NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 1478 **NQF Project:** End Stage Renal Disease
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** National Healthcare Safety Network (NHSN) Vascular Access-Related Bloodstream Infection Measure
De.2 **Brief description of measure**: Number of hemodialysis outpatients with positive blood cultures and in whom the suspected source was reported as either the vascular access or unknown, per 100 hemodialysis patient-months
1.1-2 **Type of Measure:** Outcome De.3 **If included in a composite or paired with another measure, please identify composite or paired measure** N/A
De.4 **National Priority Partners Priority Area:** Safety De.5 **IOM Quality Domain**: Safety De.6 **Consumer Care Need:** Staying healthy

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Government entity and in the public domain - no agreement necessary A.4 **Measure Steward Agreement attached:**	**A** **Y☐** **N☐**
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and	**B**

update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Other Medicare payment conditions	C Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	D Y☐ N☐
(for NQF staff use**) Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) **Specific NPP goal**:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers, Frequently performed procedure, Leading cause of morbidity/mortality, High resource use, Severity of illness, Patient/societal consequences of poor quality 1a.2 1a.3 **Summary of Evidence of High Impact:** 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	**1a** C☐ P☐ M☐ N☐

Comment [KP1]: 1a. The measure focus addresses:
- a specific national health goal/priority identified by NQF's National Priorities Partners; OR
- a demonstrated high impact aspect of healthcare (e.g., affects large numbers, leading cause of morbidity/mortality, high resource use (current and/or future), severity of illness, and patient/societal consequences of poor quality).

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%.

1a.4 Citations for Evidence of High Impact: 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, at 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.

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: Use of this measure has been demonstrated to stimulate improvements in vascular access care and other infection conrol practices that have led to subsequent reductions in access-related 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 vascular access sites and for catheter 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 animicrobial 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 basic infection prevention practices and vascular access care.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
A. Substantial variability in rates of access-related bloodstream infection (ARB) have been reported among facilities conducting surveillance. The pooled mean ARB rate for central venous cathetr (CVC) patients among facilities reporting to NHSN in 2006 was 3.1 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 6.3 per 100 patient-months.
B. Hospitalizations for bacteremia / septicemia among hemodialysis patients increased by 34% between 1993 and 2006 and vascular access infection hospitalizations increased by more than 100%. 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 Citations for data on performance gap:
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.

1b
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N ☐

Comment [KP2]: 1b. Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating considerable variation, or overall poor performance, in the quality of care across providers and/or population groups (disparities in care).

Comment [k3]: 1 Examples of data on opportunity for improvement include, but are not limited to: prior studies, epidemiologic data, measure data from pilot testing or implementation. If data are not available, the measure focus is systematically assessed (e.g., expert panel rating) and judged to be a quality problem.

Abstract presented at SHEA 2009 Annual Conference.
(http://www.cdc.gov/ncidod/dhqp/SHEA_Abstract2.html)

1b.4 Summary of Data on disparities by population group:

1b.5 Citations for data on Disparities:

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** This is an outcome measure. As previously described, Access-related BSIs are a leading cause of death and hospitalizations among maintenance hemodialysis patients and can lead to severe medical complications. As reported by USRDS, between 1993 and 2006, the rate of hospitalizations for bacteremia(adjusted for factors such as age, race, and cause of ESRD) among hemodialysis patients increased by 34% while the all-cause hospitalization rate in this same population remained stable. Patients with central venous catheters are at highest risk for aquiring an access-related bloodstream infection and according to Fistula First data, approximately 20-25% of all maintenance hemodialysis patients have a central venous catheter. Thus the measure is reflective of an event with severe health consequences and close to one-quarter of all hemodialysis patients are at extremely high risk of developing this outcome.

1c.2-3. Type of Evidence: Observational study, Evidence-based guideline, Randomized controlled trial, Expert opinion, Systematic synthesis of research

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
Multiple healthcare services and care processes have been shown to influence outcomes. These include: performing surveillance and data feedback to influence practices, antimicrobial ointments at hemodialysis catheter exit sites, staff education, hand hygiene, patient education, improved vascular access care and aseptic technique, and chlorhexidine for catheter exit site skin antisepsis. There is also ample evidence from the literature focused on inpatient settings describing reductions in central line-associated bloodstream infections that resulted from improved care processes. In addition to the interventions previously mentioned, these prevention trials also implemented adherence tools (e.g., catheter insertion checklist) and changes in safety culture.

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**
Multiple interventions were listed. The individual recommendations have varying levels of evidence, the highest being Category IA.

1c.6 Method for rating evidence: CDC/HICPAC recommendations are based on reviews of the evidence by an expert writing group. This information is then compiled and voted on by HICPAC. The evidence is rated as follows:

Category IA. Strongly recommended for implementation and strongly supported by well-designed experimental, clinical, or epidemiologic studies.
Category IB. Strongly recommended for implementation and supported by some experimental, clinical, or epidemiologic studies, and a strong theoretical rationale.
Category IC. Required by state or federal regulations, rules, or standards.
Category II. Suggested for implementation and supported by suggestive clinical or epidemiologic studies or a theoretical rationale.
Unresolved issue. Represents an unresolved issue for which evidence is insufficient or no consensus regarding efficacy exists.

1c.7 Summary of Controversy/Contradictory Evidence:

1c.8 Citations for Evidence (*other than guidelines***):** George A, Tokars JI, Cluterbuck EJ, Bamford KB, Pusey C, Holmes AH. Reducing dialysis associated bacteraemia, and recommendations for surveillance in the United

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N☐

Comment [k4]: 1c. The measure focus is:
•an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;
OR
•if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
oIntermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
oProcess – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
oStructure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
oPatient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
oAccess – evidence that an association exists between access to a health service and the outcomes of, or experience with, care. ... [1]

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status – patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g., mammography) or measures for multiple care processes that affect a single outcome.

Comment [k6]: 3 The strength of the body of evidence for the specific measure focus should be systematically assessed and rated (e.g., USPSTF grading system http://www.ahrq.gov/clinic/uspstf07/methods/benefit.htm). If the USPSTF grading system was not used, the grading system is explained including how it relates to the USPSTF grades or why it does not. However, evidence is not limited to quantitative studies and the best type of evidence depends upon the question being studied (e.g., randomized controlled trials appropriate for studying drug efficacy are not well suited for complex system changes). When qualitative studies are used, appropriate qualitative research criteria are used to judge the strength of the evidence.

Kingdom: a prospective study. BMJ. 2006;332:1435-1439.
CDC. Reductions in central line-associated bloodstream infections among patients in intensive care units--Pennsyvania, Apri 2001-March 2005. MMWR Morbid Mortal Wkly Rep. 2005;54(40):1013-1016.
Pronovost P, Needham D, Berenholtz , et al. An intervention to decrease catheter-related bloodstream infections in the ICU. New Engl J Med. 2006;355:2725-2732.
Kallen AJ, Arduino MJ, Patel PR. Preventing infections in patients undergoing hemodialysis. Expert rev Anti Infect Ther 2010; 8:643-55.

1c.9 **Quote the Specific guideline recommendation (***including guideline number and/or page number***):**
CDC. Recommendations for Preventing Transmission of Infections among Chronic Hemodialysis Patients. MMWR 2001; 50(RR05):1-43.
CDC. Guidelines for the Prevention of Intravenous Catheter-Related Infections. MMWR 2002; 51(RR10):1-26.

1c.10 **Clinical Practice Guideline Citation:** National Kidney Foundation. KDOQI Clinical Practice Guidelines and Clinical Practice Recommendations: 2006 Updates: Vascular Access. (http://www.kidney.org/professionals/kdoqi/guideline_uphd_pd_va/index.htm)
APIC Guide to the Elimination of Infections in Hemodialysis. (http://www.apic.org/Content/NavigationMenu/PracticeGuidance/APICEliminationGuides/APIC_Hemodialysis_web.pdf)

1c.11 **National Guideline Clearinghouse or other URL:**

1c.12 **Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):**

1c.13 **Method for rating strength of recommendation** (*If different from USPSTF system, also describe rating and how it relates to USPSTF)***:**

1c.14 **Rationale for using this guideline over others:**
Multiple guidelines are listed. All highlight the importance of basic infection control practices and vascular access care procedures to access-related bloodstream infection rates.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?* — **1**

Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** — **1** Y☐ N☐
Rationale:

2. 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. (evaluation criteria) — **Eval Rating**

2a. MEASURE SPECIFICATIONS

S.1 **Do you have a web page where current detailed measure specifications can be obtained?**
S.2 **If yes, provide web page URL:**

2a. Precisely Specified

2a.1 **Numerator Statement (***Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):**
The number of bloodstream infections that are suspected to be related to the vascular access-- i.e., not including positive blood cultures that likely reflect contamination nor that represent secondary bloodstream infections with a nonvascular primary site of origin.

2a.2 **Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** — **2a-specs** C☐ P☐ M☐ N☐

Comment [k7]: USPSTF grading system **http://www.ahrq.gov/clinic/uspstf/grades.htm**: **A -** The USPSTF recommends the service. There is high certainty that the net benefit is substantial. **B -** The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. **C -** The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small. Offer or provide this service only if other considerations support the offering or providing the service in an individual patient. **D -** The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits. **I -** The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

Comment [KP8]: 2a. The measure is well defined and precisely specified so that it can be implemented consistently within and across organizations and allow for comparability. The required data elements are of high quality as defined by NQF's Health Information Technology Expert Panel (HITEP) .

Cases are included if the positive blood culture occurs during a month that the outpatient unit is performing surveillance

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions***):**
Information required: Number of positive blood culture events, event date, and suspected source of the positive blood culture
Definition: 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 plus suspected source of the positive blood culture reported as the vascular access or unknown source (not contamination or other source).
Data Specifications: Events are included if the field labeled, "Patient with positive blood culture" on Form 57.109 is checked as being present AND one of the following fields on the same form (under ´Suspected source of positive blood culture´) is also checked: "Vascular access" or "Uncertain"

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
Number of maintenance hemodialysis patients treated in the outpatient hemodialysis unit on the first 2 working days of the month.

2a.5 Target population gender: Female, Male
2a.6 Target population age range: All ages

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
First 2 working days of each month

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
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 57.119) is used as the denominator.

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** Patients receiving inpatient hemodialysis are excluded

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
The 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.

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**
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. Access-related BSI rate in CVC (central venous catheter) patients = the numerator below divided by denominator below times 100
1a. NUMERATOR. Events are included in the numerator if the "patient with positive blood culture" field on Form 57.109 is checked, along with either "Vascular access" or "Uncertain" (under ´Suspected source of positive blood culture´), AND any of the following fields on Form 57.109 under ´Vascular accesses´ are checked as being present: "Permanent central line", "Temporary central line", or "Port access device".
1b. DENOMINATOR. The denominator equals the sum of the numeric values entered for the following fields on Form 57.119: "Permanent central line", "Temporary central line", and ""Port access device".
2. Access-related BSI rate in AVG (arteriovenous graft) patients = the numerator below divided by denominator below times 100
2a. NUMERATOR. Events are included in the numerator if the "patient with positive blood culture" field on Form 57.109 is checked, along with either "Vascular access" or "Uncertain" (under ´Suspected source of

Comment [k9]: 11 Risk factors that influence outcomes should not be specified as exclusions.
12 Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.

positive blood culture´), AND if the field labeled "Graft" on Form 57.109 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", or "Port access device".
2b. DENOMINATOR. The denominator equals the numeric value entered for the field labeled, "Graft" on Form 57.119.
3. Access-related BSI rate in AVF (arteriovenous fistula) patients = the numerator below divided by denominator below times 100
3a. NUMERATOR. Events are included in the numerator if the "patient with positive blood culture" field on Form 57.109 is checked, along with either "Vascular access" or "Uncertain" (under ´Suspected source of positive blood culture´), AND if the field labeled "Fistula" on Form 57.109 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", or "Port access device".
3b. DENOMINATOR. The denominator equals the numeric value entered for the field labeled, "Fistula" on Form 57.119.

2a.12-13 Risk Adjustment Type: Other Simple stratification

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**
Both the numerator and denominator are stratified by vascular access type since vascular access type is the single greatest risk factor for access-related bloodstream infection in this population. The vascular access variables that are collected and included in this analysis are: arteriovenous (AV) fistula, AV graft, permanent central line, and temporary 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 < permanent central line < temporary 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.

