALIDITY - SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)

Measure testing must demonstrate adequate reliability and validity in order to be recommended for endorsement. Testing may be conducted for data elements and/or the computed measure score. Testing information and results should be entered in the appropriate field. Supplemental materials may be referenced or attached in item 2.1. See guidance on measure testing.

2a2. Reliability Testing. (*Reliability testing was conducted with appropriate method, scope, and adequate demonstration of reliability.*)

2a2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

Refer to the validity section for a description of the data sample for our EHR testing project.

2a2.2 Analytic Method *(Describe method of reliability testing & rationale)*:

Refer to the validity section for a description of the analytic methods for our EHR testing project.

2a2.3 Testing Results *(Reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:

Refer to the validity section for the testing results for our EHR testing project.

2b. VALIDITY. Validity, Testing, including all Threats to Validity: H☐ M☐ L☐ I ☐

2b1.1 Describe how the measure specifications *(measure focus, target population, and exclusions)* are consistent with the evidence cited in support of the measure focus (*criterion 1c)* and identify any differences from the evidence:

The evidence cited for this measure is directly related to transition records for all ages, during transitions of care from inpatient to outpatient settings. There are no differences from the measure focus, target population, or exclusions.

2b2. Validity Testing. (*Validity testing was conducted with appropriate method, scope, and adequate demonstration of validity.)*

2b2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

EHR Measure Validity

AMA-PCPI Testing Project

o This project identified a sample of patients taken from one multi-specialty, medium-sized health practice in Southeast Texas.

o This health practice has been designated by the NCQA as a Tier III Medical Home, and has made it a priority to create coordinated transitions in care across the continuum of care.

o This proactive oversees approximately 7-8,000 hospital discharges per year.

o Measure implementation began in July of 2009.

o Manually abstracted sample included 100 patients from the inpatient setting.

Face Validity

The measures were pilot tested via focus group discussion and surveys in six Midwestern healthcare facilities between December 2009 and February 2010. Participants included front line caregivers as well as administrators and leadership. Approximately 65% of the 81 focus group participants also provided written surveys and feedback for analysis.

Face Validity Assessment

Face validity of the measure score as an indicator of quality was systematically assessed, by members of the PCPI Care Coordination Technical Expert Panel, which included 11 members. The list of expert panel members that participated in the assessment is as follows:

Samuel M. Bierner, MD (Co-Chair)

Mary L. Casper, MA, CCC-SLP

Scottie B. Day, BS, MD, FAAP

Michael J. Fischer, MD, MSPH

Selena L. Hariharan, MD, MHSA

Roger G. Kathol, MD

Marjorie L. King, MD, FACC

Ioannis Koutroulis, MD, PhD, MBA

Claranne P. Mathiesen, RN, MSN, CNN, SCRN

Paul E. Miller, MD

Connie White-Williams, PhD, RN, NE-BC, FAAN

2b2.2 Analytic Method *(Describe method of validity testing and rationale; if face validity, describe systematic assessment)*:

EHR Measure Validity

Data from a performance report for the measure automatically-generated from the EHR (designed to collect the necessary data elements to identify eligible cases and calculate the performance score) were compared to data elements found and scores calculated manually on visual inspection of the medical record by trained abstractors.

Data analysis included:

• Percent agreement at the denominator, numerator, (exception - for those measures with exception) and the measure overall.

• Kappa statistic to ensure that agreement rates are not a phenomenon of chance

Face Validity

The clarity and face validity of measures was assessed using numeric surveys and focused discussion.

The survey asked a panel consisting of 81 individuals including front line caregivers, administrators and leadership.

The aforementioned panel was asked to rate the following aspects of this measure:

Clarity of Numerator Statement

Clarity of Denominator Statement

Clarity of Denominator Exclusions

Overall Understanding of the Information in the Measure Specification Document

The rating scale ranged from 1-5, where 1=Very Poor; 3=Average; 5=Very Good

Face Validity Assessment

Face validity of the measure score as an indicator of quality was systematically assessed as follows.

After the measure was fully specified, the expert panel was asked to rate their agreement with the following statement:

The scores obtained from the measure as specified will provide an accurate reflection of quality and can be used to distinguish good and poor quality.

Scale 1-5, where 1= Strongly Disagree; 2= Disagree 3= Neither Agree nor Disagree; 4=Agree

5= Strongly Agree

2b2.3 Testing Results *(Statistical results, assessment of adequacy in the context of norms for the test conducted; if face validity, describe results of systematic assessment)*:

EHR Measure Validity

Overall Reliability*: N, % Agreement, Kappa (95% Confidence Interval)

100, 88.00%, 0.69 (0.52 - 0.85)

This measure demonstrates substantial agreement.

*Visual inspection of the medical record compared to the automatically generated report of the data elements.

Face Validity

Site evaluation scores for the clarity of the numerator statements resulted in 57% of participants submitting a rating of 4 or 5. For denominator statements, 82% of respondents rated the clarity in the top 2 boxes. For the clarity of exceptions, 94% of sites submitted a rating of 4 or 5. Overall understanding of information in the measure specifications document received a score of 71% reporting in the top 2 boxes.

Face Validity Assessment

The results of the expert panel rating of the validity statement were as follows: N = 11; Mean rating = 3.82 and 72.7% of respondents either agree or strongly agree that this measure can accurately distinguish good and poor quality.

Frequency Distribution of Ratings

1 – 1 response (Strongly Disagree)

2 – 0 responses

3 – 2 responses (Neither Agree nor Disagree)

4 – 5 responses

5 – 3 responses (Strongly Agree)

POTENTIAL THREATS TO VALIDITY. (*All potential threats to validity were appropriately tested with adequate results.*)

2b3. Measure Exclusions. (*Exclusions were supported by the clinical evidence in 1c or appropriately tested with results demonstrating the need to specify them.*)

2b3.1 Data/Sample for analysis of exclusions *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

AMA-PCPI Testing Project

o This project identified a sample of patients taken from a multi-specialty, medium-sized health practice in Southeast

Texas.

- This health practice has been designated by the NCQA as a Tier III Medical Home, and has made it a priority to create coordinated transitions in care across the continuum of care.
- This practice oversees approximately 7-8,000 hospital discharges per year.
- Measure implementation began in July of 2009.
- Manually abstracted sample included 100 patients from the inpatient setting.

2b3.2 Analytic Method (*Describe type of analysis and rationale for examining exclusions, including exclusion related to patient preference)*:

Data from an automatically-generated report from the EHR was compared to manual abstraction from patient records to calculate parallel forms reliability for the measure.

Data analysis included:

- Percent agreement
- Kappa statistic to adjust for chance agreement

2b3.3 Results *(Provide statistical results for analysis of exclusions, e.g., frequency, variability, sensitivity analyses):*

Overall Reliability: N, % Agreement, Kappa (95% Confidence Interval)

100, 100.00%, Kappa Not Calculable*

* Kappa statistics cannot be calculated but are given a value of 1.00 because of complete agreement. Confidence intervals cannot be calculated because to do so would involve dividing by zero which cannot be done.

2b4. Risk Adjustment Strategy. (*For outcome measures, adjustment for differences in case mix (severity) across measured entities was appropriately tested with adequate results.*)

2b4.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

This measure is not risk adjusted.

2b4.2 Analytic Method (*Describe methods and rationale for development and testing of risk model or risk stratification including selection of factors/variables)*:

This measure is not risk adjusted.

2b4.3 Testing Results *(Statistical risk model: Provide quantitative assessment of relative contribution of model risk factors; risk model performance metrics including cross-validation discrimination and calibration statistics, calibration curve and risk decile plot, and assessment of adequacy in the context of norms for risk models. Risk stratification: Provide quantitative assessment of relationship of risk factors to the outcome and differences in outcomes among the strata)*:

This measure is not risk adjusted.

2b4.4 If outcome or resource use measure is not risk adjusted, provide rationale and analyses to justify lack of adjustment: As a process measure, no risk adjustment is necessary.

2b5. Identification of Meaningful Differences in Performance. (*The performance measure scores were appropriately analyzed and discriminated meaningful differences in quality.*)

2b5.1 Data/Sample *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

Highmark Quality Blue Hospital Pay-for-Performance Program

63 participating hospitals implemented Care Coordination measures as part of a "defect-free care transitions bundle"

2b5.2 Analytic Method *(Describe methods and rationale to identify statistically significant and practically/meaningfully differences in performance)*:

Highmark Quality Blue Hospital Pay-for-Performance Program

Participant performance was assessed quarterly over the course of Fiscal Year 2011

2b5.3 Results *(Provide measure performance results/scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:

Highmark Quality Blue Hospital Pay-for-Performance Program

Participant performance on this measure, by quarter is as follows:

FY 2011, Quarter 1: 10.00%

FY 2011, Quarter 2: 17.00%

FY 2011, Quarter 3: 38.00%

2b6. Comparability of Multiple Data Sources/Methods. (*If specified for more than one data source, the various approaches result in comparable scores.*)

2b6.1 Data/Sample *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

AMA-PCPI Testing Project

o This project identified a sample of patients taken from one multi-specialty, medium-sized health practice in Southeast Texas.

o This health practice has been designated by the NCQA as a Tier III Medical Home, and has made it a priority to create coordinated transitions in care across the continuum of care.

o This proactive oversees approximately 7-8,000 hospital discharges per year.

o Measure implementation began in July of 2009.

o Manually abstracted sample included 100 patients from the inpatient setting.

2b6.2 Analytic Method *(Describe methods and rationale for testing comparability of scores produced by the different data sources specified in the measure)*:

Data from a performance report for the measure automatically-generated from the EHR (designed to collect the necessary data elements to identify eligible cases and calculate the performance score) were compared to data elements found and scores calculated manually on visual inspection of the medical record by trained abstractors.

Data analysis included:

• Percent agreement at the denominator, numerator, (exception - for those measures with exception) and the measure overall.

• Kappa statistic to ensure that agreement rates are not a phenomenon of chance

2b6.3 Testing Results *(Provide statistical results, e.g., correlation statistics, comparison of rankings; assessment of adequacy in the context of norms for the test conducted)*:

Overall Reliability*: N, % Agreement, Kappa (95% Confidence Interval)

100, 88.00%, 0.69 (0.52 - 0.85)

This measure demonstrates substantial agreement.

*Visual inspection of the medical record compared to the automatically generated report of the data elements.

2c. Disparities in Care: H☐ M☐ L☐ I ☐ NA☐ (*If applicable, the measure specifications allow identification of disparities.*)

2c.1 If measure is stratified for disparities, provide stratified results *(Scores by stratified categories/cohorts)*: We encourage the results of this measure to be stratified by race, ethnicity, gender, and primary language, and have included these variables as recommended data elements to be collected.

2c.2 If disparities have been reported/identified (e.g., in 1b), but measure is not specified to detect disparities, please explain:

The PCPI advocates that performance measure data should, where possible, be stratified by race, ethnicity, and primary language to assess disparities and initiate subsequent quality improvement activities addressing identified disparities, consistent with recent national efforts to standardize the collection of race and ethnicity data. A 2008 NQF report endorsed 45 practices including stratification by the aforementioned variables.(1) A 2009 IOM report “recommends collection of the existing Office of Management and Budget (OMB) race and Hispanic ethnicity categories as well as more fine-grained

categories of ethnicity(referred to as granular ethnicity and based on one's ancestry) and language need (a rating of spoken English language proficiency of less than very well and one's preferred language for health-related encounters)."(2)

References:

(1)National Quality Forum Issue Brief (No.10). Closing the Disparities Gap in Healthcare Quality with Performance Measurement and Public Reporting. Washington, DC: NQF, August 2008.

(2)Race, Ethnicity, and Language Data: Standardization for Health Care Quality Improvement. March 2010. AHRQ Publication No. 10-0058-EF. Agency for Healthcare Research and Quality, Rockville, MD. Available at:

http://www.ahrq.gov/research/iomracereport. Accessed May 25, 2010.

2.1-2.3 Supplemental Testing Methodology Information:

Steering Committee: Overall, was the criterion, *Scientific Acceptability of Measure Properties*, met?

(*Reliability and Validity must be rated moderate or high*) Yes☐ No☐

Provide rationale based on specific subcriteria:

If the Committee votes No, STOP

3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

3a. Byproduct of Care Processes

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).

3a.1. **Data Elements Generated as Byproduct of Care Processes.**

Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims), Abstracted from a record by someone other than person obtaining original information (e.g., chart abstraction for quality measure or registry)

If other:

3b. Electronic Sources

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

3b.1. **To what extent are the specified data elements available electronically in defined fields** (*i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields*) Update this field for **maintenance of endorsement**.

No data elements are in defined fields in electronic sources

3b.2. **If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources.** For **maintenance of endorsement**, if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).

This measure does not lend itself to a "traditional specification" for EHR reporting, where data elements, logic and clinical coding are identified to calculate the measure, due to the fact the fact that every facility may have a different template for a transition record and the information required for this measure is based on individualized patient information unique to one episode of care (i.e., inpatient stay). However, we have provided guidance on how a facility should query the electronic health record for the information required for this measure, within the numerator details.

3b.3. **If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL. Please also complete and attach the NQF Feasibility Score Card.**
Attachment:

3c. Data Collection Strategy

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

3c.1. **Required for maintenance of endorsement. Describe difficulties (as a result of testing and/or operational use of the measure) regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.**
IF a PRO-PM, consider implications for both individuals providing PRO data (patients, service recipients, respondents) and those whose performance is being measured.
The unit of measurement was changed from patients to discharges to clarify that the intent of this measure is to assess each individual discharge as a patient may have more than one discharge within a measurement period. This measure was found to be reliable and feasible for implementation.

3c.2. **Describe any fees, licensing, or other requirements to use any aspect of the measure as specified** *(e.g., value/code set, risk model, programming code, algorithm)*.
The Measures, while copyrighted, can be reproduced and distributed, without modification, for noncommercial purposes, e.g., use by health care providers in connection with their practices. Commercial use is defined as the sale, license, or distribution of the Measures for commercial gain, or incorporation of the Measures into a product or service that is sold, licensed or distributed for commercial gain.

Commercial uses of the Measures require a license agreement between the user and the PCPI® Foundation (PCPI®) or the American Medical Association (AMA). Neither the American Medical Association (AMA), nor the AMA-convened Physician Consortium for Performance Improvement® (AMA-PCPI), now known as the PCPI, nor their members shall be responsible for any use of the Measures.

4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

4.1. **Current and Planned Use**
NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.

Specific Plan for Use	Current Use (for current use provide URL)
Public Reporting	Payment Program CMS Inpatient Psychiatric Facility Quality Reporting Program http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier1&cid=1228772862944

4a.1. **For each CURRENT use, checked above (update for maintenance of endorsement), provide:**

- Name of program and sponsor
- Purpose

- Geographic area and number and percentage of accountable entities and patients included
- Level of measurement and setting

This measure is in use in the CMS Inpatient Psychiatric Facility Quality Reporting Program (IPFQR). The IPFQR is a pay-for-reporting program and this measure was added in 2016. The reporting period for FY 2018 Payment Determination is between July 1–December 31, 2016 and the data submission period will be July 1–August 15, 2017.

The IPFQR program was developed as mandated by section 1886(s)(4) of the Social Security Act, as added and amended by Sections 3401(f) and 10322(a) of the Affordable Care Act (Pub.L. 111-148).

To meet the IPFQR program requirement, Inpatient Psychiatric Facilities (IPFs) are required to submit all quality measures to the Centers for Medicare & Medicaid Services (CMS). Because this is a pay-for-reporting program, eligible facilities will be subject to payment reduction for non-participation. Eligible IPFs that do not participate in the IPFQR program in a fiscal year or do not meet all of the reporting requirements will receive a 2.0 percentage point reduction of their annual update to their standard federal rate for that year.

CMS plans to include this facility-level measure within the Hospital Compare public reporting program sometime after the first submission period.

4a.2. **If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons?** (*e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?*)

4a.3. **If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement.** (*Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.*)

Improvement

Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4b. **Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (trends in performance results, number and percentage of people receiving high-quality healthcare; Geographic area and number and percentage of accountable entities and patients included.)**
If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

Performance data are not yet available for this measure as it is in the initial year of use within the IPFQR.

4c. Unintended Consequences

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

4c.1. **Please explain any unexpected findings (positive or negative) during implementation of this measure including unintended impacts on patients.**

We are not aware of any unintended consequences related to this measurement.

4c.2. **Please explain any unexpected benefits from implementation of this measure.**

We are not yet aware of any unexpected benefits related to this measurement.

4d1.1. **Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.**
How many and which types of measured entities and/or others were included? If only a sample of measured entities were

included, describe the full population and how the sample was selected.
Currently, assistance has been provided with the implementation of the measure as it is in the initial year of use within the IPFQR.

4d1.2. **Describe the process(es) involved, including when/how often results were provided, what data were provided, what educational/explanatory efforts were made, etc.**
Not applicable

4d2.1. **Summarize the feedback on measure performance and implementation from the measured entities and others described in 4d.1.**
Describe how feedback was obtained.
Not applicable

4d2.2. **Summarize the feedback obtained from those being measured.**
Not applicable

4d2.3. **Summarize the feedback obtained from other users**
CMS has sought feedback and clarification of the measure intent. Additionally, as part of the implementation of the measure, the CMS contractor recommended a change in the unit of measurement from patients to discharges. The change has been incorporated and the measure language updated as reflected in this submission form.

4d.3. **Describe how the feedback described in 4d.2 has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.**
Based on user feedback to change the unite of measurement, the measure language was updated as reflected in this submission form.

5. Comparison to Related or Competing Measures

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

5. Relation to Other NQF-endorsed Measures
Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.
Yes

5.1a. **List of related or competing measures (selected from NQF-endorsed measures)**
0291 : EMERGENCY TRANSFER COMMUNICATION MEASURE
0293 : Medication Information
0297 : Procedures and Tests

5.1b. **If related or competing measures are not NQF endorsed please indicate measure title and steward.**

5a. Harmonization of Related Measures
The measure specifications are harmonized with related measures;
OR
The differences in specifications are justified

5a.1. **If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):**
Are the measure specifications harmonized to the extent possible?
No

5a.2. **If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.**
While our measure focuses of the receipt of a transition record by patients who are discharged from an inpatient facility, measure

0291 focuses on the timely transfer of information to the receiving facility for patients who are transferred from the ED to another facility and 0293 and 0297 focus specifically on the communication of medication information and procedure/test information, respectively, for patients who are transferred from the ED to another facility. We feel that the measures are complementary in addressing the quality of care transitions.

5b. Competing Measures

The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);
OR
Multiple measures are justified.

5b.1. **If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):**
Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)
Not applicable. There are no existing NQF-endorsed measures that address both the same target population and measure focus.

Appendix

A.1 Supplemental materials may be provided in an appendix. All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.
Attachment **Attachment:** NQF0647_InpatientTransitionRecord_DataCollectionFlowsheet.pdf

Contact Information

Co.1 **Measure Steward (Intellectual Property Owner):** PCPI
Co.2 **Point of Contact:** PCPI, Measures, pcpimeasures@ama-assn.org, 312-464-5709-
Co.3 **Measure Developer if different from Measure Steward:** PCPI
Co.4 **Point of Contact:** Elvia, Chavarria, elvia.chavarria@ama-assn.org, 312-464-5709-

Additional Information

Ad.1 **Workgroup/Expert Panel involved in measure development**
Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
PCPI measures are developed through cross-specialty, multi-disciplinary work groups. All medical specialties and other health care professional disciplines participating in patient care for the clinical condition or topic under study must be equal contributors to the measure development process. In addition, the PCPI strives to include on its work groups individuals representing the perspectives of patients, consumers, private health plans, and employers. This broad-based approach to measure development ensures buy-in on the measures from all stakeholders and minimizes bias toward any individual specialty or stakeholder group. All work groups have at least two co-chairs who have relevant clinical and/or measure development expertise and who are responsible for ensuring that consensus is achieved and that all perspectives are voiced.

Co-chairs:
Robert M. Palmer, MD, MPH (Co-Chair) (Geriatrics/Gerontology)
Mark V. Williams, MD, FACP (Co-Chair) (Hospital medicine)

Work Group members:
Dennis M. Beck, MD, FACEP (Emergency medicine)
Judith S. Black, MD, MHA (Blue Cross and Blue Shield Association)
Caroline Blaum, MD (Geriatrics)
Clair M. Callan, MD, MBA, CPE (American College of Physician Executives)
Jayne Hart Chambers, MBA (Federation of American Hospitals)
Steven Chen, MD, MBA (Surgical oncology)
Kenneth D. Coburn, MD, MPH (Health Quality Partners)
Mirean Fisher Coleman, MSW, LICSW, CT (National Association of Social Workers)

Sydney Dy, MD, MSc (Hospice and palliative medicine)
Scott Endsley, MD, MSc (Health Services Advisory Group)
David A. Etzioni, MD, MSHS (Colon and rectal surgery)
Beth Feldpush, MPH (American Hospital Association)
Rita Munley Gallagher, PhD, RN (American Nurses Association)
G. Scott Gazelle, MD, MPH, PhD (Radiology)
Robert W. Gilmore, MD (Clinical surgery)
Eric S. Holmboe, MD, FACP (Internal medicine)
Mary Ann Kliethermes, B.S., Pharm.D. (American Society of Health System Pharmacists)
James E. Lett, II, MD (American Medical Directors Association)
Janet R. Maurer, MD, MBA, FCCP (Pulmonology)
Andie Melendez, RN, MSN, HTPC (Academy of Medical-Surgical Nurses)
Donise Mosebach, RN, MS, CEN (The Joint Commission)
Michael O´Dell, MD, MSHA, FAAFP (Family medicine)
Eric D. Peterson, MD, MPH, FAHA, FACC (American Heart Association/Cardiology)
Mark Redding MD. FAAP (Pediatrics)
Michael Ries, MD, MBA, FCCM (Critical care medicine)
Hilary C. Siebens, MD (Physical medicine and rehabilitation)
Janet (Jesse) Sullivan, MD (National Transitions of Care Coalition)
Randal J. Thomas, MD, MS, FACC, FAHA, FACP, FAACVPR (Cardiology)
Christopher Tompkins, PhD (Brandeis University)
Robert Wears, MD, FACEP (Emergency medicine)

ABIM Foundation
Daniel B. Wolfson, MHSA

American College of Physicians
Vincenza Snow, MD, FACP
Society of Hospital Medicine
Jill Epstein, MA

PCPI Consultants
Rebecca Kresowik
Timothy Kresowik, MD

National Committee for Quality Assurance Liaison
Aisha Tenea´ Pittman, MPH

American Medical Association
Mark Antman, DDS, MBA
Heidi Bossley, MSN, MBA
Kerri Fei, MSN, RN
JoeAnn Jackson, MJ
Kendra Hanley, MS
Karen Kmetik, PhD
Joanne G. Schwartzberg, MD
Patricia Sokol, RN, JD
Chyna Wilcoxson

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 **Year the measure was first released:** 2009

Ad.3 **Month and Year of most recent revision:** 04, 2016

Ad.4 **What is your frequency for review/update of this measure?** Supporting guidelines, specifications and coding for this measure are reviewed annually

Ad.5 **When is the next scheduled review/update for this measure?** 12, 2017

Limited proprietary coding is contained in the Measure specifications for convenience. Users of the proprietary code sets should obtain all necessary licenses from the owners of these code sets. The AMA, the PCPI and its members and former members of the AMA-PCPI disclaim all liability for use or accuracy of any Current Procedural Terminology (CPT®) or other coding contained in the specifications.

Ad.7 **Disclaimers:** The Measures are not clinical guidelines, do not establish a standard of medical care, and have not been tested for all potential applications.

The Measures, while copyrighted, can be reproduced and distributed, without modification, for noncommercial purposes, e.g., use by health care providers in connection with their practices. Commercial use is defined as the sale, license, or distribution of the Measures for commercial gain, or incorporation of the Measures into a product or service that is sold, licensed or distributed for commercial gain.

Commercial uses of the Measures require a license agreement between the user and the PCPI® Foundation (PCPI®) or the American Medical Association (AMA). Neither the American Medical Association (AMA), nor the AMA-convened Physician Consortium for Performance Improvement® (AMA-PCPI), now known as the PCPI, nor their members shall be responsible for any use of the Measures.

AMA and PCPI encourage use of the Measures by other health care professionals, where appropriate.

THE MEASURES AND SPECIFICATIONS ARE PROVIDED “AS IS” WITHOUT WARRANTY OF ANY KIND.

Ad.8 **Additional Information/Comments:**

MEASURE WORKSHEET

This document summarizes the evaluation of the measure as it progresses through NQF's Consensus Development Process (CDP). The information submitted by measure developers/stewards is included after the Brief Measure Information, Preliminary Analysis, and Pre-meeting Public and Member Comments sections.

