NATIONAL QUALITY FORUM

Memo

TO: Consensus Standards Approval Committee (CSAC)

FR: Jesse Pines

RE: *Patient Safety – Complications Endorsement Maintenance: Phase II* Member Voting Results

DA: October 29, 2012

The CSAC will review recommendations from the *Patient Safety – Complications Phase II* project at its November 7-8, 2012 in-person meeting.

This memo includes a summary of the project, recommended measures, and themes identified from and responses to the public and member comments.

This project followed the National Quality Forum's (NQF) version 1.9 of the Consensus Development Process (CDP). Member voting on these recommended measures ended on November 1, 2012.

Accompanying this memo are the following documents:

1. **Patient Safety- Complications Draft Report.** The draft report has been updated to reflect the changes made following Steering Committee discussion of public and member comments. The complete draft report and supplemental materials are available on the project page.
2. **Comment table**. Staff has identified themes within the comments received. This table lists 35 comments received and the NQF/Steering Committee responses.

CSAC ACTION REQUIRED

Pursuant to the CDP, the CSAC may consider approval of 14 candidate consensus standards.

Patient Safety – Complications Phase II Measures Recommended for Endorsement:

- 0035 Fall risk management
- 0101 Falls: Screening, risk-assessment, and plan of care to prevent future falls
- 0141 Patient fall rate
- 0202 Falls with injury
- 0266 Patient fall
- 0537 Multifactor fall risk assessment conducted in patients 65 and older
- 0538 Pressure ulcer prevention and care
- 0337 Pressure ulcer rate (PDI 2)
- 0347 Death rate in low-mortality diagnosis related groups (PSI 2)
- 0204 Skill mix (Registered Nurse [RN], Licensed Vocational/ Practical Nurse [LVN/ LPN], Unlicensed Assistive Personnel [UAP], and contract)

- 0205 Nursing hours per patient day
- 0206 Practice Environment Scale - Nursing Work Index (PES-NWI) (composite and five subscales)
- 1716 National Healthcare Safety Network (NHSN) facility-wide inpatient hospital-onset Methicillin-resistant Staphylococcus aureus (MRSA) bacteremia outcome measure
- 1717 National Healthcare Safety Network (NHSN) facility-wide inpatient hospital-onset Clostridium difficile Infection (CDI) outcome measure

Patient Safety – Complications Phase II Measures Not Recommended:

- 0207 Voluntary turnover
- 0504 Pediatric weight documented in kilograms

BACKGROUND

Medical errors and unsafe care kill tens of thousands of Americans each year. NQF's National Voluntary Consensus Standards for the Reporting of Healthcare-Associated Infection (HAI) Data reports that "an estimated 2 million HAIs alone occur each year in the United States, accounting for an estimated 90,000 deaths and adding $4.5 billion to $5.7 billion in healthcare costs."[1] The Centers for Disease Control and Prevention (CDC) estimate that HAIs cost U.S. hospitals at least 5.7 billion per year, and potentially up to $31.5 billion.[2]

Falls and pressure ulcers are also high cost and high volume adverse events. Falls are the leading cause of injury-related death for individuals 65 and older, and it is estimated that patient falls among the elderly will cost over $30 billion by 2020.[3][4] In 2007, there were 257,412 reported cases of Medicare patients who had a pressure ulcer as a secondary diagnosis during hospitalization—these cases had an average charge of $43,180.[5] In addition, beginning October 1, 2008, Medicare no longer reimburses for either the extra cost of treating Category/ Stage III and IV pressure ulcers that occur while the patient is in the hospital or the extra cost of treatment for serious injuries resulting from falls. HAIs, falls, and pressure ulcers, while occurring in relatively high numbers, are only a few of the many types of patient safety-related events that occur in healthcare settings.

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[1] NQF, *National Voluntary Consensus Standards for the Reporting of Healthcare-Associated Infection Data: A Consensus Report*, Washington, DC: NQF; 2008.

[2] Scott RD, *The Direct Medical Costs of Healthcare-Associated Infections in U.S. Hospitals and the Benefits of Prevention*, Division of Healthcare Quality Promotion, National Center for Preparedness, Detection, and Control of Infectious Diseases; Coordinating Center for Infectious Diseases, Centers for Disease Control and Prevention; March 2009.

[3] CDC, 2006: Centers for Disease Control and Prevention. National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS). Available at http://www.cms.hhs.gov/hospitalacqcond/. Last accessed October 30, 2009.

[4] Ulrich R., Zimring C. The Role of the Physical Environment in the Hospital of the 21st Century: A Once-in-a-Lifetime Opportunity. Concord, CA: The Center for Health Design; 2004 Sept.

[5] Armstrong DG, Ayello EA, Capitulo KL, et al. New opportunities to improve pressure ulcer prevention and treatment: implications of the CMS inpatient hospital care present on admission indicators/hospital-acquired conditions policy -- a consensus paper from the International Expert Wound Care Advisory Panel. *Adv Skin Wound Care* 2008; 21:469-470, 472-478.

In Phase 2 of this project, the Steering Committee reviewed NQF-endorsed® patient safety measures before June 2009 and sought new performance measures that could be used for accountability and quality improvement on falls, pressure ulcers and healthcare associated infections. A 26-member Steering Committee reviewed 21 measures, and recommended 14 of these measures for endorsement. Public and member commenting took place from July 30-August 28, 2012.

DRAFT REPORT

The Patient Safety - Complications Draft Report presents the results of the evaluation of 21 measures considered under the CDP. Fourteen are recommended for endorsement as voluntary consensus standards suitable for accountability and quality improvement and 2 were not recommended. The measures were evaluated against the 2011 version of the measure evaluation criteria.

	MAINTENANCE	NEW	TOTAL
Measures considered	17	4	21
Withdrawn from consideration	3	2	5
Recommended	12	2	14
Not recommended	2	0	2
Reasons not Recommended	Importance- 2		

OVERARCHING ISSUES

During the Steering Committee's discussion of the measures, several overarching issues emerged that were factored into the Committee's ratings and recommendations for multiple measures.

Common Definitions

Among related measures the Committee noted the lack of standardized terminology, such as the medical definition of a fall. Because this varied across several of the submitted measures, the Committee encouraged measure developers in the future to work together to create common definitions within the field by the next maintenance cycle. This will improve the usability of and comparability across the measures.

Current Evidence and Relationship to Outcomes

The Committee expressed its preference for measures that provide clear and direct evidence of a proximal relationship between a process measure and an important outcome. In addition, Committee members agreed that future measurement efforts should move more toward outcome measures rather than process measures. Ensuring the rigor of the evidence to support each measure was also highlighted. Particularly for measures undergoing maintenance, where there was close scrutiny on whether sufficient evidence existed to justify re-endorsement. For process of care measures, discussions centered on whether what was being measured, such as a clinical assessment or other intervention, was itself associated with differences in patient care outcomes. This concern was also reflected in the evaluation and

underlying rationale for supporting specific measures and combining interdependent measures together.

Combining Measures

The Committee discussed combining or "pairing" several measures, where it was recommended in several instances that two or more measures should be reported together. The reasoning was there seemed to be more scientific merit in reporting a group of interdependent measures than reporting each singly. For example, during the review of measures focused on falls and pressure ulcers, the Committee noted that several measures submitted by the same developer should be combined to highlight the sequence of care. The Committee requested that measures *0101: Falls Screening for future fall risk*, *1730: Falls: Risk assessment for falls* and *1733: Falls Plan of Care for Falls*, submitted by the National Committee for Quality Assurance (NCQA), be combined to create one measure with three separate rates. This would be designed to give a complete picture of screening, risk assessment and plans of care because the numerator of the screening for future fall risk is designed to be used as the denominator for the assessment for falls and plan of care measures. Similarly, the Committee recommended that measures *0538: Pressure ulcer prevention included in plan of car*e, *0539: Pressure ulcer prevention implemented during short term episodes of care* and *0540: Pressure ulcer risk assessment conducted*, submitted by the Centers for Medicare and Medicaid Services (CMS), also be combined to create a single measure comprised of three separate rates measuring assessment, plans of care and the implementation of care for pressure ulcers based upon similar logic. They surmised that some of the measures' individual utility and evidence-base were limited but when taken together would have a greater ability to effect change. After the in-person meeting, both NCQA and CMS submitted the combined measures. Consequently, one "consolidated" falls measure submitted by NCQA (*0101: Falls: Screening, Risk-Assessment, and Plan of Care to Prevent Future Falls*) was recommended for endorsement, while the two previously stand-alone measures (1730 and 1733) that were ultimately rolled into measure 0101 were withdrawn from consideration by the developer. Similarly, one "consolidated" pressure ulcer measure from CMS (*0538: Pressure Ulcer Prevention and Care*) was recommended for endorsement, while the two measures rolled into measure 0538 (0539 and 0540) were withdrawn by the developer.

Discussion of Related and Competing Measures

The Committee reviewed a number of previously endorsed measures that had been identified as related and potentially competing in the areas of falls and pressure ulcers. In general, the Committee viewed existing measures as related but not directly competing, since none of the measures had precisely the same focus and target population. This is further discussed in each of the falls and pressure ulcer measure evaluation summaries. However, because several of the measures were related, the Committee recommended that in the future harmonized measures that apply across populations, settings, and care transitions would be developed.

Usability

Concerns were raised surrounding the usability of measures that relied on voluntary reporting, such as measures that required patients or providers to report falls without injury, such as

measure *0141: Patient Fall Rate*. While this information would be useful to monitor for internal quality improvement, it may be less applicable for public accountability. The information presented through these types of measures may not include all incidents and as a result they may not accurately reflect care. However, the Committee believed that tracking these measures generally should be considered important since they may help in identifying gaps in care, and developing interventions.

COMMENTS AND THEIR DISPOSITION

NQF received 35 comments from five NQF member organizations pertaining to the general draft report and to the measures under consideration.

A table of comments submitted during the comment period, with the responses to each comment and the actions taken by the Steering Committee and measure developers, is posted to the Patient Safety - Complications project page under the Public and Member Comment section.

Comments Themes and Committee Responses

Comments regarding how to make measures more meaningful to consumer and suggested revisions to measure specifications were forwarded to the developers, who were invited to respond.

At its review of all comments, the Steering Committee had the benefit of developer responses. Committee members focused their discussion on measures or topic areas with the most significant and recurring issues.

Major Themes

Four major themes were identified in the comments, as follows:

1. Request for reconsideration of one measure not recommended: #0504: Pediatric weight documented in kilograms
2. Need for measures that are meaningful to consumers
3. Additional areas for measure development
4. Suggested revisions of measure specifications

Theme 1: Request for reconsideration of one measure not recommended: #0504: Pediatric weight documented in kilograms

Description: A comment by the Emergency Nurses Association (ENA) suggests that this measure should be reconsidered because of the importance of reducing medication errors in children due to incorrect weight. It cites additional evidence and notes that the use of EHRs may not eliminate errors related to pediatric dosing, which supports the need for a quality measure.

Action Taken: The Committee noted the significance of pediatric weight documented in kilograms but indicated that the developer needed to present data linking the failure to measure weight in kilograms to adverse events or demonstrate that measuring weight for pediatric patients mitigates adverse

events. After a re-vote, the measure remained not recommended for endorsement, but the Committee encouraged the developer to resubmit it in the future after additional evidence had been generated linking the measure to outcomes.

Theme 2- Need for measures that are meaningful to consumers

Description: There were seven comments suggesting that certain measures would be more meaningful to consumers if their approaches to public reporting were altered. The comments are listed below, along with the developers' responses, if provided. Developer responses are also listed in the comment spreadsheet.

Usefulness to Consumer:

- 0141: Patient Fall Rate
- 0202: Falls with injury

The measures are reported as a rate based on patient day and not by patient admission. Consumers may find it easier to interpret the measure if it reflects how long they will stay in the hospital.

Developer response (ANA): Thank you for your comments. Instead of calculating rates per patient admission, NDNQI uses patient days as the denominator because a patient's fall risk is roughly proportional to the length of stay in the hospital—e.g., a patient staying 30 days would be much more likely to fall than a patient staying 1 day, all else being equal. Similarly, a unit with 30 admissions and 300 patient days in a month would be expected to have a higher fall rate than a unit with 30 admissions and 30 patient days. By dividing by patient days, we can meaningfully compare units with different patient volumes.

Action Taken: The Committee was satisfied with the developer's response, and reaffirmed its recommendations of measure 0141 and 0202 for endorsement as specified. However, the Committee also recognized the value of making measures more meaningful to consumers and acknowledged the importance of public understanding.

Risk Adjustment:

- 0347: Death Rate in Low-Mortality Diagnosis Related Groups (PSI 2)

The measure's hierarchical risk adjustment may remove important variation from the results and may complicate consumer's ability to distinguish between providers.

Developer response (AHRQ): The table below (Table 1) provides information on the ability of measure #0347 to reliably discriminate based on provider performance:

Table 1: Discrimination in Provider Performance, 2008

				95% Probability Interval	
Year	Number of Hospitals	Number of Patients	Reference Population Rate (per 1,000)	Better	Worse
2008	4,239	7,130,445	0.30060	4.4%	7.3%

Source: HCUP State Inpatient Databases (SID). Healthcare Cost and Utilization Project (HCUP). 2008. Agency for Healthcare Research and Quality, Rockville, MD. www.hcup-us.ahrq.gov/sidoverview.jsp.

Action Taken: The Committee was satisfied with the developer's response, and reaffirmed its recommendation of measure 0347 as specified.

Measuring Providers:

- 0538: Pressure Ulcer Prevention and Care

It may be difficult for consumers to evaluate home health provider's prevention and care of pressure ulcers from this measure – the measure should incorporate outcomes and should score providers on an "all-or-none" basis.

Developer response (CMS): CMS does not publicly report an outcome measure of how often patients develop new pressure ulcers because less than one half of one percent of home health patients experience this outcome. We will continue to refine these three process measures and evaluate the concordance between risk, inclusion on the plan of care and implementation for the next cycle.

Action Taken: The Committee was satisfied with the developer's response, and reaffirmed its recommendation of measure 0538 as specified.

Approach to Reporting:

- 1716: National Healthcare Safety Network (NHSN) Facility-wide Inpatient Hospital-onset Methicillin-resistant Staphylococcus aureus (MRSA) Bacteremia Outcome Measure
- 1717: National Healthcare Safety Network (NHSN) Facility-wide Inpatient Hospital-onset Clostridium difficile Infection (CDI) Outcome Measure

Standardized infection rates are not as meaningful to consumers as the actual risk-adjusted rates of infection per admission.

Developer response (CDC): We appreciate the commenter's feedback. The standardized infection ratio (SIR) offers clear advantages to healthcare consumers over infection rates as the summary metric for this measure. The SIR produces a single risk-adjusted metric that can be further aggregated to the state, regional, or national level, all while maintaining appropriate comparisons between healthcare facilities. Further, observed-to-predicted ratios, such as the SIR, are widely used in public reporting of healthcare quality data. CDC, the Centers for Medicare and Medicaid Services, health departments in many states, and Consumers Union all use the SIR to report HAI data.

Action Taken: The Committee was satisfied with the developer's response and reaffirmed its recommendation of measures 1716 and 1717 as specified. However, they suggested the developer consider reporting actual risk-adjusted rates of infection per admission in the future. The Committee also recognized the importance of measures that are meaningful to consumers and it was noted as an area of future measure development in the draft report.

Theme 3: Additional areas for measure development

Description: There were 11 comments noting that measures recommended for endorsement should include additional settings and proposing four areas of future measure development.

Measurement Gaps Identified:

- Outcome measures should examine social factors in the prevention and treatment of falls, focusing on community level measurement.
- Falls across the care continuum should be addressed. These metrics should include patient assessment, plan of care, intervention, and outcomes, and should take into account care across various settings, such as inpatient, outpatient, ambulatory surgical centers, and home health.
- Further measures are needed that focus on complications linked to surgical site infections (including cesarean sections) and outcomes.
- Measures are needed that are easy to understand and meaningful to consumers

Action Taken: The Committee reaffirmed the importance of the measures recommended for endorsement, while also supporting the suggestions for future measure development. The report was updated to include these gaps.

Theme 4: Suggested revisions of measure specifications

Description: The following comments addressing specifications were forwarded to the developers for response. The developers' responses are listed in the comment spreadsheet.

- 0035: Fall Risk Management

The measure should involve an all-or-none principle instead of incorporating individual numerators and denominators.

