



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 subcriterion 1b).

| Brief Measure Information |
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| <p>NQF #: 1460</p> <p>De.2. Measure Title: Bloodstream Infection in Hemodialysis Outpatients</p> <p>Co.1.1. Measure Steward: Centers for Disease Control and Prevention</p> <p>De.3. Brief Description of Measure: The Standardized Infection Ratio (SIR) of Bloodstream Infections (BSI) will be calculated among patients receiving hemodialysis at outpatient hemodialysis centers.</p> <p>1b.1. Developer Rationale: Use of this measure has been demonstrated to help identify outbreaks of bloodstream infections and to stimulate improvements in vascular access care and other infection control practices that have led to subsequent reductions in bloodstream infections. NHSN has an analytic function that allows facilities to view and analyze their own data in NHSN and produce data reports without the need for separate software packages. These features of NHSN are currently being used by multiple facilities and in several quality improvement initiatives to promote feedback of rate information to clinical staff. Such feedback has been shown to positively influence practices and infection rates. Specific improvements in quality that have been observed and are envisioned include enhanced practice in the following areas: 1. Use of proper aseptic technique during catheter care; 2. Use of optimal skin antiseptic solutions at catheter exit site and for hub cleansing--i.e., skin antiseptic agents that have been recommended in evidence-based guidelines from the Centers for Disease Control and Prevention (CDC) and Healthcare Infection Control Practices Advisory Committee (HICPAC) as well as the Kidney Disease Outcomes Quality Initiative (KDOQI) Vascular Access Guidelines; 3. Implementation of other CDC/HICPAC and KDOQI-recommended evidence-based practices such as use of antimicrobial ointment at hemodialysis catheter exit sites; 4. Increased hand hygiene adherence and proper glove use, particularly prior to vascular access care and other invasive procedures; 5. Staff education and training on infection prevention.</p> |
| <p>S.4. Numerator Statement: The number of new positive blood culture events based on blood cultures drawn as an outpatient or within 1 calendar day after a hospital admission. A positive blood culture is considered a new event and counted only if it occurred 21 days or more after a previous positive blood culture in the same patient.</p> <p>S.7. Denominator Statement: Number of maintenance hemodialysis patients treated in the outpatient hemodialysis center on the first 2 working days of the month.</p> <p>S.10. Denominator Exclusions: Patients receiving inpatient hemodialysis and home hemodialysis are excluded</p> |
| <p>De.1. Measure Type: Outcome</p> <p>S.23. Data Source: Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Imaging/Diagnostic Study, Electronic Clinical Data : Laboratory, Electronic Clinical Data : Pharmacy, Paper Medical Records</p> <p>S.26. Level of Analysis: Facility, Population : National, Population : Regional, Population : State</p> |
| <p>IF Endorsement Maintenance – Original Endorsement Date: Aug 16, 2011 Most Recent Endorsement Date: Oct 02, 2015</p> |
| <p>IF this measure is included in a composite, NQF Composite#/title:</p> <p>IF this measure is paired/grouped, NQF#/title:</p> <p>De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results? N/A</p> |

| 1. Evidence, Performance Gap, Priority – Importance to Measure and Report |
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| 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 subcriteria to pass this criterion and be evaluated against the remaining criteria.**

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

[1460_Evidence_MSF5.0_Data-635278480644048484.doc](#)

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., the benefits or improvements in quality envisioned by use of this measure)

Use of this measure has been demonstrated to help identify outbreaks of bloodstream infections and to stimulate improvements in vascular access care and other infection control practices that have led to subsequent reductions in bloodstream infections. NHSN has an analytic function that allows facilities to view and analyze their own data in NHSN and produce data reports without the need for separate software packages. These features of NHSN are currently being used by multiple facilities and in several quality improvement initiatives to promote feedback of rate information to clinical staff. Such feedback has been shown to positively influence practices and infection rates. Specific improvements in quality that have been observed and are envisioned include enhanced practice in the following areas: 1. Use of proper aseptic technique during catheter care; 2. Use of optimal skin antiseptic solutions at catheter exit site and for hub cleansing--i.e., skin antiseptic agents that have been recommended in evidence-based guidelines from the Centers for Disease Control and Prevention (CDC) and Healthcare Infection Control Practices Advisory Committee (HICPAC) as well as the Kidney Disease Outcomes Quality Initiative (KDOQI) Vascular Access Guidelines; 3. Implementation of other CDC/HICPAC and KDOQI-recommended evidence-based practices such as use of antimicrobial ointment at hemodialysis catheter exit sites; 4. Increased hand hygiene adherence and proper glove use, particularly prior to vascular access care and other invasive procedures; 5. Staff education and training on infection prevention.

