



Measure Information

This document contains the information submitted by measure developers/stewards, but is organized according to NQF's measure evaluation criteria and process. The item numbers refer to those in the submission form but may be in a slightly different order here. In general, the item numbers also reference the related criteria (e.g., item 1b.1 relates to sub criterion 1b).

Brief Measure Information

NQF #: 0533

Corresponding Measures:

De.2. Measure Title: Postoperative Respiratory Failure Rate (PSI 11)

Co.1.1. Measure Steward: Agency for Healthcare Research and Quality

De.3. Brief Description of Measure: Postoperative respiratory failure (secondary diagnosis), prolonged mechanical ventilation, or reintubation cases per 1,000 elective surgical discharges for patients ages 18 years and older. Excludes cases with principal diagnosis for acute respiratory failure; cases with secondary diagnosis for acute respiratory failure present on admission; cases in which tracheostomy is the only operating room procedure or in which tracheostomy occurs before the first operating room procedure; cases with neuromuscular disorders, laryngeal, pharyngeal or craniofacial surgery, esophageal resection, lung cancer, lung transplant or degenerative neurological disorders; cases with a procedure on the nose, mouth, or pharynx; cases with respiratory or circulatory diseases; and obstetrics charges.

1b.1. Developer Rationale: This measure is intended to identify adult patients with a clinically significant adverse event that is at least partially preventable -- acute respiratory failure as a secondary diagnosis acquired in the hospital. This indicator excludes the evaluation of patients with major respiratory or circulatory disorders and limits the assessment to patients who undergo an elective surgical procedure. Use of this measure for comparative reporting can lead to targeted intervention for quality improvement and reduction in adverse events.

This indicator was originally proposed by Iezzoni et al. as part of the CSP (CSP 3, "postoperative pulmonary compromise") (1). The Iezzoni et al. definition also includes pulmonary congestion, other (or postoperative) pulmonary insufficiency, and acute pulmonary edema, which were omitted from this PSI. The University HealthSystem Consortium (#2927) and AHRQ's original HCUP Quality Indicators adopted the CSP indicator for major surgery patients (2). Needleman and Buerhaus identified postoperative pulmonary failure as an "Outcome Potentially Sensitive to Nursing," using the original CSP definition (3).

References:

1. Iezzoni LI, Daley J, Heeren T, Foley SM, Fisher ES, Duncan C, et al. Identifying complications of care using administrative data. *Med Care* 1994;32(7):700-15.
2. Johantgen M, Elixhauser A, Bali JK, Goldfarb M, Harris DR. Quality indicators using hospital discharge data: State and national applications. *Jt Comm J Qual Improv* 1998;24(2):88-195. Published erratum appears in *Jt Comm J Qual Improv* 1998;24(6):341.
3. Needleman J, Buerhaus PJ, Mattke S, Stewart M, Zelevinsky K. *Nurse Staffing and Patient Outcomes in Hospitals*. Boston, MA: Health Resources Services Administration; 2001 February 28. Report No.:230-99-0021.

S.4. Numerator Statement: Discharges, among cases meeting the inclusion and exclusion rules for the denominator, with either:

- any secondary ICD-10-CM diagnosis code for acute respiratory failure; or
- any secondary ICD-10-PCS procedure codes for a mechanical ventilation for 96 consecutive hours or more that occurs zero or more days after the first major operating room procedure code (based on days from admission to procedure); or
- any secondary ICD-10-PCS procedure codes for a mechanical ventilation for less than 96 consecutive hours (or undetermined) that occurs two or more days after the first major operating room procedure code (based on days from admission to procedure); or
 - any secondary ICD-10-PCS procedure codes for a reintubation that occurs one or more days after the first major operating room procedure code (based on days from admission to procedure)

S.6. Denominator Statement: Elective surgical discharges, for patients ages 18 years and older, with any-listed ICD-10-PCS procedure codes for an operating room procedure. Elective surgical discharges are defined by specific MS-DRG codes with admission type recorded as elective (SID ATYPE=3).

