



## 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 #:** 0478

**Corresponding Measures:**

**De.2. Measure Title:** Neonatal Blood Stream Infection Rate (NQI 03)

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

**De.3. Brief Description of Measure:** Discharges with healthcare-associated bloodstream infection per 1,000 discharges for newborns and outborns with birth weight of 500 grams or more but less than 1,500 grams; with gestational age between 24 and 30 weeks; or with birth weight of 1,500 grams or more and death, an operating room procedure, mechanical ventilation, or transferring from another hospital within two days of birth. Excludes discharges with a length of stay less than 3 days and discharges with a principal diagnosis of sepsis, or bacteremia, or newborn bacteremia.

**1b.1. Developer Rationale:** Low birth weight, or premature, and critically ill infants are at increased risk for sepsis or blood stream infections due to immature immune systems, immature skin barriers, and invasive devices such as central venous access or arterial access, ventilation or feeding tubes. Septicemia is one of the most common neonatal infection in neonatal intensive care units. Processes such as hand washing, evidence based vascular access procedures and central line care, and appropriate administration of prophylactic antibiotics can lower rates of neonatal blood stream infection.

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

- any secondary ICD-10-CM diagnosis codes for newborn sepsis (BSI5DX\*), or
- any secondary ICD-10-CM diagnosis codes for newborn septicemia or bacteremia codes requiring a separate organism code (BSI2DX\*) and any secondary ICD-10-CM diagnosis codes for staphylococcal or Gram-negative bacterial infection (BSI3DX\*)

**S.6. Denominator Statement:** All newborns and outborns (Appendix I) with either:

- a birth weight of 500 to 1,499 grams (Birth Weight Categories 2, 3, 4 and 5) (Appendix L)
- any-listed ICD-10-CM diagnosis codes for gestational age between 24 and 30 weeks; (GESTCAT\*)
- a birth weight greater than or equal to 1,500 grams (Birth Weight Category 6, 7, or 8) and death (DISP=20)
- a birth weight greater than or equal to 1,500 grams (Birth Weight Category 6, 7, or 8) and any-listed ICD-10-PCS procedure codes for operating room procedure (Appendix A)
- a birth weight greater than or equal to 1,500 grams (Birth Weight Category 6, 7, or 8) and any-listed ICD-10-PCS procedure codes for mechanical ventilation (MECHVCD\*)
- a birth weight greater than or equal to 1,500 grams (Birth Weight Category 6, 7, or 8) and transferring from another health care facility within two days of birth (ATYPE = 4 and POINTOFORIGINUB04 = 6)

**S.8. Denominator Exclusions:** Exclude cases:

- with a principal ICD-10-CM diagnosis code (or secondary diagnosis present on admission) for sepsis or bacteremia (BSI4DX\*), among patients otherwise qualifying for numerator.
- with a principal ICD-10-CM diagnosis code (or secondary diagnosis present on admission) for staphylococcal or Gram-negative bacterial infection (BSI3DX\*), among patients otherwise qualifying for numerator.
- with birth weight less than 500 grams (Birth Weight Category 1) (Appendix L)
- with length of stay less than 3 days
- 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: Oct 24, 2008 Most Recent Endorsement Date: Oct 25, 2016

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**

0478\_Evidence\_MSF5.0\_Data-635787040715945660-637267085613303726.doc

**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.

Low birth weight, or premature, and critically ill infants are at increased risk for sepsis or blood stream infections due to immature immune systems, immature skin barriers, and invasive devices such as central venous access or arterial access, ventilation or feeding tubes. Sepsis is one of the most common neonatal infection in neonatal intensive care units. Processes such as hand washing, evidence based vascular access procedures and central line care, and appropriate administration of prophylactic antibiotics can lower rates of neonatal blood stream infection.

**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.

This table is also included in the supplemental files.

Table 1. Reference Population Rate and Distribution of Hospital Performance for NQI 03 Neonatal Blood Stream Infection Rate

Overall Reference Population Rate

Year3    Number of Hospitals    Outcome of Interest

(Numerator)1    Population at Risk

(Denominator)1    Observed Rate

Per 10001

2011    1,285    1,746    72,697    24.018

2012    1,344    1,695    74,032    22.896

2013    1,277    1,331    68,647    19.389

Distribution of Hospital-level Observed Rates in Reference Population Per 1000

Year3    Number of

Hospitals    (p=percentile)2

Mean    SD    p5    p25    Median    p75    p95

2011	1,285	11.53	22.62	0.00	0.00	0.00	16.81	56.14
2012	1,344	11.62	26.61	0.00	0.00	0.00	14.04	58.82
2013	1,277	9.15	19.05	0.00	0.00	0.00	11.83	49.28

Source: HCUP State Inpatient Databases (SID). Healthcare Cost and Utilization Project (HCUP). 2011-2013. Agency for Healthcare Research and Quality, Rockville, MD. [www.hcup-us.ahrq.gov/sidoverview.jsp](http://www.hcup-us.ahrq.gov/sidoverview.jsp). (AHRQ QI Software Version 6.1 alpha)

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

3 Reference population is limited to states with present on admission data (POA). Since many states did not report POA data prior to 2011 we have not included testing prior to 2011.