1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis. (This is required for endorsement maintenance. 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 included). This information also will be used to address the subcriterion on improvement (4b.1) under Usability and Use.

A. Substantial variability in rates of bloodstream infection (BSI) have been reported among facilities conducting BSI surveillance and among intervention trials that have described pre-intervention baseline rates of BSI. The pooled mean BSI rate for central venous catheter (CVC) patients among facilities reporting to NHSN in 2006 was 4.2 per 100 patient-months. Facilities in the 10th percentile had a rate of 0 per 100 patient-months, whereas the 90th percentile for this stratified measure was 9.4 per 100 patient-months. In another study, facilities all using a uniform method of measuring and reporting BSIs had facility-specific BSI rates that ranged from 0 to 30.8 BSIs per 100 patient-years.

B. Hospitalizations for bacteremia /septicemia among hemodialysis patients increased by 34% between 1993 and 2006. This is in marked contrast to the rate of central line associated BSIs in intensive care unit (ICU) patients during the past decade, which has declined.

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.

A1. Klevens RM, Edwards JR, Andrus ML, Peterson KD, Dudeck MC, Horan TC. Dialysis surveillance report: National Healthcare Safety Network--data summary for 2006. *Semin Dial.* 2008;21:24-28.

A2. Dopirak M, Hill C, Oleksiw M, et al. Surveillance of hemodialysis-associated primary bloodstream infections: the experience of ten hospital-based centers. *Infect Control Hosp Epidemiol.* 2002;23:721-724.

B1. USRDS 2008 Annual Data Report (<http://www.usrds.org/adr.htm>)

B2. Burton DC, Edwards JR, Horan TC, Fridkin SK.

Trends in Central Line-associated Bloodstream Infections in Intensive Care Units-United States, 1997-2007. Abstract presented at SHEA 2009 Annual Conference. (http://www.cdc.gov/ncidod/dhqp/SHEA_Abstract2.html)

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 endorsement maintenance. 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 subcriterion on improvement (4b.1) under Usability and Use.

Older adults and blacks might be disproportionately impacted by BSIs. BSIs occur most commonly among hemodialysis patients with central venous catheters. The burden of BSI-associated morbidity and mortality is expected to be higher in these groups. CDC surveillance data demonstrate that during July 2004--June 2006, approximately 70% of invasive methicillin-resistant *Staphylococcus aureus* (MRSA) infections among dialysis patients occurred in persons aged >50 years. Males and blacks accounted for 57% and 56%, respectively, of the total population of dialysis patients with these infections. The majority (86%) of the infections were bloodstream infections, identified via positive blood culture. Approximately 85% of dialysis patients had an invasive device or catheter in place at the time of infection, and approximately 90% required hospitalization. The in-hospital mortality rate for MRSA-related hospitalization was 17%.

1b.5. If no or limited data on disparities from the measure as specified is reported in 1b4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations.

CDC. Invasive methicillin-resistant *Staphylococcus aureus* infections among dialysis patients--United States, 2005. MMWR Morbid Mortal Wkly Rep. 2007;56:197-199.

1c. High Priority (previously referred to as High Impact)

The measure addresses:

- a specific national health goal/priority identified by DHHS or the National Priorities Partnership convened by NQF; OR
- a demonstrated high-priority (high-impact) aspect of healthcare (e.g., affects large numbers of patients and/or has a substantial impact for a smaller population; leading cause of morbidity/mortality; high resource use (current and/or future); severity of illness; and severity of patient/societal consequences of poor quality).