To navigate the links in the worksheet: Ctrl + click link to go to the link; ALT + LEFT ARROW to return

Brief Measure Information

NQF #: 0648

Measure Title: Timely Transmission of Transition Record (Discharges from an Inpatient Facility to Home/Self Care or Any Other Site of Care)

Measure Steward: PCPI

Brief Description of Measure: Percentage of discharges from an inpatient facility (eg, hospital inpatient or observation, skilled nursing facility, or rehabilitation facility) to home or any other site of care, of patients, regardless of age, for which a transition record was transmitted to the facility or primary physician or other health care professional designated for follow-up care within 24 hours of discharge

Developer Rationale: The availability of the patient's discharge information at the first post-discharge physician visit improves the continuity of care and may be associated with a decreased risk of rehospitalization.

By requiring the completion and prompt transmission of a detailed "transition record" for discharged patients, this measure is promoting a significant enhancement to the customary use of the discharge summary. Numerous studies have documented the prevalence of communication gaps and discontinuities in care for patients after discharge, and the significant effect of these lapses on hospital readmissions and other indicators of the quality of transitional care (1-3). Current information and communication technology can facilitate the routine completion and transmission of a transition record within 24 hours of discharge, which could greatly reduce communication gaps and help improve patient outcomes.

1. Sabogal F, Coots-Miyazaki M, Lett JE. Effective care transitions interventions: Improving patient safety and healthcare quality. CAHQ Journal 2007 (Quarter 2).
2. Moore C, Wisnevesky J, Williams S, McGinn T. 2003. Medical errors related to discontinuity of care from an inpatient to an outpatient setting. Journal of General Internal Medicine 18:646–651.
3. Roy CL, Poon EG, Karson AS, et al. Patient safety concerns arising from test results that return after hospital discharge. Ann Intern Med 2005;143(2):121-128.

Numerator Statement: Discharges in which a transition record was transmitted to the facility or primary physician or other health care professional designated for follow-up care within 24 hours of discharge

Denominator Statement: All discharges for patients, regardless of age, from an inpatient facility (eg, hospital inpatient or observation, skilled nursing facility, or rehabilitation facility) to home/self care or any other site of care

Denominator Exclusions: Patients who died
Patients who left against medical advice (AMA) or discontinued care

Measure Type: Process

Data Source: EHRs Hybrid, Paper Records

Level of Analysis: Facility, Integrated Delivery System

IF Endorsement Maintenance – Original Endorsement Date: Most Recent Endorsement Date: Aug 10, 2012

Maintenance of Endorsement -- Preliminary Analysis

To maintain NQF endorsement endorsed measures are evaluated periodically to ensure that the measures still meets the NQF endorsement criteria ("maintenance"). The emphasis for maintaining endorsement is focused on how effective the measure is for promoting improvements in quality. Endorsed measures should have some experience from the field to inform the evaluation. The emphasis for maintaining endorsement is noted for each criterion.

Criteria 1: Importance to Measure and Report

1a. Evidence
Maintenance measures – less emphasis on evidence unless there is new information or change in evidence since the prior evaluation.

1a. Evidence. The evidence requirements for a *process or intermediate outcome* measure is that it is based on a systematic review (SR) and grading of the body of empirical evidence where the specific focus of the evidence matches what is being measured.

The developer provides the following evidence for this measure:

- **Systematic Review of the evidence specific to this measure?** ☒ **Yes** ☐ **No**
- **Quality, Quantity and Consistency of evidence provided?** ☐ **Yes** ☒ **No**
- **Evidence graded?** ☐ **Yes** ☒ **No**

Evidence Summary or **Summary of prior review in 2012**

- In the prior review, the evidence provided by the developer included the 2009 Transitions of Care Consensus Conference (TOCCC) development of standards. The standards were a result of a consensus conference convened in 2006 by the American College of Physicians (ACP), the Society of General Internal Medicine (SGIM), and the Society of Hospital Medicine (SHM), with representation from the Emergency Medicine community. The standards were developed by a group consensus process and were based on a systematic review of the evidence and evidence related to transitions of care between the inpatient and outpatient settings.
- The standards were developed by a group consensus process and were based on a systematic review of the evidence and evidence related to transitions of care between the inpatient and outpatient settings. The TOCCC document referenced "Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies", developed by Agency for Healthcare Research and Quality. The evidence in the "Closing the Quality Gap" document appeared to focus more on multidisciplinary teams and was not as specific to transition records.
- In addition, the developers cited references related to timely transmission of transition records for all ages, during transitions of care from inpatient to outpatient settings

Changes to evidence from last review

☒ **The developer attests that there have been no changes in the evidence since the measure was last evaluated.**
☐ **The developer provided updated evidence for this measure:**

Questions for the Committee:

- *The developer attests the underlying evidence for the measure has not changed since the last NQF endorsement review. Does the Committee agree the evidence basis for the measure has not changed and there is no need for repeat discussion and vote on Evidence?*

Preliminary rating for evidence: ☒ **Pass** ☐ **No Pass**

1b. Gap in Care/Opportunity for Improvement and 1b. Disparities
Maintenance measures – increased emphasis on gap and variation

1b. Performance Gap. The performance gap requirements include demonstrating quality problems and opportunity for improvement.

- No data on current performance were provided.
- A summary of data from the literature showing that delayed or insufficient transfer of discharge information

between hospital-based providers and primary care physicians remains common was provided to demonstrate there is opportunity for improvement.

Disparities

- Information on disparities of care was not provided. NQF encourages disparities data from the measure as specified.

Questions for the Committee:

- *Is there a gap in care that warrants a national performance measure?*
- *If no disparities information is provided, are you aware of evidence that disparities exist in this area of healthcare?*

Preliminary rating for opportunity for improvement: ☐ **High** ☐ **Moderate** ☐ **Low** ☒ **Insufficient**
RATIONALE: Performance scores on the measure as specified (current and over time) at the specified level of analysis are required for maintenance of endorsement.

Committee pre-evaluation comments

Criteria 1: Importance to Measure and Report (including 1a, 1b, 1c)

1a. Evidence to Support Measure Focus

Comments: **The developer used a systematic review of the evidence for this measure, a summary of which was provided in 2012. The basis of the review included the 2009 Transitions of Care Consensus Conference development of standards and literature citations.

This measure is intended to improve communications among providers, patients and caregivers, so that continuity of appropriate care is maintained; patients/caregivers follow appropriate post discharge self management regimens, and consumption of preventable services can be achieved. Ultimately, improvements in service delivery and patient outcomes can be optimized.

No additional changes in the evidence has been provided.

**Evidence supporting the measure does not directly evaluate the measure. It does support that the timely delivery of discharge summary and instructions is one component of programs that are successful in reducing negative post-discharge events.

**Insufficient

Exception would seem logical - in order to deliver care to a recently hospitalized patient, the next level of care does need to know what happened

evidence not provided; again, surprised with the literature about the importance of hand-off info

Concern -- 647 - similar to a DC instruction (abbreviated information given to patient in lay terminology); 648 references more of discharge summary which typically is very detailed about the course of hospitalization and is medically technical.

**Agree with "Insufficient with exception". These items all have face validity. In our unpublished data we developed a similar list based on a prioritization of data elements by several hundred "receivers" at multiple post acute care sites. Unless this information is received in a timely fashion it has no value, so timeliness is an essential "attribute" of this information.

**No new evidence presented.

There is no need for a repeat vote on teh evidence.

Prior determination was "insufficient with exception"

**insufficient but previously endorsed. problem clear and well supported - information not being transferred between providers but i'm not convinced transmission of data as specified in measure specs is closely enough linked to outcome. what is to say that transmission by one provider ensures information received/looked at by the receiving provider?

**The evidence provided is a systematic review, but it is not graded and does not include a QQC; therefore, it is insufficient, but it does involve expert opinion as to its benefits, so should be considered with exception.

**Same comments as for 648.

**A summary of data from the literature showing that delayed or insufficient transfer of discharge information between hospital-based providers and primary care physicians remains common was provided to demonstrate there is opportunity for improvement. In the prior review, the evidence provided by the developer included the 2009 Transitions of Care Consensus Conference (TOCCC) development of standards. The standards were a result of a consensus conference convened in 2006 by the American College of Physicians (ACP), the Society of General Internal Medicine (SGIM), and the Society of Hospital Medicine (SHM), with representation from the Emergency Medicine community. The standards were developed by a group consensus process and were based on a systematic review of the evidence and evidence related to transitions of care between the inpatient and outpatient settings.

1b. Performance Gap

Comments: **No data on current performance were provided, however, studies are underway.

The literature documents delays in transmission of essential health information among providers and patients/caregivers as a significant health problem. Moreover, the literature points out the implications of such gaps for medical errors, excessive expenditures, and less than optimal health outcomes.

A national measure can help to standardize processes to reduce preventable adverse outcomes.

No data was provided to measure differences in transmission rates among sub populations. However, one literature citation references differences in lower transmission rates among patients with no usual source of care. The same article notes potential implications associated with practice changes in cases where hospitalists provide care and primary care providers are less involved in the inpatient setting and do not receive timely vital patient information upon discharge.

**Performance data on the measure is not yet available. Literature supports the need for a timely and complete discharge summary

**Agree that this measure is important, but variation between recipient timely needs vary. A SNF needs at tie of discharge in order to continue to deliver care. The PCP needs just prior to the visit.

**In our multi-year QI project we demonstrated wide variability in timely transmission of this information at all levels within the organization including: individual providers, practices, units, services, divisions, hospitals and across the network. Some barriers to timely transmission were enshrined in hospital bylaws on completion of discharge summaries which allowed up to 60 days before disciplinary action occurred. We did not have disparity data but there is no reason a priori to expect better performance in populations which are traditionally underserved. There was no disparity data provided by the developers. In my opinion, there is a major performance gap that warrants a national performance measure.

**Insufficient data.

I am not aware of any information regarding disparities in this area.

**There are some studies provided that indicate a performance gap, but there have been no performance scores shared based on its use over the past few years and there is no information on disparities. Therefore, I recommend that the gap rating be insufficient.

**This measure should be a companion measure with 0648. The standards were developed by a group consensus process and were based on a systematic review of the evidence and evidence related to transitions of care between the inpatient and outpatient settings. The TOCCC document referenced "Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies", developed by Agency for Healthcare Research and Quality. The evidence in the "Closing the Quality Gap" document appeared to focus more on multidisciplinary teams and was not as specific to transition records.

 In addition, the developers cited references related to timely transmission of transition records for all ages, during transitions of care from inpatient to outpatient settings

Criteria 2: Scientific Acceptability of Measure Properties

2a. Reliability

2a1. Reliability Specifications

Maintenance measures – no change in emphasis – specifications should be evaluated the same as with new measures

2a1. Specifications requires the measure, as specified, to produce consistent (reliable) and credible (valid) results about the quality of care when implemented.

Data source(s): Electronic clinical data, Paper Records

Specifications:

- The level of analysis is the facility and is specified for use in the hospital inpatient or observation, skilled nursing facility, or rehabilitation facility setting. A higher score indicates better quality.
- The unit of measurement was changed from patients to discharges to clarify that the intent of this measure is to assess each individual discharge as a patient may have more than one discharge within a measurement period.
- The numerator includes discharges in which a transition record was transmitted to the facility or primary physician or other health care professional designated for follow-up care within 24 hours of discharge.
- The denominator includes all discharges for patients, regardless of age, from an inpatient facility (eg, hospital inpatient or observation, skilled nursing facility, or rehabilitation facility) to home/self care or any other site of care.
- Exclusions include:
    - Patients who died

- Patients who left against medical advice (AMA) or discontinued care
- A sample data collection is provided to identify discharges through medical record abstraction. Guidance is also provided on how a facility should query the electronic health records for the information required for this measure.
- This measure is not risk-adjusted.

Questions for the Committee:

- *Are all the data elements clearly defined? Are all appropriate codes included?*
- *Is the logic or calculation algorithm clear?*
- *Is it likely this measure can be consistently implemented?*

2a2. Reliability Testing Testing attachment
Maintenance measures – less emphasis if no new testing data provided

2a2. Reliability testing demonstrates if the measure data elements are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period and/or that the measure score is precise enough to distinguish differences in performance across providers.

For maintenance measures, summarize the reliability testing from the prior review:

- In the prior review, the developers tested data element validity for 100 patients by comparing data from a report automatically generated from an EHR to a visual inspection of the full EHR. The sample was taken from one multi-specialty, medium-sized health practice.
- In the prior review, committee members were concerned that the reliability testing were substantially lower than what was found for measure 0647. Developers suggested that the small sample size (n=100) might contribute to the low reliability statistic; they also explained that that the testing site used an automatic fax to transmit the transition record and suggested that the date of the fax may not have been stored long-term in the EHR. Some committee members were concerned that reliability/validity testing did not include testing of manual abstraction from paper records. Developers did clarify that the testing included checking that the transmitted records contained a standardized list of elements (that is, if some of the elements were missing, that record would not be included in the numerator of the measure). Also, because the specifications were noted to be unclear, committee members requested confirmation from the developer that this measure includes the same standardized set of elements as measure 0647.

SUMMARY OF TESTING

Reliability testing level ☐ **Measure score** ☒ **Data element** ☐ **Both**

Reliability testing performed with the data source and level of analysis indicated for this measure ☒ **Yes** ☐ **No**

Method(s) of reliability testing

- Data from an automatically-generated report from the EHR was compared to manual abstraction from patient records to calculate reliability for the measure.

Results of reliability testing

- The developer provided the following statistics: 95% agreement, kappa=.49.
- The kappa value represents the proportion of agreement between two raters/abstractors that is not explained by chance alone. A value of 1.0 reflects perfect agreement; a value of 0 reflects agreement that is no better than what would be expected by chance alone. A kappa of 1.0 means that the raters agreed 100% of the time over and above what would be expected by chance alone.
- NQF guidance indicates that data element testing should be conducted for all critical data elements, although at minimum, results about the numerator, denominator, and exclusions should be provided. Only a single kappa value was reported – this is insufficient.

Questions for the Committee:

- *Is the test sample adequate to generalize for widespread implementation?*

o *Do the results demonstrate sufficient reliability so that differences in performance can be identified?*

Guidance from the Reliability Algorithm Precise specifications (Box 1) → Empirical reliability testing with measure as specified (Box 2) → Empirical validity testing of patient-level data conducted (Box 3) → **Validity** testing conducted with patient-level data elements (Box 10) → Statistical results for all critical data elements not provided separately (Box 11) → Insufficient

Preliminary rating for reliability: ☐ **High** ☐ **Moderate** ☐ **Low** ☒ **Insufficient**
RATIONALE: All critical data elements must be assessed separately (minimum numerator, denominator, exclusions).

2b. Validity
Maintenance measures – less emphasis if no new testing data provided

2b1. Validity: Specifications

2b1. Validity Specifications. This section should determine if the measure specifications are consistent with the evidence.

Specifications consistent with evidence in 1a. ☐ **Yes** ☒ **Somewhat** ☐ **No**

Question for the Committee:
o *Are the specifications consistent with the evidence?*

2b2. Validity testing

2b2. Validity Testing should demonstrate the measure data elements are correct and/or the measure score correctly reflects the quality of care provided, adequately identifying differences in quality.

For maintenance measures, summarize the validity testing from the prior review:

- In the previous review, the developers tested data element validity for 100 patients by comparing data from a report automatically generated from an EHR to a visual inspection of the full EHR. . The sample was taken from one multi-specialty, medium-sized health practice. The developers also provided results of a systematic assessment of face validity.
- As mentioned above, some committee members were concerned that reliability/validity testing did not include testing of manual abstraction from paper records. Developers did clarify that the testing included checking that the transmitted records contained a standardized list of elements (that is, if some of the elements were missing, that record would not be included in the numerator of the measure).

Previous data element validity testing results:

	N	% Agreement	Kappa (95% CI)
Overall	100	95%	0.49 (0.05 to 0.93)

Describe any updates to validity testing:

- Updated face validity testing results were included.

SUMMARY OF TESTING

Validity testing level ☐ **Measure score** ☐ **Data element testing against a gold standard** ☒ **Both**

Method of validity testing of the measure score:

☒ **Face validity**
☐ **Empirical validity testing of the measure score**

Updated validity testing method:
Face validity of the measure score was systematically assessed by 11 members of an expert panel who were asked to rate their agreement with the following statement:

The scores obtained from the measure as specified will provide an accurate reflection of quality and can be used to distinguish good and poor quality.

Scale 1-5, where 1= Strongly Disagree; 2= Disagree 3= Neither Agree nor Disagree; 4=Agree
5= Strongly Agree

Note: Face validity of the measure score as a quality indicator may be adequate if accomplished through a systematic and transparent process, by identified experts, and explicitly addresses whether performance scores resulting from the measure as specified can be used to distinguish good from poor quality.

Updated validity testing results:
The results of the expert panel rating of the validity statement were as follows: N = 11; Mean rating = 3.91 and 72.7% of respondents either agree or strongly agree that this measure can accurately distinguish good and poor quality.

Frequency Distribution of Ratings
1 – 1 response (Strongly Disagree)
2 – 0 responses
3 – 2 responses (Neither Agree nor Disagree)
4 – 4 responses
5 – 4 responses (Strongly Agree)

Questions for the Committee:
- o *Is the test sample adequate to generalize for widespread implementation?*
- o *Do the results demonstrate sufficient validity so that conclusions about quality can be made?*
- o *Do you agree that the score from this measure as specified is an indicator of quality?*

2b3-2b7. Threats to Validity

2b3. Exclusions:
- Exclusions include:
  - Patients who died
  - Patients who left against medical advice (AMA) or discontinued care
- The developer did not provide a statistical analysis demonstrating that exclusions are needed to prevent unfair distortion of performance results.

Questions for the Committee:
- o *Are the exclusions consistent with the evidence?*
- o *Are any patients or patient groups inappropriately excluded from the measure?*
- o *Are the exclusions/exceptions of sufficient frequency and variation across providers to be needed (and outweigh the data collection burden)?*

2b4. Risk adjustment: **Risk-adjustment method** ☒ **None** ☐ **Statistical model** ☐ **Stratification**

This measure is not risk adjusted.

2b5. Meaningful difference *(can statistically significant and clinically/practically meaningful differences in performance measure scores can be identified)*:

The developer did not provide any data on meaningful differences about quality from the measure

Question for the Committee:
- o *Does this measure identify meaningful differences about quality?*

2b6. Comparability of data sources/methods:
N/A

2b7. Missing Data
No information on missing data was presented.

Guidance from the Validity Algorithm
Specifications somewhat consistent with evidence (Box 1) >Somewhat assessed potential threats to validity (Box 2) >

face validity and empirical testing (NOTE: all critical data elements were not assessed separately) (Box 3) >face validity assessed (Box 5) > Moderate, assuming potential threats to validity are not a problem or are adequately addressed.

The highest possible rating is Moderate.

Preliminary rating for validity: ☐ High ☒ Moderate ☐ Low ☐ Insufficient

Committee pre-evaluation comments

Criteria 2: Scientific Acceptability of Measure Properties (including all 2a, 2b, and 2d)

2a1. & 2b1. Specifications

Comments: **Generally, the data elements and logic algorithm appear to be clearly defined.
The specifications seem to be consistent with the evidence, which were among the elements referenced that are frequently absent/incomplete from patient information transmitted.
**Specifications are consistent with the evidence. There is a body of evidence supporting the timely communication of a discharge summary.
**insufficient; the testing of the 24 hour parameter was not questioned in the testing
**The "continued medication list" is missing the "indication" for each medication (universally requested by post acute care sites). Furthermore, there is no assessment of the adequacy of the process that led to the medication list (NQF #2456). For future consideration, the medication measure should also include an explanation for all medication changes that occurred between the preadmission medication list and the "continued medications" list. This information helps the receiver determine if a medication was intentionally omitted rather than forgotten.
**Specifications seem consistent with target population goals.
**face validity only by 11 members of committee
**The specifications seem consistent with the evidence provided; however, since the evidence is insufficient, I rate this as somewhat.
**Specifications are consistent

2a2. Reliability Testing

Comments: **Each element of the measure was not tested, which is recommended for NQF endorsement. Further testing with a larger sample size and in more than one facility should enhance assessment of the measure's reliability and enable consistent identification of differences in performance across providers.
**Reliability testing information does not include testing on each element. Additionally, the kappa value of 0.49 demonstrates low to moderate concurrence.
**Insufficient - test results not strong; sample small; question the timing in general; e.g. fax dates/times?
**Insufficient testing. It took us about six cycles of testing and review with over 250 records/cycle to develop adequate clarity around each measure so that it could be reliably scored as present or absent.
**Reliability is good - no new evidence presented.
Definitions and logic are clear.
**It does not appear that the developer has fully addressed the concerns raised when it was originally endorsed with regard to the initial endorsement of this measure. Given the kappa statistic of .49, I am not confident that this could be generalized for widespread implementation. I rate this as low to insufficient.
**Data from an automatically-generated report from the EHR was compared to manual abstraction from patient records to calculate reliability for the measure. The developer provided the following statistics: 95% agreement, kappa=.49.
 The kappa value represents the proportion of agreement between two raters/abstractors that is not explained by chance alone. A value of 1.0 reflects perfect agreement; a value of 0 reflects agreement that is no better than what would be expected by chance alone. A kappa of 1.0 means that the raters agreed 100% of the time over and above what would be expected by chance alone. The developers tested data element validity for 100 patients by comparing data from a report automatically generated from an EHR to a visual inspection of the full EHR. The sample was taken from one multi-specialty, medium-sized health practice.
 The developers clarified that the testing included checking that the transmitted records contained a standardized list of elements (that is, if some of the elements were missing, that record would not be included in the numerator of the measure). .

2b2. Validity Testing

Comments: **The developers tested data element validity for 100 patients during the prior review. They compared data from a report automatically generated from an EHR to a visual inspection of the full EHR. The sample was taken from one medium sized, multi-specialty health practice.
Updated validity testing results were included.

However, the individual data elements in the measure were not tested, which should be done to better discern the accuracy of each facet of the measure for broader generalizability.
**Face validity results were 72% (with two of eleven individuals indicating neither agreement nor disagreement). Face validity results do not appear to have been conducted separately for measures 647 and 648.
**both data element and score levels. validity 72.7% agree that this measure can accurately distinguish good and poor quality - still question the timeliness being factors into this measure.
Within integrated systems, a discharge summary is not "sent" - the PCP or receiving org that is within the same EHR simply looks it up -- not sure how the measure would truly be operational
**sample size was too small and it did not sample the opinions of the receivers of the information. They are the only valid arbiters of whether the information was adequate. The senders, on the other hand, are the only ones who can tell if the information is complete and accurate.
As currently specified, these elements are not precise enough to be reliably rated. Nor is the rating process sufficiently rigorous to reduce inter-rater reliability variation.
**The updated face validity testing provided is concerning, particularly since this measure was endorsed based on exception with insufficient evidence. Similar to related measures, 3 of 11 experts could not agree that this measure can adequately distinguish good form poor quality. I would expect greater expert agreement on face validity testing.
I don't think the results presented strongly support the statement that the "score from this measure as specified is an indicator of quality."
**Face validity testing also results in a rating that does not appear sufficient to generalize the measure for widespread implementation. This measure seems to need further testing before it can be clear that one can draw conclusions about quality.
**The results of the expert panel rating of the validity statement were as follows: N = 11; Mean rating = 3.91 and 72.7% of respondents either agree or strongly agree that this measure can accurately distinguish good and poor quality.

2b3. Exclusions Analysis
2b4. Risk Adjustment/Stratification for Outcome or Resource Use Measures
2b5. Identification of Statistically Significant & Meaningful Differences In Performance
2b6. Comparability of Performance Scores When More Than One Set of Specifications
2b7. Missing Data Analysis and Minimizing Bias
Comments: **It is unclear why one of the exclusions only include Cancer patients who died rather all patients who died. In this regard, I am not sure if this exclusion criteria would result in variation in interpretation of the data element and affect how the calculations would be consistently performed.
**Exclusion criteria - as amended (patients who died and patients who left against medical advice) are appropriate exclusions and do not pose a threat to validity.
**no risk adjustment; more importantly, the timing needs to be adjusted by the next level of care's timely need.
? why all expired patients would not be included
question whether the measure burden outweigh benefit
agree ama should be excluded
**The exclusions are fine. There is no risk adjustment. The choice of present/absent is an appropriate way to uncover meaningful differences (if the previously mentioned issues are addressed)
However, the choice of a 24 hour window between discharge and transmission is a major shortcoming and should be eliminated. This information should be available at the time of discharge and not later. SNFs rely on the discharge summaries as the documents that contain this information. Without this documentation at the time of admission to SNF (where there might not be any physicians present at the time of admission) there is a significant risk for error and misinterpretation of any other information sent at the same time. Our current standard is that all discharge documentation is ready at the time of discharge; and any documentation provided later than that does not meet performance standards.
Transitions are critical to care coordination. 0648 and its related measures have the potential to be really important measures but they are not there yet. They are not ready to be put into wide use.
**Exclusions are consistent appropriate.
Other threats to validity not adequately assessed
**The exclusions for this measure seem appropriate; however, the measure is not risk adjusted. Also, the developer has not provided data on meaningful differences about quality. Therefore, I would rate this as insufficient, per the validity algorithm.
**The developer did not provide a statistical analysis demonstrating that exclusions are needed to prevent unfair distortion of performance results.