**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.**

n/a

**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.**

This table is also included in the supplemental files.

Table 2. Neonatal Blood Stream Infection Rate per 1,000 (NQI 03), by patient and hospital characteristics, 2013

Patient/hospital characteristic	Estimate	Std Error	p-value	(Ref Grp = *)	Lower	95% CL	Upper
95% CL							
Total U.S.	18.3284	0.505			17.339	19.318	
Patient Characteristics							
Gender:							
Male*	19.4373	0.702			18.060	20.814	
Female	17.132	0.727	0.011		15.708	18.556	
Patient Zip Code Median Income							
First quartile (lowest income)	18.514	1.782	0.378		15.021	22.008	
Second quartile	18.711	1.198	0.285		16.363	21.059	
Third quartile	18.839	1.018	0.230		16.844	20.835	
Fourth quartile (highest income)*	17.917	0.719			16.509	19.326	
Location of patient residence (NCHS):							
Rural	17.774	5.044	0.456		7.888	27.659	
Urban*	18.339	0.508			17.343	19.335	
Expected payment source:							
Private insurance*	16.681	0.813			15.087	18.275	
Medicare1	7.898	12.131	0.235		0	31.675	
Medicaid	19.575	0.681	0.003		18.240	20.912	
Uninsured / self-pay / no charge	11.723	3.819	0.102		4.237	19.208	
Other insurance	20.231	2.365	0.078		15.595	24.867	
Location of Care:							
Northeast*	17.577	1.335			14.963	20.193	
Midwest	18.138	1.060	0.371		16.062	20.215	
South	18.143	0.787	0.357		16.602	19.685	
West	19.405	1.089	0.144		17.270	21.540	

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2013, and AHRQ Quality Indicators, version 6.1 alpha.

Rates are adjusted by gender using the AHRQ QI PDI POA Reference Population for 2013 as the standard population

NCHS - National Center for Health Statistics designation for urban-rural locations.  
1These births represent approximately 13,000 births covered by disabled Medicare beneficiaries.

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

n/a

## 2. Reliability and Validity—Scientific Acceptability of Measure Properties

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

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

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

Perinatal Health

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

Safety : Healthcare Associated Infections

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

Children

**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/pdi\\_resources.aspx](http://www.qualityindicators.ahrq.gov/Modules/pdi_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)

This is not an eMeasure Attachment:

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

Attachment Attachment:

**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.

No, this is not an instrument-based measure 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.

Not an instrument-based measure

**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 codes for newborn sepsis (BSI5DX\*), or
- any secondary ICD-10-CM diagnosis codes for newborn septicemia or bacteremia codes requiring a separate organism code (BSI2DX\*) and any secondary ICD-10-CM diagnosis codes for staphylococcal or Gram-negative bacterial infection (BSI3DX\*)

**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).*

BSI2DX: Newborn septicemia or bacteremia diagnosis codes

P368 Other bacterial sepsis of newborn

R7881 Bacteremia

BSI3DX: Staphylococcal or Gram-negative bacterial infection diagnosis codes

B961 *Klebsiella pneumoniae* [K. pneumoniae] as the cause of diseases classified elsewhere

B9620 Unspecified *Escherichia coli* [E. coli] as the cause of diseases classified elsewhere

B9621 Shiga toxin-producing *Escherichia coli* [E. coli] (STEC) O157 as the cause of diseases classified elsewhere

B9622 Other specified Shiga toxin-producing *Escherichia coli* [E. coli] (STEC) as the cause of diseases classified elsewhere

B9623 Unspecified Shiga toxin-producing *Escherichia coli* [E. coli] (STEC) as the cause of diseases classified elsewhere

B9629 Other *Escherichia coli* [E. coli] as the cause of diseases classified elsewhere

B965 *Pseudomonas (aeruginosa) (mallei) (pseudomallei)* as the cause of diseases classified elsewhere

B9689 Other specified bacterial agents as the cause of diseases classified elsewhere

BSI5DX: Newborn sepsis diagnosis code

P3619 Sepsis of newborn due to other streptococci

P362 Sepsis of newborn due to *Staphylococcus aureus*

P3630 Sepsis of newborn due to unspecified staphylococci

P3639 Sepsis of newborn due to other staphylococci

P364 Sepsis of newborn due to *Escherichia coli*

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

All newborns and outborns (Appendix I) with either:

- a birth weight of 500 to 1,499 grams (Birth Weight Categories 2, 3, 4 and 5) (Appendix L)
- any-listed ICD-10-CM diagnosis codes for gestational age between 24 and 30 weeks; (GESTCAT\*)
- a birth weight greater than or equal to 1,500 grams (Birth Weight Category 6, 7, or 8) and death (DISP=20)
- a birth weight greater than or equal to 1,500 grams (Birth Weight Category 6, 7, or 8) and any-listed ICD-10-PCS procedure codes for operating room procedure (Appendix A)
- a birth weight greater than or equal to 1,500 grams (Birth Weight Category 6, 7, or 8) and any-listed ICD-10-PCS procedure codes for mechanical ventilation (MECHVCD\*)
- a birth weight greater than or equal to 1,500 grams (Birth Weight Category 6, 7, or 8) and transferring from another health care facility within two days of birth (ATYPE = 4 and POINTOFORIGINUB04 = 6)

**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).

Surgical and medical discharges are defined by specific MS-DRG codes. (See Appendix C – Surgical MS-DRGs and Appendix E – Medical MS-DRGs for detailed list of codes.)

GESTCAT: Gestational diagnosis codes for age between 24 and 30 weeks

MECHVCD: Mechanical ventilation procedure codes

Appendix A: Operating Room Procedure Codes

Appendix I: Definitions of Neonate, Newborn, Normal Newborn, and Outborn

Appendix L: Low Birth Weight Categories

(See attached technical specifications, Appendix A, Appendix I, and Appendix L for detailed list of codes.)

**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 sepsis or bacteremia (BSI4DX\*), among patients otherwise qualifying for numerator.
- with a principal ICD-10-CM diagnosis code (or secondary diagnosis present on admission†) for staphylococcal or Gram-negative bacterial infection (BSI3DX\*), among patients otherwise qualifying for numerator.
- with birth weight less than 500 grams (Birth Weight Category 1) (Appendix L)
- with length of stay less than 3 days
- 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.)

BSI4DX: Sepsis or bacteremia diagnosis codes

BSI3DX: Staphylococcal or Gram-negative bacterial infection diagnosis codes

Appendix L: Low Birth Weight Categories

**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.)

Risk adjustment is not currently included in the ICD-10-CM/PCS v7.0 of the AHRQ QI specifications, due to the transition to ICD-10-CM/PCS (October 1, 2015). At least one full year of data coded in ICD-10-CM/PCS is needed in order to develop robust risk



adjustment models. A full year of ICD-10-CM/PCS coded all-payer data will not be available until mid-2019. AHRQ will announce an anticipated date as soon as one is known.

The AHRQ QI v7.0 software (SAS and WinQI) for use with ICD-10-CM/PCS produces observed rates, which may be used to evaluate performance within hospitals. However, caution should be used when comparing observed rates across hospitals because observed rates do not account for differences in patient populations (i.e., case mix).

**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- or ICD-10-CM/PCS coded administrative billing/claims/discharge dataset.

**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)

Inpatient/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

NQI03\_Measure\_Testing\_Form\_160212-637267085615335132.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.

Because the indicator is based on readily available administrative billing and claims data and U.S. Census data, feasibility is not an issue.

The AHRQ QI software has been publicly available at no cost since 2001; Users have over ten years of experience using the AHRQ QI software in SAS and Windows.



**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. Software is freely available from the AHRQ Quality Indicators website (<http://www.qualityindicators.ahrq.gov/>).

## 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)
Quality Improvement (Internal to the specific organization)	Public Reporting Wisconsin Hospital Association (WHA) Information Center, Wisconsin Inpatient Hospital Quality Indicators Report <a href="http://www.whainfocenter.com/uploads/PDFs/Publications/QualityIndicators/2012_WI_IQIRReport.pdf">http://www.whainfocenter.com/uploads/PDFs/Publications/QualityIndicators/2012_WI_IQIRReport.pdf</a>

#### 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

##### Public Reporting:

Wisconsin Hospital Association (WHA) Information Center

Wisconsin Hospital Association (WHA) Quality Indicators Report

[http://www.whainfocenter.com/uploads/PDFs/Publications/QualityIndicators/2012\\_WI\\_IQIRReport.pdf](http://www.whainfocenter.com/uploads/PDFs/Publications/QualityIndicators/2012_WI_IQIRReport.pdf)

##### Quality Improvement:

##### Norton Healthcare

Large healthcare provider in Kentucky and Southern Indiana that includes 5 hospitals and 12 immediate care centers.

<http://www.rivercityortho.com/ChildrenInfectionControl>

<https://nortonhealthcare.com/Pages/Home.aspx>

**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?)**

n/a

**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.)**

n/a

**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](mailto: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 4d2.1.](#)

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

[See the response to 4d2.1.](#)

**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.**

[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.**

No evidence has been identified suggesting unintended consequences for this measure.