1c.1. Demonstrated high priority aspect of healthcare

Affects large numbers, Frequently performed procedure, A leading cause of morbidity/mortality, High resource use, Severity of illness, Patient/societal consequences of poor quality

1c.2. If Other:

1c.3. Provide epidemiologic or resource use data that demonstrates the measure addresses a high priority aspect of healthcare.

List citations in 1c.4.

In 2007, more than 340,000 patients received maintenance hemodialysis in the United States. The number of patients requiring maintenance dialysis for end stage renal disease (ESRD) continues to increase at a dramatic rate. The number of patients who will require maintenance dialysis in 2020 is projected to be 530,000. Patients who require maintenance hemodialysis are at high-risk for acquiring infections, because of their immunocompromised state, requirement for frequent and prolonged vascular access, and frequent exposure to healthcare environments, where healthcare-associated infections (HAIs) can occur. These patients typically receive hemodialysis treatments for 3-4 hours, 3 times weekly. During this time, their bloodstream is accessed for the hemodialysis procedure and they tend to be treated in close proximity with other patients, creating opportunities for infection transmission. Infections are the second leading cause of death in this patient population and infections related to the vascular access (including bloodstream infections) are the most common type of infection experienced. A minimum of 50,000 bloodstream infections occur annually in this population. Bloodstream infections in these patients cause significant morbidity, mortality, and healthcare costs. Several studies of hemodialysis patients who were hospitalized for *Staphylococcus aureus* bloodstream infections identified that patients required hospitalization for 9-13 days at an average cost of about \$24,000 per episode. Severe complications such as endocarditis and osteomyelitis occurred in 21-31% of these patients; hospital readmissions were also common and 12-week mortality following the bloodstream infection episode approached 20%.

1c.4. Citations for data demonstrating high priority provided in 1a.3

1. US Renal Data System. USRDS 2009 Annual Data report: Atlas of end-stage renal disease in the United States. NIH, National Institute of Diabetes and Digestive and Kidney Diseases. Bethesda, MD (2009).
2. Patel PR, Kallen AJ, Arduino MJ. Epidemiology, surveillance, and prevention of bloodstream infections in hemodialysis patients. Am J Kidney Dis. 2010 Sep;56(3):566-77. Epub 2010 Jun 15.
3. Tokars JI. Bloodstream infections in hemodialysis patients: getting some deserved attention. Infect Control Hosp Epidemiol. 2002 Dec;23(12):713-5.
4. Engemann JJ, Friedman JY, Reed SD, et al. Clinical outcomes and costs due to *Staphylococcus aureus* bacteremia among patients receiving long-term hemodialysis. Infect Control Hosp Epidemiol. 2005 Jun;26(6):534-9.
5. Nissenson AR, Dylan ML, Griffiths RI, et al. Clinical and economic outcomes of *Staphylococcus aureus* septicemia in ESRD patients receiving hemodialysis. Am J Kidney Dis. 2005;46:301-308.

6. Li Y, Friedman JY, O'Neal BF, et al. Outcomes of Staphylococcus aureus infection in hemodialysis-dependent patients. Clin J Am Soc Nephrol. 2009;4:428-434.

1c.5. If a PRO-PM (e.g. HRQoL/functional status, symptom/burden, experience with care, health-related behaviors), provide evidence that the target population values the measured PRO and finds it meaningful. (Describe how and from whom their input was obtained.)

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 subcriteria 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):

Renal : End Stage Renal Disease (ESRD)

De.6. Cross Cutting Areas (check all the areas that apply):

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.cdc.gov/nhsn/psc_da_de.html

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:

S.3. For endorsement maintenance, please briefly describe any changes to the measure specifications since last endorsement date and explain the reasons.

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)

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

The number of new positive blood culture events based on blood cultures drawn as an outpatient or within 1 calendar day after a hospital admission. A positive blood culture is considered a new event and counted only if it occurred 21 days or more after a previous positive blood culture in the same patient.

S.5. Time Period for Data (What is the time period in which data will be aggregated for the measure, e.g., 12 mo, 3 years, look back to August for flu vaccination? Note if there are different time periods for the numerator and denominator.)