S.8. Denominator Exclusions: Exclude cases:

- with a principal ICD-10-CM diagnosis code (or secondary diagnosis present on admission) for acute respiratory failure (see below)
- where the only operating room procedure is tracheostomy
- where a procedure for tracheostomy occurs before the first operating room procedure†
- with any-listed ICD-10-CM diagnosis codes for neuromuscular disorder
- with any-listed ICD-10-PCS procedure codes for laryngeal or pharyngeal, nose, mouth, pharynx or facial surgery
- with any-listed ICD-10-PCS procedure codes for esophageal resection
- with any-listed ICD-10-PCS procedure codes for lung cancer
- any-listed ICD-10-CM diagnosis codes for degenerative neurological disorder
- with any-listed ICD-10-PCS procedure codes for lung transplant
- MDC 4 (diseases/disorders of respiratory system)
- MDC 5 (diseases/disorders of circulatory system)
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing), or principal diagnosis (DX1=missing)

De.1. Measure Type: Outcome

S.17. Data Source: Claims

S.20. Level of Analysis: Facility

IF Endorsement Maintenance – Original Endorsement Date: Aug 05, 2009 **Most Recent Endorsement Date:** Sep 03, 2015

IF this measure is included in a composite, NQF Composite#/title:

IF this measure is paired/grouped, NQF#/title:

De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results? Not applicable

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

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

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

[PSI11_NQF0355_Evidence_Form_150107_v02.docx](#)

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

Do not remove any existing information. If there have been any changes to evidence, the Committee will consider the new evidence. Please use the most current version of the evidence attachment (v7.1). Please use red font to indicate updated evidence.

1b. Performance Gap

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

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

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

If a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), ***SKIP this question and answer the composite questions.***

This measure is intended to identify adult patients with a clinically significant adverse event that is at least partially preventable -- acute respiratory failure as a secondary diagnosis acquired in the hospital. This indicator excludes the evaluation of patients with major respiratory or circulatory disorders and limits the assessment to patients who undergo an elective surgical procedure. Use of this measure for comparative reporting can lead to targeted intervention for quality improvement and reduction in adverse events.

This indicator was originally proposed by Iezzoni et al. as part of the CSP (CSP 3, “postoperative pulmonary compromise”) (1). The Iezzoni et al. definition also includes pulmonary congestion, other (or postoperative) pulmonary insufficiency, and acute pulmonary edema, which were omitted from this PSI. The University HealthSystem Consortium (#2927) and AHRQ’s original HCUP Quality Indicators adopted the CSP indicator for major surgery patients (2). Needleman and Buerhaus identified postoperative pulmonary failure as an “Outcome Potentially Sensitive to Nursing,” using the original CSP definition (3).

References:

1. Iezzoni LI, Daley J, Heeren T, Foley SM, Fisher ES, Duncan C, et al. Identifying complications of care using administrative data. *Med Care* 1994;32(7):700-15.
2. Johantgen M, Elixhauser A, Bali JK, Goldfarb M, Harris DR. Quality indicators using hospital discharge data: State and national applications. *Jt Comm J Qual Improv* 1998;24(2):88-195. Published erratum appears in *Jt Comm J Qual Improv* 1998;24(6):341.
3. Needleman J, Buerhaus PJ, Mattke S, Stewart M, Zelevinsky K. *Nurse Staffing and Patient Outcomes in Hospitals*. Boston, MA: Health Resources Services Administration; 2001 February 28. Report No.:230-99-0021.

1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis. (*This is required for maintenance of endorsement. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.*) This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.

Table 1. Reference Population Rate and Distribution of Hospital Performance of Postoperative Respiratory Failure (PSI11)

Overall Reference Population Rate

Year	Number Hospitals	Outcome of Interest
(Numerator)1	Population at Risk	
(Denominator)1	Observed Rate	
Per 10001		

2012	2,706	24,066	2,385,631	10.088
2011	2,559	21,506	2,326,997	9.242
20103	4,253	28,952	3,360,053	8.616
20093	4,156	27,856	3,369,598	8.267
20083	4,124	27,254	3,317,359	8.216

Distribution of Hospital-level Observed Rates in Reference Population

Year	Number of Hospitals	Distribution of Observed Hospital-level Rates per 1000 (p=percentile)2						
		Mean	SD	p5	p25	Median	p75	p95
2012	2,706	8.48	13.88	0.00	0.00	6.03	11.93	25.13
2011	2,559	8.48	15.08	0.00	0.00	6.21	11.31	22.90

Source: HCUP State Inpatient Databases (SID). Healthcare Cost and Utilization Project (HCUP). 2008-2012. Agency for Healthcare Research and Quality, Rockville, MD. www.hcup-us.ahrq.gov/sidoverview.jsp. (AHRQ QI Software Version 4.5 and 5.0)

1The observed rate refers to the total rate for all observations included in the reference population data (numerator) divided the total combined population of all hospitals included in the reference population data (denominator).