**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)

1731 : PC-04 Health Care-Associated Bloodstream Infections in Newborns

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

### 5a. Harmonization of Related Measures

The measure specifications are harmonized with related measures;

**OR**

The differences in specifications are justified

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

Are the measure specifications harmonized to the extent possible?

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

### 5b. Competing Measures

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

**OR**

Multiple measures are justified.

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

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

Our understanding is that The Joint Commission (TJC) intends to submit "Health Care-Associated Bloodstream Infections in Newborns (PC-04)" under the call for measures. In anticipation of this, AHRQ and TJC have agreed to harmonize our measures to the extent feasible given alternative data sources. (The AHRQ QI is an existing NQF endorsed measure; the TJC measure is a newly submitted measure).

There are three specification differences related to data availability in the TJC measure specification. First, hospitals report to TJC the actual birth weight from the medical record (rather than coded birth weight using ICD-9-CM); Second, hospitals report whether the patient has a signed consent form for participation in a clinical trial. Therefore, the TJC specification does not include an

inclusion criteria related to gestational age as in the AHRQ QI (rather, actual birthweight is used as an alternative to coded birth weight). The TJC also includes an exclusion for enrollment in a clinical trial. The AHRQ QI contains no such exclusion. Finally, TJC excludes stays of more than 120 days for technical reasons related to the measure reporting period. This rationale does not apply to the AHRQ QI, and therefore the AHRQ QI has no such exclusion.

## 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:** [NQI03\\_Supplemental\\_Files\\_160216-637267085617522473.pdf](#)

## Contact Information

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

**Co.2 Point of Contact:** [Mia, DeSoto, Maushami.Desoto@ahrq.hhs.gov](#)

**Co.3 Measure Developer if different from Measure Steward:**

**Co.4 Point of Contact:**

## 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.**

[Members of this workgroup have provided feedback on key indicator development decisions and methodology, including a review of validity and usefulness of Neonatal Blood Stream Infection Rate \(NQI 03\).](#)

[J. Christopher Glantz, MD, MPH, OB/GYN, Maternal-Fetal Medicine](#)

[Rochester, New York](#)

[Strong Memorial Hospital \(University of Rochester Medical Center\)](#)

[Nominated by the American Academy of Pediatrics](#)

[William G. Keyes, MD, PhD, Pediatrics, Pediatric Critical Care Medicine, Neonatal-Perinatal Medicine](#)

[Atlanta, Georgia](#)

[Children's Healthcare of Atlanta, Northside Hospital](#)

[Nominated by the National Association of Children's Hospitals and Related Institutions](#)

[Teresa W Marchese, CNM, PhD, Nurse-Midwife](#)

[Washington, DC](#)

[Unity Health Care, Inc](#)

[Georgetown University School of Nursing and Health Studies](#)

[Nominated by the American College of Nurse-Midwives](#)

[Richard A. Molteni, MD, FAAP, Neonatal Medicine, Pediatrics](#)

[Seattle, Washington](#)

[Children's Hospital and Regional Medical Center, Seattle](#)

[Nominated by the Child Health Corporation of America](#)

[Paul Ogburn, Jr, MD, OB/GYN, Maternal-Fetal Medicine](#)

[East Setauket, New York](#)

[SUNY University Hospital Stony Brook](#)

[Nominated by the American Academy of Pediatrics](#)

[Sumana Reddy, MD, FAAP, Family Medicine, Obstetrics](#)

<p>Salinas, CA Salinas Valley Memorial and Natividad Medical Centers Nominated by the California Academy of Family Physicians</p> <p>William F. Walsh, MD, Pediatrics, Neonatology Nashville, Tennessee Vanderbilt Children's Hospital Nominated by the National Association of Children's Hospitals and Related Institutions</p> <p>Lorna Cisler-Cahill, MS, RN, Neonatal Clinical Nurse Specialist Milwaukee, Wisconsin Children's Hospital of Wisconsin Nominated by the Child Health Corporation of America</p>
<p><b>Measure Developer/Steward Updates and Ongoing Maintenance</b> <b>Ad.2 Year the measure was first released:</b> 2008 <b>Ad.3 Month and Year of most recent revision:</b> 01, 2015 <b>Ad.4 What is your frequency for review/update of this measure?</b> Annual <b>Ad.5 When is the next scheduled review/update for this measure?</b> 01, 2016</p>
<p><b>Ad.6 Copyright statement:</b> The AHRQ QI software is publicly available. We have no copyright disclaimers. <b>Ad.7 Disclaimers:</b> None</p>
<p><b>Ad.8 Additional Information/Comments:</b> None</p>