Cases are included if the positive blood culture occurs during a month during which a dialysis clinic was performing surveillance. With low numbers of expected infections, it will be necessary to have a data sample of sufficient size to generate meaningful SIRs, thus the time window for data aggregation will be 12 months (one year).

S.6. 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, 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.

Information required: Number of positive blood culture events and event date

Definition: A positive blood culture is a blood culture that results in growth of 1 or more organisms. A new positive blood culture (not less than 21 days after a previous positive blood culture in the same patient) in a hemodialysis patient identified from blood cultures taken as an outpatient or within 1 calendar day after a hospital admission.

Data specifications: Events are counted if the following field: "patient with a positive blood culture" (on Form 57.502 under Event Details) is checked as being present.

Additional data collection items/responses:

Vascular access types are defined as follows--

Nontunneled central line: a central venous catheter that travels directly from the skin entry site to a vein and terminates close to the heart or one of the great vessels, typically intended for short term use

Tunneled central line: a central venous catheter that travels a distance under the skin from the point of insertion before terminating at or close to the heart or one of the great vessels

Graft: a surgically created connection between an artery and a vein using implanted material (typically synthetic) to provide vascular access for hemodialysis

Fistula: a surgically created direct connection between an artery and a vein to provide vascular access for hemodialysis

Other vascular access device: includes hybrid access devices (e.g., HeRO vascular access device), ports, and any other central vascular access devices that do not meet the above definitions

S.7. Denominator Statement (Brief, narrative description of the target population being measured)

Number of maintenance hemodialysis patients treated in the outpatient hemodialysis center on the first 2 working days of the month.

S.8. Target Population Category (Check all the populations for which the measure is specified and tested if any):

Senior Care

S.9. Denominator Details (All information required to identify and calculate the target population/denominator such as definitions, 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)

Target population is all maintenance hemodialysis patients treated on the first 2 working days of a particular month in an outpatient hemodialysis center.

Data specification: The numeric value entered into the field labeled "Total patients" (on Form 57.503) is used as the denominator.

S.10. Denominator Exclusions (Brief narrative description of exclusions from the target population)

Patients receiving inpatient hemodialysis and home hemodialysis are excluded

S.11. Denominator Exclusion Details (All information required to identify and calculate exclusions from the denominator such as definitions, 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)

The inpatient hemodialysis exclusion is only relevant for facilities that provide both outpatient (maintenance) and inpatient (acute or maintenance) hemodialysis. Patients who receive inpatient hemodialysis in the same facility are excluded. The home dialysis exclusion applies to all patients who are on home dialysis, including but not limited to home dialysis patients who are monitored by a dialysis facility.

S.12. Stratification Details/Variables (All information required to stratify the measure results including the stratification variables, definitions, 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 with at S.2b)

Both the numerator and denominator are stratified by patient vascular access type, where permanent central lines are defined as tunneled central lines (or tunneled central venous catheters) and temporary central lines are defined as nontunneled central lines (or nontunneled central venous catheters).

Details of stratified measures:

1. BSI rate in CVC (central venous catheter) patients = the numerator and denominator below times 100
 - 1a. NUMERATOR. Events are included in the numerator if the "patient with positive blood culture" field on Form 57.502 is checked AND any of the following fields on Form 57.502 under 'Vascular accesses' are checked as being present: "Permanent central line", "Temporary central line".
 - 1b. DENOMINATOR. The denominator equals the sum of the numeric values entered for the following fields on Form 57.503: "Permanent central line", "Temporary central line".
2. BSI rate in AVG (arteriovenous graft) patients = the numerator and denominator below times 100
 - 2a. NUMERATOR. Events are included in the numerator if the "patient with positive blood culture" field on Form 57.502 is checked AND if the field labeled "Graft" on Form 57.502 under 'Vascular accesses' is checked as being present AND none of the following fields on the same form are checked as being present: "Permanent central line", "Temporary central line".
 - 2b. DENOMINATOR. The denominator equals the numeric value entered for the field labeled, "Graft" on Form 57.503.
3. BSI rate in AVF (arteriovenous fistula) patients = the numerator and denominator below times 100
 - 3a. NUMERATOR. Events are included in the numerator if the "patient with positive blood culture" field on Form 57.502 is checked AND if the field labeled "Fistula" on Form 57.502 under 'Vascular accesses' is checked as being present AND none of the following fields on the same form are checked as being present: "Graft", "Permanent central line", "Temporary central line".
 - 3b. DENOMINATOR. The denominator equals the numeric value entered for the field labeled, "Fistula" on Form 57.503.
4. BSI rate in other access type patients = the numerator and denominator below times 100
 - 4a. NUMERATOR. Events are included in the numerator if the "patient with positive blood culture" field on Form 57.502 is checked AND if the field labeled "Other vascular access device" under 'Vascular accesses' is checked as being present AND none of the following fields on the same form are checked as being present: "Permanent central line", "Temporary central line".
 - 4b. DENOMINATOR. The denominator equals the numeric value entered for the following field on Form 57.503: "Other vascular access device".