2The distribution of hospital rates reports the mean and standard deviation (SD) of the observed rates for all hospitals included in the dataset, as well as the observed rate for hospitals in the 5th, 25th, 50th (median), 75th, and 95th percentile.

32008-2010 data are calculated using Version 4.5 of the QI Software and all states included in the SID for those years. Version 4.5 includes a “prediction module” which is used to account for missing present on admission flags. In Version 5.0, the “prediction module” has been removed and the reference population is limited to states and hospitals with present on admission data. These differences may lead to some discontinuity in the observed rates between 2010 and 2011, since many states did not report POA data prior to 2011. The number of states reporting consistent POA has increased dramatically since 2008.

1b.3. If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.

Not applicable.

1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability. (*This is required for maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities*

included.) For measures that show high levels of performance, i.e., “topped out”, disparities data may demonstrate an opportunity for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.

Table 2. Risk-Adjusted Postoperative Respiratory Failure Rates per 1,000 Elective Surgery Admissions, Age 18 and Over (PSI 11), by Patient and Hospital Characteristics, 2012

Patient/hospital characteristic	Estimate	Std Error	p-value	(Ref Grp = *)
---------------------------------	----------	-----------	---------	---------------

Total U.S.	10.071	0.064		
------------	--------	-------	--	--

Patient Characteristics

Age Groups:

18-44*	10.035	0.221	*	
45-64	10.092	0.105	0.408	
65 and over	10.063	0.087	0.453	

Gender:

Male*	10.073	0.093	*	
Female	10.069	0.088	0.512	

Patient Zip Code Median Income

First quartile (lowest income)	11.001	0.126	0.000	
Second quartile	10.095	0.125	0.000	
Third quartile	10.240	0.128	0.000	
Fourth quartile (highest income)*	8.798	0.135	*	

Location of patient residence (NCHS):

Large central metropolitan	10.494	0.134	0.444	
Large fringe metropolitan*	10.468	0.125	*	
Medium metropolitan	10.080	0.146	0.978	
Small metropolitan	9.251	0.192	1.000	
Micropolitan	9.272	0.185	1.000	
Noncore	9.892	0.217	0.989	

Expected payment source:

Private insurance*	8.447	0.113	*	
Medicare	10.750	0.084	0.000	
Medicaid	12.789	0.274	0.000	
Other insurance	10.306	0.360	0.000	
Uninsured / self-pay / no charge	9.407	0.467	0.023	

Hospital Characteristic:

Location of Care:

Northeast*	8.779	0.139	*	
Midwest	9.346	0.130	0.001	
South	11.312	0.099	0.000	
West	9.596	0.177	0.000	

Source: HCUP State Inpatient Databases (SID). Healthcare Cost and Utilization Project (HCUP). 2012. Agency for Healthcare Research and Quality, Rockville, MD. www.hcup-us.ahrq.gov/sidoverview.jsp. (AHRQ QI Software Version 5.0)

*Reference for p-value test statistics.

NCHS - National Center for Health Statistics designation for urban-rural locations.

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

Not applicable

2. Reliability and Validity—Scientific Acceptability of Measure Properties

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

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

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

Critical Care, Surgery : General Surgery

De.6. Non-Condition Specific(check all the areas that apply):

Safety : Complications

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

Elderly

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

http://www.qualityindicators.ahrq.gov/Modules/psi_resources.aspx

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

Attachment:

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

Attachment Attachment: [PSI_11_Postoperative_Respiratory_Failure_Rate-636167077239344000.xlsx](#)

S.2c. Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

Attachment:

S.2d. Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

S.3.1. For maintenance of endorsement: Are there changes to the specifications since the last updates/submission. If yes, update the specifications for S1-2 and S4-22 and explain reasons for the changes in S3.2.