Criterion 3. Feasibility
Maintenance measures – no change in emphasis – implementation issues may be more prominent

3. Feasibility is the extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

- This measure is coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims), Abstracted from a record by someone other than person obtaining original information (e.g., chart abstraction for quality measure or registry).
- The developer notes: *"This measure does not lend itself to a "traditional specification" for EHR reporting, where data elements, logic and clinical coding are identified to calculate the measure, due to the fact the fact that every facility may have a different template for a transition record and the information required for this measure is based on individualized patient information unique to one episode of care (i.e., inpatient stay). However, we have provided guidance on how a facility should query the electronic health record for the information required for this measure, within the numerator details."*

Questions for the Committee:

- *Are the required data elements routinely generated and used during care delivery?*
- *Are the required data elements available in electronic form, e.g., EHR or other electronic sources?*
- *Is the data collection strategy ready to be put into operational use?*

Preliminary rating for feasibility: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

Committee pre-evaluation comments

Criteria 3: Feasibility

3a. Byproduct of Care Processes
3b. Electronic Sources
3c. Data Collection Strategy

Comments: **All of the required data elements are routinely generated and used during care delivery.
**Data elements are routinely generated during care delivery, however the lack of standardization of these elements in both the production/labeling of discharge summary content areas and capture in an electronic medical record (EMR) create challenges for data collection.
**Low-Mod
sending the discharge summary is not consistently documented in EHR unless it is sent through the EHR
Also, with integrated systems, a discharge summary is not "sent" - the PCP or receiving org that is within the same EHR simply looks it up -- not sure how the measure would truly be operational
question how the timing will actually be collected in any non-electronic fashion
**I disagree with the developers. It is highly feasible to identify the required data elements within the EHR, create a standardized transitions record and send it automatically. The specifications in the quality measures have to be incorporated into the EHR. There are many different ways to accomplish that (drop downs, required fields, free text abstraction). Ultimately, this should be largely driven by EHR data derived during the process of care.
**Agree with moderate feasibility rating. Most elements will already be captured, but some additions to meet the measure may be needed.
**The data for this measure can be generated routinely as part of care delivery; however, it is not clear if these data are consistently available electronically given differences in templates, etc. Therefore, I rate the feasibility as moderate.
**This measure is coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims), Abstracted from a record by someone other than person obtaining original information (e.g., chart abstraction for quality measure or registry).
 The developer notes: "This measure does not lend itself to a "traditional specification" for EHR reporting, where data elements, logic and clinical coding are identified to calculate the measure, due to the fact the fact that every facility may have a different template for a transition record and the information required for this measure is based on individualized patient information unique to one episode of care (i.e., inpatient stay). However, we have provided guidance on how a facility should query the electronic health record for the information required for this measure, within the numerator details."

Criterion 4: Usability and Use
Maintenance measures – increased emphasis – much greater focus on measure use and usefulness, including both impact /improvement and unintended consequences

4. Usability and Use evaluate the extent to which audiences (e.g., consumers, purchasers, providers, policymakers) use

or could use performance results for both accountability and performance improvement activities.

Current uses of the measure

Publicly reported? ☒ **Yes** ☐ **No**

- This measure is in use in the CMS Inpatient Psychiatric Facility Quality Reporting Program (IPFQR). The IPFQR is a pay-for-reporting program and this measure was added in 2016. The reporting period for FY 2018 Payment Determination is between July 1–December 31, 2016 and the data submission period will be July 1–August 15, 2017.
- This measure is also in use in The Public Hospital Redesign and Incentives in Medi-Cal (PRIME) Medicaid waiver program that is sponsored by CMS and administered by the California Department of Health Care Services (DHCS).
- The developer indicated that CMS plans to include this facility-level measure within the Hospital Compare public reporting program sometime after the first submission period.

Improvement results

- The developer reports that performance data are not yet available for this measure as it is in the initial year of use within the IPFQR and PRIME programs.

Unexpected findings (positive or negative) during implementation

- None identified

Potential harms

- None identified

Vetting of the measure None reported.

Feedback:

- In 2016, the MAP Dual Eligible Beneficiaries workgroup voted to include this measure in the starter set of measures, which are a subset of measures that are considered most ready for implementation as currently specified. Members expressed how these measures cumulatively address important aspects of care transitions, such as patients' experience of care, whether patients receive essential information, and whether providers transfer information.

***Questions for the Committee**:*

- *How can the performance results be used to further the goal of high-quality, efficient healthcare?*
- *Do the benefits of the measure outweigh any potential unintended consequences?*
- *How has the measure been vetted in real-world settings by those being measure or others?*

Preliminary rating for usability and use: ☐ **High** ☐ **Moderate** ☒ **Low** ☐ **Insufficient**

RATIONALE: NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement. Improvement results were not provided.

Committee pre-evaluation comments

Criteria 4: Usability and Use

4a. Accountability and Transparency

4b. Improvement

4c. Unintended Consequences

Comments: **The measure is being used in the CMS Inpatient Psychiatric Facility Quality Reporting Program (IPFQR) and the Hospital Compare public reporting program. In 2016 the MAP Dual Eligible Beneficiaries workgroup voted to include this measure in the starter set of measures.

**Measure is scheduled to be publicly reported later this year as part of the CMS Inpatient Psychiatric Facility Quality Reporting Program (IPFQR).
**Insufficient
Needs to be flushed out better for timing by receiving facility and how this works within an integrated system.
Would be helpful to receive feedback from those who are testing.
In addition, with the advent of HIEs, if the discharge summary was sent at discharge, all the receiving entities (outside the integrated health system) would have access.
**Highly useful as a performance measure. It speaks to the facility's commitment to safety and quality even after the individual leaves their direct care. No unintended consequences. All upside.
**It is in use currently for pay4R and pay4P. Decisions for further widespread use should be based on data from this reporting (was in its first year in 2016)
**use in programs supports usability and feasibility
**It is not clear if the results from this measure can be used to further high-quality care. Since it has been in use, this measure has not generated enough information to strengthen the case for its use in reporting or accountability programs. Therefore, I rate the usability and use as low--it should not be used for accountability programs until further testing is done.
**This measure is in use in the CMS Inpatient Psychiatric Facility Quality Reporting Program (IPFQR). The IPFQR is a pay-for-reporting program and this measure was added in 2016. The reporting period for FY 2018 Payment Determination is between July 1–December 31, 2016 and the data submission period will be July 1–August 15, 2017.
 This measure is also in use in The Public Hospital Redesign and Incentives in Medi-Cal (PRIME) Medicaid waiver program that is sponsored by CMS and administered by the California Department of Health Care Services (DHCS).
 The developer indicated that CMS plans to include this facility-level measure within the Hospital Compare public reporting program sometime after the first submission period.
Improvement results
 The developer reports that performance data are not yet available for this measure as it is in the initial year of use within the IPFQR and PRIME programs.

Criterion 5: Related and Competing Measures

Related or competing measures

- 0291 : Emergency Transfer Communication Measure
- 0293 : Medication Information
- 0297 : Procedures and Tests
- 0648 : Transition Record with Specified Elements Received by Discharged Patients (Discharges from an Inpatient Facility to Home/Self Care or Any Other Site of Care)
- 0649 : Transition Record with Specified Elements Received by Discharged Patients (Emergency Department Discharges to Ambulatory Care [Home/Self Care] or Home Health Care)

Harmonization

- In the prior review, the committee noted a need for different content and presentation (particularly in relation to language and health literacy) in a transition record that is given to the patient compared to one given to the next provider. They also agreed that measures #0647 and #0648 be should be designated as paired measures.

Endorsement + Designation

The "Endorsement +" designation identifies measures that exceed NQF's endorsement criteria in several key areas. After a Committee recommends a measure for endorsement, it will then consider whether the measure also meets the "Endorsement +" criteria.

This measure is a candidate for the "Endorsement +" designation IF the Committee determines that it: meets evidence for measure focus without an exception; is reliable, as demonstrated by score-level testing; is valid, as demonstrated by score-level testing (not via face validity only); and has been vetted by those being measured or other users.

Eligible for Endorsement + designation: ☐ **Yes** ☒ **No**

RATIONALE IF NOT ELIGIBLE: The measure is not eligible for Endorsement + because it is not demonstrated by reliability testing of the measure score, it is only at the data element level.

Pre-meeting public and member comments

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NATIONAL QUALITY FORUM

Measure missing data in MSF 6.5 from MSF 5.0

NQF #: 0648 NQF Project: Care Coordination 2016-2017 Project

1. IMPACT, OPPORTUITY, EVIDENCE - IMPORTANCE TO MEASURE AND REPORT

Importance to Measure and Report is a threshold criterion that must be met in order to recommend a measure for endorsement. All three subcriteria must be met to pass this criterion. See guidance on evidence.

Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria. (evaluation criteria)

1c.1 Structure-Process-Outcome Relationship *(Briefly state the measure focus, e.g., health outcome, intermediate clinical outcome, process, structure; then identify the appropriate links, e.g., structure-process-health outcome; process- health outcome; intermediate clinical outcome-health outcome)*:

Since the last update/submission, no contradictory evidence has emerged that would prompt changes to this measure.

The measure focus is the process of providing a timely transition record to the facility, physician or other health care professional designated for patient follow-up care within 24 hours of discharge from an inpatient facility (eg, hospital inpatient or observation, skilled nursing facility, or rehabilitation facility) to home or any other site of care. This process is directly related to preventing medication errors, adverse events, patient harm, and hospital readmissions. The availability of the patient's discharge information at the first post-discharge physician visit improves the continuity of care and may be associated with a decreased risk of rehospitalization. Additionally, randomized trials have shown that many hospital readmissions can be prevented by patient education, predischarge assessment, and domiciliary aftercare. One recent study found that patients participating in a hospital program providing detailed, personalized instructions at discharge, including a review of medication routines and assistance with arranging follow-up appointments, had 30% fewer subsequent emergency visits and hospital readmissions than patients who received usual care at discharge.

Citations:

van Walraven C, Seth R, Austin PC, Laupacis A. 2002. Effect of discharge summary availability during post-discharge visits on hospital readmission. Journal of General Internal Medicine 17:186–192.

Benbassat J, Taragin M. Hospital readmissions as a measure of quality of healthcare. Archives Internal Medicine 2000; 160:1074-81.

Jack BW, Chetty VK, Anthony D, et al. A reengineered hospital discharge program to decrease rehospitalization. Ann Intern Med

2009; 150:178-187.

1c.2-3 Type of Evidence *(Check all that apply)*:

Clinical Practice Guideline

Systematic review of body of evidence (other than within guideline development)

1c.4 Directness of Evidence to the Specified Measure *(State the central topic, population, and outcomes addressed in the body of evidence and identify any differences from the measure focus and measure target population)*:

The evidence cited for this measure is directly related to timely transmission of transition records for all ages, during transitions of care from inpatient to

outpatient settings. There are no differences from the measure focus and measure target population.

1c.5 Quantity of Studies in the Body of Evidence *(Total number of studies, not articles*): The quantity of studies reviewed was not stated, but the guideline paper references 21 articles.

1c.6 Quality of Body of Evidence (*Summarize the certainty or confidence in the estimates of benefits and harms to patients across studies in the body of evidence resulting from study factors. Please address: a) study design/flaws; b) directness/indirectness of the evidence to this measure (e.g., interventions, comparisons, outcomes assessed, population included in the evidence); and c) imprecision/wide confidence intervals due to few patients or events):* The quality of the evidence was not discussed; however, the guideline paper provided the following summary:

Summary: This guideline is the result of a consensus conference convened in 2006 by the American College of Physicians (ACP), the Society of General

Internal Medicine (SGIM), and the Society of Hospital Medicine (SHM), with representation from the Emergency Medicine community added subsequent to the conference. The participating organizations focused specifically on the development of principles and standards for transitions of care between the inpatient and outpatient settings, in preparation for the development of performance measures. The standards development of the Transitions of Care Consensus Conference (TOCCC) built upon the earlier work of the Stepping Up to the Plate (SUTTP) Alliance established by the ABIM Foundation.

Guideline development methodology: The TOCCC developed its principles and standards based on a systematic review of the evidence related to transitions of care between the inpatient and outpatient settings. After initial discussion in breakout groups, the conference participants refined the principles and standards through a group consensus process. Participants then prioritized

the standards using a group consensus voting process. The final summary paper was subsequently reviewed and approved by all participating organizations.

Evidence base: The TOCCC developed 8 standards for care transitions, based on cohort, observational, and cross-sectional studies and expert opinion. The standards/ recommendations were developed and prioritized by a group consensus process.

1c.7 Consistency of Results across Studies *(Summarize the consistency of the magnitude and direction of the effect):* Again, the consistency of results across studies was not discussed, but the number of people and organizations involved in the development of the consensus statement

suggest great consistency in the evidence base. The TOCCC was held over two days on July 11-12, 2007 at ACP Headquarters in Philadelphia, PA. There were 51 participants representing over thirty organizations. Participating organizations included medical specialty societies from internal medicine as well as family medicine and pediatrics, governmental agencies, such as the AHRQ and CMS, performance measure developers, such as the NCQA and AMA PCPI, nurses associations, such as the VNAA and Home Care and Hospice, pharmacists groups, and patient groups such as the Institute for Family-

Centered Care. The TOCCC developed 8 standards for care transitions, based on cohort, observational, and cross-sectional studies and expert opinion. The standards/ recommendations were developed and prioritized by a group consensus process.

In addition, multiple studies have shown that many hospital readmissions can be prevented by patient education, predischarge assessment, and domiciliary aftercare; patients participating in a hospital program providing detailed, personalized instructions at discharge, including a review of medication routines and assistance with arranging follow-up appointments, had 30% fewer

subsequent emergency visits and hospital readmissions than patients who received usual care at discharge. [Benbassat, 2000; Jack, 2009]

1c.8 Net Benefit *(Provide estimates of effect for benefit/outcome; identify harms addressed and estimates of effect; and net benefit - benefit over harms)*:

There are no potential harms discussed in this guideline or in the evidence, only the harm caused by not transmitting a detailed transition record in a timely manner. The TOCCC focuses only on the transitions between the inpatient and outpatient settings and does not address the equally important transitions between the many other different care settings such as hospital to nursing home, or rehabilitation facility. The intent of the TOCCC is to provide this document to national measure developers such as the Physician Consortium for

Performance Improvement and others in order to guide measure development and ultimately lead to improvement in quality and safety in care transitions.

1c.9 Grading of Strength/Quality of the Body of Evidence. Has the body of evidence been graded? No

1c.10 If body of evidence graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias: N/A

1c.11 System Used for Grading the Body of Evidence: Other

1c.12 If other, identify and describe the grading scale with definitions: The body of evidence was not graded.

1c.13 Grade Assigned to the Body of Evidence: N/A

1c.14 Summary of Controversy/Contradictory Evidence: No areas of controversy.

1c.15 Citations for Evidence other than Guidelines*(Guidelines addressed below)*:

1c.16 Quote verbatim, the specific guideline recommendation *(Including guideline # and/or page #)*:

The following evidence statements are quoted verbatim.

Coordinating Clinicians

Communication and information exchange between the Medical Home and the receiving provider should occur in an amount of time that will allow the receiving provider to effectively treat the patient. This communication should ideally occur whenever patients are at a transition of care; eg, at discharge from the inpatient setting. The timeliness of this communication should be consistent with the patient's clinical presentation and, in the case of a patient being discharged, the urgency of the follow-up required. Communication and information exchange between the MH and the physician may be in the form of a call, voicemail, fax, or other secure, private, and accessible means, including mutual access to an EHR. (TOCCC, 2009)

Standard PC.02.02.01

The [organization] coordinates the [patient]'s care, treatment, and services based on the [patient]'s needs.

1. The hospital has a process to receive or share patient information when the patient is referred to other internal or external providers of care, treatment, and services. (See also PC.04.02.01, EP 1) (The Joint Commission, 2009)

Standard PC.04.02.01

When a [patient] is discharged or transferred, the [organization] gives information about the care, treatment, and services provided to the [patient] to other service providers who will provide the [patient] with care, treatment, or services.

1. At the time of the patient's discharge or transfer, the hospital informs other service providers who will provide care, treatment, or services to the patient about the following:

- The reason for the patient's discharge or transfer

- The patient's physical and psychosocial status

- A summary of care, treatment, and services it provided to the patient

- The patient's progress toward goals

- A list of community resources or referrals made or provided to the patient

(See also PC.02.02.01, EP 1) (Joint Commission, 2009)

Safe Practice 12: Patient Care Information

Ensure that care information is transmitted and appropriately documented in a timely manner and in a clearly understandable form to patients and appropriate family and caregivers, and to all of the patient's healthcare providers/ professionals, within and between care settings, who need that information to provide continued care. [Massachusetts Coalition for the Prevention of Medical Errors. Available at http://www.macoalition.org/ index.shtml. Last accessed October 14, 2009] (NQF Safe Practices for Better Healthcare–2010 Update)

Safe Practice 15: Discharge Systems

A "discharge plan" must be prepared for each patient at the time of hospital discharge, and a concise discharge summary must be prepared for and relayed to the clinical caregiver accepting responsibility for postdischarge care in a timely manner. Organizations must ensure that there is confirmation of receipt of the discharge information by the independent licensed practitioner who will

assume the responsibility for care after discharge. [Jack BW, Chetty VK,

Anthony D, et al. A reengineered hospital discharge program to decrease rehospitalization: a randomized trial. Ann Intern Med 2009 Feb 3;150(3):178-87] (NQF Safe Practices for Better Healthcare–2010 Update)

-Discharge policies and procedures should be established and resourced and should address: [Clancy CM. Reengineering hospital discharge: a protocol to improve patient safety, reduce costs, and boost patient satisfaction. Am J Med Qual 2009 Jul-Aug;24(4):344-6. Epub 2009 Jun 5] • explicit delineation of roles and responsibilities in the discharge process; • preparation for discharge

occurring, with documentation, throughout the hospitalization; • reliable information flow from the primary care physician (PCP) or referring caregiver on admission, to the hospital caregivers, and back to the PCP, after discharge, using standardized communication methods; [Sherman FT. Rehospitalizations: packaging discharge and transition services to prevent "bounce backs". Geriatrics 2009 May;64(5):8-9] • completion of discharge plan and discharge summaries before discharge; [Jack, 2009] • patient or, as appropriate, family perception of coordination of discharge care; and • benchmarking, measurement, and continuous quality improvement of discharge processes.

-A written discharge plan must be provided to each patient at the time of discharge that is understandable to the patient and/or his family or guardian and appropriate to each individual's health literacy and English language proficiency. [Chugh A, Williams MV, Grigsby J, et al. Better transitions: improving comprehension of discharge instructions. Front Health Serv Manage 2009 Spring;25(3):11-32; Were MC, Li X, Kesterson J, et al. Adequacy of hospital discharge summaries in documenting tests with pending results

and outpatient follow-up providers. J Gen Intern Med 2009 Sep;24(9):1002-6. Epub 2009 Jul 3]

At a minimum, the discharge plan must include the following: • reason for hospitalization; • medications to be taken postdischarge, including, as appropriate, resumption of pre-admission medications, how to take them, and how to obtain them; • instructions for the patient on what to do if his or her condition changes; and • coordination and planning for follow-up appointments that the patient can keep and follow-up of tests and studies for which confirmed results are not available at the time of discharge.

-A discharge summary must be provided to the ambulatory clinical provider who accepts the patient's care after hospital discharge.

At a minimum, the discharge summary should include the following: • reason for hospitalization; • significant findings; • procedures performed and care, treatment, and services provided to the patient; • the patient's condition at discharge; • information provided to the patient and family; • a comprehensive and reconciled medication list; and • a list of acute medical issues, tests, and studies for which confirmed results are unavailable at the time of discharge and require follow-up.

-Original source documents (e.g., laboratory or radiology reports or medication administration records) should be in the transcriber's immediate possession and should be visible when it is necessary to transcribe information from one document to another.

-The organization should ensure and document receipt of discharge information by caregivers who assume responsibility for postdischarge care. This confirmation may occur through telephone, fax, e-mail response, or other electronic response using health information technologies. [Zsenits B, Polashenski WA, Sterns RH, et al. Systematically improving physician assignment during inhospital transitions of care by enhancing a preexisting

hospital electronic health record. J Hosp Med 2009 May;4(5):308-12]

(NQF Safe Practices for Better Healthcare–2010 Update)

1c.17 Clinical Practice Guideline Citation: Snow V, Beck D, Budnitz T, Miller DC, Potter J, Wears RL, Weiss KB, Williams MV. Transitions of Care Consensus Policy Statement: American College of Physicians-Society of General Internal Medicine-Society of Hospital Medicine-American Geriatrics Society-American College of Emergency Physicians-Society of Academic Emergency Medicine. J Gen Intern Med 2009 Apr 3.

Joint Commission on Accreditation of Healthcare Organizations. 2009 Hospital Accreditation Standards. Oakbrook Terrace, IL: Joint Commission Resources, Inc.

National Quality Forum (NQF). Safe Practices for Better Healthcare–2010 Update: A Consensus Report. Washington, DC: NQF; 2010.

1c.18 National Guideline Clearinghouse or other URL:

1c.19 Grading of Strength of Guideline Recommendation. Has the recommendation been graded? No

1c.20 If guideline recommendation graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias:

1c.21 System Used for Grading the Strength of Guideline Recommendation: Other

1c.22 If other, identify and describe the grading scale with definitions: The guideline recommendations were not graded.

1c.23 Grade Assigned to the Recommendation: N/A

1c.24 Rationale for Using this Guideline Over Others: It is the PCPI policy to use guidelines, which are evidence-based, applicable to physicians and other health-care providers, and developed by a national specialty organization or government agency. In addition, the PCPI has now expanded what is acceptable as the evidence base for measures to include documented quality improvement (QI) initiatives or implementation projects that have demonstrated improvement in quality of care.

Based on the NQF descriptions for rating the evidence, what was the developer's assessment of the quantity, quality, and consistency of the body of evidence?

1c.25 Quantity: Moderate 1c.26 Quality: Moderate1c.27 Consistency: Moderate

1. Evidence, Performance Gap, Priority – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. ***Measures must be judged to meet all sub criteria to pass this criterion and be evaluated against the remaining criteria.***

1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form

0648_Evidence_Measure_Submission_Form.doc

1a.1 For Maintenance of Endorsement: Is there new evidence about the measure since the last update/submission? Please update any changes in the evidence attachment in red. Do not remove any existing information. If there have been any changes to evidence, the Committee will consider the new evidence. If there is no new evidence, no updating of the evidence information is needed.

No

1b. Performance Gap

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- Disparities in care across population groups.

1b.1. **Briefly explain the rationale for this measure** *(e.g., how the measure will improve the quality of care, the benefits or improvements in quality envisioned by use of this measure)*

IF a PRO-PM (e.g. HRQoL/functional status, symptom/burden, experience with care, health-related behaviors), provide evidence that the target population values the measured PRO and finds it meaningful. (Describe how and from whom their input was obtained.)

IF a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), SKIP this question and provide rationale for composite in question 1c.3 on the composite tab.

The availability of the patient's discharge information at the first post-discharge physician visit improves the continuity of care and may be associated with a decreased risk of rehospitalization.

By requiring the completion and prompt transmission of a detailed "transition record" for discharged patients, this measure is promoting a significant enhancement to the customary use of the discharge summary. Numerous studies have documented the prevalence of communication gaps and discontinuities in care for patients after discharge, and the significant effect of these lapses on hospital readmissions and other indicators of the quality of transitional care (1-3). Current information and communication technology can facilitate the routine completion and transmission of a transition record within 24 hours of discharge, which could greatly reduce communication gaps and help improve patient outcomes.

1. Sabogal F, Coots-Miyazaki M, Lett JE. Effective care transitions interventions: Improving patient safety and healthcare quality. CAHQ Journal 2007 (Quarter 2).

2. Moore C, Wisnevesky J, Williams S, McGinn T. 2003. Medical errors related to discontinuity of care from an inpatient to an outpatient setting. Journal of General Internal Medicine 18:646–651.

3. Roy CL, Poon EG, Karson AS, et al. Patient safety concerns arising from test results that return after hospital discharge. Ann Intern Med 2005;143(2):121-128.

1b.2. **Provide performance scores on the measure as specified (current and over time) at the specified level of analysis**. *(This is required for maintenance of endorsement. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the sub-criterion on improvement (4b) under Usability and Use.*

Performance scores for this measure are not yet available

1b.3. **If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.**

The delayed or insufficient transfer of discharge information between hospital-based providers and primary care physicians remains common.