Developer response (NCQA): Thank you very much for your comment. We would like to clarify that the measure is not a composite measure as defined by NQF and the two rates do not use the same denominator. The first rate addresses whether health care providers discussed falls or problems with gait or balance with consumers. Many of these consumers will have no history of falls and/or balance/gait problems and therefore follow-up care is not necessary. The second rate addresses whether health care providers provided follow-up care for those individuals who had a fall or problem with gait or balance. Having the two rates separated (as opposed to an all or nothing measure) provides health plans with the adequate information to identify where a quality problem is occurring (i.e. are consumers not being asked about falls/balance and gait problems OR are consumers with identified falls/balance and gait problems not being provided appropriate follow-up care).

> **Action Taken:** The Committee was satisfied with the developer's response, and reaffirmed its recommendation of measure 0035 as specified.

- 0101: Falls: Screening, Risk-Assessment, and Plan of Care to Prevent Future Falls

The measure may not result in an improvement in patient outcomes and may become a "checkbox" measure. Patient-reported data would be a better source of performance information.

Developer response (NCQA): Thank you for your comment. NCQA believes the two measures (0035 and 0101) are complementary and provide valuable information from different perspectives. Measure 0101 assesses provider report of clinical processes for all patients at risk of a future falls and is not subject to many of the limitations of the similar patient-reported measures (0035) such as recall bias, non-response bias and proxy bias. The use of these two measures together provides an important insight into where quality gaps exist.

> **Action Taken:** The Committee agreed that patient-reported data is an important element of falls-related quality measurement. However, provider data is also a key component, and helps to ensure a fuller picture of falls prevention activities and understanding by the patient. The Committee reaffirmed its recommendation of measure 0101 for endorsement.

- 0202: Falls with injury

This measure does not take into account that studies have demonstrated patients in rehabilitation settings may have higher fall rates due to cognitive impairment and lower staffing ratios. Additionally, collecting information on sub-specialty analysis for patient populations (such as stroke, brain injury, etc) may be useful.

Developer response (ANA): Thank you for your comments. Using NDNQI data, we have found the inpatient rehabilitation unit (N = 514 units) injury fall rates to be: mean (SD) = 1.91 (1.36); 25th percentile = 0.00; median = 0.93; and 75th percentile = 1.69. NDNQI provides member hospitals with quarterly national comparison data by unit type and several hospital characteristics. Because we stratify our staffing data to account for various levels of patient acuity, our main stratification

is by unit type (e.g., adult or pediatric critical care, step down, medical, surgical, combined medical-surgical, and adult rehabilitation in-patient). NDNQI also classifies rehabilitation units by sub-specialties, such as brain injury/SCI, Orthopedic/amputee, neuro/stroke, cardiopulmonary, and none. However, some of the subspecialties do not have enough units enrolled to provide stable national comparison data. In addition to unit type, the stratifications can be done by facility bed size, teaching status, Magnet(R) Designation, Metropolitan status, census division, state, case mix index, and hospital specialty type (e.g. pediatric, psychiatric). Further, rehabilitation units that also report nursing care hours to NDNQI would receive nursing hours per patient day and skill mix, along with comparison data. We encourage site coordinators and staff members at NDNQI hospitals to consider more than just fall rate when thinking about improvement. These factors include staffing; nursing characteristics such as education, certification, experience; rate of fall risk assessment; recency of risk assessment; whether prevention protocols are in place; and so forth.

> **Action Taken:** The Committee recognized that the measure stratifies results based on specialty units, including rehabilitation and accepted that the developer could not further differentiate by complexity of the patient diagnosis within the unit. They reaffirmed their recommendation of measure 0202 for endorsement.

- 0204: Skill mix (Registered Nurse [RN], Licensed Vocational/Practical Nurse [LVN/LPN], unlicensed assistive personnel [UAP], and contract)
- 0205: Nursing Hours per Patient Day

The number of specialty certified nurses can affect patient outcomes and should be addressed in the ratios. Variations in staffing mix may depend on the geographic region of the country and in some instances specific nurse staffing mandates are stipulated. Finally, staffing ratios may differ from freestanding inpatient rehabilitation facilities and hospital-based rehabilitation units.

Developer response (ANA): Thank you very much for your comment and we agree. In our recent studies, we also found that there were variations in the relationships between nurse staffing and patient outcomes by unit type, nurse specialty certification, and geographical location (Boyle et al., 2011; Choi et al., 2012). Nurse staffing levels represent the conditions in which care occurs. At this time we do not have a statistical risk model for the nurse staffing measures. However, NDNQI provides member hospitals with quarterly national comparison data by unit type and several hospital characteristics. Because we stratify our staffing data to account for various levels of patient acuity, our main stratification is by unit type (e.g., adult or pediatric critical care, step down, medical, surgical, combined medical-surgical, and adult rehabilitation in-patient). NDNQI also classifies units by sub-specialties, such as brain injury/SCI, Orthopedic/amputee, neuro/stroke, cardiopulmonary, and none. However, some of the subspecialties do not have enough units enrolled to provide stable national comparison data. In addition to unit type, the stratifications can be done by facility bed size, teaching status, Magnet(R) Designation, Metropolitan status, census division, state, case mix index, and hospital specialty type (e.g. pediatric, psychiatric). In research on the relationship between and nurse staffing and patient outcomes, all of these were typical control variables that were included in the data analysis for control variables.

Action Taken: The Committee requested in future versions of the measure the developer continue updating the specifications, data permitting, to include additional variations in staffing ratios and collect data on specialty certified nurses. They reaffirmed their recommendation of measures 0204 and 0205 for endorsement.

- 0266: Patient Fall

The measure could be expanded beyond ambulatory care, to include inpatient and outpatient settings.

Developer response (ASC Quality Collaboration): We thank the commenter for their support of capturing patient falls. The mission of the ASC Quality Collaboration is to develop quality measures appropriate to the outpatient surgical setting. The NQF portfolio includes measures that examine falls in other care settings.

Action Taken: The Committee was satisfied with the developer's response, and reaffirmed its recommendation of measure 0266 as specified. Addressing falls across settings was noted as an area of measure gaps.

- 0537: Multifactor Fall Risk Assessment Conducted in Patients 65 and Older

The measure could be expanded beyond the 65 and older population, to include patients 18 and over.

Developer response (CMS): Thank you for your comment. In our initial submission, we included all adult patients to whom OASIS applied, but the previous panel did not endorse the measure for the <65 population because of concerns about the body of evidence for community dwelling adults less than 65. We and the current NQF Committee agree that this measure would be valuable for patients of all ages in home health care. We will pursue expanding the measure when it is next re-evaluated for NQF endorsement in 2015.

Action Taken: The Steering Committee agreed that a measure applicable to all ages would be preferable; the Committee supported the developer's proposed effort to expand the measure before its next endorsement review.

NQF MEMBER VOTING RESULTS

**NQF Member Voting results to be inserted after Patient Safety Complications NQF Member voting closes on Thursday, November 1, 2012.*

Individual Measure Voting Results

REMOVE ENDORSEMENT OF MEASURES

Three measures previously endorsed by NQF have been withdrawn from maintenance of endorsement or not recommended for continued endorsement:

Measure	Description	Reason for removal of endorsement
0207 Voluntary turnover	NSC- 11.1 Total number of full-time and part-time Registered Nurse (RN) and Advanced Practice Nurse (APN) voluntary uncontrolled separations occurring during the calendar month NSC-11.2 Total number of full-time and part-time Licensed Practical Nurse (LPN), Licensed Vocational Nurse (LVN) voluntary uncontrolled separations occurring during the calendar month NSC-11.3 Total number of full-time and part-time Unlicensed Assistive Personnel (UAP) voluntary uncontrolled separations occurring during the calendar month	Did not meet Importance criteria
0503 Anticoagulation for acute pulmonary embolus	Number of acute embolus patients who have orders for anticoagulation (heparin or low-molecular weight heparin) for pulmonary embolus while in the ED.	Developer requested additional time for reliability and validity testing.
0504 Pediatric weight documented in kilograms	Percentage of emergency department visits by patients < 18 years of age with a current weight documented in kilograms in the ED electronic health record; measure to be reported each month.	Did not meet Importance criteria
0539 Pressure ulcer prevention implemented during short term episodes of care	Percentage of short term home health episodes of care during which interventions to prevent pressure ulcers were included in the physician-ordered plan of care and implemented.	Developer combined three pressure ulcer measures into one measure with three rates
0540 Pressure ulcer risk assessment conducted	Percentage of home health episodes of care in which the patient was assessed for risk of developing pressure ulcers at start/resumption of care.	Developer combined three pressure ulcer measures into one measure with three rates

Measure Evaluation Summary Tables

LEGEND: Y = Yes; N = No; H = High; M = Moderate; L = Low; I = Insufficient

0035 Fall risk management

Submission | **Specifications**

Description: a) Discussing Fall Risk. The percentage of adults 75 years of age and older, or 65–74 years of age with balance or walking problems or a fall in the past 12 months, who were seen by a practitioner in the past 12 months and who discussed falls or problems with balance or walking with their current practitioner.
b) Managing Fall Risk. The percentage of adults 65 years of age and older who had a fall or had problems with balance or walking in the past 12 months, who were seen by a practitioner in the past 12 months and who received fall risk intervention from their current practitioner.
Numerator Statement: This measure has two rates. The numerator for the discussing falls rate is the number of older adults who talked with their doctor about falling or problems with balance or walking. The numerator for the managing falls risk rate is the number of older adults who report having their provider suggest an intervention to prevent falls or treat problems with balance or walking.
Denominator Statement: Each rate has a different denominator. The Discussing Falls measure has two denominators: adults age 75 and older who had a provider visit in the past 12 months and adults age 65-74 who had a provider visit in the past 12 months and report either falling or having a problem with balance or walking in the past 12 months. The Managing Falls Risk measure has only one denominator: Adults age 65 and older who had a provider visit in the past 12 months and report either falling or having a problem with balance or walking in the past 12 months.
Exclusions: N/A
Adjustment/Stratification: No risk adjustment or risk stratification N/A N/A
Level of Analysis: Clinician : Individual, Health Plan, Population : National
Type of Measure: Process
Data Source: Patient Reported Data/Survey
Measure Steward: National Committee for Quality Assurance

STEERING COMMITTEE MEETING 06/14-15/2012

Importance to Measure and Report: The measure meets the Importance criteria

(1a. High Impact: 1b. Performance Gap, 1c. Evidence)

1a. Impact: **H-12; M-7; L-1; I-0** 1b. Performance Gap: **H-7; M-13; L-0; I-0** 1c. Evidence: **Y-16; N-4**

Rationale:

- The Committee stated that it was important to measure patient perceptions about whether they were queried about falls and/or had an intervention as this measure does. The Committee agreed that medical literacy, which they defined as the patient's ability to understand and recall interactions with their provider, is a critical issue and could be used to drive improvement.
- There is a significant performance gap. In the most recent data available from 2009, only 32.4% of patients indicated that their doctor queried them about whether they had a fall or a problem with gait or balance within the previous year. Additionally, 58.7% of patients indicated that they had been queried regarding a treatment or intervention.
- The measure is based on a recommendation from the American Geriatrics Society (AGS) that physicians should ask older adults if they had a fall annually or a problem with gait or balance. Evidence indicates that the first step of a falls intervention is asking patients about their risks and intervening in high-risk populations to reduce the risk of falls
- In the future the Committee requested that the developer consider creating a falls outcome measure at the health plan level.

0035 Fall risk management

2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u>
(2a. Reliability – precise specifications, testing; 2b. Validity – testing, threats to validity)
2a. Reliability: **H-2; M-15; L-2; I-1** 2b. Validity**: H-3; M-16; L-1; I-0**
<u>Rationale:</u>

- Reliability is assessed through a signal-to-noise ratio within the health plan and reevaluated every two to three years by the developer. They also examine the distribution of performance across health plans as well as the number of health plans that cannot report on this measure due to a sample size requirement of at least 100 patients. Additionally, audits are conducted every year of the survey vendors to ensure that they are appropriately fielding the survey.
- The Committee questioned the measure's reliability since dementia was not listed as an exclusion and the measure was based on patient's self-reporting. The developer explained that dementia was not included as an exclusion because in the survey, whether the patient was assessed can also be reported by a healthcare proxy, such as a family member.
- The measure has undergone extensive cognitive testing to ensure that patients understand the survey. It is available in several different languages, including Spanish and Chinese.
- The measure is not risk-adjusted since it's used at the health plan level and sufficient differences have not been demonstrated between health plan populations. Moreover, risk-adjustment is typically not considered necessary or appropriate for process measures.

3. Usability: H-5; M-14; L-1; I-0
(*Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)*
<u>Rationale</u>:

- This is a patient-reported measure collected through the Health Outcomes Survey. It has been used in the Stars program, which has been used as CMS's rating system for Medicare advantage plans since 2009.

4. Feasibility: H-8; M-11; L-1; I-0
(4a. Clinical data generated during care delivery; 4b. Electronic sources; 4c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)
<u>Rationale</u>:

- The Committee expressed concern that the measure could be burdensome if the patient had to be queried at every visit by every provider within a year. However, the developer clarified that the measure would be used by health plans to assess whether patients were queried annually about falls by *any* provider and was not designed to measure whether *every* provider asked about falls at every visit. Furthermore, since patients may not differentiate between a primary care physician and a specialist, the measure does not differentiate the type of provider that may query the patient about falls. Ultimately, the goal of this measure is to allow health plans to influence provider behavior and reduce falls, by making fall risk assessment a measured priority.
- The survey is also structured to minimize the burden to patients and facilities. It asks two broad questions, focused on whether a provider helped patients manage their risk and prevent falls in the future, in order to reduce the expense of printing and limit confusion among patients.

0035 Fall risk management

5. Related and Competing Measures

- The Committee determined that the following falls measures were related but not competing:
  0035: Fall risk management
  0101: Falls: Screening, risk-assessment, and plan of care to prevent future falls
  0141: Patient fall rate
  0202: Falls with injury
  0266: Patient fall; and,
  0537: Multifactor fall risk assessment conducted in patients 65 and older

  Measure *0035* was considered unique since it focused on a self-reported patient survey of their experience within a health plan. The Committee agreed that it was important to measure patient perception.

Steering Committee Recommendation for Endorsement: Y-20; **N-0**

Public & Member Comment:

- Comments included: The measure should involve an all-or-none principle instead of incorporating individual numerators and denominators.
  Developer response: Thank you very much for your comment. We would like to clarify that the measure is not a composite measure as defined by NQF and the two rates do not use the same denominator. The first rate addresses whether health care providers discussed falls or problems with gait or balance with consumers. Many of these consumers will have no history of falls and/or balance/gait problems and therefore follow-up care is not necessary. The second rate addresses whether health care providers provided follow-up care for those individuals who had a fall or problem with gait or balance. Having the two rates separated (as opposed to an all or nothing measure) provides health plans with the adequate information to identify where a quality problem is occurring (i.e. are consumers not being asked about falls/balance and gait problems OR are consumers with identified falls/balance and gait problems not being provided appropriate follow-up care).

- The issue of falls extends beyond a medical setting and should encompass broad based interventions at the family, circle of contacts, and community level.
  Developer response: NCQA agrees falls risk management is not just a medical issue. Many very successful falls risk interventions are offered in the community, and we agree additional measures would be useful to evaluate the effectiveness of falls risk management at the community level. This measures is designed for use in a health plan and therefore is focused solely on the medical care a health can be held accountable for. We agree the HOS survey is not an appropriate tool to evaluate targeted interventions at the community level.

Committee response: The Committee was satisfied with the developer's responses, and reaffirmed its recommendation of measure 0035 as specified. Additionally, the SC is interested in further exploration of community-level measures and has included this in the draft report as an area of future measure development, but believes that this measure is an important factor in gauging provider performance.

