



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 #: 0352

Corresponding Measures:

De.2. Measure Title: Failure to Rescue In-Hospital Mortality (risk adjusted)

Co.1.1. Measure Steward: The Children's Hospital of Philadelphia

De.3. Brief Description of Measure: Percentage of patients who died with documented or undocumented complications in the hospital

1b.1. Developer Rationale: By using Failure-to-Rescue, predicting death after an adverse occurrence, hospitals would be able to improve their quality of care. Hospitals and health care providers benefit from knowing not only their institution's mortality rate, but also their institution's ability to rescue patients after an adverse occurrence. Using failure-to-rescue measure is especially important if hospital resources needed for prevention were different from those needed for rescue. From a research and policy perspective knowing the failure-to-rescue rate in addition to the mortality rate will improve our understanding of mortality statistics, especially if complication rates are being reported. Since the death rate appears to be composed of two distinct rates, quality of care measurement may be improved if both mortality and FTR rates are reported instead of relying on the adjusted mortality rate alone. In so doing, we may better understand the reasons for variation in hospital mortality rates.

S.4. Numerator Statement: Patients who died with a complication plus patients who died without documented complications. Death is defined as death in the hospital.

All patients in an FTR analysis have developed a complication (by definition) or died without a documented complication.

Complicated patient has at least one of the complications defined in Appendix B/D (see attachment and website <http://www.research.chop.edu/programs/cor/node/26>). Complications are defined using the secondary ICD9/ICD10 diagnosis and procedure codes and the DRG code of the current admission.

Comorbidities are defined in Appendix C/E (see attachment and website <http://www.research.chop.edu/programs/cor/node/26>) using secondary ICD9/ICD10 diagnosis codes of the current admission and primary or secondary ICD9/ICD10 diagnosis codes of previous admission within 90 days of the admission date of the current admission.

*When Current Procedural Terminology (CPT) codes are available, the definition of complications and comorbidities are augmented to include them.

S.6. Denominator Statement: General Surgery, Orthopedic and Vascular patients in specific DRGs with complications plus patients in specific General Surgery, Orthopedic and Vascular DRGs who died in the hospital without complications.

Inclusions: adult patients admitted for one of the procedures in the General Surgery, Orthopedic or Vascular DRGs (see attachment and Appendix A <http://www.research.chop.edu/programs/cor/node/26>).

S.8. Denominator Exclusions: Patients over age 90, under age 18. Those over 90 are excluded due to the increased likelihood that these patients will have DNR orders. This could introduce a bias towards increased failure-to-rescue due to DNR status census, potentially disproportionately penalizing hospitals for deaths that were out of their control. If DNR status were included in the dataset, it could be used as a more accurate exclusion criteria variable. Patients over age 90, under age 18. Those over 90 are excluded due to the increased likelihood that these patients will have DNR orders. This could introduce a bias towards increased failure-to-rescue due to DNR status census, potentially disproportionately penalizing hospitals for deaths that were out of their control. If DNR status were included in the dataset, it could be used as a more accurate exclusion criteria variable.

De.1. Measure Type: Outcome

S.17. Data Source: Claims

S.20. Level of Analysis: Facility, Health Plan, Integrated Delivery System, Other, Population : Community, County or City, Population : Regional and State

IF Endorsement Maintenance – Original Endorsement Date: May 15, 2008 **Most Recent Endorsement Date:** Dec 10, 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? This measure should be looked at with Failure to Rescue 30-day Mortality (risk adjusted) to account for differences in length of stay across hospitals.

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

[Evidence_FTR_InHospital_Resub_FINAL_Tracked.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.

By using Failure-to-Rescue, predicting death after an adverse occurrence, hospitals would be able to improve their quality of care. Hospitals and health care providers benefit from knowing not only their institution's mortality rate, but also their institution's ability to rescue patients after an adverse occurrence. Using failure-to-rescue measure is especially important if hospital resources needed for prevention were different from those needed for rescue. From a research and policy perspective knowing the failure-to-rescue rate in addition to the mortality rate will improve our understanding of mortality statistics, especially if complication rates are being reported. Since the death rate appears to be composed of two distinct rates, quality of care measurement may be improved if both mortality and FTR rates are reported instead of relying on the adjusted mortality rate alone. In so doing, we may better understand the reasons for variation in hospital mortality rates.

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.*

In a study examining the association of nurse-level mix and failure-to-rescue, cross-sectional analyses of outcomes data for 232,342 general, orthopedic, and vascular surgery patients from 168 non-federal adult general Pennsylvania hospitals between April 1, 1998 and November 30, 1999. Aiken et al. showed if the proportion of BSN nurses in all hospitals was 60% rather than 20% 14.2 fewer deaths per 1000 patients with complications (failure-to-rescue) would be expected. Moreover failure-to-rescue rates would be decidedly lower if both the workloads of nurses were lighter and the workforce were composed of higher percent ages of BSN-

prepared nurses. In addition, after adjusting for patient and hospital structural characteristics, as well as nurse staffing, nurse experience, and the patient's surgeon board certification status, a 10% increase in the proportion of nurses with a bachelor's degree was found to be associated with a 5% decrease in the odds of failure-to-rescue (odds ratio, 0.95; 95% CI 0.91-0.99) (see Tables 3 and 4 in Aiken LH, Clarke SP, Cheung RB, Sloane DM, Silber JH. JAMA 2003, Educational Levels of Hospital Nurses and Surgical Patient Mortality).

A study was completed by Kutney-Lee et al. comparing changes over time in failure-to-rescue in a sample of hospitals that attained Magnet recognition between 1999 and 2007 with hospitals that remained non-Magnet. A total of 196 Pennsylvania hospitals were included in the analysis, which included: 11 emerging Magnets and 125 non-Magnets. The timepoints compared were 1999 and 2006. At each timepoint, the failure-to-rescue rates were not found to differ significantly between Magnet and non-Magnet hospitals. The researchers did find that the changes in the failure-to-rescue rates were more pronounced by 6.1 fewer deaths per 1000 patients (SE 2.64 P=0.02) in emerging Magnet hospitals than non-Magnet hospitals. (see Kutney-Lee A, Stimpfel AW, Sloane DM, Cimiotti JP, Quinn LW, Aiken LH. Med Care 2015 Changes in Patient and Nurse Outcomes Associated With Magnet Hospital Recognition)

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.

In Silber JH et al. Arch Surg 2009, cross-sectional analyses of outcomes data for 232,342 general, orthopedic, and vascular surgery patients discharged from 168 nonfederal adult general Pennsylvania hospitals between April 1, 1998, and November 30, 1999, linked to administrative and survey data providing information on educational composition, staffing, and other characteristics.

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.

Silber JH et al. Arch Surg 2009, shows failure-to rescue rates were consistently lower in hospitals with higher resident-to bed ratios. Hospitals of high teaching intensity (resident-to-bed ratio=0.6) compared with nonteaching hospitals (resident-to-bed ratio=0) were associated with 15% (95% CI, 14%-16%) lower odds of failure-to-rescue for combined surgery, with similar finding for subgroup analysis. (see Table 3 in paper). The relative benefits associated with teaching hospitals were not found to be experienced by black patients, however white patients were found to have significantly different FTR rates across teaching and non-teaching hospitals.

Silber JH et al. Examining Causes of Racial Disparities in General Surgical Mortality: Hospital Quality versus Patient Risk. Accepted to Medical Care 2015, shows in-hospital failure-to-rescue is significantly ($p<0.001$) higher for black surgical patients (6.1) compared to whites (5.1) matched on procedure. When matched on procedure and patient characteristics, the difference in failure-to-rescue was not statistically significant. Similarly, no significant difference was found in failure-to-rescue between blacks matched to whites from the same hospital with the same procedure and patient characteristics. This report used Medicare data from 6 states (CA, FL, GA, NY, OH, and PA) spanning 2004-2007.

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

NA

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):

Musculoskeletal : Falls and Traumatic Injury, Musculoskeletal : Joint Surgery, Surgery, Surgery : General Surgery, Surgery : Vascular Surgery

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

Safety, Safety : Complications

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

Elderly, Populations at Risk, Populations at Risk : Dual eligible beneficiaries, Populations at Risk : Individuals with multiple chronic conditions, Populations at Risk : Veterans

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.research.chop.edu/programs/cor/node/26>

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

This is not an eMeasure Attachment:

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

No data dictionary Attachment:

S.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.

No

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

The only changes in the measure specifications reflect the few updates in the ICD9 codes since the last endorsement. Comorbidity and complication definitions using ICD10 codes have been added but will still require testing when data becomes available.

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

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

Patients who died with a complication plus patients who died without documented complications. Death is defined as death in the hospital.

All patients in an FTR analysis have developed a complication (by definition) or died without a documented complication.

Complicated patient has at least one of the complications defined in Appendix B/D (see attachment and website <http://www.research.chop.edu/programs/cor/node/26>). Complications are defined using the secondary ICD9/ICD10 diagnosis and procedure codes and the DRG code of the current admission.

Comorbidities are defined in Appendix C/E (see attachment and website <http://www.research.chop.edu/programs/cor/node/26>) using secondary ICD9/ICD10 diagnosis codes of the current admission and primary or secondary ICD9/ICD10 diagnosis codes of previous admission within 90 days of the admission date of the current admission.

*When Current Procedural Terminology (CPT) codes are available, the definition of complications and comorbidities are augmented to include them.

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).

General Surgery, Orthopedic and Vascular patients in specific DRGs with complications who died and patients who died without documented complications. Death is defined as death in the hospital.

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

General Surgery, Orthopedic and Vascular patients in specific DRGs with complications plus patients in specific General Surgery, Orthopedic and Vascular DRGs who died in the hospital without complications.

Inclusions: adult patients admitted for one of the procedures in the General Surgery, Orthopedic or Vascular DRGs (see attachment and Appendix A <http://www.research.chop.edu/programs/cor/node/26>).

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).

Adult patients admitted for one of the procedures in the General Surgery, Orthopedic or Vascular DRGs (see attachment and Appendix A at <http://www.research.chop.edu/programs/cor/node/26>) who developed an in hospital complication and those who died without a documented complication.

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

Patients over age 90, under age 18. Those over 90 are excluded due to the increased likelihood that these patients will have DNR orders. This could introduce a bias towards increased failure-to-rescue due to DNR status census, potentially disproportionately penalizing hospitals for deaths that were out of their control. If DNR status were included in the dataset, it could be used as a more accurate exclusion criteria variable. Patients over age 90, under age 18. Those over 90 are excluded due to the increased likelihood that these patients will have DNR orders. This could introduce a bias towards increased failure-to-rescue due to DNR status census, potentially disproportionately penalizing hospitals for deaths that were out of their control. If DNR status were included in the dataset, it could be used as a more accurate exclusion criteria variable.

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

N/A

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

Complicated patient has at least one of the complications defined in Appendix B/D

(<http://www.research.chop.edu/programs/cor/node/26>). Complications are defined using the secondary ICD9/ICD10 diagnosis and procedure codes and the DRG code of the current admission. When Current Procedural Terminology (CPT) codes are available, the definition of complications and comorbidities are augmented to include them.

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

[Statistical risk model](#)

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.)

Patients admitted to an acute care facility with a stay characterized by a principal procedure and DRG of interest as outlined in the attached Appendix A that can also be found on the website (<http://www.research.chop.edu/programs/cor/node/26>). Those patients both alive and without complications were excluded, as were any below 18 years of age or above 90 years old. Cases meeting the target criteria were therefore between the ages of 18-90 years old, admitted to an acute care facility for a DRG of interest, and had a complication or died without a documented complication in the hospital. The event of interest is death. Failure-to-Rescue is the rate of deaths in the hospital in the target case population.

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.

[Measure not based on sample, all surgical patients between the ages of 18 and 90 admitted to an acute care hospital.](#)

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.

[Measure not based on survey/patient-reported data.](#)

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.

[Linked patients' hospitalization claims records, augmented with outpatient records; can also use single hospital admission records if linked files are not available to identify comorbidities and develop definitions of severity and other risk measure.](#)

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, Health Plan, Integrated Delivery System, Other, Population : Community, County or City, Population : Regional and State](#)

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

[Hospital](#)

If other:

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

2. Validity – See attached Measure Testing Submission Form

[TestingMeasurement_FTR_InHospital_Resub_FINAL_Tracked-635808607384507392.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.

We have developed FTR measures based on hospital administrative claims. When possible, such as in the Medicare population, we improve the risk adjustment by using more patient level information available in the Outpatient or Carrier (Part B) files.

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

There are no fees, licensing or other requirements to use any aspect of this measure as specified.

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 | |
| Quality Improvement (Internal to the specific organization) | |

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

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?)

A modified version of Failure-to-Rescue is endorsed and tracked by the Agency for Healthcare Research and Quality (AHRQ) as a Patient Safety Indicator (PSI) and as such this measure has not been adopted for use in these manners.

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.)

In the coming year, we will contact HealthGrades and Consumer Reports that currently use the aforementioned modified version of Failure-to-Rescue. They recognize the importance of reporting on this outcome, however the version of the measure they have adopted suffers from shortfalls. As part of our plan to increase the use of this measure in public reporting, we will outline the following weaknesses of their current adopted measure: 1) Lower Reliability- their current reported measure ignores 50% of the deaths, which is especially problematic since deaths are rare to begin with, and 2) Susceptible to Gaming- not all deaths have to be accounted for and included in the numerator, therefore falls prey to subjectivity of complication reporting.

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.

Performance results, data, and assistance with interpretation have neither been requested nor provided.

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.

N/A

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.

N/A

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

N/A

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

N/A

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.

N/A

Improvement

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

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.

N/A

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.

There have been no unintended negative consequences identified.

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.

Yes

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

0351 : Death Rate among Surgical Inpatients with Serious Treatable Complications (PSI 04)

0353 : Failure to Rescue 30-Day Mortality (risk adjusted)

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

5a. Harmonization of Related Measures

The measure specifications are harmonized with related measures;

OR

The differences in specifications are justified

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

Are the measure specifications harmonized to the extent possible?

No

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

0351 identifies a subpopulation with treatable complications and defines the numerator as only those deaths with this type of complication. In essence, the difference with 0351 hinges on what are labeled as serious, treatable complications and whether they can be distinguished from other complications. As such, 50% of deaths are excluded using this definition resulting in lower reliability and in addition is susceptible to gaming. 0353 limits the time period for which death occurs to the first 30-days of an admission.

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.)

Needleman et al. adapted the FTR measure to "nurse sensitive complications" by selecting a limited number of complications for the FTR measure. This change in definition, which we will call FTR-N, was developed to better focus on nursing quality of care. Because only deaths after nursing sensitive complications are studied, a large number of deaths are not used in the analysis. Subsequently, AHRQ again adapted the FTR-N definition to reflect quality from a "patient safety" perspective (ie, the identification of deaths that were especially likely to be preventable). Expert panels guided both of these adaptations through consensus development panels. The National Quality Forum, through its own process of selecting National Voluntary Consensus Standards for Nursing-Sensitive Care, endorsed Needleman et al's adaptation and assigned it to AHRQ for updating and support. FTR-N includes only 6 complications (pneumonia, shock, gastrointestinal bleeding, cardiac arrest, sepsis, and deep venous thrombosis) in its denominator definition, and it excludes deaths in patients without these complications. The alternative adaptation by AHRQ endorsed by NQF (0351), which we

will call FTR-A, adds renal failure to the FTR-N list of eligible complications, and modestly alters the definition of several others. Table 1C and 1D of Silber et al. Med Care 2007 display the impact of restricting the denominator of FTR to more limited sets of complications, as in the FTR-N and FTR-A definitions, respectively. Note first that the number of patients defined as having a complication fell from 189,031 (46.8%) in Table 1A to 43,500 (10.8%) in Table 1C and 39,101 (9.7%) in Table 1D. However, this smaller complication rate comes at an important cost—of all deaths, the proportion coded as having a complication (the precedence rate) fell from 95% in Table 1A to only 51% in Table 1C, and 58.5% in Table 1D. (Refer to Silber et al. Med Care 2007)

In summary, FTR-A (0351) is a less valid measure and more susceptible to gaming than our measure (0353). (Refer to Silber et al. Med Care 2007 and Silber JAMA Surg 2014)

Related Measures: 0200 Death among surgical inpatients with treatable serious complications (failure-to-rescue)

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: FTR_InHospital_August_2015.pdf**

Contact Information

Co.1 Measure Steward (Intellectual Property Owner): The Children's Hospital of Philadelphia

Co.2 Point of Contact: Jeffrey H., Silber, silber@email.chop.edu, 215-590-2540-

Co.3 Measure Developer if different from Measure Steward: The Children's Hospital of Philadelphia

Co.4 Point of Contact: Orit, Even-Shoshan, shoshan@email.chop.edu, 215-590-2809-

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.

A group of clinicians and coding experts from the University of Pennsylvania reviewed the updated ICD, CPT, and DRG codes and updated the measure to reflect current coding.

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 Year the measure was first released: 2010

Ad.3 Month and Year of most recent revision: 07, 2014

Ad.4 What is your frequency for review/update of this measure? The measure is updated when the ICD and DRG codes change.

Ad.5 When is the next scheduled review/update for this measure? 07, 2015

Ad.6 Copyright statement:

Ad.7 Disclaimers:

Ad.8 Additional Information/Comments: We have updated the Appendix to include proposed ICD-10 codes. These will still require testing once data are available, but we have reviewed them for clinical comparability with the ICD-9 codes.