- Communication between hospital-based physicians and primary care physicians as part of the discharge process occurs between 3%-20% of the time.
- Discharge summaries were only available between 12%-34% of first postdischarge visit and between 51%-77% within 4 weeks after discharge.
- Discharge summaries often lacked important information including:
  - Diagnostic test results which were missing from 33%-63% of discharge summaries
  - Course of treatment missing from 7%-22%
  - Discharge medications missing from 2%-40%
  - Test results pending at discharge within 65% of discharge summaries
  - Follow-up plans missing from 2%-43%

A retrospective study focusing on discharge summaries found that 21% of discharged patients did not have a discharge summary completed within a week after discharge. The absence of a discharge summary was associated with a 79% increase in the rate of readmission within 7 days and a 37% increased rate of readmission within 28 days (2).

Kripalani S, LeFevre F, Phillips CO, Williams MV, Basaviah P, Baker DW. Deficits in communication and information transfer between hospital-based and primary care physicians: implications for patient safety and continuity of care. JAMA. 2007;297(8):831-841. doi:10.1001/jama.297.8.831

2. Li JYZ, Yong TY, Hakendorf P, Ben-Tovim D, Thompson CH. Timeliness in discharge summary dissemination is associated with patients´ clinical outcomes. Journal of Evaluation in Clinical Practice. 2013;19:76–79. doi:10.1111/j.1365-2753.2011.01772.

1b.4. **Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability.** *(This is required for maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included.) For measures that show high levels of performance, i.e., "topped out", disparities data may demonstrate an opportunity for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b) under Usability and Use.*

We are not aware of any publications or evidence outlining disparities in this area.

1b.5. **If no or limited data on disparities from the measure as specified is reported in 1b.4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations. Not necessary if performance data provided in 1b.4**

N/A

2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. ***Measures must be judged to meet the sub criteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.***

2a.1. Specifications The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

De.5. **Subject/Topic Area** *(check all the areas that apply):*

De.6. **Cross Cutting Areas** *(check all the areas that apply):*
«crosscutting_area»

De.7. **Target Population Category** *(Check all the populations for which the measure is specified and tested if any):*
Elderly

S.1. **Measure-specific Web Page** *(Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)*
The measure specifications are included inthis submission. Additional measure details may be found at: http://www.thepcpi.org/pcpi/media/documents/Care-Transitions-updated-measures-112016.pdf

S.2a. **If this is an eMeasure**, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)
This is not an eMeasure **Attachment:**

S.2b. **Data Dictionary, Code Table, or Value Sets** *(and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)*
No data dictionary **Attachment:**

S.3.1. **For maintenance of endorsement:** Are there changes to the specifications since the last updates/submission. If yes, update the specifications for S1-2 and S4-22 and explain reasons for the changes in S3.2.
Yes

S.3.2. **For maintenance of endorsement,** please briefly describe any important changes to the measure specifications since last measure update and explain the reasons.
For measure 0648, the unit of measurement was changed from patients to discharges to clarify that the intent of this measure is to assess each individual discharge as a patient may have more than one discharge within a measurement period.

S.4. **Numerator Statement** *(Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome) DO NOT include the rationale for the measure.*
IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).
Discharges in which a transition record was transmitted to the facility or primary physician or other health care professional designated for follow-up care within 24 hours of discharge

S.5. **Numerator Details** *(All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)*
IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).
Time Period for Data Collection: Within 24 hours of each discharge during measurement period

Numerator Element Definitions:
- Transition record: a core, standardized set of data elements related to patient's diagnosis, treatment, and care plan that is discussed with and provided to patient in printed or electronic format at each transition of care, and transmitted to the facility/physician/other health care professional providing follow-up care. Electronic format may be provided only if acceptable to patient.
- Transmitted: transition record may be transmitted to the facility or physician or other health care professional designated for follow-up care via fax, secure e-mail, or mutual access to an electronic health record (EHR)
- Primary physician or other health care professional designated for follow-up care: may be designated primary care physician (PCP), medical specialist, or other physician or health care professional

For Administrative:
Numerator Elements to be identified through medical record abstraction:
See Sample Data Collection Tool attached in Appendix A.1.

For EHR:
This measure does not lend itself to a "traditional specification" for EHR reporting, where data elements, logic and clinical coding are identified to calculate the measure, due to the fact that every facility may have a different template for a transition record and the information required for this measure is based on individualized patient information unique to one episode of care (ie, inpatient stay). We have provided guidance on how a facility should query the electronic health record for the information required for this measure.

Transmitting the Transition Record with Specified Elements:
The Transition Record should be transmitted to the next provider(s) of care in accordance with established approved standards for interoperability. The ONC Health IT Standards Committee (HITSC) has recommended that certain vocabulary standards are used for quality measure reporting, in accordance with the Quality Data Model (https://ecqi.healthit.gov/qdm). The use of recognized interoperability standards for the transmission of the Transition Record information will ensure that the information can be received into the destination EHR.

Systematic External Reporting that the Transition Record was transmitted within 24 hours of discharge:
To systematically identify the transition records that were transmitted within 24 hours of discharge, a discrete data field and code may be needed in the EHR. This discrete data field will facilitate external reporting of the information.

S.6. **Denominator Statement** *(Brief, narrative description of the target population being measured)*
All discharges for patients, regardless of age, from an inpatient facility (eg, hospital inpatient or observation, skilled nursing facility, or rehabilitation facility) to home/self care or any other site of care

S.7. **Denominator Details** *(All information required to identify and calculate the target population/denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.) IF an OUTCOME MEASURE, describe how the target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).*
Time Period for Data Collection: At each discharge during measurement period

Note: Facilities are responsible for determining the appropriate use of codes.

For Administrative:
Identify patients discharged from inpatient facility using the following:
UB-04 (Form Locator 04 - Type of Bill):
- 0111 (Hospital Inpatient (Including Medicare Part A), Admit through Discharge Claim)
- 0114 (Hospital Inpatient (Including Medicare Part A), Interim - Last Claim)

- 0121 (Hospital Inpatient (Medicare Part B only), Admit through Discharge Claim)
- 0124 (Hospital Inpatient (Medicare Part B only), Interim - Last Claim)
- 0181 (Hospital - Swing Beds, Admit through Discharge Claim)
- 0184 (Hospital - Swing Beds, Interim - Last Claim)
- 0211 (Skilled Nursing-Inpatient (Including Medicare Part A), Admit through Discharge Claim)
- 0214 (Skilled Nursing-Inpatient (Including Medicare Part A), Interim - Last Claim)
- 0221 (Skilled Nursing-Inpatient (Medicare Part B only), Admit through Discharge Claim)
- 0224 (Skilled Nursing- Inpatient (Medicare Part B only), Interim - Last Claim)
- 0281 (Skilled Nursing-Swing Beds, Admit through Discharge Claim)
- 0284 (Skilled Nursing-Swing Beds, Interim - Last Claim)

AND

Discharge Status (Form Locator 17)

- 01 (Discharged to home or self care (routine discharge)
- 02 (Discharged/transferred to a short term general hospital for inpatient care)
- 03 (Discharged/transferred to skilled nursing facility (SNF) with Medicare certification in anticipation of skilled care)
- 04 (Discharged/transferred to a facility that provides custodial or supportive care)
- 05 (Discharged/transferred to a designated cancer center or children's hospital)
- 06 (Discharged/transferred to home under care of an organized home health service organization in anticipation of covered skilled care)
- 21 (Discharged/transferred to court/law enforcement)
- 43 (Discharged/transferred to a federal health care facility)
- 50 (Hospice – home)
- 51 (Hospice - medical facility (certified) providing hospice level of care)
- 61 (Discharged/transferred to hospital-based Medicare approved swing bed)
- 62 (Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital)
- 63 (Discharged/transferred to a Medicare certified long term care hospital (LTCH))
- 64 (Discharged/transferred to a nursing facility certified under Medicaid but not certified under Medicare)
- 65 (Discharged/transferred to a psychiatric hospital or psychiatric distinct part unit of a hospital)
- 66 (Discharged/transferred to a Critical Access Hospital (CAH))
- 69 (Discharged/transferred to a designated disaster alternative care site)
- 70 (Discharged/transferred to another type of health care institution not defined elsewhere in this code list)
- 81 (Discharged to home or self care with a planned acute care hospital inpatient readmission)
- 82 (Discharged/transferred to a short term general hospital for inpatient care with a planned acute care hospital inpatient readmission)
- 83 (Discharged/transferred to a skilled nursing facility (SNF) with Medicare certification with a planned acute care hospital inpatient readmission)
- 84 (Discharged/transferred to a facility that provides custodial or supportive care with a planned acute care hospital inpatient readmission)
- 85 (Discharged/transferred to a designated cancer center or children's hospital with a planned acute care hospital inpatient readmission)
- 86 (Discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission)
- 87 (Discharged/transferred to court/law enforcement with a planned acute care hospital inpatient readmission)
- 88 (Discharged/transferred to a federal health care facility with a planned acute care hospital inpatient readmission
- 89 (Discharged/transferred to a hospital-based Medicare approved swing bed with a planned acute care hospital inpatient readmission)
- 90 (Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission)

- 91 (Discharged/transferred to a Medicare certified long term care hospital (LTCH) with a planned acute care hospital inpatient readmission)
- 92 (Discharged/transferred to nursing facility certified under Medicaid but not certified under Medicare with a planned acute care hospital inpatient readmission)
- 93 (Discharged/transferred to a psychiatric hospital or psychiatric distinct part unit of a hospital with a planned acute care hospital inpatient readmission)
- 94 (Discharged/transferred to a critical access hospital (CAH) with a planned acute care hospital inpatient readmission)
- 95 (Discharged/transferred to another type of health care institution not defined elsewhere in this code list with a planned acute care hospital inpatient readmission)

OR

UB-04 (Form Locator 04 - Type of Bill):
- 0131 (Hospital Outpatient, Admit through Discharge Claim)
- 0134 (Hospital Outpatient, Interim - Last Claim)

AND

UB-04 (Form Locator 42 - Revenue Code):
- 0762 (Hospital Observation)
- 0490 (Ambulatory Surgery)
- 0499 (Other Ambulatory Surgery)

AND

Discharge Status (Form Locator 17)
- 01 (Discharged to home or self care (routine discharge)
- 02 (Discharged/transferred to a short term general hospital for inpatient care)
- 03 (Discharged/transferred to skilled nursing facility (SNF) with Medicare certification in anticipation of skilled care)
- 04 (Discharged/transferred to a facility that provides custodial or supportive care)
- 05 (Discharged/transferred to a designated cancer center or children's hospital
- 06 (Discharged/transferred to home under care of an organized home health service organization in anticipation of covered skilled care)
- 21 (Discharged/transferred to court/law enforcement)
- 43 (Discharged/transferred to a federal health care facility)
- 50 (Hospice – home)
- 51 (Hospice - medical facility (certified) providing hospice level of care)
- 61 (Discharged/transferred to hospital-based Medicare approved swing bed)
- 62 (Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital)
- 63 (Discharged/transferred to a Medicare certified long term care hospital (LTCH))
- 64 (Discharged/transferred to a nursing facility certified under Medicaid but not certified under Medicare)
- 65 (Discharged/transferred to a psychiatric hospital or psychiatric distinct part unit of a hospital)
- 66 (Discharged/transferred to a Critical Access Hospital (CAH))
- 69 (Discharged/transferred to a designated disaster alternative care site)
- 70 (Discharged/transferred to another type of health care institution not defined elsewhere in this code list)
- 81 (Discharged to home or self-care with a planned acute care hospital inpatient readmission)
- 82 (Discharged/transferred to a short term general hospital for inpatient care with a planned acute care hospital inpatient readmission)
- 83 (Discharged/transferred to a skilled nursing facility (SNF) with Medicare certification with a planned acute care hospital inpatient readmission)
- 84 (Discharged/transferred to a facility that provides custodial or supportive care with a planned acute care hospital

inpatient readmission)

- 85 (Discharged/transferred to a designated cancer center or children's hospital with a planned acute care hospital inpatient readmission)
- 86 (Discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission)
- 87 (Discharged/transferred to court/law enforcement with a planned acute care hospital inpatient readmission)
- 88 (Discharged/transferred to a federal health care facility with a planned acute care hospital inpatient readmission
- 89 (Discharged/transferred to a hospital-based Medicare approved swing bed with a planned acute care hospital inpatient readmission)
- 90 (Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission)
- 91 (Discharged/transferred to a Medicare certified long term care hospital (LTCH) with a planned acute care hospital inpatient readmission)
- 92 (Discharged/transferred to nursing facility certified under Medicaid but not certified under Medicare with a planned acute care hospital inpatient readmission)
- 93 (Discharged/transferred to a psychiatric hospital or psychiatric distinct part unit of a hospital with a planned acute care hospital inpatient readmission)
- 94 (Discharged/transferred to a critical access hospital (CAH) with a planned acute care hospital inpatient readmission)
- 95 (Discharged/transferred to another type of health care institution not defined elsewhere in this code list with a planned acute care hospital inpatient readmission)

This measure may also be implemented in EHRs:
Eligible discharges for the denominator should be identified through the Admission, Discharge, Transfer (ADT) system, or from another electronic system where this information is stored.

S.8. **Denominator Exclusions** *(Brief narrative description of exclusions from the target population)*
Patients who died
Patients who left against medical advice (AMA) or discontinued care

S.9. **Denominator Exclusion Details** *(All information required to identify and calculate exclusions from the denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*
Time Period for Data Collection: At each discharge during measurement period

According to the PCPI methodology, exclusions arise when the intervention required by the numerator is not appropriate for a group of patients who are otherwise included in the initial patient or eligible population of a measure (ie, the denominator). Exclusions are absolute and are to be removed from the denominator of a measure and therefore clinical judgment does not enter the decision. For measure Timely Transmission of Transition Record (Discharges from an Inpatient Facility to Home/Self Care or Any Other Site of Care), exclusions include patients who died, and patients who left against medical advice (AMA) or discontinued care.

Additional details by data source are as follows:

For Administrative Data:
UB-04 (Form Locator 17 - Discharge Status):

- 07 (Left against medical advice or discontinued care)
- 20 (Expired)
- 40 (Expired at home)
- 41 (Expired in a medical facility (e.g. hospital, SNF, ICF, or free standing hospice))
- 42 (Expired - place unknown)

For EHR:
Discharges meeting denominator exclusions criteria should be identified through the Admission, Discharge, Transfer (ADT) system, or from another electronic system where this information is stored.

S.10. **Stratification Information** *(Provide all information required to stratify the measure results, if necessary, including the stratification variables, definitions, specific data collection items/responses, code/value sets, and the risk-model covariates and coefficients for the clinically-adjusted version of the measure when appropriate – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b.)*
Consistent with CMS' Measures Management System Blueprint and recent national recommendations put forth by the IOM and NQF to standardize the collection of race and ethnicity data, we encourage the results of this measure to be stratified by race, ethnicity, administrative sex, and payer.

S.11. **Risk Adjustment Type** (Select type. Provide specifications for risk stratification in measure testing attachment)
No risk adjustment or risk stratification
If other:

S.12. **Type of score:**
Rate/proportion
If other:

S.13. **Interpretation of Score** *(Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)*
Better quality = Higher score

S.14. **Calculation Algorithm/Measure Logic** (*Diagram or describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; time period for data, aggregating data; risk adjustment; etc.)*
To calculate performance rates:
1. Find the patients who meet the initial population (ie, the general group of patients that a set of performance measures is designed to address).
2. From the patients within the initial population criteria, find the patients who qualify for the denominator. (ie, the specific group of patients for inclusion in a specific performance measure based on defined criteria). Note: in some cases the initial population and denominator are identical.
3. Find the patients who qualify for denominator exclusions and subtract from the denominator.
4. From the patients within the denominator, find the patients who meet the numerator criteria (ie, the group of patients in the denominator for whom a process or outcome of care occurs). Validate that the number of patients in the numerator is less than or equal to the number of patients in the denominator.

If the patient does not meet the numerator, this case represents a quality failure.

S.15. **Sampling** *(If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)*
IF a PRO-PM, identify whether (and how) proxy responses are allowed.
Not applicable. The measure is not based on a sample.

S.16. **Survey/Patient-reported data** *(If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)*
IF a PRO-PM, specify calculation of response rates to be reported with performance measure results.
Not applicable. The measure is not based on a survey.

S.17. **Data Source** *(Check ONLY the sources for which the measure is SPECIFIED AND TESTED). If other, please describe in S.18.*
EHRs Hybrid, Paper Records

S.18. **Data Source or Collection Instrument** *(Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data is collected.)* IF a PRO-PM, identify the specific PROM(s); and standard methods, modes, and languages of administration.
See attached data collection tool.

S.19. **Data Source or Collection Instrument** *(available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)*
Available in attached appendix at A.1

S.20. **Level of Analysis** *(Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)*
Facility, Integrated Delivery System

S.21. **Care Setting** *(Check ONLY the settings for which the measure is SPECIFIED AND TESTED)*
Ambulatory Surgery Center, Behavioral Health : Inpatient, Hospital, Hospital : Acute Care Facility, Hospital : Critical Care, Inpatient Rehabilitation Facility, Long Term Acute Care, Nursing Home / SNF
If other:

S.22. **COMPOSITE Performance Measure** - Additional Specifications *(Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)*
Not applicable. This measure is not a composite.

2. Validity – See attached Measure Testing Submission Form
0648_Timely_Transmission_of_Transition_Record-636159383871408000.doc

2.1 For maintenance of endorsement
Reliability testing: If testing of reliability of the measure score was not presented in prior submission(s), has reliability testing of the measure score been conducted? If yes, please provide results in the Testing attachment. (Do not remove prior testing information – include date of new information in red.)
Yes

2.2 For maintenance of endorsement
Has additional empirical validity testing of the measure score been conducted? If yes, please provide results in the Testing attachment. (Do not remove prior testing information – include date of new information in red.)
Yes

2.3 For maintenance of endorsement
Risk adjustment: For outcome, resource use, cost, and some process measures, risk-adjustment that includes SDS factors is no longer prohibited during the SDS Trial Period (2015-2016). Please update sections 1.8, 2a2, 2b2, 2b4, and 2b6 in the Testing attachment and S.14 and S.15 in the online submission form in accordance with the requirements for the SDS Trial Period. NOTE: These sections must be updated even if SDS factors are not included in the risk-adjustment strategy. If yes, and your testing attachment does not have the additional questions for the SDS Trial please add these questions to your testing attachment:

What were the patient-level sociodemographic (SDS) variables that were available and analyzed in the data or sample used? For example, patient-reported data (e.g., income, education, language), proxy variables when SDS data are not collected from each patient (e.g. census tract), or patient community characteristics (e.g. percent vacant housing, crime rate).

Describe the conceptual/clinical and statistical methods and criteria used to select patient factors (clinical factors or sociodemographic factors) used in the statistical risk model or for stratification by risk (e.g., potential factors identified in the literature and/or expert panel; regression analysis; statistical significance of p<0.10; correlation of x or higher; patient factors should be present at the start of care)

What were the statistical results of the analyses used to select risk factors?

Describe the analyses and interpretation resulting in the decision to select SDS factors (e.g. prevalence of the factor across measured entities, empirical association with the outcome, contribution of unique variation in the outcome, assessment of between-unit effects and within-unit effects)

No - This measure is not risk-adjusted

NATIONAL QUALITY FORUM

Measure missing data in MSF 6.5 from MSF 5.0

NQF #: 0648 NQF Project: Care Coordination Project

2. RELIABILITY & VALIDITY - SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)

Measure testing must demonstrate adequate reliability and validity in order to be recommended for endorsement. Testing may be conducted for data elements and/or the computed measure score. Testing information and results should be entered in the appropriate field. Supplemental materials may be referenced or attached in item 2.1. See guidance on measure testing.

2a2. Reliability Testing. (*Reliability testing was conducted with appropriate method, scope, and adequate demonstration of reliability.*)

2a2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

Refer to the validity section for a description of the data sample for our EHR testing project.

2a2.2 Analytic Method *(Describe method of reliability testing & rationale)*:

Refer to the validity section for a description of the analytic methods for our EHR testing project.

2a2.3 Testing Results *(Reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:

Refer to the validity section for the testing results for our EHR testing project.

2b. VALIDITY. Validity, Testing, including all Threats to Validity: H☐ M☐ L☐ I ☐

2b1.1 Describe how the measure specifications *(measure focus, target population, and exclusions)* are consistent with the evidence cited in

support of the measure focus (*criterion 1c)* and identify any differences from the evidence:

The evidence cited for this measure is directly related to timely transmission of transition records for all ages, during transitions of care from inpatient to

outpatient settings. There are no differences from the measure focus, target population, or exceptions.

2b2. Validity Testing. (*Validity testing was conducted with appropriate method, scope, and adequate demonstration of validity.)*

2b2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

EHR Measure Validity

AMA-PCPI Testing Project

o This project identified a sample of patients taken from one multi-specialty, medium-sized health practice in Southeast Texas.

o This health practice has been designated by the NCQA as a Tier III Medical Home, and has made it a priority to create coordinated transitions in care across the continuum of care.

o This proactive oversees approximately 7-8,000 hospital discharges per year.

o Measure implementation began in July of 2009.

o Manually abstracted sample included 100 patients from the inpatient setting.

Face Validity

The measures were pilot tested via focus group discussion and surveys in six Midwestern healthcare facilities between December 2009 and February 2010. Participants included front line caregivers as well as administrators and leadership. Approximately 65% of the 81 focus group participants also provided written surveys and feedback for analysis.

Face Validity Assessment

Face validity of the measure score as an indicator of quality was systematically assessed, by members of the PCPI Care Coordination Technical Expert Panel, which included 11 members. The list of expert panel members that participated in the assessment is as follows:

Samuel M. Bierner, MD (Co-Chair)

Mary L. Casper, MA, CCC-SLP

Scottie B. Day, BS, MD, FAAP

Michael J. Fischer, MD, MSPH

Selena L. Hariharan, MD, MHSA

Roger G. Kathol, MD

Marjorie L. King, MD, FACC

Ioannis Koutroulis, MD, PhD, MBA

Claranne P. Mathiesen, RN, MSN, CNN, SCRN

Paul E. Miller, MD

Connie White-Williams, PhD, RN, NE-BC, FAAN

2b2.2 Analytic Method *(Describe method of validity testing and rationale; if face validity, describe systematic assessment)*:

EHR Measure Validity

Data from a performance report for the measure automatically-generated from the EHR (designed to collect the necessary data elements to identify eligible cases and calculate the performance score) were compared to data elements found and scores calculated manually on visual inspection of the medical record by trained abstractors.

Data analysis included:

• Percent agreement at the denominator, numerator, (exception - for those measures with exception) and the measure overall.

• Kappa statistic to ensure that agreement rates are not a phenomenon of chance

Face Validity

The clarity and face validity of measures was assessed using numeric surveys and focused discussion.

The survey asked a panel consisting of 81 individuals including front line caregivers, administrators and leadership.

The aforementioned panel was asked to rate the following aspects of this measure:

Clarity of Numerator Statement

Clarity of Denominator Statement

Clarity of Denominator Exclusions

Overall Understanding of the Information in the Measure Specification Document

The rating scale ranged from 1-5, where 1=Very Poor; 3=Average; 5=Very Good

Face Validity Assessment

Face validity of the measure score as an indicator of quality was systematically assessed as follows.

After the measure was fully specified, the expert panel was asked to rate their agreement with the following statement:

The scores obtained from the measure as specified will provide an accurate reflection of quality and can be used to distinguish good and poor quality.

Scale 1-5, where 1= Strongly Disagree; 2= Disagree 3= Neither Agree nor Disagree; 4=Agree

5= Strongly Agree

2b2.3 Testing Results *(Statistical results, assessment of adequacy in the context of norms for the test conducted; if face validity, describe results of systematic assessment)*:

EHR Measure Validity

Overall Reliability*: N, % Agreement, Kappa (95% Confidence Interval)

100, 95.00%, 0.49 (0.05 - 0.93)

A kappa of 0.49 shows that the measure has a moderate level of agreement.

*Visual inspection of the medical record compared to the automatically generated report of the data elements.

Face Validity

For this measure, 97% of sites submitted a rating of 4 or 5 for the clarity of exceptions with a slightly lower percentage of respondents rating the clarity of denominator statements in the top 2 boxes (92%). 87% selected a 4 or 5 for the clarity of the numerator statement. Overall understanding of information in the measure specifications document received a score of 84% in the top 2 boxes.

Face Validity Assessment

The results of the expert panel rating of the validity statement were as follows: N = 11; Mean rating = 3.91 and 72.7% of respondents either agree or strongly agree that this measure can accurately distinguish good and poor quality.

Frequency Distribution of Ratings

1 – 1 response (Strongly Disagree)

2 – 0 responses

3 – 2 responses (Neither Agree nor Disagree)

4 – 4 responses

5 – 4 responses (Strongly Agree)

POTENTIAL THREATS TO VALIDITY. (*All potential threats to validity were appropriately tested with adequate results.*)

2b3. Measure Exclusions. (*Exclusions were supported by the clinical evidence in 1c or appropriately tested with results demonstrating the need to specify them.*)

2b3.1 Data/Sample for analysis of exclusions *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

AMA-PCPI Testing Project

- This project identified a sample of patients taken from a multi-specialty, medium-sized health practice in Southeast Texas.
- This health practice has been designated by the NCQA as a Tier III Medical Home, and has made it a priority to create coordinated transitions in care across the continuum of care.
- This practice oversees approximately 7-8,000 hospital discharges per year.
- Measure implementation began in July of 2009.
- Manually abstracted sample included 100 patients from the inpatient setting.

2b3.2 Analytic Method (*Describe type of analysis and rationale for examining exclusions, including exclusion related to patient preference)*:

Data from an automatically-generated report from the EHR was compared to manual abstraction from patient records to calculate parallel forms reliability for the measure.

Data analysis included:

- Percent agreement
- Kappa statistic to adjust for chance agreement

2b3.3 Results *(Provide statistical results for analysis of exclusions, e.g., frequency, variability, sensitivity analyses):*

Overall Reliability: N, % Agreement, Kappa (95% Confidence Interval)

100, 95.00%, 0.00 (0.00 - 0.85)*

* This is an example of a limitation of the Kappa statistic, despite the high agreement shown, the "kappa is significantly reduced if one classification category dominates" (http://www.ajronline.org/cgi/content/full/184/5/1391).

2b4. Risk Adjustment Strategy. (*For outcome measures, adjustment for differences in case mix (severity) across measured entities was appropriately tested with adequate results.*)

2b4.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

This measure is not risk adjusted.

2b4.2 Analytic Method (*Describe methods and rationale for development and testing of risk model or risk stratification including selection of factors/variables)*:

This measure is not risk adjusted.

2b4.3 Testing Results *(Statistical risk model: Provide quantitative assessment of relative contribution of model risk factors; risk model performance metrics including cross-validation discrimination and calibration statistics, calibration curve and risk decile plot, and assessment of adequacy in the context of norms for risk models. Risk stratification: Provide quantitative assessment of relationship of risk factors to the outcome and differences in outcomes among the strata)*:

This measure is not risk adjusted.

2b4.4 If outcome or resource use measure is not risk adjusted, provide rationale and analyses to justify lack of adjustment: As a process measure, no risk adjustment is necessary.

2b5. Identification of Meaningful Differences in Performance. (*The performance measure scores were appropriately analyzed and discriminated meaningful differences in quality.*)

2b5.1 Data/Sample *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

Highmark Quality Blue Hospital Pay-for-Performance Program

63 participating hospitals implemented Care Coordination measures as part of a “defect-free care transitions bundle”

2b5.2 Analytic Method *(Describe methods and rationale to identify statistically significant and practically/meaningfully differences in performance)*:

Highmark Quality Blue Hospital Pay-for-Performance Program

Participant performance was assessed quarterly over the course of Fiscal Year 2011

2b5.3 Results *(Provide measure performance results/scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:

Quality Blue Hospital Pay-for-Performance Program

Participant performance on this measure, by quarter is as follows:

FY 2011, Quarter 1: 30.00%

FY 2011, Quarter 2: 50.00%

FY 2011, Quarter 3: 80.00%

2b6. Comparability of Multiple Data Sources/Methods. (*If specified for more than one data source, the various approaches result in comparable scores.*)

2b6.1 Data/Sample *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

AMA-PCPI Testing Project

o This project identified a sample of patients taken from one multi-specialty, medium-sized health practice in Southeast Texas.

o This health practice has been designated by the NCQA as a Tier III Medical Home, and has made it a priority to create coordinated transitions in care across the continuum of care.

o This proactive oversees approximately 7-8,000 hospital discharges per year.

o Measure implementation began in July of 2009.

o Manually abstracted sample included 100 patients from the inpatient setting.

2b6.2 Analytic Method *(Describe methods and rationale for testing comparability of scores produced by the different data sources specified in the measure)*:

Data from a performance report for the measure automatically-generated from the EHR (designed to collect the necessary data elements to identify eligible cases and calculate the performance score) were compared to data elements found and scores calculated manually on visual inspection of the medical record by trained abstractors.

Data analysis included:

• Percent agreement at the denominator, numerator, (exception - for those measures with exception) and the measure overall.

• Kappa statistic to ensure that agreement rates are not a phenomenon of chance

Data analysis included:

- Percent agreement
- Kappa statistic to adjust for chance agreement

2b6.3 Testing Results *(Provide statistical results, e.g., correlation statistics, comparison of rankings; assessment of adequacy in the context of norms for the test conducted)*:

Overall Reliability*: N, % Agreement, Kappa (95% Confidence Interval)

100, 95.00%, 0.49 (0.05 - 0.93)

A kappa of 0.49 shows that the measure has a moderate level of agreement.

*Visual inspection of the medical record compared to the automatically generated report of the data elements.

2c. Disparities in Care: H☐ M☐ L☐ I ☐ NA☐ (*If applicable, the measure specifications allow identification of disparities.*)

2c.1 If measure is stratified for disparities, provide stratified results *(Scores by stratified categories/cohorts)*: We encourage the results of this measure to be stratified by race, ethnicity, gender, and primary language, and have included these variables as recommended data elements to be collected.

2c.2 If disparities have been reported/identified (e.g., in 1b), but measure is not specified to detect disparities, please explain:

The PCPI advocates that performance measure data should, where possible, be stratified by race, ethnicity, and primary language to assess disparities and initiate subsequent quality improvement activities addressing identified disparities, consistent with recent national efforts to standardize the collection of race and ethnicity data. A 2008 NQF report endorsed 45 practices including stratification by the aforementioned variables.(1) A 2009 IOM report "recommends collection of the existing Office of Management and Budget (OMB) race and Hispanic ethnicity categories as well as more fine-grained categories of ethnicity(referred to as granular ethnicity and based on one's ancestry) and language need (a rating of spoken English language proficiency of less than very well and one's preferred language for health-related encounters)."(2)

References:

(1)National Quality Forum Issue Brief (No.10). Closing the Disparities Gap in Healthcare Quality with Performance Measurement and Public Reporting. Washington, DC: NQF, August 2008.

(2)Race, Ethnicity, and Language Data: Standardization for Health Care Quality Improvement. March 2010. AHRQ Publication No. 10-0058-EF. Agency for Healthcare Research and Quality, Rockville, MD. Available at:

http://www.ahrq.gov/research/iomracereport. Accessed May 25, 2010.

2.1-2.3 Supplemental Testing Methodology Information:

Steering Committee: Overall, was the criterion, *Scientific Acceptability of Measure Properties*, met?

(*Reliability and Validity must be rated moderate or high*) Yes☐ No☐

Provide rationale based on specific subcriteria:

If the Committee votes No, STOP

3. FEASIBILITY

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

3a. Byproduct of Care Processes

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).

3a.1. **Data Elements Generated as Byproduct of Care Processes.**

Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims), Abstracted from a record by someone other than person obtaining original information (e.g., chart abstraction for quality measure or registry)

If other:

3b. Electronic Sources

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

3b.1. **To what extent are the specified data elements available electronically in defined fields** (*i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields*) Update this field for **maintenance of endorsement**.

No data elements are in defined fields in electronic sources

3b.2. **If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources.** For **maintenance of**

endorsement, if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).
This measure does not lend itself to a "traditional specification" for EHR reporting, where data elements, logic and clinical coding are identified to calculate the measure, due to the fact the fact that every facility may have a different template for a transition record and the information required for this measure is based on individualized patient information unique to one episode of care (i.e., inpatient stay). However, we have provided guidance on how a facility should query the electronic health record for the information required for this measure, within the numerator details.

3b.3. **If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL. Please also complete and attach the NQF Feasibility Score Card.**
Attachment:

3c. Data Collection Strategy

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

3c.1. **Required for maintenance of endorsement. Describe difficulties (as a result of testing and/or operational use of the measure) regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.**
IF a PRO-PM, consider implications for both individuals providing PRO data (patients, service recipients, respondents) and those whose performance is being measured.
The unit of measurement was changed from patients to discharges to clarify that the intent of this measure is to assess each individual discharge as a patient may have more than one discharge within a measurement period. This measure was found to be reliable and feasible for implementation.

3c.2. **Describe any fees, licensing, or other requirements to use any aspect of the measure as specified** *(e.g., value/code set, risk model, programming code, algorithm)*.
The Measures, while copyrighted, can be reproduced and distributed, without modification, for noncommercial purposes, e.g., use by health care providers in connection with their practices. Commercial use is defined as the sale, license, or distribution of the Measures for commercial gain, or incorporation of the Measures into a product or service that is sold, licensed or distributed for commercial gain.

Commercial uses of the Measures require a license agreement between the user and the PCPI® Foundation (PCPI®) or the American Medical Association (AMA). Neither the American Medical Association (AMA), nor the AMA-convened Physician Consortium for Performance Improvement® (AMA-PCPI), now known as the PCPI, nor their members shall be responsible for any use of the Measures.

4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

4.1. Current and Planned Use

NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.

Specific Plan for Use	Current Use (for current use provide URL)
Public Reporting	Payment Program CMS Inpatient Psychiatric Facility Quality Reporting Program http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier1&cid=1228772862944 Public Hospital Redesign and Incentives in Medi-Cal (PRIME) program http://www.dhcs.ca.gov/provgovpart/Pages/PRIME.aspx

4a.1. For each CURRENT use, checked above (update for maintenance of endorsement), provide:

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included
- Level of measurement and setting

IPFQR program:

This measure is in use in the CMS Inpatient Psychiatric Facility Quality Reporting Program (IPFQR). The IPFQR is a pay-for-reporting program and this measure was added in 2016. The reporting period for FY 2018 Payment Determination is between July 1–December 31, 2016 and the data submission period will be July 1–August 15, 2017.

The IPFQR program was developed as mandated by section 1886(s)(4) of the Social Security Act, as added and amended by Sections 3401(f) and 10322(a) of the Affordable Care Act (Pub.L. 111-148).

To meet the IPFQR program requirement, Inpatient Psychiatric Facilities (IPFs) are required to submit all quality measures to the Centers for Medicare & Medicaid Services (CMS). Because this is a pay-for-reporting program, eligible facilities will be subject to payment reduction for non-participation. Eligible IPFs that do not participate in the IPFQR program in a fiscal year or do not meet all of the reporting requirements will receive a 2.0 percentage point reduction of their annual update to their standard federal rate for that year.

CMS plans to include this facility-level measure within the Hospital Compare public reporting program sometime after the first submission period.

PRIME program

The Public Hospital Redesign and Incentives in Medi-Cal (PRIME) Medicaid waiver program is sponsored by CMS and administered by the California Department of Health Care Services (DHCS).

On December 30, 2015, CMS approved Medi-Cal 2020 – a five year renewal of California's Section 1115 Medicaid Waiver, which could provide California with new federal funding through programs that will shift the focus away from hospital-based and inpatient care, towards outpatient, primary and preventative care.

California's 17 designated public hospitals and health systems and some of its 38 district hospitals are in the process of implementing and reporting this measure to DHCS. The PRIME measures are pay for reporting (P4R) the first year (2015-2016) and pay-for-performance (P4P) the following four years. Reporting and performance data are not yet available for this facility-level measure.

4a.2. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons? (*e.g., Do policies or actions of the developer/steward or accountable entities restrict*

access to performance results or impede implementation?)

4a.3. **If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement.** (*Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.*)

Improvement

Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4b. **Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (trends in performance results, number and percentage of people receiving high-quality healthcare; Geographic area and number and percentage of accountable entities and patients included.)**
If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

Performance data are not yet available for this measure as it is in the initial year of use within the IPFQR and PRIME programs.

4c. Unintended Consequences

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

4c.1. **Please explain any unexpected findings (positive or negative) during implementation of this measure including unintended impacts on patients.**

We are not aware of any unintended consequences related to this measurement.

4c.2. **Please explain any unexpected benefits from implementation of this measure.**

We are not yet aware of any unexpected benefits related to this measurement.

4d1.1. **Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.**
How many and which types of measured entities and/or others were included? If only a sample of measured entities were included, describe the full population and how the sample was selected.

Currently, assistance has been provided with the implementation of the measure as it is in the initial year of use within the IPFQR and PRIME programs.

4d1.2. **Describe the process(es) involved, including when/how often results were provided, what data were provided, what educational/explanatory efforts were made, etc.**

Not applicable

4d2.1. **Summarize the feedback on measure performance and implementation from the measured entities and others described in 4d.1.**
Describe how feedback was obtained.

Not applicable

4d2.2. **Summarize the feedback obtained from those being measured.**
Not applicable

4d2.3. **Summarize the feedback obtained from other users**
CMS has sought feedback and clarification of the measure intent. Additionally, as part of the implementation of the measure, the CMS contractor recommended a change in the unit of measurement from patients to discharges. The change has been incorporated and the measure language updated as reflected in this submission form.

4d.3. **Describe how the feedback described in 4d.2 has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.**
Based on user feedback to change the unite of measurement, the measure language was updated as reflected in this submission form.

5. Comparison to Related or Competing Measures

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

5. Relation to Other NQF-endorsed Measures
Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.
Yes

5.1a. **List of related or competing measures (selected from NQF-endorsed measures)**
0291 : EMERGENCY TRANSFER COMMUNICATION MEASURE
0293 : Medication Information
0297 : Procedures and Tests

5.1b. **If related or competing measures are not NQF endorsed please indicate measure title and steward.**

5a. Harmonization of Related Measures

The measure specifications are harmonized with related measures;

OR

The differences in specifications are justified

5a.1. **If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):**
Are the measure specifications harmonized to the extent possible?
No

5a.2. **If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.**
While all three measures focus on the timely communication of key transition information, our measure focuses on patients who are discharged from an inpatient facility while 0291and 0293 focus on patients who are transferred from the ED to another facility. In addition, 0293 focuses specifically on the communication of medication information and 0297 focuses specifically on the communication of procedure and test information. We feel they are complementary in addressing the quality of care transitions.

5b. Competing Measures

The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);

OR

Multiple measures are justified.

5b.1. **If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):**

Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)

Not applicable. There are no existing NQF-endorsed measures that address both the same target population and measure focus.

APPENDIX

A.1 Supplemental materials may be provided in an appendix. All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.

ATTACHMENT ATTACHMENT: **NQF0648_TIMELYTRANSMISSION_DATACOLLECTIONFLOWSHEET.PDF**

CONTACT INFORMATION

Co.1 **Measure Steward (Intellectual Property Owner):** PCPI

Co.2 **Point of Contact:** PCPI, Measures, pcpimeasures@ama-assn.org, 312-464-5709-

Co.3 **Measure Developer if different from Measure Steward:** PCPI

Co.4 **Point of Contact:** PCPI, Chavarria, elvia.chavarria@ama-assn.org, 312-464-5709-

ADDITIONAL INFORMATION

Ad.1 **Workgroup/Expert Panel involved in measure development**

Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.

PCPI measures are developed through cross-specialty, multi-disciplinary work groups. All medical specialties and other health care professional disciplines participating in patient care for the clinical condition or topic under study must be equal contributors to the measure development process. In addition, the PCPI strives to include on its work groups individuals representing the perspectives of patients, consumers, private health plans, and employers. This broad-based approach to measure development ensures buy-in on the measures from all stakeholders and minimizes bias toward any individual specialty or stakeholder group. All work groups have at least two co-chairs who have relevant clinical and/or measure development expertise and who are responsible for ensuring that consensus is achieved and that all perspectives are voiced.

Co-chairs:
Robert M. Palmer, MD, MPH (Co-Chair) (Geriatrics/Gerontology)
Mark V. Williams, MD, FACP (Co-Chair) (Hospital medicine)

Work Group members:
Dennis M. Beck, MD, FACEP (Emergency medicine)
Judith S. Black, MD, MHA (Blue Cross and Blue Shield Association)
Caroline Blaum, MD (Geriatrics)
Clair M. Callan, MD, MBA, CPE (American College of Physician Executives)
Jayne Hart Chambers, MBA (Federation of American Hospitals)
Steven Chen, MD, MBA (Surgical oncology)

Kenneth D. Coburn, MD, MPH (Health Quality Partners)
Mirean Fisher Coleman, MSW, LICSW, CT (National Association of Social Workers)
Sydney Dy, MD, MSc (Hospice and palliative medicine)
Scott Endsley, MD, MSc (Health Services Advisory Group)
David A. Etzioni, MD, MSHS (Colon and rectal surgery)
Beth Feldpush, MPH (American Hospital Association)
Rita Munley Gallagher, PhD, RN (American Nurses Association)
G. Scott Gazelle, MD, MPH, PhD (Radiology)
Robert W. Gilmore, MD (Clinical surgery)
Eric S. Holmboe, MD, FACP (Internal medicine)
Mary Ann Kliethermes, B.S., Pharm.D. (American Society of Health System Pharmacists)
James E. Lett, II, MD (American Medical Directors Association)
Janet R. Maurer, MD, MBA, FCCP (Pulmonology)
Andie Melendez, RN, MSN, HTPC (Academy of Medical-Surgical Nurses)
Donise Mosebach, RN, MS, CEN (The Joint Commission)
Michael O´Dell, MD, MSHA, FAAFP (Family medicine)
Eric D. Peterson, MD, MPH, FAHA, FACC (American Heart Association/Cardiology)
Mark Redding MD. FAAP (Pediatrics)
Michael Ries, MD, MBA, FCCM (Critical care medicine)
Hilary C. Siebens, MD (Physical medicine and rehabilitation)
Janet (Jesse) Sullivan, MD (National Transitions of Care Coalition)
Randal J. Thomas, MD, MS, FACC, FAHA, FACP, FAACVPR (Cardiology)
Christopher Tompkins, PhD (Brandeis University)
Robert Wears, MD, FACEP (Emergency medicine)

ABIM Foundation
Daniel B. Wolfson, MHSA

American College of Physicians
Vincenza Snow, MD, FACP

Society of Hospital Medicine
Jill Epstein, MA

PCPI Consultants
Rebecca Kresowik
Timothy Kresowik, MD

National Committee for Quality Assurance Liaison
Aisha Tenea´ Pittman, MPH

American Medical Association
Mark Antman, DDS, MBA
Heidi Bossley, MSN, MBA
Kerri Fei, MSN, RN
JoeAnn Jackson, MJ
Kendra Hanley, MS
Karen Kmetik, PhD
Joanne G. Schwartzberg, MD

Patricia Sokol, RN, JD
Chyna Wilcoxson

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 **Year the measure was first released:** 2009

Ad.3 **Month and Year of most recent revision:** 04, 2016

Ad.4 **What is your frequency for review/update of this measure?** Supporting guidelines, specifications and coding for this measure are reviewed annually

Ad.5 **When is the next scheduled review/update for this measure?** 12, 2017

Ad.6 **Copyright statement:**

Ad.7 **Disclaimers:** The Measures are not clinical guidelines, do not establish a standard of medical care, and have not been tested for all potential applications. The

Measures, while copyrighted, can be reproduced and distributed, without modification, for noncommercial purposes, e.g., use by health care providers in connection with their practices. Commercial use is defined as the sale, license, or distribution of the Measures for commercial gain, or incorporation of the Measures into a product or service that is sold, licensed or distributed for commercial gain.

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Ad.8 **Additional Information/Comments:**

MEASURE WORKSHEET

This document summarizes the evaluation of the measure as it progresses through NQF's Consensus Development Process (CDP). The information submitted by measure developers/stewards is included after the Brief Measure Information, Preliminary Analysis, and Pre-meeting Public and Member Comments sections.

To navigate the links in the worksheet: Ctrl + click link to go to the link; ALT + LEFT ARROW to return

Brief Measure Information

NQF #: 0649

Measure Title: Transition Record with Specified Elements Received by Discharged Patients (Emergency Department Discharges to Ambulatory Care [Home/Self Care] or Home Health Care)

Measure Steward: PCPI

Brief Description of Measure: Percentage of discharges from an emergency department (ED) to ambulatory care or home health care, in which the patient, regardless of age, or their caregiver(s), received a transition record at the time of ED discharge including, at a minimum, all of the specified elements

Developer Rationale: Providing detailed discharge information enhances patients' preparation to self-manage post-discharge care and comply with treatment plans. Additionally, studies have shown that many hospital readmissions can be prevented by patient education, predischarge assessment, and domiciliary aftercare (1). One study found that patients participating in a hospital program providing detailed, personalized instructions at discharge, including a review of medication routines and assistance with arranging follow-up appointments, had 30% fewer subsequent emergency visits and hospital readmissions than patients who received usual care at discharge (2).

By requiring the completion and prompt transmission of a detailed "transition record" for discharged patients, this measure is promoting a significant enhancement to the customary use of the discharge summary. Numerous studies have documented the prevalence of communication gaps and discontinuities in care for patients after discharge, and the significant effect of these lapses on hospital readmissions and other indicators of the quality of transitional care (3-5). Current information and communication technology can facilitate the routine completion and transmission of a transition record within 24 hours of discharge, which could greatly reduce communication gaps and help improve patient outcomes.

1. Benbassat J, Taragin M. Hospital readmissions as a measure of quality of healthcare. Archives Internal Medicine. 2000;160:1074-81.
2. Jack BW, Chetty VK, Anthony D, et al. A reengineered hospital discharge program to decrease rehospitalization. Ann Intern Med 2009; 150:178-187.
3. Sabogal F, Coots-Miyazaki M, Lett JE. Effective care transitions interventions: Improving patient safety and healthcare quality. CAHQ Journal 2007 (Quarter 2).
4. Moore C, Wisnevesky J, Williams S, McGinn T. 2003. Medical errors related to discontinuity of care from an inpatient to an outpatient setting. Journal of General Internal Medicine 18:646–651.
5. Roy CL, Poon EG, Karson AS, et al. Patient safety concerns arising from test results that return after hospital discharge. Ann Intern Med 2005;143(2):121-128.

Numerator Statement: Discharges in which the patient or their caregiver(s) received a transition record at the time of emergency department (ED) discharge including, at a minimum, all of the following elements:
- Summary of major procedures and tests performed during ED visit, AND
- Principal clinical diagnosis at discharge which may include the presenting chief complaint, AND
- Patient instructions, AND
- Plan for follow-up care (OR statement that none required), including primary physician, other health care professional, or site designated for follow-up care, AND
- List of new medications and changes to continued medications that patient should take after ED discharge, with quantity prescribed and/or dispensed (OR intended duration) and instructions for each

Denominator Statement: All discharges for patients, regardless of age, from an emergency department (ED) to ambulatory care (home/self care) or home health care

Denominator Exclusions: Exclusions:
Patients who died
Patients who left against medical advice (AMA) or discontinued care

Exceptions:
Patients who declined receipt of transition record
Patients for whom providing the information contained in the transition record would be prohibited by state or federal law

Measure Type: Process
Data Source: EHRs Hybrid, Paper Records
Level of Analysis: Facility, Integrated Delivery System

IF Endorsement Maintenance – Original Endorsement Date: May 05, 2010 **Most Recent Endorsement Date:** Aug 10, 2012

Maintenance of Endorsement -- Preliminary Analysis

To maintain NQF endorsement endorsed measures are evaluated periodically to ensure that the measures still meets the NQF endorsement criteria ("maintenance"). The emphasis for maintaining endorsement is focused on how effective the measure is for promoting improvements in quality. Endorsed measures should have some experience from the field to inform the evaluation. The emphasis for maintaining endorsement is noted for each criterion.

Criteria 1: Importance to Measure and Report

1a. Evidence
Maintenance measures – less emphasis on evidence unless there is new information or change in evidence since the prior evaluation.

1a. Evidence. The evidence requirements for a *process or intermediate outcome* measure is that it is based on a systematic review (SR) and grading of the body of empirical evidence where the specific focus of the evidence matches what is being measured.

The developer provides the following evidence for this measure:

- **Systematic Review of the evidence specific to this measure?** ☒ **Yes** ☐ **No**
- **Quality, Quantity and Consistency of evidence provided?** ☐ **Yes** ☒ **No**
- **Evidence graded?** ☐ **Yes** ☒ **No**

Summary of prior review in 2012

- In the prior review, the evidence provided by the developer included the 2009 Transitions of Care Consensus Conference (TOCCC) development of standards. The standards were a result of a consensus conference convened in 2006 by the American College of Physicians (ACP), the Society of General Internal Medicine (SGIM), and the Society of Hospital Medicine (SHM), with representation from the Emergency Medicine community.
- The standards were developed by a group consensus process and were based on a systematic review of the evidence and evidence related to transitions of care between the inpatient and outpatient settings. The standards were developed by a group consensus process and were based on a systematic review of the evidence and evidence related to transitions of care between the inpatient and outpatient settings. The TOCCC document referenced "Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies", developed by Agency for Healthcare Research and Quality. The evidence in the "Closing the Quality Gap" document appeared to focus more on multidisciplinary teams and was not as specific to transition records.
- Committee members expressed some concern that the evidence presented pertained to transfer of information after an inpatient stay rather than transfer of information after an emergency department visit. Developers responded by noting that there is very little evidence that specifically addresses transfer of information from the ER; this this was confirmed by a Committee member.
- In addition, the developers cited references linking provision of discharge information/patient education to improved patient self-management /compliance and reduced hospital readmissions.

Changes to evidence from last review

☒ **The developer attests that there have been no changes in the evidence since the measure was last evaluated.**
☐ **The developer provided updated evidence for this measure:**

Questions for the Committee:

- *The developer attests the underlying evidence for the measure has not changed since the last NQF endorsement review. Does the Committee agree the evidence basis for the measure has not changed and there is no need for repeat discussion and vote on Evidence?*

Preliminary rating for evidence: ☒ **Pass** ☐ **No Pass**

▪

1b. Gap in Care/Opportunity for Improvement and 1b. Disparities
Maintenance measures – increased emphasis on gap and variation

1b. Performance Gap. The performance gap requirements include demonstrating quality problems and opportunity for improvement.

- No data on current performance were provided.
- A summary of data from the literature showing that delayed or insufficient transfer of discharge information between hospital-based providers and primary care physicians remains common was provided to demonstrate there is opportunity for improvement.

Disparities

- Information on disparities of care was not provided. NQF encourages disparities data from the measure as specified.

Questions for the Committee:

- *Is there a gap in care that warrants a national performance measure?*
- *If no disparities information is provided, are you aware of evidence that disparities exist in this area of healthcare?*

Preliminary rating for opportunity for improvement: ☐ **High** ☐ **Moderate** ☐ **Low** ☒ **Insufficient**
RATIONALE: Performance scores on the measure as specified (current and over time) at the specified level of analysis are required for maintenance of endorsement.

Committee pre-evaluation comments

Criteria 1: Importance to Measure and Report (including 1a, 1b, 1c)

1a. Evidence to Support Measure Focus

Comments: **Insufficient

same comment as previous

**Agree with "insufficient" with exception. Each element contains useful information for the patient at discharge from the ED. The value of similar information in other transitions supports this claim.

**Evidence supporting the measure does not directly evaluate the measure. It does support that the process indicated by the measure (providing discharge summary to the patient/caregiver at the time of emergency department discharge) is one component of programs that are successful in reducing negative post-discharge events.

**No outcome measured.

No new evidence presented as compared with prior assessment.

Evidence is rated as insufficient, using the algorithm.

The initial data presented includes 100 patients from a single medium-sized multi specialty practice. No ED discharges were included in the initial coghort. It is unclear whether results would be similar in an ED population.

**Same comments as 647 & 648.

1b. Performance Gap

Comments: **Insufficient

same

**Agree that there was no data provided on performance for this transition. Not clear that incomplete discharge summaries necessarily equate to incomplete ED visit summaries. However, it is likely that such gaps exist given that they exist in every other transition.
**Performance data on the measure is not yet available. Literature supports the need for a timely and complete discharge summary.
**No new performance data presented.

Criteria 2: Scientific Acceptability of Measure Properties

2a. Reliability

2a1. Reliability Specifications
Maintenance measures – no change in emphasis – specifications should be evaluated the same as with new measures

2a1. Specifications requires the measure, as specified, to produce consistent (reliable) and credible (valid) results about the quality of care when implemented.
Data source(s): Electronic clinical data, Paper Records
Specifications:

- The level of analysis is the facility and is specified for use in emergency department settings. A higher score indicates better quality.
- The unit of measurement was changed from patients to discharges to clarify that the intent of this measure is to assess each individual discharge as a patient may have more than one discharge within a measurement period.
- The numerator for this measure includes discharges in which the patient or their caregiver(s) received a transition record at the time of emergency department (ED) discharge including, at a minimum, all of the following elements:
    - Summary of major procedures and tests performed during ED visit, AND
    - Principal clinical diagnosis at discharge which may include the presenting chief complaint, AND
    - Patient instructions, AND
    - Plan for follow-up care (OR statement that none required), including primary physician, other health care professional, or site designated for follow-up care, AND
    - List of new medications and changes to continued medications that patient should take after ED discharge, with quantity prescribed and/or dispensed (OR intended duration) and instructions for each
- The denominator includes All discharges for patients, regardless of age, from an emergency department (ED) to ambulatory care (home/self care) or home health care
- Exclusions include:
    - Patients who died
    - Patients who left against medical advice (AMA) or discontinued care
- Exceptions include:
    - Patients who declined receipt of transition record
    - Patients for whom providing the information contained in the transition record would be prohibited by state or federal law
- A sample data collection is provided to identify discharges through medical record abstraction. Guidance is also provided on how a facility should query the electronic health records for the information required for this measure.
- This measure is not risk-adjusted.

Questions for the Committee:

- *Specific questions on the specifications, codes, definitions, etc.*
- *Are all the data elements clearly defined? Are all appropriate codes included?*
- *Is the logic or calculation algorithm clear?*
- *Is it likely this measure can be consistently implemented?*

2a2. Reliability Testing Testing attachment
Maintenance measures – less emphasis if no new testing data provided

2a2. Reliability testing demonstrates if the measure data elements are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period and/or that the measure score is precise enough to distinguish differences in performance across providers.

For maintenance measures, summarize the reliability testing from the prior review:

- In the prior review, the developers tested data element validity for 100 patients by comparing data from a report automatically generated from an EHR to a visual inspection of the full EHR.
- Some Committee members were concerned that this measure was tested using the same inpatient sample as used in measures 0647 and 0648, and were unsure if the testing results would be similar for ED. Committee members also noted that it may be difficult to define an "emergency department"; however, developers clarified that urgent care and observational care is not included in this measure.

SUMMARY OF TESTING

Reliability testing level ☐ **Measure score** ☒ **Data element** ☐ **Both**

Reliability testing performed with the data source and level of analysis indicated for this measure ☒ **Yes** ☐ **No**

Method(s) of reliability testing

- Data from an automatically-generated report from the EHR was compared to manual abstraction from patient records to calculate reliability for the measure.

Results of reliability testing

- The developer provided testing statistics (82% agreement, kappa=.62).
- The kappa value represents the proportion of agreement between two raters/abstractors that is not explained by chance alone. A value of 1.0 reflects perfect agreement; a value of 0 reflects agreement that is no better than what would be expected by chance alone. A kappa of 1.0 means that the raters agreed 100% of the time over and above what would be expected by chance alone.
- NQF guidance indicates that data element testing should be conducted for all critical data elements, although at minimum, results about the numerator, denominator, and exclusions should be provided. Only a single kappa value was reported – this is insufficient.

Questions for the Committee:

- *Is the test sample adequate to generalize for widespread implementation?*
- *Do the results demonstrate sufficient reliability so that differences in performance can be identified?*

Guidance from the Reliability Algorithm Precise specifications (Box 1) → Empirical reliability testing with measure as specified (Box 2) → Empirical validity testing of patient-level data conducted (Box 3) → **Validity** testing conducted with patient-level data elements (Box 10) → Statistical results for all critical data elements not provided separately (Box 11) → Insufficient

Preliminary rating for reliability: ☐ **High** ☐ **Moderate** ☐ **Low** ☒ **Insufficient**

RATIONALE: All critical data elements must be assessed separately (minimum numerator, denominator, exclusions).

2b. Validity
Maintenance measures – less emphasis if no new testing data provided

2b1. Validity: Specifications

2b1. Validity Specifications. This section should determine if the measure specifications are consistent with the evidence.

Specifications consistent with evidence in 1a. ☐ **Yes** ☒ **Somewhat** ☐ **No**

Question for the Committee:

- *Are the specifications consistent with the evidence?*

2b2. Validity testing

2b2. Validity Testing should demonstrate the measure data elements are correct and/or the measure score correctly reflects the quality of care provided, adequately identifying differences in quality.

For maintenance measures, summarize the validity testing from the prior review:

- In the previous review, the developers tested data element validity for 100 patients by comparing data from a report automatically generated from an EHR to a visual inspection of the full EHR. The sample was taken from one multi-specialty, medium-sized health practice. The developers also provided results of a systematic assessment of face validity.

Previous data element validity testing results:

	N	% Agreement	Kappa (95% CI)
Overall	38	81.58%	0.62 (0.37 to 0.88)

Describe any updates to validity testing:

- Updated face validity testing results were included.

SUMMARY OF TESTING

Validity testing level ☐ **Measure score** ☐ **Data element testing against a gold standard** ☒ **Both**

Method of validity testing of the measure score:

☒ **Face validity**

☐ **Empirical validity testing of the measure score**

Updated validity testing method:

Face validity of the measure score was systematically assessed by 11 members of an expert panel who were asked to rate their agreement with the following statement:

The scores obtained from the measure as specified will provide an accurate reflection of quality and can be used to distinguish good and poor quality.

Scale 1-5, where 1= Strongly Disagree; 2= Disagree 3= Neither Agree nor Disagree; 4=Agree
5= Strongly Agree

Note: Face validity of the measure score as a quality indicator may be adequate if accomplished through a systematic and transparent process, by identified experts, and explicitly addresses whether performance scores resulting from the measure as specified can be used to distinguish good from poor quality.

Updated validity testing results:

The results of the expert panel rating of the validity statement were as follows: N = 11; Mean rating = 4.0 and 81.8% of respondents either agree or strongly agree that this measure can accurately distinguish good and poor quality.

Frequency Distribution of Ratings
1 – 1 response (Strongly Disagree)
2 – 0 responses
3 – 2 responses (Neither Agree nor Disagree)
4 – 5 responses
5 – 3 responses (Strongly Agree)

Questions for the Committee:

- *Is the test sample adequate to generalize for widespread implementation?*

- *Do the results demonstrate sufficient validity so that conclusions about quality can be made?*
- *Do you agree that the score from this measure as specified is an indicator of quality?*

2b3-2b7. Threats to Validity

2b3. Exclusions:

- Exclusions include:
  - Patients who died
  - Patients who left against medical advice (AMA) or discontinued care
- Exceptions include:
  - Patients who declined receipt of transition record
  - Patients for whom providing the information contained in the transition record would be prohibited by state or federal law

The developer did not provide a statistical analysis demonstrating that exclusions are needed to prevent unfair distortion of performance results.

Questions for the Committee:

- *Are the exclusions consistent with the evidence?*
- *Are any patients or patient groups inappropriately excluded from the measure?*
- *Are the exclusions/exceptions of sufficient frequency and variation across providers to be needed (and outweigh the data collection burden)?*

2b4. Risk adjustment: **Risk-adjustment method** ☒ **None** ☐ **Statistical model** ☐ **Stratification**

This measure is not risk adjusted.

2b5. Meaningful difference *(can statistically significant and clinically/practically meaningful differences in performance measure scores can be identified)*:
The developer did not provide any data on meaningful differences about quality from the measure

Question for the Committee:
Does this measure identify meaningful differences about quality?

2b6. Comparability of data sources/methods:

N/A

2b7. Missing Data

No information on missing data was presented.

Guidance from the Validity Algorithm

Specifications somewhat consistent with evidence (Box 1) >Somewhat assessed potential threats to validity (Box 2) > face validity and empirical testing (NOTE: all critical data elements were not assessed separately) (Box 3) **>**face validity assessed (Box 5) > Moderate, assuming potential threats to validity are not a problem or are adequately addressed.

The highest possible rating is Moderate.

Preliminary rating for validity: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

Committee pre-evaluation comments

Criteria 2: Scientific Acceptability of Measure Properties (including all 2a, 2b, and 2d)

2a1. & 2b1. Specifications

Comments: **face validity
?low
**There is no data presented that states this is the consensus opinion of a large group of ED users. Missing from the specifications is information that patients do value such as: tests pending at discharge, how to get the results, who will be responsible for contacting the patient about the results, what to do if there is a specific change in condition.

**Specifications are consistent with the evidence. There is a body of evidence supporting inclusion of all of the identified elements of the discharge summary.
**Measure has face validity but lacks evidence.

2a2. Reliability Testing
Comments: **Insufficient
see previous comments
**No. Needs more testing to demonstrate that there is little inter rater reliability for each element. This requires tighter specifications for each element.
**Original kappa value was 0.62 indicating moderate concordance. Testing was not performed on each element.
**Testing was conducted in a single system with 100 inpatients. This is not likely to reflect performance in ED setting. Evidence is insufficient.

2b2. Validity Testing
Comments: **Face validity
data element and score level
question - as written - not clear indicator of quality
**No. We know the performance scores increased from Q1,2 to Q3 in their reported data but we don't know what that means in terms of outcomes or quality. We want to believe that those improvements occur but there is no evidence.
**Face validity results had 81.8% (N=11) agreement that the measure can distinguish good and poor quality.
**Face validity testing:
3/11 experts surveyed did not agree or strongly agree that this measure could distinguish good from poor quality. In the absence of empirical data, face validity among experts surveyed should probably be closer to 100% (not the 72% it is here).

2b3. Exclusions Analysis
2b4. Risk Adjustment/Stratification for Outcome or Resource Use Measures
2b5. Identification of Statistically Significant & Meaningful Differences In Performance
2b6. Comparability of Performance Scores When More Than One Set of Specifications
2b7. Missing Data Analysis and Minimizing Bias
Comments: **insufficient
**Exclusions are reasonable because they remove populations for whom improved communication is not possible. The connection between improved performance and improved quality has not been demonstrated, however, as a "first step" measure this is important. The question is whether there is more harm than good which would result from waiting to implement a more perfect measure. I think there is more harm in waiting than in implementing an imperfect measure.
**The exclusion criteria - as amended (patients who died and patients who left against medical advice) are appropriate exclusions and do not pose a threat to validity
**Exclusions/exceptions appear adequate, though direct data are lacking.

Criterion 3. Feasibility
Maintenance measures – no change in emphasis – implementation issues may be more prominent

3. Feasibility is the extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

- This measure is coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims), Abstracted from a record by someone other than person obtaining original information (e.g., chart abstraction for quality measure or registry).
- The developer notes: *"This measure does not lend itself to a "traditional specification" for EHR reporting, where data elements, logic and clinical coding are identified to calculate the measure, due to the fact the fact that every facility may have a different template for a transition record and the information required for this measure is based on individualized patient information unique to one episode of care (i.e., inpatient stay). However, we have provided guidance on how a facility should query the electronic health record for the information required for this measure, within the numerator details."*
- In the prior review, there was some discussion among the members about the appropriateness of having fewer standard data elements in this measure compared to what was required for measure 0647; however, the general consensus was that the specified elements are obtainable, achievable, and transmissible in an ED setting. Also, as with measures 0647 and 0648, Committee members felt that deriving this measure via chart abstraction

would be time consuming and expensive.

Questions for the Committee:

- *Are the required data elements routinely generated and used during care delivery?*
- *Are the required data elements available in electronic form, e.g., EHR or other electronic sources?*
- *Is the data collection strategy ready to be put into operational use?*

Preliminary rating for feasibility: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

Committee pre-evaluation comments

Criteria 3: Feasibility

3a. Byproduct of Care Processes
3b. Electronic Sources
3c. Data Collection Strategy
Comments: **low-mod
see previous comments
must mention - less information is collected during a ER encounter
Hand-off to PCP important but not always possible
**Feasible and possible to generate from templates within the EHR.
**Data elements are routinely generated during care delivery, however the lack of standardization of these elements in both the production/labeling of discharge summary content areas and capture in an electronic medical record (EMR) create challenges for data collection.
**"Procedures" as described in this measure are often not easily captured in electronic workflows, even when there is clear documentation of the procedure in the EHR. Meeting this measure could add to burden of EHR documentation (work and rework) without added benefit to patients.

Criterion 4: Usability and Use
Maintenance measures – increased emphasis – much greater focus on measure use and usefulness, including both impact /improvement and unintended consequences

4. Usability and Use evaluate the extent to which audiences (e.g., consumers, purchasers, providers, policymakers) use or could use performance results for both accountability and performance improvement activities.

Current uses of the measure N/A
Publicly reported? ☐ **Yes** ☒ **No**

Current use in an accountability program? ☐ **Yes** ☒ **No** ☐ **UNCLEAR**
OR
Planned use in an accountability program? ☐ **Yes** ☒ **No**

The developer states, **"***The PCPI has shared the measure with CMS and other potential implementers to gauge interest in its use within public reporting and accountability programs."*

Accountability program details N/A

Improvement results Improvement results were not provided.

Unexpected findings (positive or negative) during implementation None identified.

Potential harms None identified.

Vetting of the measure None reported.

Feedback:

The family of measures for Dual Eligible Beneficiaries is a group of the best available measures to address the unique needs of the dual eligible beneficiary population. This measure is included in the family of measures.

***Questions for the Committee**:*

- o *How can the performance results be used to further the goal of high-quality, efficient healthcare?*
- o *Do the benefits of the measure outweigh any potential unintended consequences?*
- o *How has the measure been vetted in real-world settings by those being measure or others?*

Preliminary rating for usability and use: ☐ **High** ☐ **Moderate** ☒ **Low** ☐ **Insufficient**

RATIONALE: NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement. Improvement results were not provided.

Committee pre-evaluation comments

Criteria 4: Usability and Use

4a. Accountability and Transparency

4b. Improvement

4c. Unintended Consequences

Comments: **LOW as written

**Public reporting. There are no down side risks. As the developers stated, the only risk comes from the failure to provide this information.

**The measure is not included in any publically reported data sets or planned reporting requirements

**No usability or performance data to review.

This measure presumes that that ED discharge data are similar to the data presented from inpatient discharges. Unfortuately, the processes are different enough in many places that this may not be a valid assumption.

Criterion 5: Related and Competing Measures

- 0291 : Emergency Transfer Communication Measure
- 0293 : Medication Information
- 0297 : Procedures and Tests
- 0648 : Timely Transmission of Transition Record with Specified Elements Received by Discharged Patients (Discharges from an Inpatient Facility to Home/Self Care or Any Other Site of Care)
- 0647 : Transition Record with Specified Elements Received by Discharged Patients (Discharges from an Inpatient Facility to Home/Self Care or Any Other Site of Care)

Harmonization

In the prior review, because measures #0647, #0648, and #0649 are competing measures, the Committee was first asked to vote on whether there is a justifiable reason for a different transition record for inpatient facilities (#0647) and EDs (#0649). Committee members who voted in favor of needing two separate measures cited the differences between ED visits and inpatient stays, the infeasibility of collecting some of the elements in the ED environment, and the differences in state privacy laws. Committee members who opposed having two separate measures noted that the information that should be conveyed is very similar, if not identical; they also noted the need for alignment with future EHR requirements for transition records, a concern that a different standard may adversely impact ED patients, and a preference for fewer measures.

Endorsement + Designation

The "Endorsement +" designation identifies measures that exceed NQF's endorsement criteria in several key areas. After a Committee recommends a measure for endorsement, it will then consider whether the measure also meets

the "Endorsement +" criteria.
This measure is a candidate for the "Endorsement +" designation IF the Committee determines that it: meets evidence for measure focus without an exception; is reliable, as demonstrated by score-level testing; is valid, as demonstrated by score-level testing (not via face validity only); and has been vetted by those being measured or other users. **Eligible for Endorsement + designation**: ☐ **Yes** ☒ **No** **RATIONALE IF NOT ELIGIBLE**: The measure is not eligible for Endorsement + because it is not demonstrated by reliability testing of the measure score, it is only at the data element level.

Pre-meeting public and member comments

-

NATIONAL QUALITY FORUM

Measure missing data in MSF 6.5 from MSF 5.0

NQF #: 0649 NQF Project: Care Coordination 2016-2017 Project

1. IMPACT, OPPORTUITY, EVIDENCE - IMPORTANCE TO MEASURE AND REPORT
Importance to Measure and Report is a threshold criterion that must be met in order to recommend a measure for endorsement. All three subcriteria must be met to pass this criterion. See guidance on evidence. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria)
1c.1 Structure-Process-Outcome Relationship *(Briefly state the measure focus, e.g., health outcome, intermediate clinical outcome, process, structure; then identify the appropriate links, e.g., structure-process-health outcome; process-health outcome; intermediate clinical outcome-health outcome)*: Since the last update/submission, no contradictory evidence has emerged that would prompt changes to this measure. The measure focus is the process of providing a detailed transition record to patients at the time of discharge from the emergency department. This process is directly related to preventing medication errors, adverse events, patient harm, and hospital readmissions. Providing a detailed transition record at the time of ED discharge enhances the patient's preparation to self-manage post-discharge care and comply with the post-discharge treatment plan. Additionally, randomized trials have shown that many hospital readmissions can be prevented by patient education, predischarge assessment, and domiciliary aftercare. One recent study found that patients participating in a hospital program providing detailed, personalized instructions at discharge, including a review of medication routines and assistance with arranging follow-up appointments, had 30% fewer subsequent emergency visits and hospital readmissions than patients who received usual care at discharge.

Citations:

Benbassat J, Taragin M. Hospital readmissions as a measure of quality of healthcare. Archives Internal Medicine 2000; 160:1074-81.

Jack BW, Chetty VK, Anthony D, et al. A reengineered hospital discharge program to decrease rehospitalization. Ann Intern Med 2009; 150:178-187.

1c.2-3 Type of Evidence *(Check all that apply)*:

Clinical Practice Guideline

Systematic review of body of evidence (other than within guideline development)

1c.4 Directness of Evidence to the Specified Measure *(State the central topic, population, and outcomes addressed in the body of evidence and identify any differences from the measure focus and measure target population)*:

The evidence cited for this measure is directly related to transition records for all ages, during transitions of care from inpatient to outpatient settings, and some evidence specific to the emergency department.

1c.5 Quantity of Studies in the Body of Evidence *(Total number of studies, not articles)*: The quantity of studies reviewed was not stated, but the guideline paper references 21 articles.

1c.6 Quality of Body of Evidence (*Summarize the certainty or confidence in the estimates of benefits and harms to patients across studies in the body of evidence resulting from study factors. Please address: a) study design/flaws; b) directness/indirectness of the evidence to this measure (e.g., interventions, comparisons, outcomes assessed, population included in the evidence); and c) imprecision/wide confidence intervals due to few patients or events):* The quality of the evidence was not discussed; however, the guideline paper provided the following summary:

Summary: This guideline is the result of a consensus conference convened in 2006 by the American College of Physicians (ACP), the Society of General

Internal Medicine (SGIM), and the Society of Hospital Medicine (SHM), with representation from the Emergency Medicine community added subsequent to the conference. The participating organizations focused specifically on the development of principles and standards for transitions of care between the inpatient and outpatient settings, in preparation for the development of performance measures. The standards development of the Transitions of Care Consensus Conference (TOCCC) built upon the earlier work of the Stepping Up to the Plate (SUTTP) Alliance established by the ABIM Foundation.

Guideline development methodology: The TOCCC developed its principles and standards based on a systematic review of the evidence related to transitions of care between the inpatient and outpatient settings. After initial discussion in breakout groups, the conference participants refined the principles and standards through a group consensus process. Participants then prioritized

the standards using a group consensus voting process. The final summary paper was subsequently reviewed and approved by all participating organizations.

Evidence base: The TOCCC developed 8 standards for care transitions, based on cohort, observational, and cross-sectional studies and expert opinion. The standards/ recommendations were developed and prioritized by a group

consensus process.

1c.7 Consistency of Results across Studies *(Summarize the consistency of the magnitude and direction of the effect):* Again, the consistency of results across studies was not discussed, but the number of people and organizations involved in the development of the consensus statement suggest great consistency in the evidence base. The TOCCC was held over two days on July 11-12, 2007 at ACP Headquarters in Philadelphia, PA. There were 51 participants representing over thirty organizations. Participating organizations included medical specialty societies from internal medicine as well as family medicine and pediatrics, governmental agencies, such as the AHRQ and CMS, performance measure developers, such as the NCQA and AMA PCPI, nurses associations, such as the VNAA and Home Care and Hospice, pharmacists groups, and patient groups such as the Institute for Family-Centered Care. The TOCCC developed 8 standards for care transitions,

based on cohort, observational, and cross-sectional studies and expert opinion. The standards/ recommendations were developed and prioritized by a group consensus process.

In addition, multiple studies have shown that many hospital readmissions can be prevented by patient education, predischarge assessment, and domiciliary aftercare; patients participating in a hospital program providing detailed, personalized instructions at discharge, including a review of medication routines and assistance with arranging follow-up appointments, had 30% fewer

subsequent emergency visits and hospital readmissions than patients who received usual care at discharge. [Benbassat, 2000; Jack, 2009]

1c.8 Net Benefit *(Provide estimates of effect for benefit/outcome; identify harms addressed and estimates of effect; and net benefit - benefit over harms)*:

There are no potential harms discussed in this guideline or in the evidence, only the harm caused by not preparing a detailed transition record. The TOCCC focuses only on the transitions between the inpatient and outpatient settings and does not address the equally important transitions between the many other different care settings such as hospital to nursing home, or rehabilitation

facility. The intent of the TOCCC is to provide this document to national measure developers such as the Physician Consortium for Performance Improvement and others in order to guide measure development and ultimately lead to improvement in quality and safety in care transitions.

1c.9 Grading of Strength/Quality of the Body of Evidence. Has the body of evidence been graded? No

1c.10 If body of evidence graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias: N/A

1c.11 System Used for Grading the Body of Evidence: Other

1c.12 If other, identify and describe the grading scale with definitions: The body of evidence was not graded.

1c.13 Grade Assigned to the Body of Evidence: N/A

1c.14 Summary of Controversy/Contradictory Evidence: No areas of controversy.

1c.15 Citations for Evidence other than Guidelines*(Guidelines addressed below)*:

1c.16 Quote verbatim, the specific guideline recommendation *(Including guideline # and/or page #)*:

The following evidence statements are quoted verbatim from the referenced clinical guidelines.

The Emergency Department (ED) represents a unique subset of potential transitions of care. The transition potential can generally be described as outpatient to outpatient or outpatient to inpatient depending on whether or not the patient is admitted to the hospital. The outpatient to outpatient transition is represented by a number of potential variables. Patients with a medical home may be referred in to the ED by the medical home or they may self refer. A significant number of patients do not have a physician and self refer to the ED. The disposition from the ED, either outpatient to outpatient or outpatient to inpatient is similarly represented by a number of variables. Discharged patients may or may not have a medical home, may or may not need a specialist and may or may not require urgent (<24 hours) follow-up. Admitted patients may or may not have a medical home and may or may not require specialty care. This variety of variables precludes a single approach to ED transitions of care coordination. The determination as to which scenarios will be appropriate for standards development (Coordinating Clinicians and Transitions Responsibility) will require further contributions from ACEP and SAEM and review by the Steering Committee. (TOCCC, 2009)

Standard PC.04.02.01

When a [patient] is discharged or transferred, the [organization] gives information about the care, treatment, and services provided to the [patient] to other service providers who will provide the [patient] with care, treatment, or services.

• At the time of the patient's discharge or transfer, the hospital informs other service providers who will provide care, treatment, or services to the patient about the following:

- The reason for the patient's discharge or transfer

- The patient's physical and psychosocial status

- A summary of care, treatment, and services it provided to the patient

- The patient's progress toward goals

- A list of community resources or referrals made or provided to the patient

(See also PC.02.02.01, EP 1) (Joint Commission, 2009)

Standard PC.04.01.05

Before the [organization] discharges or transfers a [patient], it informs and educates the [patient] about his or her follow-up care, treatment, and services.

1. When the hospital determines the patient's discharge or transfer needs, it promptly shares this information with the patient.

2. Before the patient is discharged, the hospital informs the patient of the kinds of continuing care, treatment, and services he or she will need.

3. When the patient is discharged or transferred, the hospital provides the patient with information about why he or she is being discharged or transferred.

5. Before the patient is transferred, the hospital provides the patient with information about any alternatives to the transfer.

7. The hospital educates the patient about how to obtain any continuing care, treatment, and services that he or she will need.

8. The hospital provides written discharge instructions in a manner that the patient and/or the patient's family or caregiver can understand. (See also RI.01.01.03, EP 1) (Joint Commission, 2009)

Safe Practice 15: Discharge Systems

A "discharge plan" must be prepared for each patient at the time of hospital discharge, and a concise discharge summary must be prepared for and relayed to the clinical caregiver accepting responsibility for postdischarge care in a timely manner. Organizations must ensure that there is confirmation of receipt of the discharge information by the independent licensed practitioner who will

assume the responsibility for care after discharge. [Jack BW, Chetty VK, Anthony D, et al. A reengineered hospital discharge program to decrease rehospitalization: a randomized trial. Ann Intern Med 2009 Feb 3;150(3):178-87] (NQF Safe Practices for Better Healthcare–2010 Update)

-Discharge policies and procedures should be established and resourced and should address: [Clancy CM. Reengineering hospital discharge: a protocol to improve patient safety, reduce costs, and boost patient satisfaction. Am J Med Qual 2009 Jul-Aug;24(4): 344-6. Epub 2009 Jun 5] • explicit delineation of roles and responsibilities in the discharge process; • preparation for discharge

occurring, with documentation, throughout the hospitalization; • reliable information flow from the primary care physician (PCP) or referring caregiver on admission, to the hospital caregivers, and back to the PCP, after discharge, using standardized communication methods; [Sherman FT. Rehospitalizations: packaging discharge and transition services to prevent "bounce backs". Geriatrics 2009 May;64(5):8-9] • completion of discharge plan and discharge summaries before discharge; [Jack, 2009] • patient or, as appropriate, family perception of coordination of discharge care; and • benchmarking, measurement, and continuous quality improvement of discharge processes.

-A written discharge plan must be provided to each patient at the time of discharge that is understandable to the patient and/or his family or guardian and appropriate to each individual's health literacy and English language proficiency. [Chugh A, Williams MV, Grigsby J, et al. Better transitions: improving comprehension of discharge instructions. Front Health Serv Manage 2009 Spring;25 (3):11-32; Were MC, Li X, Kesterson J, et al. Adequacy of hospital discharge summaries in documenting tests with pending results

and outpatient follow-up providers. J Gen Intern Med 2009 Sep;24(9):1002-6. Epub 2009 Jul 3]

At a minimum, the discharge plan must include the following: • reason for hospitalization; • medications to be taken postdischarge, including, as appropriate, resumption of pre-admission medications, how to take them, and how to obtain them; • instructions for the patient on what to do if his or her condition changes; and • coordination and planning for follow-

up appointments that the patient can keep and follow-up of tests and studies for which confirmed results are not available at the time of discharge.

-A discharge summary must be provided to the ambulatory clinical provider who accepts the patient's care after hospital discharge.

At a minimum, the discharge summary should include the following: • reason for hospitalization; • significant findings; • procedures performed and care, treatment, and services provided to the patient; • the patient's condition at discharge; • information provided to the patient and family; • a comprehensive and reconciled medication list; and • a list of acute medical issues, tests, and studies for which confirmed results are unavailable at the time of discharge and require follow-up.

-Original source documents (e.g., laboratory or radiology reports or medication administration records) should be in the transcriber's immediate possession and should be visible when it is necessary to transcribe information from one document to another.

-The organization should ensure and document receipt of discharge information by caregivers who assume responsibility for postdischarge care. This confirmation may occur through telephone, fax, e-mail response, or other electronic response using health information technologies. [Zsenits B, Polashenski WA, Sterns RH, et al. Systematically improving physician assignment during inhospital transitions of care by enhancing a preexisting hospital electronic health record. J Hosp Med 2009 May;4(5):308-12] (NQF Safe Practices for Better Healthcare–2010 Update)

1c.17 Clinical Practice Guideline Citation: Snow V, Beck D, Budnitz T, Miller DC, Potter J, Wears RL, Weiss KB, Williams MV. Transitions of Care Consensus Policy Statement: American College of Physicians-Society of General Internal Medicine-Society of Hospital Medicine-American Geriatrics Society-American College of Emergency Physicians-Society of Academic Emergency Medicine. J Gen Intern Med 2009 Apr 3.

Joint Commission on Accreditation of Healthcare Organizations. 2009 Hospital Accreditation Standards. Oakbrook Terrace, IL: Joint Commission Resources, Inc.

National Quality Forum (NQF). Safe Practices for Better Healthcare–2010 Update: A Consensus Report. Washington, DC: NQF; 2010.

1c.18 National Guideline Clearinghouse or other URL:

1c.19 Grading of Strength of Guideline Recommendation. Has the recommendation been graded? No

1c.20 If guideline recommendation graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias:

1c.21 System Used for Grading the Strength of Guideline Recommendation: Other

1c.22 If other, identify and describe the grading scale with definitions: The guideline recommendations were not graded.

1c.23 Grade Assigned to the Recommendation: N/A

1c.24 Rationale for Using this Guideline Over Others: It is the PCPI policy to use guidelines, which are evidence-based, applicable to physicians and other health-care providers, and developed by a national specialty organization or government agency. In addition, the PCPI has now expanded what is acceptable as the evidence base for measures to include documented quality improvement (QI) initiatives or implementation projects that have demonstrated improvement in quality of care.

Based on the NQF descriptions for rating the evidence, what was the developer's assessment of the quantity, quality, and consistency of the body of evidence?

1c.25 Quantity: Moderate 1c.26 Quality: Moderate1c.27 Consistency: Moderate

1. Evidence, Performance Gap, Priority – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. ***Measures must be judged to meet all sub criteria to pass this criterion and be evaluated against the remaining criteria.***

1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form
0649_Evidence_Measure_Submission_Form.doc
1a.1 For Maintenance of Endorsement: Is there new evidence about the measure since the last update/submission?
Please update any changes in the evidence attachment in red. Do not remove any existing information. If there have been any changes to evidence, the Committee will consider the new evidence. If there is no new evidence, no updating of the evidence information is needed.
No

1b. Performance Gap

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- Disparities in care across population groups.

1b.1. **Briefly explain the rationale for this measure** *(e.g., how the measure will improve the quality of care, the benefits or improvements in quality envisioned by use of this measure)*
IF a PRO-PM (e.g. HRQoL/functional status, symptom/burden, experience with care, health-related behaviors), provide evidence that the target population values the measured PRO and finds it meaningful. (Describe how and from whom their input was obtained.)
IF a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), SKIP this question and provide rationale for composite in question 1c.3 on the composite tab.
Providing detailed discharge information enhances patients' preparation to self-manage post-discharge care and comply with treatment plans. Additionally, studies have shown that many hospital readmissions can be prevented by patient education, predischarge assessment, and domiciliary aftercare (1). One study found that patients participating in a hospital program providing detailed, personalized instructions at discharge, including a review of medication routines and assistance with arranging follow-up appointments, had 30% fewer subsequent emergency visits and hospital readmissions than patients who received usual care at discharge (2).

By requiring the completion and prompt transmission of a detailed "transition record" for discharged patients, this measure is promoting a significant enhancement to the customary use of the discharge summary. Numerous studies have documented the prevalence of communication gaps and discontinuities in care for patients after discharge, and the significant effect of these lapses on hospital readmissions and other indicators of the quality of transitional care (3-5). Current information and communication technology can facilitate the routine completion and transmission of a transition record within 24 hours of discharge, which could greatly reduce communication gaps and help improve patient outcomes.

1. Benbassat J, Taragin M. Hospital readmissions as a measure of quality of healthcare. Archives Internal Medicine. 2000;160:1074-81.
2. Jack BW, Chetty VK, Anthony D, et al. A reengineered hospital discharge program to decrease rehospitalization. Ann Intern Med 2009; 150:178-187.
3. Sabogal F, Coots-Miyazaki M, Lett JE. Effective care transitions interventions: Improving patient safety and healthcare quality. CAHQ Journal 2007 (Quarter 2).
4. Moore C, Wisnevesky J, Williams S, McGinn T. 2003. Medical errors related to discontinuity of care from an inpatient to an outpatient setting. Journal of General Internal Medicine 18:646–651.
5. Roy CL, Poon EG, Karson AS, et al. Patient safety concerns arising from test results that return after hospital discharge. Ann Intern Med 2005;143(2):121-128.

1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis. *(This is required for maintenance of endorsement. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the sub-criterion on improvement (4b) under Usability and Use.*
Performance scores for this measure are not yet available

1b.3. If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.
The delayed or insufficient transfer of discharge information between hospital-based providers and primary care physicians remains common.

- Communication between hospital-based physicians and primary care physicians as part of the discharge process occurs between 3%-20% of the time.
- Discharge summaries were only available between 12%-34% of first postdischarge visit and between 51%-77% within 4 weeks after discharge.
- Discharge summaries often lacked important information including:
  - Diagnostic test results which were missing from 33%-63% of discharge summaries
  - Course of treatment missing from 7%-22%
  - Discharge medications missing from 2%-40%
  - Test results pending at discharge within 65% of discharge summaries
  - Follow-up plans missing from 2%-43%

A retrospective study on discharge summaries found that 21% of discharged patients did not have a discharge summary completed within a week after discharge. The absence of a discharge summary was associated with a 79% increase in the rate of readmission within 7 days and a 37% increased rate of readmission within 28 days (2).

Kripalani S, LeFevre F, Phillips CO, Williams MV, Basaviah P, Baker DW. Deficits in communication and information transfer between hospital-based and primary care physicians: implications for patient safety and continuity of care. JAMA. 2007;297(8):831-841. doi:10.1001/jama.297.8.831
2. Li JYZ, Yong TY, Hakendorf P, Ben-Tovim D, Thompson CH. Timeliness in discharge summary dissemination is associated with patients´ clinical outcomes. Journal of Evaluation in Clinical Practice. 2013;19:76–79. doi:10.1111/j.1365-2753.2011.01772.

1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability. *(This is required for maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included.) For measures that show high levels of performance, i.e., "topped out", disparities data may demonstrate an opportunity for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b) under Usability and Use.*
We are not aware of any publications or evidence outlining disparities in this area.

1b.5. If no or limited data on disparities from the measure as specified is reported in 1b.4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations. Not necessary if performance data provided in 1b.4

N/A

2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. ***Measures must be judged to meet the sub criteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.***

2a.1. Specifications The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

De.5. **Subject/Topic Area** *(check all the areas that apply):*

De.6. **Cross Cutting Areas** *(check all the areas that apply):*
«crosscutting_area»

De.7. **Target Population Category** *(Check all the populations for which the measure is specified and tested if any):*
Elderly

S.1. **Measure-specific Web Page** *(Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)*
The measure specifications are included in this submission. Additional measure details may be found at:
http://www.thepcpi.org/pcpi/media/documents/Care-Transitions-updated-measures-112016.pdf

S.2a. **If this is an eMeasure**, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)
This is not an eMeasure **Attachment:**

S.2b. **Data Dictionary, Code Table, or Value Sets** *(and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)*
No data dictionary **Attachment:**

S.3.1. **For maintenance of endorsement:** Are there changes to the specifications since the last updates/submission. If yes, update the specifications for S1-2 and S4-22 and explain reasons for the changes in S3.2.
Yes

S.3.2. **For maintenance of endorsement,** please briefly describe any important changes to the measure specifications since last measure update and explain the reasons.
For measure 0649, the unit of measurement was changed from patients to discharges to clarify that the intent of this measure is to assess each individual discharge as a patient may have more than one discharge within a measurement period.

S.4. **Numerator Statement** *(Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome) DO NOT include the rationale for the measure.*
IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).
Discharges in which the patient or their caregiver(s) received a transition record at the time of emergency department (ED) discharge including, at a minimum, all of the following elements:
- Summary of major procedures and tests performed during ED visit, AND
- Principal clinical diagnosis at discharge which may include the presenting chief complaint, AND
- Patient instructions, AND
- Plan for follow-up care (OR statement that none required), including primary physician, other health care professional, or site designated for follow-up care, AND

- List of new medications and changes to continued medications that patient should take after ED discharge, with quantity prescribed and/or dispensed (OR intended duration) and instructions for each

S.5. **Numerator Details** *(All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)*
IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).
Time Period for Data Collection: At each emergency department discharge during measurement period

Numerator Element Definitions:
- Transition record (for ED discharges): a core, standardized set of data elements related to patient's diagnosis, treatment, and care plan that is discussed with, provided to and accepted by the patient in written, printed, or electronic format. Electronic format may be provided only if acceptable to patient.
- Summary of any major tests and procedures performed during the emergency department encounter must be included in the transition record, but it is not the intention of the measure that a complete order set is provided to all patients. The types of procedures and tests included should be defined by each emergency department prior to measure implementation and may include fracture management, wound repair, incision and drainage (I & D), foreign body removal, joint reduction, joint aspiration, chest tube placement, emergency endotracheal intubation, central line placement, or lumbar punctures. Tests may include lab tests, scans, or x-rays that were performed. Major tests that have results pending should be included, since they were performed during the encounter and will require follow up after the patient leaves the ED.
- Primary physician or other health care professional designated for follow-up care: may be primary care physician (PCP), medical specialist, or other physician or health care professional. If no physician, other health care professional, or site designated or available, patient may be provided with information on alternatives for obtaining follow-up care needed, which may include a list of community health services/other resources.

For Administrative:
Numerator Elements to be identified through medical record abstraction:
See Sample Data Collection Tool attached in Appendix A.1.

This measure may also be implemented in EHRs:
The Care Transitions measures do not lend themselves to a "traditional specification" for EHR reporting, where data elements, logic and clinical coding are identified to calculate the measure. Given the fact that every facility may use a different template for a transition record and the information required for this measure is based on individualized patient information unique to one episode of care (ie, emergency department episode). We have provided guidance on how a facility should query the electronic health record for the information required for this measure.

Producing the Transition Record with Specified Elements:
Emergency departments that have implemented an EHR should establish a standardized template within their system that providers will use to generate the Transition Record. A standardized template will ensure that all data elements specified in the performance measure are included each time a Transition Record is prepared. Sample Transition Records were developed and are included in the Care Transitions Specifications. Each facility has the autonomy to customize the format of the Transition Record, based on clinical workflow, policies and procedures, and the patient population treated at the individual institution.

Systematic External Reporting of the Transition Record:
In order to report, at the facility level, which of the patients discharged from the emergency department have received a Transition Record, a discrete data field and code indicating the patient received a Transition Record at discharge may be needed in the EHR.

Transmitting the Transition Record with Specified Elements:
This performance measure does not require that the Transition Record be transmitted to the next provider(s) of care. However, if the Transition Record is transmitted to the next provider(s) of care, it should be done so in accordance with established approved standards for interoperability. The ONC Health IT Standards Committee (HITSC) has recommended that certain vocabulary standards are used for quality measure reporting, in accordance with the Quality Data Model (https://ecqi.healthit.gov/qdm). In addition, the use of recognized interoperability standards for the transmission of the Transition Record information will ensure that the information can be received into the destination EHR.

S.6. **Denominator Statement** *(Brief, narrative description of the target population being measured)*
All discharges for patients, regardless of age, from an emergency department (ED) to ambulatory care (home/self care) or home health care

S.7. **Denominator Details** *(All information required to identify and calculate the target population/denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*
IF an OUTCOME MEASURE, describe how the target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).
Time Period for Data Collection: At each emergency department discharge during the measurement period

For Administrative:
Identify patients discharged from emergency department using the following:
UB-04 (Form Locator 42 - Revenue Code):
• 0450 (Emergency Room)
AND
UB-04 (Form Locator 17 - Discharge Status):
• 01 (Discharged to home or self care (routine discharge))
• 06 (Discharged/transferred to home under care of an organized home health service organization in anticipation of covered skilled care)
• 21 (Discharged/transferred to court/law enforcement)

(Note: Only the above codes from UB-04 Form Locator 17 - Discharge Status should be included in the eligible population.)

This measure may also be implemented in EHRs:
Eligible discharges for the denominator should be identified through the Admission, Discharge, Transfer (ADT) system, or from another electronic system where this information is stored.

S.8. **Denominator Exclusions** *(Brief narrative description of exclusions from the target population)*
Exclusions:
Patients who died
Patients who left against medical advice (AMA) or discontinued care

Exceptions:
Patients who declined receipt of transition record
Patients for whom providing the information contained in the transition record would be prohibited by state or federal law

S.9. **Denominator Exclusion Details** *(All information required to identify and calculate exclusions from the denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*
Time Period for Data Collection: At each emergency department discharge during measurement period

The PCPI distinguishes between measure exceptions and measure exclusions.

Measure exlcusions:
Exclusions arise when the intervention required by the numerator is not appropriate for a group of patients who are otherwise included in the initial patient or eligible population of a measure (ie, the denominator). Exclusions are absolute and are to be removed from the denominator of a measure and therefore clinical judgment does not enter the decision. For measure Transition Record with Specified Elements Received by Discharged Patients (Emergency Department Discharges to Ambulatory Care [Home/Self Care] or Home Health Care), exclusions include patients who died, and patients who left against medical advice (AMA) or discontinued care.

Measure exceeptions:
Exceptions are used to remove a patient from the denominator of a performance measure when the patient does not receive a therapy or service AND that therapy or service would not be appropriate due to patient-specific reasons. The patient would otherwise meet the denominator criteria. Exceptions are not absolute, and are based on clinical judgment, individual patient characteristics, or patient preferences. The PCPI exception methodology uses three categories of exception reasons for which a

patient may be removed from the denominator of an individual measure. These measure exception categories are not uniformly relevant across all measures; for each measure, there must be a clear rationale to permit an exception for a medical, patient, or system reason. For measure Transition Record with Specified Elements Received by Discharged Patients (Emergency Department Discharges to Ambulatory Care [Home/Self Care] or Home Health Care), exceptions may include patients who declined receipt of transition record, and patients for whom providing the information contained in the transition record would be prohibited by state or federal law. Although this methodology does not require the external reporting of more detailed exception data, the PCPI recommends that physicians document the specific reasons for exception in patients' medical records for purposes of optimal patient management and audit-readiness. The PCPI also advocates the systematic review and analysis of each physician's exceptions data to identify practice patterns and opportunities for quality improvement.

Additional details by data source are as follows:

For Administrative:
UB-04 (Form Locator 17 - Discharge Status):
• 07 (Left against medical advice or discontinued care)*
• 20 (Expired)
• 40 (Expired at home)
• 41 (Expired in a medical facility (e.g. hospital, SNF, ICF, or free standing hospice))
• 42 (Expired - place unknown)

This measure may also be implemented in EHRs:
Discharges meeting denominator exclusions criteria should be identified through the Admission, Discharge, Transfer (ADT) system, or from another electronic system where this information is stored.

Exception Definition: Documentation is required for patients who are excepted from the measure:
• Patients who declined receipt of transition record.
• Patients for whom providing the information contained in the transition record would be prohibited by state or federal law.

S.10. **Stratification Information** *(Provide all information required to stratify the measure results, if necessary, including the stratification variables, definitions, specific data collection items/responses, code/value sets, and the risk-model covariates and coefficients for the clinically-adjusted version of the measure when appropriate – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b.)*
Consistent with CMS' Measures Management System Blueprint and recent national recommendations put forth by the IOM and NQF to standardize the collection of race and ethnicity data, we encourage the results of this measure to be stratified by race, ethnicity, administrative sex, and payer.

S.11. **Risk Adjustment Type** (Select type. Provide specifications for risk stratification in measure testing attachment)
No risk adjustment or risk stratification
If other:

S.12. **Type of score:**
Rate/proportion
If other:

S.13. **Interpretation of Score** *(Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)*
Better quality = Higher score

S.14. **Calculation Algorithm/Measure Logic** (*Diagram or describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; time period for data, aggregating data; risk adjustment; etc.)*
To calculate performance rates:
1. Find the patients who meet the initial population (ie, the general group of patients that a set of performance measures is designed to address).
2. From the patients within the initial population criteria, find the patients who qualify for the denominator. (ie, the specific group of patients for inclusion in a specific performance measure based on defined criteria). Note: in some cases the initial population and denominator are identical.
3. Find the patients who qualify for denominator exclusions and subtract from the denominator.

4. From the patients within the denominator (after denominator exclusions have been subtracted from the denominator), find the patients who meet the numerator criteria (ie, the group of patients in the denominator for whom a process or outcome of care occurs). Validate that the number of patients in the numerator is less than or equal to the number of patients in the denominator.
5. From the patients who did not meet the numerator criteria, determine if the provider has documented that the patient meets any criteria for exception when denominator exceptions have been specified [for this measure: patients who declined receipt of transition record, and patients for whom providing the information contained in the transition record would be prohibited by state or federal law]. If the patient meets any exception criteria, they should be removed from the denominator for performance calculation. Although the exception cases are removed from the denominator population for the performance calculation, the exception rate (ie, percentage of patients with valid exceptions) should be calculated and reported along with performance rates to track variations in care and highlight possible areas of focus for QI.

If the patient does not meet the numerator and a valid exception is not present, this case represents a quality failure.

S.15. **Sampling** *(If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)*
IF a PRO-PM, identify whether (and how) proxy responses are allowed.
Not applicable. The measure is not based on a sample.

S.16. **Survey/Patient-reported data** *(If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)*
IF a PRO-PM, specify calculation of response rates to be reported with performance measure results.
Not applicable. The measure is not based on a survey.

S.17. **Data Source** *(Check ONLY the sources for which the measure is SPECIFIED AND TESTED).*
If other, please describe in S.18.
EHRs Hybrid, Paper Records

S.18. **Data Source or Collection Instrument** *(Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data is collected.)*
IF a PRO-PM, identify the specific PROM(s); and standard methods, modes, and languages of administration.
See attached data collection tool.

S.19. **Data Source or Collection Instrument** *(available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)*
Available in attached appendix at A.1

S.20. **Level of Analysis** *(Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)*
Facility, Integrated Delivery System

S.21. **Care Setting** *(Check ONLY the settings for which the measure is SPECIFIED AND TESTED)*
Emergency Department
If other:

S.22. **COMPOSITE Performance Measure** - Additional Specifications *(Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)*
Not applicable. Measure is not a composite

2. Validity – See attached Measure Testing Submission Form
0649_Transition_Record_with_Specified_Elements_Received_by_Discharged_Patients_-ED-.doc

2.1 For maintenance of endorsement
Reliability testing: If testing of reliability of the measure score was not presented in prior submission(s), has reliability testing of the measure score been conducted? If yes, please provide results in the Testing attachment. (Do not remove prior testing information – include date of new information in red.)
Yes

2.2 For maintenance of endorsement
Has additional empirical validity testing of the measure score been conducted? If yes, please provide results in the Testing attachment. (Do not remove prior testing information – include date of new information in red.)

Yes

2.3 For maintenance of endorsement

Risk adjustment: For outcome, resource use, cost, and some process measures, risk-adjustment that includes SDS factors is no longer prohibited during the SDS Trial Period (2015-2016). Please update sections 1.8, 2a2, 2b2, 2b4, and 2b6 in the Testing attachment and S.14 and S.15 in the online submission form in accordance with the requirements for the SDS Trial Period. NOTE: These sections must be updated even if SDS factors are not included in the risk-adjustment strategy. If yes, and your testing attachment does not have the additional questions for the SDS Trial please add these questions to your testing attachment:

What were the patient-level sociodemographic (SDS) variables that were available and analyzed in the data or sample used? For example, patient-reported data (e.g., income, education, language), proxy variables when SDS data are not collected from each patient (e.g. census tract), or patient community characteristics (e.g. percent vacant housing, crime rate).

Describe the conceptual/clinical and statistical methods and criteria used to select patient factors (clinical factors or sociodemographic factors) used in the statistical risk model or for stratification by risk (e.g., potential factors identified in the literature and/or expert panel; regression analysis; statistical significance of p<0.10; correlation of x or higher; patient factors should be present at the start of care)

What were the statistical results of the analyses used to select risk factors?

Describe the analyses and interpretation resulting in the decision to select SDS factors (e.g. prevalence of the factor across measured entities, empirical association with the outcome, contribution of unique variation in the outcome, assessment of between-unit effects and within-unit effects)

No - This measure is not risk-adjusted

NATIONAL QUALITY FORUM

Measure missing data in MSF 6.5 from MSF 5.0

NQF #: 0649 NQF Project: Care Coordination Project

2. RELIABILITY & VALIDITY - SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)

Measure testing must demonstrate adequate reliability and validity in order to be recommended for endorsement. Testing may be conducted for data elements and/or the computed measure score. Testing information and results should be entered in the appropriate field. Supplemental materials may be referenced or attached in item 2.1. See guidance on measure testing.

2a2. Reliability Testing. (*Reliability testing was conducted with appropriate method, scope, and adequate demonstration of reliability.*)

2a2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

Refer to the validity section for a description of the data sample for our EHR testing project.

2a2.2 Analytic Method *(Describe method of reliability testing & rationale)*:

Refer to the validity section for a description of the analytic methods for our EHR testing project.

2a2.3 Testing Results *(Reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:

Refer to the validity section for the testing results for our EHR testing project.

2b. VALIDITY. Validity, Testing, including all Threats to Validity: H☐ M☐ L☐ I ☐

2b1.1 Describe how the measure specifications *(measure focus, target population, and exclusions)* are consistent with the evidence cited in support of the measure focus (*criterion 1c)* and identify any differences from the evidence:

The evidence cited for this measure is directly related to transition records for all ages, during transitions of care from inpatient to outpatient settings, then some evidence specific to the emergency department.

2b2. Validity Testing. (*Validity testing was conducted with appropriate method, scope, and adequate demonstration of validity.)*

2b2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

EHR Measure Validity

AMA-PCPI Testing Project

o This project identified a sample of patients taken from one multi-specialty, medium-sized health practice in Southeast Texas.

o This health practice has been designated by the NCQA as a Tier III Medical Home, and has made it a priority to create coordinated transitions in care across the continuum of care.

o This proactive oversees approximately 7-8,000 hospital discharges per year.

o Measure implementation began in July of 2009.

o Manually abstracted sample included 100 patients from the inpatient setting.

Face Validity

The measures were pilot tested via focus group discussion and surveys in six Midwestern healthcare facilities between December 2009 and February 2010. Participants included front line caregivers as well as administrators and leadership. Approximately 65% of the 81 focus group participants also provided written surveys and feedback for analysis.

Face Validity Assessment

Face validity of the measure score as an indicator of quality was systematically assessed, by members of the PCPI Care Coordination Technical Expert Panel, which included 11 members. The list of expert panel members that participated in the assessment is as follows:

Samuel M. Bierner, MD (Co-Chair)

Mary L. Casper, MA, CCC-SLP

Scottie B. Day, BS, MD, FAAP

Michael J. Fischer, MD, MSPH

Selena L. Hariharan, MD, MHSA

Roger G. Kathol, MD

Marjorie L. King, MD, FACC

Ioannis Koutroulis, MD, PhD, MBA

Claranne P. Mathiesen, RN, MSN, CNN, SCRN

Paul E. Miller, MD

Connie White-Williams, PhD, RN, NE-BC, FAAN

2b2.2 Analytic Method *(Describe method of validity testing and rationale; if face validity, describe systematic assessment)*:

EHR Measure Validity

Data from a performance report for the measure automatically-generated from the EHR (designed to collect the necessary data elements to identify eligible cases and calculate the performance score) were compared to data elements found and scores calculated manually on visual inspection of the medical record by trained abstractors.

Data analysis included:

• Percent agreement at the denominator, numerator, (exception - for those measures with exception) and the measure overall.

• Kappa statistic to ensure that agreement rates are not a phenomenon of chance

Face Validity

The clarity and face validity of measures was assessed using numeric surveys and focused discussion.

The survey asked a panel consisting of 81 individuals including front line caregivers, administrators and leadership.

The aforementioned panel was asked to rate the following aspects of this measure:

Clarity of Numerator Statement

Clarity of Denominator Statement

Clarity of Denominator Exclusions

Overall Understanding of the Information in the Measure Specification Document

The rating scale ranged from 1-5, where 1=Very Poor; 3=Average; 5=Very Good

Face Validity Assessment

Face validity of the measure score as an indicator of quality was systematically assessed as follows.

After the measure was fully specified, the expert panel was asked to rate their agreement with the following statement:

The scores obtained from the measure as specified will provide an accurate reflection of quality and can be used to distinguish good and poor quality.

Scale 1-5, where 1= Strongly Disagree; 2= Disagree 3= Neither Agree nor Disagree; 4=Agree

5= Strongly Agree

2b2.3 Testing Results *(Statistical results, assessment of adequacy in the context of norms for the test conducted; if face validity, describe results of systematic assessment)*:

EHR Measure Validity

EHR Measure Validity

Overall Reliability*: N, % Agreement, Kappa (95% Confidence Interval)

38, 81.58%, 0.62 (0.37, 0.88)

This measure demonstrates substantial agreement.

*Visual inspection of the medical record compared to the automatically generated report of the data elements.

Face Validity

For this measure, 95% of the 39 individuals providing feedback in the form of a numeric survey submitted a rating of 4 or 5 for the clarity of exceptions with a slightly lower percentage of respondents rating the clarity of denominator statements in the top 2 boxes (93%).

The percent of respondents indicating top 2 box scores was lower for the numerator statement; which received a mark of 76%. Overall understanding of information in the measure specifications document received a score of 87% in the top 2 boxes for this measure.

Face Validity Assessment

The results of the expert panel rating of the validity statement were as follows: N = 11; Mean rating = 4.00 and 81.8% of respondents either agree or strongly agree that this measure can accurately distinguish good and poor quality.

Frequency Distribution of Ratings

1 – 1 response (Strongly Disagree)

2 – 0 responses

3 – 1 responses (Neither Agree nor Disagree)

4 – 5 responses

5 – 4 responses (Strongly Agree)

POTENTIAL THREATS TO VALIDITY. (*All potential threats to validity were appropriately tested with adequate results.*)

2b3. Measure Exclusions. (*Exclusions were supported by the clinical evidence in 1c or appropriately tested with results demonstrating the need to specify them.*)

2b3.1 Data/Sample for analysis of exclusions *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

AMA-PCPI Testing Project

- This project identified a sample of patients taken from a multi-specialty, medium-sized health practice in Southeast Texas.
- This health practice has been designated by the NCQA as a Tier III Medical Home, and has made it a priority to create coordinated transitions in care across the continuum of care.
- This practice oversees approximately 7-8,000 hospital discharges per year.
- Measure implementation began in July of 2009.
- Manually abstracted sample included 100 patients from the inpatient setting.

2b3.2 Analytic Method (*Describe type of analysis and rationale for examining exclusions, including exclusion related to patient preference)*:

Data from an automatically-generated report from the EHR was compared to manual abstraction from patient records to calculate parallel forms reliability for the measure.

Data analysis included:

- Percent agreement
- Kappa statistic to adjust for chance agreement

2b3.3 Results *(Provide statistical results for analysis of exclusions, e.g., frequency, variability, sensitivity analyses):*

Exception Reliability: N, % Agreement, Kappa (95% Confidence Interval)

38, 100.00%, Kappa not calculable*

* Kappa statistics cannot be calculated because of complete agreement. Confidence intervals cannot be calculated because to do so would involve dividing by zero which cannot be done.

2b4. Risk Adjustment Strategy. (*For outcome measures, adjustment for differences in case mix (severity) across measured entities was appropriately tested with adequate results.*)

2b4.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

This measure is not risk adjusted.

2b4.2 Analytic Method (*Describe methods and rationale for development and testing of risk model or risk stratification including selection of factors/variables)*:

This measure is not risk adjusted.

2b4.3 Testing Results *(Statistical risk model: Provide quantitative assessment of relative contribution of model risk factors; risk model performance metrics including cross-validation discrimination and calibration statistics, calibration curve and risk decile plot, and assessment of adequacy in the context of norms for risk models. Risk stratification: Provide quantitative assessment of relationship of risk factors to the outcome and differences in outcomes among the strata)*:

This measure is not risk adjusted.

2b4.4 If outcome or resource use measure is not risk adjusted, provide rationale and analyses to justify lack of adjustment: As a process measure, no risk adjustment is necessary.

2b5. Identification of Meaningful Differences in Performance. (*The performance measure scores were appropriately analyzed and discriminated meaningful differences in quality.*)

2b5.1 Data/Sample *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

Highmark Quality Blue Hospital Pay-for-Performance Program

63 participating hospitals implemented Care Coordination measures as part of a “defect-free care transitions bundle”

2b5.2 Analytic Method *(Describe methods and rationale to identify statistically significant and practically/meaningfully differences in performance)*:

Highmark Quality Blue Hospital Pay-for-Performance Program

Participant performance was assessed quarterly over the course of Fiscal Year 2011

2b5.3 Results *(Provide measure performance results/scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:

Quality Blue Hospital Pay-for-Performance Program

Participant performance on this measure, by quarter is as follows:

FY 2011, Quarter 1: 27.00%

FY 2011, Quarter 2: 30.00%

FY 2011, Quarter 3: 94.00%

2b6. Comparability of Multiple Data Sources/Methods. (*If specified for more than one data source, the various approaches result in comparable scores.*)

2b6.1 Data/Sample *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

AMA-PCPI Testing Project

o This project identified a sample of patients taken from one multi-specialty, medium-sized health practice in Southeast Texas.

o This health practice has been designated by the NCQA as a Tier III Medical Home, and has made it a priority to create coordinated transitions in care across the continuum of care.

o This proactive oversees approximately 7-8,000 hospital discharges per year.

o Measure implementation began in July of 2009.

o Manually abstracted sample included 100 patients from the inpatient setting.

2b6.2 Analytic Method *(Describe methods and rationale for testing comparability of scores produced by the different data sources specified in the measure)*:

Data from a performance report for the measure automatically-generated from the EHR (designed to collect the necessary data elements to identify eligible cases and calculate the performance score) were compared to data elements found and scores calculated manually on visual inspection of the medical record by trained abstractors.

Data analysis included:

• Percent agreement at the denominator, numerator, (exception - for those measures with exception) and the measure overall.

• Kappa statistic to ensure that agreement rates are not a phenomenon of chance

2b6.3 Testing Results *(Provide statistical results, e.g., correlation statistics, comparison of rankings; assessment of*

adequacy in the context of norms for the test conducted):

EHR Measure Validity

Overall Reliability*: N, % Agreement, Kappa (95% Confidence Interval)

38, 81.58%, 0.62 (0.37, 0.88)

This measure demonstrates substantial agreement.

*Visual inspection of the medical record compared to the automatically generated report of the data elements.

2c. Disparities in Care: H☐ M☐ L☐ I ☐ NA☐ (*If applicable, the measure specifications allow identification of disparities.*)

2c.1 If measure is stratified for disparities, provide stratified results *(Scores by stratified categories/cohorts)*: We encourage the results of this measure to be stratified by race, ethnicity, gender, and primary language, and have included these variables as recommended data elements to be collected.

2c.2 If disparities have been reported/identified (e.g., in 1b), but measure is not specified to detect disparities, please explain:

The PCPI advocates that performance measure data should, where possible, be stratified by race, ethnicity, and primary language to assess disparities and initiate subsequent quality improvement activities addressing identified disparities, consistent with recent national efforts to standardize the collection of race and ethnicity data. A 2008 NQF report endorsed 45 practices including stratification by the aforementioned variables.(1) A 2009 IOM report "recommends collection of the existing Office of Management and Budget (OMB) race and Hispanic ethnicity categories as well as more fine-grained categories of ethnicity(referred to as granular ethnicity and based on one's ancestry) and language need (a rating of spoken English language proficiency of less than very well and one's preferred language for health-related encounters)."(2)

References:

(1)National Quality Forum Issue Brief (No.10). Closing the Disparities Gap in Healthcare Quality with Performance Measurement and Public Reporting. Washington, DC: NQF, August 2008.

(2)Race, Ethnicity, and Language Data: Standardization for Health Care Quality Improvement. March 2010. AHRQ Publication No. 10-0058-EF. Agency for Healthcare Research and Quality, Rockville, MD. Available at:

http://www.ahrq.gov/research/iomracereport. Accessed May 25, 2010.

2.1-2.3 Supplemental Testing Methodology Information:

Steering Committee: Overall, was the criterion, *Scientific Acceptability of Measure Properties*, met?

(*Reliability and Validity must be rated moderate or high*) Yes☐ No☐

Provide rationale based on specific subcriteria:

If the Committee votes No, STOP

3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

3a. Byproduct of Care Processes

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).

3a.1. **Data Elements Generated as Byproduct of Care Processes.**

Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims), Abstracted from a record by someone other than person obtaining original information (e.g., chart abstraction for quality measure or registry)

If other:

3b. Electronic Sources

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

3b.1. **To what extent are the specified data elements available electronically in defined fields** (*i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields*) Update this field for **maintenance of endorsement**.

No data elements are in defined fields in electronic sources

3b.2. **If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources.** For **maintenance of endorsement**, if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).

This measure does not lend itself to a "traditional specification" for EHR reporting, where data elements, logic and clinical coding are identified to calculate the measure, due to the fact the fact that every facility may have a different template for a transition record and the information required for this measure is based on individualized patient information unique to one episode of care (i.e., inpatient stay). However, we have provided guidance on how a facility should query the electronic health record for the information required for this measure, within the numerator details.

3b.3. **If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL. Please also complete and attach the NQF Feasibility Score Card.**

Attachment:

3c. Data Collection Strategy

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

3c.1. **Required for maintenance of endorsement. Describe difficulties (as a result of testing and/or operational use of the measure) regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.**

IF a PRO-PM, consider implications for both individuals providing PRO data (patients, service recipients, respondents) and those whose performance is being measured.

The unit of measurement was changed from patients to discharges to clarify that the intent of this measure is to assess each individual discharge as a patient may have more than one discharge within a measurement period. This measure was found to be reliable and feasible for implementation.

3c.2. **Describe any fees, licensing, or other requirements to use any aspect of the measure as specified** *(e.g., value/code set, risk model, programming code, algorithm)*.
The Measures, while copyrighted, can be reproduced and distributed, without modification, for noncommercial purposes, e.g., use by health care providers in connection with their practices. Commercial use is defined as the sale, license, or distribution of the Measures for commercial gain, or incorporation of the Measures into a product or service that is sold, licensed or distributed for commercial gain.

Commercial uses of the Measures require a license agreement between the user and the PCPI® Foundation (PCPI®) or the American Medical Association (AMA). Neither the American Medical Association (AMA), nor the AMA-convened Physician Consortium for Performance Improvement® (AMA-PCPI), now known as the PCPI, nor their members shall be responsible for any use of the Measures.

4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

4.1. **Current and Planned Use**

NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.

Specific Plan for Use	Current Use (for current use provide URL)
Public Reporting Use Unknown	

4a.1. **For each CURRENT use, checked above (update for maintenance of endorsement), provide:**

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included
- Level of measurement and setting

4a.2. **If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons?** (*e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?*)
The PCPI strongly encourages the use of its measures in quality improvement and accountability initiatives and promotes their use in public reporting programs. Measures developed by the PCPI, while copyrighted, can be reproduced and distributed, without modification, for noncommercial purposes, e.g., use by health care providers in connection with their practices. As a measure developer, we work with measure implementers as opportunities arise to encourage and facilitate the integration of PCPI measures in their programs.

4a.3. **If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement.** (*Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.*)
The PCPI has shared the measure with CMS and other potential implementers to gauge interest in its use within public reporting and

accountability programs.

Improvement

Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4b. **Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (trends in performance results, number and percentage of people receiving high-quality healthcare; Geographic area and number and percentage of accountable entities and patients included.)**
If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

While the PCPI creates measures with an ultimate goal of improving the quality of care, measurement is a mechanism to drive improvement but does not equate with improvement. Measurement can help identify opportunities for improvement with actual improvement requiring making changes to health care processes and structure. In order to promote improvement, quality measurement systems need to provide feedback to front-line clinical staff in as close to real time as possible and at the point of care whenever possible. (1)

1. Conway PH, Mostashari F, Clancy C. The future of quality measurement for improvement and accountability. JAMA. 2013 Jun 5;309(21):2215-6.

4c. Unintended Consequences

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

4c.1. **Please explain any unexpected findings (positive or negative) during implementation of this measure including unintended impacts on patients.**

We are not aware of any unintended consequences related to this measurement.

4c.2. **Please explain any unexpected benefits from implementation of this measure.**

We are not aware of any unexpected benefits related to this measurement.

4d1.1. **Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.**
How many and which types of measured entities and/or others were included? If only a sample of measured entities were included, describe the full population and how the sample was selected.

Not available

4d1.2. **Describe the process(es) involved, including when/how often results were provided, what data were provided, what educational/explanatory efforts were made, etc.**

Not available

4d2.1. **Summarize the feedback on measure performance and implementation from the measured entities and others described in 4d.1.**
Describe how feedback was obtained.

Not available

4d2.2. **Summarize the feedback obtained from those being measured.**

Not available

4d2.3. **Summarize the feedback obtained from other users**

Not available

4d.3. **Describe how the feedback described in 4d.2 has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.**

Not available

5. Comparison to Related or Competing Measures

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

5. Relation to Other NQF-endorsed Measures
Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.
Yes

5.1a. **List of related or competing measures (selected from NQF-endorsed measures)**
0291 : EMERGENCY TRANSFER COMMUNICATION MEASURE
0293 : Medication Information
0297 : Procedures and Tests

5.1b. **If related or competing measures are not NQF endorsed please indicate measure title and steward.**

5a. Harmonization of Related Measures
The measure specifications are harmonized with related measures;
OR
The differences in specifications are justified

5a.1. **If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):**
Are the measure specifications harmonized to the extent possible?
No

5a.2. **If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.**
While our measure focuses of the receipt of a transition record by patients who are discharged from an ED, measure 0291 focuses on the timely transfer of information to the receiving facility for patients who are transferred from the ED and 0293 and 0297 focus specifically on the communication of medication information and procedure/test information, respectively, for patients who are transferred from the ED to another facility. We feel that the measures are complementary in addressing the quality of care transitions.

5b. Competing Measures
The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);
OR
Multiple measures are justified.

5b.1. **If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):**
Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)
Not applicable. There are no existing NQF-endorsed measures that address both the same target population and measure focus.

Appendix

A.1 Supplemental materials may be provided in an appendix. All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.
Attachment **Attachment:** NQF0649_EDTransitionRecord_DataCollectionFlowsheet-636159393324696000.pdf

Contact Information

Co.1 **Measure Steward (Intellectual Property Owner):** PCPI
Co.2 **Point of Contact:** PCPI, Measures, pcpimeasures@ama-assn.org, 312-464-5709-
Co.3 **Measure Developer if different from Measure Steward:** PCPI
Co.4 **Point of Contact:** Elvia, Chavarria, elvia.chavarria@ama-assn.org, 312-464-5709-

Additional Information

Ad.1 **Workgroup/Expert Panel involved in measure development**
Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
PCPI measures are developed through cross-specialty, multi-disciplinary work groups. All medical specialties and other health care professional disciplines participating in patient care for the clinical condition or topic under study must be equal contributors to the measure development process. In addition, the PCPI strives to include on its work groups individuals representing the perspectives of patients, consumers, private health plans, and employers. This broad-based approach to measure development ensures buy-in on the measures from all stakeholders and minimizes bias toward any individual specialty or stakeholder group. All work groups have at least two co-chairs who have relevant clinical and/or measure development expertise and who are responsible for ensuring that consensus is achieved and that all perspectives are voiced.

Co-chairs:
Robert M. Palmer, MD, MPH (Co-Chair) (Geriatrics/Gerontology)
Mark V. Williams, MD, FACP (Co-Chair) (Hospital medicine)

Work Group members:
Dennis M. Beck, MD, FACEP (Emergency medicine)
Judith S. Black, MD, MHA (Blue Cross and Blue Shield Association)
Caroline Blaum, MD (Geriatrics)
Clair M. Callan, MD, MBA, CPE (American College of Physician Executives)
Jayne Hart Chambers, MBA (Federation of American Hospitals)
Steven Chen, MD, MBA (Surgical oncology)
Kenneth D. Coburn, MD, MPH (Health Quality Partners)
Mirean Fisher Coleman, MSW, LICSW, CT (National Association of Social Workers)
Sydney Dy, MD, MSc (Hospice and palliative medicine)
Scott Endsley, MD, MSc (Health Services Advisory Group)
David A. Etzioni, MD, MSHS (Colon and rectal surgery)
Beth Feldpush, MPH (American Hospital Association)
Rita Munley Gallagher, PhD, RN (American Nurses Association)
G. Scott Gazelle, MD, MPH, PhD (Radiology)
Robert W. Gilmore, MD (Clinical surgery)
Eric S. Holmboe, MD, FACP (Internal medicine)
Mary Ann Kliethermes, B.S., Pharm.D. (American Society of Health System Pharmacists)
James E. Lett, II, MD (American Medical Directors Association)
Janet R. Maurer, MD, MBA, FCCP (Pulmonology)
Andie Melendez, RN, MSN, HTPC (Academy of Medical-Surgical Nurses)
Donise Mosebach, RN, MS, CEN (The Joint Commission)
Michael O´Dell, MD, MSHA, FAAFP (Family medicine)
Eric D. Peterson, MD, MPH, FAHA, FACC (American Heart Association/Cardiology)
Mark Redding MD. FAAP (Pediatrics)
Michael Ries, MD, MBA, FCCM (Critical care medicine)
Hilary C. Siebens, MD (Physical medicine and rehabilitation)
Janet (Jesse) Sullivan, MD (National Transitions of Care Coalition)
Randal J. Thomas, MD, MS, FACC, FAHA, FACP, FAACVPR (Cardiology)
Christopher Tompkins, PhD (Brandeis University)
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American College of Physicians
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Karen Kmetik, PhD
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Patricia Sokol, RN, JD
Chyna Wilcoxson

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 **Year the measure was first released:** 2009

Ad.3 **Month and Year of most recent revision:** 04, 2016

Ad.4 **What is your frequency for review/update of this measure?** Supporting guidelines, specifications and coding for this measure are reviewed annually

Ad.5 **When is the next scheduled review/update for this measure?** 12, 2017

Ad.7 **Disclaimers:** The Measures are not clinical guidelines, do not establish a standard of medical care, and have not been tested for all potential applications.

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Ad.8 **Additional Information/Comments:**