S.13. Risk Adjustment Type (Select type. Provide specifications for risk stratification in S.12 and for statistical model in S.14-15)
Statistical risk model

If other:

S.14. Identify the statistical risk model method and variables (Name the statistical method - e.g., logistic regression and list all the risk factor variables. Note - risk model development and testing should be addressed with measure testing under Scientific Acceptability)

Both the numerator and denominator are stratified by vascular access type since vascular access type is the single greatest risk factor for bloodstream infection in this population. The vascular access variables that are collected and included in this analysis are: arteriovenous (AV) fistula, AV graft, other access device, tunneled central line, and nontunneled central line. If more than one access type is present in a patient, the bloodstream infection event is attributed to the access type with the greatest risk (i.e., AV fistula < AV graft < other access device < tunneled central line < nontunneled central line). During denominator collection (see URL below), the user is asked to count each patient as having only 1 vascular access type, following the algorithm described. During numerator collection, all vascular access types present at the time of the bloodstream infection event are reported and the algorithm is applied during analysis of the data.

Standardized Infection Ratio (SIR):

The SIR is constructed using an indirect standardization method for summarizing infection experience across a number of stratified groups of data. BSI rates will be stratified by vascular access type, which forms the basis of the population standardization. A standard population will be used to calculate SIR. One standard population that can be used is the national pool of dialysis patient events reported to NHSN in a single year chosen as baseline year. For example, all dialysis patients and their BSIs reported to NHSN in 2014 can be used as standard population to calculate SIR for 2015.

URL for SIR calculation: http://www.cdc.gov/nhsn/PDFs/Newsletters/NHSN_NL_OCT_2010SE_final.pdf

S.15. Detailed risk model specifications (must be in attached data dictionary/code list Excel or csv file. Also indicate if available at measure-specific URL identified in S.1.)

Note: Risk model details (including coefficients, equations, codes with descriptors, definitions), should be provided on a separate worksheet in the suggested format in the Excel or csv file with data dictionary/code lists at S.2b.

URL

S.15a. Detailed risk model specifications (if not provided in excel or csv file at S.2b)

S.16. Type of score:

Rate/proportion

If other:

S.17. 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.18. Calculation Algorithm/Measure Logic (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; aggregating data; risk adjustment; etc.)

The Standardized Infection Ratio (SIR) is calculated as follows:

1. Identify the number of BSI in each vascular access stratum
2. Total these numbers for an observed number of BSIs
3. Obtain the predicted number of BSIs in the same strata by multiplying the observed patient-months by the corresponding BSI rates in specific strata from a standard population
4. Sum the number of predicted BSIs from all strata in the annual period
5. Divide the total number of observed BSI events (#2 above) by the predicted number of BSIs (#4 above)
6. Result = SIR

S.19. Calculation Algorithm/Measure Logic Diagram URL or Attachment (You also may provide a diagram of the Calculation Algorithm/Measure Logic described above at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)

S.20. Sampling (If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)

IF a PRO-PM, identify whether (and how) proxy responses are allowed.

This measure is not based on a sample. It represents complete information from all facilities that are participating / reporting.

S.21. Survey/Patient-reported data (If measure is based on a survey, provide instructions for conducting the survey and guidance on minimum response rate.)

IF a PRO-PM, specify calculation of response rates to be reported with performance measure results.