2a.15-17 Detailed risk model available Web page URL or attachment: URL
http://www.cdc.gov/nhsn/forms/57.119_DenomOutpatDialysis_BLANK.pdf

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Lower score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
1. Determine the number of bloodstream infection events where the suspected source was the vascular access or unknown that occurred in the unit for the month under surveillance (X)
2. Determine the outpatient hemodialysis facility patient census (i.e., denominator) for the month under surveillance (Y)
3. Divide X by Y and multiply this by 100 to determine the rate of access-related bloodstream infections per 100 patient-months.
Pooled mean rates are calculated by pooling the numerator over time (e.g., for an entire year or over multiple hemodialysis units) and dividing by the corresponding pooled denominator.

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**
Rates are compared using standard significance tests for person-time rates (e.g., mid p exact test). Most often, individual facility rates are compared to an overall pooled mean rate for all outpatient hemodialysis facilities reporting to NHSN. In addition, rates can be tested to evaluate changes over time.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
This measure is not based on a sample. It represents complete information from all facilities that are participating / reporting.

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)***:**
Paper medical record/flow-sheet, Electronic Health/Medical Record, Lab data

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
57.119 Denominators for Outpatient Dialysis
57.109 Dialysis Event

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL
http://www.cdc.gov/nhsn/psc_da_de.html#3

2a.29-31 Data dictionary/code table web page URL or attachment: URL
http://www.cdc.gov/nhsn/PDFs/pscManual/14_Tables_of_Instructions.pdf

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Facility/Agency, Population: national, Population: regional/network, Can be measured at all levels

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Dialysis Facility

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: Nurses, Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO), Dialysis, Other Dialysis technicians

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)***:** The data collected for this measure represent the entire population of patients in participating facilities. There is no sampling used. Currently, there are more than 120 dialysis facilities reporting.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)***:**
No formal reliability testing has been conducted.

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:**

2b
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P☐
M☐
N☐

2c. Validity testing

2c.1 Data/sample *(description of data/sample and size)***:** A validation study was conducted of CDC´s dialysis surveillance system in 2002. At the time, this measure was collected as part of the Dialysis Surveillance Network (predecessor to the current dialysis event module in NHSN). A validation study of the BSI measure and several other data elements was conducted at 13 facilities. Twenty facilities were selected for the validation project. Participation in the study was voluntary. Thirteen of the 20 facilities opted to participate.

2c.2 Analytic Method *(type of validity & rationale, method for testing)***:**
The 2002 validation study had 2 components. (1) For each facility, a sample of events reported to the surveillance system were pulled and medical record review was conducted at the facility to verify the information submitted. (2) A list of most recent positive blood culture events and other events of interest were obtained from the facility and were compared with data submitted to the surveillance system to determine the completeness of event capture.
The validity of this measure will be further tested in 2010-2011 in a study designed to evaluate the validity of the measures compared to health record data available electronically and in paper records within the facility and to compare to a definition of BSI that will attempt to be more specific than the current definition. The study has been funded and is expected to begin in late 2010. It will involve data abstraction in at least 20 facilities in each of 4 geographically distinct sites in CDC's Emerging infections Program. The Colorado health department is also planning a validation study to compare the BSI measure in NHSN to facility medical record data.

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test conducted)***:**
(1) Of 157 blood culture results that were reported to the dialysis surveillance system and were reviewed, 87.7% were determined to have been correctly characterized and reported.
(2) Of 159 patient vascular access types reported to the surveillance system and reviewed, 88.8% were

2c
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M☐
N☐

Comment [KP10]: 2b. Reliability testing demonstrates the measure results are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period.

Comment [k11]: 8 Examples of reliability testing include, but are not limited to: inter-rater/abstractor or intra-rater/abstractor studies; internal consistency for multi-item scales; test-retest for survey items. Reliability testing may address the data items or final measure score.

Comment [KP12]: 2c. Validity testing demonstrates that the measure reflects the quality of care provided, adequately distinguishing good and poor quality. If face validity is the only validity addressed, it is systematically assessed.

Comment [k13]: 9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 is a marker of quality). If face validity is the only validity addressed, it is systematically assessed (e.g., ratings by relevant stakeholders) and the measure is judged to represent quality care for the specific topic and that the measure focus is the most important aspect of quality for the specific topic.

determined to have been correctly characterized and reported.
(3) Of 113 recent positive blood culture events that were independently identified by the facilities in the study, 88 (77.9%) had an appropriate surveillance form completed for the event.
(4) Of 53 positive blood cultures where suspected source was reported to the surveillance system and reviewed, 63.9% were determined to have been correctly characterized and reported.
Both the accuracy of this measure and completeness of reporting were determined to be high. The rate of successful verification of the suspected source of positive blood cultures was not as high. However, the ability to confirm suspected source based on information documented in medical records might be more limited. Overall, the measure was judged to have good validity.

2d. Exclusions Justified

2d.1 **Summary of Evidence supporting exclusion(s):**

2d.2 **Citations for Evidence:**

2d.3 **Data/sample** *(description of data/sample and size)*:

2d.4 **Analytic Method** *(type analysis & rationale)*:

2d.5 **Testing Results** *(e.g., frequency, variability, sensitivity analyses)*:

2d C☐ P☐ M☐ N☐ NA☐

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 **Data/sample** *(description of data/sample and size)*: This is not a sample but represents all of the data reported by participating facilities (i.e., total population reported is used).

2e.2 **Analytic Method** *(type of risk adjustment, analysis, & rationale)*:
The only risk adjustment performed is stratification of rates by vascular access type. This stratification accounts for direct contributions to risk imparted by the access type and also accounts for many other (both measured and unmeasured) factors that are correlated with vascular access type. These include variables such as age and presence of certain comorbid conditions and illness severity. Within each stratified category of patient-vascular access type, risks of access-related bloodstream infection are more consistent and more dependent upon practices related to care of the vascular access.

2e.3 **Testing Results** *(risk model performance metrics)*:

2e.4 **If outcome or resource use measure is not risk adjusted, provide rationale:**

2e C☐ P☐ M☐ N☐ NA☐

2f. Identification of Meaningful Differences in Performance

2f.1 **Data/sample from Testing or Current Use** *(description of data/sample and size)*: This is not a sample but represents all of the data reported by participating facilities (i.e., total population reported is used).

2f.2 **Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*:
The distribution of facility-specific rates is calculated for each stratified measure and a corresponding percentile category (based on quartiles and the 1 highest and 1 lowest decile) for that facility is calculated. Some facilities utilize individualized performance targets based upon a goal rate percentile. Facility-specific stratified rates are also compared to the overall pooled mean rate for all facilities in NHSN. The difference between these two rates is assessed using standard significance tests for person-time measures (e.g., mid p exact test). A p-value of less than 0.05 is considered statistically significant.

2f.3 **Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in*

2f C☐ P☐ M☐ N☐

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND
•a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus;
AND
•precisely defined and specified:
–if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such as number of cases excluded, exclusion rates by type of exclusion);
if patient preference (e.g., informed decision-making) is a basis for exclusion, there must be evidence that it strongly impacts performance on the measure and the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category ... [2]

Comment [k15]: 10 Examples of evidence that an exclusion distorts measure results include, but are not limited to: frequency of occurrence, sensitivity analyses with and without the exclusion, and variability of exclusions across providers.

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;[Error! Bookmark not defined.] OR rationale/data support no risk adjustment.

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and women). It is preferable to stratify measures by race and socioeconomic status rather than adjusting out differences.

Comment [KP18]: 2f. Data analysis demonstrates that methods for scoring and analysis of the specified measure allow for identification of statistically significant and practically/clinically meaningful differences in performance.

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for a ... [3]

performance):
As described above, the distribution of facility-specific rates is calculated for each stratified measure and a corresponding percentile category (based on quartiles and the 1 highest and 1 lowest decile) for that facility is calculated. Some facilities utilize individualized performance targets based upon a goal rate percentile (e.g., 25th percentile or less). Facility-specific stratified rates are also compared to the overall pooled mean rate for all facilities in NHSN. The difference between these two rates is assessed using standard significance tests for person-time measures (e.g., mid p exact test). A p-value of less than 0.05 is considered statistically significant.

2g. Comparability of Multiple Data Sources/Methods

2g.1 **Data/sample** *(description of data/sample and size)*: This is not a sample but represents all of the data reported by participating facilities (i.e., total population reported is used).

2g.2 **Analytic Method** *(type of analysis & rationale)*:

2g.3 **Testing Results** *(e.g., correlation statistics, comparison of rankings)*:
No correlation statistics have been used. Participating facilities in NHSN are different from facilities that were the data sources for other published surveillance reports or studies.

2g
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Comment [KP20]: 2g. If multiple data sources/methods are allowed, there is demonstration they produce comparable results.

2h. Disparities in Care

2h.**1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: Based on 2006 NHSN data, pooled mean stratified access-related BSI rates (per 100 patient-months) were:
0.2 for AV fistula
0.4 for AV graft
3.1 for tunneled central venous catheter (CVC)
17.8 for nontunneled CVC

2h.2 **If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:**

2h
C☐ P☐ M☐ N☐ NA☐

Comment [KP21]: 2h. If disparities in care have been identified, measure specifications, scoring, and analysis allow for identification of disparities through stratification of results (e.g., by race, ethnicity, socioeconomic status, gender);OR rationale/data justifies why stratification is not necessary or not feasible.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*

2

Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?**
Rationale:

2
C☐ P☐ M☐ N☐

3. USABILITY

Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)

Eval Rating

3a. Meaningful, Understandable, and Useful Information

3a.1 **Current Use:** In use

3a.2 **Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*):
The state of Colorado currently mandates reporting of dialysis events, including access-related BSIs, from all licensed outpatient dialysis facilities in the state to the National Healthcare Safety Network (NHSN). Several other states have similar legislative mandates that are not yet enforced or are planning for a similar mandate in the future.
http://www.cdphe.state.co.us/hf/PatientSafety/HospitalReportCardInitiative/HB061045.pdf
http://www.cdphe.state.co.us/hf/PatientSafety/index.html

3a
C☐ P☐ M☐ N☐

Comment [KP22]: 3a. Demonstration that information produced by the measure is meaningful, understandable, and useful to the intended audience(s) for both public reporting (e.g., focus group, cognitive testing) and informing quality improvement (e.g., quality improvement initiatives). An important outcome that may not have an identified improvement strategy still can be useful for informing quality improvement by identifying the need for and stimulating new approaches to improvement.

3a.3 **If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):** This measure is actively in use by more than 120 dialysis facilities nationwide. It is also a required measure (reported through NHSN) for CDC´s Hemodialysis BSI prevention collaborative (http://www.delmarvafoundation.org/providers/ambulatory/dialysis/index.html). ESRD Networks 3, 7, and 13 have recently initiated quality improvement programs that will require some or all of their ESRD facilities to report to NHSN and join the CDC prevention collaborative to prevent BSIs, including access-related BSIs. CMS in its Conditions for Coverage for ESRD facilities and Interpretive Guidance requires monitoring of infection rates and recommends use of NHSN to track BSIs, other vascular access infections and related adverse events. **Testing of Interpretability** (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) 3a.4 **Data/sample** *(description of data/sample and size)***:** 3a.5 **Methods** *(e.g., focus group, survey, QI project)***:** Facilities participating (approximately 20) in the CDC hemodialysis BSI prevention collaborative have been informally queried about their use of these measures, their acceptability and meaning. 3a.6 **Results** *(qualitative and/or quantitative results and conclusions)***:** These participants have found the measure to be easily understandable and relevant for quality improvement.	
3b/3c. Relation to other NQF-endorsed measures 3b.1 **NQF # and Title of similar or related measures:**	
(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): 3b.2 **Are the measure specifications harmonized? If not, why?**	**3b** C☐ P☐ M☐ N☐ NA ☐
3c. Distinctive or Additive Value 3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** 5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:** N/A	**3c** C☐ P☐ M☐ N☐ NA ☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability?*	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability***, met?** **Rationale:**	**3** C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	**Eval Ratin g**
4a. Data Generated as a Byproduct of Care Processes	**4a**

Comment [KP23]: 3b. The measure specifications are harmonized with other measures, and are applicable to multiple levels and settings.

Comment [k24]: 16 Measure harmonization refers to the standardization of specifications for similar measures on the same topic (e.g., *influenza immunization* of patients in hospitals or nursing homes), or related measures for the same target population (e.g., eye exam and HbA1c for *patients with diabetes*), or definitions applicable to many measures (e.g., age designation for children) so that they are uniform or compatible, unless differences are dictated by the evidence. The dimensions of harmonization can include numerator, denominator, exclusions, and data source and collection instructions. The extent of harmonization depends on the relationship of the measures, the evidence for the specific measure focus, and differences in data sources.

Comment [KP25]: 3c. Review of existing endorsed measures and measure sets demonstrates that the measure provides a distinctive or additive value to existing NQF-endorsed measures (e.g., provides a more complete picture of quality for a particular condition or aspect of healthcare, is a more valid or efficient way to measure).

Comment [KP26]: 4a. For clinical measures, required data elements are routinely generated concurrent with and as a byproduct of care processes during care delivery. (e.g., BP recorded in the electronic record, not abstracted from the record later by other personnel; patient self-assessment tools, e.g., depression scale; lab values, meds, etc.)

4a.1-2 **How are the data elements that are needed to compute measure scores generated?**
Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition)

C☐ P☐ M☐ N☐

4b. Electronic Sources

4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*)
No

4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**
CDC is working to explore and attempt to valiadate algorithms to accurately define access-related bloodstream infections (i.e., the suspected source) based upon information available in electronic health records and laboratory data.

4b
C☐ P☐ M☐ N☐

Comment [KP27]: 4b. The required data elements are available in electronic sources. If the required data are not in existing electronic sources, a credible, near-term path to electronic collection by most providers is specified and clinical data elements are specified for transition to the electronic health record.

4c. Exclusions

4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?**
No

4c.2 **If yes, provide justification.**

4c
C☐ P☐ M☐ N☐ NA☐

Comment [KP28]: 4c. Exclusions should not require additional data sources beyond what is required for scoring the measure (e.g., numerator and denominator) unless justified as supporting measure validity.

4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences

4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.**
The determination of access-related bloodstream infection is a more specific measure than all bloodstream infections and more reflective of vascular access management practices. However, it is also a more subjective measure than relying purely upon positive blood cultures. This subjectivity could lead to biased reporting of the measure, particularly in the setting of public reporting and/or payment incentives. The suggested strategy to minimize these limitations is to assess several other measures in conjunction with access-related BSI rate. These include rate of IV antibiotic starts and rate of all BSIs. These measures have also been submitted for consideration.

4d
C☐ P☐ M☐ N☐

Comment [KP29]: 4d. Susceptibility to inaccuracies, errors, or unintended consequences and the ability to audit the data items to detect such problems are identified.

4e. Data Collection Strategy/Implementation

4e.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/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:**
Although this measure is slightly more difficult to collect than BSIs and requires some information (i.e., suspected source) that might not be readily available in electronic health record systems, this measure tends to be most meaningful for users. Providers find this measure to be most reflective of their practices. Time and costs of data collection for this measure are low and offset by the utility of the measure. CDC is working to explore and attempt to validate access-related BSI measures based upon existing electronic health record and/or laboratory data.

4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:**
NHSN is a web-based surveillance system that is available to all US outpatient dialysis facilities free of charge.
Complete data collection and reporting for NHSN (i.e., all measures) require approximately 2 hours per month of staff time.

4e.3 **Evidence for costs:**
1. There is no fee for participation in the NHSN.(http://www.cdc.gov/nhsn/about.html)
2. Following CDC´s dialysis surveillance protocol requires approximately 2 hours per month of staff time. (George A, Tokars JI, Clutterbuck EJ, et al. BMJ 2006; 332:1435-1439)

4e
C☐ P☐ M☐ N☐

Comment [KP30]: 4e. Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, etc.) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use).

4e.4 **Business case documentation:**	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, met? **Rationale:**	**4** **C☐** **P☐** **M☐** **N☐**
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited ☐**
Steering Committee: Do you recommend for endorsement? **Comments:**	**Y☐** **N☐** **A☐**

CONTACT INFORMATION

Co.1 **Measure Steward (Intellectual Property Owner)**
Co.1 **Organization**
Centers for Disease Control and Prevention, 1600 Clifton Rd., MS A-31, Atlanta, Georgia, 30333

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

Measure Developer If different from Measure Steward
Co.3 **Organization**
Centers for Disease Control and Prevention, 1600 Clifton Rd., MS A-31, Atlanta, Georgia, 30333

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

Co.5 **Submitter If different from Measure Steward POC**
Priti, Patel, MD, MPH, pgp0@cdc.gov, 404-639-4273-, Centers for Disease Control and Prevention

Co.6 **Additional organizations that sponsored/participated in measure development**

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 **Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**

Ad.2 **If adapted, provide name of original measure:**
Ad.3-5 **If adapted, provide original specifications URL or attachment**

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 **Year the measure was first released:** 1999
Ad.7 **Month and Year of most recent revision:** 09, 2008
Ad.8 **What is your frequency for review/update of this measure?** Annually
Ad.9 **When is the next scheduled review/update for this measure?** 01, 2011

Ad.10 **Copyright statement/disclaimers:**

Ad.11 -13 **Additional Information web page URL or attachment:** Attachment 2a29 Data Dictionary-634214861500832745.docx

Date of Submission (*MM/DD/YY*)**:** 12/09/2010

Page 4: [1] Comment [k4] **Karen Pace** **10/5/2009 8:59:00 AM**

1c. The measure focus is:

- an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;

OR

- if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
  - Intermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
  - Process – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
    if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
  - Structure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
  - Patient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
  - Access – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
  - Efficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

Page 9: [2] Comment [KP14] **Karen Pace** **10/5/2009 8:59:00 AM**

2d. Clinically necessary measure exclusions are identified and must be:

- supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;

AND

- a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus;

AND

- precisely defined and specified:
  - if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such as number of cases excluded, exclusion rates by type of exclusion);

if patient preference (e.g., informed decision-making) is a basis for exclusion, there must be evidence that it strongly impacts performance on the measure and the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category computed separately, denominator exclusion category computed separately).

Page 9: [3] Comment [k19] **Karen Pace** **10/5/2009 8:59:00 AM**

14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

2a.29. Data Dictionary or Code Table

http://www.cdc.gov/nhsn/PDFs/pscManual/9pscSSIcurrent.pdf

http://www.cdc.gov/nhsn/PDFs/OperativeProcedures.pdf

http://www.cdc.gov/nhsn/PDFs/ImportingProcedureData_current.pdf

http://www.cdc.gov/nhsn/PDFs/pscManual/14_Tables_of_Instructions.pdf

http://www.cdc.gov/nhsn/PDFs/pscManual/16pscKeyTerms_current.pdf

Tables of Instructions

Table 1. Instructions for Completion of the Patient Safety Monthly Reporting Plan Form (CDC 57.106) (Tables of Instructions List)

Data Field	Instructions for Form Completion
Facility ID #	The NHSN-assigned facility ID will be auto-entered by the computer.
Month/Year	Required. Enter the month and year for the surveillance plan being recorded; use MM/YYYY format.
No NHSN Patient Safety Modules Followed this Month	Conditionally required. Check this box if you do not plan to follow any of the NHSN Patient Safety Modules during the month and year selected.
Device-Associated Module	
Locations	Conditionally required. If you plan to follow device-associated events, enter the location codes for those facility locations where patients are housed overnight and from which you will collect denominator data (i.e., inpatient locations). If you plan to follow CLIP (see below), any type of patient care location where central lines are inserted may be entered.
CLABSI	Conditionally required. If you plan to follow device-associated events, check this box if you will collect central line-associated bloodstream infection (CLABSI) data and corresponding summary (denominator) data for the location in the left column.
DE	Conditionally required. If you plan to follow device-associated events, check this box if you will collect dialysis event (DE) data and corresponding summary (denominator) data for the outpatient dialysis location in the left column.
VAP	Conditionally required. If you plan to follow device-associated events, check this box if you will collect ventilator-associated pneumonia (VAP) data and corresponding summary (denominator) data for the location in the left column.
CAUTI	Conditionally required. If you plan to follow device-associated events, check this box if you will collect catheter-associated urinary tract infection (CAUTI) data and corresponding summary (denominator) data for the location in the left column.
CLIP	Conditionally required. Check this box if you will collect central line insertion practice (CLIP) data for the location indicated in the left column. These locations may be any type of patient care area where central lines are inserted (e.g., ward, OR, ED, ICU, outpatient clinic, etc.).
Procedure-Associated Module	
Procedures	Conditionally required. If you plan to follow procedure-associated events, list the procedure codes for those NHSN operative procedures for which you will collect data about selected procedure-associated events and procedure-level denominator data.

Data Field	Instructions for Form Completion
SSI (Circle one setting)	Conditionally required. For each selected NHSN operative procedure in the left column, if you plan to follow SSIs, choose the patient population for which you will monitor this procedure. Circle "In" to follow only inpatients, circle "Out" to follow only outpatients, or circle "Both" to follow inpatients and outpatients. If SSIs will not be monitored for a listed procedure for this month, do not circle any of the choices.
Post-procedure PNEU	Conditionally required. For each selected NHSN operative procedure in the left column, if you plan to follow post-procedure pneumonia (PPP), circle "In". If you do not monitor PPP, leave this unmarked. **NOTE:** Inpatient ("In") is the only setting option for monitoring post-procedure pneumonia.
MDRO and CDAD Module	
Locations	Conditionally required. If you plan to perform infection surveillance, choose the location(s) from the drop down box. You must add a row for the second and subsequent locations. If you plan to perform LabID Event surveillance you must choose the location(s) as detailed above; or to perform overall facility-wide for all inpatient locations, choose FACWIDEIN; to perform facility-wide surveillance for all outpatient locations, choose FACWIDEOUT; to perform LabID Event surveillance in all inpatient and outpatient areas, choose both FACWIDEIN and FACWIDEOUT. (You must add a row for the second location or these will be added in two separate rows.)
Specific Organism Type	Conditionally required. Enter each organism you will be following: MRSA, MRSA/MSSA, VRE, MDR-*Klebsiella* spp., MDR-*Acinetobacter* spp. and/or *C. difficile.*
LabID Event	Conditionally required. Check this on the top section of the form only if performing surveillance on the organism facility-wide but not by location (i.e., using only Method C).
Locations	Conditionally required. If you plan to perform MDRO or *C. difficile* infection surveillance, LabID Event reporting, or monitor process and/or outcome measures, list the individual location code on each line for the areas in your facility that you intend to monitor.
Specific Organism Type	Conditionally required. For the location(s) selected, enter the organism you will be following in each: MRSA, MRSA/MSSA, VRE, MDR-*Klebsiella* spp., MDR-*Acinetobacter* spp. and/or *C. difficile.*
Infection Surveillance	Conditionally required. Infection surveillance or LabID Event reporting in ≥ 1 patient care area is required for each MDRO your facility chooses to monitor (MRSA, MRSA/MSSA, VRE, MDR-*Klebsiella* spp., MDR-*Acinetobacter* spp*., or C. difficile*).
AST Timing	Conditionally required. For the given location and organism, If you plan to perform active surveillance testing (AST) for the organism,

Data Field	Instructions for Form Completion
	indicate whether testing will be done on admission (Adm) only or at admission and at discharge/transfer (Both).
AST Eligible	Conditionally required. For the given location and organism, circle All if **all** patients will be eligible for AST, OR, circle NHx to indicate that the only patients eligible for testing will be those with no history of MDRO colonization or infection in the past 12 months as documented by the admitting facility.
Incidence	Conditionally required. Check this box if you plan to report incidence of the organism at the location listed in the left column using AST and clinical positives.
Prevalence	Conditionally required. Check this box if you plan to report prevalence of the organism at the location listed in the left column using AST, clinical positive and known positive cases.
LabID Event	Conditionally required. For the given location and organism, indicate if you plan to monitor for Laboratory-identified (LabID). Infection Surveillance or LabID Event reporting in at least one patient care area is required for each organism your facility chooses to monitor (MDRO or *C. difficile*).
HH	Conditionally required. Check this if you plan to monitor Hand Hygiene adherence in the location specified. Ideally, this should be the patient care location(s) also selected for MDRO Infection or *C. difficile* surveillance.
GG	Conditionally required. Check this if you plan to monitor gown and gloves use adherence in the location specified. Ideally, this should be the patient care location(s) also selected for MDRO Infection or *C. difficile* surveillance.
High Risk Inpatient Influenza Vaccination Module	
Method A:/Method B:	Conditionally required. Select either Method A or Method B.

Table 2. Instructions for Completion of the Primary Bloodstream Infection (BSI) Form (CDC 57.108) (Tables of Instructions List)

Data Field	Instructions for Data Collection
Facility ID #	The NHSN-assigned facility ID will be auto-entered by the computer.
Event #	Event ID number will be auto-entered by the computer.
Patient ID #	Required. Enter the alphanumeric patient ID number. This is the patient identifier assigned by the hospital and may consist of any combination of numbers and/or letters.
Social Security #	Optional. Enter the 9-digit numeric patient Social Security Number.
Secondary ID #	Optional. Enter the alphanumeric ID number assigned by the facility.
Patient name	Optional. Enter the last, first, and middle name of the patient.
Gender	Required. Check Female or Male to indicate the gender of the patient.
Date of Birth	Required. Record the date of the patient birth using this format: MM/DD/YYYY.
Ethnicity Hispanic or Latino Not Hispanic or Not Latino	Optional. If patient is Hispanic or Latino, check this box. If patient is not Hispanic or not Latino, check this box.
Race	Optional. Check all the boxes that apply to identify the patient's race.
Event type	Required. BSI.
Date of event	Required. The date when the first clinical evidence of the BSI appeared or the date the blood culture was collected, whichever comes first. Enter date of this event using this format: MM/DD/YYYY. NOTE: If a device has been pulled on the first day of the month in a location where there are no other device days in that month, and a device-associated infection develops after the device is pulled, attribute the infection to the previous month.
Post-procedure BSI	Optional. Check Y if this event occurred after an NHSN defined procedure but before discharge from the facility, otherwise check N.
NHSN procedure code	Conditionally required. If Post-procedure BSI = Y, enter the appropriate NHSN procedure code. **NOTE:** A BSI cannot be "linked" to an operative procedure unless that procedure has already been added to NHSN. If the procedure was previously added, and the "Link to Procedure" button is clicked, the fields pertaining to the operation will be auto-entered by the computer.
ICD-9-CM procedure code	Optional. The ICD-9-CM code may be entered here instead of (or in addition to) the NHSN Procedure Code. If the ICD-9-CM code is entered, the NHSN code will be auto-entered by the computer. If the NHSN code is entered first, you will have the option to select the appropriate ICD-9-CM code. In either case, it is optional to select the ICD-9-CM code. Only those ICD-9-CM codes identified in Table 10 of the Procedure-associated

Data Field	Instructions for Data Collection
	Module section are allowed.
MDRO infection	Required. Enter "Yes", if the pathogen is being followed for the MDRO/CDAD Module and is part of your Monthly Reporting Plan: MRSA, MSSA (MRSA/MSSA), VRE, MDR-*Klebsiella*, MDR-*Acinetobacter* or *C. difficile*. If the pathogen for this event happens to be an MDRO but your facility is not following the MDRO/CDAD Module in your Monthly Reporting Plan, answer "No" to this question.
Location	Required. Enter the inpatient location to which the patient was assigned when the BSI was identified. If the BSI develops in a patient within 48 hours of transfer from a location, indicate the transferring location, not the current location of the patient.
Date admitted to facility	Required. Enter date patient admitted to facility using this format: MM/DD/YYYY. An NHSN Inpatient is defined as a patient whose date of admission to the healthcare facility and the date of discharge are <u>different</u> calendar days. When determining a patient's admission dates to both the facility and specific inpatient location, the NHSN user must take into account all such days, including any days spent in an inpatient location as an "observation" patient before being officially admitted as an inpatient to the facility, as these days contribute to exposure risk. Therefore, all such days are included in the counts of admissions and patient days for the facility and specific location, and facility and admission dates must be moved back to the first day spent in the inpatient location.
Risk Factors: If ICU/Other locations, central line	Required. Answer this question if the location is an intensive care unit (ICU) or location other than a specialty care area (SCA) or neonatal intensive care unit (NICU). Check Y if patient had a central line during the 48 hour period before event date, otherwise check N. **NOTE:** If the patient has both a peripheral and a central line and the BSI can clearly be attributed to the peripheral line (e.g., pus at insertion site and matching pathogen from pus and blood), check N.
Risk Factors: If Specialty Care Area, Permanent central line Temporary central line	Required. Answer these questions if the location is an SCA: Check Y if patient had a tunneled or implanted central line during the 48-hour period before event date, otherwise check N. Check Y if patient had a non-tunneled central line during the 48-hour period before event date, otherwise check N.

Data Field	Instructions for Data Collection
Risk Factors: If NICU,	Required. Answer these questions if the location is an NICU:
Central line	Check Y if patient had a non-umbilical central line during the 48-hour period before event date, otherwise check N.
Umbilical catheter	Check Y if patient had an umbilical catheter during the 48-hour period before event date, otherwise check N.
Birthweight	Required. Enter patient's weight at the time of birth in grams, not the weight on the date of event.
Location of device insertion	Optional. Enter the patient location where the central line was inserted. • If the patient has more than one central line, enter the location where the first central line was inserted. • If the patient has both a permanent and a temporary central line, enter the location where the temporary line was inserted. • If the patient has both an umbilical and a non-umbilical central line, enter the location where the umbilical line was inserted.
Date of device insertion	Optional. Enter the date the central line was inserted. If the patient has more than one central line, enter the insertion date for the first line that was inserted.
Event Details: Specific event	Required. Check Laboratory-confirmed (LCBI).
Event Details Specify criteria used:	Required. Check each of the elements of the criterion that was used to identify this infection.
Event Details: Died	Required. Check Y if patient died during the hospitalization, otherwise check N.
Event Details: BSI contributed to death	Conditionally required if patient died. Check Y if the BSI contributed to death, otherwise check N.
Event Details: Discharge date	Optional. Date patient discharged from facility using this format: MM/DD/YYYY.
Event Details: Pathogen identified	Required. Enter Y if pathogen identified, otherwise check N. If Yes, specify pathogen(s) on reverse of form (see Table 2a for instructions). **NOTE:** If LCBI, this field will be autofilled by the computer as Y.
Custom fields and labels	Optional. Up to two date fields, two numeric fields, and 10 alphanumeric fields that may be customized for local use. **NOTE:** Each custom field must be set up in the Facility/Custom Options section of the application before the field can be selected for use.
Comments	Optional. Enter any information on the event.

Table 2a. Instructions for Completion of the Back of the Following Forms: Primary Bloodstream Infection (CDC 57.108); Pneumonia (CDC 57.111); Urinary Tract Infection (CDC 57.114); Surgical Site Infection (CDC 57.120); Dialysis Event (CDC 57.109); MDRO and CDAD Infection Event (CDC 57.126) (Tables of Instructions List)

Data Field	Instructions for Data Collection/Entry
For specified Gram-positive and Gram-negative organisms, Pathogen #	Up to three pathogens may be reported. If multiple pathogens are identified, enter the pathogen judged to be the most important cause of infection as #1, the next most as #2, and the least as #3 (usually this order will be indicated on the laboratory report).
Antimicrobial agent and susceptibility results	Conditionally required if Pathogen Identified = Y. • For those organisms shown on the back of an event form, susceptibility results are required only for the agents listed. • For organisms that are not listed on the back of an event form, enter a susceptibility result for at least one antimicrobial agent, even if that result is "Not Tested". Circle the pathogen's susceptibility result: S – Susceptible, I – Intermediate, R – Resistant, N – Not Tested. Additional antimicrobial agents and susceptibility results may be reported for up to a total of 20 agents.
For Other Organisms, Pathogen #	Up to three pathogens may be reported. If multiple pathogens are identified, enter the pathogen judged to be the most important cause of infection as #1, the next most as #2, and the least as #3 (usually this order will be indicated on the laboratory report).
Antimicrobial agent and susceptibility results	For each pathogen, up to 20 antimicrobial agents and susceptibility results may be reported. Values for susceptibility results are: S – Susceptible, I – Intermediate, R – Resistant, N – Not Tested.

Table 3. Instructions for Completion of the Central Line Insertion Practices Adherence Monitoring Form (CDC 57.125) (Tables of Instructions List)

Data Field	Instructions for Form Completion
Facility ID	The NHSN-assigned facility ID will be auto-entered by the computer.
Event #	Event ID number will be auto-entered by the computer.
Patient ID	Required. Enter the alphanumeric patient ID number. This is the patient identifier assigned by the hospital and may consist of any combination of numbers and/or letters.
Social Security #	Optional. Enter the 9-digit numeric patient Social Security Number.
Secondary ID	Optional. Enter the alphanumeric ID number assigned by the facility.
Patient name: Last, first, middle	Optional. Enter the last, first, and middle name of the patient.
Gender	Required. Check Female or Male to indicate the gender of the patient.
Date of Birth	Required. Record the date of the patient birth using this format: MM/DD/YYYY.
Ethnicity Hispanic or Latino Not Hispanic or Not Latino	Optional. If patient is Hispanic or Latino, check this box. If patient is not Hispanic or not Latino, check this box.
Race (specify)	Optional. Check all the boxes that apply to identify the patient's race.
Event Type	Required. CLIP.
Location	Required. Enter the location of the patient at the time of the central line insertion.
Insertion date	Required. Enter the date of central line insertion (MM/DD/YYYY).
Person recording insertion practice data	Required. Select inserter or observer.
Central line inserter ID	Optional. Enter the HCW ID# of the person inserting the central line.
Name, Last, First	Optional. Enter last name and first name of person inserting the central line.
Occupation of inserter	Required. Check the occupational category of the person inserting the central line Attending physician; Intern/Resident; Physician assistant; PICC team; IV team; Fellow; Other medical staff; Medical student; Other student. If Other than these, please specify.
Reason for insertion	Required. Check the primary reason for inserting the central line: New indication; Replace malfunctioning central line; Suspected central line-associated infection. If Other, please specify. • Central line exchanged over a guidewire- Conditionally required. Answer this only if reason for insertion is suspected

Data Field	Instructions for Form Completion
	central line-associated infection. Check Y if the central line was exchanged over a guidewire; otherwise Check N.
Inserter performed hand hygiene prior to central line insertion	Required. Check Y if the inserter appropriately performed hand hygiene prior to inserting central line; otherwise check N. Appropriate hand hygiene includes the use of alcohol-based hand rub or soap and water hand wash.
Were all 5 maximal sterile barrier precautions used?	Required. Answer "Yes" to this question will autofill all individual maximal sterile barriers (MSB) as "Yes". If "No" is chosen, then individual MSB must be individually identified as used, or not, in the question that follows.
Maximal sterile barrier precautions used	Conditionally required. If "No" is chosen to preceding question, then barrier precautions must be individually identified as used, or not, by choosing "Yes" or "No". **NOTE:** If inserter wore either a mask or a mask with eye shield, the Mask box should be checked
Skin preparation	Required. Check all that apply: Chlorhexidine gluconate; Povidone iodine; Alcohol; Other. If Other is chosen, specify prep used.
Was skin preparation agent completely dry at time of first skin puncture?	Required. Check Y if the skin prep agent was allowed to dry completely at the time of first skin puncture; otherwise select N.
Insertion site	Required. Check the site of insertion of the central line: Jugular; Subclavian; Umbilical; Femoral; Upper extremity; Lower Extremity; Scalp.
Antimicrobial coated catheter used	Optional. Check Y if antimicrobial coated catheter was used; otherwise check N.
Central line catheter type	Required. Check the type of central line inserted: Non-tunneled catheter (other than dialysis); Tunneled catheter (other than dialysis); Dialysis catheter non-tunneled; Dialysis catheter tunneled; Umbilical; PICC. If other, please specify.
Custom Fields and Labels	Optional. Up to two date fields, two numeric fields, and 10 alphanumeric fields that may be customized for local use. **NOTE:** Each custom field must be set up in the Facility/Custom Options section of the application before the field can be selected for use.
Comments	Optional. Enter any additional information on the central line insertion.

Table 4. Instructions for Completion of Pneumonia (PNEU) Form (CDC 57.111) (Tables of Instructions List)

Data Field	Instructions for Data Collection
Facility ID #	The NHSN-assigned facility ID will be auto entered by the computer.
Event #	Event ID number will be auto entered by the computer.
Patient ID #	Required. Enter the alphanumeric patient ID number. This is the patient identifier assigned by the hospital and may consist of any combination of numbers and/or letters.
Social Security #	Optional. Enter the 9-digit numeric patient Social Security Number.
Secondary ID #	Optional. Enter the alphanumeric ID number assigned by the facility.
Patient name	Optional. Enter the last, first, and middle name of the patient.
Gender	Required. Check Female or Male to indicate the gender of the patient.
Date of birth	Required. Record the date of the patient birth using this format: MM/DD/YYYY.
Ethnicity Hispanic or Latino Not Hispanic or Not Latino	Optional. If patient is Hispanic or Latino, check this box. If patient is not Hispanic or not Latino, check this box.
Race	Optional. Check all the boxes that apply to identify the patient's race.
Event type	Required. PNEU.
Date of event	Required. The date when the first clinical evidence of the PNEU appeared or the date the specimen used to make or confirm the diagnosis was collected, whichever comes first. Enter date of this event using this format: MM/DD/YYYY. NOTE: If a device has been pulled on the first day of the month in a location where there are no other device days in that month, and a device-associated infection develops after the device is pulled, attribute the infection to the previous month.
Post-procedure PNEU	Required. Check Y if this event occurred after an NHSN defined procedure but before discharge from the facility, otherwise check N.
Date of procedure	Conditionally required. If Post-procedure PNEU = Y, then enter the date the procedure was done.
NHSN procedure code	Conditionally required. Answer this question only if this patient developed the PNEU during the same admission as an operative procedure. Enter the appropriate NHSN procedure code.

Data Field	Instructions for Data Collection
	NOTE: A PNEU cannot be "linked" to an operative procedure unless that procedure has already been added to NHSN. If the procedure was previously added, and the "Link to Procedure" button is clicked, the fields pertaining to the operation will be auto entered by the computer.
ICD-9-CM procedure code	Optional. The ICD-9-CM code may be entered here instead of (or in addition to) the NHSN Procedure Code. If the ICD-9-CM code is entered, the NHSN code will be auto entered by the computer. If the NHSN code is entered first, you will have the option to select the appropriate ICD-9-CM code. In either case, it is optional to select the ICD-9-CM code. Only those ICD-9-CM codes identified in Table 10 of the Procedure-associated Module section are allowed.
MDRO infection	Required. Enter "Yes", if the pathogen is being followed for the MDRO/CDAD Module and is part of your Monthly Reporting Plan: MRSA, MSSA (MRSA/MSSA), VRE, MDR-*Klebsiella*, MDR-*Acinetobacter* or *C. difficile*. If the pathogen for this event happens to be an MDRO but your facility is not following the MDRO/CDAD Module in your Monthly Reporting Plan, answer "No" to this question.
Location	Required. Enter the inpatient location to which the patient was assigned when the PNEU was identified. If the PNEU develops in a patient within 48 hours of transfer from a location, indicate the transferring location, not the current location of the patient.
Date admitted to facility	Required. Enter date patient admitted to facility using this format: MM/DD/YYYY. An NHSN Inpatient is defined as a patient whose date of admission to the healthcare facility and the date of discharge are <u>different</u> calendar days. When determining a patient's admission dates to both the facility and specific inpatient location, the NHSN user must take into account all such days, including any days spent in an inpatient location as an "observation" patient before being officially admitted as an inpatient to the facility, as these days contribute to exposure risk. Therefore, all such days are included in the counts of admissions and patient days for the facility and specific location, and facility and admission dates must be moved back to the first day spent in the inpatient location.
Risk Factors	
Ventilator	Required. Check Y if the patient with PNEU had a device to assist or control respiration continuously through a tracheostomy or by endotracheal intubation, inclusive of the weaning period, within the 48-hour period before developing infection, otherwise check N.
Birth weight	Conditionally required. If the patient is a NICU patient, enter the patient's birth weight in grams.

Data Field	Instructions for Data Collection
Location of device insertion	Optional. Enter the patient location where the intubation and ventilation procedure was performed
Date of device insertion	Optional. Enter the date the intubation and ventilation procedure was performed.
Event Details: PNEU Specific event	Required. Check one: Clinically Defined Pneumonia (PNU1), Pneumonia with specific laboratory findings (PNU2), or Pneumonia in immunocompromised patients (PNU3), whichever criteria are met for this event.
Event Details: Specify criteria used	Required. Check each of the elements that were used to identify this infection.
Event Details: Secondary bloodstream infection	Required. Check Y if there is a culture-confirmed bloodstream infection (BSI) and a related pneumonia, otherwise check N.
Event Details: Died	Required. Check Y if patient died during the hospitalization, otherwise check N.
Event Details: PNEU contributed to death	Conditionally required. If the patient died, check Y if the PNEU contributed to death, otherwise check N.
Event Details: Discharge date	Optional. Date patient discharged from facility.
Event Details: Pathogen identified	Required. Enter Y if Pathogen Identified, N otherwise; if Yes, specify on reverse (See Table 2a for instructions)
Custom fields and labels	Optional. Up to two date fields, two numeric fields, and 10 alphanumeric fields that may be customized for local use. **NOTE:** Each Custom Field must be set up in the Facility/Custom Options section of the application before the field can be selected for use.
Comments	Optional. Enter any information on the event.

Table 5. Instructions for Completion of Urinary Tract Infection (UTI) Form (CDC 57.114) (Tables of Instructions List)

Data Field	Instructions for Data Collection/Entry
Facility ID #	The NHSN-assigned facility ID will be auto-entered by the computer.
Event #	Event ID number will be auto-entered by the computer.
Patient ID #	Required. Enter the alphanumeric patient ID number. This is the patient identifier assigned by the hospital and may consist of any combination of numbers and/or letters.
Social Security #	Optional. Enter the 9-digit numeric patient Social Security Number.
Secondary ID #	Optional. Enter the alphanumeric ID number assigned by the facility.
Patient name	Optional. Enter the last, first, and middle name of the patient.
Gender	Required. Check Female or Male to indicate the gender of the patient.
Date of birth	Required. Record the date of the patient birth using this format: MM/DD/YYYY.
Ethnicity Hispanic or Latino Not Hispanic or Not Latino	Optional. If patient is Hispanic or Latino, check this box. If patient is not Hispanic or not Latino, check this box.
Race	Optional. Check all the boxes that apply to identify the patient's race.
Event type	Required. UTI.
Date of event	Required. The date when the first clinical evidence of the UTI appeared or the date the specimen used to make or confirm the diagnosis was collected, whichever comes first. Enter date of this event using this format: MM/DD/YYYY. NOTE: If a device has been pulled on the first day of the month in a location where there are no other device days in that month, and a device-associated infection develops after the device is pulled, attribute the infection to the previous month.
Post-procedure UTI	Optional. Check Y if this event occurred after an NHSN defined procedure but before discharge from the facility, otherwise check N.
Date of procedure	Conditionally required. If Post-procedure UTI = Y, enter the date the procedure was done.
NHSN procedure code	Conditionally required. If Post-procedure UTI = Y, enter the appropriate NHSN procedure code. **NOTE:** A UTI cannot be "linked" to an operative procedure unless that procedure has already been added to NHSN. If the procedure was previously added, and the "Link to Procedure" button is clicked, the fields pertaining to the operation will be auto-entered by the computer.
ICD-9-CM procedure	Optional. The ICD-9-CM code may be entered here instead of (or in

Data Field	Instructions for Data Collection/Entry
code	addition to) the NHSN Procedure Code. If the ICD-9-CM code is entered, the NHSN code will be auto-entered by the computer. If the NHSN code is entered first, you will have the option to select the appropriate ICD-9-CM code. In either case, it is optional to select the ICD-9-CM code. Only those ICD-9-CM codes identified in Table 10 of the Procedure-associated Module section are allowed.
MDRO infection	Required. Enter "Yes", if the pathogen is being followed for the MDRO/CDAD Module and is part of your Monthly Reporting Plan: MRSA, MSSA (MRSA/MSSA), VRE, MDR-*Klebsiella*, MDR-*Acinetobacter* or *C. difficile*. If the pathogen for this event happens to be an MDRO but your facility is not following the MDRO/CDAD Module in your Monthly Reporting Plan, answer "No" to this question.
Location	Required. Enter the inpatient location to which the patient was assigned when the UTI was identified. If the UTI develops in a patient within 48 hours of transfer from a location, indicate the transferring location, not the current location of the patient.
Date admitted to facility	Required. Enter date patient admitted to facility using this format: MM/DD/YYYY. An NHSN Inpatient is defined as a patient whose date of admission to the healthcare facility and the date of discharge are <u>different</u> calendar days. When determining a patient's admission dates to both the facility and specific inpatient location, the NHSN user must take into account all such days, including any days spent in an inpatient location as an "observation" patient before being officially admitted as an inpatient to the facility, as these days contribute to exposure risk. Therefore, all such days are included in the counts of admissions and patient days for the facility and specific location, and facility and admission dates must be moved back to the first day spent in the inpatient location.
Risk factor: Urinary catheter status at time of specimen collection	Required. Check "In place" if urinary catheter was in place at time of urine specimen collection; Check "Removed within 48 hours prior " if a urinary catheter was removed within the 48 hours before urine specimen was collected; Check "Not in place nor within 48 hours prior" if no urinary catheter was in place at the time of or within the 48 hours prior to urine specimen collection.
Location of device insertion	Optional. Enter the patient location where the indwelling urethral catheter was inserted.
Date of device insertion	Optional. Enter the date the indwelling urethral catheter was inserted.
Event details: Specific event: UTI	Required. Check Symptomatic UTI (SUTI), Asymptomatic Bacteremic UTI (ABUTI), or Other UTI (OUTI), for the specific event type you are reporting.
Event details: UTI Specify criteria used	Required. Check each of the elements of the criteria that were used to identify the specific type of UTI being reported.
Event Details: Secondary	Required. Check Y if there is a culture-confirmed bloodstream infection

Data Field	Instructions for Data Collection/Entry
bloodstream infection	(BSI) and a related healthcare-associated UTI, otherwise check N.
Event Details: Died	Required. Check Y if patient died during the hospitalization, otherwise check N.
Event Details: UTI contributed to death	Conditionally required. If patient died, check Y if the UTI contributed to death, otherwise check N.
Event Details: Discharge date	Optional. Date patient discharged from facility.
Event Details: Pathogens identified	Required. Enter Y if pathogen identified, N if otherwise. If Y, specify organism name on reverse. For SUTI with secondary BSI and ABUTI, enter only the matching organism(s) identified in both urine and blood cultures (See Table 2a for instructions).
Custom fields and labels	Optional. Up to two date fields, two numeric fields, and 10 alphanumeric fields that may be customized for local use. **NOTE:** Each Custom Field must be set up in the Facility/Custom Options section of the application before the field can be selected for use.
Comments	Optional. Enter any information on the event.

Table 6. Instructions for the Completion of Denominators for Intensive Care Unit (ICU)/Other Locations (Not NICU or SCA) (CDC 57.118)

(Tables of Instructions List)

Data Field	Instructions for Data Collection
Facility ID #	The NHSN-assigned facility ID will be auto-entered by the computer.
Location code	Required. Enter the location code of the unit where you collect the data.
Month	Required. Record the 2-digit month during which the data were collected for this location.
Year	Required. Record the 4-digit year during which the data were collected for this location.
Number of patients	Required. For each day of the month selected, record the number of patients on the unit. Record this number at the same time each day.
Number of patients with 1 or more central lines	Conditionally required. Complete if you have chosen central line-associated bloodstream infection (CLABSI) as an event to follow in your Plan for this month. For each day of the month, at the same time each day, record the number of patients on the selected unit who have 1 or more central lines. NOTE: "If the patient has only a tunneled or implanted central line, begin recording days on the first day the line was accessed and continue throughout entire stay." NOTE: If a device has been pulled on the first day of the month in a location where there are no other device days in that month, and a device-associated infection develops after the device is pulled, attribute the infection to the previous month.
Number of patients with a urinary catheter	Conditionally required. Complete if you have chosen catheter-associated urinary tract infection (CAUTI) as an event to follow in your Plan for this month. For each day of the month, at the same time each day, record the number of patients on the selected unit who have an indwelling urinary catheter. NOTE: If a device has been pulled on the first day of the month in a location where there are no other device days in that month, and a device-associated infection develops after the device is pulled, attribute the infection to the previous month.
Number of patients on a ventilator	Conditionally required. Complete if you have chosen ventilator-associated pneumonia (VAP) as an event to follow in your Plan for this month. For each day of the month, at the same time each day, record the number of patients on the selected unit who are on a ventilator. NOTE: If a device has been pulled on the first day of the month in a location where there are no other device days in that month, and a device-

Data Field	Instructions for Data Collection
	associated infection develops after the device is pulled, attribute the infection to the previous month.
Total	Required. Totals for each column should be calculated. This is the number that will be entered into the NHSN application.
Label and data fields	Optional. Up to five numeric fields may be customized for local use. **NOTE:** Each Custom Field must be set up in the Facility/Custom Options section of NHSN before the field can be selected for use.

Table 7. Instructions for Completion of the Denominators for Specialty Care Area (SCA) (CDC 57.117) (Tables of Instructions List)

Data Field	Instructions for Data Collection
Facility ID #	The NHSN-assigned facility ID will be auto-entered by the computer
Location code	Required. Enter the location code of the unit where you collect the data.
Month	Required. Record the 2-digit month during which the data were collected for this location.
Year	Required. Record the 4-digit year during which the data were collected for this location.
Number of patients	Required. For each day of the month selected, record the number of patients on the unit. Record this number at the same time each day.
Number of patients with 1 or more central lines	Conditionally required. Complete if you have chosen central line-associated bloodstream infection (CLABSI) as an event to follow in your Plan for this month.
Temporary	For each day of the month, at the same time each day, record the number of patients on the selected unit who have 1 or more non-tunneled central lines.
Permanent	For each day of the month, at the same time each day, record the number of patients on the selected unit who have 1 or more tunneled or implanted central lines beginning on the first day the permanent line was accessed and continuing through the entire stay. **NOTE:** If a patient has both a temporary and a permanent line in place, count only the temporary line.
Number of patients with a urinary catheter	Conditionally required. Complete if you have chosen catheter-associated urinary tract infection (CAUTI) as an event to follow in your Plan for this month. For each day of the month, at the same time each day, record the number of patients on the selected unit who have an indwelling urinary catheter.
Number of patients on a ventilator	Conditionally required. Complete if you have chosen ventilator-associated pneumonia (VAP) as an event to follow in your Plan for this month. For each day of the month, at the same time each day, record the number of patients on the selected unit who are on a ventilator.
Total	Required. Totals for each column should be calculated. This is the number that will be entered into the NHSN application.
Label and data fields	Optional. Up to five numeric fields may be customized for local use. **NOTE:** Each Custom Field must be set up in the Facility/Custom Options section of NHSN before the field can be selected for use.

Table 8. Instructions for Completion of the Denominators for Neonatal Intensive Care Unit (NICU) (CDC 57.116) (Tables of Instructions List)

Data Field	Instructions for Data Collection
Facility ID #	The NHSN-assigned facility ID will be auto-entered by the computer.
Location code	Required. Enter the location code of the unit where you collect the data.
Month	Required. Record the 2-digit month during which the data were collected for this location.
Year	Required. Record the 4-digit year during which the data were collected for this location.
Number of patients (Pts)	Required. For each day of the month selected, record the number of patients in each birthweight category on the unit. Record this number at the same time each day.
Number of patients with each of the following:	Conditionally required. Complete if you have chosen central line-associated bloodstream infection (CLABSI) as an event to follow in your Plan for this month for this unit. If you choose to monitor CLABSI in the NICU population, you must collect data for both umbilical catheters and for non-umbilical central lines.
Umbilical catheter (U/C)	For each day of the month, at the same time each day, record the number of patients in each birthweight category on the selected unit who have an umbilical catheter in place.
Non-umbilical central line (CL)	For each day of the month, at the same time each day, record the number of patients in each birthweight category on the selected unit who have 1 or more non-umbilical central line(s) in place. **NOTE:** If an infant has both an umbilical catheter and a non-umbilical central line, count as an umbilical catheter day only.
Number of patients on a ventilator (VNT)	Conditionally required. Complete if you have chosen ventilator-associated pneumonia (VAP) as an event to follow in your Plan for this unit for this month. For each day of the month, at the same time each day, record the number of patients in each birthweight category on the selected unit who are on a ventilator.
Total	Required. Totals for each column should be calculated. This is the number that will be entered into the NHSN application.
Label and data fields	Optional. Up to five numeric fields may be customized for local use. **NOTE:** Each Custom Field must be set up in the Facility/Custom Options section of NHSN before the field can be selected for use.

Table 9. Instructions for Completion of Dialysis Event (DE) form (CDC 57.109) (Tables of Instructions List)

Data Field	Instructions for Completion
Facility ID #	The NHSN-assigned facility ID will be auto-entered by the computer.
Event ID #	Event ID # will be auto-entered by the computer.
Patient ID #	Required. Enter the alphanumeric patient ID number. This is the patient identifier assigned by the hospital and may consist of any combination of numbers and/or letters.
Social Security #	Optional. Enter the 9-digit numeric patient Social Security Number.
Secondary ID #	Optional. Enter the alphanumeric ID number assigned by the facility.
Patient name	Optional. Enter the last, first and middle name of the patient.
Gender	Required. Check Female or Male to indicate the gender of the patient.
Date of birth	Required. Record the date of the patient birth using this format: MM/DD/YYYY.
Ethnicity Hispanic or Latino Not Hispanic or Not Latino	Optional. If patient is Hispanic or Latino, check this box. If patient is not Hispanic or not Latino, check this box.
Race	Optional. Check all the boxes that apply to identify the patient's race.
Event type	Required. Enter DE.
Date of event	Required. Depending on the type of incident reported, enter either the date of hospitalization, or date of in-unit IV antimicrobial start, or for a patient, whose incident is a positive blood culture, enter the date the blood specimen was collected. Enter date of this-event using this format: MM/DD/YYYY.
Location	Required. Enter the location code of the outpatient dialysis unit where the patient was at the time of the DI.
Risk Factor: Vascular access type	Required. Check each access that the patient has.
Event Details: DI Incident type	Required. Check one or more of the incident types below: • Check Hospitalization if patient stayed overnight in a hospital, not just those related to infections or those where patient was directly admitted from the dialysis unit. Each time a patient is hospitalized, enter it as a new event. If a patient is hospitalized and returns to the dialysis unit on IV antimicrobials, both will be included in the same event – do not enter a second event. • Check In-unit IV antimicrobial start if patient is given IV

Data Field	Instructions for Completion
	antimicrobial agents in the dialysis unit for any reason, not just those with vancomycin or for a vascular access problem. If IV antimicrobials are stopped for less than 21 days and then restarted, this is NOT considered a new event. However, if IV antimicrobials are stopped for 21 or more days and then restarted, this is considered a new event. • Check Positive blood culture if the patient blood culture is positive, even if they did not have an associated hospitalization or in-unit IV antimicrobial start. Include blood cultures taken as an outpatient or within 1 day after a hospital admission. If the patient had an associated hospitalization or in-unit IV antimicrobial start, use the appropriate rule (above) for entering the event; if the patient had neither, enter a new event for positive blood culture occurring 21 or more days after a previous positive blood culture.
Problem (s)	Required. For each syndrome listed, check if present.
Pus, redness, or increased swelling at the vascular access site	Check if symptoms present. Do not check this if the patient is thought to have an access infection, but does not have the signs listed. Instead check "Other" and specify "Possible access infection." Similar rule for other responses: If the patient is thought to have the problem but does not meet the criteria, check "Other."
If applicable, check the access with pus, redness, or increased swelling:	If applicable, check one of the following: __ graft __ fistula __ temporary central line __ permanent central line __ port access device
Blood culture	Required. Check positive, negative, unknown, or not done. This applies only to blood cultures.
If positive, suspected source of positive blood culture	Conditionally required. If blood culture is positive, check "Vascular access" only if there is some objective evidence of vascular access infection. Check "A source other than the vascular access" if either (a) or (b) is true: (a) a culture from another site (e.g., leg wound, urine) shows the same organism found in the blood; (b) there is clinical evidence of infection at another site, but a culture was not taken from it. Check "Contamination" if the organism is thought by the physician, infection control practitioner, or head nurse to be a contaminant. Contamination is more likely if a common skin

Data Field	Instructions for Completion
	contaminant (e.g., coagulase negative staphylococci, diphtheroids, *Propionibacterium*, or *Bacillus* spp.) is isolated from only one blood culture. Check "Uncertain" if there is insufficient evidence to decide among the three previous categories.
Custom fields and labels	Optional. Up to two date fields, two numeric fields, and 10 alphanumeric fields may be customized for local use (optional). **NOTE:** Each Custom Field must be set up in the Facility/Custom Options section of the application before the field can be selected for use.
Comments	Optional. Enter any information on the Event. This information may not be analyzed.

Table 10. Instructions for completion of Denominators for Outpatient Dialysis: Census Form (CDC 57.119) (Tables of Instructions List)

Data Field	Instructions for Data Collection
Facility ID #	The NHSN-assigned facility ID will be auto-entered by the computer.
Location code	Required. Enter the location code for the outpatient dialysis location from which you will collect data about dialysis incidents.
Month	Required. Record the 2-digit month during which the data were collected for this location.
Year	Required. Record the 4-digit year during which the data were collected for this location.
Number of chronic hemodialysis patients	Required. For each type of vascular access listed, record the number of patients who received hemodialysis at this location during the first two working days of the month. Record each patient only once. If a patient has both an implanted access (graft or fistula) and a temporary central line, record the temporary central line.
Total patients:	Required. Add the numbers from the column.
Label and data fields:	Optional. Up to five numeric fields may be customized for local use. **NOTE:** Each Custom Field must be set up in the Facility/Custom Options section of NHSN before the field can be selected for use.

Table 11. Instructions for completion of the AUR Option Forms (CDC 57.123 and CDC 57.124) (Tables of Instructions List)

Notice: The AUR Module is currently undergoing revisions, and no AUR data may be entered. NHSN users will be notified when the module updates are completed.

Table 12. Instructions for completion of the Surgical Site Infection (SSI) Form (CDC 57.120) (Tables of Instructions List)

Data Field	Instructions for Data Collection
Facility ID #	The NHSN-assigned facility ID will be auto-entered by the computer.
Event #	Event ID number will be auto-entered by the computer.
Patient ID #	Required. Enter the alphanumeric patient ID number. This is the patient identifier assigned by the hospital and may consist of any combination of numbers and/or letters.
Social Security #	Optional. Enter the 9-digit numeric patient Social Security Number.
Secondary ID #	Optional. Enter the alphanumeric ID number assigned by the facility.
Patient name	Optional. Enter the last, first, and middle name of the patient.
Gender	Required. Check Female or Male to indicate the gender of the patient.
Date of birth	Required. Record the date of the patient birth using this format: MM/DD/YYYY.
Ethnicity Hispanic or Latino Not Hispanic or Not Latino	Optional. If patient is Hispanic or Latino, check this box. If patient is not Hispanic or not Latino, check this box.
Race	Optional. Check all the boxes that apply to identify the patient's race.
Event type	Required. Enter SSI.
Date of event	Required. The date when the first clinical evidence of the SSI appeared or the date the specimen used to make or confirm the diagnosis was collected, whichever comes first. Enter date of this event using this format: MM/DD/YYYY.
NHSN procedure code	Required. Enter the appropriate NHSN procedure code. **NOTE:** An SSI cannot be "linked" to an operative procedure unless that procedure has already been added to NHSN. If the procedure was previously added, and the "Link to Procedure" button is clicked, the fields pertaining to the operation will be auto-entered by the computer.
Date of procedure	Required. Enter date using this format: MM/DD/YYYY.
ICD-9-CM procedure code	Optional. The ICD-9-CM code may be entered here instead of (or in addition to) the NHSN Procedure Code. If the ICD-9-CM code is entered, the NHSN code will be auto-entered by the computer. If the NHSN code is entered first, you will have the option to select the appropriate ICD-9-CM code. In either case, it is optional to select the ICD-9-CM code. Only ICD-9-CM codes in Table 10 of the Procedure-associated Module section are allowed.
Outpatient Procedure	Required. Check Y if this operative procedure was performed on an outpatient; otherwise check N.
MDRO infection	Required. Enter "Yes", if the pathogen is being followed for the MDRO/CDAD

Data Field	Instructions for Data Collection
	Module and is part of your Monthly Reporting Plan: MRSA, MSSA (MRSA/MSSA), VRE, MDR-*Klebsiella*, MDR-*Acinetobacter* or *C. difficile*. If the pathogen for this event happens to be an MDRO but your facility is not following the MDRO/CDAD Module in your Monthly Reporting Plan, answer "No" to this question.
Location	Required. Enter the patient care area where the patient was assigned in the postoperative period. Inpatient or outpatient locations are allowed, but Operating Room locations are not allowed.
Date admitted to facility	Required. Enter date patient admitted to facility using this format: MM/DD/YYYY. If a patient is readmitted with a previously unreported event that was acquired during a preceding admission, enter the date of admission of the facility stay in which the event was acquired. An NHSN Inpatient is defined as a patient whose date of admission to the healthcare facility and the date of discharge are <u>different</u> calendar days. When determining a patient's admission dates to both the facility and specific inpatient location, the NHSN user must take into account all such days, including any days spent in an inpatient location as an "observation" patient before being officially admitted as an inpatient to the facility, as these days contribute to exposure risk. Therefore, all such days are included in the counts of admissions and patient days for the facility and specific location, and facility and admission dates must be moved back to the first day spent in the inpatient location.
Event details specific event SSI	Required. Check the appropriate level of SSI from the list ___Superficial incisional primary (SIP) ___Superficial incisional secondary (SIS) ___Deep incisional primary (DIP) ___Deep incisional secondary (DIS) ___Organ/space: __(indicate specific site code from table shown in organ/space SSI definition)
Event details: SSI Specify criteria used	Required. Check each of the elements of the definition that were used to identify the specific type of SSI. Specific Organ/space event types have their own unique criteria which must be met. They are found in Table 17.
Event details: Detected	Required. Check A if SSI was identified before the patient was discharged from the facility following the operation. Check P if SSI was identified during post-discharge surveillance. Include as P those SSI identified by another facility (i.e., patient with SSI was admitted to a facility other than the one in which the operation was performed). Check R if SSI was identified due to patient readmission to the facility where the operation was done.
Event Details: Secondary bloodstream infection	Required. Check Y if there is a culture-confirmed bloodstream infection (BSI) and a related healthcare-associated infection at the surgical site, otherwise check N.