0101 Falls: Screening, risk-assessment, and plan of care to prevent future falls

Submission | **Specifications**

Description: This is a clinical process measure that assesses falls prevention in older adults. The measure has three rates:
A) Screening for Future Fall Risk:
Percentage of patients aged 65 years and older who were screened for fall risk (2 or more falls in the past year or any fall with injury in the past year) at least once within 12 months
B) Multifactorial Risk Assessment for Falls:
Percentage of patients aged 65 years and older with a history of falls who had a risk assessment for falls completed within 12 months
C) Plan of Care to Prevent Future Falls:
Percentage of patients aged 65 years and older with a history of falls who had a plan of care for falls documented within 12 months
Numerator Statement: This measure has three rates. The numerators for the three rates are as follows:
A) Screening for Future Fall Risk: Patients who were screened for future fall* risk** at last once within 12 months
B) Multifactorial Falls Risk Assessment: Patients at risk* of future fall** who had a multifactorial risk assessment*** for falls completed within 12 months
C) Plan of Care to Prevent Future Falls: Patients at risk* of future fall** with a plan of care**** for falls prevention documented within 12 months.
*A fall is defined as a sudden, unintentional change in position causing an individual to land at a lower level, on an object, the floor, or the ground, other than as a consequence of a sudden onset of paralysis, epileptic seizure, or overwhelming external force.
**Risk of future falls is defined as having had had 2 or more falls in the past year or any fall with injury in the past year.
***Risk assessment is defined as at a minimum comprised of balance/gait AND one or more of the following: postural blood pressure, vision, home fall hazards, and documentation on whether medications are a contributing factor or not to falls within the past 12 months.
***Plan of care is defined as at a minimum consideration of appropriate assistance device AND balance, strength and gait training.
Denominator Statement: A) Screening for Future Fall Risk: All patients aged 65 years and older seen by an eligible provider in the past year.
B & C) Multifactorial Falls Risk Assessment & Plan of Care to Prevent Future Falls: All patients aged 65 years and older with a history of falls (history of falls is defined as 2 or more falls in the past year or any fall with injury in the past year) seen by an eligible provider in the past year.
Exclusions: Patients who have documentation of medical reason(s) for not screening for future fall risk, undergoing a risk-assessment or having a plan of care (e.g., patient is not ambulatory) are considered exclusion to this measure.
Adjustment/Stratification: No risk adjustment or risk stratification N/A N/A
Level of Analysis: Clinician : Group/Practice, Clinician : Individual, Clinician : Team
Type of Measure: Process
Data Source: Administrative claims
Measure Steward: National Committee for Quality Assurance **Other organizations:** This measure was developed with the cooperation of the American Geriatrics Society, the National Committee for Quality Assurance and the American Medical Association.

0101 Falls: Screening, risk-assessment, and plan of care to prevent future falls

STEERING COMMITTEE MEETING 06/14-15/2012

Importance to Measure and Report: The measure meets the Importance criteria

(1a. High Impact: 1b. Performance Gap, 1c. Evidence)

1a. Impact: **H-12; M-7; L-1; I-0** 1b. Performance Gap: **H-11; M-9; L-0; I-0** 1c. Evidence: **Y-15; N-5**

Rationale:

- The Committee agreed that when the three separate measures were combined they would have the greatest impact by measuring the entire continuum of care for fall prevention: screening for falls annually, conducting a multifactorial risk assessment and implementing a plan of care.
- According to data from the Physician Quality Reporting System (PQRS) in 2008 and 2009 the performance rates for screening for future fall risk is 44%, multifactorial risk assessments is 88.82% and plans of care to prevent future falls is 86.80%.
- The developer noted that in the future the measure will be updated to incorporate any changes in guidelines from the American Geriatrics Society (AGS), United States Preventative Services Task Force (USPSTF) and the measure's advisory panel.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability – precise specifications, testing; 2b. Validity – testing, threats to validity)

2a. Reliability: **H-5; M-15; L-0; I-0** 2b. Validity**: H-4; M-16; L-0; I-0**

Rationale:

- The Committee expressed concern that the measure only included interventions related to gait and balance issues and excluded other risk factors for falls, such as medications. The developer explained that the measure was designed to apply to a broad population and focused on gait and balance issues since these are the strongest recommendations from the AGS guidelines to reduce the risk of falls.
- The measure's reliability was tested through manual and electronic chart abstraction at four practice sites. Inter-rater reliability was then used to compare the abstracted data with the data derived from claims for percent agreement. The overall agreement for future fall risk was 98.56%, while multifactor risk assessment and plan of care were both 100% agreement.
- Potential threats to validity were tested by analyzing the frequency and variability of patient and medical reasons for exclusions across providers.

3. Usability: H-7; M-13; L-1; I-0

(*Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)*

Rationale:

- The three combined measures are used in PQRS and are publicly reported through the CMS website.

4. Feasibility: H-8; M-13; L-0; I-0

(4a. Clinical data generated during care delivery; 4b. Electronic sources; 4c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)

Rationale:

- The Committee noted that a measure focused on documentation may be burdensome to providers, but this may decrease since it is in the process of being e-specified for electronic medical records.

0101 Falls: Screening, risk-assessment, and plan of care to prevent future falls

5. Related and Competing Measures

- The Committee determined that the following falls measures were related but not competing:
  0035: Fall risk management
  0101: Falls: Screening, risk-assessment, and plan of care to prevent future falls
  0141: Patient fall rate
  0202: Falls with injury
  0266: Patient fall; and,
  0537: Multifactor fall risk assessment conducted in patients 65 and older

  Measure *0101* was considered unique since it involved screening for falls annually, conducting a multifactorial risk assessment and implementing a plan of care. It is measured at the clinician level to gauge provider treatment, rather than at the health plan level as measure *0035*. It is applicable across settings and utilizes administrative claims data.

Steering Committee Recommendation for Endorsement: Y-21; N-0

Public & Member Comment:
Comments included:

- The measure may not result in an improvement in patient outcomes and may become a "checkbox" measure. Patient-reported data would be a better source of performance information.
  Developer response: Thank you for your comment. NCQA believes the two measures (0035 and 0101) are complementary and provide valuable information from different perspectives. Measure 0101 assesses provider report of clinical processes for all patients at risk of a future falls and is not subject to many of the limitations of the similar patient-reported measures (0035) such as recall bias, non-response bias and proxy bias. The use of these two measures together provides an important insight into where quality gaps exist.

- The issue of falls extends beyond a medical setting and should encompass broad based interventions at the family, circle of contacts, and community level.
  Developer response: Thank you for you comment. THE USPSTF recommends that falls prevention can be achieved through many settings, community and medical based. The purpose of this measures is to evaluate falls risk management interventions for which a health care provider can be held accountable, therefore the focus of the measure is management and referral which occurs in an ambulatory care office visit. The falls prevention interventions highlighted in your comment (referral to PT or Tai Chi) all count towards the numerator for the third rate in the measure (follow up plan of care documented). This rate assesses the proportion of patients at risk for future falls who received (1) information about balance, strength, and gait training exercises OR referral to an exercise program (tai chi included) AND (2) Consideration of appropriate assistance device OR referral for evaluation of an appropriate assistance device (PT referral included).

Committee response: The Committee agreed that patient-reported data is an important element of falls-related measurement efforts. However, provider data is also a key component, and helps to ensure a fuller picture of falls prevention activities and understanding by the patient. The Committee reaffirmed its recommendation of measure 0101 for endorsement and supported broad based interventions for falls being noted as a measure gap.

0141 Patient fall rate
Submission | **Specifications**

0141 Patient fall rate

Description: All documented falls, with or without injury, experienced by patients on eligible unit types in a calendar quarter. Reported as Total Falls per 1,000 Patient Days and Unassisted Falls per 1000 Patient Days. (Total number of falls / Patient days) X 1000
Measure focus is safety.
Target population is adult acute care inpatient and adult rehabilitation patients.
Numerator Statement: Total number of patient falls (with or without injury to the patient and whether or not assisted by a staff member) by hospital unit during the calendar month X 1000.
Target population is adult acute care inpatient and adult rehabilitation patients. Eligible unit types include adult critical care, adult step-down, adult medical, adult surgical, adult medical-surgical combined, critical access, adult rehabilitation in-patient.
Denominator Statement: Denominator Statement: Patient days by hospital unit during the calendar month.
Included Populations:
•Inpatients, short stay patients, observation patients, and same day surgery patients who receive care on eligible inpatient units for all or part of a day.
•Adult critical care, step-down, medical, surgical, medical-surgical combined, critical access, and adult rehabilitation units.
•Patients of any age on an eligible reporting unit are included in the patient day count.
Exclusions: Excluded Populations: Other unit types (e.g., pediatric, psychiatric, obstetrical, etc.)
Adjustment/Stratification: Other Stratification is by unit type (e.g., critical care, step down, medical), which is not identical to risk, but may be related. N/A Stratification by unit type:
Adult In-patient Patient Population
Limited to units generally caring for patients over 16 years old.

- Critical Care

Highest level of care, includes all types of intensive care units. Optional specialty designations include: Burn, Cardiothoracic, Coronary Care, Medical, Neurology, Pulmonary, Surgical, and Trauma ICU.

- Step-Down

Limited to units that provide care for patients requiring a lower level of care than critical care units and higher level of care than provided on medical/surgical units. Examples include progressive care or intermediate care units. Telemetry is not an indicator of acuity level. Optional specialty designations include: Med-Surg, Medical or Surgical Step-Down units.

- Medical

Units that care for patients admitted to medical services, such as internal medicine, family practice, or cardiology. Optional specialty designations include: BMT, Cardiac, GI, Infectious Disease, Neurology, Oncology, Renal or Respiratory Medical units.

- Surgical

Units that care for patients admitted to surgical services, such as general surgery, neurosurgery, or orthopedics. Optional specialty designations include: Bariatric, Cardiothoracic, Gynecology, Neurosurgery, Orthopedic, Plastic Surgery, Transplant or Trauma Surgical unit.

- Med-Surg Combined

Units that care for patients admitted to either medical or surgical services. Optional specialty designations include: Cardiac, Neuro/Neurosurgery or Oncology Med-Surg combined units.

- Critical Access Unit

Unit located in a Critical Access Hospital that cares for a combination of patients that may include critical care, medical-surgical, skilled nursing (swing bed) and/or obstetrics.
Rehabilitation In-patient Patient Population
Medicare payment policies differentiate rehabilitation from acute care, requiring patients to be discharged from acute care and admitted to a distinct acute rehabilitation unit. Rehabilitation units provide intensive therapy 5 days/week for patients expected to improve.

0141 Patient fall rate

- Adult

Limited to units generally caring for rehab patients over 16 years old. Optional specialty designations include: Brain Injury/SCI, Cardiopulmonary, Neuro/Stroke and Orthopedic/Amputee Rehab units.
Level of Analysis: Clinician : Team
Type of Measure: Outcome
Data Source: Electronic Clinical Data, Other, Paper Records
Measure Steward: American Nurses Association

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Importance to Measure and Report: The measure meets the Importance criteria

(1a. High Impact: 1b. Performance Gap, 1c. Evidence)

1a. Impact: **H-18; M-1; L-0; I-0** 1b. Performance Gap: **H-10; M-9; L-0; I-0** 1c. Evidence: **Y-19; N-0**

Rationale:

- This measure will provide benchmarks for falls research, and allow comparisons across facilities and help evaluate interventions to reduce falls. Ultimately, measuring all falls will be useful in designing interventions that reduce overall falls risk.
- This unit was a small medical-surgical unit that had 6 falls in one month and only 50 patient days. First quarter National Database of Nursing Quality Indicators (NDNQI) data in 2011 indicated that the range of falls varied across and within unit types from 1.24 per patient day in the adult critical care setting to 6.64 per patient day in the adult rehabilitation. The maximum fall rate was 54.71/1000 patient days, which occurred in a small medical-surgical unit that had 6 falls in one month and only 50 patient days.
- Seven studies have found a significant indirect relationship between some aspect of nurse staffing and fall rate or injury fall rate, indicating that it may be able to be improve through quality improvement efforts.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability – precise specifications, testing; 2b. Validity – testing, threats to validity)

2a. Reliability: **H-3; M-11; L-3; I-2** 2b. Validity**: H-0; M-15; L-4; I-1**

Rationale:

- Reliability is based on the consistency of agreement between raters and a group of experts and found a high rate of agreement of 85% on the classification of falls.
- Validity is based on the sensitivity and specificity of fall identification and found a 91% sensitivity agreement in identifying falls and 95.7% specificity agreement in identifying non-falls.
- The Committee expressed concern that validity testing centered on whether falls were correctly coded and not whether the fall rate was accurately captured through voluntary reporting.
- In the future the Committee requested the measure include the type of fall (accidental, anticipated or unaniticipated fall) and further specify preventable or unpreventable.

0141 Patient fall rate

3. Usability: H-5; M-8; L-6; I-1

(*Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)*

Rationale:

- About one-third of hospitals nationwide are reporting on this measure. Yet, since it is based on voluntary reporting it may be more useful for internal quality improvement purposes rather than accountability.
- More recently the trend has been for smaller facilities, with less than 100 beds, to start reporting on this measure.

4. Feasibility: H-4; M-15; L-1; I-0

(4a. Clinical data generated during care delivery; 4b. Electronic sources; 4c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)

Rationale:

- Data are collected through incident reports, which are increasingly but not exclusively electronic. The American Nurses Association (ANA) has a highly standardized set of training materials, quality assurance protocols and feedback from the users for data collection. Reporters must pass an online test before they can enter data. Specifications are underway for use as an EHR measure.
- Since the measure is voluntarily reported, it is susceptible to reporting error, specifically the underreporting of falls, particularly those where there is no injury. In addition, using the measure in pay-for-performance programs may impact voluntary data collection efforts.
- A Committee member identified an unintended consequence of measuring falls in inpatient units, which could encourage patient immobility or the use of restraints as mechanisms for prevention.

5. Related and Competing Measures

- The Committee determined that the following falls measures were related but not competing:
  - *0035: Fall risk management*
  - *0101 Falls: Screening, risk-assessment, and plan of care to prevent future falls*
  - *0141: Patient fall rate*
  - *0202: Falls with injury*
  - *0266: Patient fall; and,*
  - *0537: Multifactor fall risk assessment conducted in patients 65 and older*

  They agreed that measure *0141* was unique, since it is an outcome measure that reports falls within a facility through the NDNQI.

Steering Committee Recommendation for Endorsement: Y-14; **N-6**

*This measure is paired with measure *0202: Falls with injury* since they provide complimentary information regarding the number of falls and the number of falls with injury within a facility.

0141 Patient fall rate

Public & Member Comment:

Comments included:

The measure is reported as a rate based on patient day and not by patient admission. Consumers may find it easier to interpret the measure if it reflects how long they will stay in the hospital. ***Developer response:*** Thank you for your comments. Instead of calculating rates per patient admission, NDNQI uses patient days as the denominator because a patient's fall risk is roughly proportional to the length of stay in the hospital—e.g., a patient staying 30 days would be much more likely to fall than a patient staying 1 day, all else being equal. Similarly, a unit with 30 admissions and 300 patient days in a month would be expected to have a higher fall rate than a unit with 30 admissions and 30 patient days. By dividing by patient days, we can meaningfully compare units with different patient volumes.

- Falls should be also be addressed within the care continuum.

  Developer response: Thank you very much for your comments. We agree that measures across the care continuum are needed, including a common fall definition across the continuum.

- Standardizing benchmarks for comparison is important but needs to be balanced with potentially small numbers of patients that can lead to greater variation in the data collected.

  Developer response: Thank you for your comments. Regarding comparisons: NDNQI provides member hospitals with quarterly national comparison data by unit type and several hospital characteristics. Because we stratify our staffing data to account for various levels of patient acuity, our main stratification is by unit type (e.g., adult or pediatric critical care, step down, medical, surgical, combined medical-surgical, and adult rehabilitation in-patient). NDNQI also classifies units by sub-specialties where possible. However, some of the subspecialties do not have enough units enrolled to provide stable national comparison data. In addition to unit type, the stratifications can be done by facility bed size, teaching status, Magnet(R) Designation, Metropolitan status, census division, state, case mix index, and hospital specialty type (e.g. pediatric, psychiatric). Regarding your comment about reliability and small numbers, it is true that fall rates on units with very low patient volume will be susceptible to large month-to-month fluctuations (e.g., spiking from zero to a seemingly high fall rate due to a single fall occurring). Small units can get more reliable estimates by computing the fall rate across several months. We provide quarterly comparison of information on a calendary year quarter.

Committee response:

The Committee was satisfied with the developer's responses, and reaffirmed its recommendation of measure 0141 for endorsement as specified. However, the Committee also recognized the value of making measures more meaningful to consumers and acknowledged the importance of public understanding. Additionally, addressing falls on the care continuum was noted as an area of measure gaps.

0202 Falls with injury
Submission | **Specifications**

0202 Falls with injury

Description: All documented patient falls with an injury level of minor or greater on eligible unit types in a calendar quarter. Reported as Injury falls per 1000 Patient Days.
(Total number of injury falls / Patient days) X 1000
Measure focus is safety.
Target population is adult acute care inpatient and adult rehabilitation patients.
Numerator Statement: Total number of patient falls of injury level minor or greater (whether or not assisted by a staff member) by eligible hospital unit during the calendar month X 1000.
Included Populations:
• Falls with Fall Injury Level of "minor" or greater, including assisted and repeat falls with an Injury level of minor or greater
• Patient injury falls occurring while on an eligible reporting unit
Target population is adult acute care inpatient and adult rehabilitation patients. Eligible unit types include adult critical care, step-down, medical, surgical, medical-surgical combined, critical access, adult rehabilitation in-patient.
Denominator Statement: Denominator Statement: Patient days by Type of Unit during the calendar month.
Included Populations:
•Inpatients, short stay patients, observation patients, and same day surgery patients who receive care on eligible inpatient units for all or part of a day.
•Adult critical care, step-down, medical, surgical, medical-surgical combined, critical access and adult rehabilitation inpatient units.
•Patients of any age on an eligible reporting unit are included in the patient day count.
Exclusions: Excluded Populations: Other unit types (e.g., pediatric, psychiatric, obstetrical, etc.)
Adjustment/Stratification: Other Stratification is by unit type (e.g., critical care, step down, medical), which is not identical to risk, but may be related. N/A Stratification by unit type:
Adult In-patient Patient Population
Limited to units generally caring for patients over 16 years old.
- Critical Care

Highest level of care, includes all types of intensive care units. Optional specialty designations include: Burn, Cardiothoracic, Coronary Care, Medical, Neurology, Pulmonary, Surgical, and Trauma ICU.
- Step-Down

Limited to units that provide care for patients requiring a lower level of care than critical care units and higher level of care than provided on medical/surgical units. Examples include progressive care or intermediate care units. Telemetry is not an indicator of acuity level. Optional specialty designations include: Med-Surg, Medical or Surgical Step-Down units.
- Medical

Units that care for patients admitted to medical services, such as internal medicine, family practice, or cardiology. Optional specialty designations include: BMT, Cardiac, GI, Infectious Disease, Neurology, Oncology, Renal or Respiratory Medical units.
- Surgical

Units that care for patients admitted to surgical services, such as general surgery, neurosurgery, or orthopedics. Optional specialty designations include: Bariatric, Cardiothoracic, Gynecology, Neurosurgery, Orthopedic, Plastic Surgery, Transplant or Trauma Surgical unit.
- Med-Surg Combined

Units that care for patients admitted to either medical or surgical services. Optional specialty designations include: Cardiac, Neuro/Neurosurgery or Oncology Med-Surg combined units.
- Critical Access Unit

Unit located in a Critical Access Hospital that cares for a combination of patients that may include critical care, medical-surgical, skilled nursing (swing bed) and/or obstetrics.

0202 Falls with injury

Rehabilitation In-patient Patient Population
Medicare payment policies differentiate rehabilitation from acute care, requiring patients to be discharged from acute care and admitted to a distinct acute rehabilitation unit. Rehabilitation units provide intensive therapy 5 days/week for patients expected to improve.

- Adult

Limited to units generally caring for rehab patients over 16 years old. Optional specialty designations include: Brain Injury/SCI, Cardiopulmonary, Neuro/Stroke and Orthopedic/Amputee Rehab units.
Level of Analysis: Clinician : Team
Type of Measure: Outcome
Data Source: Electronic Clinical Data, Other, Paper Records
Measure Steward: American Nurses Association

STEERING COMMITTEE MEETING 06/14-15/2012

Importance to Measure and Report: The measure meets the Importance criteria

(1a. High Impact: 1b. Performance Gap, 1c. Evidence)

1a. Impact: **H-19; M-0; L-0; I-0** 1b. Performance Gap: **H-13; M-7; L-0; I-0** 1c. Evidence: **Y-19; N-0**

Rationale:

- Falls are one of the most common adverse events in hospitals, which occur to patients in acute care settings at a rate of 2-5 falls per 1000 patient days.
- First quarter NDNQI data in 2011 indicated that the greatest opportunity for improvement was within critical access units, which had 1.33 total injurious falls per patient day. The maximum injurious fall rate was 31.49/1000 patient days. This unit was a small ICU that had 3 injury falls in the quarter. The next highest rate was 12.34/1000 patient days. The smallest opportunity for improvement was in adult critical care units, which had 0.28 injury falls per patient day.
- Eighteen studies have examined patient fall rates and nursing characteristics/staffing at the unit level. Most of these studies noted the relationship between staffing and patient fall rates.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability – precise specifications, testing; 2b. Validity – testing, threats to validity)

2a. Reliability: **H-6; M-12; L-2; I-0** 2b. Validity**: H-3; M-15; L-2; I-0**

Rationale:

- The Committee stated that this measure may be easier to capture than measure *0141: Patient Fall Rate*, since it includes injurious falls, which are better documented.
- Reliability and validity were tested through three different methods: a) site coordinator interviews to identify core processes and key personnel involved in data collection; b) video reviews of fall scenarios to assess consistency, sensitivity and specificity; and, c) an online, written fall injury scenario to determine inter-rater reliability and appropriately predict the severity of injurious falls. The site coordinator interviews found no difference between hospital type and found limited differences based on hospital size and teaching status. The results of the video falls scenario was rated for consistency between the expert and direct care providers, demonstrating high agreement for almost all scenarios within a range of -9% to +7% differences. The online falls scenario had an Intraclass Coefficient (ICC of 0.85 for 13 scenarios, with two discarded due to wide variance.

0202 Falls with injury

3. Usability: H-11; M-8; L-1; I-0

(*Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)*

Rationale:

- About one-third of hospitals nationwide report on this measure. Yet, since it is based on voluntary reporting it may be more useful for internal quality improvement purposes rather than public accountability.
- This measure is reported publicly in Colorado and Massachusetts. Additional data are available through Leapfrog on 39 states.

4. Feasibility: H-9; M-11; L-0; I-0

(4a. Clinical data generated during care delivery; 4b. Electronic sources; 4c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)

Rationale:

- Data are collected through incident reports, which are increasingly but not exclusively electronic. The ANA has a highly standardized set of training materials, quality assurance protocols and feedback from the users for the collection of data. Reported must pass an online test before they can enter data. Specifications are underway for an EHR based measure.
- Since the measure is voluntarily reported, it is susceptible to reporting errors involving the underreporting of falls. In addition, using the measure in pay-for-performance programs may impact voluntary reporting of data.
- A Committee member identified an unintended consequence of measuring falls in inpatient units, which could encourage patient immobility or the use of restraints as mechanisms for prevention.

5. Related and Competing Measures

- The Committee determined that the following falls measures were related but not competing:
  - *0035: Fall risk management*
  - *0101: Falls: Screening, risk-assessment, and plan of care to prevent future falls*
  - *0141: Patient fall rate*
  - *0202: Falls with injury*
  - *0266: Patient fall; and,*
  - *0537: Multifactor fall risk assessment conducted in patients 65 and older*

  They agreed that measure *0202* was unique since it reports falls within a facility through the National Database of Nursing Quality Indicators (NDNQI).

Steering Committee Recommendation for Endorsement: Y-19; **N-1**

*This measure is paired with measure *0141: Patient fall rate* since they provide complimentary information regarding the number of falls and the number of falls with injury within a facility.

0202 Falls with injury

Public & Member Comment:
Comments included:

- The measure does not take into account that studies have demonstrated patients in rehabilitation settings may have higher fall rates due to cognitive impairment and lower staffing ratios. Additionally, collecting information on sub-specialty analysis for patient populations (such as stroke, brain injury, etc) may be useful.
  Developer response: Thank you for your comments. Using NDNQI data, we have found the inpatient rehabilitation unit (N = 514 units) injury fall rates to be: mean (SD) = 1.91 (1.36); 25th percentile = 0.00; median = 0.93; and 75th percentile = 1.69. NDNQI provides member hospitals with quarterly national comparison data by unit type and several hospital characteristics. Because we stratify our staffing data to account for various levels of patient acuity, our main stratification is by unit type (e.g., adult or pediatric critical care, step down, medical, surgical, combined medical-surgical, and adult rehabilitation in-patient). NDNQI also classifies rehabilitation units by sub-specialties, such as brain injury/SCI, Orthopedic/ amputee, neuro/ stroke, cardiopulmonary, and none. However, some of the subspecialties do not have enough units enrolled to provide stable national comparison data. In addition to unit type, the stratifications can be done by facility bed size, teaching status, Magnet(R) Designation, Metropolitan status, census division, state, case mix index, and hospital specialty type (e.g. pediatric, psychiatric). Further, rehabilitation units that also report nursing care hours to NDNQI would receive nursing hours per patient day and skill mix, along with comparison data. We encourage site coordinators and staff members at NDNQI hospitals to consider more than just fall rate when thinking about improvement. These factors include staffing; nursing characteristics such as education, certification, experience; rate of fall risk assessment; recency of risk assessment; whether prevention protocols are in place; and so forth.

- This measure may be susceptible to an under reporting bias and the reliability could be affected by small numbers of patients.
  Developer response: Thank you for your comments. Regarding your comment about reliability, it is true that fall rates on units with very low patient volume will be susceptible to large month-to-month fluctuations (e.g., spiking from zero to a seemingly high fall rate due to a single fall occurring). Small units can get more reliable estimates by computing the fall rate across several months.

- The measure is reported as a rate based on patient day and not by patient admission. Consumers may find it easier to interpret the measure if it reflects how long they will stay in the hospital. Falls should be assessed within the care continuum.
  Developer response: Thank you for your comments. As part of the falls (0141) and falls with injury (0202) measures, NDNQI also collects whether a fall risk assessment was done, which risk assessment scale was used, time since last risk assessment, whether a fall prevention protocol was in place, and if physical restraints were in use. Hospitals can use this information to determine, unit by unit, if risk assessment and care management are being done.
  We use patient days as the denominator because a patient's fall risk is roughly proportional to the length of stay in the hospital—e.g., a patient staying 30 days would be much more likely to fall than a patient staying 1 day, all else being equal. Similarly, a unit with 30 admissions and 300 patient days in a month would be expected to have a higher fall rate than a unit with 30 admissions and 30 patient days. By dividing by patient days, we can meaningfully compare units with different patient volumes.

Committee response: The Committee recognized that the measure stratifies results based on specialty units, including rehabilitation and accepted that the developer could not further differentiate by complexity of the patient diagnosis within the unit. They also recognized the value of making measures more meaningful to

0202 Falls with injury

consumers and acknowledged the importance of public understanding. The Committee reaffirmed their recommendation of measure 0202 for endorsement. Addiionally, addressing falls on the care continuum was also noted as an area of measure gaps.

0266 Patient fall

Submission | **Specifications**

Description: Percentage of Ambulatory Surgical Center (ASC) admissions experiencing a fall in the ASC.
Numerator Statement: ASC admissions experiencing a fall in the ASC.
Denominator Statement: All ASC admissions.
Exclusions: ASC admissions experiencing a fall outside the ASC.
Adjustment/Stratification: No risk adjustment or risk stratification None This measure is not stratified
Level of Analysis: Facility
Type of Measure: Outcome
Data Source: Paper Records
Measure Steward: Ambulatory Surgical Centers Quality Collaborative **Other organizations:** No additional organizations participated in measure development.

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Importance to Measure and Report: The measure meets the Importance criteria

(1a. High Impact: 1b. Performance Gap, 1c. Evidence)

1a. Impact: **H-4; M-8; L-5; I-1** 1b. Performance Gap: **H-; M-10; L-7; I-2** 1c. Evidence: **Y-13; N-6**

Rationale:

- The measure reinforces the importance of reporting falls and provides an opportunity to benchmark fall rates in ASCs. The Committee agreed that due to high patient turnover rates in ASCs, capturing information on falls may highlight providing patients with appropriate recovery time before discharge.
- The Committee questioned the performance gap, citing the low incidence of falls in ASCs noting that patient fall rates varied from 0-0.93%.
- There are over 100 studies that address patient safety topics related to falls incidence, falls risk assessment and falls prevention. However, few studies focus on ASCs and measuring the incidence of falls is considered a key aspect of quality improvement.

0266 Patient fall

2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u>
(2a. Reliability – precise specifications, testing; 2b. Validity – testing, threats to validity)
2a. Reliability: **H-3; M-8; L-8; I-0** 2b. Validity**: H-0; M-11; L-6; I-2**
<u>Rationale:</u>

- Reliability testing involved a convenience sample of 22 ASCs selected for retrospective chart auditing and found error rates for the numerator and denominator of zero.
- Validity testing involved respondents using a questionnaire to rate characteristics of the measure and demonstrated a high level of agreement.
- The measure captures information on patients from admission to discharge. The Committee indicated that measuring falls outside the ASC after discharge may present an opportunity for improvement because this is where many falls may occur; however, this is currently an exclusion. The developer explained that the measure was defined from admission to discharge, since intake procedures and the structure of ASCs vary by facility. It was suggested that in the future capturing post-discharge information could be an opportunity for quality improvement to help identify practices to reduce fall rates after discharge from an ASC.
- The Committee also agreed that the measure could be further strengthened by differentiating between preventable and non-preventable falls and whether the fall resulted in harm. The developer indicated that they are looking at definitions of injury and severity levels in the future but suggested that even falls without injury should still be captured.

3. Usability: H-2; M-10; L-6; I-1
(*Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)*
<u>Rationale</u>:

- CMS will begin using this measure for public reporting in October 2012. All ASC's providing care to Medicare patients will report on it at the facility level using a claims-based reporting process. The developer indicated that eventually reporting may involve all payers and all patients, but will begin with Medicare patients to lower the burden.

4. Feasibility: H-3; M-14; L-2; I-0
(4a. Clinical data generated during care delivery; 4b. Electronic sources; 4c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)
<u>Rationale</u>:

- Data on falls are currently being collected through occurrence reports, which CMS believed was less burdensome than chart abstraction.

0266 Patient fall

5. Related and Competing Measures

- The Committee determined that the following falls measures were related but not competing:
  0035: Fall risk management
  0101: Falls: Screening, risk-assessment, and plan of care to prevent future falls
  0141: Patient fall rate
  0202: Falls with injury
  0266: Patient fall; and,
  0537: Multifactor fall risk assessment conducted in patients 65 and older

  They agreed that measure *0266* was unique, since it is the only outcome measure in the NQF portfolio to focus on falls in ASCs. They stated that the patient population was distinctive and falls in ASCs occur for different reasons than in other settings.

Steering Committee Recommendation for Endorsement: Y-12; **N-7**
Rationale

Public & Member Comment:
Comments included:

- The measure could be expanded beyond ambulatory care, to include inpatient and outpatient settings. ***Developer response:*** We thank the commenter for their support of capturing patient falls. The mission of the ASC Quality Collaboration is to develop quality measures appropriate to the outpatient surgical setting. The NQF portfolio includes measures that examine falls in other care settings.

Committee response: The Committee was satisfied with the developer's response, and reaffirmed its recommendation of measure 0266 as specified. Addressing falls across settings was noted as an area of measure gaps.

0537 Multifactor fall risk assessment conducted in patients 65 and older

Submission | Specifications

Description: Percentage of home health episodes of care in which patients 65 and older had a multi-factor fall risk assessment at start/resumption of care.
Numerator Statement: Number of home health episodes of care in which patients 65 and older had a multi-factor fall risk assessment at start/resumption of care.
Denominator Statement: Number of home health episodes of care ending during the reporting period, other than those covered by generic or measure-specific exclusions.
Exclusions: Episodes in which the patient's age was less than 65 at the time of assessment.
Adjustment/Stratification: No risk adjustment or risk stratification N/A - process measure. N/A - measure not stratified.
Level of Analysis: Facility
Type of Measure: Process
Data Source: Electronic Clinical Data
Measure Steward: Centers for Medicare and Medicaid Services **Other organizations:** Abt Associates, Inc.
Case Western Reserve University
University of Colorado at Denver, Division of Health Care Policy and Research

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Importance to Measure and Report: The measure meets the Importance criteria

(1a. High Impact: 1b. Performance Gap, 1c. Evidence)

1a. Impact: **H-8; M-7; L-2; I-2** 1b. Performance Gap: **H-3; M-13; L-3; I-0** 1c. Evidence: **Y-14; N-5;**

Rationale:

- There is significant variation in falls risk assessments among providers, indicating that a more frequent assessment could reduce the rates of falls in older adults who receive home health services. However, the average agency had a relatively high compliance rate of 95%.
- The Committee agreed that the evidence cited by the developer was well-articulated and the measure targeted a vulnerable group of patients with significant morbidity from falls. Although fall rates in home health care may not be well documented, fall rates within nursing homes create a compelling argument for measurement in the home. The only study specific to home health patients reported an annual fall rate of 28.5%.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability – precise specifications, testing; 2b. Validity – testing, threats to validity)

2a. Reliability: **H-7; M-11; L-1; I-0** 2b. Validity**: H-2; M-15; L-1; I-0**

Rationale:

- At least 75% of agencies have a reliability score greater than .966 indicating that performance can be distinguished between agencies.
- The Committee suggested that in the future the measure could be expanded to include patients under 65. The developer agreed that this population would benefit from falls risk assessments.

0537 Multifactor fall risk assessment conducted in patients 65 and older
3. Usability: H-6; M-8; L-5; I-0 (*Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)* Rationale: • The measure is currently publicly reported for agencies that have 20 episodes or more on the Medicare Home Health Compare website.
4. Feasibility: H-9; M-10; L-0; I-0 *(4a. Clinical data generated during care delivery; 4b. Electronic sources; 4c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)* Rationale: • Data are collected through OASIS, and submitted electronically.
5. Related and Competing Measures • The Committee determined that the following falls measures were related but not competing: *0035: Fall risk management* *0101: Falls: Screening, risk-assessment, and plan of care to prevent future falls* *0141: Patient fall rate* *0202: Falls with injury* *0266: Patient fall; and,* *0537: Multifactor fall risk assessment conducted in patients 65 and older* They agreed that measure *0537* was unique, since *it* applies to home health and is sufficiently different from other environments. They stated that the patient population was distinctive and falls resulted for different reasons than in other settings.
Steering Committee Recommendation for Endorsement: Y-16; **N-3**

0537 Multifactor fall risk assessment conducted in patients 65 and older

Public & Member Comment:
Comments included:

- The measure is a checkbox measures and should be expanded beyond the 65 and older population, to include patients 18 and over.
  Developer response: Thank you for your comment. In our initial submission, we included all adult patients to whom OASIS applied, but the previous panel did not endorse the measure for the <65 population because of concerns about the body of evidence for community dwelling adults less than 65. We and the current NQF Committee agree that this measure would be valuable for patients of all ages in home health care. We will pursue expanding the measure when it is next re-evaluated for NQF endorsement in 2015.

- Falls should be assessed within the care continuum.
  Developer response: Thank you for your comment. We concur and look forward to working with NQF to identify cross-setting measures.

Committee response: The Committee agreed that a measure applicable to all ages would be preferable; the Committee supported the developer's proposed effort to expand the measure before its next endorsement review. Addressing falls on the care continuum was noted as an area of measure gaps.

0538 Pressure ulcer prevention and care

Submission | Specifications

Description: Pressure Ulcer Risk Assessment Conducted: Percentage of home health episodes of care in which the patient was assessed for risk of developing pressure ulcers at start/resumption of care.
Pressure Ulcer Prevention Included in Plan of Care: Percentage of home health episodes of care in which the physician-ordered plan of care included interventions to prevent pressure ulcers.
Pressure Ulcer Prevention Implemented during Short Term Episodes of Care: Percentage of short term home health episodes of care during which interventions to prevent pressure ulcers were included in the physician-ordered plan of care and implemented**.**
Numerator Statement: Pressure Ulcer Risk Assessment Conducted: Number of home health episodes of care in which the patient was assessed for risk of developing pressure ulcers either via an evaluation of clinical factors or using a standardized tool, at start/resumption of care.
Pressure Ulcer Prevention Included in Plan of Care: Number of home health episodes of care in which the physician-ordered plan of care included interventions to prevent pressure ulcers.
Pressure Ulcer Prevention Implemented during Short Term Episodes of Care: Number of home health episodes of care during which interventions to prevent pressure ulcers were included in the physician-ordered plan of care and implemented.
Denominator Statement: Pressure Ulcer Risk Assessment Conducted: Number of home health episodes of care ending during the reporting period, other than those covered by generic exclusions.
Pressure Ulcer Prevention Included in Plan of Care: Number of home health episodes of care ending during the reporting period, other than those covered by generic exclusions.
Pressure Ulcer Prevention Implemented during Short Term Episodes of Care: Number of home health episodes of care ending during the reporting period, other than those covered by generic or measure-specific exclusions.
Exclusions: Pressure Ulcer Risk Assessment Conducted: No measure-specific exclusions.
Pressure Ulcer Prevention Included in Plan of Care: Episodes in which the patient is not assessed to be at risk for pressure ulcers.
Pressure Ulcer Prevention Implemented during Short Term Episodes of Care: Number of home health episodes in which the patient was not assessed to be at risk for pressure ulcers, or the home health episode ended in transfer to an inpatient facility or death.
Adjustment/Stratification: No risk adjustment or risk stratification N/A - process measure N/A - not stratified
Level of Analysis: Facility
Type of Measure: Process
Data Source: Electronic Clinical Data : Electronic Health Record
Measure Steward: Centers for Medicare and Medicaid Services Other organizations: Acumen LLC
Abt Associates, Inc.
Case Western Reserve University
University of Colorado at Denver, Division of Health Care Policy and Research

0538 Pressure ulcer prevention and care

STEERING COMMITTEE MEETING 06/14-15/2012

Importance to Measure and Report: The measure meets the Importance criteria

(1a. High Impact: 1b. Performance Gap, 1c. Evidence)

1a. Impact: **H-10; M-8; L-1; I-0** 1b. Performance Gap: **H-2; M-11; L-6; I-0** 1c. Evidence: **Y-16; N-4**

Rationale:

- The Committee discussed recommending measures *0538: Pressure ulcer prevention included in plan of care*, *0539: Pressure ulcer prevention implemented during short term episodes of care*, and *0540: Pressure ulcer risk assessment conducted* separately; however, they determined that combining the measures into one measure with three distinct rates would be more useful. The combination would then link the assessment, plan and implemention of care for pressure ulcers, while also reinforcing the importance of reporting on each step in care. Following the meeting, the developer was able to combine the measures into *0538: Pressure Ulcer Plan of Care.*
- There was concern about whether measure *0540* reflected a standard of care (i.e., there was no performance gap) and would not improve outcomes. Yet, it was included with the other measures as part of the treatment process focused on pressure ulcers for home health care.
- The developer stated that high performance on the measure should be encouraged and indicated that patients were being appropriately treated.
- Although the developer noted a limited body of evidence for pressure ulcers in the home healthcare setting, two studies were cited, providing evidence about prevalence and incidence. One study of 1,711 community-based adults receiving home care indicated an incidence of 3.2% of Stage II through IV pressure ulcers; the other study, focusing on a consecutive sample of 3,048 patients admitted to home health agencies, cited a prevalence of 9%, with 40% having Stage II pressure ulcers and 27% having Stage III or Stage IV pressure ulcers.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability – precise specifications, testing; 2b. Validity – testing, threats to validity)

2a. Reliability: **H-4; M-13; L-2; I-1** 2b. Validity**: H-3; M-16; L-1; I-0**

Rationale:

- Combining the measures was seen as a useful way to assess the quality of the continuum of care for pressure ulcer assessment, prevention, and treatment.
- The Committee clarified that measure *0540* involves using a standardized instrument to determine risk which is conducted by the home health agency. If necessary, this leads to contacting a physician and an ordered plan of care.
- The three combined measures were tested individually using agencies with at least 20 quality episodes and the analyses were based on beta-binomial distributions. The distribution scores indicated that at least 75% of agencies had a reliability score greater than 0.948 for risk assessment, 0.930 for plan of care, and 0.923 for interventions implemented during short term episodes of care, implying that performance can likely be distinguished from other agencies. Similarly, each measure was rated for validity by a technical expert panel (TEP) with 9 out of 13 rating the risk assessment as partially or completely meeting their criteria for validity, 7 out of 12 rating the plan of care as partially or completely meeting the criteria, and 8 out of 11 rating the interventions implemented during short term episodes of care as partially or completely meeting the criteria.

0538 Pressure ulcer prevention and care

3. Usability: H-5; M-13; L-2; I- 0

(*Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)*

Rationale:

- This combined measure is currently publicly reported as three separate measures on the Medicare Home Health Compare website.

4. Feasibility: H-6; M-13; L-1; I-0

(4a. Clinical data generated during care delivery; 4b. Electronic sources; 4c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)

Rationale:

- The measure data are gathered and publicly reported using the OASIS system.

5. Related and Competing Measures

- The Committee determined that measure *0538* was related to but not competing with measure *0337: Pressure ulcer rate (PDI 2),* since *0538* is a process measure focused on an assessment, plan and the implementation of care, while *0337* is an outcome measure focused on capturing pressure ulcer rates. Additionally, *0538* applies to home health while *0337* applies to hospitals and acute care facilities. The NQF portfolio also includes two measures focused on new or worsening pressure ulcers in nursing home populations and one that measures the prevalence of pressure ulcers for in-hospital and nursing home patients.

Steering Committee Recommendation for Endorsement: Y-18; N-2

Public & Member Comment:

Comments included:

- It may be difficult for consumers to evaluate home health provider's prevention and care of pressure ulcers from this measure – the measure should incorporate outcomes and should score providers on an "all-or-none" basis.

  Developer response: CMS does not publicly report an outcome measure of how often patients develop new pressure ulcers because less than one half of one percent of home health patients experience this outcome. We will continue to refine these three process measures and evaluate the concordance between risk, inclusion on the plan of care and implementation for the next cycle.

Committee response: The Committee was satisfied with the developer's response, and reaffirmed its recommendation of measure 0538 as specified.

0337 Pressure ulcer rate (PDI 2)
Submission | **Specifications**

0337 Pressure ulcer rate (PDI 2)

Description: Percent of discharges among cases meeting the inclusion and exclusion rules for the denominator with ICD-9-CM code of pressure ulcer in any secondary diagnosis field and ICD-9-CM code of pressure ulcer stage III or IV (or unstagable) in any secondary diagnosis field
Numerator Statement: Discharges among cases meeting the inclusion and exclusion rules for the denominator with ICD-9-CM code of pressure ulcer in any secondary diagnosis field and ICD-9-CM code of pressure ulcer stage III or IV (or unstagable) in any secondary diagnosis field.
Denominator Statement: All surgical and medical discharges under age 18 defined by specific DRGs or MS-DRGs
Exclusions: Exclude cases:
- neonates
- with length of stay of less than 5 days
- with preexisting condition of pressure ulcer (see Numerator) (principal diagnosis or secondary diagnosis present on admission)
- in MDC 9 (Skin, Subcutaneous Tissue, and Breast)
- with an ICD-9-CM procedure code for debridement or pedicle graft before or on the same day as the major operating room procedure (surgical cases only)
- with an ICD-9-CM procedure code of debridement or pedicle graft as the only major operating room procedure (surgical cases only)
- Transfer from a hospital (different facility)
- Transfer from a Skilled Nursing Facility (SNF) or Intermediate Care Facility (ICF)
- Transfer from another health care facility
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing discharge gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

See Pediatric Quality Indicators Appendices:
- Appendix I – Definitions of Neonate, Newborn, Normal Newborn, and Outborn
- Appendix J – Admission Codes for Transfers

Link to PDI appendices:
http://qualityindicators.ahrq.gov/Downloads/Software/SAS/V43/TechnicalSpecifications/PDI%20Appendices.pdf
Adjustment/Stratification: Statistical risk model The predicted value for each case is computed using a hierarchical model (logistic regression with hospital random effect) and covariates for gender, birthweight (500g groups), age in days (29-60, 61-90, 91+), age in years (in 5-year age groups), modified CMS DRG and AHRQ CCS comorbities. The reference population used in the regression is the universe of discharges for states that participate in the HCUP State Inpatient Data (SID) for the years 2008, a database consisting of 43 states and approximately 6 million pediatric discharges. The expected rate is computed as the sum of the predicted value for each case divided by the number of cases for the unit of analysis of interest (i.e., hospital). The risk adjusted rate is computed using indirect standardization as the observed rate divided by the expected rate, multiplied by the reference population rate.
Covariates used in this measure:
Age in Years 13 to 18
Age in Years 6 to 13
MDC 1
High-risk (hemiplegia, paraplegia, or quadriplegia, spina bifida, anoxic brain,other continuous mechanical ventilation code for 96 or more consecutive hours)
PDI 2 stratifies rates by high-risk vs. lower risk groups.
High risk groups:
ICD-9-CM Hemiplegia, paraplegia, or quadriplegia diagnosis codes:
33371
ATHETOID CEREBRAL PALSY

0337 Pressure ulcer rate (PDI 2)

3420
FLACCID HEMIPLEGIA
34200
FLCCD HMIPLGA UNSPF SIDE
34201
FLCCD HMIPLGA DOMNT SIDE
34202
FLCCD HMIPLG NONDMNT SDE
3421
SPASTIC HEMIPLEGIA
34210
SPSTC HMIPLGA UNSPF SIDE
34211
SPSTC HMIPLGA DOMNT SIDE
34212
SPSTC HMIPLG NONDMNT SDE
34280
OT SP HMIPLGA UNSPF SIDE
34281
OT SP HMIPLGA DOMNT SIDE
34282
OT SP HMIPLG NONDMNT SDE
3429
HEMIPLEGIA, UNSPECIFIED
34290
UNSP HEMIPLGA UNSPF SIDE
34291
UNSP HEMIPLGA DOMNT SIDE
34292
UNSP HMIPLGA NONDMNT SDE
3430
INFANTILE CEREBRAL PALSY, DIPLEGIC
3431
INFANTILE CEREBRAL PALSY, HEMIPLEGIC
3432
INFANTILE CEREBRAL PALSY, QUADRIPLEGIC
3433
INFANTILE CEREBRAL PALSY, MONOPLEGIC
3434
INFANTILE CEREBRAL PALSY INFANTILE HEMIPLEGIA
3438
INFANTILE CEREBRAL PALSY OTHER SPECIFIED INFANTILE CEREBRAL PALSY
3439
INFANTILE CEREBRAL PALSY, INFANTILE CEREBRAL PALSY, UNSPECIFIED
3440
QUADRIPLEGIA AND QUADRIPARESIS
34400
QUADRIPLEGIA, UNSPECIFD

0337 Pressure ulcer rate (PDI 2)

34401
QUADRPLG C1-C4, COMPLETE
34402
QUADRPLG C1-C4, INCOMPLT
34403
QUADRPLG C5-C7, COMPLETE
34404
QUADRPLG C5-C7, INCOMPLT
34409
OTHER QUADRIPLEGIA
3441
PARAPLEGIA
3442
DIPLEGIA OF UPPER LIMBS
3443
MONOPLEGIA OF LOWER LIMB
34430
MONPLGA LWR LMB UNSP SDE
34431
MONPLGA LWR LMB DMNT SDE
34432
MNPLG LWR LMB NONDMNT SD
3444
MONOPLEGIA OF UPPER LIMB
34440
MONPLGA UPR LMB UNSP SDE
34441
MONPLGA UPR LMB DMNT SDE
34442
MNPLG UPR LMB NONDMNT SD
3445
UNSPECIFIED MONOPLEGIA
3446
CAUDA EQUINA SYNDROME
34460
CAUDA EQUINA SYNDROME, WITHOUT MENTION OF NEUROGENIC BLADDER
34461
CAUDA EQUINA SYNDROME, WITH NEUROGENIC BLADDER
3448
OTHER SPECIFIED PARALYTIC SYNDROMES
34481
LOCKED-IN STATE
34489
OTH SPCF PARALYTIC SYND
3449
PARALYSIS, UNSPECIFIED
43820
LATE EF-HEMPLGA SIDE NOS

0337 Pressure ulcer rate (PDI 2)

43821
LATE EF-HEMPLGA DOM SIDE
43822
LATE EF-HEMIPLGA NON-DOM
43830
LATE EF-MPLGA UP LMB NOS
43831
LATE EF-MPLGA UP LMB DOM
43832
LT EF-MPLGA UPLMB NONDOM
43840
LTE EF-MPLGA LOW LMB NOS
43841
LTE EF-MPLGA LOW LMB DOM
43842
LT EF-MPLGA LOWLMB NONDM
43850
LT EF OTH PARAL SIDE NOS
43851
LT EF OTH PARAL DOM SIDE
43852
LT EF OTH PARALS NON-DOM
43853
LT EF OTH PARALS-BILAT
7687
HYPOXIC-ISCHEMIC ENCEPH
76870
HYPOXIC-ISCHEMIC ENCEPHALOPATHY, UNSPECIFIED (OCT09)
76872
MODERATE HYPOXIC-ISCHEMIC ENCEPHALOPATHY (OCT09)
76873
SEVERE HYPOXIC-ISCHEMIC ENCEPHALOPATHY (OCT09)
ICD-9-CM Spina bifida diagnosis codes:
74100
SPINA BIFIDA, W HYDROCEPHALUS UNSPECIFIED REGION
74101
SPINA BIFIDA, W HYDROCEPHALUS CERVICAL REGION
74102
SPINA BIFIDA, W HYDROCEPHALUS DORSAL REGION
74103
SPINA BIFIDA, W HYDROCEPHALUS LUMBAR REGION
74190
SPINA BIFIDA, W/O HYDROCEPHALUS UNSPECIFIED REGION
74191
SPINA BIFIDA, W/O HYDROCEPHALUS CERVICAL REGION
74192
SPINA BIFIDA, W/O HYDROCEPHALUS DORSAL REGION
74193

0337 Pressure ulcer rate (PDI 2)

SPINA BIFIDA, W/O HYDROCEPHALUS LUMBAR REGION
7687
HYPOXIC-ISCHEMIC ENCEPH
ICD-9-CM Anoxic brain damage diagnosis codes:
3481
ANOXIC BRAIN DAMAGE
7685
SEVERE BIRTH ASPHYXIA
ICD-9-CM Continuous mechanical ventilation procedure code:
9672
ADD CONTINUOUS MECHANICAL VENTILATION >=96 HRS
Low risk group:
All patients not qualifying as high risk.
Level of Analysis: Facility
Type of Measure: Outcome
Data Source: Administrative claims
Measure Steward: Agency for Healthcare Research and Quality **Other organizations:** University of California-Davis
Stanford University
Battelle Memorial Institute

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Importance to Measure and Report: The measure meets the Importance criteria

(1a. High Impact: 1b. Performance Gap, 1c. Evidence)

1a. Impact: **H-13; M-6; L-0; I-0** 1b. Performance Gap: **H-7; M-11; L-1; I-0** 1c. Evidence: **Y-18; N-1**

Rationale:

- The Committee considered the measure an important outcome, since pressure ulcers lead to greater length of stay and more expensive care.
- Data provided by the developer indicated that the greatest variations in performance occur between private, for-profit and public facilities. Other performance gaps were noted based on hospital region, teaching status, location and bed size.
- The Committee discussed the evidence for excluding neonates from the measure. The developer explained that low birth weight infants have fragile skin, and the preventability of pressure ulcers was questioned by their expert panel. In the future, the Committee encouraged the developer to create a measure specifically to target pressure ulcers in the neonate population.

0337 Pressure ulcer rate (PDI 2)

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria
(2a. Reliability – precise specifications, testing; 2b. Validity – testing, threats to validity)
2a. Reliability: **H-5; M-14; L-0; I-0** 2b. Validity**: H-1; M-13; L-5; I-0**
Rationale:

- The Committee noted that the positive predictive value of the measure to capture actual pressure ulcers with noted exclusions ranged from 54-64%. However, the developer explained that this rate reflected the positive predictive value before the current present-on-admission code had been included in the measure as an exclusion. As a result the positive predictive value should increase. The Committee was concerned that more rigorous data involving the positive predictive value was not available; yet, they agreed that the measure was important and accepted that it would be updated accordingly in the future.
- The developer is also investigating the appropriateness of exclusions, since coding for pressure ulcers has become more granular, and is scheduled to conclude their review in the fall of 2012. As a result, in the future it is expected that the list of exclusions will become more limited when the measure is reviewed through the annual update process.

3. Usability: H-9; M-7; L-3; I-0
(*Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)*
Rationale:

- This measure is used for public reporting by Norton Healthcare and is part of the Pediatric Quality Indicators (PDI), which is used by several entities to collect information on the quality improvement efforts related to pressure ulcers.

4. Feasibility: H-13; M-6; L-0; I-0
(4a. Clinical data generated during care delivery; 4b. Electronic sources; 4c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)
Rationale:

- The measure is not burdensome to collect as it involves the use of electronic claims.

5. Related and Competing Measures

- The Committee determined that measure *0337* was related to but not competing with measure *0538,* since *0337* is an outcome measure focused on capturing the rate of pressure ulcers, while *0538* is a process measure focused on an assessment, plan and the implementation of care. Additionally, *0337* applies to hospitals and acute care facilities, *0538* applies to home healthcare. The NQF portfolio also includes two measures focused on new or worsening pressure ulcers in nursing home populations and one that measures the prevalence of pressure ulcers for in-hospital and nursing home patients.

Steering Committee Recommendation for Endorsement: Y-17; **N-2**

Public & Member Comment:
Comments included:

- One comment was received in support of the measure.

0347 Death rate in low-mortality diagnosis related groups (PSI 2)
Submission | **Specifications**

0347 Death rate in low-mortality diagnosis related groups (PSI 2)

Description: Percent of discharges with disposition of "deceased" (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator
Numerator Statement: Discharges with disposition of "deceased" (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator
Denominator Statement: Discharges, 18 years and older or MDC 14 (pregnancy, childbirth, and puerperium), in DRGs or MS-DRGs with less than 0.5% mortality rate. If a DRG is divided into two groups with or without "comorbidities or complications" or an MS-DRG is divided into three groups - with major, other, or no comorbidities or complications - then both DRGs or all MS-DRGs must have mortality rates below 0.5% to qualify for inclusion.
Exclusions: Exclude cases:
- with any code for trauma, cancer, or immunocompromised state
- transfer to an acute care facility (DISP = 2)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)
Adjustment/Stratification: Statistical risk model The predicted value for each case is computed using a hierarchical model (logistic regression with hospital random effect) and covariates for gender, age (in 5-year age groups), modified CMS DRG, and the AHRQ Comorbidity category. The reference population used in the regression is the universe of discharges for states that participate in the HCUP State Inpatient Data (SID) for the years 2008, a database consisting of 42 states and approximately 30 million adult discharges. The expected rate is computed as the sum of the predicted value for each case divided by the number of cases for the unit of analysis of interest (i.e., hospital). The risk adjusted rate is computed using indirect standardization as the observed rate divided by the expected rate, multiplied by the reference population rate.

Sex	Female
Age	18 to 24
Age	25 to 29
Age	30 to 59
Age	65 to 69
Age	70 to 74
Age	75 to 79
Age	80 to 84
Age	85+
MDRG	413
MDRG	533
MDRG	1915
MDRG	2019
MDC	19
TRNSFER	Transfer-in
NOPRDAY	Procedure Days Data Not Available
COMORB	CHF
COMORB	NEURO
COMORB	CHRNLUNG
COMORB	HYPOTHY
COMORB	RENLFAIL
COMORB	OBESE
COMORB	ANEMDEF Not applicable

Level of Analysis: Facility
Type of Measure: Outcome
Data Source: Administrative claims

0347 Death rate in low-mortality diagnosis related groups (PSI 2)

Measure Steward: Agency for Healthcare Research and Quality **Other organizations:** University of California-Davis Stanford University
Battelle Memorial Institute

STEERING COMMITTEE MEETING 06/14-15/2012

Importance to Measure and Report: The measure meets the Importance criteria

(1a. High Impact: 1b. Performance Gap, 1c. Evidence)

1a. Impact: **H-2; M-12; L-2; I-1** 1b. Performance Gap: **H-2; M-13; L-1; I-1** 1c. Evidence: **Y-13; N-4**

Rationale:

- This measure was designed to focus on patients who died but who would not be expected to die based on having a diagnosis with a low overall death rate. The underlying assumption is that when patients admitted for an extremely low-mortality condition or procedure die, a medical error is more likely to be a contributing factor.
- Data on the performance gap indicated variation in treatment by region, hospital type, location and bed size.
- The Committee reviewed the evidence and noted that the citations used provided information about the methodology and not the incidence of Diagnosis-Related Groups (DRGs). The developer was able to submit updated information to the Committee following the in-person meeting. Hannan et al. (1989) found that patients in low-mortality DRGs were 5 times more likely than non-targeted cases to receive care that departed from care standards. The overall rate of substandard care was 10% in the group identified by the measure, compared with 2% in random controls. Among the 10% of cases where there was substandard care, in more than half (58%) the patient's death was attributed to substandard care. Based upon that, it was recommended that this measure could be useful as a screening tool to identify cases for chart review.

0347 Death rate in low-mortality diagnosis related groups (PSI 2)

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability – precise specifications, testing; 2b. Validity – testing, threats to validity)

2a. Reliability: **H-1; M-13; L-3; I-0** 2b. Validity**: H-2; M-13; L-2; I-0**

Rationale:

- Some Committee members expressed concern about why the measure did not use risk-adjustment based on All Patient Refined Diagnosis Related Groups (APR-DRGs) instead of the CMS DRGs, which were designed specifically for the Medicare population. The developer explained that using APR-DRGs, a proprietary product from 3M, provides more precise risk stratification. Although the developer uses the APR-DRG system for risk adjustment in certain mortality indicators, they have not explored using it to calculate the risk-adjustment for this measure. They are willing to consider it in the future but noted that the measure has not been tested with the APR-DRGs. Following the meeting, the developer addressed the risk adjustment model by submitting additional information regarding DRG testing in Australia, which found that the indicator was modified by patient characteristics including age, male sex, comorbidities, inter-hospital transfer and skilled nursing facilities transfers (SNF).
- The Committee questioned whether recent changes in coding, specifically related to better awareness of using the present-on-admission (POA) code, had impacted the mortality prediction of 0.5%. The developer conceded that testing POA coding might affect the determination of what will be considered a low-mortality DRG. However, they have not yet tested it.
- It was questioned whether the measure should use a hospital standardized morality ratio (HSMR) to create an observed to expected mortality ratio based on all cases. However, the developer pointed out that the measure is specifically targeted to low mortality DRGs, and not all mortality. As a result, conceptually, the two approaches would be very different.
- The Committee noted that the measure could monitor 30-day mortality instead of just in-hospital mortality. However, the developer explained that while 30 day mortality has conceptual advantages, such as a reduction in bias related to patient transfers and the recognition of length of stay patterns across hospitals, few data sets allow an estimation of risk adjusted 30-day mortality for all payers. This measure is intended for use to all payers across a hospital's population; as a result this measure can only be used with inpatient data.
- A Committee member stated that there were relatively weak associations between organizations that scored poorly on this measure and other quality of care indicators.
- The Committee requested the developer further study the positive predictive value and undergo additional validity testing to examine the accuracy of DRG cases being captured.
- There was concern about the low proportion of cases identified by the measure that departed from the standard of care, specifically that in only 10% of cases identified by the measure, there was substandard care. The developer noted that this was 5 times higher than randomly chosen cases based on the report by Hannan et al. They also mentioned that in a more recent report on the measure, Mihrshani et al in 2010 reviewed all the published literature on this indicator and concluded that "the indicator has utility as a screening tool to enable institutions to quickly and easily identify a manageable number of medical records to investigate more fully, for example, by using chart reviews or a mortality review".
- To reduce potential inaccuracies, coding professionals follow detailed guidelines and are subject to training and credentialing requirements, peer reviews, and audits.
- Additional validity testing submitted by the developer indicated that a panel reviewed the measure and rated the indicator on its overall usefulness based on its rationale and characteristics; upon reviewing the supplemental information, the Committee was satisfied with the developer's response.

0347 Death rate in low-mortality diagnosis related groups (PSI 2)

3. Usability: H-2; M-11; L-4; I-0

(*Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)*

Rationale:

- While the data was considered useful for internal quality improvement, there was concern expressed about its usefulness for public accountability. However, the measure is currently used for public reporting in ten states.

4. Feasibility: H-8; M-9; L-0; I-0

(4a. Clinical data generated during care delivery; 4b. Electronic sources; 4c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)

Rationale:

- This measure is feasible since it can be generated electronically.
-

5. Related and Competing Measures

- No related or competing measures noted.

Steering Committee Recommendation for Endorsement: Y-13; **N-4**

Rationale

- Originally, this measure did not pass the importance criteria since the evidence for measuring DRGs was not clearly articulated. Additionally, the Committee expressed a variety of concerns about its reliability and validity. However, following updates to the measure and additional information provided to the Committee by the developer, the measure was reconsidered. It was ultimately recommended for endorsement.

0347 Death rate in low-mortality diagnosis related groups (PSI 2)

Public & Member Comment:
Comments included:

- The measure's hierarchical risk adjustment may remove important variation from the results and may complicate consumer's ability to distinguish between providers.
  Developer response: The table below (Table 1) provides information on the ability of measure #0347 to reliably discriminate based on provider performance:

Table 1: Discrimination in Provider Performance, 2008

				95% Probability Interval	
Year	Number of Hospitals	Number of Patients	Reference Population Rate (per 1,000)	Better	Worse
2008	4,239	7,130,445	0.30060	4.4%	7.3%

Source: HCUP State Inpatient Databases (SID). Healthcare Cost and Utilization Project (HCUP). 2008. Agency for Healthcare Research and Quality, Rockville, MD. www.hcup-us.ahrq.gov/sidoverview.jsp.

Committee response:
The Committee was satisfied with the developer's response, and reaffirmed its recommendation of measure 0347 as specified. However, they requested that NQF staff review the statistical model to better understand the developer's approach to hierarchical risk adjustment and provide feedback to the Committee in the future.

0204 Skill mix (Registered Nurse [RN], Licensed Vocational/ Practical Nurse [LVN/ LPN], Unlicensed Assisstive Personnel [UAP], and contract)
Submission | **Specifications**

0204 Skill mix (Registered Nurse [RN], Licensed Vocational/ Practical Nurse [LVN/ LPN], Unlicensed Assisstive Personnel [UAP], and contract)

Description: NSC-12.1 - Percentage of total productive nursing hours worked by RN (employee and contract) with direct patient care responsibilities by hospital unit.
NSC-12.2 - Percentage of total productive nursing hours worked by LPN/LVN (employee and contract) with direct patient care responsibilities by hospital unit.
NSC-12.3 - Percentage of total productive nursing hours worked by UAP (employee and contract) with direct patient care responsibilities by hospital unit.
NSC-12.4 - Percentage of total productive nursing hours worked by contract or agency staff (RN, LPN/LVN, and UAP) with direct patient care responsibilities by hospital unit.
Note that the skill mix of the nursing staff (NSC-12.1, NSC-12.2, and NSC-12.3) represent the proportions of total productive nursing hours by each type of nursing staff (RN, LPN/LVN, and UAP); NSC-12.4 is a separate rate.
Measure focus is structure of care quality in acute care hospital units.
Numerator Statement: Four separate numerators are as follows:
RN hours – Productive nursing care hours worked by RNs with direct patient care responsibilities for each hospital in-patient unit during the calendar month.
LPN/LVN hours – Productive nursing care hours worked by LPNs/LVNs with direct patient care responsibilities for each hospital in-patient unit during the calendar month.
UAP hours – Productive nursing care hours worked by UAP with direct patient care responsibilities for each hospital in-patient unit during the calendar month.
Contract or agency hours – Productive nursing care hours worked by nursing staff (contract or agency staff) with direct patient care responsibilities for each hospital in-patient unit during the calendar month.
Denominator Statement: Denominator is the total number of productive hours worked by employee or contract nursing staff with direct patient care responsibilities (RN, LPN/LVN, and UAP) for each hospital in-patient unit during the calendar month.
Exclusions: Same as numerator; nursing staff with no direct patient care responsibilities are excluded.
Adjustment/Stratification: Other Each unit is stratified by unit type (e.g., critical care, step down, medical), which is not identical to risk, but may be related. N/A Stratification variables are patient population and unit type. Units are stratified by patient population first and then unit type based on acuity level, age, or type of service provided.
1. Patient population
1) Adult population: limited to units generally caring for patients over 16 years old.
2) Pediatric population: limited to units generally caring for patients under 18 years old.
3) Neonate population: limited to units caring for newborn infants.
4) Psychiatric population: units caring for patients with psychiatric disorders.
5) Rehabilitation population: limited to distinct acute rehabilitation units providing intensive therapy 5 days/week.
2. Unit types by population
1) Adult population
Critical Care
Highest level of care, includes all types of intensive care units. Optional specialty designations include: Burn, Cardiothoracic, Coronary Care, Medical, Neurology, Pulmonary, Surgical and Trauma.
Step-Down
Limited to units that provide care for patients requiring a lower level of care than critical care units and higher level of care than provided on medical/surgical units. Examples include progressive care or intermediate care units. Telemetry alone is not an indicator of acuity level.
Medical
Units that care for patients admitted to medical services, such as internal medicine, family practice, or cardiology. Optional specialty designations include: BMT (Bone Marrow Transplant), Cardiac, GI, Infectious Disease, Neurology, Oncology, Renal or Respiratory.
Surgical

0204 Skill mix (Registered Nurse [RN], Licensed Vocational/ Practical Nurse [LVN/ LPN], Unlicensed Assisstive Personnel [UAP], and contract)

Units that care for patients admitted to surgical services, such as general surgery, neurosurgery, or orthopedics. Optional specialty designations include: Bariatric, Cardiothoracic, Gynecology, Neurosurgery, Orthopedic, Plastic Surgery, Transplant or Trauma.
Medical-Surgical Combined
Units that care for patients admitted to either medical or surgical services. Optional specialty designations include: Cardiac, Neuro/Neurosurgery or Oncology.
Critical Access
A unit located in a Critical Access Hospital that cares for a combination of patients that may include critical care, medical-surgical, skilled nursing (swing bed) and/or obstetrics.
2) Pediatric population
Refer to Adult unit type descriptions for corresponding unit types.
Critical care
Step-Down
Medical
Surgical
Medical-Surgical Combined
3) Neonate population
The three unit types below (Level I, II, and III/IV) are based on the Guidelines for Perinatal Care, 5th Ed., which are used by state certification programs. Level I, II, and III/IV neonatal units are the highest level of infant care provided, and are specified by sequential level of acuity.
Well-baby Nursery
Level I Continuing Care
Level II Intermediate Care
Level III/IV Critical Care
4) Psychiatric population
Adult
Units caring for adult patients with acute psychiatric disorders.
Child/Adolescent
Units caring for children and/or adolescents, predominantly ages 2-18 years old, with acute psychiatric disorders.
Geripsych
Units caring for elderly patients with acute psychiatric disorders.
Other (Behavioral Health, Specialty, Multiple Psychiatric Unit Types)
Behavioral Health
Units caring for individuals of any age with eating disorders or substance abuse (alcohol and drugs) diagnoses.
Specialty
Units caring for patients of any age with dual diagnoses (e.g., mental illness and mental retardation, or substance abuse and an additional mental illness diagnosis).
Multiple Psychiatric Unit Types
Units caring for patients that encompass 3 or more of the above unit types, but for which no one unit type comprises greater than 50% of the entire unit.
5) Rehabilitation population
Adult
Limited to units generally caring for rehab patients over 16 years old. Optional specialty designations include: Brain Injury/SCI, Cardiopulmonary, Neuro/Stroke and Orthopedic/Amputee Rehab units.
Pediatric
Limited to units generally caring for rehab patients under 18 years old.
Level of Analysis: Clinician : Team

0204 Skill mix (Registered Nurse [RN], Licensed Vocational/ Practical Nurse [LVN/ LPN], Unlicensed Assisstive Personnel [UAP], and contract)

Type of Measure: Structure
Data Source: Management Data, Other
Measure Steward: American Nurses Association

STEERING COMMITTEE MEETING 06/14-15/2012

Importance to Measure and Report: <u>The measure meets the Importance criteria</u>

(1a. High Impact: 1b. Performance Gap, 1c. Evidence)

1a. Impact: **H-13; M-5; L-0; I-0** 1b. Performance Gap: **H-7; M-9; L-2; I-0** 1c. Evidence: **Y-17; N-1**

<u>Rationale</u>:

- Higher nurse staffing levels are significantly associated with better patient outcomes, including shorter length of stay, lower rates of mortality, failure to rescue, hospital acquired infections, falls, medication errors and pressure ulcers.
- There is a demonstrated performance gap particularly within unit types.
- There are 7 selected studies connecting skill mix to patient outcomes. The evidence indicates that better nurse staffing and better Registered Nurse (RN) skill mix are associated with a decreased length of stay, decreased mortality, lower failure to rescue, lower health care infections, falls, net errors and pressure ulcers.

2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u>

(2a. Reliability – precise specifications, testing; 2b. Validity – testing, threats to validity)

2a. Reliability: **H-4; M-11; L-3; I-0** 2b. Validity**: H-5; M-11; L-3; I-0**

<u>Rationale:</u>

- The reliability testing showed ICCs for nursing care by different types of nurse staffing, RNs, LPNs and UAPs, ranged from above 0.70 for Licensed Practical Nurses (LPN) hours and 0.95 for RN nursing hours.
- Each unit type included in the measure involves both nursing personnel and ancillary personnel. In the future the measure may include nurse extenders, such as administrative staff and sitters.

3. Usability: H-8; M-8; L-3; I-0

(*Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)*

<u>Rationale</u>:

- The measure is used in public reporting, professional certification, and recognition programs and for internal and external quality improvement.
- The main users of the measure are chief nursing officers, nurse managers and performance improvement specialists within hospitals.
- The measure is also useful to consumers because it provides information on the type of nurse staffing being used by hospitals.

0204 Skill mix (Registered Nurse [RN], Licensed Vocational/ Practical Nurse [LVN/ LPN], Unlicensed Assisstive Personnel [UAP], and contract)

4. Feasibility: H-8; M-10; L-1; I-0

(4a. Clinical data generated during care delivery; 4b. Electronic sources; 4c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)

Rationale:

- Data indicates that 72% of site coordinators have little difficulty getting data and that they review it before submission. The main difficulty encountered has been providing data by separate classifications.
- A Committee member suggested that an unintended consequence of requiring certain nursing staff ratios could be a hospital financially cutting back other staffing supports.

5. Related and Competing Measures

- No related or competing measures noted.

Steering Committee Recommendation for Endorsement: Y-19; **N-0**

*This measure is paired with measure *0205: Nursing hours per patient day* since they provide complimentary information regarding the number nursing hours worked by skill mix and the number of nursing hours with direct patient care.

Public & Member Comment:

Comments included:

- The number of specialty certified nurses can affect patient outcomes and should be addressed in the ratios. Variations in staffing mix may depend on the geographic region of the country and in some instances specific nurse staffing mandates are stipulated. Finally, staffing ratios may differ from freestanding inpatient rehabilitation facilities and hospital-based rehabilitation units.
  Developer response: Thank you very much for your comment and we agree. In our recent studies, we also found that there were variations in the relationships between nurse staffing and patient outcomes by unit type, nurse specialty certification, and geographical location (Boyle et al., 2011; Choi et al., 2012). Nurse staffing levels represent the conditions in which care occurs. At this time we do not have a statistical risk model for the nurse staffing measures. However, NDNQI provides member hospitals with quarterly national comparison data by unit type and several hospital characteristics. Because we stratify our staffing data to account for various levels of patient acuity, our main stratification is by unit type (e.g., adult or pediatric critical care, step down, medical, surgical, combined medical-surgical, and adult rehabilitation in-patient). NDNQI also classifies units by sub-specialties, such as brain injury/SCI, Orthopedic/amputee, neuro/stroke, cardiopulmonary, and none. However, some of the subspecialties do not have enough units enrolled to provide stable national comparison data. In addition to unit type, the stratifications can be done by facility bed size, teaching status, Magnet(R) Designation, Metropolitan status, census division, state, case mix index, and hospital specialty type (e.g. pediatric, psychiatric). In research on the relationship between and nurse staffing and patient outcomes, all of these were typical control variables that were included in the data analysis for control variables.

Committee response: The Committee requested in future versions of the measure the developer continue updating specifications, data permitting, to take into account additional variations in staffing ratios and collect data on specialty certified nurses. They reaffirmed their recommendation of measure 0204 for endorsement.

0205 Nursing hours per patient day
Submission | **Specifications**

0205 Nursing hours per patient day

Description: NSC-13.1 (RN hours per patient day) – The number of productive hours worked by RNs with direct patient care responsibilities per patient day for each in-patient unit in a calendar month.
NSC-13.2 (Total nursing care hours per patient day) – The number of productive hours worked by nursing staff (RN, LPN/LVN, and UAP) with direct patient care responsibilities per patient day for each in-patient unit in a calendar month.
Measure focus is structure of care quality in acute care hospital units.
Numerator Statement: Total number of productive hours worked by nursing staff with direct patient care responsibilities for each hospital in-patient unit during the calendar month.
Denominator Statement: Denominator is the total number of patient days for each in-patient unit during the calendar month. Patient days must be from the same unit in which nursing care hours are reported.
Exclusions: Patient days from some non-reporting unit types, such as Emergency Department, peri-operative unit, and obstetrics, are excluded.
Adjustment/Stratification: Other Each unit is stratified by unit type (e.g., critical care, step down, medical), which is not identical to risk, but may be related. N/A Stratification variables are patient population and unit type. Units are stratified by patient population first and then unit type based on acuity level, age, or type of service provided.
1. Patient population
1) Adult population: limited to units generally caring for patients over 16 years old.
2) Pediatric population: limited to units generally caring for patients under 18 years old.
3) Neonate population: limited to units caring for newborn infants.
4) Psychiatric population: units caring for patients with psychiatric disorders.
5) Rehabilitation population: limited to distinct acute rehabilitation units providing intensive therapy 5 days/week.
2. Unit types by population
1) Adult population
Critical Care
Highest level of care, includes all types of intensive care units. Optional specialty designations include: Burn, Cardiothoracic, Coronary Care, Medical, Neurology, Pulmonary, Surgical and Trauma.
Step-Down
Limited to units that provide care for patients requiring a lower level of care than critical care units and higher level of care than provided on medical/surgical units. Examples include progressive care or intermediate care units. Telemetry alone is not an indicator of acuity level.
Medical
Units that care for patients admitted to medical services, such as internal medicine, family practice, or cardiology. Optional specialty designations include: BMT (Bone Marrow Transplant), Cardiac, GI, Infectious Disease, Neurology, Oncology, Renal or Respiratory.
Surgical
Units that care for patients admitted to surgical services, such as general surgery, neurosurgery, or orthopedics. Optional specialty designations include: Bariatric, Cardiothoracic, Gynecology, Neurosurgery, Orthopedic, Plastic Surgery, Transplant or Trauma.
Medical-Surgical Combined
Units that care for patients admitted to either medical or surgical services. Optional specialty designations include: Cardiac, Neuro/Neurosurgery or Oncology.
Critical Access
A unit located in a Critical Access Hospital that cares for a combination of patients that may include critical care, medical-surgical, skilled nursing (swing bed) and/or obstetrics.
2) Pediatric population
Refer to Adult unit type descriptions for corresponding unit types.
Critical care
Step-Down

0205 Nursing hours per patient day

Medical
Surgical
Medical-Surgical Combined
3) Neonate population
The three unit types below (Level I, II, and III/IV) are based on the Guidelines for Perinatal Care, 5th Ed., which are used by state certification programs. Level I, II, and III/IV neonatal units are the highest level of infant care provided, and are specified by sequential level of acuity.
Well-baby Nursery
Level I Continuing Care
Level II Intermediate Care
Level III/IV Critical Care
4) Psychiatric population
Adult
Units caring for adult patients with acute psychiatric disorders.
Child/Adolescent
Units caring for children and/or adolescents, predominantly ages 2-18 years old, with acute psychiatric disorders.
Geripsych
Units caring for elderly patients with acute psychiatric disorders.
Other (Behavioral Health, Specialty, Multiple Psychiatric Unit Types)
Behavioral Health
Units caring for individuals of any age with eating disorders or substance abuse (alcohol and drugs) diagnoses.
Specialty
Units caring for patients of any age with dual diagnoses (e.g., mental illness and mental retardation, or substance abuse and an additional mental illness diagnosis).
Multiple Psychiatric Unit Types
Units caring for patients that encompass 3 or more of the above unit types, but for which no one unit type comprises greater than 50% of the entire unit.
5) Rehabilitation population
Adult
Limited to units generally caring for rehab patients over 16 years old. Optional specialty designations include: Brain Injury/SCI, Cardiopulmonary, Neuro/Stroke and Orthopedic/Amputee Rehab units.
Pediatric
Limited to units generally caring for rehab patients under 18 years old.
Level of Analysis: Clinician : Team
Type of Measure: Structure
Data Source: Management Data, Other
Measure Steward: American Nurses Association

0205 Nursing hours per patient day

STEERING COMMITTEE MEETING 06/14-15/2012

Importance to Measure and Report: The measure meets the Importance criteria

(1a. High Impact: 1b. Performance Gap, 1c. Evidence)

1a. Impact: **H-8; M-8; L-3; I-0** 1b. Performance Gap: **H-3; M-13; L-1; I-2** 1c. Evidence: **Y-13; N-6**

Rationale:

- An Agency for Healthcare Research and Quality (AHRQ) meta-analysis of 97 observational studies found a strong and consistent relationship between nurse staffing and specific patient outcomes, such as mortality and length of stay. Furthermore, this measure is an important review tool to assess the number of productive hours worked by nursing staff with direct patient care responsibilities and provides information subdivided by RNs, LPNs and Unlicensed Assistive Personnel (UAPs). The performance gap indicates that there is a wide range of total nursing hours per patient day between and within unit types. The mean number of both total and RN hours per patient day were lowest in psychiatric other units and highest in pediatric critical care.
- The Committee noted that the evidence included several studies that raised questions regarding the relationship between nurse staffing and outcomes. However, the developer clarified that they included all studies that contributed to the knowledge base between nurse staffing and outcomes. Larger, more recent studies, which used appropriate statistical modeling, more clearly demonstrated the relationship. It was suggested that further studies, conducted over time, could yield additional data.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability – precise specifications, testing; 2b. Validity – testing, threats to validity)

2a. Reliability: **H-7; M-9; L-2; I-1** 2b. Validity**: H-4; M-9; L-5; I-1**

Rationale:

- The reliability testing showed that all of the ICCs for nursing care hours ranged from 0.70 for LPN nursing hours to 0.95 for RN nursing hours.
- Two studies provided information on validity. One study indicated that total nursing care hours per patient day was significantly associated with patient falls; for every increase of one hour in total nursing hours per patient day, fall rates were 1.9% lower. The second study found that an additional RN hour per patient day was associated with a 3% lower rate of falls in ICUs.

3. Usability: H-7; M-9; L-3; I-0

(*Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)*

Rationale:

- This measure has been extensively used in public reporting and benchmarking across a number of organizations.

0205 Nursing hours per patient day

4. Feasibility: H-10; M-9; L-0; I-0

(4a. Clinical data generated during care delivery; 4b. Electronic sources; 4c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)

Rationale:

- Nursing hours are generally calculated electronically from payroll data or staffing systems. The data are reviewed afterwards to include the use of any float nurses, which could involve a third data source. The site coordinator then combines the information; it is reviewed for accuracy and reported to the American Nurses Association (ANA).

5. Related and Competing Measures

- No related or competing measures noted.

Steering Committee Recommendation for Endorsement: Y-18; **N-1**

*This measure is paired with measure *0204: Skill mix (Registered Nurse [RN], Licensed Vocational/ Practical Nurse [LVN/ LPN], Unlicensed Assisstive Personnel [UAP], and contract)* since they provide complimentary information regarding the number nursing hours worked by skill mix and the number of nursing hours with direct patient care.

Public & Member Comment:

Comments included:

- The number of specialty certified nurses can affect patient outcomes and should be addressed in the ratios. Variations in staffing mix may depend on the geographic region of the country and in some instances specific nurse staffing mandates are stipulated. Finally, staffing ratios may differ from freestanding inpatient rehabilitation facilities and hospital-based rehabilitation units.
  Developer response: Thank you very much for your comment and we agree. In our recent studies, we also found that there were variations in the relationships between nurse staffing and patient outcomes by unit type, nurse specialty certification, and geographical location (Boyle et al., 2011; Choi et al., 2012). Nurse staffing levels represent the conditions in which care occurs. At this time we do not have a statistical risk model for the nurse staffing measures. However, NDNQI provides member hospitals with quarterly national comparison data by unit type and several hospital characteristics. Because we stratify our staffing data to account for various levels of patient acuity, our main stratification is by unit type (e.g., adult or pediatric critical care, step down, medical, surgical, combined medical-surgical, and adult rehabilitation in-patient). NDNQI also classifies units by sub-specialties, such as brain injury/SCI, Orthopedic/amputee, neuro/stroke, cardiopulmonary, and none. However, some of the subspecialties do not have enough units enrolled to provide stable national comparison data. In addition to unit type, the stratifications can be done by facility bed size, teaching status, Magnet(R) Designation, Metropolitan status, census division, state, case mix index, and hospital specialty type (e.g. pediatric, psychiatric). In research on the relationship between and nurse staffing and patient outcomes, all of these were typical control variables that were included in the data analysis for control variables.

Committee response: The Committee requested in future versions of the measure the developer continue updating specifications, data permitting, to take into account additional variations in staffing ratios and collect data on specialty certified nurses. They reaffirmed their recommendation of measure 0205 for endorsement.

0206 Practice Environment Scale - Nursing Work Index (PES-NWI) (composite and five subscales)

Submission | **Specifications**

Description: Practice Environment Scale-Nursing Work Index (PES-NWI) is a survey based measure of the nursing practice environment completed by staff registered nurses; includes mean scores on index subscales and a composite mean of all subscale scores.
Numerator Statement: Continuous Variable Statement: For surveys completed by Registered Nurses (RN):
12a) Mean score on a composite of all subscale scores
12b) Mean score on Nurse Participation in Hospital Affairs (survey item numbers 5, 6, 11, 15, 17, 21, 23, 27, 28)
12c) Mean score on Nursing Foundations for Quality of Care (survey item numbers 4, 14, 18, 19, 22, 25, 26, 29, 30, 31)
12d) Mean score on Nurse Manager Ability, Leadership, and Support of Nurses (survey item numbers 3, 7, 10, 13, 20)
12e) Mean score on Staffing and Resource Adequacy (survey item numbers 1, 8, 9, 12)
12f) Mean score on Collegial Nurse-Physician Relations (survey item numbers 2, 16, 24)
12g) Three category variable indicating favorable, mixed, or unfavorable practice environments: favorable = four or more subscale means exceed 2.5; mixed = two or three subscale means exceed 2.5; unfavorable = zero or one subscales exceed 2.5.
Denominator Statement: Staff RNs
Exclusions: Not applicable
Adjustment/Stratification: No risk adjustment or risk stratification Not applicable 12a) Mean score on a composite of all subscale scores
12b) Mean score on Nurse Participation in Hospital Affairs (survey item numbers 5, 6, 11, 15, 17, 21, 23, 27, 28)
12c) Mean score on Nursing Foundations for Quality of Care (survey item numbers 4, 14, 18, 19, 22, 25, 26, 29, 30, 31)
12d) Mean score on Nurse Manager Ability, Leadership, and Support of Nurses (survey item numbers 3, 7, 10, 13, 20)
12e) Mean score on Staffing and Resource Adequacy (survey item numbers 1, 8, 9, 12)
12f) Mean score on Collegial Nurse-Physician Relations (survey item numbers 2, 16, 24)
12g) Three category variable indicating favorable, mixed, or unfavorable practice environments: favorable = four or more subscale means exceed 2.5; mixed = two or three subscale means exceed 2.5; unfavorable = zero or one subscales exceed 2.5.
Level of Analysis: Clinician : Team, Facility
Type of Measure: Structure
Data Source: Healthcare Provider Survey
Measure Steward: The Joint Commission (TJC)

0206 Practice Environment Scale - Nursing Work Index (PES-NWI) (composite and five subscales)

STEERING COMMITTEE MEETING 06/14-15/2012

Importance to Measure and Report: The measure meets the Importance criteria

(1a. High Impact: 1b. Performance Gap, 1c. Evidence)

1a. Impact: **H-10; M-8; L-1; I-0** 1b. Performance Gap: **H-10; M-9; L-0; I-0** 1c. Evidence: **Y-19; N-0**

Rationale:

- Since the nursing workforce is the largest group of caregivers in all healthcare settings, measuring the practice environment provides key information on the nursing environment and staffing. The Practice Environment Scale- Nursing Work Index (PES-NWI) has been used to test the links between nurses' environments and nurse and patient outcomes since 2002.
- The measure is supported by 37 studies, which indicate a significant association between the work index and risk of death, failure to rescue, rates of hospitalization, satisfaction scores, adverse events, turnover, needle sticks, infections and low birth weight.
- The PES-NWI is measured on a four point Likert scale, with possible scores ranging from 1.0 to 4.0. The average hospital-level subscale ranged from 2.50 to 2.84. The lowest score was noted in "Staffing and Resource Adequacy" and the highest was in "Collegial Nurse-Physician Relations".

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability – precise specifications, testing; 2b. Validity – testing, threats to validity)

2a. Reliability: **H-5; M-14; L-0; I-0** 2b. Validity**: H-4; M-15; L-1; I-0**

Rationale:

- The measure uses a random sample of 50 staff nurses and anticipates a response rate of 60%, which is The Joint Commission's (TJC's) standard. The Committee questioned whether there was an adjustment in the sampling strategy based on the size of the hospital. However, for consistency the measure requires a minimum of 30 nurses. Use of the index internationally indicates that this sample size is sufficient to identify differences across hospitals.
- Research evidence using this instrument in a pre-test and post-test design show that in four of the five subscales, the value increased; this indicates that the index is sensitive to organizational quality improvement efforts.
- The Committee noted in the future the measure could be further specified to collect information on union and non-union hospitals. Additionally information could be collected on hospital size, for-profit and not-for-profit institutions.

3. Usability: H-11; M-7; L-2; I-0

(*Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)*

Rationale:

- The measure has been publicly reported at the organizational level for about 5 years and provides hospitals with actionable items for quality improvement. It also supplies consumers with important information.

0206 Practice Environment Scale - Nursing Work Index (PES-NWI) (composite and five subscales)

4. Feasibility: H-15; M-5; L-0; I-0

(4a. Clinical data generated during care delivery; 4b. Electronic sources; 4c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)

Rationale:

- This measure relies exclusively on electronic sources and nurses submit their responses directly to the University of Kansas server. There is extensive guidance available for survey coordinators in each hospital to manage the response rates. Additionally, they are responsible for ensuring that human subjects protection are in place and nurses are protected from being constrained to answer in a certain manner. If there are any complaints, participants are able to contact the Human Subjects Office.

5. Related and Competing Measures

- No related or competing measures noted.

Steering Committee Recommendation for Endorsement: Y-19; N-0

Public & Member Comment:

Comments included:

- No comments received.

1716 National Healthcare Safety Network (NHSN) facility-wide inpatient hospital-onset Methicillin-resistant Staphylococcus aureus (MRSA) bacteremia outcome measure

Submission | Specifications

Description: Standardized infection ratio (SIR) of hospital-onset unique blood source MRSA Laboratory-identified events (LabID events) among all inpatients in the facility
Numerator Statement: Total number of observed hospital-onset unique blood source MRSA LabID events among all inpatients in the facility
Denominator Statement: Total number of expected hospital-onset unique blood source MRSA LabID events, calculated by multiplying the number of inpatient days for the facility by the hospital-onset MRSA LabID event rate for the same types of facilities (obtained from the standard population).
Exclusions: Data from patients who are not assigned to an inpatient bed are excluded from the denominator counts. These include outpatient clinic and emergency department visits.
Adjustment/Stratification: Other Standardized Infection Ratio The SIR is a method of indirect standardization that summarizes HAI experience across a series of groups of data. The SIR compares a facility's observed number of unique hospital-onset blood MRSA LabID events for a given time period to the 2009-2010 standard population's experience, which can be used to calculate an expected number of LabID events. Dividing observed by expected numbers of LabID events produces the SIR.
The rate of unique hospital-onset blood MRSA LabID events identified per 1,000 patient days from the standard population is used to calculate the number of expected unique hospital-onset blood MRSA LabID events for a given facility. These rates are adjusted by facility-specific factors, including facility type, facility bedsize, teaching status, medical school affiliation (major, graduate, or limited, see 2a1.7), and possibly CMS case mix index. The measure will not be stratified, as it is an overall facility-wide summary measure. Facility characteristics will be used for risk adjustment, described in 2a1.13.
Level of Analysis: Facility, Population : National, Population : State
Type of Measure: Outcome
Data Source: Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Laboratory, Paper Records
Measure Steward: Centers for Disease Control and Prevention

STEERING COMMITTEE MEETING 06/14-15/2012

Importance to Measure and Report: The measure meets the Importance criteria

(1a. High Impact: 1b. Performance Gap, 1c. Evidence)

1a. Impact: **H-15; M-1; L-0; I-0** 1b. Performance Gap: **H-10; M-6; L-0; I-0** 1c. Evidence: **Y-15; N-1**

Rationale:

- The measure is aimed at reducing infection rates. Multidrug-Resistant Organisms (MDROs), including Methicillin-resistant Staphylococcus aureus (MRSA), have been associated with increased mortality, length of stay and cost. Additionally, 56.8% of all central line-associated bloodstream infections reported to the National Healthcare Safety Network (NHSN) in 2006-2007 caused by Staphylococcus aureus were MRSA.
- In 2010, MRSA bacteremia was monitored in 548 facilities from 29 states. A total of 1,078 Healthcare Facility-Onset (HO) MRSA bacteremia events were reported from 3,807,920 admissions and 17,427,005 patient-days. MRSA bacteremia incidence rates differed significantly by teaching type and bed size.
- Following the 2006 Healthcare Infection Control Practices and Advisory Committee (HICPAC) guideline can be used to reduce the incidence and transmission of infections with MDROs in healthcare facilities.

1716 National Healthcare Safety Network (NHSN) facility-wide inpatient hospital-onset Methicillin-resistant Staphylococcus aureus (MRSA) bacteremia outcome measure
2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u> (2a. Reliability – precise specifications, testing; 2b. Validity – testing, threats to validity) 2a. Reliability: **H-7; M-9; L-0; I-0** 2b. Validity**: H-7; M-9; L-0; I-0** <u>Rationale:</u> • The measure examines the hospital onset of MRSA that occurs more than three days after admission to a facility. It counts patient days within the facility, which are collected and entered by infection preventionists. Data are presented as a standardized infection ratio and the denominator is measured in 1000 patient days. • The Committee requested clarification on the CDC's risk-adjustment methods, with some questioning whether the measure could account for institutions with higher concentrations of immune-compromised patients (e.g., cancer hospitals). The CDC provided additional information on the variables included in the Standardized Infection Ratio (SIR) for this measure. • The Committee was satisfied with the SIR methodology and did not have concerns about the measure's validity or reliability.
3. Usability: H-11; M-5; L-0; I-0 (*Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)* <u>Rationale</u>: • This measure will be included in CMS´ Hospital Inpatient Quality Reporting (IQR) Program for events identified starting in January 2013.
4. Feasibility: H-10; M-6; L-0; I-0 *(4a. Clinical data generated during care delivery; 4b. Electronic sources; 4c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)* <u>Rationale</u>: • Data are entered both manually and through an automated system. • There was concern that lab tests confirming MRSA may not be ordered by hospitals in order to artificially reduce the number of MRSA infections reported. The developer thought this would be unlikely; however, they stated that if they had an indication of this type of situation, they could create another measure relating to the use of antimicrobials without obtaining a culture as another method of capturing MRSA infections focused exclusively treatment.
5. Related and Competing Measures • No related or competing measures noted.
Steering Committee Recommendation for Endorsement: Y-16; **N-0**

1716 National Healthcare Safety Network (NHSN) facility-wide inpatient hospital-onset Methicillin-resistant Staphylococcus aureus (MRSA) bacteremia outcome measure

Public & Member Comment:
Comments included:

- Standardized infection rates are not as meaningful to consumers as the actual risk-adjusted rates of infection per admission.
  ***Developer response*:** We appreciate the commenter's feedback. The standardized infection ratio (SIR) offers clear advantages to healthcare consumers over infection rates as the summary metric for this measure. The SIR produces a single risk-adjusted metric that can be further aggregated to the state, regional, or national level, all while maintaining appropriate comparisons between healthcare facilities. Further, observed-to-predicted ratios, such as the SIR, are widely used in public reporting of healthcare quality data. CDC, the Centers for Medicare and Medicaid Services, health departments in many states, and Consumers Union all use the SIR to report HAI data.

Committee response: The Committee was satisfied with the developer's response and reaffirmed its recommendation of measure 1716 as specified. However, they suggested the developer consider reporting actual risk-adjusted rates of infection per admission in the future. The Committee also recognized the importance of measures that are meaningful to consumers and it was noted as an area of future measure development in the draft report.

1717 National Healthcare Safety Network (NHSN) facility-wide inpatient hospital-onset Clostridium difficile Infection (CDI) outcome Mmeasure

Submission | **Specifications**

Description: Standardized infection ratio (SIR) of hospital-onset CDI Laboratory-identified events (LabID events) among all inpatients in the facility, excluding well-baby nurseries and neonatal intensive care units (NICUs)
Numerator Statement: Total number of observed hospital-onset CDI LabID events among all inpatients in the facility, excluding well baby-nurseries and NICUs
Denominator Statement: Total number of expected hospital-onset CDI LabID events, calculated by multiplying the number of inpatient days for the facility by the hospital-onset CDI LabID event rate for the same types of facilities (obtained from the standard population).
Exclusions: Data from patients who are not assigned to an inpatient bed are excluded from the denominator counts, including outpatient clinic and emergency department visits. Additionally, data from well-baby nurseries and NICUs are excluded from the denominator count.
Adjustment/Stratification: Other Standardized Infection Ratio (SIR) The SIR is a method of indirect standardization that summarizes HAI experience across a series of groups of data. The SIR compares a facility's observed number of hospital-onset CDI LabID events for a given time period to the 2009-2010 standard population's experience, which can be used to calculate an expected number of LabID events. Dividing observed by expected numbers of LabID events produces the SIR.
The rate of hospital-onset CDI LabID events identified per 1,000 patient days from the standard population is used to calculate the number of expected hospital-onset CDI LabID events for a given facility. These rates are stratified by facility-specific factors, including facility type, facility bedsize, and medical school affiliation (major, graduate, or limited, see 2a1.7), the number of admission prevalent CDI LabID events, the type of microbiological test the facility uses to identify C. difficile, and possibly CMS case mix index. The measure will not be stratified, as it is an overall facility-wide summary measure. Facility characteristics will be used for risk adjustment, described in 2a1.13.
Level of Analysis: Facility, Population : National, Population : State
Type of Measure: Outcome
Data Source: Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Laboratory, Paper Records
Measure Steward: Centers for Disease Control and Prevention

STEERING COMMITTEE MEETING 06/14-15/2012

Importance to Measure and Report: The measure meets the Importance criteria

(1a. High Impact: 1b. Performance Gap, 1c. Evidence)

1a. Impact: **H-15; M-1; L-0; I-0** 1b. Performance Gap: **H-6; M-10; L-0; I-0** 1c. Evidence: **Y-16; N-0**

Rationale:

- This measure is important since concern about Clostridium difficile Infection (CDI) has risen significantly in the medical community. Rates of CDI are highest for patients in healthcare facilities and increase with patient age.
- In 2010, 715 facilities from 28 states monitored CDI events in NHSN. A total of 20,803 HO CDI events were reported from 5,757,846 admissions and 28,279,284 patient-days. CDI incidence rates differed significantly by facility teaching type, bed size, test type, and Community Onset (CO) prevalence.
- The measure is supported by clinical practice guidelines from the Society for Healthcare Epidemiology or America (SHEA), Infectious Disease Society of America (IDSA) and the CDC Healthcare infections Control Practices Advisory Committee (HICPAC). By adhering to these guidelines can decrease the rate of CDI transmission and infection.

1717 National Healthcare Safety Network (NHSN) facility-wide inpatient hospital-onset Clostridium difficile Infection (CDI) outcome Mmeasure
2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u> (2a. Reliability – precise specifications, testing; 2b. Validity – testing, threats to validity) 2a. Reliability: **H-7; M-9; L-0; I-0** 2b. Validity**: H-7; M-9; L-0; I-0** <u>Rationale:</u> • The denominator time window in 10,000 patient days was used to create an easily understandable time period for measure calculations. The Committee expressed concern that the number of infections may be low since the measure included a lengthy time period. However, the developer explained that CDI was increasing and that rates are reviewed annually, and that this is the standard way that CDI rates are reported. • The time window is monthly reporting, with each facility completing a reporting plan to that they are following infections. • Neonates and babies less than one year of age are excluded from the measure since whether an infection is present or whether they are carriers is not clear and easy to differentiate. • More sensitive testing for CDI has become available, through the use of Polymerase Chain Reaction (PCR), and is increasingly available to facilities. Because PCR-based tests are more sensitive, it may appear that facilities using PCR-based testing would have higher rates than non-PCR based testing. • The Committee was satisfied with the Standardized Infection Ratio (SIR) methodology and did not have concerns about the measure's validity or reliability.
3. Usability: H-12; M-4; L-0; I-0 (*Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)* <u>Rationale</u>: • This measure will be included in CMS´ Hospital Inpatient Quality Reporting (IQR) Program for events identified starting in January 2013.
4. Feasibility: H-10; M-6; L-0; I-0 *(4a. Clinical data generated during care delivery; 4b. Electronic sources; 4c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)* <u>Rationale</u>: • The Committee noted that the use of antibiotics to treat CDI could be susceptible to overuse and misuse. The developer indicated that they will have an antimicrobial use and resistance model to monitor this issue through NHSN, which will likely be ready in August 2013.
5. Related and Competing Measures • No related or competing measures noted.
Steering Committee Recommendation for Endorsement: Y-16; **N-0**

1717 National Healthcare Safety Network (NHSN) facility-wide inpatient hospital-onset Clostridium difficile Infection (CDI) outcome Mmeasure

Public & Member Comment:
Comments included:

- Standardized infection rates are not as meaningful to consumers as the actual risk-adjusted rates of infection per admission.

  ***Developer response*:** We appreciate the commenter's feedback. The standardized infection ratio (SIR) offers clear advantages to healthcare consumers over infection rates as the summary metric for this measure. The SIR produces a single risk-adjusted metric that can be further aggregated to the state, regional, or national level, all while maintaining appropriate comparisons between healthcare facilities. Further, observed-to-predicted ratios, such as the SIR, are widely used in public reporting of healthcare quality data. CDC, the Centers for Medicare and Medicaid Services, health departments in many states, and Consumers Union all use the SIR to report HAI data.

Committee response: The Committee was satisfied with the developer's response and reaffirmed its recommendation of measure 1717 as specified. However, they suggested the developer consider reporting actual risk-adjusted rates of infection per admission in the future. The Committee also recognized the importance of measures that are meaningful to consumers and it was noted as an area of future measure development in the draft report.