Yes

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

As standard protocol, the AHRQ QI program annually updates all measures with Fiscal Year coding changes, refinements based on stakeholder input, refinements to improve specificity and sensitivity based on additional analyses, and necessary software changes. In addition, approximately every two years, AHRQ updates the risk adjustment parameter estimates and composite weights based on the most recent year of data (i.e., the most current reference population possible). The refined measures are tested and confirmed to be valid and reliable prior to release of the updated software.

S.4. Numerator Statement (Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome) DO NOT include the rationale for the measure.

IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

Discharges, among cases meeting the inclusion and exclusion rules for the denominator, with either:

- any secondary ICD-10-CM diagnosis code for acute respiratory failure; or
- any secondary ICD-10-PCS procedure codes for a mechanical ventilation for 96 consecutive hours or more that occurs zero or

more days after the first major operating room procedure code (based on days from admission to procedure); or

- any secondary ICD-10-PCS procedure codes for a mechanical ventilation for less than 96 consecutive hours (or undetermined) that occurs two or more days after the first major operating room procedure code (based on days from admission to procedure); or
- any secondary ICD-10-PCS procedure codes for a reintubation that occurs one or more days after the first major operating room procedure code (based on days from admission to procedure)

S.5. Numerator Details (All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

Acute respiratory failure diagnosis codes: (ACURF2D)

J95821 Acute Postprocedural Respiratory Failure

J95822 Acute and Chronic Postprocedural Respiratory Failure

Mechanical ventilation for 96 consecutive hours or more procedure codes: (PR9672P)

5A1955Z Respiratory Ventilation, Greater than 96 Consecutive Hours

Mechanical ventilation for less than 96 consecutive hours procedure codes: (PR9671P)

5A1945Z Respiratory Ventilation, 24-96 Consecutive Hours

Reintubation procedure codes: (PR9604P)

5A1955Z Respiratory Ventilation, Greater than 96 Consecutive Hours

0BH13EZ Insertion Of Endotracheal Airway Into Trachea, Via Natural Or Artificial Opening

0BH18EZ Insertion Of Endotracheal Airway Into Trachea, Via Natural Or Artificial Opening Endoscopic

S.6. Denominator Statement (Brief, narrative description of the target population being measured)

Elective surgical discharges, for patients ages 18 years and older, with any-listed ICD-10-PCS procedure codes for an operating room procedure. Elective surgical discharges are defined by specific MS-DRG codes with admission type recorded as elective (SID ATYPE=3).

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

IF an OUTCOME MEASURE, describe how the target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

For a complete list of codes, see the attached technical specifications, PSI Appendix A – Operating Room Procedure Codes, and PSI Appendix E - Surgical Discharge MS-DRGs (for discharges on or after October 1, 2007)

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

Exclude cases:

- with a principal ICD-10-CM diagnosis code (or secondary diagnosis present on admission) for acute respiratory failure (see below)
- where the only operating room procedure is tracheostomy
- where a procedure for tracheostomy occurs before the first operating room procedure†
- with any-listed ICD-10-CM diagnosis codes for neuromuscular disorder
- with any-listed ICD-10-PCS procedure codes for laryngeal or pharyngeal, nose, mouth, pharynx or facial surgery
- with any-listed ICD-10-PCS procedure codes for esophageal resection
- with any-listed ICD-10-PCS procedure codes for lung cancer
- any-listed ICD-10-CM diagnosis codes for degenerative neurological disorder
- with any-listed ICD-10-PCS procedure codes for lung transplant
- MDC 4 (diseases/disorders of respiratory system)

- MDC 5 (diseases/disorders of circulatory system)
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing), or principal diagnosis (DX1=missing)

S.9. Denominator Exclusion Details (All information required to identify and calculate exclusions from the denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)

For a complete list of excluded codes, see the attached technical specifications.

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

Not applicable.

S.11. Risk Adjustment Type (Select type. Provide specifications for risk stratification in measure testing attachment)

No risk adjustment or risk stratification

If other:

S.12. Type of score:

Rate/proportion

If other:

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

Better quality = Lower score

S.14. Calculation Algorithm/Measure Logic (Diagram or describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; time period for data, aggregating data; risk adjustment; etc.)

Rate/proportion

S.15. Sampling (If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)

IF an instrument-based performance measure (e.g., PRO-PM), identify whether (and how) proxy responses are allowed.

Not applicable.

S.16. Survey/Patient-reported data (If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)

Specify calculation of response rates to be reported with performance measure results.

Not applicable.

S.17. Data Source (Check ONLY the sources for which the measure is SPECIFIED AND TESTED).

If other, please describe in S.18.

Claims

S.18. Data Source or Collection Instrument (Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data are collected.)

IF instrument-based, identify the specific instrument(s) and standard methods, modes, and languages of administration.

While the measure is tested and specified using data from the Healthcare Cost and Utilization Project (HCUP) (see section 1.1 and 1.2 of the measure testing form), the measure specifications and software are specified to be used with any ICD-9-CM-coded administrative billing/claims/discharge dataset with Present on Admission (POA) information. Note that in the forthcoming Version 5.0 (expected release Quarter 1 of 2015), the AHRQ QI software will no longer support prediction of POA status using an embedded prediction module. Users are expected to provide POA data.

S.19. Data Source or Collection Instrument (available at measure-specific Web page URL identified in S.1 OR in attached appendix at

A.1)

Available at measure-specific web page URL identified in S.1

S.20. Level of Analysis (Check *ONLY* the levels of analysis for which the measure is SPECIFIED AND TESTED)

Facility

S.21. Care Setting (Check *ONLY* the settings for which the measure is SPECIFIED AND TESTED)

Hospital

If other:

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

Not applicable.

2. Validity – See attached Measure Testing Submission Form

[PSI11_NQF_0533_Measure_Testing_Form_150114_V02.docx](#)

2.1 For maintenance of endorsement

Reliability testing: If testing of reliability of the measure score was not presented in prior submission(s), has reliability testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.

2.2 For maintenance of endorsement

Has additional empirical validity testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.

2.3 For maintenance of endorsement

Risk adjustment: For outcome, resource use, cost, and some process measures, risk-adjustment that includes social risk factors is not prohibited at present. Please update sections 1.8, 2a2, 2b1,2b4.3 and 2b5 in the Testing attachment and S.140 and S.11 in the online submission form. NOTE: These sections must be updated even if social risk factors are not included in the risk-adjustment strategy. You MUST use the most current version of the Testing Attachment (v7.1) -- older versions of the form will not have all required questions.

3. Feasibility

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

3a. Byproduct of Care Processes

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

3a.1. Data Elements Generated as Byproduct of Care Processes.

[Coded by someone other than person obtaining original information \(e.g., DRG, ICD-9 codes on claims\)](#)

If other:

3b. Electronic Sources

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

3b.1. To what extent are the specified data elements available electronically in defined fields (i.e., data elements that are needed

to compute the performance measure score are in defined, computer-readable fields) Update this field for **maintenance of endorsement**.

ALL data elements are in defined fields in electronic claims

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

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

Attachment:

3c. Data Collection Strategy

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

3c.1. Required for maintenance of endorsement. Describe difficulties (as a result of testing and/or operational use of the measure) regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.

IF instrument-based, consider implications for both individuals providing data (patients, service recipients, respondents) and those whose performance is being measured.

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

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

No fees. Software is freely available from the AHRQ Quality Indicators website (<http://www.qualityindicators.ahrq.gov/>). The version 5.0 software will be released in early 2015.

4. Usability and Use

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

4a. Accountability and Transparency

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

4.1. Current and Planned Use

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

Specific Plan for Use	Current Use (for current use provide URL)
	Public Reporting Agency for Healthcare Research and Quality (AHRQ), National Healthcare Quality Report & National Healthcare Disparities Reports, http://www.ahrq.gov/research/findings/nhqdr/index.html Arizona Department of Health Services, Arizona Hospital Compare (MONAHRQ-generated)

<http://pub.azdhs.gov/hospital-discharge-stats/2011/index.html>
 BlueCross BlueShield
<http://www.bcbs.com/healthcare-partners/blue-distinction-for-providers/cardiacprogramcriteria.pdf>
 Cigna
<http://www.cigna.com/pdf/CentersOfExcellence.pdf>
 Commonwealth of Kentucky, Office of Health Policy, Cabinet for Health and Family Services Quality Indicators (MONAHRQ-generated)
<https://prd.chfs.ky.gov/MONAHRQ/2011/>
 Connecticut Hospital Association
<http://www.cthosp.org/advocacy/quality-and-patient-safety/hospital-quality-reporting-website/>
 HealthGrades
<http://www.healthgrades.com/quality/2014-patient-safety-methodology>
 Illinois State Government
<http://www.healthcarereportcard.illinois.gov/>
 Iowa Healthcare Collaborative
http://www.ihconline.org/UserDocs/Pages/IowaReport_TableofContents.pdf
 Leapfrog Group Hospital Safety Score
<http://www.hospitalsafetyscore.org/your-hospitals-safety-score/about-the-score>
 Maine Health Data Organization, Maine Health Data Website (MONAHRQ-generated)
<http://gateway.maine.gov/mhdo/monahrq/index.html>
 Nevada Division of Health Care Financing and Policy, Nevada Compare Care (MONAHRQ-generated)
<http://nevadacomparecare.net/>
 Nevada Hospital Association
<http://www.nvhospitalquality.net/index.php>
 Niagara Health Quality Coalition
<http://www.myhealthfinder.com/newyork13/index.php>
 Texas Department of State Health Services
<http://www.dshs.state.tx.us/Layouts/ContentPage.aspx?PageID=35648&id=34770&terms=quality+indicators>
 Texas Health Resources
<https://www.texashealth.org/Pages/Quality-and-Patient-Safety/Quality-and-Safety-Reports.aspx>
 US News
http://www.usnews.com/pubfiles/BH_2014_Methodology_Report_Final_Jul14.pdf
 Utah Department of Health, Utah Hospital Comparison Reports, (MONAHRQ-generated)
<https://health.utah.gov/myhealthcare/monahrq/index.html>
 Washington State MONAHRQ: Hospital Utilization, Quality and Avoidable Stays
<http://www.wamonahrq.net/>
 WHA Information Center (Wisconsin Hospital Association)
http://www.whainfocenter.com/uploads/PDFs/Publications/QualityIndicators/2012_WI_IQIReport.pdf

 Regulatory and Accreditation Programs
 Statewide Quality Advisory Committee (Massachusetts)
<http://www.mass.gov/chia/gov/commissions-and-initiatives/statewide-quality-advisory-committee/>

 Professional Certification or Recognition Program
 BlueCross BlueShield
<http://www.bcbs.com/healthcare-partners/blue-distinction-for-providers/cardiacprogramcriteria.pdf>

	<p>Cigna Centers of Excellence http://www.cigna.com/pdf/CentersOfExcellence.pdf</p> <p>Quality Improvement (Internal to the specific organization) Cook County HHS http://www.cookcountyhhs.org/wp-content/uploads/2013/12/09-23-14-QPS-scan-Minutes.pdf Greenville Health System, Quality and Safety Report http://www.ghs.org/reportcard Norton Healthcare Quality Report http://www.nortonhealthcare.com/QualityReport Washington State Hospital Association https://www.wsha.org/files/177/2%20-%20Amber%20slides_SafeTable_April_23_2014.pdf</p>
--	---

4a1.1 For each CURRENT use, checked above (update for maintenance of endorsement), provide:

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

Agency for Healthcare Research and Quality (AHRQ), National Healthcare Quality Report & National Healthcare Disparities Reports
2010 data are from 45 participating states in the Healthcare Cost and Utilization Project (HCUP) database
<http://www.hcup-us.ahrq.gov/reports/methods/2012-02.pdf>

Agency for Healthcare Research and Quality (AHRQ), MONAHRQ Software
Used by many states and other health research organizations; My Own Network, Powered by AHRQ (MONAHRQ) generates interactive, data-driven querying website from state-input hospital administrative data
http://monahrq.ahrq.gov/monahrq_resources.shtml;
http://monahrq.ahrq.gov/MONAHRQ_41_Measure_List.xls

Arizona Department of Health Services, Arizona Hospital Compare (MONAHRQ-generated)
Hospital quality ratings from all hospitals in Arizona
<http://pub.azdhs.gov/hospital-discharge-stats/2011/index.html>

Commonwealth of Kentucky, Office of Health Policy, Cabinet for Health and Family Services Quality Indicators (MONAHRQ-generated)
Hospital quality ratings from all hospitals in Kentucky
<https://prd.chfs.ky.gov/MONAHRQ/2011/>

Maine Health Data Organization, Maine Health Data Website (MONAHRQ-generated)
Hospital quality ratings from all hospitals in Maine
<http://gateway.maine.gov/mhdo/monahrq/index.html>

Nevada Division of Health Care Financing and Policy, Nevada Compare Care (MONAHRQ-generated)
Hospital quality ratings from most hospitals in Nevada
<http://nevadacomparecare.net/Monahrq/AboutQualityRatings.html>

Utah Department of Health, Utah Hospital Comparison Reports, (MONAHRQ-generated)
Hospital quality ratings from most hospitals in Utah
<https://health.utah.gov/myhealthcare/monahrq/AboutQualityRatings.html>

Virginia Health Information (VHI) Organization, Virginia Health Information Website (MONAHRQ-generated)
Hospital quality ratings from most hospitals in Virginia
http://www.vhi.org/monahrq2/qual/PHC/maps/s_All.html

Washington State MONAHRQ: Hospital Utilization, Quality and Avoidable Stays

Hospital quality ratings from most hospitals in Washington

<http://www.wamonahrq.net/>

Kentucky Hospital Association Quality Data

Hospital quality ratings from most hospitals in Kentucky

<http://info.kyha.com/QualityData/>

Colorado Hospital Association

Hospital Report Card

http://www.cohospitalquality.org/corda/dashboards/COLORADO_REPORT_CARD_BY_MEASURE/main.dashxml

Illinois State Government

Illinois Hospital Report Card and Consumer Guide to Health Care

<http://www.healthcarereportcard.illinois.gov/>

Illinois Hospital Association

Illinois Hospitals Caring for You

www.illinoishospitals.org

Hawaii Health Information Corporation (HHIC), Hawaii Health Information Corporation Public Reports (MONAHRQ-generated)

Hospital quality ratings from all hospitals in Hawaii

<http://www.hhicpublicreports.org/Methodology.html>

Wisconsin Employer Health Care Alliance Cooperative (available to members only)

Hospital quality ratings from hospitals in Wisconsin

<http://the-alliance.org/>

Kentucky Norton Healthcare (hospital system)

Norton Healthcare Quality Report

<http://www.nortonhealthcare.com/body.cfm?id=157>

Iowa Healthcare Collaborative

Hospital quality ratings from hospitals in Iowa

<http://www.ihconline.org/aspx/publicreporting/iowareport.aspx>

Hospital Safety Score

Leapfrog Group Hospital Safety Score program grades hospitals on their overall performance in keeping patients safe from preventable harm and medical errors

<http://www.hospitalsafetyscore.org/>

West Jefferson Medical Center

Reports indicators of potentially avoidable hospitalizations associated with the parish in which it is located, and compared those indicators with state-level indicators.

<http://www.wjmc.org/docs/WJMC-Secondary-Data-Profile-09-23-2013.pdf>

Upstate University Hospital

Upstate Medical University reports a broad range of over 20 AHRQ Inpatient Quality Indicators (IQI's) and Patient Safety Indicators for both itself and a national average of over 100 academic medical centers.

<http://qoc.upstate.edu/>

Quality Improvement

University HealthSystem Consortium

Internal quality improvement efforts including Postoperative Respiratory Failure 2008 Benchmarking Project

<https://www.uhc.edu>

Washington State Hospital

Internal quality improvement efforts to reduce events that risk patient safety, including PSI11 rates.

https://www.wsha.org/files/177/2%20-%20Amber%20slides_SafeTable_April_23_2014.pdf

Cook County HHS

Assessment of patient safety at John H. Stroger, Jr. Hospital (September 2014)

<http://www.cookcountyhhs.org/wp-content/uploads/2013/12/09-23-14-QPS-scan-Minutes.pdf>

Barnes-Jewish Hospital

Quality assessment and comparison to other hospitals within network

<http://www.barnesjewish.org/upload/docs/AboutUs/Annual%20Reports/PS-Q%20BoardReport2012.pdf>

Regulatory

Statewide Quality Advisory Committee (Massachusetts)

The committee annually recommends a standard set of health metrics to use throughout statewide health quality efforts.

<http://www.mass.gov/chia/gov/commissions-and-initiatives/statewide-quality-advisory-committee/>

4a1.2. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons? (e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?)

Not applicable

4a1.3. If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement. (Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.)

Not applicable

4a2.1.1. Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.

How many and which types of measured entities and/or others were included? If only a sample of measured entities were included, describe the full population and how the sample was selected.

The Agency for Healthcare Research and Quality (AHRQ) provides free software, in both SAS and Windows format, to calculate the AHRQ Quality Indicators. Users may use their own hospital administrative data to calculate the QIs using this software.

In addition, AHRQ provides technical assistance to users through a QI User Support email address, QISupport@ahrq.hhs.gov. AHRQ triages, troubleshoots and responds to technical inquiries related to methodology and rationale behind the indicator and general questions related to the use of the software. During a calendar year, AHRQ typically provides technical support to over 1,000 queries.

4a2.1.2. Describe the process(es) involved, including when/how often results were provided, what data were provided, what educational/explanatory efforts were made, etc.

The AHRQ QI software is updated annually. Technical support is available on an on-going basis. No data updates are necessary; users apply the AHRQ QIs to their own hospital administrative data.

4a2.2.1. Summarize the feedback on measure performance and implementation from the measured entities and others described in 4d.1.

Describe how feedback was obtained.

Feedback is obtained from users through a variety of channels, in particular through a technical assistance support service described above. In addition, AHRQ incorporates input on QI implementation from technical workgroups convened to support QI development and maintenance, stakeholder committees such as NQF standing committees, and peer-reviewed or other research publications.

4a2.2.2. Summarize the feedback obtained from those being measured.

[See the response to 432.1.](#)

4a2.2.3. Summarize the feedback obtained from other users

[See the response to 432.1.](#)

4a2.3. Describe how the feedback described in 4a2.2.1 has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.

The AHRQ Quality Indicators are updated annually, including updating indicator technical specifications in accordance with the latest coding guidance; suggestions from users and other stakeholders obtained through Technical Assistance, committees, or workgroups; and the latest clinical and scientific research. AHRQ regularly reviews these sources, identifies possible indicator updates, and prioritizes updates for each indicator and software update based on expected impact on users.

Improvement

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

4b1. Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (trends in performance results, number and percentage of people receiving high-quality healthcare; Geographic area and number and percentage of accountable entities and patients included.)

If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

[The observed rate has increased since 2008. However, recent mean and median hospital-level rates are relatively flat. More intervention effort could be made to reduce the rates of postoperative respiratory failure.](#)

4b2. Unintended Consequences

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

4b2.1. Please explain any unexpected findings (positive or negative) during implementation of this measure including unintended impacts on patients.

[None noted.](#)

4b2.2. Please explain any unexpected benefits from implementation of this measure.

5. Comparison to Related or Competing Measures

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

5. Relation to Other NQF-endorsed Measures

Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.

[No](#)

5.1a. List of related or competing measures (selected from NQF-endorsed measures)

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

5a. Harmonization of Related Measures

The measure specifications are harmonized with related measures;

OR

The differences in specifications are justified

5a.1. If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):

Are the measure specifications harmonized to the extent possible?

5a.2. If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.

[Both questions\(5a.1. and 5a.2.\): not applicable – no measures with same focus or target population](#)

5b. Competing Measures

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

OR

Multiple measures are justified.

5b.1. If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):

Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)

[No competing measures](#)

Appendix

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

[Attachment Attachment: PSI11_Supplemental_Packet_150114.pdf](#)

Contact Information

Co.1 Measure Steward (Intellectual Property Owner): [Agency for Healthcare Research and Quality](#)

Co.2 Point of Contact: [Pamela, Owens, Pam.Owens@ahrq.hhs.gov, 301-427-1412-](#)

Co.3 Measure Developer if different from Measure Steward: [Agency for Healthcare Research and Quality](#)

Co.4 Point of Contact: [Mamatha, Pancholi, Mamatha.Pancholi@ahrq.hhs.gov, 301-427-1470-](#)

Additional Information

Ad.1 Workgroup/Expert Panel involved in measure development

Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.

[Not applicable for maintenance endorsement.](#)

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 Year the measure was first released: [2002](#)

Ad.3 Month and Year of most recent revision: [03, 2015](#)

Ad.4 What is your frequency for review/update of this measure? [Annual](#)

Ad.5 When is the next scheduled review/update for this measure? [10, 2015](#)

Ad.6 Copyright statement: [The AHRQ QI software is publicly available. We have no copyright disclaimers](#)

Ad.7 Disclaimers: [None](#)

Ad.8 Additional Information/Comments: [None](#)