S.22. Missing data (specify how missing data are handled, e.g., imputation, delete case.)

Required for Composites and PRO-PMs.

S.23. Data Source (Check ONLY the sources for which the measure is SPECIFIED AND TESTED).

If other, please describe in S.24.

Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Imaging/Diagnostic Study, Electronic Clinical Data : Laboratory, Electronic Clinical Data : Pharmacy, Paper Medical Records

S.24. Data Source or Collection Instrument (Identify the specific data source/data collection instrument e.g. name of database, clinical registry, collection instrument, etc.)

IF a PRO-PM, identify the specific PROM(s); and standard methods, modes, and languages of administration.

57.503 Denominators for Outpatient Dialysis form

57.502 Dialysis Event

S.25. Data Source or Collection Instrument (available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)

URL

S.26. Level of Analysis (Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)

Facility, Population : National, Population : Regional, Population : State

S.27. Care Setting (Check *ONLY* the settings for which the measure is SPECIFIED AND TESTED)

Dialysis Facility

If other:

S.28. 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.)

2a. Reliability – See attached Measure Testing Submission Form

2b. Validity – See attached Measure Testing Submission Form

[1460_MeasureTesting_MS5.0_Data-635278480644048484-635726605462454863-635742844505010294.doc](#)

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.

generated by and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition

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)

Yes

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.

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.

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. Describe what you have learned/modified 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 a PRO-PM, consider implications for both individuals providing PROM data (patients, service recipients, respondents) and those whose performance is being measured.

Positive blood cultures are a fairly objective measure and relatively simple to collect. Time and costs of data collection for this measure are minimal. Because these data are available electronically in most instances, CDC is working to create and validate BSI measures based upon existing electronic health record and/or laboratory data.

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).

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.

| Planned | Current Use (for current use provide URL) |
|---|--|
| Public Reporting | Public Health/Disease Surveillance http://www.cdc.gov/dialysis/ |
| Quality Improvement with Benchmarking (external benchmarking to multiple organizations) | CDC Dialysis Patient Safety |
| Quality Improvement (Internal to the specific organization) | Payment Program CMS ESRD Quality Incentive Program http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/ESRDQIP/ |

4a.1. For each CURRENT use, checked above, provide:

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

As of January 2015, approximately 6000 outpatient dialysis facilities are reporting to NHSN.

4a.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?)

4a.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.)

4b. 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.

4b.1. Progress on Improvement. (Not required for initial endorsement unless available.)

Performance results on this measure (current and over time) should be provided in 1b.2 and 1b.4. Discuss:

- Progress (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

4b.2. 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.

4c. 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).

4c.1. Were any unintended negative consequences to individuals or populations identified during testing; OR has evidence of unintended negative consequences to individuals or populations been reported since implementation? If so, identify the negative unintended consequences and describe how benefits outweigh them or actions taken to mitigate them.

Positive blood cultures are to some extent a function of blood culturing practices within hemodialysis units. This includes practices that could lead to increased contamination of cultures and whether or not antibiotics are given empirically to patients with suspected BSI without performing cultures. The suggested strategy to minimize these limitations is to assess several other measures in conjunction with BSI rate. These include rate of IV antibiotic starts and rate of vascular access-related BSI. These measures have also been submitted for consideration.

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)

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

5a. Harmonization

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 completely harmonized?

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.)

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:

Contact Information

Co.1 Measure Steward (Intellectual Property Owner): Centers for Disease Control and Prevention

Co.2 Point of Contact: Priti, Patel, pgp0@cdc.gov, 404-639-4273-

Co.3 Measure Developer if different from Measure Steward: Centers for Disease Control and Prevention

Co.4 Point of Contact: Priti, Patel, pgp0@cdc.gov, 404-639-4273-

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.

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 Year the measure was first released: 1999

Ad.3 Month and Year of most recent revision: 09, 2008

Ad.4 What is your frequency for review/update of this measure? Annually

Ad.5 When is the next scheduled review/update for this measure? 01, 2011

Ad.6 Copyright statement:

Ad.7 Disclaimers:

Ad.8 Additional Information/Comments: