NATIONAL QUALITY FORUM
Driving measurable health improvements together

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 #: 3668

Measure Title: Follow-up After Emergency Department Visits for Asthma

Measure Steward: Albert Einstein College of Medicine

sp.02. Brief Description of Measure: This process measure seeks to capture follow up after asthma-related emergency department (ED) visits for children with asthma after discharge from the ED, as recommended by the NHLBI 2007 guidelines. This measure assesses the percentage of asthma-related ED visits for children ages 3-21 with a follow-up visit with a primary care clinician or an asthma subspecialist within 14 days of discharge from the ED, within the reporting year, for patients who are enrolled in the health plan for two consecutive months following the ED visit.

1b.01. Developer Rationale: The rationale for this measure is to improve access for patients who may benefit from additional asthma management and support. The NHLBI guidelines recommend follow-up with a provider within 1-4 weeks after an ED visit and provide evidence-based recommendations for management of asthma and connection to a provider shortly after an exacerbation can facilitate delivery of evidence-based care. This can include initiation or step up of a controller medication to prevent future exacerbations, identification of actionable triggers (dust or smoking exposure in the house), and identification of barriers to asthma home management. Having a follow-up visit may not guarantee better asthma control, since the quality of the care delivered during the visit may vary. However, this measure supports a key process step to improving health care quality after an asthma-related ED visit by highlighting the importance of the connection with a provider. As noted in 1b.02 Table 2, the overall rate of follow-up visits is quite low, indicating substantial room for improvement.

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sp.12. Numerator Statement: The numerator assesses whether there was a follow-up visit within 14 days to a primary care or asthma-specific subspecialty provider.

sp.14. Denominator Statement: Children 3-21 years of age with an asthma-related ED visit (primary or second diagnosis (in the second diagnostic spot) of asthma) during the measurement year, with at least 2 months of insurance enrollment after the ED visit.

sp.16. Denominator Exclusions: none

Measure Type: Process

sp.28. Data Source: Claims

sp.07. Level of Analysis: Health Plan

Preliminary Analysis: New Measure

Criteria 1: Importance to Measure and Report

1a. Evidence

1a. Evidence. The evidence requirements for a ***structure, process or intermediate outcome*** measure are 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. For measures derived from patient report, evidence also should demonstrate that the target population values the measured process or structure and finds it meaningful.

The developer provides the following description for this measure:

- This is a new process measure that assesses the percentage of asthma-related emergency department (ED) visits among children ages 3-21 that have a follow-up visit with a primary care clinician or an asthma subspecialist within 14 days of the ED discharge.
- The developer provides a logic model that depicts the relationship between healthcare actions (key drivers, secondary drivers, and interventions) and the prevention of subsequent ED visits for children diagnosed with asthma after an ED visit.

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:

- The developer provided evidence from the 2007 National Asthma Education and Prevention Program Guidelines for the Diagnosis and Management of Asthma Summary Report supporting the continuation of care for children treated in the ED in an outpatient primary care or asthma specialist setting.
- The developer highlighted that while the guidelines were updated in 2020, the updates were only applicable to specific topics; asthma ED follow-up recommendations remained the same.
- The developer notes that the grade assigned to the evidence associated with the recommendation is a Category B (randomized control trials [RCT] with limited body of data).
    - Children diagnosed with asthma should receive regular care in an outpatient setting and receive a referral for a follow-up asthma care appointment (i.e., either primary care provider (PCP) or asthma specialist) within 1-4 weeks.
- The developer highlighted that the evidence supports post-ED follow-up visits among children with asthma (four RCTs and one observational study) and supports these interventions to improve outpatient asthma management and decrease subsequent visits.
- The developer acknowledged that there are inconsistencies with the benefit estimates noting that the ED visit may indicate inadequacies in disease management and asthma exacerbation plans; however, the developer noted that follow-up care with either a primary care provider (PCP) or asthma specialist within 1-4 weeks after an ED discharge should decrease the risk of subsequent health care utilization.

Exception to evidence

- NA

Questions for the Committee:

- *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

Not a health outcome or PRO (Box 1) -> Process measure based on systematic review (Box 3) -> QQC presented (Box 4) -> Quantity: moderate; Quality: moderate; Consistency: Moderate (Box 5) -> Moderate. The highest possible rating is Moderate.

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

1b. Gap in Care/Opportunity for Improvement and Disparities

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

- The developer provided mean performance rates for follow-up visits by health plan decile.
    - Performance in the lowest decile is 11.7 percent (n=9 health plans; 14,524 visits)
    - Performance in the highest decile is 43.0 percent (n=8 health plans; 1,749 visits)
    - Overall performance is 22.1 percent (n= 82 health plans; 94,886 visits)
- The developer notes the overall rate of follow-up visits is low and indicates substantial room for improvement.

Disparities

- The developer provided performance by visit characteristics across various stratified pediatric populations (race/ethnicity, age, gender, insurance type, comorbid medical conditions).
- The developer noted that older patients, patients who were Black, and patients with fee-for-service (FFS) rather than managed care were less likely to have follow-up visits after an ED discharge.
    - Follow-up visits were higher in patients ages 3-5 (26.5 percent) and lowest in patients 18-21 (11.5 percent) years of age.
    - Those who were Asian/Pacific Islander had a higher percentage of follow-up visits (27.2 percent) compared to those that were Black (16.4 percent), Hispanic (23.6 percent), and White (20.7 percent).
    - Patients with Medicaid FFS (10.2 percent) were less likely to have follow-up visits compared to those with Medicaid managed care (23.9 percent).

Questions for the Committee:

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

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

Committee Pre-evaluation Comments:

1a. Evidence

- 1. have a question about the age range because for many the legal age of an adult is 18 and pediatrics are below 18. Medicaid populations in states other than California cut off benefits at 18. This measure however, is supported by real world patient populations having very little follow-up after an ED visit for Asthma. Especially in the Medicaid populations who do not have an established PCP or access to clinics--the ED becomes the primary care. Also, I am wondering if within the Medicaid claims data a PCP can be established first before pulling the rest of that data. Reason if they do not have PCP established before they go to the ED it is likely they will not have a f/u visit with a PCP. One of the MCO-Medicaid requirements is to have an established PCP however with narrow networks and a shortge of PCPs many beneficiaries still do not have an Established PCP.
- Evidence is limited but guidelines recommend
- Process measure. The developer provided evidence from the 2007 National Asthma Education and Prevention Program Guidelines for the Diagnosis and Management of Asthma Summary Report supporting the continuation of care for children treated in the ED in an outpatient primary care or asthma specialist setting. The guidelines were updated in 2020, but did not impact the measure specifications. Evidence was a Category B. The evidence referenced by the developer made a relationship of this measure to the patient outcome.
- Moderate level evidence, aligns with current guidelines

1b. Gap in Care/Opportunity for Improvement and Disparities

- Yes there is a performance gap and post-Covid-19 it is worse. Especially geographically. Also their point about patients 18-21yo having the lowest f/u visits may because they age out of the system or move on to college health plans or employer health plans or homelessness.
- Evidence of gap presented and disparities also
- Performance in the lowest decile is 11.7 percent (n=9 health plans; 14,524 visits); Performance in the highest decile is 43.0 percent (n=8 health plans; 1,749 visits); Overall performance is 22.1 percent (n= 82 health plans; 94,886 visits). Follow-up visits were higher in patients ages 3-5 (26.5 percent) and lowest in patients 18-21 (11.5 percent) years of age. Those who were Asian/Pacific Islander had a higher percentage of follow-up visits (27.2 percent) compared to those that were Black (16.4 percent), Hispanic (23.6 percent), and White (20.7 percent). Patients with Medicaid FFS (10.2 percent) were less likely to have follow-up visits compared to those with Medicaid managed care (23.9 percent). Data provided by the developer addressed only Medicaid data.
- Performance Gaps exist, moderate opportunity for improvement

Criteria 2: Scientific Acceptability of Measure Properties

Complex measure evaluated by Scientific Methods Panel? ☐ **Yes** ☒ **No**

Evaluators: Staff

2a. Reliability: Specifications and Testing

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

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.

Specifications:

- Measure specifications are clear and precise.

Reliability Testing:

- Reliability testing conducted at the Accountable Entity Level:
    - The developer conducted random split-half reliability testing using CA Medicaid managed care and CA Medicaid fee-for-service claims data from 2015 to assess the ratio of between-plan variation to total plan variation.
    - ICC for all plans is 0.83 (Confidence Interval [CI] 0.75-0.89; mean visits per plan 5569 [Standard Deviation 5180])
        - 1st volume quartile ICC= 0.78 (CI 0.65-0.86; mean visits 593 [SD 302])
        - 2nd volume quartile ICC= 0.89 (CI 0.66-0.97; mean visits 1,777 [SD 477])
        - 3rd volume quartile ICC= 0.98 (CI 0.86-0.99; mean visits 3,495 [SD 673])
        - 4th volume quartile ICC= 0.99 (CI 0.97-0.99; mean visits 11,110 [SD 3,648])
    - The developer notes that the results indicate very good reliability.

Questions for the Committee regarding reliability:

- *Do you have any concerns that the measure cannot be consistently implemented (i.e., are measure specifications adequate)?*
- *Do you have concerns with the generalizability of the reliability testing?*

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

2b. Validity: Validity testing; Exclusions; Risk-Adjustment; Meaningful Differences; Comparability; Missing Data

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.

2b2-2b6. Potential threats to validity should be assessed/addressed.

Validity Testing

- Validity testing conducted at the Patient/Encounter Level:
    - Predictive validity calculated using a logistic regression model with binary indicators of subsequent asthma-related emergency department (ED) visits withing 6-days and 365- days of the index ED visit.
    - Model adjusted for average age during index year, gender, chronic disease status, insurance type, and evidence of prior asthma. Predicted relationships for each analysis was completed using Stata's post-estimation "margins" command.
    - Patients with a follow-up visit within 14-days and 365- days of an asthma-related ED visit was associated with lower rates of subsequent asthma-related ED utilization, 5.7 percent (CI 5.3-6.0; p <0.001) and 25 percent (CI 24.4-25.7; p<0.001). compared to no follow up (6.4 percent [6.2-6.6] to 28.3 percent [27.8-28.7]).
- Validity testing conducted at the Accountable Entity Level:

- The developer assessed the relationship between plan performance on the measure and the percentage of eligible patients with repeat utilization (i.e., repeat ED visit within 60 days and 365 days) using linear regression.
- The developer demonstrates a beta coefficient of -0.19 (CI -0.30- [-0.08], p<0.001) for 60-day revisits; for each 1 percent increase in follow-up visits, there is a decrease of 0.2 percent in 60-day ED revisits.
- The developer notes Numbers Needed to Treat (NNT) are as follows:
    - 30 follow-up visits to prevent on subsequent ED revisit in 365 days
    - 143 follow-up visits to prevent one subsequent ED revisit within 60-days

Exclusions

- The measure does not use exclusions.

Risk-Adjustment

- The measure is not risk adjusted or stratified.

Meaningful Differences

- To assess statistically significant differences, the developer calculated the predicted plan random effects from a mixed effects logit model using individual-level data, including only the measure performance as the outcome and including the plan variable as a random effect.
    - Higher health plan performers (n=24) had a higher mean percent performance (34.9 percent; 95 percent confidence interval [CI]= 32.4-37.5) than average performers (n= 39; 24.9 percent; 95 percent CI= 23.0-26.7), and low performers (n= 19; 16.2 percent; 95 percent CI=14.1-18.3).
- The developer assessed clinically meaningful differences through exponentiating the estimated plan random effects by calculating the odds ratios for the performance of each health plan in relation to an "average" plan with a random effect of zero.
    - Higher health plan performers (n=28) had a higher mean percent performance (35.4 percent; 95 percent confidence interval [CI]= 33.2-37.6) than average performers (n= 41; 23.3 percent; 95 percent CI= 22.4-24.1), and low performers (n= 13; 13.2 percent; 95 percent CI=11.3-15.0).
- The developer noted the overall grand mean of 22 percent and that the results indicate that there are statistically and clinically meaningful differences in performance.

Missing Data

- The developer did not provide information on missing data.

Comparability

- The measure uses one set of specifications.

Questions for the Committee regarding validity:

- *Do you have any concerns regarding the validity of the measure (e.g., exclusions, risk-adjustment approach, etc.)?*
- *The developer did not provide information on missing data. Does the Standing Committee have any concerns regarding missing data?*

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

Committee Pre-evaluation Comments:

2a. Reliability-Specification

- Each State Medicaid selects and administers their programs slightly differently state-by-state, whether Fee-4-service or MCO-Medicaid. Also Medicaid programs generally have a higher ED use due to lack of healthcare access and many Medicaid programs offer flat grants to health systems to cover care delivered for chronic conditions in the ED. This measure uses Medicaid data which limits the ability to apply accross other coverages.
- This can be consistently implemented
- The measure specifications are clear and precise. The measure should be able to be consistently implemented.
- High reliability

2a2. Reliability-Testing

- It is reliabile in Medicaid data sets.
- No concerns
- The reliability testing was conducted at the Accountable Entity Level. The developer conducted random split-half reliability testing using CA Medicaid managed care and CA Medicaid fee-for-service claims data from 2015 to assess the ratio of between-plan variation to total plan variation. The data provided by the developer indicated good reliability in the results.
- None

2b. Validity

- No
- No concern
- Validity testing was conducted at the Patient/Encounter level. Predictive validity calculated using a logistic regression model with binary indicators of subsequent asthma-related emergency department (ED) visits within 6-days and 365- days of the index ED visit. Model adjusted for average age during index year, gender, chronic disease status, insurance type, and evidence of prior asthma. Predicted relationships for each analysis was completed using Stata's post-estimation "margins" command. Patients with a follow-up visit within 14-days and 365- days of an asthma-related ED visit was associated with lower rates of subsequent asthma-related ED utilization, 5.7 percent (CI 5.3- 6.0; p <0.001) and 25 percent (CI 24.4-25.7; p<0.001). compared to no follow up (6.4 percent [6.2-6.6] to 28.3 percent [27.8-28.7]). Validity was also tested at the Accountable Entity Level. The developer assessed the relationship between plan performance on the measure and the percentage of eligible patients with repeat utilization (i.e., repeat ED visit within 60 days and 365 days) using linear regression. The developer demonstrates a beta coefficient of -0.19 (CI -0.30- [-0.08], p<0.001) for 60-day revisits; for each 1 percent increase in follow-up visits, there is a decrease of 0.2 percent in 60- day ED revisits.
- None

2b2-2b3. Potential threats to validity

- Should you consider removing the beneficiaries that do not have an established PCP? Now in Covid-19, RSV, & flu remove those children testing positive.
- no concerns
- The measure did not have any exclusions noted. The measure did not use a risk adjustment methodology or stratify the resuts.

- No concerns

2b4-2b7. Potential threats to validity

- Validity testing mirrored the 2022 article by Bardach NS etal Follow-UP after asthma emergency department visits...
- No information about missing data. No threats identified
- The measure uses one set of specifications. The developer did not specify if there were any issues with missing data. The measure is not risk-adjusted or stratified. The measure does not have exclusions. The developer should explain if there was any missing data and how it was accounted for in the evaluation and results.l
- No concerns

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.

- The developer indicated that all data elements needed to compute the measure score can be found in defined fields in electronic claims and can be coded through a source other than individual obtaining the original information.
- The developer acknowledged that linking claims codes for an ED visit and outpatient visit might require collaboration between health care entities to capture the data elements needed to compute the measure score.
- The developer indicated that there are no fees associated with participation or data submission.

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:

3. Feasibility

- To be feasible outside of the California Medicaid, the analysis of Health system grants and MCO-Medicaid benefit inclusion and documentation will need to be documented.
- No real discussion of how care in different health systems will be handled
- The developer indicated that all data elements needed to compute the measure score can be found in defined fields in electronic claims and can be coded through a source other than individual obtaining the original information. There may be some challenges to link claim codes for an ED visit with the outpatient visit. All data elements are routinely generated during care delivery and are available in EHRs. The measure steward indicates the measure is ready to be operationalized.
- Moderate feasibility

Criterion 4: Use and Usability

4a. Use (4a1. Accountability and Transparency; 4a2. Feedback on measure)

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

4a.1. 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.

Current uses of the measure

Publicly reported?	☐	Yes	☒	No		
Current use in an accountability program?	☐	Yes	☒	No	☐	UNCLEAR
Planned use in an accountability program?	☒	Yes	☐	No	☐	NA

Accountability program details

- The developer states this is a new measure and has not been implemented in practice.
- The developer noted that this measure has been presented to the California (CA) Department of health Care Services (DHCS) for inclusion in the children and youth CAL Aim programs within the next three years.

4a.2. Feedback on the measure by those being measured or others. Three criteria demonstrate feedback: 1) those being measured have been given performance results or data, as well as assistance with interpreting the measure results and data; 2) those being measured and other users have been given an opportunity to provide feedback on the measure performance or implementation; 3) this feedback has been considered when changes are incorporated into the measure

Feedback on the measure by those being measured or others

- The developer noted that an Expert Panel and Asthma Advisory Council (health plan leadership and content and clinical experts) reviewed the measure and provided feedback on the specifications and concepts for additional development.

***Questions for the Committee**:*

- *How have (or can) the performance results be used to further the goal of high-quality, efficient healthcare?*
- *How has the measure been vetted in real-world settings by those being measured or others?*

Preliminary rating for Use: ☒ **Pass** ☐ **No Pass**

4b. Usability (4b1. Improvement; 4b2. Benefits of measure)

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

4b.1 Improvement. Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated.

Improvement results

- The developers states that this measure is not currently in use so performance results are not available yet.

4b2. Benefits vs. harms. 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).

Unexpected findings (positive or negative) during implementation

- The developer did not provide unexpected findings.

Potential harms

- The developer did not identify any potential harms.

***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?*

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

Committee Pre-evaluation Comments:

4a. Use

- This measure is an excellent measusre to insure that a MCO-Medicaid vendor IS providing the very important f/u care.
- Not currently in use, new measure. Proposed to accountability program
- The measure is not currently publicly reported and is not used in an accountability program. The developer indicates that there is a plan to include in an accountability program. The measure has been presented to the DHCS for inclusion in the children and youth CAL Aim programs. The measure has not been vetted in a real life setting. The measure was tested using MediCal data.
- Planned use

4a. Usability

- Again to apply outside of California Medicaid each state's insurance rules and medicaid coverages will need to be examined prior to pulling the data, as well as with non-medicaid coverage.
- no harms
- The measure is not yet in use but has been presented to MediCal for inclusion in a quality/performance improvement program. No harms were identified by the developer. The developer stated that the benefits of the performance measure in facilitating progress toward achieving high-quality, efficient health care for individuals and populations outweigh evidence of unintended negative consequences to individuals or populations, but did not provide information as to what those might be..
- No concerns

Criterion 5: Related and Competing Measures

Related measures

- NQF #3599 Pediatric Asthma Emergency Department Use

Harmonization

- The developer indicates that the measure is harmonized with NQF #3599 to the extent possible (age range and ICD code claims).

Committee Pre-evaluation Comments:

5: Related and Competing Measures

- Could not get to NQF #3599 to compare....still concerned about the age range-would like the backgroud on that range.
- related measures are harmonized to extent possible.
- NQF #3599 Pediatric Asthma Emergency Department Use and that the new measure is harmonized with the measure.
- NA

Public and NQF Member Comments (Submitted as of Month Day, Year)

Member Expression of Support

- No members submitted an expression of support for this measure.

Comments

- No NQF member and public comments were received in advance of the Standing Committee evaluation.

Scientific Acceptability Evaluation

RELIABILITY: SPECIFICATIONS

1. **Are submitted specifications precise, unambiguous, and complete so that they can be consistently implemented? ☒ Yes ☐ No**
2. **Briefly summarize any changes to the measure specifications and/or concerns about the measure specifications.**
   - This is a new measure; therefore, no changes have been previously made.

RELIABILITY: TESTING

3. **Reliability testing level: ☒ Accountable-Entity Level ☐ Patient/Encounter Level ☐ Neither**
4. **Reliability testing was conducted with the data source and level of analysis indicated for this measure:**
   ☒ Yes ☐ No
5. If accountable-entity level and/or patient/encounter level reliability testing was NOT conducted or if the methods used were NOT appropriate, was **empirical VALIDITY testing** of patient-level data conducted?
   ☒ Yes ☐ No
6. **Assess the method(s) used for reliability testing:**

   - The developer conducted random split-half reliability testing using Medicaid managed care and Medicaid fee-for-service claims data from 2015 to assess the ratio of between-plan variation to total plan variation.
     - ICC for all plans is 0.83 (Confidence Interval [CI] 0.75-0.89; mean visits per plan 5569 [Standard Deviation 5180])
     - 1st volume quartile ICC= 0.78 (CI 0.65-0.86; mean visits 593 [SD 302])

- 2nd volume quartile ICC= 0.89 (CI 0.66-0.97; mean visits 1,777 [SD 477])
- 3rd volume quartile ICC= 0.98 (CI 0.86-0.99; mean visits 3,495 [SD 673])
- 4th volume quartile ICC= 0.99 (CI 0.97-0.99; mean visits 11,110 [SD 3,648])

7. **Assess the results of reliability testing**
   - The developer notes that the results indicate very good reliability.
8. Was the method described and appropriate for assessing the proportion of variability due to real differences among measured entities? **NOTE:** If multiple methods used, at least one must be appropriate.

   ☒ **Yes** ☐ **No** ☐ **Not applicable**
9. Was the method described and appropriate for assessing the reliability of ALL critical data elements?

   ☒ **Yes** ☐ **No** ☐ **Not applicable** (patient/encounter level testing was not performed)
10. **OVERALL RATING OF RELIABILITY** (taking into account precision of specifications and all testing results):

    ☐ **High** (NOTE: Can be HIGH only if accountable-entity level testing has been conducted)

    ☒ **Moderate** (NOTE: Moderate is the highest eligible rating if accountable-entity level testing has not been conducted)

    ☐ **Low** (NOTE: Should rate LOW if you believe specifications are NOT precise, unambiguous, and complete or if testing methods/results are not adequate)

    ☐ **Insufficient** (NOTE: Should rate INSUFFICIENT if you believe you do not have the information you need to make a rating decision)
11. **Briefly explain rationale for the rating of OVERALL RATING OF RELIABILITY and any concerns you may have with the approach to demonstrating reliability.**

    Measure specifications precise, unambiguous, and complete (Box 1) -> Empirical testing conducted (Box 2) -> Testing conducted at each level of analysis (Box 4) -> Method described and appropriate for assessing the proportion of performance variability (Box 5) -> Moderate certainty or confidence that the accountable entity levels are reliable (Box 6a) -> Moderate rating

VALIDITY: TESTING

12. **Validity testing level (check all that apply):**

    ☒ **Accountable-Entity Level** ☐ **Patient or Encounter-Level** ☒ **Both**

    NOTE: Empirical validity testing is expected at time of maintenance review; if not possible, justification is required.
13. **If patient/encounter level validity testing was provided, was the method described and appropriate for assessing the accuracy of ALL critical data elements? NOTE:** Data element validation from the literature is acceptable.

    ☒ **Yes**

    ☐ **No**

    ☒ **Not applicable** (patient/encounter level testing was not performed)
14. **Method of establishing validity at the accountable-entity level:**

    ☐ **Face validity**

    ☒ **Empirical validity testing at the accountable-entity level**

    ☐ **N/A (accountable-entity level testing not conducted)**
15. **Was the method described and appropriate for assessing conceptually and theoretically sound hypothesized relationships?**

    ☒ **Yes**

☒ **No**

☐ **Not applicable** (accountable-entity level testing was not performed)

16. **Assess the method(s) for establishing validity**

- Validity testing conducted at the Patient/Encounter Level:
  - Predictive validity calculated using a logistic regression model with binary indicators of subsequent asthma-related emergency department (ED) visits withing 6-days and 365- days of the index ED visit.
  - Model adjusted for average age during index year, gender, chronic disease status, insurance type, and evidence of prior asthma. Predicted relationships for each analysis was completed using Stata's post-estimation "margins" command.
  - Patients with a follow-up visit within 14-days and 365- days of an asthma-related ED visit was associated with lower rates of subsequent asthma-related ED utilization, 5.7 percent (CI 5.3-6.0; p <0.001) and 25 percent (CI 24.4-25.7; p<0.001). compared to no follow up (6.4 percent [6.2-6.6] to 28.3 percent [27.8-28.7]).
- Validity testing conducted at the Accountable Entity Level:
  - The developer assessed the relationship between plan performance on the measure and the percentage of eligible patients with repeat utilization (i.e., repeat ED visit within 60 days and 365 days) using linear regression.
  - The developer demonstrates a beta coefficient of -0.19 (CI -0.30- [-0.08], p<0.001) for 60-day revisits; for each 1 percent increase in follow-up visits, there is a decrease of 0.2 percent in 60-day ED revisits.
  - The developer notes Numbers Needed to Treat (NNT) are as follows:
    - 30 follow-up visits to prevent on subsequent ED revisit in 365 days
    - 143 follow-up visits to prevent one subsequent ED revisit within 60-days

17. **Assess the results(s) for establishing validity**

- The developer states the findings demonstrate meaningful predictive validity for the measure.

VALIDITY: ASSESSMENT OF THREATS TO VALIDITY

18. **Please describe any concerns you have with measure exclusions.**

- There are no exclusions for this measure.

19. **Risk Adjustment**

22a. **Risk-adjustment method**

☒ None (only answer Question 20b and 20e) ☐ Statistical model ☐ Stratification

☐ Other method assessing risk factors (please specify)

22b. **If not risk-adjusted, is this supported by either a conceptual rationale or empirical analyses?**

☐ Yes ☐ No ☒ Not applicable

22c. **Social risk adjustment:**

22c.1 Are social risk factors included in risk model? ☐ Yes ☐ No ☒ Not applicable

22c.2 Conceptual rationale for social risk factors included? ☐ Yes ☐ No

22c.3 Is there a conceptual relationship between potential social risk factor variables and the measure focus? ☐ Yes ☐ No

22d.**Risk adjustment summary:**

22d.1 All of the risk-adjustment variables present at the start of care? ☐ Yes ☐ No

22d.2 If factors not present at the start of care, do you agree with the rationale provided for inclusion?
☐ Yes ☐ No

22d.3 Is the risk adjustment approach appropriately developed and assessed? ☐ Yes ☐ No

22d.4 Do analyses indicate acceptable results (e.g., acceptable discrimination and calibration)
☐ Yes ☐ No

22d.5.Appropriate risk-adjustment strategy included in the measure? ☐ Yes ☐ No

22e**. Assess the risk-adjustment approach**

- The measure is not risk adjusted or stratified.

20. **Please describe any concerns you have regarding the ability to identify meaningful differences in performance.**

    For cost/resource use measures, does this measure identify meaningful differences about cost and resource use between the measured entities?

    - No concerns with the ability to identify meaningful differences in performance.

21. **Please describe any concerns you have regarding comparability of results if multiple data sources or methods are specified.**

    - No concerns as only one data source were used.

22. **Please describe any concerns you have regarding missing data.**

    - No concerns with missing data.

For cost/resource use measures ONLY:

If not cost/resource use measure, please skip to question 25.

23. **Are the specifications in alignment with the stated measure intent?**

    ☐ **Yes** ☐ **Somewhat** ☐ **No (If "Somewhat" or "No", please explain)**

24. **Describe any concerns of threats to validity related to attribution, the costing approach, carve outs, or truncation (approach to outliers):** No concerns of threats to validity.

25. **OVERALL RATING OF VALIDITY taking into account the results and scope of all testing and analysis of potential threats.**

    ☐ **High** (NOTE: Can be HIGH only if accountable-entity level testing has been conducted)

    ☒ **Moderate** (NOTE: Moderate is the highest eligible rating if accountable-entity level testing has NOT been conducted)

    ☐ **Low** (NOTE: Should rate LOW if you believe that there are threats to validity and/or relevant threats to validity were not assessed OR if testing methods/results are not adequate)

    ☐ **Insufficient** (NOTE: For instrument-based measures and some composite measures, testing at both the accountable-entity level and the patient/encounter level is required; if not conducted, should rate as INSUFFICIENT.)

26. **Briefly explain rationale for rating of OVERALL RATING OF VALIDITY and any concerns you may have with the developers' approach to demonstrating validity.**

    All potential threats to validity relevant to the measure empirically assessed (Box 1) -> Empirical validity testing conducted using the measure as specified (Box 2) -> Validity testing at the accountable entity level for each level of the analysis (Box 5) -> Testing methods described and appropriate for assessing conceptually and theoretically sound hypothesized relationships (Box 6) -> Moderate certainty or confidence that accountable entity levels are valid indicator of quality (Box 7b) -> Moderate rating

ADDITIONAL RECOMMENDATIONS

27. **If you have listed any concerns in this form, do you believe these concerns warrant further discussion by the multi-stakeholder Standing Committee? If so, please list those concerns below.**

Criteria 1: 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

---

Please separate added or updated information from the most recent measure evaluation within each question response in the Importance to Measure and Report: Evidence section. For example:

2021 Submission:

Updated evidence information here.

2018 Submission:

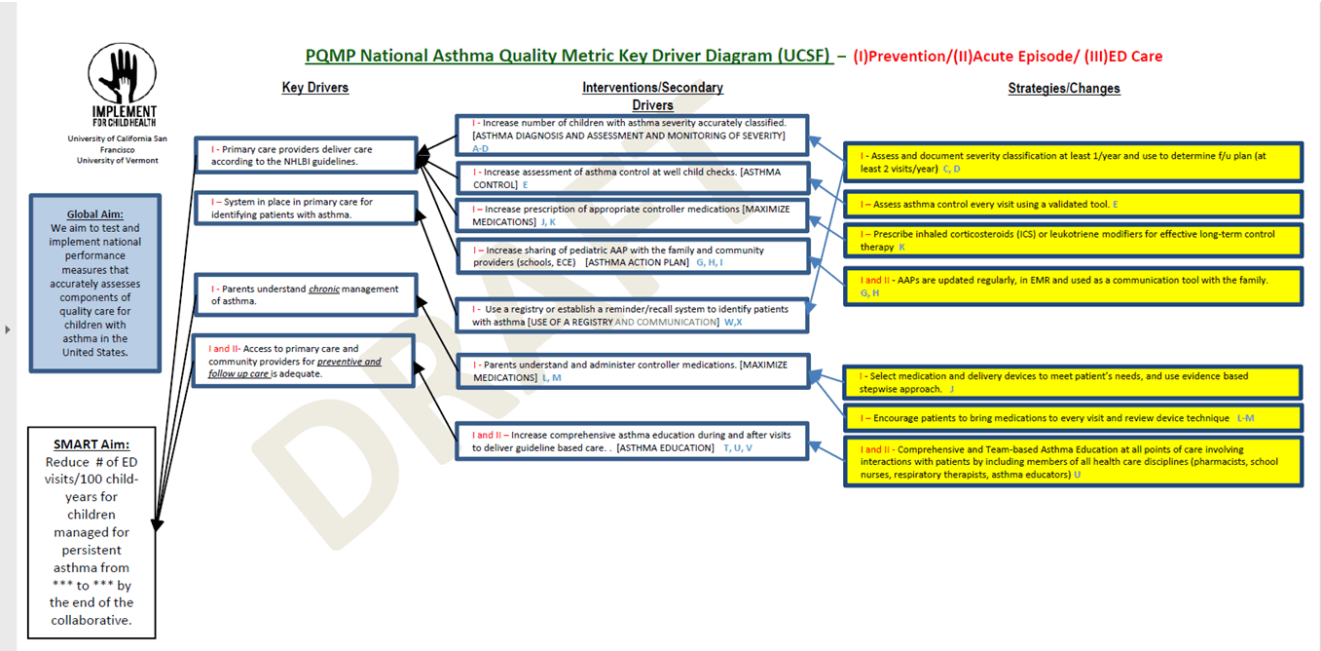
Evidence from the previous submission here.

1a. Evidence

1a.01. Provide a logic model.

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.

[Response Begins]



This figure shows a key driver diagram to prevent pediatric asthma-related ED visits. There is a SMART aim on the far left, to reduce pediatric asthma-related ED visits. The next column shows key drivers, then a

column of interventions to affect those key drivers, followed by a columns with strategies and care process changes that would contribute to those interventions.

The key driver diagram above conveys the logic model underlying the proposed measure. On the far left is an aim statement regarding reducing emergency department visits for asthma. One of the key drivers in the second column is "Access to primary care and community providers for preventive and follow-up care is adequate". The proposed measure operationalizes this concept, assessing access to providers for follow-up care after emergency department visits, in order to prevent subsequent visits. The proposed mechanism for this measure supporting decreased ED visits is through enabling the key driver "Primary care providers deliver care according to the NHLBI asthma guidelines." These support the interventions and secondary drivers listed in the third and fourth columns as depicted.

[Response Ends]

1a.02. Select the type of source for 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.

[Response Begins]

Clinical Practice Guideline recommendation (with evidence review)

[Response Ends]

If the evidence is not based on a systematic review, skip to the end of the section and do not complete the repeatable question group below. If you wish to include more than one systematic review, add additional tables by clicking "Add" after the final question in the group.

Evidence - Systematic Reviews Table (Repeatable)

Group 1 - Evidence - Systematic Reviews Table

1a.03. Provide the title, author, date, citation (including page number) and URL for the systematic review.

[Response Begins]

National Asthma Education and Prevention Program. Expert Panel Report 3 (EPR-3): Guidelines for the Diagnosis and Management of Asthma-Summary Report 2007. J Allergy Clin Immunol. 2007 Nov;120(5 Suppl):S94-138. doi: 10.1016/j.jaci.2007.09.043. Erratum in: J Allergy Clin Immunol. 2008 Jun;121(6):1330. PMID: 17983880. Also available at: https://www.nhlbi.nih.gov/sites/default/files/media/docs/EPR-3_Asthma_Full_Report_2007.pdf

Although the NHLBI guidelines were updated in 2020, this update focused on specific topics and did not include any updates to the recommendations for asthma ED follow-up (Cloutier, 2021).

[Response Ends]

1a.04. Quote the guideline or recommendation verbatim about the process, structure or intermediate outcome being measured. If not a guideline, summarize the conclusions from the systematic review.

[Response Begins]

Section: The Expert Panel recommends the following actions for discharging patients from the ED:

--"Emphasize the need for continual, regular care in an outpatient setting, and refer the patient for a follow up asthma care appointment (either primary care provider (PCP) or asthma specialist) within 1–4 weeks (Evidence B)." Page 400.

[Response Ends]

1a.05. Provide the grade assigned to the evidence associated with the recommendation, and include the definition of the grade.

[Response Begins]

- **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.

[Response Ends]

1a.06. Provide all other grades and definitions from the evidence grading system.

[Response Begins]

"The Expert Panel agreed to specify the level of evidence used to justify the recommendations being made. Panel members only included ranking of evidence for recommendations they made based on the scientific literature in the current evidence review. They did not assign evidence rankings to recommendations pulled through from the EPR—2 1997 on topics that are still important to the diagnosis and management of asthma but for which there was little new published literature. These "pull through" recommendations are designated by EPR—2 1997 in parentheses following the first mention of the recommendation. For recommendations that have been either revised or further substantiated on the basis of the evidence review conducted for the EPR—3: Full Report 2007, the level of evidence is indicated in the text in parentheses following first mention of the recommendation. The system used to describe the level of evidence is as follows (Jadad et al. 2000):

- **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. In addition to specifying the level of evidence supporting a recommendation, the Expert Panel agreed to indicate the strength of the recommendation. When a certain clinical practice "is recommended," this indicates a strong recommendation by the panel. When a certain clinical practice "should, or may, be considered," this indicates that the recommendation is less strong.

This distinction is an effort to address nuances of using evidence ranking systems. For example, a recommendation for which clinical RCT data are not available (e.g., conducting a medical history for symptoms suggestive of asthma) may still be strongly supported by the Panel. Furthermore, the range of evidence that qualifies a definition of "B" or "C" is wide, and the Expert Panel considered this range and the potential implications of a recommendation as they decided how strongly the recommendation should be presented."

[Response Ends]

1a.07. Provide the grade assigned to the recommendation, with definition of the grade.

[Response Begins]

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.

[Response Ends]

1a.08. Provide all other grades and definitions from the recommendation grading system.

[Response Begins]

- **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 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.

[Response Ends]

1a.09. Detail the quantity (how many studies) and quality (the type of studies) of the evidence.

[Response Begins]

There were 2 randomized controlled trials (Baren, Zorc,); and one observational study (Schatz) referenced that assess the effect of a follow-up visit after an emergency department (ED) visit for asthma on subsequent asthma ED visits. The interventions are in the controlled trials are heterogenous (e.g., follow-up as well as other interventions to improve asthma management, the follow-up time is sometimes less than one year). In the observational studies, follow-up is the 'exposure'; however, the exact content of the visit (e.g., what was discussed, what was prescribed or changed) is not clear.

[Response Ends]

1a.10. Provide the estimates of benefit, and consistency across studies.

[Response Begins]

There is inconsistency with the estimates of the benefit. Since an ED visit may indicate inadequate management or plans for handling asthma exacerbations, outpatient follow-up with the primary clinician or asthma specialist should diminish the likelihood of a repeat ED visit. According to the NHLBI follow up asthma care can occur with either the primary care provider (PCP) or an asthma specialist within 1–4 weeks after the ED discharge (NHLBI, 2007).

In general, the review felt that follow-up should decrease the risk of subsequent health care utilization.

[Response Ends]

1a.11. Indicate what, if any, harms were identified in the study.

[Response Begins]

There were no 'harms' specifically identified in any of the studies; however, the "costs" of a follow-up asthma visit to a primary care provider might include potential lost time from school or work for the patient and family.

[Response Ends]

1a.12. Identify any new studies conducted since the systematic review, and indicate whether the new studies change the conclusions from the systematic review.

[Response Begins]

Since the 2007 NHLBI guidelines, there are now a total of are 4 randomized controlled trials (Baren, Zorc, Gorelick, Teach); and several observational studies (Schatz, Cabana, Bardach) that assess the effect of a follow-up visit after an emergency department (ED) visit for asthma on subsequent asthma ED visits. Once again, the interventions are in the controlled trials are heterogenous (e.g., follow-up as well as other interventions to improve asthma management, the follow-up time is sometimes less than one year). In the observational studies, follow-up is the 'exposure'; however, the exact content of the visit (e.g., what was discussed, what was prescribed or changed) is not clear.

Prior to the widespread use of asthma education interventions and use of proper controller medications, there was mixed evidence that referral after an ED visit for asthma follow-up will make a difference in the likelihood of subsequent ED visits. However, the quality, content and structure of the outpatient asthma visit may be important determinants in preventing future ED asthma visits.

In the last decade, methods to improve outpatient asthma management and education have evolved and elements of a successful follow-up appointment have been more clearly described (Cabana, 2006; Schatz, 2009).

The most recent study by Bardach (2022), with at least one year of follow-up suggest that 14-day follow-up was associated with decreased subsequent asthma-related ED revisits at 60 days (5.7% versus 6.4%, $P < .001$) and at 365 days (25.0% versus 28.3%, $P < 0.001$). This study used recent observational data from California Medicaid (2014-2016), as well as Vermont (2014-2016) and Massachusetts (2013-2015) all-payer claims databases, Bardach et al. found a protective association between outpatient 14-day follow-up and asthma-related ED revisits. This may reflect improved asthma control as providers follow the NHLBI guideline stepwise approach (Bardach, 2022).

In terms of impact, according to the Bardach (2022) study, "The size of the associated decreases in ED use were modest, with a "number needed to treat" of 30 follow-up visits needed to prevent one subsequent ED revisit within a year and 143 to prevent one within 60 days. However, taken over a large population, the decreased revisits represent substantial savings and improved quality of life for patients with asthma and their families. Follow-up visits were associated with 10.6 fewer ED revisits/100 child-years. In 2016, there were 674,145 ED visits for asthma for children 1 to 17 years nationally. If follow-up was in place for all visits, this translates into a potential ~72,000 subsequent revisits prevented."

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Baren JM, Boudreaux ED, Brenner BE, Cydulka RK, Rowe BH, Clark S, Camargo CA Jr. Randomized controlled trial of emergency department interventions to improve primary care follow-up for patients with acute asthma. Chest. 2006 Feb;129(2):257-265. doi: 10.1378/chest.129.2.257. PMID: 16478839.

Cabana MD, Bruckman D, Bratton SL, Kemper AR, Clark NM. Association between outpatient follow-up and pediatric emergency department asthma visits. J Asthma. 2003;40(7):741-9. doi: 10.1081/jas-120023499. PMID: 14626330.

Cabana MD, Slish KK, Evans D, et al. Impact of physician asthma care education on patient outcomes. Pediatrics. 2006;117:2149–2157.

Cloutier MM, Teach SJ, Lemanske RF Jr, Blake KV. The 2020 Focused Updates to the NIH Asthma Management Guidelines: Key Points for Pediatricians. Pediatrics. 2021 Jun;147(6):e2021050286. doi: 10.1542/peds.2021-050286. Epub 2021 May 3. PMID: 33941586; PMCID: PMC8168603.

Gorelick MH, Meurer JR, Walsh-Kelly CM, Brousseau DC, Grabowski L, Cohn J, Kuhn EM, Kelly KJ. Emergency department allies: a controlled trial of two emergency department-based follow-up interventions to improve asthma outcomes in children. Pediatrics. 2006 Apr;117(4 Pt 2):S127-34. doi: 10.1542/peds.2005-2000J. PMID: 16777828.

Schatz M, Rachelefsky G, Krishnan JA. Follow-up after acute asthma episodes: what improves future outcomes? J Emerg Med. 2009;37(2 Suppl):S42–S50.

Smith SR, Jaffe DM, Fisher EB Jr, Trinkaus KM, Highstein G, Strunk RC. Improving follow-up for children with asthma after an acute Emergency Department visit. J Pediatr. 2004 Dec;145(6):772-7. doi: 10.1016/j.jpeds.2004.08.029. Erratum in: J Pediatr. 2005 Mar;146(3):413. PMID: 15580199.

Teach SJ, Crain EF, Quint DM, Hylan ML, Joseph JG. Improved asthma outcomes in a high-morbidity pediatric population: results of an emergency department-based randomized clinical trial. Arch Pediatr Adolesc Med. 2006 May;160(5):535-41. doi: 10.1001/archpedi.160.5.535. PMID: 16651498.

Zeiger RS, Heller S, Mellon MH, Wald J, Falkoff R, Schatz M. Facilitated referral to asthma specialist reduces relapses in asthma emergency room visits. J Allergy Clin Immunol. 1991 Jun;87(6):1160-8. doi: 10.1016/0091-6749(91)92162-t. Erratum in: J Allergy Clin Immunol 1992 Aug;90(2):278. PMID: 2045618.

[Response Ends]

1a.13. If source of evidence is NOT from a clinical practice guideline, USPSTF, or systematic review, describe the evidence on which you are basing the performance measure.

[Response Begins]

NA

[Response Ends]

1a.14. Briefly synthesize the evidence that supports the measure.

[Response Begins]

NA

[Response Ends]

1a.15. Detail the process used to identify the evidence.

[Response Begins]

NA

[Response Ends]

1a.16. Provide the citation(s) for the evidence.

[Response Begins]

NA

[Response Ends]

1b. Performance Gap

1b.01. Briefly explain the rationale for this measure.

Explain how the measure will improve the quality of care, and list the benefits or improvements in quality envisioned by use of this measure.

[Response Begins]

The rationale for this measure is to improve access for patients who may benefit from additional asthma management and support. The NHLBI guidelines recommend follow-up with a provider within 1-4 weeks after an ED visit and provide evidence-based recommendations for management of asthma and connection to a provider shortly after an exacerbation can facilitate delivery of evidence-based care. This can include initiation or step up of a controller medication to prevent future exacerbations, identification of actionable triggers (dust or smoking exposure in the house), and identification of barriers to asthma home management. Having a follow-up visit may not guarantee better asthma control, since the quality of the care delivered during the visit may vary. However, this measure supports a key process step to improving health care quality after an asthma-related ED visit by highlighting the importance of the connection with a provider. As noted in 1b.02 Table 2, the overall rate of follow-up visits is quite low, indicating substantial room for improvement.

[Response Ends]

1b.02. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis.

Include mean, std dev, min, max, interquartile range, and 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.

[Response Begins]

Table 2. Performance by Health Plan Decile

Decile	Mean* (%)	SD	Min	Max	Health plans, n	Visits, n
1st	11.7	2.5	7.8	15	9	14,524
2nd	17.3	1.8	15.3	20.0	8	17,714
3rd	20.8	0.4	20.1	21.5	8	7,418
4th	22.8	0.7	21.7	23.5	8	7,226
5th	24.0	0.3	23.6	24.6	8	20,828
6th	25.6	0.6	24.7	26.4	9	7,659
7th	28.6	1.2	26.9	30.1	8	8,736
8th	31.3	1.0	30.2	33.0	8	6,596

Decile	Mean* (%)	SD	Min	Max	Health plans, n	Visits, n
9th	34.8	1.3	33.3	37.0	8	2,439
10th	43.0	4.4	37.7	52.5	8	1,749
All	22.1	41.2	7.8	52.5	82	94886

Table 2 shows performance by health plan decile. Performance in the lowest decile is 11.7% and at the highest decile is 43.0% and overall performance is 22.1 percent.

[Response Ends]

1b.03. If no or limited performance data on the measure as specified is reported above, 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. Include citations.

[Response Begins]

NA

[Response Ends]

1b.04. 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.

Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included. Include mean, std dev, min, max, interquartile range, and scores by decile. 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.

[Response Begins]

Table 3. Performance by Visit characteristics

Visit Characteristics	Visits, n (%)	Patients with follow-up within 14 days, %	Standard deviation, %
Total	**94,886 (100)**	**22.1**	**41.5**
Age group, years	*	*	
3-5	**31,569 (33.3)**	**26.5**	**44.1**
6-11	**27,811 (29.3)**	**23.5**	**42.4**
12-17	**21,751 (22.9)**	**20.7**	**40.5**
18-21	**13,755 (14.5)**	**11.5**	**31.8**
Gender	*	*	*
Male	**54,463 (57.4)**	**22.8**	**41.9**
Female	**40,423 (42.6)**	**21.2**	**40.9**

Visit Characteristics	Visits, n (%)	Patients with follow-up within 14 days, %	Standard deviation, %
Race/Ethnicity	*	*	*
White	**14,624 (15.4)**	**20.7**	**40.6**
Hispanic	**51,030 (53.8)**	**23.6**	**42.5**
Black	**16,063 (16.9)**	**16.4**	**37.1**
Asian/Pacific Islander	**4,341 (4.6)**	**27.2**	**44.5**
Other	**3,143 (3.3)**	**22.1**	**41.5**
Missing or Declined to state	**5,685 (6.0)**	**24.0**	**42.7**
Insurance type	*	*	*
Medicaid managed care	**82,702 (87.2)**	**23.9**	**42.6**
Medicaid FFS[a]	**12,184 (12.8)**	**10.2**	**30.3**
PMCA[b]	*	*	*
None (non-chronic)	**63,271 (66.7)**	**20.1**	**40.1**
Chronic, non-complex	**17, 593 (18.5)**	**24.4**	**42.9**
Complex chronic	**14,022 (14.8)**	**28.4**	**45.1**

Table 3 presents performance by visit characteristics, including age, gender, race, insurance type, and comorbid medical conditions (none, non-complex chronic, complex chronic). Older patients, patients who were black, and patients with fee-for-service rather than managed care were less likely to have follow-up. Patients with other complex chronic conditions were more likely to have follow-up within 14 days.

[a] FFS: Fee for service. [b]PMCA: pediatric medical complexity algorithm, using ICD9 and 10 codes to assess for comorbid medical conditions, in three categories, no chronic comorbidities, chronic non-complex comorbidities, and complex chronic comorbidities (Simon et al. 2014, 2018). * This cell intentionally left blank.

[Response Ends]

1b.05. If no or limited data on disparities from the measure as specified is reported above, 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 above.

[Response Begins]

NA

[Response Ends]

Criteria 2: 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.

---

sp.01. Provide the measure title.

Measure titles should be concise yet convey who and what is being measured (see What Good Looks Like).

[Response Begins]

Follow-up After Emergency Department Visits for Asthma

[Response Ends]

sp.02. Provide a brief description of the measure.

Including type of score, measure focus, target population, timeframe, (e.g., Percentage of adult patients aged 18-75 years receiving one or more HbA1c tests per year).

[Response Begins]

This process measure seeks to capture follow up after asthma-related emergency department (ED) visits for children with asthma after discharge from the ED, as recommended by the NHLBI 2007 guidelines. This measure assesses the percentage of asthma-related ED visits for children ages 3-21 with a follow-up visit with a primary care clinician or an asthma subspecialist within 14 days of discharge from the ED, within the reporting year, for patients who are enrolled in the health plan for two consecutive months following the ED visit.

[Response Ends]

sp.04. Check all the clinical condition/topic areas that apply to your measure, below.

Please refrain from selecting the following answer option(s). We are in the process of phasing out these answer options and request that you instead select one of the other answer options as they apply to your measure.

Please do not select:

- *Surgery: General*

[Response Begins]

Respiratory: Asthma

[Response Ends]

sp.05. Check all the non-condition specific measure domain areas that apply to your measure, below.

[Response Begins]

Access to Care

Care Coordination

Care Coordination: Transitions of Care

Primary Prevention

[Response Ends]

sp.06. Select one or more target population categories.

Select only those target populations which can be stratified in the reporting of the measure's result.

Please refrain from selecting the following answer option(s). We are in the process of phasing out these answer options and request that you instead select one of the other answer options as they apply to your measure.

Please do not select:

- *Populations at Risk: Populations at Risk*

[Response Begins]

Children (Age < 18)

[Response Ends]

sp.07. Select the levels of analysis that apply to your measure.

Check ONLY the levels of analysis for which the measure is SPECIFIED and TESTED.

Please refrain from selecting the following answer option(s). We are in the process of phasing out these answer options and request that you instead select one of the other answer options as they apply to your measure.

Please do not select:

- *Clinician: Clinician*
- *Population: Population*

[Response Begins]

Health Plan

[Response Ends]

sp.08. Indicate the care settings that apply to your measure.

Check ONLY the settings for which the measure is SPECIFIED and TESTED.

[Response Begins]

Ambulatory Care

[Response Ends]

sp.09. 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. If no URL is available, indicate "none available".

[Response Begins]

https://chipper.ucsf.edu/studies/implement/documents

[Response Ends]

sp.11. Attach the data dictionary, code table, or value sets (and risk model codes and coefficients when applicable). Excel formats (.xlsx or .csv) are preferred.

Attach an excel or csv file; if this poses an issue, contact staff . Provide descriptors for any codes. Use one file with multiple worksheets, if needed.

[Response Begins]

Available in attached Excel or csv file

[Response Ends]

sp.12. State the numerator.

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.

[Response Begins]

The numerator assesses whether there was a follow-up visit within 14 days to a primary care or asthma-specific subspecialty provider.

[Response Ends]

sp.13. Provide details needed to calculate the numerator.

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 sp.11.

[Response Begins]

Of the eligible asthma ED visits described in the denominator, those with outpatient follow-up with a primary care clinician or asthma specialist within 14 days of discharge from the ED.

Outpatient visits are identified using CPT codes for outpatient and preventive care visits (see excel spreadsheet tab “Outpatient visits (numerator)”.

Provider type is defined using taxonomy codes from NPPES named below ("Provider Type of Follow-up Clinicians) and listed in the excel spreadsheet tab “NPPES codes (numerator)”.

Provider Type of Follow-up Clinicians

- Allergy and Immunology
- Family Medicine
- Internal Medicine

Notes: Pulmonary medicine is included under Pediatrics and/or Internal Medicine.

This is identified according to the NPIs primary specialization noted in NPPES. These are also listed in the excel file tab “NPPES codes (numerator)”

[Response Ends]

sp.14. State the denominator.

Brief, narrative description of the target population being measured.

[Response Begins]

Children 3-21 years of age with an asthma-related ED visit (primary or second diagnosis (in the second diagnostic spot) of asthma) during the measurement year, with at least 2 months of insurance enrollment after the ED visit.

[Response Ends]

sp.15. Provide details needed to calculate the denominator.

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 sp.11.

[Response Begins]

Patients between the ages of 3 and 21 at the time of the index ED visit are eligible. Some of these patients may have started the measurement year at the age of 2 years old and some may become 22 years old during the measurement year, but if they are 3-21 years old at the time of the index ED visit they are eligible for inclusion.

To identify patients who have had an ED visit during the measurement year, eligible patient claims are examined for ED visits, using CPT and revenue codes to identify those visits (see Excel spreadsheet for ED visit codes to identify ED visit types, tab "ED Visits (denominator)").

To identify eligible ED visits, eligible claims should be examined for visits with ICD9 and ICD10 diagnoses used to define asthma in the first or second diagnostic spot, (see Excel spreadsheet for ED visit codes to identify ED visit types, tab "Asthma ICD codes (denominator)").

[Response Ends]

sp.16. Describe the denominator exclusions.

Brief narrative description of exclusions from the target population.

[Response Begins]

none

[Response Ends]

sp.17. Provide details needed to calculate the denominator exclusions.

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 sp.11.

[Response Begins]

NA

[Response Ends]

sp.18. Provide all information required to stratify the measure results, if necessary.

Include 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 in the Data Dictionary field.

[Response Begins]

NA

[Response Ends]

sp.19. Select the risk adjustment type.

Select type. Provide specifications for risk stratification and/or risk models in the Scientific Acceptability section.

[Response Begins]

No risk adjustment or risk stratification

[Response Ends]

sp.20. Select the most relevant type of score.

Attachment: If available, please provide a sample report.

[Response Begins]

Categorical, e.g., yes/no

[Response Ends]

sp.21. Select the appropriate interpretation of the measure score.

Classifies interpretation of score according to whether better quality or resource use is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score

[Response Begins]

Better quality = Higher score

[Response Ends]

sp.22. Diagram or describe the calculation of the measure score as an ordered sequence of steps.

Identify the target population; exclusions; cases meeting the target process, condition, event, or outcome; time period of data, aggregating data; risk adjustment; etc.

[Response Begins]

Step 1: Look for any qualifying events (eligible events) using the criteria for ED visits during the first 11.5 months of the enrollment year.

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.

Once denominator visits have been identified:

Step 4: Assess whether a follow-up visit has occurred in any setting in the 14 days after discharge

Step 5: If follow-up occurs, assess NPI taxonomy code and whether practitioner is in any of the specialties listed in Table 1.

Calculate percent of visits, by health plan, on day of ED visit with a follow-up within 14 days after discharge.

[Response Ends]

sp.25. If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.

[Response Begins]

NA

[Response Ends]

sp.28. Select only the data sources for which the measure is specified.

[Response Begins]

Claims

[Response Ends]

sp.29. Identify the specific data source or data collection instrument.

For example, provide the name of the database, clinical registry, collection instrument, etc., and describe how data are collected.

[Response Begins]

Data used are administrative claims. These are usually available as state-level files for Medicaid patients or as all-payer claims databases, and are able to be analyzed using SAS or another programming language.

[Response Ends]

sp.30. Provide the data collection instrument.

[Response Begins]

No data collection instrument provided

[Response Ends]

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 fields in the Scientific Acceptability sections of the Measure Submission Form.

- 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.
- All required sections must be completed.
- For composites with outcome and resource use measures, Questions 2b.23-2b.37 (Risk Adjustment) also must be completed.
- If specified for multiple data sources/sets of specifications (e.g., claims and EHRs), Questions 2b.11-2b.13 also must be completed.
- An appendix for supplemental materials may be submitted (see Question 1 in the Additional section), but there is no guarantee it will be reviewed.
- Contact NQF staff with any questions. Check for resources at the Submitting Standards webpage .
- For information on the most updated guidance on how to address social risk factors variables and testing in this form refer to the release notes for the 2021 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.

2a. Reliability testing 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 instrument-based measures (including PRO-PMs) and composite performance measures, reliability should be demonstrated for the computed performance score.

2b1. Validity testing 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 instrument based measures (including PRO-PMs) and composite performance measures, validity should be demonstrated for the computed performance score.

2b2. Exclusions are supported by the clinical evidence and are of sufficient frequency to warrant inclusion in the specifications of the measure;

AND

If patient preference (e.g., informed decision-making) 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).

2b3. 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 social risk 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.

2b4. 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.

2b5. If multiple data sources/methods are specified, there is demonstration they produce comparable results.

2b6. 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 non-responders) 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)

Definitions

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).

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. The degree of consensus and any areas of disagreement must be provided/discussed.

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.

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

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

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.

Please separate added or updated information from the most recent measure evaluation within each question response in the Importance to Scientific Acceptability sections. For example:

2021 Submission:

Updated testing information here.

2018 Submission:

Testing from the previous submission here.

2a. Reliability

2a.01. Select only the data sources for which the measure is tested.

[Response Begins]

Claims

[Response Ends]

2a.02. 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).

[Response Begins]

We used CA Medicaid claims data from 2015. This dataset includes Medicaid managed care health plan claims as well as Medicaid fee for service health plan claims.

[Response Ends]

2a.03. Provide the dates of the data used in testing.

Use the following format: "MM-DD-YYYY - MM-DD-YYYY"

[Response Begins]

01-01-2015 - 12-31-2015

[Response Ends]

2a.04. Select the levels of analysis for which the measure is tested.

Testing must be provided for all the levels specified and intended for measure implementation, e.g., individual clinician, hospital, health plan.

Please refrain from selecting the following answer option(s). We are in the process of phasing out these answer options and request that you instead select one of the other answer options as they apply to your measure.

Please do not select:

- *Clinician: Clinician*
- *Population: Population*

[Response Begins]

Health Plan

[Response Ends]

2a.05. List the measured entities 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.

[Response Begins]

The full dataset includes 102 plans, including Medicaid managed care plans and the fee-for-service plan. For the reliability and validity analyses, we excluded health plans with fewer than 25 eligible patients during the measurement year (2015) to provide more stable estimates and in light of recommendations from CMS for adequate minimum sample sizes in order to report public performance.

[Response Ends]

2a.06. Identify the number and descriptive characteristics of patients included in the analysis (e.g., age, sex, race, diagnosis), separated by level of analysis and data source; if a sample was used, describe how patients were selected for inclusion in the sample.

If there is a minimum case count used for testing, that minimum must be reflected in the specifications.

[Response Begins]

Table 2. Patient characteristics of those included in analysis

Patient Characteristics	Eligible Patients, N (%)	Eligible patients after excluding small plans, N
Total	74,568	74,357
Age group, years	*	*
3-5	24,349	24,299
6-11	22,445	22,380
12-17	18,070	18,006
18-21	10,570	10,537
Gender	*	*
Male	42,738	42,617
Female	31,830	31,740
Race/Ethnicity	*	*
White	11,649	11,551
Hispanic	40,402	40,325
Black	12,189	12,184
Asian/Pacific Islander	3,594	3,591
Other	2,517	2,503
Missing or Declined to state	4,214	4,203

Patient Characteristics	Eligible Patients, N (%)	Eligible patients after excluding small plans, N
Insurance type	*	*
Medicaid managed care	65,475	65,255
Medicaid FFS[c]	10,148	10,148
PMCA[d]	*	*
None (non-chronic)	50,792	50,656
Chronic, non-complex	13,544	13,503
Complex chronic	10,232	10,198
Health Plans	*	*
Number of Health Plans, N	102	82
Number of eligible patients per health plan, Mean (SD), Median (IQR), Range	Mean (SD): 5,553 (5181) Median (IQR): 3,413 (1144-12,184) Range: 1-14,445	Mean (SD): 5569 (5180) Median (IQR): 3413 (1243-12184) Range: 27-14,445

Table 2. Describes patient characteristics of those included in the analysis

*Cells intentionally left empty

[Response Ends]

2a.07. 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.

[Response Begins]

NA

[Response Ends]

2a.08. List the social risk factors that were available and analyzed.

For example, patient-reported data (e.g., income, education, language), proxy variables when social risk data are not collected from each patient (e.g. census tract), or patient community characteristics (e.g. percent vacant housing, crime rate) which do not have to be a proxy for patient-level data.

[Response Begins]

NA

[Response Ends]

Note: If accuracy/correctness (validity) of data elements was empirically tested, separate reliability testing of data elements is not required – in 2a.07 check patient or encounter-level data; in 2a.08 enter "see validity testing section of data elements"; and enter "N/A" for 2a.09 and 2a.10.

2a.09. Select the level of reliability testing conducted.

Choose one or both levels.

[Response Begins]

Accountable Entity Level (e.g., signal-to-noise analysis)

[Response Ends]

2a.10. For each level of reliability testing 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.

[Response Begins]

We used the intraclass correlation coefficient (ICC) to assess reliability at the health plan level. The ICC assesses the ratio of between-plan variation to total variation (within-plan variation plus between-plan) in performance. Higher ICC implies that the between-plan variation (signal) makes up a large proportion of the total variation.[1-3] We used split-sample reliability testing. We used the following approach, as suggested to us by the NQF methods committee in a prior measure submission: (1) the sample is randomly split into two halves, (2) the performance of each plan is estimated in each of the two data samples, and (3) the two sets of performance are then compared using the ICC. For step 2, performance estimation was quantified using plan-level random effects from a mixed effects logit model without covariates. The random effects approach provides shrunken performance estimates in the random effects, which improve plan performance prediction and account for noise attributable to plan sample size differences.

We performed this analysis for the full dataset and then by plan volume quartile.

References:

1. Lyratzopoulos G, Elliott MN, Barbiere JM, et al. How can health care organizations be reliably compared?: Lessons from a national survey of patient experience. *Med Care.* 2011;49(8):724-733.
2. Merlo J, Chaix B, Ohlsson H, et al. A brief conceptual tutorial of multilevel analysis in social epidemiology: using measures of clustering in multilevel logistic regression to investigate contextual phenomena. *J Epidemiol Community Health.* 2006;60(4):290-297.
3. Merlo J, Yang M, Chaix B, Lynch J, Rastam L. A brief conceptual tutorial on multilevel analysis in social epidemiology: investigating contextual phenomena in different groups of people. *J Epidemiol Community Health.* 2005;59(9):729-736.

[Response Ends]

2a.11. For each level of reliability testing checked above, what were the statistical results from reliability testing?

For example, provide the percent agreement and kappa for the critical data elements, or distribution of reliability statistics from a signal-to-noise analysis. For score-level reliability testing, when using a signal-to-noise analysis, more than just one overall statistic should be reported (i.e., to demonstrate variation in reliability across providers). If a particular method yields only one statistic, this should be explained. In addition, reporting of results stratified by sample size is preferred (pg. 18, NQF Measure Evaluation Criteria).

[Response Begins]

Table 3. Reliability testing overall and stratified by health plan volume quartile

Plan Quartile	ICC	95% Confidence interval	Number of plans	Mean visits per plan (SD)	Range of visits per plan
All plans	0.83	0.75-0.89	82	5569 (5180)	27-14445
1st volume quartile	0.78	0.65-0.86	61	593 (302)	27-1029
2nd volume quartile	0.89	0.66-0.97	12	1777 (477)	1067-2461
3rd volume quartile	0.98	0.86-0.99	5	3495 (673)	2516-4492
4th volume quartile	0.99	0.97-0.99	4	11,110 (3648)	5237-14445

Table 3. Reliability testing overall and stratified by health plan volume quartile

ICC: intraclass correlation coefficient

[Response Ends]

2a.12. Interpret the results, in terms of how they demonstrate reliability.

(In other words, what do the results mean and what are the norms for the test conducted?)

[Response Begins]

These results indicate that the measure has good reliability for the full group of plans and for the 1st volume quartile and very good to excellent reliability in the higher volume quartile plans. The lower reliability for the 1st quartile is to be expected, since those plans have smaller sample sizes. ICC norms are: excellent reliability (≥0.90); very good reliability (≥0.85); good reliability (≥0.70); low reliability (<0.70).[1-3]

References

1. Lyratzopoulos G, Elliott MN, Barbiere JM, et al. How can health care organizations be reliably compared?: Lessons from a national survey of patient experience. *Med Care.* 2011;49(8):724-733.
2. Merlo J, Chaix B, Ohlsson H, et al. A brief conceptual tutorial of multilevel analysis in social epidemiology: using measures of clustering in multilevel logistic regression to investigate contextual phenomena. *J Epidemiol Community Health.* 2006;60(4):290-297.
3. Merlo J, Yang M, Chaix B, Lynch J, Rastam L. A brief conceptual tutorial on multilevel analysis in social epidemiology: investigating contextual phenomena in different groups of people. *J Epidemiol Community Health.* 2005;59(9):729-736.

[Response Ends]

2b. Validity

2b.01. Select the level of validity testing that was conducted.

[Response Begins]

Patient or Encounter-Level (data element validity must address ALL critical data elements)

Accountable Entity Level (e.g. hospitals, clinicians)

Empirical validity testing

[Response Ends]

2b.02. 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.

[Response Begins]

We conducted empirical validity testing—assessing predictive validity regarding whether performance on the measure was associated with decreased subsequent emergency department or hospital visits for asthma within 60 days and within 365 days. See 2b.04 for additional discussion regarding the rationale behind this approach.

We conducted this testing at the encounter-level and the plan-level.

We published the results of encounter-level analyses in a paper that is in press at Academic Pediatrics "Follow-up After Asthma ED Visits and its Relationship with Subsequent Asthma-related Utilization". The analyses assessed predictive validity at the encounter-level in CA, MA, and VT administrative claims. The definition of follow-up in the paper used the measure specifications described here. We used logistic regression models with, as outcomes, the binary indicators of subsequent asthma-related ED revisits within 60 days, and within 365 days of the index ED visit. In each analysis (60-day and 365-day), we adjusted the models for average age during the index year (measured continuously) and gender, chronic disease status, insurance type, and evidence of prior asthma. We obtained predicted relationships for each adjusted analysis using Stata's post-estimation "margins" command.[4] This calculates a marginal (or average) rate by averaging predicted values for each category of the predictor, assuming it was in each of the categories, but using its covariate values for all the other variables to generate the predicted values.[4]

The plan-level analyses results are presented below. The approach we used was as follows: we calculated the health plan level performance on the measure for each health plan and the percent of patients eligible for the measure who had a repeat asthma-related ED visit within 60 days and the percent who had a repeat asthma-related visit within 365 days (excluding any repeat ED visits that occurred within the 14-day window after the index ED visit). Using a plan-level dataset, we assessed the relationship between the plan performance on the measure and percent of patients with repeat utilization, using linear regression.

References:

4. Norton EC, Miller MM, Kleinman LC. Computing adjusted risk ratios and risk differences in Stata. *Stata Journal.* 2013;13(3):492-509.

[Response Ends]

2b.03. Provide the statistical results from validity testing.

Examples may include correlations or t-test results.

[Response Begins]

Individual level validity testing (in press):

Table 4. Relationship between measure and repeat asthma-related ED revisit within 60 and 365 days

*	ED Revisit within 60 days, % (95%CI)	p-value	ED Revisit within 365 days, % (95% CI)	p-value
Follow-up visit status	*	*	*	*
No follow-up in 14 days	6.4% (6.2-6.6)	Ref	28.3% (27.8-28.7)	Ref
Follow-up in 14 days	5.7% (5.3-6.0)	<0.001	25.0% (24.4-25.7)	<0.001

Table 4. Relationship between measure and repeat asthma-related ED revisit within 60 and 365 days

*Cell intentionally left blank.

Health plan level validity analyses:

Table 5. Relationship between health plan measure performance and percent of index ED visits with one or more ED asthma-related revisits within 60 and 365 days

*	Overall Percent of visits with a revisit	Change in revisit rate for an increase of 1% in follow-up visits (β, 95% CI)	p-value
60-day revisits	13.6%	-0.19 (-0.30, -0.08)	0.001
365-day revisits	44.3%	-0.27 (-0.53, -0.03)	0.03

Table 5. Relationship between health plan measure performance and percent of index ED visits with one or more ED asthma-related revisits within 60 and 365 days

*Cell intentionally left blank.

[Response Ends]

2b.04. Provide 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?)

[Response Begins]

These findings demonstrate meaningful predictive validity for the measure. There is a statistically significant relationship between performance on the quality measure—follow-up for pediatric patients with an index asthma-related ED visit within 14 days—and decreased asthma-related subsequent ED revisits within 60- and 365-day intervals.

Table 4 shows the encounter-level analyses demonstrating that receipt of a follow-up visit with a primary care provider or asthma specialist within 14 days of an asthma-related ED visit was associated with lower rates of asthma-related ED visits and hospitalizations were associated with.

Table 5 shows a beta coefficient of -0.19 for 60-day revisits. To translate this to clinical terms, this indicates that for each 1% increase in follow-up visits, there would be a decrease of 0.2% in 60-day revisits, or, more intuitively, for each 5% increase in measure performance there would be a decrease of 1% in 60-day visits and about 1.5% decrease in 365-day revisits. Using the absolute risk reduction from the encounter-level analysis in Table 4, the "number needed to treat" is 30 follow-up visits to prevent one subsequent ED revisit within a year and 143 to prevent one within 60 days. Though these are modest effects, taken over a large population, the decreased revisits represent substantial savings and improved quality of life for patients with asthma and their families.

Of note, prior research from the early 2000s found that follow-up was not associated with decreased re-utilization or was paradoxically associated with increased re-utilization (likely due to selection bias of more severe asthmatics for follow-

up). However, in the last decade, methods to improve outpatient asthma management and education have evolved and elements of a successful follow-up appointment have been more clearly described.[5,6] These improvements in asthma practice, including evidence of improved performance on the HEDIS asthma medication measure,[7] and long-standing guidelines from the NHLBI regarding a step-wise approach to primary care asthma management,[8] likely explain why we found that having follow-up is associated with decreased utilization, both at the individual and health plan levels.

References:

5. Cabana MD, Slish KK, Evans D, et al. Impact of physician asthma care education on patient outcomes. *Pediatrics.* 2006;117(6):2149-2157.

6. Schatz M, Rachelefsky G, Krishnan JA. Follow-up after acute asthma episodes: what improves future outcomes? *The Journal of emergency medicine.* 2009;37(2 Suppl):S42-50.

7. Assurance NCfQ. HEDIS 2016 Public Comment Now Open; Posted February 19, 2015. https://blog.ncqa.org/hedis-2016-public-comment-now-open/ . Published 2015. Accessed January 24, 2021.

8. Expert Panel Report 3 (EPR-3): Guidelines for the Diagnosis and Management of Asthma-Summary Report 2007. *J Allergy Clin Immunol.* 2007;120(5 Suppl):S94-138.

[Response Ends]

2b.05. 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 in Importance to Measure and Report: Gap in Care/Disparities.

[Response Begins]

We assessed both statistically significant and clinically meaningful differences in performance measure scores among the health plans.

To assess **statistically significant differences**, we estimated predicted plan random effects from a mixed effects logit model using individual-level data, including only the measure performance as the outcome and including the plan variable as a random effect. We then calculated Z-statistics using the plan random effect and the plan-level standard error. We then defined as outliers those with a Z-statistic >1.96 or <-1.96. This led to three groups—no different than the group average, better performance than the group average, and worse performance than the group average. We then calculated the mean percent performance for health plans in each group.

To assess **clinically meaningful differences**, we exponentiated the estimated plan random effects, to calculate the odds ratios for the performance of each health plan in relation to an "average" plan (random effect of 0). We chose a doubling of performance to be a clinically significant performance difference. Therefore, we categorized plans to be in the lowest performing group if they had up to half the odds (or less) compared to the average plan, and to be in the highest performing group if they had more than double the odds of the average plan. We also calculated the mean percent performance for health plans in each group.

[Response Ends]

2b.06. Describe the statistical results from testing the ability to identify statistically significant and/or clinically/practically meaningful differences in performance measure scores across measured entities.

Examples may include 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.

[Response Begins]

Grand mean across all plans: 22.1%

Table 6. Performance by category of *statistically significant* health plan performance

Performance category	Grand mean performance (% of ED visits with follow-up in 14 days)	95% CI
Low performers (n=19)	16.2%	14.1-18.3
Average performers (n=39)	24.9%	23.0-26.7
High performers (n=24)	34.9%	32.4-37.5

Table 6. Performance by category of *statistically significant* health plan performance

Table 7. Performance by category of *clinically significant* health plan performance

Performance category	Grand mean performance (% of ED visits with follow-up in 14 days)	95% CI
Low performers (n=13)	13.2%	11.3-15.0
Average performers (n=41)	23.3%	22.4-24.1
High performers (n=28)	35.4%	33.2-37.6

Table 7. Performance by category of *clinically significant* health plan performance

[Response Ends]

2b.07. Provide 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.

In other words, what do the results mean in terms of statistical and meaningful differences?

[Response Begins]

There are statistically significant differences in performance, clinically meaningful differences in performance, and overall less-than-optimal performance in the group (grand mean of 22%).

[Response Ends]

2b.08. Describe the method of testing conducted to identify the extent and distribution of missing data (or non-response) and demonstrate that performance results are not biased due to systematic missing data (or differences between responders and non-responders). Include how the specified handling of missing data minimizes bias.

Describe the steps—do not just name a method; what statistical analysis was used.

[Response Begins]

NA

[Response Ends]

2b.09. Provide the overall frequency of missing data, the distribution of missing data across providers, and the results from testing related to missing data.

For example, provide results of sensitivity analysis of the effect of various rules for missing data/non-response. If no empirical sensitivity analysis was conducted, identify the approaches for handling missing data that were considered and benefits and drawbacks of each).

[Response Begins]

NA

[Response Ends]

2b.10. Provide 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 non-responders), and how the specified handling of missing data minimizes bias.

In other words, 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 was conducted, justify the selected approach for missing data.

[Response Begins]

NA

[Response Ends]

Note: This item is directed to measures that are risk-adjusted (with or without social risk 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 eCQMs). 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 social risk 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.

2b.11. Indicate whether there is more than one set of specifications for this measure.

[Response Begins]

No, there is only one set of specifications for this measure

[Response Ends]

2b.12. 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. Indicate what statistical analysis was used.

[Response Begins]

[Response Ends]

2b.13. Provide the statistical results from testing comparability of performance scores for the same entities when using different data sources/specifications.

Examples may include correlation, and/or rank order.

[Response Begins]

[Response Ends]

2b.14. Provide your interpretation of the results in terms of the differences in performance measure scores for the same entities across the different data sources/specifications.

In other words, what do the results mean and what are the norms for the test conducted.

[Response Begins]

[Response Ends]

2b.15. Indicate whether the measure uses exclusions.

[Response Begins]

N/A or no exclusions

[Response Ends]

2b.16. Describe the method of testing exclusions and what was tested.

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?

[Response Begins]

NA

[Response Ends]

2b.17. Provide 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.

[Response Begins]

NA

[Response Ends]

2b.18. Provide your interpretation of the results, in terms of demonstrating that exclusions are needed to prevent unfair distortion of performance results.

In other words, 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.

[Response Begins]

NA

[Response Ends]

2b.19. Check all methods used to address risk factors.

[Response Begins]

No risk adjustment or stratification

[Response Ends]

2b.20. If using statistical risk models, provide detailed risk model specifications, including the risk model method, risk factors, risk factor data sources, coefficients, equations, codes with descriptors, and definitions.

[Response Begins]

[Response Ends]

2b.21. If an outcome or resource use measure is not risk-adjusted or stratified, provide rationale and analyses to demonstrate that controlling for differences in patient characteristics (i.e., case mix) is not needed to achieve fair comparisons across measured entities.

[Response Begins]

This is a process measure, not an outcome or resource use measure.

[Response Ends]

2b.22. Select all applicable resources and methods used to develop the conceptual model of how social risk impacts this outcome.

[Response Begins]

[Response Ends]

2b.23. Describe the conceptual and statistical methods and criteria used to test and select patient-level risk factors (e.g., clinical factors, social risk factors) used in the statistical risk model or for stratification by risk.

Please be sure to address the following: potential factors identified in the literature and/or expert panel; regression analysis; statistical significance of p<0.10 or other statistical tests; correlation of x or higher. Patient factors should be present at the start of care, if applicable. Also discuss any "ordering" of risk factor inclusion; note whether social risk factors are added after all clinical factors. Discuss any considerations regarding data sources (e.g., availability, specificity).

[Response Begins]

[Response Ends]

2b.24. Detail the statistical results of the analyses used to test and select risk factors for inclusion in or exclusion from the risk model/stratification.

[Response Begins]

[Response Ends]

2b.25. Describe the analyses and interpretation resulting in the decision to select or not select social risk factors.

Examples may include prevalence of the factor across measured entities, availability of the data source, empirical association with the outcome, contribution of unique variation in the outcome, or assessment of between-unit effects and within-unit effects. Also describe the impact of adjusting for risk (or making no adjustment) on providers at high or low extremes of risk.

[Response Begins]

[Response Ends]

2b.26. 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 control for differences in patient characteristics (i.e., case mix) below. If stratified ONLY, enter "N/A" for questions about the statistical risk model discrimination and calibration statistics.

Validation testing should be conducted in a data set that is separate from the one used to develop the model.

[Response Begins]

[Response Ends]

2b.27. Provide risk model discrimination statistics.

For example, provide c-statistics or R-squared values.

[Response Begins]

[Response Ends]

2b.28. Provide the statistical risk model calibration statistics (e.g., Hosmer-Lemeshow statistic).

[Response Begins]

NA

[Response Ends]

2b.29. Provide the risk decile plots or calibration curves used in calibrating the statistical risk model.

The preferred file format is .png, but most image formats are acceptable.

[Response Begins]

[Response Ends]

2b.30. Provide the results of the risk stratification analysis.

[Response Begins]

[Response Ends]

2b.31. Provide your interpretation of the results, in terms of demonstrating adequacy of controlling for differences in patient characteristics (i.e., case mix).

In other words, what do the results mean and what are the norms for the test conducted?

[Response Begins]

[Response Ends]

2b.32. Describe any additional testing conducted to justify the risk adjustment approach used in specifying the measure.

Not required but would provide additional support of adequacy of the risk model, e.g., testing of risk model in another data set; sensitivity analysis for missing data; other methods that were assessed.

[Response Begins]

[Response Ends]

Criteria 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.

3.01. Check all methods below that are used to generate the data elements needed to compute the measure score.

[Response Begins]

Coded by someone other than person obtaining original information (e.g., DRG, ICD-10 codes on claims)

[Response Ends]

3.02. Detail to what extent the specified data elements are available electronically in defined fields.

In other words, indicate whether data elements that are needed to compute the performance measure score are in defined, computer-readable fields.

[Response Begins]

ALL data elements are in defined fields in electronic claims

[Response Ends]

3.03. 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 data elements not from electronic sources.

[Response Begins]

NA

[Response Ends]

3.04. Describe any efforts to develop an eCQM.

[Response Begins]

None.

[Response Ends]

3.06. 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.

[Response Begins]

This measure is well-suited for use with claims data, due to a relatively high likelihood that the necessary data will be entered--both the numerator and denominator reflect utilization (ED visits and outpatient visits), which health care entities are likely to bill for due to financial incentive to do so. Claims data measures require very limited resources to implement, as the data are already collected. The limitations to administrative claims include potentially inaccurate diagnosis data, which we have protected against by not requiring an asthma-specific ICD code in the numerator definition, and also a delay in accessing claims data--there can be a delay in accessing claims data associated with receipt of claims from providers and need to process and clean data. Finally, the measure requires data on both the ED visit and the outpatient visit. These are generally readily available in claims. However, for an eCQM based on outpatient clinic

records, linked data on ED visits would likely have a fair amount of missing, or not be available, and vice versa. Clinics or EDs interested in addressing this measure in a rapid cycle PDSA approach would likely need to partner with other health care entities to better understand performance in real time.

[Response Ends]

Consider implications for both individuals providing data (patients, service recipients, respondents) and those whose performance is being measured.

3.07. Detail 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),

Attach the fee schedule here, if applicable.

[Response Begins]

None. Publicly available technical specifications and SAS code.

[Response Ends]

Criteria 4: Use and Usability

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.

Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making.

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 demonstrating performance improvement.

4a. Use

4a.01.

Check all current uses. For each current use checked, please provide:

Name of program and sponsor

URL

Purpose

Geographic area and number and percentage of accountable entities and patients included

Level of measurement and setting

[Response Begins]

Not in use

This is a new measure. We have tested it for validity and feasibility, but it has not been implemented in practice as far as we are aware.

[Response Ends]

4a.02. Check all planned uses.

[Response Begins]

Public reporting

Quality Improvement with Benchmarking (external benchmarking to multiple organizations)

Quality Improvement (internal to the specific organization)

[Response Ends]

4a.03. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing), explain why the measure is not in use.

For example, do policies or actions of the developer/steward or accountable entities restrict access to performance results or block implementation?

[Response Begins]

This is a new measure. We have tested it for validity and feasibility, but it has not been implemented in practice as far as we are aware.

[Response Ends]

4a.04. If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes: used in any accountability application within 3 years, and publicly reported within 6 years of initial endorsement.

A 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.

[Response Begins]

This measure could be used in CA Medicaid programs within the next three years. We have presented the results to the research and quality group in CA Department of Health Care Services (DHCS). There is an accountability program, Cal Aim, to support care coordination for Medicaid recipients with chronic illnesses, and this may be a useful measure of program success for the asthma work. The inclusion of children and youth in Cal Aim programs will begin in the next year, so that will be a venue for inclusion of this measure.

[Response Ends]

4a.05. Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.

Detail 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.

[Response Begins]

NA. We have presented to leadership at DHCS, but not yet the individual health plans. We were planning on doing so, but the pandemic has necessarily drawn attention away from asthma care improvement initiatives.

[Response Ends]

4a.06. Describe the process for providing measure results, including when/how often results were provided, what data were provided, what educational/explanatory efforts were made, etc.

[Response Begins]

NA

[Response Ends]

4a.07. Summarize the feedback on measure performance and implementation from the measured entities and others. Describe how feedback was obtained.

[Response Begins]

NA

[Response Ends]

4a.08. Summarize the feedback obtained from those being measured.

[Response Begins]

In addition to presenting our data to CA DHCS in Fall 2021, an Expert Panel was convened early in the measure development process, when measure concepts were under consideration. This Expert Panel (described below in Additional information) included health plan leadership in addition to content and clinical experts. This measure concept was chosen as an important measure to develop.

[Response Ends]

4a.09. Summarize the feedback obtained from other users.

[Response Begins]

NA

[Response Ends]

4a.10. Describe how the feedback described has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.

[Response Begins]

The Expert Panel and Asthma Advisory Council (described in Additional information) had input into ICD definitions, clinician types, in addition to being involved in the Delphi process to choose measure concepts for additional development.

[Response Ends]

4b. Usability

4b.01. You may refer to data provided in Importance to Measure and Report: Gap in Care/Disparities, 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, provide an explanation. 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.

[Response Begins]

This measure is not currently in use for performance improvement. There are a few points that support a credible rationale that performance results can be used to further high-quality care for pediatric patients with asthma. The measure is a health plan-level measure. Health plans are particularly weel suited to be the level of measurement for this measure because they have the most immediate access to data on members that have been to the ED and have not followed-up with a provider within 14 days. In addition, health plans can serve as care coordinators for a care process that occurs across settings (follow-up after an ED visit has aspects of implementation relevant both in the ED setting as well as the outpatient setting).

In addition, as part of the funded pediatric quality measures program (PQMP) work for refinement and testing of a suite of asthma measures, we partnered with a group of clinics in VT, under the leadership of Judy Shaw, Professor of Pediatrics at University of Vermont, and Keith Robinson, Professor of Pediatric Pulmonology at University of Vermont. They were focused on assessing performance and potential improvement on a measure of Pediatric asthma ED use. In this work, they found that patients with asthma-related ED visits often had been found to have uncontrolled asthma in a prior outpatient visit but had not followed up. This indicates that follow-up care at a primary care provider or asthma care subspecialist may facilitate improved control and could reduce subsequent asthma exacerbations and ED visits.

[Response Ends]

4b.02. Explain any unexpected findings (positive or negative) during implementation of this measure, including unintended impacts on patients.

[Response Begins]

NA

[Response Ends]

4b.03. Explain any unexpected benefits realized from implementation of this measure.

[Response Begins]

NA

[Response Ends]

Criteria 5: Related and 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.

If you are updating a maintenance measure submission for the first time in MIMS, please note that the previous related and competing data appearing in question 5.03 may need to be entered in to 5.01 and 5.02, if the measures are NQF endorsed. Please review and update questions 5.01, 5.02, and 5.03 accordingly.

5.01. Search and select all NQF-endorsed related measures (conceptually, either same measure focus or target population).

(Can search and select measures.)

[Response Begins]

3599: Pediatric Asthma Emergency Department Use

[Response Ends]

5.02. Search and select all NQF-endorsed competing measures (conceptually, the measures have both the same measure focus or target population).

(Can search and select measures.)

[Response Begins]

[Response Ends]

5.03. If there are related or competing measures to this measure, but they are not NQF-endorsed, please indicate the measure title and steward.

[Response Begins]

3171:Percentage of Asthma ED visits followed by Evidence of Care Connection. Measure Steward: University Hospitals Cleveland Medicaid Center. This measure is not endorsed and not in QPS, but it appears in the list in the menu above in 5.01., so I am mentioning it here.

[Response Ends]

5.04. If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s), indicate whether the measure specifications are harmonized to the extent possible.

[Response Begins]

Yes

[Response Ends]

5.05. If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.

[Response Begins]

The measure is harmonized with measure 3599, which is NQF-endorsed, on age range and on the ICD codes used to identify the patients (including ICD codes for exclusion).

[Response Ends]

5.06. Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality). Alternatively, justify endorsing an additional measure.

Provide analyses when possible.

[Response Begins]

NA

[Response Ends]

Appendix

Supplemental materials may be provided in an appendix.: Available at measure-specific web page URL identified in sp.09

Attachment: 3668_Asthma 4 Data Dictionary 01 04 2022.xlsx

Contact Information

Measure Steward (Intellectual Property Owner) : Albert Einstein College of Medicine

Measure Steward Point of Contact: Bardach, Naomi, bardachn@peds.ucsf.edu

Cabana, Michael, mcabana@montefiore.org

Cabana, Michael, mcabana@montefiore.org

Measure Developer if different from Measure Steward: University of California, San Francisco

Measure Developer Point(s) of Contact: Bardach, Naomi, bardachn@peds.ucsf.edu

Cabana, Michael, mcabana@montefiore.org

Cabana, Michael, mcabana@montefiore.org

Additional Information

1. Provide any supplemental materials, if needed, as an appendix. All supplemental materials (such as data collection instrument or methodology reports) should be collated one file with a table of contents or bookmarks. If material pertains to a specific criterion, that should be indicated.

[Response Begins]

Available at measure-specific web page URL identified in sp.09

[Response Ends]

Attachment: 3668_Asthma 4 Data Dictionary 01 04 2022.xlsx

2. List the workgroup/panel members' names and organizations.

Describe the members' role in measure development.

[Response Begins]

Asthma Expert Panel

Elizabeth Allen, M.D Ohio State University

Chitra Dinakar, M.D. Department of Pediatrics University of Missouri-Kansas City

Stephen Teach, M.D., M.P.H. Children's National Medical Center

Charles Macias M.D., M.P.H. Pediatrics, Baylor Texas Children's Hospital

Michael Cabana M.D., M.P.H. University of California, San Francisco

Barbara Yawn M.D., M.S. Olmstead Medical Center, University of Minnesota

Joan Connell M.D. University of North Dakota

Delaney Gracy M.D., M.P.H. The Children's Health Fund and Montefiore Children's Hospital

Sharlene Miner M.D. Emergency Medicine Inter Mountain Medical Center

During the initial phase of the pediatric quality measures program, expert panelists participated in a modified Delphi process to choose pediatric asthma measure focus for development and to discuss measure specifications prior to testing and coding of the measure. From this process, the currently proposed measure was chosen as a focus for measurement.

Asthma Advisory Council

See attached PDF: "IMPLEMENT Asthma Advisory Council"

Asthma advisory council members gave ongoing feedback during refinement and further testing of measure specifications 2016-2020, meeting annually with the measure developers.

[Response Ends]

3. Indicate the year the measure was first released.

[Response Begins]

NA

[Response Ends]

4. Indicate the month and year of the most recent revision.

[Response Begins]

NA

[Response Ends]

5. Indicate the frequency of review, or an update schedule, for this measure.

[Response Begins]

per NQF.

[Response Ends]

6. Indicate the next scheduled update or review of this measure.

[Response Begins]

NA

[Response Ends]

7. Provide a copyright statement, if applicable. Otherwise, indicate "N/A".

[Response Begins]

NA

[Response Ends]

8. State any disclaimers, if applicable. Otherwise, indicate "N/A".

[Response Begins]

NA

[Response Ends]

9. Provide any additional information or comments, if applicable. Otherwise, indicate "N/A".

[Response Begins]

NA

[Response Ends]

Attachment: 3668_Asthma_Advisory_Council_Names_and_Titles 2022 04 03_(1).pdf