Data Field	Instructions for Data Collection
Event details: Died	Required. Check Y if patient died during the hospitalization, otherwise check N.
Event Details: SSI contributed to death	Conditionally required. If patient died, check Y if the SSI contributed to death, otherwise check N.
Event Details: Discharge date	Optional. Enter date patient discharged from facility using this format: MM/DD/YYYY. If a patient is readmitted with a previously unreported event that was acquired during a preceding admission, enter the date of discharge of the facility stay in which the event was acquired.
Event Details: Pathogens identified	Required. Enter Y if Pathogen Identified, N if otherwise. If Y, specify organism name on reverse. See Table 2a above for instructions.
Custom fields and labels	Optional. Up to two date fields, two numeric fields, and 10 alphanumeric fields may be customized for local use. **NOTE:** Each Custom Field must be set up in the Facility/Custom Options section of the application before the field can be selected for use.
Comments	Optional. Enter any information on the event.

Table 13. Instructions for Completion of the Denominator for Procedure form (CDC 57.121) (Tables of Instructions List)

This form is used for reporting data on each patient having one of the NHSN operative procedures selected for monitoring.

Data Field	Instructions for Data Collection
Facility ID #	The NHSN-assigned facility ID will be auto-entered by the computer.
Procedure #	The NHSN-assigned Procedure # will be auto-entered by the computer
Patient ID #	Required. Enter the alphanumeric patient ID number. This is the patient identifier assigned by the hospital and may consist of any combination of numbers and/or letters.
Social Security #	Optional. Enter the 9-digit numeric patient Social Security Number.
Secondary ID #	Optional. Enter the alphanumeric ID number assigned by the facility.
Patient name	Optional. Enter the last, first, and middle name of the patient.
Gender	Required. Check Female or Male to indicate the gender of the patient.
Date of birth	Required. Record the date of the patient birth using this format: MM/DD/YYYY.
Ethnicity Hispanic or Latino Not Hispanic or Not Latino	Optional. If patient is Hispanic or Latino, check this box. If patient is not Hispanic or not Latino, check this box.
Race	Optional. Check all the boxes that apply to identify the patient's race.
Event type	Required. Enter the code for procedure (PROC).
NHSN Procedure code	Required. Enter the appropriate NHSN procedure code.
ICD-9-CM procedure code	Optional. The ICD-9-CM code may be entered here instead of (or in addition to) the NHSN Procedure Code. If the ICD-9-CM code is entered, the NHSN code will be auto-entered by the computer. If the NHSN code is entered first, you will have the option to select the appropriate ICD-9-CM code. In either case, it is optional to select the ICD-9-CM code. Only those codes listed in

Data Field	Instructions for Data Collection
	Table 10 of the Procedure-associated Module section are allowed.
Date of procedure	Required. Record the date when the NHSN procedure was done using this format: MM/DD/YYYY.
Procedure Details:	
Outpatient:	Required. Check Y if this operative procedure was performed on an outpatient, otherwise check N.
Duration:	Required. Enter the interval in hours and minutes between the skin incision and skin closure.
Wound class:	Required. Check the appropriate wound class from the list.
General anesthesia:	Required. Check Y if general anesthesia was used for the operative procedure, otherwise check N.
ASA class:	Conditionally Required. Required for Inpatient procedures only. Check numeric ASA classification at the time of the operative procedure.
Emergency:	Required. Check Y if this operative procedure was a nonelective, unscheduled operative procedure, otherwise check N.
Trauma:	Required. Check Y if operative procedure was performed because of blunt or penetrating traumatic injury to the patient, otherwise check N.
Endoscope:	Required. Check Y if the entire operative procedure was performed using an endoscope/laparoscope, otherwise check N. **NOTE:** For CBGB, if the donor vessel was harvested using an endoscope, check Y.
Surgeon code:	Optional. Enter code of the surgeon who performed the principal operative procedure.
Implant:	Required. Check Y if a nonhuman-derived object, material, or tissue was permanently placed in a patient during the operative procedure and will not be routinely manipulated for diagnostic or therapeutic purposes. Otherwise check N

Data Field	Instructions for Data Collection
Non-autologous Transplant:	Required. Check Y if human cells, tissues, organs, or cellular- or tissue-based products that derived from another human body, either a donor cadaver or a live donor, were placed into a human recipient via grafting, infusion, or transfer. Otherwise check N.
CSEC: Height	Conditionally required. If operative procedure is CSEC, enter patient height in feet and inches or meters and centimeters.
CSEC: Weight	Conditionally required. If operative procedure is CSEC, enter patient weight in pounds or kilograms.
CSEC: Duration of labor	Conditionally required. If operative procedure is CSEC, enter hours patient labored in the hospital prior to operative procedure.
CSEC: Estimated blood loss	Conditionally required. If operative procedure is CSEC, enter the estimated blood loss in ml.
Circle one: FUSN RFUSN	Conditionally required. If operative procedure is FUSN or RFUSN, circle the procedure that was done.
FUSN/RFUSN: Spinal level	Conditionally required. If operative procedure is FUSN or RFUSN, check appropriate spinal level of procedure from list. • Atlas-Axis – C1-C2 only • Atlas-Axis/Cervical – C1-C7 (any combination) • Cervical – C3-C7 (any combination) • Cervical/Dorsal/Dorsolumbar – Extends from any cervical through any lumbar levels • Dorsal/dorsolumbar – T1 – L5 (any combination) • Lumbar/Lumbosacral – L1-S5 (any combination) • Not specified – Level not specified
FUSN/RFUSN: Diabetes mellitus	Conditionally required. If operative procedure is FUSN or RFUSN, check Y if patient is known to have diabetes mellitus, otherwise check N.
FUSN/RFUSN: Approach/Technique	Conditionally required. If operative procedure is FUSN or RFUSN, check appropriate surgical approach or technique from list.
HPRO:	Conditionally required. If operative procedure is HPRO, select TP (Total Primary), PP (Partial Primary), TR (Total Revision) or PR (Partial Revision) from the list.
KPRO:	Conditionally required. If operative procedure is KPRO, select T – Primary (Total), R – Revision (Total or Partial) from list.
Custom fields and labels	Optional. Up to two date fields, two numeric fields, and 10 alphanumeric fields may be customized for local use.

Table 19. Instructions for Completion of the Laboratory-identified MDRO or CDAD Event form (CDC 57.128) (Tables of Instructions List)

Data Field	Instructions for Form Completion
Facility ID	The NHSN-assigned facility ID number will be auto-entered by the computer.
Event #	Event ID number will be auto-entered by the computer.
Patient ID	Required. Enter the alphanumeric patient ID. This is the patient identifier assigned by the hospital and may consist of any combination of numbers and/or letters. This should be an ID that remains the same for the patient across all visits and admissions.
Social Security #	Optional. Enter the 9-digit numeric patient Social Security Number.
Secondary ID	Optional. Enter any other patient ID assigned by the facility.
Patient Name, Last First, Middle	Optional. Enter the name of the patient. If available, data will be auto-entered from Patient Form.
Gender	Required. Circle M (Male) or F (Female) to indicate the gender of the patient.
Date of Birth	Required. Record the date of the patient birth using this format: MM/DD/YYYY.
Ethnicity (specify)	Optional. Enter the patient's ethnicity: Hispanic or Latino Not Hispanic or Not Latino
Race (specify)	Optional. Enter the patient's race: Select all that apply. American Indian or Alaska Native Asian Black or African American Native Hawaiian or Other Pacific Islander White
Event Details	
Event Type	Required. Event type = LabID.
Date Specimen Collected	Required. Enter the date the specimen was collected for this event using format: MM/DD/YYYY
Specific Organism Type	Required. Check the pathogen identified for this specimen for one of the following laboratory-identified MDRO types: MRSA, MSSA (if tracking MRSA & MSSA), VRE, MDR-*Klebsiella*, MDR-*Acinetobacter* or *C. difficile*. Use one form per LabID event (i.e., 1 form for each pathogen).
Outpatient	Required. Circle "Yes" if the patient meets the definition of an NHSN Outpatient: A patient whose date of admission to the healthcare facility and date of discharge are the same day. If the patient was an outpatient, do not enter Date Admitted to Facility, Location, or Date Admitted to Location.
Specimen Body Site	Required. Enter the main body site from which the specimen was taken using the description that is most specific. (e.g., digestive system, central

Data Field	Instructions for Form Completion
	nervous system, etc.)
Specimen Source	Required. Enter the specific anatomic site from which the specimen was taken using the source description that is most accurate from the available choices (e.g., bile specimen, specimen from brain, etc.)
Date Admitted to Facility	Conditionally required. Enter the date the patient was admitted to facility using this format: MM/DD/YYYY. If the patient was OP only and not admitted, leave this blank. An NHSN Inpatient is defined as a patient whose date of admission to the healthcare facility and the date of discharge are different calendar days. When determining a patient's admission dates to both the facility and specific inpatient location, the NHSN user must take into account all such days, including any days spent in an inpatient location as an "observation" patient before being officially admitted as an inpatient to the facility, as these days contribute to exposure risk. Therefore, all such days are included in the counts of admissions and patient days for the facility and specific location, and facility and admission dates must be moved back to the first day spent in the inpatient location.
Location	Conditionally required. Enter the patient care area where the patient was assigned when the laboratory-identified MDRO or *C. difficile* event specimen was collected (i.e., the NHSN "transfer rule" does not apply for LabID events). Special Case: If a specimen collected in the emergency department is positive for an MDRO or CDAD, and the patient it is collected from is admitted to the facility on the SAME date into a location that is monitoring LabID Events for the identified MDRO or CDAD, then that specimen can be reported as the first specimen for the patient in that admitting inpatient location for the month. If the facility is also monitoring LabID Events for the same MDRO or CDAD in the emergency department, then the same specimen for the patient would also be reported a second time for that outpatient location.
Date Admitted to Location	Conditionally required. Enter the date the patient was admitted to the patient care area where laboratory-identified monitoring is being performed and where the specimen was collected from the patient. Any days spent in an inpatient location, whether as an officially admitted patient or as an "observation" patient, contribute to exposure risk. An NHSN Inpatient is defined as a patient whose date of admission to the healthcare facility and the date of discharge are different calendar days. Therefore, all such days are included in the counts of patient days for the facility and specific location. Special Emergency Department Cases: Note that because of existing business rules for edit checks in NHSN, the date of specimen collection must be the same date or later than the admission date.
Documented prior evidence of infection or colonization with this specific organism type	Non-editable. "Yes" or "No" will be auto-filled by the system only, depending on whether there is prior LabID Event entered for the same organism and same patient. Cannot be editied by user. If there is a previous LabID event for this organism type entered in NHSN in a prior month, the

Data Field	Instructions for Form Completion
from a previously reported LabID Event?	system will auto-populate with a "Yes."
Has patient been discharged from your facility in the past 3 months?	Required. Circle "Yes" if the patient has been an inpatient and discharged from your facility in the past three months, otherwise circle "No".
Date of last discharge from your facility	Conditionally Required. If the patient was discharged from your facility in the past 3 months (previous question is circled "Yes"), enter the most recent date of discharge prior to the current admission. Use format: MM/DD/YYYY
Custom Fields	
Labels	Optional. Up to two date fields, 2 numeric and 10 alphanumeric fields that may be customized for local use. **NOTE:** Each Custom Field must be set up in the Facility/Custom Options section of the application before the field can be selected for use.
Comments	Optional. Enter any information on the Event. This information may not be analyzed.

Table 20. Instructions for Completion of the MDRO or CDAD Infection Event form (CDC 57.126) (Tables of Instructions List)

Data Field	Instructions for Form Completion
Facility ID	The NHSN-assigned facility ID number will be auto-entered by the computer
Event #	Event ID number will be auto-entered by the computer
Patient ID	Required. Enter the alphanumeric patient ID. This is the patient identifier assigned by the hospital and may consist of any combination of numbers and/or letters. This should be an ID that remains the same for the patient across all visits and admissions.
Social Security #	Optional. Enter the 9-digit numeric patient Social Security Number.
Secondary ID	Optional. Enter any other patient ID assigned by the facility.
Patient Name, Last First Middle	Optional. Enter the name of the patient.
Gender	Required. Circle M (Male) or F (Female) to indicate the gender of the patient.
Date of Birth	Required. Record the date of the patient birth using this format: MM/DD/YYYY.
Ethnicity (specify)	Optional. Enter the patient's ethnicity: Hispanic or Latino Not Hispanic or Not Latino
Race (specify)	Optional. Enter the patient's race: (select all that apply) American Indian or Alaska Native Asian Black or African American Native Hawaiian or Other Pacific Islander White
Event Details	
Event Type	Required. Enter infection event type other than BSI, DE, Pneumonia, SSI, or UTI. For reporting MDRO infections that are BSI, Pneumonia, SSI, or UTI, use those infection forms and instructions.
Date of Event	Required. Enter the date the first clinical symptoms of infection occurred or the date the first positive specimen was collected, whichever came first. Use format: MM/DD/YYYY.
Post Procedure Event	Required. Circle "Yes" if the infection occurred after an NHSN-defined procedure but before discharge from the facility, otherwise circle "No".
Date of Procedure	Conditionally required. If an NHSN-defined procedure was performed, enter date using this format: MM/DD/YYYY
MDRO/CDAD Infection	Required. Enter "Yes", if the pathogen is being followed for the MDRO/CDAD Module for Infection Surveillance in that location as part of your Monthly Reporting Plan: MRSA, MSSA (MRSA/MSSA), VRE, MDR-*Klebsiella*, MDR-*Acinetobacter* or *C. difficile*. If the pathogen for this event happens to be an MDRO but your facility is not

Data Field	Instructions for Form Completion
	following the MDRO/CDAD Module in your Monthly Reporting Plan, answer "No" to this question.
NHSN Procedure code	Conditionally required. Answer this question only if this patient developed the MDRO or *C. difficile* infection during the same admission as an operative procedure. Enter the appropriate NHSN procedure code. **NOTE:** An MDRO infection cannot be "linked" to an operative procedure unless that procedure has already been added to NHSN. If the procedure was previously added, and the "Link to Procedure" button is clicked, the fields pertaining to the operation will be auto-entered by the computer.
ICD-9-CM Procedure Code	Optional. The ICD-9-CM code may be entered here instead of (or in addition to) the NHSN Procedure Code. If the ICD-9-CM code is entered, the NHSN code will be auto-entered by the computer. If the NHSN code is entered first, you will have the option to select the appropriate ICD-9-CM code. In either case, it is optional to select the ICD-9-CM code.
Specific Organism Type	Required. Check the pathogen(s) identified for this infection event. You may select up to 3.
Date Admitted to Facility	Required. Enter date patient admitted to facility using this format: MM/DD/YYYY. An NHSN Inpatient is defined as a patient whose date of admission to the healthcare facility and the date of discharge are <u>different</u> calendar days. When determining a patient's admission dates to both the facility and specific inpatient location, the NHSN user must take into account all such days, including any days spent in an inpatient location as an "observation" patient before being officially admitted as an inpatient to the facility, as these days contribute to exposure risk. Therefore, all such days are included in the counts of admissions and patient days for the facility and specific location, and facility and admission dates must be moved back to the first day spent in the inpatient location.
Location	Required. Enter the nursing care area where the patient was assigned when the MDRO or *C. difficile* infection (CDI) was acquired. If the MDRO or CDI developed in a patient within 48 hours of discharge from a location, indicate the discharging location, not the current location of the patient.
Specific Event Type	Required. List the specific CDC-defined infection event type. For event type = BSI, PNEU, SSI or UTI this form should not be used. Use the form designed for that event.
Signs & Symptoms	Required. Using the criteria in Table 17, check all signs and symptoms used to confirm the diagnosis of this infection event in the observed patient.
Laboratory or Diagnostic Testing	Conditionally required. Indicate whether any blood cultures, other laboratory tests or radiologic exams were used to diagnose the infection.
***Clostridium difficile*-Associated Disease**	
Admitted to ICU for CDAD complications	Conditionally required. If pathogen is *C. difficile*, circle "Yes" to indicate admission to ICU for *C. difficile* complications (e.g., shock that requires vasopressor therapy), otherwise circle "No".
Surgery for CDAD complications	Conditionally required. If pathogen is *C. difficile*, circle "Yes" to indicate surgery for *C. difficile* complications, otherwise circle "No". Surgery might

Data Field	Instructions for Form Completion
	include colectomy for toxic megacolon, perforation or refractory colitis.
Secondary Bloodstream Infection	Required. Circle "Yes" if there is a culture-confirmed bloodstream infection (BSI) during this admission, secondary to this infection, for the same pathogen. Otherwise circle "No".
Died	Required. Circle "Yes" if the patient died during this hospitalization, otherwise circle "No".
Event Contributed to Death	Conditionally Required. **MDRO**: If the patient died during this admission, circle "Yes" if the MDRO infection contributed to death, otherwise circle "No". **CDAD:** Circle "Yes" only if the patient died within 30 days after *C. difficile* infection symptom onset and during the current hospital admission.
Discharge Date	Optional. Enter the date the patient was discharged from the facility using this format: MM/DD/YYYY. If the patient died during this admission enter the death date.
Pathogens Identified	Required. Circle "Yes" if pathogen identified, "No" if otherwise; if "Yes" indicate the pathogen identified on the antibiogram on page 2. If the pathogen was *C. difficile,* enter it under *Other Organisms* but do not include antibiogram. **NOTE:** Any infection reported as an MDRO or CDI must have a pathogen identified.
Custom Fields and Labels	Optional. Up to two date fields, two numeric fields, and 10 alphanumeric fields may be customized for local use. **NOTE:** Each custom Field must be set up in the Facility/Custom Options section of the application before the field can be selected for use.
Comments	Optional. Enter comments for local use and the values entered. These fields may not be analyzed.

Table 21. Instructions for Completion of the MDRO and CDAD Prevention Process and Outcome Measures Monthly Monitoring form (CDC 57.127) (Tables of Instructions List)

Data Field	Instructions for Form Completion
Facility ID #	The NHSN-assigned facility ID number will be auto-entered by the computer
Month	Required. Enter the 2-digit month during which surveillance was performed.
Year	Required. Enter the 4-digit year during which surveillance was performed.
Location Code	Required. Enter the code of the patient care location where the outcome measures monitoring was done.
Setting: Patient Total Days	Conditionally Required. If this is an inpatient location, enter the total number of patient days for this location for the month. Answer "Yes" to this question will autofill all individual maximal sterile barriers (MSB) as "Yes". If "No" is chosen, then individual MSB must be individually identified as used, or not, in the question that follows.
Total Admissions	Conditionally required. Enter the total number of admissions for this location if Active Surveillance Testing (AST) or LabID event monitoring was performed. Any days spent in an inpatient location, whether as an officially admitted patient or as an "observation" patient, contribute to exposure risk. An NHSN Inpatient is defined as a patient whose date of admission to the healthcare facility and the date of discharge are different calendar days. Therefore, all such days are included in the counts of patient days for the facility and specific location.
C. diff. Days	Conditionally Required. If LabID *C. diff.* was being monitored at the FacWideIN level, then total patient days minus any patient days for NICU or Well Baby Nurseries must be entered here.
C. diff. Admissions	Conditionally Required. If LabID *C. diff.* was being monitored at the FacWideIN level, then total admissions minus any admissions for NICU or Well Baby Nurseries must be entered here.
C. diff. Encounters	Conditionally Required. If LabID *C. diff.* was being monitored at the FacWideOUT level, then total encounters minus any encounters for Well Baby Clinics must be entered here.
Setting: Outpatient (or Emergency Room) Encounters	Conditionally required. If LabID Event monitoring is performed in outpatient and/or emergency room locations, enter the total number of encounters occurring during the surveillance month. If performing Overall facility-wide surveillance and Settings = *Both* on the Monthly Reporting Plan, enter Inpatient Days, Admissions and Outpatient Encounters.
MDRO and CDAD Infection Surveillance or LabID Event Reporting	

Data Field	Instructions for Form Completion
Infection Surveillance	Conditionally required. Check any MDRO or *C. difficile* organism selected for monitoring in the location during the time period specified.
LabID Event	Conditionally required. Check any MDRO or *C. difficile* organism selected for LabID event reporting in the location during the time period specified.
Process Measures (Optional)	
Hand Hygiene Performed	Required for hand hygiene adherence process measures. Enter the total number of observed contacts during which an HCW touched either the patient or inanimate objects in the immediate vicinity of the patient and appropriate hand hygiene was performed (i.e., Hand Hygiene Performed).
Indicated	Required for hand hygiene adherence process measures. Enter the total number of observed contacts during which an HCW touched either the patient or inanimate objects in the immediate vicinity of the patient and therefore, appropriate hand hygiene was indicated (i.e., Hand Hygiene Indicated).
Gown and Gloves Used	Required for gown and gloves use adherence process measures. Among patients on Contact Precautions, enter the total number of observed contacts between an HCW and a patient or inanimate objects in the immediate vicinity of the patient for which gloves and gowns had been donned prior to the contact (i.e., Gown and Gloves Used).
Indicated	Required for gown and gloves use adherence process measures. Among patients on Contact Precautions, enter the total number of observed contacts between an HCW and a patient or inanimate objects in the immediate vicinity of the patient and therefore, gloves and gowns were indicated (i.e., Gown and Gloves Indicated).
Active Surveillance Testing (For MRSA & VRE only)	
Active Surveillance Testing performed	Required for active surveillance testing adherence process measures. For MRSA and VRE only. Check those for which active surveillance testing is being done.
Timing of AST • Adm • Both	Required for active surveillance testing adherence process measures. Choose the time period when surveillance testing will be performed. Specimens for AST can be obtained at the time of admission (Adm), or at the time of admission and for patients' stays of > 3 days, at the time of discharge/transfer (Both).
AST Eligible Patients • All • NHx	Required for admission surveillance testing adherence process measures. If all admitted patients were tested choose All. Circle NHx if performing AST only on those patients admitted to the patient care location with no documentation at the time of admission of MRSA and/or VRE colonization or infection in ≤ 12 months (NHx). That is, no specimen positive for MRSA and/or VRE for this patient during previous stays at this facility or from information provided by referring

Data Field	Instructions for Form Completion
	facilities in ≤ 12 months.
Admission AST • Performed	Required for admission surveillance testing adherence process measures. Enter the number of patients eligible for admission AST and who had a specimen obtained for testing ≤ 3 days of admission (i.e., Admission AST Performed).
• Eligible	Enter the number of patients eligible for admission surveillance testing. (i.e., Admission AST Eligible)
Discharge/Transfer AST • Performed	Required for discharge/transfer active surveillance testing adherence process measures. For patients' stays > 3 days, enter the number of discharged or transferred patients eligible for AST and who had a specimen obtained for testing prior to discharge or transfer, not including the admission AST (i.e., Discharge/Transfer AST Performed).
• Eligible	For patients' with stays of > 3 days, enter the number of patients eligible for discharge/transfer surveillance testing; were negative if tested on admission. (i.e., Discharge/Transfer AST Eligible).
Outcome Measures (Optional) - MRSA & VRE ONLY	
Prevalent Cases	
AST/Clinical Positive	Required for prevalent case - AST/clinical positive outcome measures. Enter the number of patients with MRSA and/or VRE isolated from a specimen collected for AST or for clinical reasons on admission (≤ 3 days) (i.e., the MRSA or VRE cannot be attributed to this patient care location).
Known Positive	Enter the number of patients with documentation on admission of MRSA or VRE colonization or infection, from the admitting or referring facility, in ≤ 12 months (i.e., patient is known to be colonized or infected with MRSA and/or VRE within the last year). All MRSA or VRE colonized patients already in the ICU during the first month of surveillance should be considered "Known Positive".
Incident Cases	
AST/Clinical Positive	Required for incident case - AST/clinical positive outcome measures. Enter the number of patients with a stay > 3 days: • With no documentation on admission of MRSA and/or VRE colonization or infection, from the admitting or referring facility, in ≤ 12 months (i.e., patient is not known to be colonized or infected with MRSA and/or VRE within the last year and is negative if tested on admission), AND • MRSA and/or VRE isolated from a specimen collected for AST or clinical reasons > 3 days after admission and up to discharge/transfer from the patient care location.

Data Field	Instructions for Form Completion
Custom Fields and Labels	Optional. Up to 5 numeric fields may be customized for local use. **NOTE:** Each custom field must be set up in the Facility/Custom Options section of the application before the field can be selected for use.
Comments	Optional. Enter comments for local use and the values entered. These fields may not be analyzed.