The National Healthcare Safety Network (NHSN) Manual

PATIENT SAFETY COMPONENT PROTOCOL

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Patient Safety Monthly Reporting Plan

The *Patient Safety Monthly Reporting Plan Form* (CDC 57.75A) is used by NHSN institutions to inform CDC which patient safety modules are used during a given month. This allows CDC to select the data that should be included into the aggregate data pool for analysis. Each participating institution is to enter a monthly Plan to indicate the module used, if any, and the events and locations and/or procedures they monitored.

There must be a Plan completed for every month that data are entered into NHSN although a facility may choose "No NHSN Patient Safety Modules Followed this Month" as an option. The *Instructions for Completion of Patient Safety Monthly Reporting Plan Form* (Table 1) includes brief instructions for collection and entry of each data element on the form. A minimum of 6 months of at least one component is required during each calendar year to remain an active participant in NHSN.

Identifying Healthcare-associated Infections (HAI) in NHSN

Before an infection is reported to NHSN, the person performing surveillance must decide that the clinical, laboratory, and other diagnostic information gathered on the patient satisfy the criteria for an NHSN infection. To assist surveillance personnel in making these decisions consistently, each module in this manual contains a listing of specific infections sites used in the module and the criteria for determining the presence of an infection at each of those sites. The definitions used in this manual are the only criteria that should be used in collecting NHSN events. Other CDC definitions, including all specific sites used for SSI Organ/Space infections can be found on the NHSN website: http://www.cdc.gov/ncidod/dhqp/pdf/NNIS/NosInfDefinitions.pdf

Whenever possible, generally accepted criteria are used; however, where clear consensus is lacking, the criteria are based on the best information available, and, in some cases, somewhat arbitrary decisions. While all participants may not agree with all the criteria, it is important that NHSN participants consistently use them for reporting infections, so rates between hospitals can be appropriately compared.

- Any infection reported to NHSN must meet the definition of an NHSN healthcare-associated infection (HAI), that is, a localized or systemic condition resulting from adverse reaction to the presence of an infectious agent(s) or its toxin(s). There must be no evidence that the infection was present or incubating at the time of hospital admission. Other important considerations include the following:

    - Clinical evidence may be derived from direct observation of the infection site or review of information in the patient chart or other clinical records.
    - For certain infection sites, a physician's or surgeon's diagnosis of infection derived from direct observation during a surgical operation, endoscopic examination, or other diagnostic studies or from clinical judgment may be an acceptable criterion for an NHSN infection, unless there is compelling evidence to the contrary. NOTE: Physician's diagnosis of pneumonia alone is not an acceptable criterion for nosocomial pneumonia.

HAIs may be caused by infectious agents from endogenous or exogenous sources.

- Endogenous sources are body sites, such as the skin, nose, mouth, GI tract, or vagina that are normally inhabited by microorganisms.
- Exogenous sources are those external to the patient, such as patient care personnel, visitors, patient care equipment, medical devices, or the healthcare environment.

Special Considerations:
- Infections occurring in infants that result from passage through the birth canal are considered HAIs.
- The following infections are not considered healthcare associated:
    - Infections associated with complications or extensions of infections already present on admission, unless a change in pathogen or symptoms strongly suggests the acquisition of a new infection.
    - Infections in infants that have been acquired transplacentally (e.g., herpes simplex, toxoplasmosis, rubella, cytomegalovirus, or syphilis) and become evident ≤ 48 hours after birth.
    - Reactivation of a latent infections (e.g., herpes zoster [shingles], herpes simplex, syphilis, or tuberculosis).
- The following conditions are not infections:
    - Colonization, which means the presence of microorganisms on skin, on mucous membranes in open wounds, or in excretions or secretions but are not causing adverse clinical signs or symptoms.
    - Inflammation that results from tissue response to injury or stimulation by noninfectious agents, such as chemicals.

Device-Associated Module

Methodology

This module requires active, patient-based, prospective surveillance of device-associated infections and their corresponding denominator data by a trained infection control professional (ICP). This means that the ICP shall seek out infections during a patient's stay by screening a variety of data sources, such as laboratory, pharmacy, admission/discharge/transfer, radiology/imaging, and pathology databases, and patient charts, including history and physical exam notes, nurses/physicians notes, temperature charts, etc. Others may be trained to screen data sources for these infections, but the ICP must make the final determination. Laboratory-based surveillance should not be used alone, unless all possible criteria for identifying an infection are solely determined by laboratory evidence. Retrospective chart reviews should be used only when patients are discharged before all information can be gathered. Use NHSN forms to collect all required data, using the definitions of each data field. To minimize the ICP's data collection burden, others may be trained to collect the denominator data. These data should be collected at the same time each day. When denominator data are available from electronic databases (e.g., ventilator days from respiratory therapy), these sources may be used as long as the counts are not substantially different (+/- 5%) from manually collected counts.

Central Line-Associated Bloodstream Infection (CLABSI) Event

Introduction: An estimated 200,000 CLABSIs occur in U.S. hospitals each year. Specifically, these are primary bloodstream infections that are associated with the presence of a central line or an umbilical catheter in neonates at the time of or before the onset of the infection. Primary bloodstream infections are usually serious infections that typically caused a prolongation of hospital stay and increased cost and risk of mortality.

CLABSI can be prevented through proper management of the central line. These techniques are addressed in the CDC's Healthcare Infection Control Practices Advisory Committee (CDC/HICPAC) *Guidelines for the Prevention of Intravascular Catheter-Related Infections*[1].

Settings: Surveillance will occur in any of four types of inpatient locations: (1) intensive care units (ICU), (2) specialty care areas (includes hematology/oncology wards, bone marrow transplant units, solid organ transplant units, inpatient dialysis units, long term acute care areas, (3) neonatal intensive care units (NICU), and (4) any other inpatient location in the institution where denominator data can be collected (e.g., surgical or medical wards). NOTE: It is not required to monitor for CLABSIs after the patient is discharged from the facility, however, if discovered, they should be reported to NHSN. No additional catheter days are reported.

Requirements: Surveillance for CLABSI in at least one inpatient location in the healthcare institution for at least one calendar month as indicated in the *Patient Safety Monthly Reporting Plan* (CDC 57.75A).

Definitions: Primary bloodstream infections are classified according to the criteria used, either as laboratory-confirmed bloodstream infection (LCBI) or clinical sepsis (CSEP). CSEP may be used to report only a primary BSI in neonates (≤ 30 days old) and infants (≤ 1 year old).

- Report BSIs that are central line-associated (i.e., a central line or umbilical catheter was in place at the time of, or within 48 hours before, onset of the event. NOTE: There is no minimum period of time that the central line must be in place in order for the BSI to be considered central line-associated.
- Location of attribution: The location where the patient was assigned on the date the BSI was identified.
    - Example: Patient has a central line inserted in the Emergency Department and then is admitted to the MICU. Within 24 hours of admission to the MICU, patient meets criteria for BSI. This is reported to NHSN as a CLABSI for the MICU, because the Emergency Department is not an inpatient location and no denominator data are collected there.
    - Example: Patient on the urology ward of Hospital A had the central line removed and is discharged home a few hours later. The ICP from Hospital B calls the next day to report that this patient has been admitted to Hospital B with a BSI. This CLABSI should be reported to NHSN for Hospital A and attributed to the urology ward. No additional catheter days are reported.
    - EXCEPTION: If a CLABSI develops within 48 hours of transfer from one inpatient location to another in the same facility, the infection is attributed to the transferring location. This is called the **Transfer Rule**.

- Example: Patient with a central line in place in the SICU is transferred to the surgical ward. Thirty six (36) hours later, the patient meets the criteria for BSI. This is reported to NHSN as a CLABSI for the SICU.
- Example: Patient is transferred to the medical ward from the MSICU after having the central line removed. Within 24 hours, patient meets criteria for a BSI. This is reported to NHSN as a CLABSI for the MSICU.
- Example: Patient with a central line in place is transferred from the medical ward to the coronary care ICU (CCU). After 4 days in the CCU, the patient meets the criteria for a BSI. This is reported to NHSN as a CLABSI for the CCU.

- Central line: An intravascular catheter that terminates at or close to the heart or in one of the great vessels which is used for infusion, withdrawal of blood, or hemodynamic monitoring. The following are considered great vessels for the purpose of reporting central-line infections and counting central-line days in the NHSN system: Aorta, pulmonary artery, superior vena cava, inferior vena cava, brachiocephalic veins, internal jugular veins, subclavian veins, external iliac veins, and common femoral veins.
  - NOTE: An introducer is considered an intravascular catheter
  - NOTE: In neonates, the umbilical artery/vein is considered a great vessel.
  - NOTE: Neither [the location of] the insertion site nor the type of device may be used to determine if a line qualifies as a central line. The device must terminate in one of these vessels or in or near the heart to qualify as a central line.
  - NOTE: Pacemaker wires and other nonlumened devices inserted into central blood vessels or the heart are not considered central lines, because fluids are not infused, pushed, nor withdrawn through such devices.

- Infusion: The introduction of a solution through a blood vessel via a catheter lumen. This may include continuous infusions such as nutritional fluids or medications, or it may include intermittent infusions such as flushes or IV antimicrobial administration, or blood, in the case of transfusion or hemodialysis.
- Umbilical Catheter: A central vascular device inserted through the umbilical artery or vein in a neonate
- Temporary Central Line: Non-tunneled catheter
- Permanent Central Line: Includes
  - Tunneled catheters, including certain dialysis catheters
  - Implanted catheters (including ports)
- Location of attribution: The patient care area where the event became evident

Laboratory-confirmed bloodstream infection (LCBI)

LCBI criteria 1 and 2 may be used for patients of any age, including patients ≤ 1 year of age.

LCBI must meet one of the following three criteria:

Criterion 1: Patient has a recognized pathogen cultured from one or more blood cultures
and
organism cultured from blood is not related to an infection at another site. (See Notes 1 and 2 below.)

Criterion 2: Patient has at least one of the following signs or symptoms: fever (>38°C), chills, or hypotension
and
signs and symptoms and positive laboratory results are not related to an infection at another site
and
common skin contaminant (i.e., diphtheroids [*Corynebacterium* spp.], *Bacillus* [not *B. anthracis*] spp., *Propionibacterium* spp., coagulase-negative staphylococci [including *S. epidermidis*], viridans group streptococci, *Aerococcus* spp., *Micrococcus* spp.) is cultured from two or more blood cultures drawn on separate occasions. (See Notes 3 and 4 below.)

Criterion 3: Patient ≤ 1 year of age has at least one of the following signs or symptoms: fever (>38°C, rectal), hypothermia (<37°C, rectal), apnea, or bradycardia
and
signs and symptoms and positive laboratory results are not related to an infection at another site
and
common skin contaminant (i.e., diphtheroids [*Corynebacterium* spp.], *Bacillus* [not *B. anthracis*] spp., *Propionibacterium* spp., coagulase-negative staphylococci [including *S. epidermidis*], viridans group streptococci, *Aerococcus* spp., *Micrococcus* spp.) is cultured from two or more blood cultures drawn on separate occasions. (See Notes 3, 4 and 5 below.)

Notes:

1. In criterion 1, the phrase "one or more blood cultures" means that at least one bottle from a blood draw is reported by the laboratory as having grown organisms (i.e., is a positive blood culture).
2. In criterion 1, the term "recognized pathogen" does not include organisms considered common skin contaminants (see criteria 2 and 3 for a list of common skin contaminants). A few of the recognized pathogens are *S. aureus*, *Enterococcus* spp., *E. coli*, *Pseudomonas* spp., *Klebsiella* spp., *Candida* spp., etc.
3. In criteria 2 and 3, the phrase "two or more blood cultures drawn on separate occasions" means 1) that blood from at least two blood draws were collected within two days of each other (e.g., blood draws on Monday and Tuesday or Monday and Wednesday would be acceptable for blood cultures drawn on separate occasions, but blood draws on Monday and Thursday would be too far apart in time to meet this criterion), and 2) that at least one bottle from each blood draw is reported by the laboratory as having grown the same common skin contaminant organism (i.e., is a positive blood culture). (See Note 4 for determining sameness of organisms.)
    a. For example, an adult patient has blood drawn at 8 a.m. and again at 8:15 a.m. of the same day. Blood from each blood draw is inoculated into two bottles and incubated (four bottles total). If one bottle from each blood draw set is positive for coagulase-negative staphylococci, this part of the criterion is met.

b. For example, a neonate has blood drawn for culture on Tuesday and again on Saturday and both grow the same common skin contaminant. Because the time between these blood cultures exceeds the two-day period for blood draws stipulated in criteria 2 and 3, this part of the criteria is not met.
c. A blood culture may consist of a single bottle for a pediatric blood draw due to volume constraints. Therefore, to meet this part of the criterion, each bottle from two or more draws would have to be culture-positive for the same skin contaminant.

4. There are several issues to consider when determining sameness of organisms.
   a. If the common skin contaminant is identified to the species level from one culture, and a companion culture is identified with only a descriptive name (i.e., to the genus level), then it is assumed that the organisms are the same. The speciated organism should be reported as the infecting pathogen (see examples below).

Culture	Companion Culture	Report as…
S. epidermidis	*Coagulase-negative staphylococci*	*S. epidermidis*
Bacillus spp. (not *anthracis*)	*B. cereus*	*B. cereus*
S. salivarius	*Strep* viridans	*S. salivarius*

   b. If common skin contaminant organisms from the cultures are speciated but no antibiograms are done or they are done for only one of the isolates, it is assumed that the organisms are the same.
   c. If the common skin contaminants from the cultures have antibiograms that are different for two or more antimicrobial agents, it is assumed that the organisms are not the same (see table below).
   d. For the purpose of NHSN antibiogram reporting, the category interpretation of intermediate (I) should not be used to distinguish whether two organisms are different.

Organism Name	Isolate A	Isolate B	Interpret as…
S. epidermidis	All drugs **S**	All drugs **S**	Same
S. epidermidis	OX **R** CEFAZ **R**	OX **S** CEFAZ **S**	Different
Corynebacterium spp.	PENG **R** CIPRO **S**	PENG **S** CIPRO **R**	Different
Strep viridans	All drugs S	All drugs S except ERYTH (**R**)	Same

5. For patients ≤ 1 year of age, the following temperature equivalents for fever and hypothermia may be used:
   Fever: 38°C rectal/tympanic/temporal artery = 37°C oral = 36°C axillary
   Hypothermia: 37°C rectal/tympanic/temporal artery = 36°C oral = 35°C axillary.

Specimen Collection Considerations

Ideally, blood specimens for culture should be obtained from two to four blood draws from separate venipuncture sites (e.g., right and left antecubital veins), not through a vascular catheter. These blood draws should be performed simultaneously or over a short period of time (i.e., within a few hours).[1,2] If your facility does not currently obtain specimens using this technique, you may still report BSIs using the criteria and notes above, but you should work with appropriate personnel to facilitate better specimen collection practices for blood cultures.

Reporting Instructions

- Purulent phlebitis confirmed with a positive semiquantitative culture of a catheter tip, but with either negative or no blood culture is considered a CVS-VASC, not a BSI.
- Report organisms cultured from blood as BSI – LCBI when no other site of infection is evident.

~~**Laboratory-confirmed bloodstream infection (LCBI)**~~

~~LCBI criteria may be used for all patients.~~
~~LCBI must meet one of the following three criteria:~~

~~Criterion 1: Patient has a recognized pathogen cultured from one or more blood cultures~~
~~and~~
~~organism cultured from blood is not related to an infection at another site.~~

~~Criterion 2: Patient has at least one of the following signs or symptoms: fever (>38°C), chills, or hypotension~~
~~and~~
~~signs and symptoms and positive laboratory results are not related to an infection at another site~~
~~and~~
~~at least one of the following:~~

- ~~a. common skin contaminant (e.g., diphtheroids, *Bacillus* sp., *Propionibacterium* sp., coagulase-negative staphylococci, or micrococci) is cultured from two or more blood cultures drawn on separate occasions~~
- ~~b. common skin contaminant (e.g., diphtheroids, *Bacillus* sp., *Propionibacterium* sp., coagulase-negative staphylococci, or micrococci) is cultured from at least one blood culture from a patient with an intravascular line, and the physician institutes appropriate antimicrobial therapy~~

~~Criterion 3: Patient ≤ 1 year of age has at least one of the following signs or symptoms: fever (>38°C, rectal), hypothermia (<37°C, rectal), apnea, or bradycardia~~
~~and~~
~~signs and symptoms and positive laboratory results are not related to an infection at another site~~

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[1] Clinical and Laboratory Standards Institute (CLSI). *Principles and Procedures for Blood Cultures; Approved Guideline*. CLSI document M47-A (ISBN 1-56238-641-7). Clinical and Laboratory Standards Institute, 940 West Valley Road, Suite 1400, Wayne, Pennsylvania 19087-1898 USA, 2007.

[2] Baron EJ, Weinstein MP, Dunne Jr WM, Yagupsky P, Welch DF, and Wilson DM. Blood Cultures IV. ASM Press: Washington, DC; 2005

and
at least one of the following:

a. common skin contaminant (e.g., diphtheroids, *Bacillus* sp., *Propionibacterium* sp., coagulase-negative staphylococci, or micrococci) is cultured from two or more blood cultures drawn on separate occasions

b. common skin contaminant (e.g., diphtheroids, *Bacillus* sp., *Propionibacterium* sp., coagulase-negative staphylococci, or micrococci) is cultured from at least one blood culture from a patient with an intravascular line, and physician institutes appropriate antimicrobial therapy

NOTE: The term "physician institutes appropriate antimicrobial therapy" means that an antimicrobial agent with activity against the organism is started by the physician. This will likely be empirically selected since it would be started before the results of cultures were ready. If the agent is stopped because either no organism is identified or the one identified is not sensitive to the agent being used for therapy, then this criterion is not met. If the organism is susceptible to the agent but the agent is discontinued, then this criterion is met. The language of the criterion does not state that a full course of therapy must be completed, rather it says it only needs to be initiated

Reporting Instructions

- Purulent phlebitis confirmed with a positive semiquantitative culture of a catheter tip, but with either negative or no blood culture is considered a CVS-VASC
- Report organisms cultured from blood as BSI – LCBI when no other site of infection is evident
- For neonates and infants, the CDC criteria typically specify that fever is >38°C rectal and hypothermia is <37°C rectal. Since axillary or tympanic temperatures are more often done in this population, the following equivalencies can be used:

  38°C Rectal/Tympanic/temporal artery = 37°C Oral = 36°C Axillary
  37°C Rectal/Tympanic/temporal artery = 36°C Oral = 35°C Axillary

  It is important to note that there is considerable conflicting evidence and variation among the studies that measure human temperature, but for surveillance purposes in this population, we will use the above values.

  Note also that "strip thermometers" measure the temperature of the skin, not the body's core and cannot be used to meet the temperature criteria for NHSN surveillance.

Clinical sepsis (CSEP)

CSEP may be used only to report a primary BSI in neonates and infants.
To report a CSEP, the following criterion must be met:

Patient ≤ 1 year of age has at least one of the following clinical signs or symptoms with no other recognized cause: fever (>38°C, rectal), hypothermia (<37°C, rectal), apnea, or bradycardia
and
blood culture not done or no organisms detected in blood
and

no apparent infection at another site
and
physician institutes treatment for sepsis.

Reporting Instructions

- Report culture-positive infections of the bloodstream as BSI – LCBI
- For neonates and infants, the CDC criteria typically specify that fever is >38°C rectal and hypothermia is <37°C rectal. Since axillary or tympanic temperatures are more often done in this population, the following equivalencies can be used:

  38°C Rectal/Tympanic/Temporal artery = 37°C Oral = 36°C Axillary
  37°C Rectal/Tympanic/Temporal artery = 36°C Oral = 35°C Axillary

  It is important to note that there is considerable conflicting evidence and variation among the studies that measure human temperature, but for surveillance purposes in this population, we will use the above values.

  Note also that "strip thermometers" measure the temperature of the skin, not the body's core and can not be used to meet the temperature criteria for NHSN surveillance.

Numerator Data: The *Primary Bloodstream Infection (BSI)* Form (CDC 57.75D) is used to collect and report each CLABSI that is identified during the month selected for surveillance. The *Instructions for Completion of Primary Bloodstream Infection Form* (Tables 2 and 2a.) contains brief instructions for collection and entry of each data element on the form. The Primary BSI form includes patient demographic information on whether a central line was present, and, if so, the type of central line the patient had as appropriate to the location; these data will be used to calculate line-specific infection rates. Additional data include the specific criteria met for identifying the primary BSI, whether the patient died, the organisms isolated from blood cultures, and the organisms' antimicrobial susceptibilities.

Denominator Data: Denominator data that are collected differ according to the location of the patients being monitored. For ICUs and locations other than specialty care areas and NICUs, the number of patients with one or more central lines of any type is collected daily, at the same time each day, and then summed and the total is reported for the month on the *Denominators for Intensive Care Unit (ICU)/Other Locations (Not NICU or Specialty Care Area (SCA))* (CDC 57.75L).

For specialty care areas, the number of patients with one or more central lines is dichotomized into those with permanent central lines and those with temporary central lines on the *Denominators for Specialty Care Area* (CDC 57.75K). Each is collected daily, at the same time each day, summed and the total for each is reported for the month. This distinction is made because permanent lines are commonly used in patients frequenting these areas and may have lower rates of associated infection than central lines inserted for temporary use. If a patient has both a temporary and a permanent central line, only the temporary line is counted.

In NICUs, again because of differing infection risks, the number of patients with central lines and those with umbilical catheters is collected daily, at the same time each day, summed and the

total for each is reported for the month. If a patient has both an umbilical catheter and a central line, count as an umbilical catheter day. On the *Denominators for Neonatal Intensive Care Unit (NICU)* (CDC 57.75J), patients are further stratified by birthweight in five categories since risk of BSI also varies by birthweight. NOTE: **Birthweight** is a risk stratifier for events in the NICU. It refers to the weight of the infant at the time of birth and should not be changed as the infant gains weight. For example, if a neonate weights 1006 grams at birth but remains in the NICU for two months and has a body weight of 1650 grams when it develops a CLABSI, the recorded birthweight should still be 1006 grams on the BSI form/screen.

Determination of temporary central line days in any type of patient care area: At the same time each day, the number of patients with one or more temporary central lines are counted and at the end of the month these counts are summed and used as a denominator. If a patient has more than one temporary central line on a given day, this is counted only as one central line day. If a patient has both a temporary and a permanent central line on the same day, the day is counted as one temporary central line day.

Determination of permanent central line days in SCA and non-SCA patient care areas: If a patient has only a permanent central line, include it in the daily permanent central line-day count, beginning on the day of first access and continuing through the entire stay. If a patient has both a permanent and a temporary central line on the same day, the day is counted as one temporary central line day.

Data Analyses: The CLABSI rate per 1000 central line-days is calculated by dividing the number of CLABSI by the number of central line-days and multiplying the result by 1000. The Central Line Utilization Ratio is calculated by dividing the number of central line-days by the number of patient-days. These calculations will be performed separately for different types of ICUs, specialty care areas, and other locations in the institution. Separate rates and ratios will also be calculated for different types of catheters and birthweight categories in NICUs, as appropriate.

Central Line Insertion Practices Adherence Monitoring

Introduction: Central line-associated bloodstream infections (CLABSIs) can be prevented through proper management of the central line. The CDC's Healthcare Infection Control Practices Advisory Committee (CDC/HICPAC) *Guidelines for the Prevention of Intravascular Catheter-Related Infections*[1] recommends evidence-based central line insertion practices known to reduce the risk of subsequent central line-associated bloodstream infection. These include use of maximal sterile barriers during insertion, proper use of a skin antiseptic prior to insertion, avoiding the femoral insertion site whenever possible, and avoiding guidewire exchange when a central line-associated infection is suspected. Despite the scientific evidence supporting these measures, several reports suggest that adherence to these practices remains low in US hospitals.

Several centers have found it useful to monitor adherence to evidence-based central line insertion

practices as a method for identifying quality improvement opportunities and strategically targeting interventions. Feedback of adherence data has been a component of multifaceted interventions that have successfully reduced CLABSI rates. There is currently no systematic method to collect information on central line insertion practices.

The proposed additional collections in NHSN would enable participating facilities and CDC to:

a. Monitor central line insertion practices in individual patient care units and facilities and to provide aggregate adherence data for all participating facilities. Facilities have the option of recording inserter-specific adherence data.
b. Link gaps in recommended practice with the clinical outcome (i.e., CLABSI) both in individual facilities and for all participating facilities.
c. Facilitate quality improvement by identifying specific gaps in adherence to recommended prevention practices, thereby helping to target intervention strategies for reducing central line-associated bloodstream infection rates.

Settings: Surveillance may occur in any type of patient care location where central lines are inserted.

Requirements: Surveillance for central line insertion practices in at least one location in the healthcare institution for at least one calendar month as indicated in the *Patient Safety Monthly Reporting Plan* (Form 5 CDC 57.75A). Participating facilities may perform surveillance for insertion practices during a month when concomitant CLABSI surveillance is being conducted, or may collect insertion practice data during a month when no CLABSI surveillance is being conducted or in locations where CLABSI are not monitored (e.g., emergency department, operating room, etc.). If participating facilities wish to produce reports that link insertion practices to outcomes (i.e., CLABSI), surveillance for insertion practices and CLABSI must be done concomitantly.

Methods: The *Central Line Insertion Practices Adherence Monitoring Form* (Form JJ CDC 57.75) is used to collect and report central line insertion practices for every central line insertion occurring during the month selected for surveillance. The *Instructions for Completion of the Central Line Insertion Practices Adherence Monitoring Form* (Table 3) contains directions for collection and entry of each data element on the form. The form can be completed at or near the time of insertion either by the inserter or an observer present at the insertion (e.g., nurse assisting with the catheter insertion), or the form can be completed from documentation in the patient chart (e.g., if the elements of the monitoring form have been incorporated into standard central-line insertion procedure notes). *The Central Line Insertion Practices Adherence Monitoring* form is completed for every central line insertion that occurs during the month chosen for surveillance. The form includes information pertaining to demographics of the patient, information pertaining to the inserter, information on maximal sterile barriers used, the reasons for central line insertion, skin antisepsis, hand hygiene practice before insertion, type of central line and insertion site, and use of a guidewire. These data will be used to calculate adherence to recommended catheter insertion practices.

Data Analyses: Adherence rates for specific insertion practices will be calculated by dividing the number central line insertions during which the recommended practice was followed by the total number of central line insertions and multiplying the result by 100. This calculation will be performed separately for different types of locations in the institution. Participants have the option of calculating inserter-specific adherence rates. An additional option for analysis is to generate a line list of patients in whom a central line was inserted, the insertion practices followed during the insertion, and information on any subsequent CLABSI associated with that central line.

Ventilator-Associated Pneumonia (VAP) Event

Introduction: Pneumonia is the second most common nosocomial infection in the United States and is associated with substantial morbidity and mortality. Patients with mechanically assisted ventilation have a high risk of developing nosocomial pneumonia.

Prevention and control of nosocomial pneumonia is discussed in the CDC/HICPAC document, *Guideline for Prevention of Nosocomial Pneumonia.*[2] The Guideline strongly recommends that surveillance be conducted for bacterial pneumonia in ICU patients who are mechanically ventilated to facilitate identification of trends and for interhospital comparisons.

Settings: Surveillance will occur in any of four types of inpatient locations: (1) ICU, (2) specialty care areas (includes hematology/oncology wards, bone marrow transplant units, solid organ transplant units, inpatient dialysis units, long term acute care areas), (3) NICU and (4) any other inpatient location in the institution where denominator data can be collected (e.g., surgical wards). NOTE: It is not required to monitor for VAPs after the patient is discharged from the facility, however, if discovered, a VAP should be reported to NHSN. No additional ventilator days are reported.

Requirements: Surveillance for VAP in at least one inpatient location in the healthcare institution for at least one calendar month as indicated in the *Patient Safety Monthly Reporting Plan* (CDC 57.75A).

Definitions: Pneumonia (PNEU) is identified by using a combination of radiologic, clinical and laboratory criteria. The following pages outline the various assessment criteria that may be used for meeting the surveillance definition of nosocomial pneumonia. Report PNEUs that are ventilator-associated (i.e., patient was intubated and ventilated at the time of or within 48 hours before the onset of the event). NOTE: There is no minimum period of time that the ventilator must be in place in order for the PNEU to be considered ventilator-associated.

- Location of attribution: The inpatient location where the patient was assigned on the date the PNEU was identified
    - Example: Patient is intubated and ventilated in the Operating Room and then is admitted to the MICU. Within 24 hours of admission to the MICU, patient meets criteria for PNEU. This is reported to NHSN as a VAP for the MICU, because the Operating Room is not an inpatient location and no denominator data are collected there.

- Example: Patient on the Respiratory ICU (RICU) of Hospital A had the endotracheal tube and ventilator removed and is discharged home a few hours later. The ICP from Hospital B calls the next day to report that this patient has been admitted to Hospital B with a PNEU. This VAP should be reported to NHSN for Hospital A and attributed to the RICU. No additional ventilator days are reported.
- EXCEPTION: If a VAP develops within 48 hours of transfer from one inpatient location to another in the same facility, the infection is attributed to the transferring location. This is called the **Transfer Rule.**
  - Example: Patient on a ventilator in the SICU is transferred to the surgical ward. Thirty six (36) hours later, the patient meets the criteria for PNEU. This is reported to NHSN as a VAP for the SICU.
  - Example: Patient is transferred to the medical ward from the MSICU after having ventilator removed. Within 24 hours, the patient meets criteria for a PNEU. This is reported to NHSN as a VAP for the MSICU.
  - Patient on a ventilator is transferred from the medical ward to the coronary care ICU (CCU). After 4 days in the CCU, the patient meets the criteria for a PNEU. This is reported to NHSN as a VAP for the CCU.

- Ventilator: A device to assist or control respiration continuously, inclusive of the weaning period, through a tracheostomy or by endotracheal intubation.
  NOTE: Lung expansion devices such as intermittent positive-pressure breathing (IPPB); nasal positive end-expiratory pressure (PEEP); and continuous nasal positive airway pressure (CPAP, hypoCPAP) are not considered ventilators unless delivered via tracheostomy or endotracheal intubation (e.g., ET-CPAP).

Criteria for Defining Nosocomial Pneumonia: General Comments Applicable to All Pneumonia Specific Site Criteria:

1. Physician's diagnosis of pneumonia alone is **not** an acceptable criterion for nosocomial pneumonia.
2. Although specific criteria are included for infants and children, pediatric patients may meet any of the other pneumonia specific site criteria.
3. Ventilator-associated pneumonia (i.e., pneumonia in persons who had a device to assist or control respiration continuously through a tracheostomy or by endotracheal intubation within the 48-hour period before the onset of infection, inclusive of the weaning period) should be so designated when reporting data.
4. When assessing a patient for presence of pneumonia, it is important to distinguish between changes in clinical status due to other conditions such as myocardial infarction, pulmonary embolism, respiratory distress syndrome, atelectasis, malignancy, chronic obstructive pulmonary disease, hyaline membrane disease, bronchopulmonary dysplasia, etc. Also, care must be taken when assessing intubated patients to distinguish between tracheal colonization, upper respiratory tract infections (e.g., tracheobronchitis), and early onset pneumonia. Finally, it should be recognized that it may be difficult to determine nosocomial pneumonia in the elderly, infants, and immunocompromised patients since such conditions may mask

typical signs or symptoms associated with pneumonia. Alternate specific criteria for the elderly, infants and immunocompromised patients have been included in this definition of nosocomial pneumonia.

5. Nosocomial pneumonia can be characterized by its onset: early or late. Early onset pneumonia occurs during the first four days of hospitalization and is often caused by *Moraxella catarrhalis, H. influenzae*, and *s. pneumoniae*. Causative agents of late onset pneumonia are frequently gram negative bacilli or *S. aureus*, including methicillin-resistant *S. aureus*. Viruses (e.g., Influenza A and B or Respiratory Syncytial Virus) can cause early and late onset nosocomial pneumonia, whereas yeasts, fungi, legionellae, and *Pneumocystis carinii* are usually pathogens of late onset pneumonia.
6. Pneumonia due to gross aspiration (for example, in the setting of intubation in the emergency room or operating room) is considered nosocomial if it meets any specific criteria and was not clearly present or incubating at the time of admission to the hospital.
7. Multiple episodes of nosocomial pneumonia may occur in critically ill patients with lengthy hospital stays. When determining whether to report multiple episodes of nosocomial pneumonia in a single patient, look for evidence of resolution of the initial infection. The addition of or change in pathogen alone is not indicative of a new episode of pneumonia. The combination of new signs and symptoms and radiographic evidence or other diagnostic testing is required.
8. Positive Gram stain for bacteria and positive KOH (potassium hydroxide) mount for elastin fibers and/or fungal hyphae from appropriately collected sputum specimens are important clues that point toward the etiology of the infection. However, sputum samples are frequently contaminated with airway colonizers and therefore must be interpreted cautiously. In particular, *Candida* is commonly seen on stain, but infrequently causes nosocomial pneumonia.

Abbreviations:

BAL – bronchoalveolar lavage
EIA – enzyme immunoassay
FAMA – fluorescent-antibody staining of membrane antigen
IFA – immunofluorescent antibody
LRT – lower respiratory tract
PCR – polymerase chain reaction
PMN – polymorphonuclear leukocyte
RIA -- radioimmunoassay

Reporting Instructions:

- There is a hierarchy of specific categories within the major site pneumonia. Even if a patient meets criteria for more than one specific site, report only one:
    - If a patient meets criteria for both PNU1 and PNU2, report PNU2
    - If a patient meets criteria for both PNU2 and PNU3, report PNU3
    - If a patient meets criteria for both PNU1 and PNU3, report PNU3
- Report concurrent lower respiratory tract infection (e.g., abscess or empyema) and pneumonia with the same organism(s) as pneumonia
- Lung abscess or empyema <u>without</u> pneumonia are classified as LUNG
- Bronchitis, tracheitis, tracheobronchitis, or bronchiolitis <u>without</u> pneumonia are classified as BRON.

Specific Site Algorithms for Clinically Defined Pneumonia (PNU1)

<table>
<tr><th>Radiology</th><th>Signs/Symptoms/Laboratory</th></tr>
<tr><td rowspan="3">Two or more serial chest radiographs with at least <u>one</u> of the following[1,2]:

New or progressive and persistent infiltrate

Consolidation

Cavitation

Pneumatoceles, in infants ≤ 1 year old

NOTE: In patients without underlying pulmonary or cardiac disease (e.g. respiratory distress syndrome, bronchopulmonary dysplasia, pulmonary edema, or chronic obstructive pulmonary disease), <u>one</u> <u>definitive</u> chest radiograph is acceptable.[1]</td><td>FOR ANY PATIENT, at least <u>one</u> of the following:

-Fever (>38°C or >100.4°F) with no other recognized cause
-Leukopenia (<4000 WBC/mm^3) or leukocytosis (<u>≥</u>12,000 WBC/mm^3)
-For adults <u>≥</u>70 years old, altered mental status with no other recognized cause

<u>and</u>
at least <u>two</u> of the following:

-New onset of purulent sputum[3], or change in character of sputum[4], or increased respiratory secretions, or increased suctioning requirements
-New onset or worsening cough, or dyspnea, or tachypnea[5]
-Rales[6] or bronchial breath sounds
-Worsening gas exchange (e.g. O_2 desaturations (e.g., PaO_2/FiO_2 <u>≤</u> 240)[7], increased oxygen requirements, or increased ventilator demand)</td></tr>
<tr><td>ALTERNATE CRITERIA, for infants <u>≤</u>1 year old:

Worsening gas exchange (e.g., O_2 desaturations, increased oxygen requirements, or increased ventilator demand)

<u>and</u>
at least <u>three</u> of the following:

-Temperature instability with no other recognized cause
-Leukopenia (<4000 WBC/mm^3) <u>or</u> leukocytosis (<u>≥</u>15,000 WBC/mm^3) and left shift (<u>≥</u>10% band forms)
-New onset of purulent sputum[3] or change in character of sputum[4], or increased respiratory secretions or increased suctioning requirements
-Apnea, tachypnea[5] , nasal flaring with retraction of chest wall or grunting
-Wheezing, rales[6], or rhonchi
-Cough
-Bradycardia (<100 beats/min) or tachycardia (>170 beats/min)</td></tr>
<tr><td>ALTERNATE CRITERIA, for child >1 year old or ≤ 12 years old, at least <u>three</u> of the following:

-Fever (>38.4°C or >101.1°F) or hypothermia (<36.5°C or <97.7°F) with no other recognized cause
-Leukopenia (<4000 WBC/mm^3) or leukocytosis (≥15,000 WBC/mm^3)
-New onset of purulent sputum[3], or change in character of sputum[4], or increased respiratory secretions, or increased suctioning requirements
-New onset or worsening cough, or dyspnea, apnea, or tachypnea[5].
-Rales[6] or bronchial breath sounds.
-Worsening gas exchange (e.g. O_2 desaturations, increased oxygen requirements, or increased ventilator demand)</td></tr>
</table>

Specific Site Algorithms for Pneumonia with Common Bacterial or Filamentous Fungal Pathogens and Specific Laboratory Findings (PNU2)

Radiology	Signs/Symptoms	Laboratory
Two or more serial chest radiographs with at least one of the following[1,2]: New or progressive and persistent infiltrate Consolidation Cavitation Pneumatoceles, in infants ≤ 1 year old NOTE: In patients **without** underlying pulmonary or cardiac disease (e.g. respiratory distress syndrome, bronchopulmonary dysplasia, pulmonary edema, or chronic obstructive pulmonary disease), one definitive chest radiograph is acceptable.[1]	At least **one** of the following: Fever (>38°C or >100.4°F) with no other recognized cause Leukopenia (<4000 WBC/mm^3) or leukocytosis (≥12,000 WBC/mm^3) For adults ≥70 years old, altered mental status with no other recognized cause **and** at least **one** of the following: New onset of purulent sputum[3], or change in character of sputum[4], or increased respiratory secretions, or increased suctioning requirements New onset or worsening cough, or dyspnea or tachypnea[5] Rales[6] or bronchial breath sounds Worsening gas exchange (e.g. O_2 desaturations [e.g., $PaO_2/FiO_2 \leq 240$][7], increased oxygen requirements, or increased ventilator demand)	At least **one** of the following: Positive growth in blood culture[8] not related to another source of infection Positive growth in culture of pleural fluid Positive quantitative culture[9] from minimally contaminated LRT specimen (e.g., BAL or protected specimen brushing) ≥5% BAL-obtained cells contain intracellular bacteria on direct microscopic exam (e.g., Gram stain) Histopathologic exam shows at least **one** of the following evidences of pneumonia: Abscess formation or foci of consolidation with intense PMN accumulation in bronchioles and alveoli Positive quantitative culture[9] of lung parenchyma Evidence of lung parenchyma invasion by fungal hyphae or pseudohyphae

Specific Site Algorithms for *Viral, Legionella,* and other Bacterial Pneumonias with Definitive Laboratory Findings (PNU2)

Radiology	**Signs/Symptoms**	**Laboratory**
Two or more serial chest radiographs with at least one of the following[1,2]: New or progressive and persistent infiltrate Consolidation Cavitation Pneumatoceles, in infants ≤ 1 year old NOTE: In patients **without** underlying pulmonary or cardiac disease (e.g. respiratory distress syndrome, bronchopulmonary dysplasia, pulmonary edema, or chronic obstructive pulmonary disease), one definitive chest radiograph is acceptable.[1]	At least **one** of the following: Fever (>38°C or >100.4°F) with no other recognized cause Leukopenia (<4000 WBC/mm^3) or leukocytosis (≥12,000 WBC/mm^3) For adults ≥70 years old, altered mental status with no other recognized cause **and** at least one of the following: New onset of purulent sputum[3], or change in character of sputum[4], or increased respiratory secretions, or increased suctioning requirements New onset or worsening cough or dyspnea, or tachypnea[5] Rales[6] or bronchial breath sounds Worsening gas exchange (e.g. O_2 desaturations [e.g., $PaO_2/FiO_2 \leq 240$][7], increased oxygen requirements, or increased ventilator demand)	At least **one** of the following[10-12]: Positive culture of virus or *Chlamydia* from respiratory secretions Positive detection of viral antigen or antibody from respiratory secretions (e.g., EIA, FAMA, shell vial assay, PCR) Fourfold rise in paired sera (IgG) for pathogen (e.g., influenza viruses, *Chlamydia*) Positive PCR for *Chlamydia* or *Mycoplasma* Positive micro-IF test for *Chlamydia* Positive culture or visualization by micro-IF of *Legionella* spp, from respiratory secretions or tissue. Detection of *Legionella pneumophila* serogroup 1 antigens in urine by RIA or EIA Fourfold rise in *L. pneumo*phila serogroup 1 antibody titer to ≥1:128 in paired acute and convalescent sera by indirect IFA.

Specific Site Algorithm for Pneumonia in Immunocompromised Patients (PNU3)

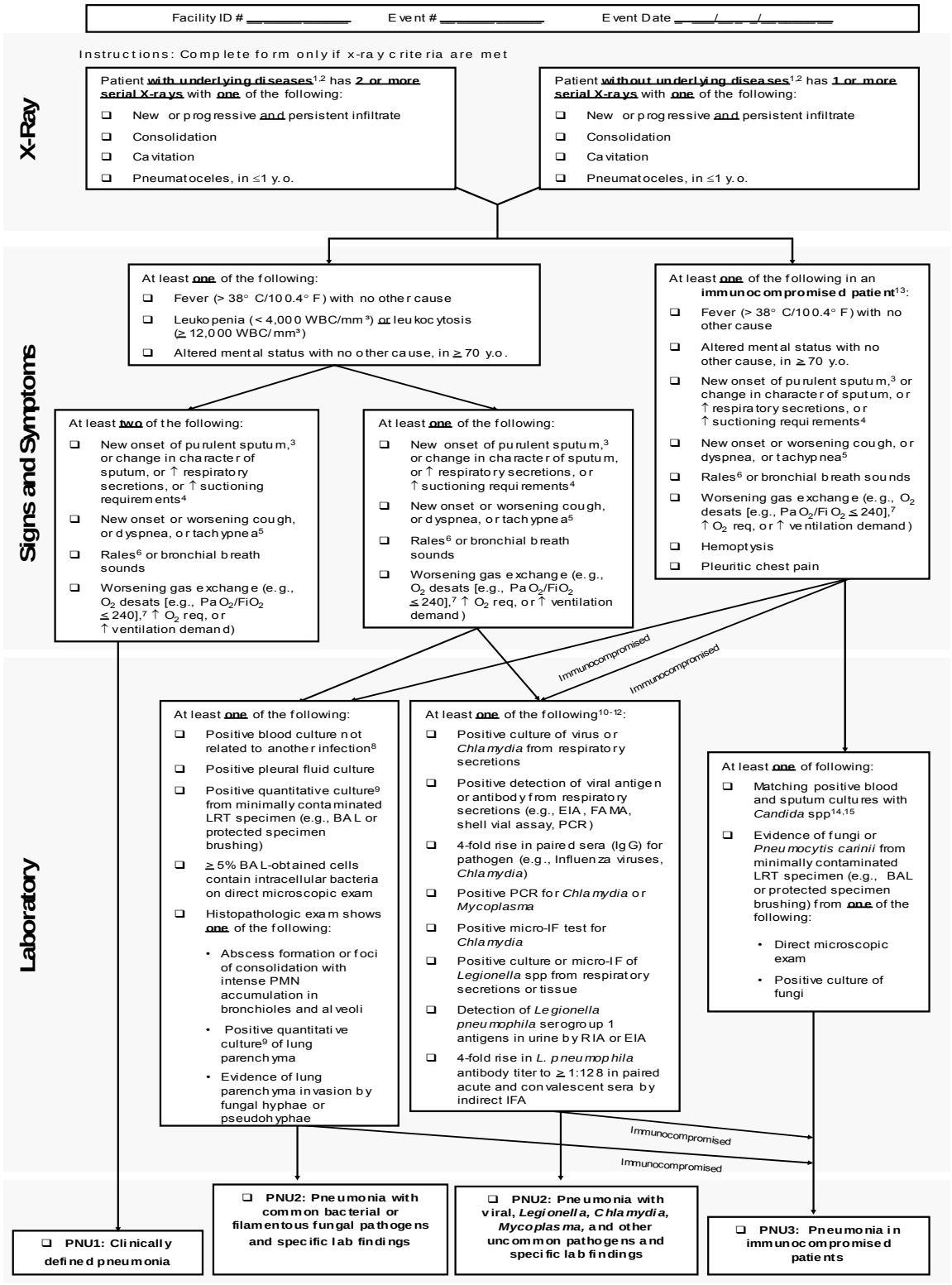
Radiology	Signs/Symptoms	Laboratory
Two or more serial chest radiographs with at least one of the following[1,2]: New or progressive and persistent infiltrate Consolidation Cavitation Pneumatoceles, in infants ≤ 1 year old NOTE: In patients **without** underlying pulmonary or cardiac disease (e.g. respiratory distress syndrome, bronchopulmonary dysplasia, pulmonary edema, or chronic obstructive pulmonary disease), one definitive chest radiograph is acceptable.[1]	Patient who is immunocompromised[13] has at least **one** of the following: Fever (>38°C or >100.4°F) with no other recognized cause For adults ≥70 years old, altered mental status with no other recognized cause New onset of purulent sputum[3], or change in character of sputum[4], or increased respiratory secretions, or increased suctioning requirements New onset or worsening cough, or dyspnea, or tachypnea[5] Rales[6] or bronchial breath sounds Worsening gas exchange (e.g. O_2 desaturations [e.g., $PaO_2/FiO_2 \leq 240$][7], increased oxygen requirements, or increased ventilator demand) Hemoptysis Pleuritic chest pain	At least **one** of the following: Matching positive blood and sputum cultures with *Candida* spp. [14, 15] Evidence of fungi or *Pneumocystis carinii* from minimally contaminated LRT specimen (e.g., BAL or protected specimen brushing) from one of the following: - Direct microscopic exam - Positive culture of fungi Any of the following from **LABORATORY CRITERIA DEFINED UNDER PNU2**

Footnotes to Algorithms:

1. Occasionally, in nonventilated patients, the diagnosis of nosocomial pneumonia may be quite clear on the basis of symptoms, signs, and a single definitive chest radiograph. However, in patients with pulmonary or cardiac disease (for example, interstitial lung disease or congestive heart failure), the diagnosis of pneumonia may be particularly difficult. Other non-infectious conditions (for example, pulmonary edema from decompensated congestive heart failure) may simulate the presentation of pneumonia. In these more difficult cases, serial chest radiographs must be examined to help separate infectious from non-infectious pulmonary processes. To help confirm difficult cases, it may be useful to review radiographs on the day of diagnosis, 3 days prior to the diagnosis and on days 2 and 7 after the diagnosis. Pneumonia may have rapid onset and progression, but does not resolve quickly. Radiographic changes of pneumonia persist for several weeks. As a result, rapid radiographic resolution suggests that the patient does not have pneumonia, but rather a non-infectious process such as atelectasis or congestive heart failure.
2. Note that there are many ways of describing the radiographic appearance of pneumonia. Examples include, but are not limited to, “air-space disease”, “focal opacification”, “patchy areas of increased density”. Although perhaps not specifically delineated as pneumonia by the radiologist, in the appropriate clinical setting these alternative descriptive wordings should be seriously considered as potentially positive findings.

3. Purulent sputum is defined as secretions from the lungs, bronchi, or trachea that contain ≥25 neutrophils and ≤10 squamous epithelial cells per low power field (x100). If your laboratory reports these data qualitatively (e.g., "many WBCs" or "few squames"), be sure their descriptors match this definition of purulent sputum. This laboratory confirmation is required since written clinical descriptions of purulence are highly variable.
4. A single notation of either purulent sputum or change in character of the sputum, is not meaningful; repeated notations over a 24 hour period would be more indicative of the onset of an infectious process. Change in character of sputum refers to the color, consistency, odor and quantity.
5. In adults, tachypnea is defined as respiration rate >25 breaths per minute. Tachypnea is defined as >75 breaths per minute in premature infants born at <37 weeks gestation and until the 40th week; >60 breaths per minute in patients <2 months old; >50 breaths per minute in patients 2-12 months old; and >30 breaths per minute in children >1 year old.
6. Rales may be described as "crackles".
7. This measure of arterial oxygenation is defined as the ratio of the arterial tension (PaO_2) to the inspiratory fraction of oxygen (FiO_2).
8. Care must be taken to determine the etiology of pneumonia in a patient with positive blood cultures and radiographic evidence of pneumonia, especially if the patient has invasive devices in place such as intravascular lines or an indwelling urinary catheter. In general, in an immunocompetent patient, blood cultures positive for coagulase negative staphylococci, common skin contaminants, and yeasts will not be the etiologic agent of the pneumonia.
9. Refer to Threshold values for cultured specimens on page 21. An endotracheal aspirate is not a minimally contaminated specimen. Therefore, an endotracheal aspirate does not meet the laboratory criteria.
10. Once laboratory-confirmed cases of pneumonia due to respiratory syncytial virus (RSV), adenovirus, or influenza virus have been identified in a hospital, clinician's presumptive diagnosis of these pathogens in subsequent cases with similar clinical signs and symptoms is an acceptable criterion for presence of nosocomial infection.
11. Scant or watery sputum is commonly seen in adults with pneumonia due to viruses and *Mycoplasma* although sometimes the sputum may be mucopurulent. In infants, pneumonia due to RSV or influenza yields copious sputum. Patients, except premature infants, with viral or mycoplasmal pneumonia may exhibit few signs or symptoms, even when significant infiltrates are present on radiographic exam.
12. Few bacteria may be seen on stains of respiratory secretions from patients with pneumonia due to *Legionella* spp, mycoplasma, or viruses.
13. Immunocompromised patients include those with neutropenia (absolute neutrophil count <500/mm^3), leukemia, lymphoma, HIV with CD4 count <200, or splenectomy; those who are early post-transplant, are on cytotoxic chemotherapy, or are on high dose steroids (e.g., >40mg of prednisone or its equivalent (>160mg hydrocortisone, >32mg methylprednisolone, >6mg dexamethasone, >200mg cortisone) daily for >2weeks).
14. Blood and sputum specimens must be collected within 48 hours of each other.
15. Semiquantitative or nonquantitative cultures of sputum obtained by deep cough, induction, aspiration, or lavage are acceptable. If quantitative culture results are available, refer to algorithms that include such specific laboratory findings.

PNEUMONIA FLOW DIAGRAM

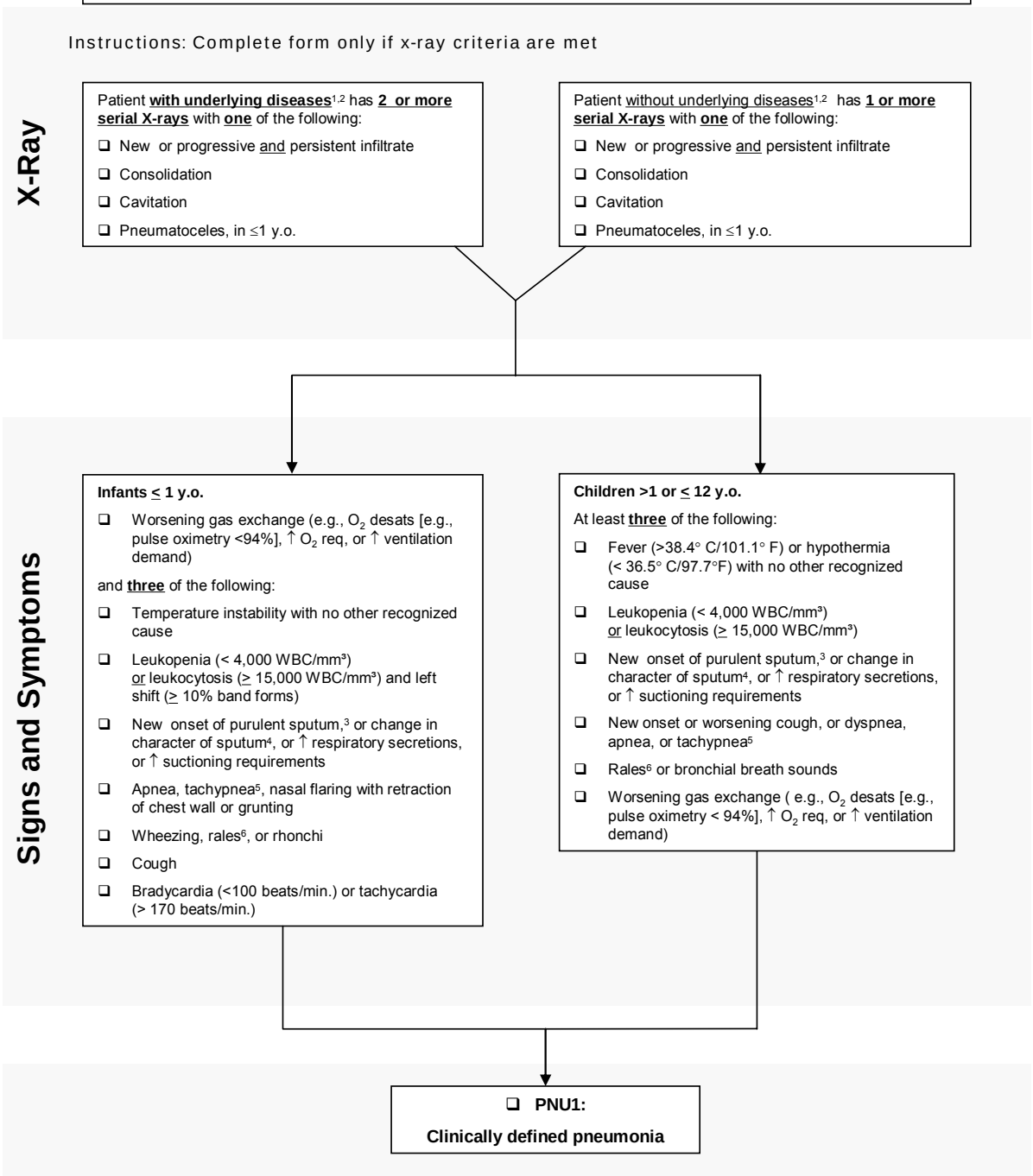


1

PNEUMONIA FLOW DIAGRAM
ALTERNATE CRITERIA FOR INFANTS AND CHILDREN

Facility ID # _____ Event # _____ Event Date _ ___/___ _/_____

Instructions: Complete form only if x-ray criteria are met



1

Threshold values for cultured specimens used in the diagnosis of pneumonia

Specimen collection/technique	**Values**
Lung parenchyma*	$\geq 10^4$ cfu/g tissue
Bronchoscopically (B) obtained specimens	
Bronchoalveolar lavage (B-BAL)	$\geq 10^4$ cfu/ml
Protected BAL (B-PBAL)	$\geq 10^4$ cfu/ml
Protected specimen brushing (B-PSB)	$\geq 10^3$ cfu/ml
Nonbronchoscopically (NB) obtained (blind) specimens	
NB-BAL	$>10^4$ cfu/ml
NB-PSB	$\geq 10^3$ cfu/ml

cfu = colony forming units
g = gram
ml = milliliter

Comment:
* Open-lung biopsy specimens and immediate post-mortem specimens obtained by transthoracic or transbronchial biopsy

Numerator Data: The *Pneumonia (PNEU) Form* (CDC 57.75G) is used to collect and report each VAP that is identified during the month selected for surveillance. The *Instructions for Completion of Pneumonia Form* (Tables 4 and 2a) includes brief instructions for collection and entry of each data element on the form. The pneumonia form includes patient demographic information and information on whether or not mechanically assisted ventilation was present. Additional data include the specific criteria met for identifying pneumonia, whether the patient developed a secondary bloodstream infection, whether the patient died, and the organisms isolated from cultures and their antimicrobial susceptibilities.

Denominator data: The number of patients managed with a ventilatory device is collected daily, at the same time each day, according to the chosen location using the appropriate form (CDC 57.75J, 57.75K, and 57.75L). These daily counts are summed and the total is entered for the month. The data are collected individually for each of the locations identified.

Data Analyses: The VAP rate per 1000 ventilator-days is calculated by dividing the number of VAPs by the number of ventilator-days and multiplying the result by 1000. The Ventilator Utilization Ratio is calculated by dividing the number of ventilator-days by the number of patient-days. These calculations will be performed separately for the different types of ICUs, specialty care areas, and other locations in the institution, as well as by each birthweight category in NICUs.

Catheter-Associated Urinary Tract Infection (CAUTI) Event

Introduction: The urinary tract is the most common site of nosocomial infection, accounting for more than 40% of infections reported by acute care hospitals. Virtually all urinary tract infections (UTI) are caused by instrumentation of the urinary tract.

Although generally assumed to have low associated morbidity, CAUTI can lead to such complications as cystitis, pyelonephritis, gram-negative bacteremia, prostatitis, epididymitis, and orchitis in males and, less commonly, endocarditis, vertebral osteomyelitis, septic arthritis, endophthalmitis, and meningitis in all patients. Complications associated with CAUTI cause discomfort to the patient, prolonged hospital stay, and increased cost and mortality.

Prevention of CAUTIs is discussed in the CDC/HICPAC document, *Guideline for Prevention of Catheter-associated Urinary Tract Infections*[3].

Settings: Surveillance will occur in any of three types of inpatient locations: (1) ICUs, (2) specialty care areas (includes hematology/oncology wards, bone marrow transplant units, solid organ transplant units, inpatient dialysis units, long term acute care areas), and (3) any other inpatient location in the institution where denominator data can be collected (e.g., surgical wards). NOTE: It is not required to monitor for CAUTIs after the patient is discharged from the facility, however, if discovered, they should be reported to NHSN. No additional indwelling catheter days are reported.

Requirements: Surveillance for CAUTI is performed in at least one inpatient location in the healthcare institution for at least one calendar month as indicated in the *Patient Safety Monthly Reporting Plan* (CDC 57.75A).

Definitions: Catheter-associated urinary tract infections are classified into two groups with specific sets of criteria for each: symptomatic urinary tract infections (SUTI) and asymptomatic bacteriuria (ASB). Report UTIs that are catheter-associated (patient had an indwelling urinary catheter at the time of or within 7 days before the onset of the event. NOTE: There is no minimum period of time that the catheter must be in place in order for the UTI to be considered catheter-associated.

- Location of attribution: The inpatient location where the patient was assigned on the date the UTI was identified.
    - Example: Patient has a Foley catheter inserted in the Emergency Department and then is admitted to the MICU. Within 24 hours of admission to the MICU, patient meets criteria for UTI. This is reported to the NHSN as a CAUTI for the MICU, because the Emergency Department is not an inpatient location and no denominator data are collected there.
    - Example: Patient on the urology ward of Hospital A had the Foley catheter removed and is discharged home a few hours later. The ICP from Hospital B calls the next day to report that this patient has been admitted to Hospital B with a UTI. This CAUTI should be reported to NHSN for Hospital A and attributed to the urology ward.
    - EXCEPTION: If a CAUTI develops within 48 hours of transfer from one inpatient location to another in the same facility, the infection is attributed to the transferring location. This is called the **Transfer Rule**.
        - Example: Patient with a Foley catheter in place in the SICU is transferred to the surgical ward. Thirty six (36) hours later, the patient meets the criteria for UTI. This is reported to NHSN as a CAUTI for the SICU.
        - Example: Patient is transferred to the medical ward from the MSICU after having the Foley catheter removed. Within 24 hours, patient meets criteria for a UTI. This is reported to NHSN as a CAUTI for the MSICU.
        - Example: Patient with a Foley catheter in place is transferred from the medical ward to the coronary care ICU (CCU). After 4 days in the CCU, the patient meets the criteria for UTI. This is reported to NHSN as a CAUTI for the CCU.

- Indwelling catheter: a drainage tube that is inserted into the urinary bladder through the urethra, is left in place, and is connected to a closed collection system; also called a Foley catheter; does not include straight in-and-out catheters.

Symptomatic urinary tract infection (SUTI)

A symptomatic urinary tract infection must meet at least one of the following criteria:

Criterion 1: Patient has at least one of the following signs or symptoms with no other recognized cause: fever (>38°C), urgency, frequency, dysuria, or suprapubic tenderness

and
patient has a positive urine culture, that is, $\geq 10^5$ microorganisms per cc of urine with no more than two species of microorganisms.

Criterion 2: Patient has at least two of the following signs or symptoms with no other recognized cause: fever (>38°C), urgency, frequency, dysuria, or suprapubic tenderness
and
at least one of the following:
a. positive dipstick for leukocyte esterase and/or nitrate
b. pyuria (urine specimen with $\geq$ 10 wbc/mm^3 or $\geq$ 3 wbc/high power field of unspun urine)
c. organisms seen on Gram stain of unspun urine
d. at least two urine cultures with repeated isolation of the same uropathogen (gram-negative bacteria or *S. saprophyticus*) with $\geq 10^2$ colonies/ml in nonvoided specimens
e. $\leq 10^5$ colonies/ml of a single uropathogen (gram-negative bacteria or *S. saprophyticus*) in a patient being treated with an effective antimicrobial agent for a urinary tract infection
f. physician diagnosis of a urinary tract infection
g. physician institutes appropriate therapy for a urinary tract infection.

Criterion 3: Patient $\leq$ 1 year of age has at least one of the following signs or symptoms with no other recognized cause: fever (>38°C rectal), hypothermia (<37°C rectal), apnea, bradycardia, dysuria, lethargy, or vomiting
and
patient has a positive urine culture, that is, $\geq 10^5$ microorganisms per cc of urine with no more than two species of microorganisms.

Criterion 4: Patient $\leq$ 1 year of age has at least one of the following signs or symptoms with no other recognized cause: fever (>38°C rectal), hypothermia (<37°C rectal), apnea, bradycardia, dysuria, lethargy, or vomiting
and
at least one of the following:
a. positive dipstick for leukocyte esterase and/or nitrate
b. pyuria (urine specimen with $\geq$ 10 wbc/mm^3 or $\geq$ 3 wbc/high power field of unspun urine)
c. organisms seen on Gram stain of unspun urine
d. at least two urine cultures with repeated isolation of the same uropathogen (gram-negative bacteria or *S. saprophyticus*) with $\geq 10^2$ colonies/ml in nonvoided specimens
e. $\leq 10^5$ colonies/ml of a single uropathogen (gram-negative bacteria or *S. saprophyticus*) in a patient being treated with an effective antimicrobial agent for a urinary tract infection
f. physician diagnosis of a urinary tract infection
g. physician institutes appropriate therapy for a urinary tract infection.

Comments

- A positive culture of a urinary catheter tip is not an acceptable laboratory test to diagnose a urinary tract infection.
- Urine cultures must be obtained using appropriate technique, such as clean catch collection or catheterization.
- In infants, a urine culture should be obtained by bladder catheterization or suprapubic aspiration; a positive urine culture from a bag specimen is unreliable and should be confirmed by a specimen aseptically obtained by catheterization or suprapubic aspiration.

Asymptomatic Bacteriuria (ASB)

An asymptomatic bacteriuria must meet the following criterion:

Patient has had an indwelling urinary catheter within 7 days before the culture
and
patient has a positive urine culture, that is, $\geq 10^5$ microorganisms per cc of urine with no more than two species of microorganisms
and
patient has no fever (>38°C), urgency, frequency, dysuria, or suprapubic tenderness.

Comments

- A positive culture of a urinary catheter tip is not an acceptable laboratory test to diagnose a urinary tract infection.
- Urine cultures must be obtained using appropriate technique, such as clean catch collection or catheterization.

Numerator Data: The *Urinary Tract Infection (UTI*) F*orm* (CDC 57.75H) is used to collect and report each CAUTI that is identified during the month selected for surveillance. The *Instructions for Completion of Urinary Tract Infection Form* (Tables 5 and 2a) includes brief instructions for collection and entry of each data element on the form. The UTI form includes patient demographic information and information on whether or not an indwelling urinary catheter was present. Additional data include the specific criteria met for identifying the UTI, whether the patient developed a secondary bloodstream infection, whether the patient died, and the organisms isolated from cultures and their antimicrobial susceptibilities.

Denominator data: The number of patients with an indwelling urinary catheter device is collected daily, at the same time each day, according to the chosen location using the appropriate form (CDC 57.75J, 57.75K, and 57.75L). These daily counts are summed and the total is entered for the month. The data are collected separately for each of the locations monitored.

Data Analyses: The CAUTI rate per 1000 urinary catheter-days is calculated by dividing the number of CAUTIs by the number of catheter-days and multiplying the result by 1000. The Urinary Catheter Utilization Ratio is calculated by dividing the number of urinary catheter-days

by the number of patient-days. These calculations will be performed separately for the different types of ICUs, specialty care areas, and other locations in the institution.

Dialysis Incident (DI)

Introduction: At the end of 2000, >240,000 patients were being treated with chronic hemodialysis at >3,600 dialysis centers in the United States. Hemodialysis patients require a vascular access, which can either be a large blood vessel or catheter that can be punctured to remove and replace blood. Bacteremias and localized infections of the vascular access site are common in hemodialysis patients[4, 5, 6, 7, 8.] The vascular access types, which are ordered according to increasing risk of infection, include arteriovenous fistulas created from the patient's own blood vessels; arteriovenous grafts constructed from synthetic materials; permanent central lines; and temporary central lines. Port access devices for hemodialysis have been removed from the market, but some existing ports may still be used. The risk of infection is relatively high in these devices. Because of frequent hospitalizations and receipt of antimicrobial drugs, hemodialysis patients are at high risk for infection with drug-resistant bacteria.

Settings: Surveillance will occur in patients who are treated in outpatient hemodialysis centers. These may be attached to or affiliated with a hospital, but should serve mostly hemodialysis outpatients.

Requirements: Surveillance for dialysis incidents for at least one month among chronic hemodialysis patients at an outpatient hemodialysis facility as indicated in the *Patient Safety Monthly Reporting Plan* (CDC 57.75A).

Definitions: Data recorded on the Dialysis Incident forms are evaluated with a computer algorithm to determine whether each incident meets the definitions of one or more events.

Local access infection: Pus, redness, or swelling of the vascular access site and access-associated bacteremia was not present and patient was hospitalized or had initiation of an IV antimicrobial agent.
Access-associated bacteremia: Blood culture positive with source identified as the vascular access site or unknown.
Vascular access infection: Either local access infection or access-associated bacteremia.

DI Rules for Entering an Event

Numerator Data: For each patient with a hospitalization, outpatient IV antimicrobial start, or positive blood culture, participating dialysis centers will complete one *Dialysis Incident Form* (CDC 57.75E).The data on the *Dialysis Incident Form* are evaluated by computer algorithm to determine the presence or absence of several outcome events (see Definitions). The *Instructions for Completion of Dialysis Incident Form* (Tables 9 and 2a) includes patient demographic information and brief instructions for collection and entry of each data element on the form.

Hospitalization: The patient stayed overnight in a hospital, not just those related to infections or those where the patient was directly admitted from the dialysis unit. Each time a patient is

hospitalized (no matter how soon after the last hospitalization), enter it as a new event. If the patient was hospitalized and returns to the dialysis unit on IV antimicrobials, both will be included in the same event -- do NOT enter a second event.

IV antimicrobial start: Include all IV antimicrobial starts, 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.

Positive blood culture: Include all patients with a positive blood culture 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 cultures occurring 21 days or more after ~~the first~~ a previous positive blood culture.

Denominator Data: The number of chronic hemodialysis patients with each access type who received hemodialysis at the center during the first two working days of the month is recorded on the *Denominators for Outpatient Dialysis Form* (CDC 57.75M). These data are used to estimate the number of patient-months. Only chronic hemodialysis outpatients are included. The *Instructions for Completion of Denominators for Outpatient Dialysis* (Table 10) includes brief instructions for collection and entry of each data element on the form.

Data Analyses: The numbers of various events are tabulated, and rates of these events per 100 patient-months calculated by dividing the number of events by the number of patient-months and multiplying the result by 100. These rates are stratified by vascular access type and compared to the mean rate of all centers combined.

Medication-Associated Module

Antimicrobial Use and Resistance (AUR) Option

Introduction: Rates of resistance to antimicrobials agents are increasing rapidly at U.S. hospitals. The two main reasons for this increase are patient-to-patient transmission of resistant organisms and selection of resistant organisms because of antimicrobial receipt.[9] Previous studies have shown that feedback of rates of antimicrobial use and resistance to clinicians can improve the appropriateness of antimicrobial prescribing. Use of the AUR Option will assist hospitals in collecting data on antimicrobial resistance and/or antimicrobial use so that this information can be used for prevention purposes. The AUR Option does not collect data on healthcare-associated infections. Therefore, we strongly encourage the simultaneous collection of data using the Device-Associated Event Module for the same months and in the same locations as followed in the AUR Option.

Settings: All data are collected for all three of the following: 1) at least one intensive care unit or specialty care area (ICU/SCA), 2) all non-ICU/SCA areas combined, and 3) all outpatient areas combined. **Exception**: No pharmacy data are collected on outpatient areas.

Requirements: If the AUR Option is chosen, either or both microbiology laboratory and pharmacy data may be reported for the locations specified below in item 2 for a minimum of 6 months per calendar year (*Antimicrobial Use and Resistance (AUR) Microbiology - Laboratory Data* (CDC 57.75P) and *Antimicrobial Use and Resistance (AUR) - Pharmacy Data* (CDC 57.75Q)). Submission of fewer than 6 months will not be adequate to accurately measure antimicrobial resistance or use rates. If more than one ICU/SCA is followed, at least 6 months of data for each ICU/SCA, in addition to the data from the combined inpatient non-ICU/SCA areas and combined outpatient areas, must be reported.

1. The unit of data collection is one month.
2. An acceptable month of data includes:
    a. Data submitted for all three of the following hospital areas: 1) at least one ICU/SCA, 2) all non-ICU/SCA inpatient areas combined, and 3) all outpatient areas combined.
    b. Each month, each hospital chooses to monitor either microbiology data or pharmacy data or both and indicates its choice on the *Patient Safety Monthly Reporting Plan* (CDC 57.75A)
    c. All data fields on the selected AUR Monthly Report forms are completed for each hospital area being followed.

The *Instructions for Completion of AUR Option (Microbiology and Pharmacy)* (Table 11) includes brief instructions on how to complete all data fields on the selected AUR Monthly Report forms for each hospital area being followed.

Definitions: See *Instructions for Completion of AUR Option (Microbiology and Pharmacy)* (Table 11).

Numerator Data:

Microbiology: Antimicrobial susceptibility test results on all nonduplicate, clinical isolates processed by the laboratory during each study month are reported. Susceptible (S), intermediate (I), and resistant (R) isolates are stratified by ICU/SCA, combined non-ICU inpatient areas, and combined outpatient areas. All nonduplicate isolates, whether responsible for hospital-associated or community-associated infection or for colonization, are reported by participating hospitals, with the exception of surveillance cultures. Participating hospitals must use Clinical Laboratory Standards Institute (CLSI)(formerly National Committee for Clinical Laboratory Standards [NCCLS]) interpretive standards for minimum inhibitory concentration or zone diameter testing standards to report numbers of susceptible, intermediate, or resistant organisms. Antimicrobial resistance rates are calculated by using the number of resistant isolates as the numerator.

Pharmacy: The number of grams or million international units (mill. I. U.), as appropriate, are reported monthly for inpatients for selected oral and parenteral antimicrobial agents. These amounts are converted to defined daily doses (DDD) for each antimicrobial agent by dividing the amount used in the inpatient location by the appropriate DDD conversion value (Table 16).[10]

Antimicrobial use rates are calculated by using the number of DDD of antimicrobial agent as the numerator (see Data Analysis below for rate formula).

Denominator Data: Antimicrobial resistance rates are calculated by using the number of tested isolates as the denominator. Antimicrobial use rate denominators are patient-days per time period of analysis stratified by area of utilization. If a screening test is used to eliminate susceptible isolates for further testing to a specific antimicrobial, the total number of isolates screened or tested should be used in the denominator.

Data Analyses: Antimicrobial resistance data are expressed as prevalence resistance rates per 100 isolates tested (i.e., # resistant isolates / # isolates tested x 100).

Antimicrobial use data are expressed as incidence density rates of DDD per 1000 patient-days stratified by hospital area according to the formula below. Antimicrobials with similar spectrum or clinical indications are grouped prior to analysis.

$$\text{DDD per 1,000 patient-days} = \frac{\text{DDD of antimicrobial}}{\text{\# Patient-days}} \times 1000$$

Procedure-Associated Module

Methodology

This module requires active, patient-based, prospective surveillance of operative procedure-associated infections and their corresponding denominator data by a trained infection control professional (ICP). This means that the ICP shall seek out infections during a patient's stay by screening a variety of data sources, such as laboratory, pharmacy, admission/discharge/transfer, radiology/imaging, and pathology databases, and patient charts, including history and physical notes, nurses/physicians notes, temperature charts, etc. Others may be trained to screen data sources for these infections, but the ICP must make the final determination. Post-procedure pneumonia (PPP) events are monitored only for patients undergoing inpatient operative procedures and only during the patient's stay (i.e., do not use post-discharge surveillance methods for PPP). Use post-discharge surveillance methods to detect SSIs following in- and outpatient operative procedures. These methods include 1) direct examination of patients' wounds during follow-up visits to either surgery clinics or physicians' offices, 2) review of medical records or surgery clinic patient records, 3) surgeon surveys by mail or telephone, and 4) patient surveys by mail or telephone (though patients may have a difficult time assessing their infections)[11]. Any combination of these methods is acceptable for use; however, CDC criteria for SSI must be used. To minimize the ICP's data collection burden, others may be trained to collect the denominator data (e.g., OR staff). In addition, downloads of operating room data may be done (see file specifications).

Surgical Site Infection (SSI) Event

Introduction: In the United States, an estimated 27 million surgical procedures are performed each year.[12] According to data reported to the NNIS system, SSIs are the third most common nosocomial infection, accounting for 14% to 16% of all nosocomial infections among hospitalized patients.[13] From 1986 to 1996, hospitals conducting SSI surveillance in the NNIS system reported 15,523 SSIs following 593,344 operations (CDC, unpublished data).

Among surgical patients, 38% of all reported infections were SSIs. When surgical patients with SSI died, 77% of the deaths were reported to be related to the infection, and the majority (93%) were serious infections involving organs or spaces accessed during the operation (CDC, unpublished data).

Advances in infection control practices include improved operating room ventilation, sterilization methods, barriers, surgical technique, and availability of antimicrobial prophylaxis. Despite these activities, SSIs remain a substantial cause of morbidity and mortality among hospitalized patients.

Surveillance of SSI with feedback of appropriate data to surgeons has been shown to be an important component of strategies to reduce SSI risk.[14, 15] A successful surveillance program includes the use of epidemiologically sound infection definitions and effective surveillance methods, stratification of SSI rates according to risk factors associated with SSI development, and data feedback.[16] The CDC's recommendations for preventing SSIs were published in 1999.[11]

Settings: Surveillance will occur with surgical patients in any inpatient/outpatient setting where the selected NHSN Operative Procedure(s) are performed.

Requirements: Select at least one NHSN operative procedure (Table 12) and indicate selected procedure on the *Patient Safety Monthly Reporting Plan* (CDC 57.75A). Collect numerator and denominator data on all selected procedures for at least one month.

Definitions:

An NHSN operative procedure is a procedure 1) that is performed on a patient who is an NHSN patient inpatient or an NHSN outpatient; and 2) takes place during an operation (defined as a single trip to the operating room [OR] where a surgeon makes at least one incision through the skin or mucous membrane, including laparoscopic approach, and closes the incision before the patient leaves the OR; and 3) that is included in Table 12.

NHSN Inpatient: A patient whose date of admission to the healthcare facility and the date of discharge are different calendar days.

NHSN Outpatient: A patient whose date of admission to the healthcare facility and date of discharge are the same calendar day.

OR: A patient care area that meets the American Institute of Architects (AIA) criteria for an operating room. This may include an operating room, C-Section room, interventional radiology room, or a cardiac catheterization lab.

Implant: A nonhuman-derived implantable foreign body (e.g., prosthetic heart valve, nonhuman vascular graft, mechanical heart, or hip prosthesis) that is permanently placed in a patient during an NHSN operative procedure and is not routinely manipulated for diagnostic or therapeutic purposes. Screws, wires, and mesh that are left permanently are considered implants.

A **superficial incisional SSI** must meet the following criterion:

Infection occurs within 30 days after the operative procedure

and

involves only skin and subcutaneous tissue of the incision

and

patient has at least one of the following:

a. purulent drainage from the superficial incision.

b. organisms isolated from an aseptically obtained culture of fluid or tissue from the superficial incision.

c. at least one of the following signs or symptoms of infection: pain or tenderness, localized swelling, redness, or heat, and superficial incision is deliberately opened by surgeon, and is culture-positive or not cultured. A culture-negative finding does not meet this criterion.

d. diagnosis of superficial incisional SSI by the surgeon or attending physician.

NOTE: There are two specific types of superficial surgical incisional SSIs:

1. Superficial Incisional Primary (SIP) – a superficial incisional SSI that is identified in the primary incision in a patient that has had an operation with one or more incisions (e.g., C-section incision or chest incision for CBGB)
2. Superficial Incisional Secondary (SIS) – a superficial incisional SSI that is identified in the secondary incision in a patient that has had an operation with more than one incision (e.g., donor site [leg] incision for CBGB)

Reporting Instructions:

- Do not report a stitch abscess (minimal inflammation and discharge confined to the points of suture penetration) as an infection.
- Do not report a localized stab wound infection as SSI – it is considered either a skin or soft tissue infection, depending on its depth. As such, it is not an NHSN Protocol event.
- "Cellulitis", by itself, does not meet the criteria for Superficial Incisional SSI
- An infected circumcision site in newborns is classified as CIRC. Circumcision is not an NHSN operative procedure.

- An infected burn wound is classified as BURN and is not an NHSN protocol event.
- If the incisional site infection involves or extends into the fascial and muscle layers, report as a deep-incisional SSI (DIP or DIS).
- Classify infection that involves both superficial and deep incision sites as deep incisional SSI.

A **deep incisional SSI** must meet the following criterion:

Infection occurs within 30 days after the operative procedure if no implant is left in place or within one year if implant is in place and the infection appears to be related to the operative procedure
and
involves deep soft tissues (e.g., fascial and muscle layers) of the incision
and
patient has at least one of the following:

a. purulent drainage from the deep incision but not from the organ/space component of the surgical site
b. a deep incision spontaneously dehisces or is deliberately opened by a surgeon and is culture-positive or not cultured when the patient has at least one of the following signs or symptoms: fever (>38°C), or localized pain or tenderness. A culture-negative finding does not meet this criterion.
c. an abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathologic or radiologic examination
d. diagnosis of a deep incisional SSI by a surgeon or attending physician.

NOTE: There are two specific types of deep surgical incisional SSIs:

1. Deep Incisional Primary (DIP) – a deep incisional SSI that is identified in a primary incision in a patient that has had an operation with one or more incisions (e.g., C-section incision or chest incision for CBGB)
2. Deep Incisional Secondary (DIS) – a deep incisional SSI that is identified in the secondary incision in a patient that has had an operation with more than one incision (e.g., donor site [leg] incision for CBGB)

Reporting Instructions

- Classify infection that involves both superficial and deep incision sites as deep incisional SSI.

An **organ/space SSI** involves any part of the body, excluding the skin incision, fascia, or muscle layers, that is opened or manipulated during the operative procedure. Specific sites are assigned to organ/space SSI to further identify the location of the infection. The table below lists the specific sites that must be used to differentiate organ/space SSI. An example is appendectomy with subsequent subdiaphragmatic abscess, which would be reported as an organ/space SSI at the intraabdominal specific site (SSI-IAB).

An **organ/space SSI** must meet the following criterion:
Infection occurs within 30 days after the operative procedure if no implant is left in place or within one year if implant is in place and the infection appears to be related to the operative procedure

and

infection involves any part of the body, excluding the skin incision, fascia, or muscle layers, that is opened or manipulated during the operative procedure

and

patient has at least one of the following:

a. purulent drainage from a drain that is placed through a stab wound into the organ/space
b. organisms isolated from an aseptically obtained culture of fluid or tissue in the organ/space
c. an abscess or other evidence of infection involving the organ/space that is found on direct examination, during reoperation, or by histopathologic or radiologic examination
d. diagnosis of an organ/space SSI by a surgeon or attending physician.

Reporting Instructions

- Occasionally an organ/space infection drains through the incision. Such infection generally does not involve reoperation and is considered a complication of the incision. Therefore, classify it as a deep incisional SSI.
- See specific sites for additional criteria
- Report mediastinitis following cardiac surgery that is accompanied by osteomyelitis as SSI-MED rather than SSI-BONE.
- If meningitis (MEN) and a brain abscess are present together, report the infection as IC
- Report CSF shunt infection as SSI-MEN if it occurs ≤ 1 year of placement; if later or after manipulation/access, it is considered CNS-MEN which is not an NHSN Protocol event.
- Report spinal abscess with meningitis as SSI-MEN following spinal surgery
- Episiotomy is not considered an operative procedure in NHSN.

Specific sites of an organ/space SSI, Individual definitions are available from the NHSN Help Messages (must be logged in to NHSN) or in CDC Definitions of Nosocomial Infections[21] (available from http://www.cdc.gov/ncidod/dhqp/pdf/NNIS/NosInfDefinitions.pdf)

CODE	SITE	CODE	SITE
BONE	Osteomyelitis	LUNG	Other infections of the respiratory tract
BRST	Breast abscess or mastitis	MED	Mediastinitis
CARD	Myocarditis or pericarditis	MEN	Meningitis or ventriculitis
DISC	Disc space	ORAL	Oral cavity (mouth, tongue, or gums)
EAR	Ear, mastoid	OREP	Other infections of the male or female reproductive tract
EMET	Endometritis	OUTI	Other infections of the urinary tract

ENDO	Endocarditis	SA	Spinal abscess without meningitis
EYE	Eye, other than conjunctivitis	SINU	Sinusitis
GIT	GI tract	UR	Upper respiratory tract
IAB	Intraabdominal, not specified else	VASC	Arterial or venous infection
IC	Intracranial, brain abscess or dura	VCUF	Vaginal cuff
JNT	Joint or bursa		

Numerator Data: All patients having a selected operation are monitored for signs of SSI. The *Surgical Site Infection (SSI)* form (CDC 57.75N) is completed for each such patient found to have an SSI.

NOTE:

- If a patient has several NHSN operative procedures prior to an infection, report the operative procedure code of the operation that was performed most closely in time prior to the infection date, unless there is evidence that the infection is associated with a different operation.
- If more than one NHSN operative procedure was done through a single incision, attempt to determine the procedure that is thought to be associated with the infection. If it is not clear (as is often the case when the infection is a superficial incisional SSI), or if the infection site being reported is not an SSI, use the NHSN Principal Operative Procedure Selection Lists (Table 14) to select which operative procedure to report.

The *Instructions for Completion of Surgical Site Infection Form* (Tables 13 and 2a) includes brief instructions for collection and entry of each data element on the form. The SSI form includes patient demographic information and information about the operative procedure, including the date and type of procedure. Information about the SSI includes the date of SSI, specific criteria met for identifying the SSI, when the SSI was detected, whether the patient developed a secondary bloodstream infection, whether the patient died, and the organisms isolated from cultures and the organisms' antimicrobial susceptibilities.

Denominator Data: For all patients having a procedure selected for surveillance during the month, complete the *Denominator for Procedure* form (CDC 57.75O). The data are collected individually for each operative procedure performed during the month specified on the *Patient Safety Monthly Surveillance Plan* (CDC 57.75A). The *Instructions for Completion of Denominator for Procedure Form* (Table 15) includes brief instructions for collection and entry of each data element on the form.

- If more than one NHSN operative procedure is performed during the same trip to the OR, a Denominator for Procedure (CDC 57.75O) record is reported for each operative procedure being monitored. Even if more than one NHSN operative procedure is done through the same incision (e.g., CARD and CBGC), a *Denominator for Procedure* record is reported for each.
- If more than one NHSN operative procedure is performed through the same incision, record the combined duration of all procedures, which is the time from skin incision to primary closure.

- For bilateral operative procedures (e.g., KPRO), two separate Denominator for Procedure (CDC 57.75O) are completed. To document the duration of the procedure, indicate the incision time to closure time for each procedure separately or, alternatively, take the total time for both procedures and split it evenly between the two.
- If a patient goes to the OR more than once during the same admission and another procedure is performed through the same incision within 24 hours of the original operative incision, report only one procedure on the Denominator for Procedure (CDC 57.75O) combining the durations for both procedures. For example, a patient has a CBGB lasting 4 hours. He returns to the OR six hours later to correct a bleeding vessel. The surgeon reopens the initial incision, makes the repairs, and recloses in 1.5 hours. Record the operative procedure as one CBGB and the duration of operation as 5 hour 30 minutes. If the wound class has changed, report the higher wound class. If the ASA class has changed, report the higher ASA class.

Data Analyses: The SSI rates per 100 operative procedures are calculated by dividing the number of SSIs by the number of specific operative procedures and multiplying the results by 100. These calculations will be performed separately for the different types of operative procedures and stratified by risk index. Standardized infection ratios are also calculated using indirect standardization or multivariate models.

- Basic SSI Risk Index. The index used in NHSN assigns surgical patients into categories based on the presence of three major risk factors:

  1. Operation lasting more than the duration cut point hours, where the duration cut point is the approximate 75th percentile of the duration of surgery in minutes for the operative procedure, rounded to the nearest whole number of hours.
  2. Contaminated (Class 3) or Dirty/infected (Class 4) wound class.
  3. ASA classification of 3, 4, or 5.

  The patient's SSI risk category is simply the number of these factors present at the time of the operation.

Post-procedure Pneumonia (PPP) Event

Introduction: Patients who undergo thoraco-abdominal operations are at increased risk of acquiring nosocomial pneumonia, even in the absence of mechanical ventilation.[17, 18, 19] Based on NNIS system reports, pneumonia was the third most frequently reported nosocomial infection among hospitalized surgical patients (15%), and among thoracic surgery patients, 34% of the nosocomial infections reported were pneumonia. Further, when NNIS surgical patients with nosocomial infections died and the death was attributed to the infection, pneumonia was the most frequently associated infection (38%). In this group, the risk of surgical patient death due to nosocomial pneumonia was similar whether or not a mechanical ventilator was used.[20]

Prevention of postoperative PNEU includes ambulation and deep breathing as soon as possible after operation and, in some patients, the use of incentive spirometry.

Settings: Surveillance of surgical patients will occur in any inpatient setting where the selected NHSN operative procedure(s) are performed.

Requirements: Select at least one NHSN operative procedure and indicate selected operation on the *Patient Safety Monthly Reporting Plan* (CDC 57.75A). Collect numerator and denominator data on all selected operations for at least one month.

Definitions: Pneumonia is identified by using a combination of radiologic, clinical, and laboratory criteria (see definitions section under VAP event).

Post-procedure Pneumonia: A pneumonia that meets the criteria after an inpatient operation takes place.

- Report as PPP those pneumonias that are detected prior to discharge following inpatient operations.
- Do not report PPP following outpatient operations.

Numerator Data: All inpatients having the selected procedure are monitored for signs of PPP. The *Pneumonia (PNEU)* form (CDC 57.75G) is completed for each such patient found to have a PPP. The *Instructions for Completion of Pneumonia Form* (Tables 4 and 2a) includes brief instructions for collection and entry of each data element on the form. The PNEU form includes patient demographic information and information about the operative procedure, including the date and type of procedure. Additional data include the specific criteria met for identifying the PNEU, whether the PNEU was also associated with the use of a ventilator, whether the patient developed a secondary bloodstream infection, whether the patient died, and the organisms isolated from cultures and the organisms' antimicrobial susceptibilities.

Denominator Data: For all patients having a procedure selected for surveillance during the month, complete *Denominator for Procedure* (CDC 57.75O). The data are collected individually for each inpatient operative procedure performed during the month specified on the *Patient Safety Monthly Surveillance Plan* (CDC 57.75A). The *Instructions for Completion of Denominator for Procedure* (Table 15) includes brief instructions for collection and entry of each data element on the form.

Data Analyses: The PPP rates per 100 operative procedures are calculated by dividing the number of PPPs by the number of specific operative procedures and multiplying the results by 100. These calculations will be performed separately for the different types of operative procedures.

Table 1. Instructions for Completion of the Patient Safety Monthly Reporting Plan Form (CDC 57.75A)

Data Field	Instructions for Data Collection
Facility ID #	The NHSN-assigned facility ID will be autoentered 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 in this column for those ~~facility~~ inpatient locations from which you will collect denominator data.
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.
DI	Conditionally required. If you plan to follow device-associated events, check this box if you will collect dialysis incidents (DI) 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.
Procedure-Associated Module	
Procedures	Conditionally required. If you plan to follow procedure-associated events, enter the procedure codes in this column for those NHSN operative procedures for which you will collect data about selected procedure-associated events and procedure-level denominator data.
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

Table 1. Instructions for Completion of the Patient Safety Monthly Reporting Plan Form (CDC 57.75A)

Data Field	Instructions for Data Collection
	outpatients, or circle "Both" to follow inpatients and outpatients. If SSIs will not be monitored for this 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 option for monitoring post-procedure pneumonia.
Medication-Associated Module	
Locations	Conditionally required. If you plan to follow the antimicrobial use and resistance (AUR) option, enter the location codes in this column for those facility locations from which you will collect data about antibiotic use and/or resistance. If you select this module, you must choose 1) at least one intensive care unit (ICU) or specialty care are (SCA) location and 2) all non-ICU/SCA locations combined and 3) all outpatient locations combined. NOTE: Pharmacy data are not collected for outpatient locations.
Microbiology	Conditionally required. If you plan to follow the AUR option, check if you will submit microbiology data for the selected location.
Pharmacy	Conditionally required. If you plan to follow the AUR option, check if you will submit pharmacy data for the selected location. NOTE: Pharmacy data are not submitted from outpatient areas.

Table 2. Instructions for Completing the Primary Bloodstream Infection (BSI) Form (CDC 57.75D)	
Data Field	**Instructions for Data Collection**
Facility ID #	The NHSN-assigned facility ID will be autoentered by the computer.
Event #	Event ID number will be autoentered 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.
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. Answer this question only if "Post-procedure BSI" response above was "yes. 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 autoentered 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 autoentered 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 12 are allowed.
Date of Procedure	Conditionally required. Answer this question only if "Post-procedure BSI" response above was "yes". If procedure performed, enter date using this format: MM/DD/YYYY.
Location	Required. Enter the inpatient location to which the patient was assigned

Table 2. Instructions for Completing the Primary Bloodstream Infection (BSI) Form (CDC 57.75D)	
Data Field	**Instructions for Data Collection**
	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.
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.
Risk Factors If Specialty Care Area, Permanent central line Temporary central line	Required. Answer these questions if the location is a 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.
Risk Factors If NICU, Central line Umbilical catheter Birth weight	Required. Answer these questions if the location is an NICU: Check Y if patient had a non-umbilical central line during the 48-hour period before Event date, otherwise check N. Check Y if patient had an umbilical catheter during the 48-hour period before Event date, otherwise check N. Required. Enter patient weight at birth in grams.
Event Details: Specific Event BSI (check laboratory-confirmed or clinical sepsis)	Required. Check either laboratory-confirmed (LCBI) or clinical sepsis (CSEP) indicating the specific site of this BSI event. NOTE: CSEP may be used only for neonates and infants.
Event Details If LCBI, indicate pathway	Conditionally required. If LCBI, check the LCBI criteria applicable to this event: __ Recognized pathogens: ≥1 blood culture positive __ Other organisms: ≥2 blood cultures drawn on separate occasions positive for same organism + clinical symptoms __ Other organisms: ≥1 blood culture positive + clinical symptoms + antimicrobial therapy
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.

Table 2. Instructions for Completing the Primary Bloodstream Infection (BSI) Form (CDC 57.75D)	
Data Field	**Instructions for Data Collection**
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. If CSEP, this field will be autofilled by the computer as N.
Custom Fields and Labels	Optional. Up to two date fields, two numeric fields, and 10 alphanumeric fields that 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 2a. Instructions for Completion of the Back of the Following Forms: **Primary Bloodstream Infection (CDC 57.75D); Pneumonia (CDC 57.75G); Urinary Tract Infection (CDC57.75H); Surgical Site Infection (CDC 57.75N); Dialysis Incident (CDC 57.75E)**	
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	If the pathogen(s) reported are those specified on the form, then for each antimicrobial agent listed, 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. **Reporting antibiograms is required for Protocol Events** For identified pathogens, antibiogram information is required. This is true regardless of whether the pathogen is one listed on the back of the printed forms. For those organisms that do appear on the back of the form, a select antibiogram is required. For pathogens that are not listed on the back of the form, you must enter a susceptibility result for at least one antimicrobial agent, even if that result is "Not Tested".
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 are reported S - Susceptible, I - Intermediate, R - Resistant, N - Not Tested

Table 3. Instructions for Completion of the Central Line Insertion Practices Adherence Monitoring Form (CDC 57.75JJ)

Data Field	Instructions for Form Completion
Facility ID	Required. Facility identification number will be autoentered by the computer
Event #	Required. Event number will be autogenerated by the computer
Patient ID	Required. Enter the patient ID. This is the patient identifier assigned by the facility and may consist of any combination of numbers and/or letters
Social Security #	Optional. Enter patient's Social Security Number
Secondary ID	Optional. Enter any other patient identifier assigned by the facility.
Patient name: Last, first, middle	Optional. Enter patient's last name, first name and middle name
Gender	Required. This is the gender of the patient. Check male or female.
Date of Birth	Required. Enter the patient's date of birth (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. 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 Type	Required. Event Type "CLIP" will be autoentered.
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; 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.
Inserter performed hand hygiene prior to central line insertion	Required. Check Y (Yes) if the inserter appropriately performed hand hygiene prior to inserting central line; otherwise check N (No). Appropriate hand hygiene includes the use of alcohol-based hand rub or soap and water hand wash.
Maximal sterile barrier	Required. Check each sterile barrier used during insertion:

Data Field	Instructions for Form Completion
precautions used	Mask/Eye shield; Sterile gown; Large sterile (full body) drape; Sterile gloves; Cap
Skin preparation	Required. Check all that apply: Chlorhexidine gluconate; Povidone iodine; Alcohol
Was skin preparation agent completely dry at time of first skin puncture?	Required. Check Y (Yes) if the skin prep agent was allowed to dry completely at the time of first skin puncture; otherwise select N (No).
Insertion site	Required. Check the site of insertion of the central line: Jugular; Subclavian; Umbilical; Femoral; Upper extremity (PICC).
Antimicrobial coated catheter used	Optional. Check Y (Yes) if antimicrobial coated catheter was used; otherwise check N (No).
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.
Number of lumens	Required. Circle the number of lumens in the device: 1, 2, 3 or $\geq$ 4.
Central line exchanged over a guidewire	Required. Check Y (Yes) if the central line was exchanged over a guidewire; otherwise Check N (No).
Antiseptic ointment applied to site	Required. Check Y (Yes) if antiseptic was applied to the insertion site following insertion but prior to application of the dressing; otherwise check N (No).
Custom Fields and Labels	Optional. Up to two date 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 57.75.G)	
Data Field	**Instructions for Data Collection**
Facility ID #	The NHSN-assigned facility ID will be autoentered by the computer.
Event #	Event ID number will be autoentered 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 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.
Post-procedure PNEU	Required. 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. Answer this question only if this patient developed the PNEU during the same admission as an operative procedure. Enter the appropriate NHSN procedure code. 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 autoentered 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 autoentered 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 12 are allowed.
Date of Procedure	If procedure performed, enter date using this format: MM/DD/YYYY.
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.
Risk Factors Ventilator Birth weight	 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. Conditionally required. If the patient is a NICU patient, enter the patient's birth weight in grams.
Event Details: PNEU Specific Event	Required. Check either 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: Secondary Bloodstream Infection	Required. Check Y or N to indicate if the patient had a secondary BSI.
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 (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.

Table 5. Instructions for Completion of Urinary Tract Infection (UTI) (CDC 57.75H)

Data Field	Instructions for Data Collection/Entry
Facility ID #	The NHSN-assigned facility ID will be autoentered by the computer.
Event #	Event ID number will be autoentered 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 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.
Post-procedure UTI	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. Answer this question only if "Post-procedure UTI" response above was "yes. 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 autoentered 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 autoentered 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 12 are allowed.
Date of Procedure	Conditionally required. If procedure performed, enter date.

Table 5. Instructions for Completion of Urinary Tract Infection (UTI) (CDC 57.75H)	
Data Field	**Instructions for Data Collection/Entry**
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.
Risk Factor Urinary Catheter	Required. Check Y or N to indicate if the patient had an indwelling urinary catheter at the time the event occurred or during the 7 days before the event.
Event Details: Specific Event: UTI	Required. Check either Asymptomatic bacteriuria (ASB), or Symptomatic UTI (SUTI), whichever criteria are met for this event
Event Details: Secondary Bloodstream Infection	Required. Check Y or N to indicate if the patient had a secondary BSI.
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 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 (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.

Table 6. Instructions for the Completion of Denominators for Intensive Care Unit (ICU)/Other locations (Not NICU or SCA)	
Data Field	**Instructions for Data Collection**
Facility ID #	The NHSN-assigned facility ID will be autoentered 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.
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 label and five corresponding custom data fields are available for local use and the values entered. These fields may be analyzed.

Table 7. Instructions for Completion of the Denominators for Specialty Care Area (SCA) (CDC 57.75K)	
Data Field	**Instructions for Data Collection**
Facility ID #	The NHSN-assigned facility ID will be autoentered 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 Temporary Permanent	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 non-tunneled central lines. 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 label and five corresponding custom data fields are available for local use and the values entered. These fields may be analyzed.

Table 8. Instructions for Completion of the Denominators for Neonatal Intensive Care Unit (NICU) (CDC 57.75J)	
Data Field	**Instructions for Data Collection**
Facility ID #	The NHSN-assigned facility ID will be autoentered 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: Umbilical catheter (U/C) Non-umbilical Central Line (CL)	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. 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. 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 label and five corresponding custom data fields are available for local use and the values entered. These fields may be analyzed.

Table 9. Instructions for Completion of Dialysis Incident (DI) Form (CDC 57.75E)	
Data Field	**Instructions for Completion**
Facility ID #	The NHSN-assigned facility ID will be autoentered by the computer.
Event ID #	Event ID # will be autoentered 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 DI.
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 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 ~~the first~~ 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 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.

Pathogen Identified	Required. Enter Y if Pathogen Identified, N otherwise; if Yes, specify on reverse. See Table 2a for instructions for completion of pathogen data.
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 57.75M)	
Data Field	**Instructions for Data Collection**
Facility ID #	The NHSN-assigned facility ID will be autoentered 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 label and five corresponding custom data fields are available for local use and the values entered. These fields may be analyzed.

Table 11. Instructions for Completion of the AUR Option Forms (CDC 57.75P and CDC 57.75Q)	
Data Field	**Instructions for Data Collection**
Fields common to both forms:	
Facility ID #	The NHSN-assigned facility ID will be autoentered by the computer.
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.
Location	Required. Enter hospital area specification; must be an intensive care unit (ICU/SCA), combined inpatient non-ICU/SCA area, or combined outpatient area as defined below: Intensive Care Unit (ICU): An ICU is defined in the NHSN as a patient care area that provides intensive observation, diagnosis, and therapeutic procedures for critically ill patients. This designation excludes units that provide step-down care, intermediate care, or telemetry. Specialty Care Area (SCA): An SCA is a patient care area in which 80% of patients are of the following types: Bone marrow transplant patients Solid organ transplant patients Patients with hematologic or oncologic malignancies Patients receiving peritoneal or hemodialysis Patients in long-term acute care units Inpatient Non-ICU/SCA/ An inpatient non-ICU/SCA location is a patient care area that houses NHSN patient inpatients (i.e., those patients whose date of admission and discharge are different). These areas do not provide intensive care or specialty care as defined above. Examples of inpatient non-ICU/SCA locations are general medicine and general surgery wards. The data from these areas are combined and reported as a single entity. Outpatient: An outpatient location is an area in which patients are ordinarily admitted and discharged on the same day. Examples of outpatient care include same day surgery, evaluations and screening, and urgent or emergent care. Many diagnostic or therapeutic procedures may be delivered in these locations, such as mammography, cardiac catheterization, or administration of chemotherapy. The data from these areas are combined and reported as a single entity.
AUR Microbiology Laboratory Data Form (CDC 57.75P)	
No duplicate isolates or surveillance cultures are included when reporting monthly counts of	

organisms and their susceptibilities. (Ref: Clinical Laboratory Standards Institute (CLSI)(formerly National Committee for Clinical Laboratory Standards [NCCLS])) Duplicate isolate: An isolate of the same species of bacteria, regardless of antimicrobial susceptibility pattern, in the same patient, regardless of specimen site, during a given reporting period. For AUR, the reporting period is one month. Do not count duplicate isolates. Surveillance cultures: Those cultures performed as part of infection control surveillance, such as stool cultures for vancomycin-resistant enterococci (VRE).	
Susceptible (S) Intermediate (I) Resistant (R)	Required. Record the number of bacterial isolates that are classified as susceptible (S), intermediate (I), and resistant (R) (as defined by CLSI) by minimum inhibitory concentration (MIC) or disc diffusion tested to the antimicrobial agents shown on the form. If testing is not performed on any of the agents listed, enter a zero in each field (S, I, R).
Total Tested	Required. The number of each bacterial species that were tested for susceptibility to each of the corresponding antimicrobial agents during a given month. The total must be equal to the S, I, and R numbers recorded.
AUR Pharmacy Data Form (CDC 57.75Q)	
Pharmacy data are reported monthly for inpatient locations only; do not report outpatient data.	
Patient Days	Required. Total number of days when patients were hospitalized.
Parenteral Antibiotics Quantity Used:	Required. Record the total number of grams or millions of units (mill. I.U.) of each parenteral antimicrobial agent delivered to the inpatient care location shown at the top of the form.
Oral Antibiotics, Quantity Used:	Required. Record the total number of grams (g) of each oral antimicrobial agent delivered to the inpatient care location shown at the top of the form for the month. If the antimicrobial agent is not on your formulary or none was used, enter a zero. For combination drugs, enter grams for the drug marked with an asterisk (*).

Table 12. NHSN Operative Procedure Categories

Code	Operative Procedure	Description	ICD-9-CM Codes
AAA	Abdominal aortic aneurysm repair	Resection of abdominal aorta with anastomosis or replacement	38.34, 38.44, 38.64
AMP	Limb amputation	Total or partial amputation or disarticulation of the upper or lower limbs, including digits	84.00-84.19, 84.91
APPY	Appendix surgery	Operation of appendix (not incidental to another procedure)	47.01, 47.09, 47.2, 47.91-47.92, 47.99
AVSD	Shunt for dialysis	Arteriovenostomy for renal dialysis	39.27
BILI	Bile duct, liver or pancreatic surgery	Excision of bile ducts or operative procedures on the biliary tract, liver or pancreas (does not include operations only on gallbladder)	50.0, 50.12, 50.14, 50.21-50.23, 50.25-50.26, 50.29-50.3, 50.4, 50.61, 50.69, 51.31-51.37, 51.39, 51.41-51.43, 51.49, 51.51, 51.59, 51.61-51.63, 51.69, 51.71-51.72, 51.79, 51.81-51.83, 51.89, 51.91-51.95, 51.99, 52.09, 52.12, 52.22, 52.3, 52.4, 52.51-52.53, 52.59-52.6, 52.7, 52.92, 52.95-52.96, 52.99
BRST	Breast surgery	Excision of lesion or tissue of breast including radical, modified, or quadrant resection, lumpectomy, incisional biopsy, or mammoplasty.	85.12, 85.20-85.23, 85.31-85.36, 85.41-85.48, 85.50, 85.53-85.54, 85.6, 85.7, 85.93-85.96
CARD	Cardiac surgery	Open chest procedures on the valves or septum of heart; does not include coronary artery bypass graft, surgery on vessels, heart transplantation, or pacemaker implantation	35.00-35.04, 35.10-35.14, 35.20-35.28, 35.31-35.35, 35.39, 35.42, 35.50-35.51, 35.53-35.54, 35.60-35.63, 35.70-35.73, 35.81-35.84, 35.91-35.95, 35.98-35.99, 37.10-37.11, 37.24-37.25, 37.31-37.33, 37.35, 37.41, 37.49
CEA	Carotid endarterectomy	Carotid endarterectomy	38.12
CBGB	Coronary artery bypass graft with **both** chest and donor site incisions	Chest procedure to perform direct revascularization of the heart; includes obtaining suitable vein from donor site for grafting.	36.10-36.14, 36.19
CBGC	Coronary artery bypass graft with chest incision only	Chest procedure to perform direct vascularization of the heart using, for example the internal mammary (thoracic) artery	36.15-36.17, 36.2
CHOL	Gallbladder surgery	Cholecystectomy and cholecystotomy	51.03-51.04, 51.13, 51.21-51.24

Code	Operative Procedure	Description	ICD-9-CM Codes
COLO	Colon surgery	Incision, resection, or anastomosis of the large intestine; includes large-to-small and small-to-large bowel anastomosis; does not include rectal operations	45.03, 45.26, 45.41, 45.49, 45.52, 45.71-45.76, 45.79-45.8, 45.92-45.95, 46.03-46.04, 46.10-46.11, 46.13-46.14, 46.43, 46.52, 46.75-46.76, 46.94
CRAN	Craniotomy	Incision through the skull to excise, repair, or explore the brain; does not include taps or punctures	01.12, 01.14, 01.21-01.25, 01.28, 01.31-01.32, 01.39, 01.41-01.42, 01.51-01.53, 01.59, 02.11-02.14, 02.91-02.93, 07.51-07.54, 07.59, 07.61-07.65, 07.68-07.69, 07.71-07.72, 07.79, 38.01, 38.11, 38.31, 38.41, 38.51, 38.61, 38.81, 39.28
CSEC	Cesarean section	Obstetrical delivery by Cesarean section	74.0, 74.1, 74.2, 74.4, 74.91, 74.99
FUSN	Spinal fusion	Immobilization of spinal column	81.00-81.08, 81.62-81.64, 84.51-84.52
FX	Open reduction of fracture	Open reduction of fracture or dislocation of long bones that requires internal or external fixation; does not include placement of joint prosthesis	79.21-79.22, 79.25-79.26, 79.31-79.32, 79.35-79.36, 79.51-79.52, 79.55-79.56
GAST	Gastric surgery	Incision or excision of stomach; includes subtotal or total gastrectomy; does not include vagotomy and fundoplication	43.0, 43.42, 43.49-43.5, 43.6, 43.7, 43.81, 43.89, 43.91, 43.99, 44.15, 44.21, 44.29, 44.31, 44.38-44.42, 44.49-44.5, 44.61-44.65, 44.68-44.69, 44.95-44.98
HER	Herniorrhaphy	Repair of inguinal, femoral, umbilical, or anterior abdominal wall hernia; does not include repair of diaphragmatic or hiatal hernia or hernias at other body sites.	53.00-53.05, 53.10-53.17, 53.21, 53.29, 53.31, 53.39, 53.41, 53.49, 53.51, 53.59, 53.61, 53.69
HPRO	Hip prosthesis	Arthroplasty of hip	00.85-00.87, 00.70-00.73, 81.51-81.53
HTP	Heart transplant	Transplantation of heart	37.51-37.54
HYST	Abdominal hysterectomy	Removal of uterus through an abdominal incision	68.31, 68.39, 68.41, 68.49, 68.61, 68.69
KPRO	Knee prosthesis	Arthroplasty of knee	00.80-00.84, 81.54-81.55
KTP	Kidney transplant	Transplantation of kidney	55.61, 55.69
LAM	Laminectomy	Exploration or decompression of spinal cord through excision or incision into vertebral structures	03.01-03.02, 03.09, 80.50-80.51, 80.59, 84.60-84.69, 84.80 – 84.85
LTP	Liver transplant	Transplantation of liver	50.51, 50.59

Code	Operative Procedure	Description	ICD-9-CM Codes
NECK	Neck surgery	Major excision or incision of the larynx and radical neck dissection; does not include thyroid and parathyroid operations.	30.1, 30.21-30.22, 30.29-30.3, 30.4, 31.45, 40.40-40.42
NEPH	Kidney surgery	Resection or manipulation of the kidney with or without removal of related structures	55.01-55.02, 55.11-55.12, 55.24, 55.31-55.32, 55.34-55.35, 55.39-55.4, 55.51-55.52, 55.54, 55.91
OVRY	Ovarian surgery	Operations on ovary and related structures	65.01, 65.09, 65.12-65.13, 65.21-65.25, 65.29, 65.31, 65.39, 65.41, 65.49, 65.51-65.54, 65.61-65.64, 65.71-65.76, 65.79, 65.81, 65.89, 65.92-65.95, 65.99
PACE	Pacemaker surgery	Insertion, manipulation or replacement of pacemaker	00.50-00.54, 37.70-37.77, 37.79-37.83, 37.85-37.87, 37.89, 37.94-37.99
PRST	Prostate surgery	Suprapubic, retropubic, radical, or perineal excision of the prostate; does not include transurethral resection of the prostate.	60.12, 60.3, 60.4, 60.5, 60.61-60.62, 60.69
PVBY	Peripheral vascular bypass surgery	Bypass operations on peripheral vessels	39.29
REC	Rectal surgery	Operations on rectum	48.25, 48.35, 48.49-48.5, 48.61-48.65, 48.69, 48.74
RFUSN	Refusion of spine	Refusion of spine	81.30-81.39
SB	Small bowel surgery	Incision or resection of the small intestine; does not include small-to-large bowel anastomosis	45.01-45.02, 45.15, 45.31-45.34, 45.51, 45.61-45.63, 45.91, 46.01-46.02, 46.20-46.24, 46.31, 46.39, 46.41, 46.51, 46.71-46.74, 46.93
SPLE	Spleen surgery	Resection or manipulation of spleen	41.2, 41.33, 41.41-41.43, 41.5, 41.93, 41.95, 41.99
THOR	Thoracic surgery	Noncardiac, nonvascular thoracic surgery; includes pneumonectomy and diaphragmatic or hiatal hernia repair	32.09-32.1, 32.20,32.21-32.23, 32.25-32.26, 32.29-32.3, 32.4, 32.5, 32.6, 32.9, 33.0, 33.1, 33.28, 32.30, 33.31-33.34, 32.39, 32.41, 32.49, 32.50, 32.59, 33.20, 33.41-33.43, 33.48-33.49, 33.98-33.99, 34.01-34.03, 34.06, 34.1, 34.20, 34.26, 34.3, 34.4, 34.51, 34.52, 34.59-34.6, 34.81-34.84, 34.89, 34.93, 34.99, 53.80-53.82
THYR	Thyroid and/or	Resection or manipulation of	06.02, 06.09, 06.12, 06.2, 06.31, 06.39-

Code	Operative Procedure	Description	ICD-9-CM Codes
	parathyroid surgery	thyroid and/or parathyroid	06.4, 06.50-06.52, 06.6, 06.7, 06.81, 06.89, 06.91-06.95, 06.98-06.99
VHYS	Vaginal hysterectomy	Removal of the uterus through vaginal or perineal incision	68.51, 68.59, 68.7-68.71, 68.79
VSHN	Ventricular shunt	Ventricular shunt operations, including revision and removal of shunt	02.2, 02.31-02.35, 02.39, 02.42-02.43, 54.95
XLAP	Abdominal surgery	Abdominal operations not involving the gastrointestinal tract or biliary system	53.7, 54.0, 54.11-54.12, 54.19, 54.3, 54.4, 54.51, 54.59, 54.61-54.64, 54.71-54.75, 54.92-54.93

Table 13. Instructions for Completion of the Surgical Site Infection (SSI) Form (CDC 57.75N)	
Data Field	**Instructions for Data Collection**
Facility ID #	The NHSN-assigned facility ID will be autoentered by the computer.
Event #	Event ID number will be autoentered 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 autoentered 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 autoentered 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 12 are allowed.
Date of Procedure	Required. Enter date using this format: MM/DD/YYYY.
Location	Required. Enter the nursing care area where the patient was assigned ~~when the SSI was acquired~~ 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.
Event Details	Required. Check the appropriate level of SSI from the list

Specific Event SSI	___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 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 nosocomial infection at the surgical site, otherwise check N.
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.
Event Details Pathogens identified	Required. Enter Y if Pathogen Identified, N if 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 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 comments for local use and the values entered. These fields may not be analyzed.

Table 14. Principle Operative Procedure Selection Lists

The following lists are derived from Table 12, NHSN Operative Procedure Categories. The operative procedures with the highest risk of surgical site infection are listed before those with a lower risk.

Priority	**Code**	**Abdominal Operations**
1	SB	Small bowel surgery
2	KTP	Kidney transplant
3	LTP	Liver transplant
4	BILI	Biliary surgery
5	REC	Rectal surgery
6	COLO	Colon surgery
7	GAST	Gastric surgery
8	CSEC	Cesarean section
9	SPLE	Spleen surgery
10	APPY	Appendectomy
11	HYST	Abdominal hysterectomy
12	OVRY	Ovarian surgery
13	HER	Hernia repair
14	CHOL	Cholecystectomy
15	AAA	Abdominal aortic aneurysm repair
16	NEPH	Kidney surgery
17	XLAP	Laparotomy
Priority	**Code**	**Thoracic Operations**
1	HTP	Heart transplant
2	CBGB	Coronary artery bypass graft and donor site
3	CBGC	Coronary artery bypass graft, chest only
4	CARD	Cardiac surgery
5	THOR	Thoracic surgery
Priority	**Code**	**Neurosurgical (Spine) Operations**
1	RFUSN	Spinal refusion
2	FUSN	Spinal fusion
3	LAM	Laminectomy
Priority	**Code**	**Neurosurgical (Brain) Operations**
1	VSHN	Ventricular shunt
2	CRAN	Craniotomy

Priority	**Code**	**Neck Operations**
1	NECK	Operations on the neck
2	THYR	Thyroid surgeries

Table 15. Instructions for Completion of the Denominator for Procedure form (CDC 57.75O)	
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 autoentered by the computer.
Procedure #	The NHSN-assigned Procedure # will be autoentered 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 autoentered 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 Table 12 are allowed.
Date of Procedure	Required. Record the date when the NHSN procedure was done using this format: MM/DD/YYYY.
Procedure Details	

Table 15. Instructions for Completion of the Denominator for Procedure form (CDC 57.75O)	
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:	Required. 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.
Multiple Procedures:	Required. Check Y if more than one category of NHSN operative procedure was performed through the same incision during the same trip to the operating room, otherwise check N.
Surgeon Code:	Optional. Enter code of the surgeon who performed the principal operative procedure.
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

Table 15. Instructions for Completion of the Denominator for Procedure form (CDC 57.75O)	
	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 16. Defined daily dose (DDD) of antimicrobial agents, by class and group

Class	Group	Antimicrobial Agent	DDD
β-lactams	Penicillin group	Penicillin G	1.2×10^6 U*
		Procaine Penicillin G	2.4×10^6 U*
		Penicillin G benzathine	1.2×10^6 U*
		Penicillin V	1 g*
	Ampicillin group	Ampicillin (parenteral)	2g
		Ampicillin (oral)	2g
		Ampicillin/sulbactam	2g
		Amoxicillin (oral)	1g
		Amoxicillin/Clavulanic Acid (oral)	1g
	Antistaphylococcal penicillins (Methicillin group)	Nafcillin	4g*
		Oxacillin	2g
		Dicloxacillin (oral)	2g
	Antipseudomonal penicillins	Piperacillin	14g
		Piperacillin/Tazobactam	14g
		Ticarcillin	15g
		Ticarcillin/Clavulanic Acid	15g
	1st-Generation cephalosporins	Cefazolin	3g
		Cephalothin	4g
		Cefadroxil (oral)	2g
		Cephalexin (oral)	2g
	2nd-Generation cephalosporins	Cefotetan	4g
		Cefmetazole	4g*
		Cefoxitin	6g
		Cefuroxime	3g
		Cefuroxime axetil (oral)	1g*
		Cefaclor (oral)	1g
		Cefprozil (oral)	1g
	3rd-Generation cephalosporins	Cefotaxime	4g
		Ceftazidime	4g
		Ceftizoxime	4g
		Ceftriaxone	2g
		Cefixime (oral)	0.4g
		Cefipime	2g
	Carbapenems	Meropenem	2g
		Imipenem cilastatin	2g
Other β-lactams		Aztreonam	4g
Glycopeptides		Vancomycin (parenteral)	2g
		Vancomycin (oral)	1g*

Fluoroquinolones	Ciprofloxacin (parenteral)	0.5g
	Ciprofloxacin (oral)	1g
	Ofloxacin (parenteral)	0.4g
	Ofloxacin (oral)	0.4g
	Levofloxacin (parenteral)	0.5g
	Levofloxacin (oral)	0.5g
	Trovafloxacin (parenteral)	0.2g
	Trovafloxacin (oral)	0.2g
	Sparfloxacin (oral)	0.2g
	Norfloxacin (oral)	0.8g
	Moxifloxacin (oral)	0.4 g
	Moxifloxacin (Parenteral)	0.4 g
	Lomefloxacin	0.4g*
Trimethoprim/ Sulfamethoxazole	Trimethoprim component (oral)	0.4g
	Trimethoprim compound (parenteral)	0.4g
Tetracyclines	Tigecycline (Parenteral)	0.1g

DDD for those agents marked with an asterisk (*) are adapted from Amsden GW, Schentag JJ. Tables of antimicrobial agent pharmacology. In: Mandell GL,Bennett JE, Dolin R, eds. Principles and practice of infectious diseases, 4th edition. New York: Churchill Livingstone, 1995:492-528.
All other DDD are from: Anatomical Therapeutic Chemical (ATC) classification index with defined daily doses (DDD). WHO Collaborating Centre for Drug Statistics Methodology, 2007; http://www.whocc.no/atcddd/

NHSN Key Terms

80% Rule — See CDC Location

ASA Score — Assessment by the anesthesiologist of the patient's preoperative physical condition using the American Society of Anesthesiologist' (ASA) Classification of Physical Status. Used as one element of the SSI Basic Risk index.

1 Normally healthy patient
2 Patient with mild systemic disease
3 Patient with severe systemic disease that is not incapacitating
4 Patient with an incapacitating systemic disease that is a constant threat to life
5 Moribund patient who is not expected to survive for 24 hours with or without the operation

Birthweight — Birthweight refers to the weight of the infant at the time of birth and should not be changed as the infant gains weight.

Catheter-associated Urinary Tract Infection (CAUTI) — CAUTI is a urinary tract infection (UTI) that occurs in a patient who had an indwelling urethral urinary catheter in place within the 7-day period before the onset of the UTI. If the UTI develops in a patient within 48 hours of discharge from a location, the CAUTI is associated with the discharging location, not the current location. NOTE: There is no minimum period of time that the catheter must be in place in order for the UTI to be considered catheter-associated.

CDC Location (formerly labeled "NHSN Location") — A CDC-defined designation given to a patient care area housing patients who have similar disease conditions or who are receiving care for similar medical or surgical specialties. Each facility location that is monitored is "mapped" to one CDC Location. The specific CDC Location code is determined by the type of patients cared for in that area according to the **80% Rule**. That is, if 80% of patients are of a certain type (e.g., pediatric patients with orthopedic problems) then that area is designated as that type of location (in this case, an Inpatient Pediatric Orthopedic Ward).

Central line — An intravascular catheter that terminates at or close to the heart or in one of the great vessels which is used for infusion, withdrawal of blood, or hemodynamic monitoring. The following are considered great vessels for the purpose of reporting central-line infections and counting central-line days in the NHSN system: Aorta, pulmonary artery, superior vena cava, inferior vena cava, brachiocephalic veins, internal jugular veins, subclavian veins, external iliac veins, and common femoral veins.

- NOTE: An introducer is considered an intravascular catheter
- NOTE: In neonates, the umbilical artery/vein is considered a great vessel.
- NOTE: Neither [the location of] the insertion site nor the type of device

may be used to determine if a line qualifies as a central line. The device must terminate in one of these vessels or in or near the heart to qualify as a central line.
    - NOTE: Pacemaker wires and other nonlumened devices inserted into central blood vessels or the heart are not considered central lines, because fluids are not infused, pushed, nor withdrawn through such devices.
- Umbilical Catheter: A central vascular device inserted through the umbilical artery or vein in a neonate
- Temporary Central Line: Non-tunneled catheter
- Permanent Central Line: Includes
    - Tunneled catheters, including certain dialysis catheters
    - Implanted catheters (including ports)

Central Line-associated Bloodstream Infection (CLABSI) A CLABSI is a primary bloodstream infection (BSI) in a patient that had a central line within the 48-hour period before the development of the BSI. If the BSI develops within 48-hours of discharge from a location, it is associated with the discharging location. NOTE: There is no minimum period of time that the central line must be in place in order for the BSI to be considered central line-associated.

Clean (Wound Class) See Wound Class

Clean Contaminated (Wound Class) See Wound Class

Contaminated (Wound Class) See Wound Class

Date of Infection See Infection Date

Deep incisional primary (DIP) SSI A deep incisional SSI that is identified in the primary incision in a patient that has had an operation with one or more incisions (e.g., C-section incision or chest incision for CBGB).

Deep incisional secondary (DIS) SSI A deep incisional SSI that is identified in the secondary incision in a patient that has had an operation with more than one incision (e.g., donor site [leg] incision for CBGB).

Device-associated infection An infection in a patient with a device (e.g., ventilator or central line) that was used within the 48-hour period before onset of infection. If the interval is longer than 48 hours, there must be compelling evidence that the infection was associated with device use. For catheter-associated UTI, indwelling urinary catheter must have been in place within 7 days before positive laboratory results or signs and symptoms meeting criteria for UTI were evident. NOTE: There is

	no minimum period of time that the device must be in place in order for the infection to be considered device-associated.
Device days	A count of the number of patients with a specific device in the patient care location. To calculate device days, for each day of the month, at the same time each day, record the number of patients who have the specific device (e.g., central line, ventilator, or indwelling urinary catheter).
Died	The patient died during this facility admission.
Dialysis Incident types (Outpatient hemodialysis only)	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. In-unit IV antimicrobial start if patient is given IV 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 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 the first
Dialysis Access-associated infection types (Outpatient hemodialysis only)	Local access infection: Pus redness, or swelling of the vascular access site and access-associated bacteremia was not present and patient was hospitalized or had initiation of an IV antimicrobial. Access-associated bacteremia: Blood culture positive with source the vascular access site or unknown. Vascular access infection: Either local access infection or access-associated bacteremia.
Dirty or Infected (Wound Class)	See Wound Class
Duplicate isolates	An isolate of the same bacteria with the same antimicrobial susceptibility pattern in the same patient, regardless of specimen site, during a given calendar month.
Event contributed to	The event either directly caused death or exacerbated an existing disease condition which then led to death.

Death

Healthcare-associated infection (HAI)	A localized or systemic condition resulting from an adverse reaction to the presence of an infectious agent(s) or its toxin(s) that a) occurs in a patient in a healthcare setting (e.g., a hospital or outpatient clinic), b) was not found to be present or incubating at the time of admission unless the infection was related to a previous admission to the same setting, and c) if the setting is a hospital, meets the criteria for a specific infection site as defined by CDC.[21]
Implant	A nonhuman-derived implantable foreign body (e.g., prosthetic heart valve, nonhuman vascular graft, mechanical heart, or hip prosthesis that is permanently placed in a patient during an NHSN operative procedure and is not routinely manipulated for diagnostic or therapeutic purposes. Screws, wires, and mesh that are left permanently are considered implants.
Indwelling catheter	A drainage tube that is inserted into the urinary bladder through the urethra, is left in place, and is connected to a closed collection system; also called a Foley catheter. Does not include straight in-and-out catheters.
Infant	A patient who is ≤ 12 months of age.
Infusion	The introduction of a solution through a blood vessel via a catheter lumen. This may include continuous infusions such as nutritional fluids or medications, or it may include intermittent infusions such as flushes or IV antimicrobial administration, or blood, in the case of transfusion or hemodialysis.
Inpatient Location	See Location
Intensive care unit (ICU)	A nursing care area that provides intensive observation, diagnosis, and therapeutic procedures for adults and/or children who are critically ill. An ICU excludes nursing areas that provide step-down, intermediate care or telemetry only. Specialty care areas are also excluded. The type of ICU is determined by the kind of patients cared for in that unit. That is, if 80% of patients are of a certain type (e.g., patients with trauma), than that ICU is designated as that type of unit (in this case, trauma ICU). When a unit houses roughly equal populations of medical and surgical patients, it is called a medical/surgical unit.
Location	The patient care area to which a patient is assigned while receiving care in the healthcare facility. NOTE: Only locations where patients are housed overnight (i.e., inpatient locations) and where denominator data are collected can be used when monitoring events in the Device-associated Module. This means that operating rooms (including cardiac cath labs, c-section rooms, and interventional radiology)

	and outpatient locations are not ~~allowed~~ valid locations when monitoring events in the Device-associated Module Monthly Reporting Plan. See also CDC Location.
Multiple procedures	More than one NHSN operative procedure performed through the same incision during the same trip to the operating room.
Neonatal intensive care unit (NICU)	A patient care area that provides level III care to infants who are critically ill. Most NICU patients are under the care of a pediatrician who is a neonatologist, and the ratio of infants to nurses is low (e.g. 2:1). If the population of a NICU is a combination of patients requiring level II and III care and their distribution and placement is such that they **cannot** readily be separated for denominator data collection purposes, classify the entire unit as NICU II/III.
Neonate	A patient who is an infant ≤ 30 days of age.
NHSN inpatient	A patient whose date of admission to the healthcare facility and the date of discharge are <u>different</u> calendar days.
NHSN operative procedure	A procedure: 1) that is performed on a patient who is an NHSN inpatient or an NHSN outpatient 2) takes place during an operation and 3) that is included in Table 12
NHSN outpatient	A patient whose date of admission to the healthcare facility and the date of discharge are the <u>same</u> day.
NHSN patient days	A count of the number of patients in the patient care location. To calculate patient days, for each day of the month, at the same time each day, record the number of patients on the unit. At the end of the month, the sum of all days is recorded.
NNIS SSI risk index	A score used to predict a surgical patient's risk of acquiring a surgical site infection. The risk index score, ranging from 0 to 3, is the number of risk factors present among the following: a) a patient with an American Society of Anesthesiologists' physical status classification score of 3, 4, or 5[22], b) an operation classified as contaminated or dirty infected[23], and c) an operation lasting longer than the Duration cut point hours, where the Duration cut point depends upon the operation being performed.[24] Current Duration cut point values can be found in the NNIS Report at http://www.cdc.gov/ncidod/dhqp/pdf/nnis/2004NNISreport.pdf.
Operating room (OR)	A patient care area that meets the American Institute of Architects (AIA) criteria for an operating room[25]. This may include an operating room, C-Section room,

	interventional radiology room or a cardiac catheterization lab.
Operation	A single trip to the operating room (OR) where a surgeon makes at least one incision through the skin or mucous membrane, including laparoscopic approach, and closes the incision before the patient leaves the OR.
Permanent central line	A central line that is tunneled, including certain dialysis catheters. Includes implantable catheters.
Post-procedure pneumonia (PPP)	A pneumonia that meets the criteria and occurs after an inpatient operation takes place but prior to discharge.
Secondary bloodstream infection (BSI)	A culture-confirmed BSI associated with a documented HAI at another site. If the primary infection is cultured, the Secondary BSI must yield culture of same organism and exhibit same antibiogram as the primary HAI site. For example, if blood culture is positive in a patient with a nosocomial UTI and organisms and antibiograms of both blood and urine specimens are identical, infection is reported as UTI with secondary BSI. Secondary BSI is not reported separately. If, on the other hand, an organ/space SSI is identified by CT scan and no culture is used to meet the criteria for SSI-GIT, and a blood culture grows *Bacteroides fragilis*, then the SSI-GIT is recorded as an SSI with a secondary BSI. The pathogen for the SSI is recorded as *Bacteroides fragilis.*
Specialty care area (SCA)	Hospital location which includes one of the types below: Bone marrow transplant Solid organ transplant Inpatient acute dialysis Hematology/Oncology Long term acute care
Superficial incisional primary (SIP) SSI	A superficial incisional SSI that is identified in the primary incision in a patient that has had an operation with one or more incisions (e.g., C-section incision or chest incision for CBGB).
Superficial incisional secondary (SIS) SSI	A superficial incisional SSI that is identified in the secondary incision in a patient that has had an operation with more than one incision (e.g., donor site [leg] incision for CBGB).
Surveillance cultures	Those cultures reported as part of infection control surveillance such as stool cultures for vancomycin-resistant enterococci (VRE).
Temporary	A central line that is not tunneled.

central line

Transfer Rule — If a device-associated infection develops within 48 hours of transfer from one inpatient location to another in the same facility, the infection is attributed to the transferring location.

Umbilical Catheter — A central line inserted through the umbilical artery or vein in a neonate.

Ventilator — A device to assist or control respiration continuously through a tracheostomy or by endotracheal intubation.
NOTE: Lung expansion devices such as intermittent positive pressure breathing (IPPB); nasal positive end-expiratory pressure (PEEP); continuous nasal positive airway pressure (CPAP, hypoCPAP) are not considered ventilators unless delivered via tracheostomy or endotracheal intubation (e.g., ET-CPAP).

Ventilator-associated Pneumonia (VAP) — A VAP is a pneumonia (PNEU) that occurs in a patient who was intubated and ventilated at the time of or within 48 hours before the onset of the pneumonia. If the PNEU develops in a patient within 48 hours of discharge from a location, the VAP is associated with the discharging location, not the current location. NOTE: There is no minimum period of time that the ventilator must be in place in order for the PNEU to be considered ventilator-associated.

Wound Class — An assessment of the degree of contamination of a surgical wound at the time of the operation. The wound class system used in NHSN is an adaptation of the American College of Surgeons wound classification schema[11]. Wounds are divided into four classes:

- **Clean**: An uninfected operative wound in which no inflammation is encountered and the respiratory, alimentary, genital, or uninfected urinary tracts are not entered. In addition, clean wounds are primarily closed and, if necessary, drained with closed drainage. Operative incisional wounds that follow nonpenetrating (blunt) trauma should be included in this category if they meet the criteria.
- **Clean-Contaminated**: Operative wounds in which the respiratory, alimentary, genital, or urinary tracts are entered under controlled conditions and without unusual contamination. Specifically, operations involving the biliary tract, appendix, vagina, and oropharynx are included in this category, provided no evidence of infection or major break in technique is encountered.
- **Contaminated**: Open, fresh, accidental wounds. In addition, operations with major breaks in sterile technique (e.g., open cardiac massage) or gross spillage from the gastrointestinal tract, and incisions in which acute, nonpurulent inflammation is encountered are included in this category.
- **Dirty or Infected**: Includes old traumatic wounds with retained

devitalized tissue and those that involve existing clinical infection or perforated viscera. This definition suggests that the organisms causing postoperative infection were present in the operative field before the operation.

CDC Location Label	Location Description
	INPATIENT LOCATIONS
Inpatient Adult Critical Care	
Burn Critical Care	Critical care area specializing in the care of patients with significant/major burns.
Medical Cardiac Critical Care	Critical care area specializing in the care of patients with serious heart problems that do not require heart surgery.
Surgical Cardiothoracic Critical Care	Critical care area specializing in the care of patients following cardiac and thoracic surgery.
Medical Critical Care	Critical care area for patients who are being treated for nonsurgical conditions.
Medical/Surgical Critical Care	An area where critically ill patients with medical and/or surgical conditions are managed.
Neurologic Critical Care	Critical care area specializing in treating life-threatening neurological diseases.
Neurosurgical Critical Care	Critical care area specializing in the surgical management of patients with severe neurological diseases or those at risk for neurological injury as a result of surgery.
Prenatal Critical Care	Critical care area specializing in the management of the pregnant patient with complex medical or obstetric problems requiring a high level of care to prevent the loss of the fetus and to protect the life of the mother.
Respiratory Critical Care	Critical care area for the evaluation and treatment of the patient with severe respiratory conditions.
Surgical Critical Care	Critical care area for the evaluation and management of patients with serious illness before and/or after surgery.
Trauma Critical Care	Critical care area specializing in the care of patients who require a high level of monitoring and/or intervention following trauma or during critical illness related to trauma.
Neonatal Units	
Inpatient Well Baby Nursery (Level I)	Hospital area for normal newborns with no identified health problems.
Step down Neonatal ICU (Level II)	Hospital area for newborns and infants who are not critically ill but who may remain in the nursery for extended observation or to increase weight.
Neonatal Critical Care(Level II/III)	Combined nursery housing both Level II and III newborns and infants

Neonatal Critical Care (Level III)	Critical care area for newborns and infants with serious illness requiring Level III care; area is supervised by a neonatologist
Pediatric Critical Care	
Pediatric Burn Critical Care	Critical care area specializing in the care of patients ≤ 18 years old with significant/major burns
Pediatric Cardiothoracic Critical Care	Critical care area specializing in the care of patients ≤ 18 years old following cardiac and thoracic surgery.
Pediatric Medical Critical Care	Critical care area for patients ≤ 18 years old who are being treated for nonsurgical conditions. In the NNIS system, this was called Pediatric ICU (PICU).
Pediatric Medical/Surgical Critical Care	An area where critically ill patients ≤ 18 years old with medical and/or surgical conditions are managed.
Pediatric Neurology Critical Care	Critical care area for patients ≤ 18 years old specializing in treating life-threatening neurological diseases.
Pediatric Neurosurgical Critical Care	Critical care area specializing in the surgical management of patients ≤ 18 years old with severe neurological diseases or those at risk for neurological injury as a result of surgery.
Pediatric Respiratory Critical Care	Critical care area for the evaluation and treatment of the patients ≤ 18 years old with severe respiratory conditions.
Pediatric Surgical Critical Care	Critical care area for the evaluation and management of patients ≤ 18 years old with serious illness before and/or after surgery.
Pediatric Trauma Critical Care	Critical care area specializing in the care of patients ≤ 18 years old who require a high level of monitoring and/or intervention following trauma or during critical illness related to trauma.
Specialty Care Areas	
Long Term Acute Care (LTAC)	Area that provides acute care services to patients suffering medically complex conditions, or patients who have suffered recent catastrophic illness or injury and require an extended stay in an acute care environment.
Bone Marrow Transplant Specialty Care Area	Hospital specialty care area for the treatment of patients who undergo bone marrow (stem cell) transplant for the treatment of various disorders.
Inpatient Acute Dialysis Unit	Hospital specialty care area for patients who require acute dialysis as a temporary measure.
Hematology/Oncology SCA	Hospital specialty care area for the management and treatment of patients with cancer and/or blood disorders.

Solid Organ Transplant SCA	Hospital specialty area for the postoperative care of patients who have had a solid organ transplant (e.g., heart/lung, kidney, liver, pancreas)
Pediatric Bone Marrow Transplant SCA	Hospital specialty care area for the treatment of patients ≤ 18 years old who undergo bone marrow (stem cell) transplant for the treatment of various disorders.
Pediatric Dialysis SCA	Hospital specialty care area for patients ≤ 18 years oldwho require acute dialysis as a temporary measure.
Pediatric Hematology/Oncology SCA	Hospital specialty care area for the management and treatment of patients ≤ 18 years old with cancer and/or blood disorders.
Pediatric Solid Organ Transplant SCA	Hospital specialty area for the postoperative care of patients ≤ 18 years old who have had a solid organ transplant (e.g., heart/lung, kidney, liver, pancreas).
Inpatient Adult Wards	
Inpatient Burn Ward	Hospital area for evaluation and treatment of patients who have burns.
Inpatient Behavioral Health/Psych Ward	Hospital area for evaluation and treatment of patients with acute psychiatric or behavioral disorders.
Inpatient Ear/Nose/Throat Ward	Hospital area for the evaluation, treatment, or surgery of patients with ear, nose, or throat disorders
Inpatient Gastrointestinal Ward	Hospital area for evaluation, treatment or surgery of patients with disorders of the gastrointestinal tract.
Inpatient Gerontology Ward	Hospital area for the evaluation, treatment or surgery of patients with age-related diseases.
Inpatient Genitourinary Ward	Hospital area for the evaluation, treatment or surgery of patients with disorders of the genitourinary system.
Inpatient Gynecology Ward	Hospital area for the evaluation, treatment, or surgery of female patients with reproductive tract disorders.
Inpatient School Infirmary	Overnight stay patient care area of a school infirmary or health center (e.g., private residential school or college campus).
Inpatient Jail Unit	Overnight stay patient care area of a hospital or correctional facility used only for those who are in custody of law enforcement during their treatment.
Labor and Delivery Ward	Hospital area where women labor and give birth.

Labor, Delivery, Recovery, Postpartum Room (LDRP)	Hospital suite used for labor, delivery, recovery and post partum (LDRP) -- all within the same suite.
Inpatient Medical Ward	Hospital area for the evaluation and treatment of patients with medical conditions or disorders.
Inpatient Medical/Surgical Ward	Hospital area for the evaluation of patients with medical and/or surgical conditions.
Inpatient Neurology Ward	Hospital inpatient area where patients with neurological disorders are evaluated and treated.
Inpatient Neurosurgical Ward	Hospital area for care of patients whose primary reason for admission is to have neurosurgery or to be cared for by a neurosurgeon after head or spinal trauma.
Inpatient Orthopedic Trauma Ward	Hospital inpatient area where patients with orthopedic injuries or disorders are evaluated and treated.
Inpatient Plastic Surgery Ward	Hospital area for the care of patients who have reconstructive surgery performed by a plastic surgeon.
Inpatient Postpartum Ward	Hospital area for the patient who is recovering from childbirth.
Inpatient Pulmonary Ward	Hospital area where patients with respiratory system conditions or disorders are evaluated and treated.
Inpatient Ophthalmology Ward	Hospital area for care of patients whose primary reason for admission is to have eye surgery or to be cared for by an ophthalmologist after eye trauma.
Inpatient Orthopedic Ward	Hospital area for evaluation, treatment or surgery on bones, joints, and associated structures by an orthopedist.
Inpatient Rehabilitation Ward	Hospital area for evaluation and restoration of function to patients who have lost function due to acute or chronic pain, musculoskeletal problems, stroke, or catastrophic events resulting in complete or partial paralysis.
Inpatient Surgical Ward	Hospital area for evaluation and treatment of patients who have undergone a surgical procedure.
Acute Stroke Unit	Hospital area for evaluation, stabilization and treatment of patients who have experienced an acute stroke.
Inpatient Vascular Surgery Ward	Hospital area for evaluation and treatment of patients who have undergone vascular surgery.

Pediatric Wards	
Inpatient Adolescent Behavioral Health	Hospital area for evaluation and treatment of patients between the ages of 13 and 18 with acute psychiatric or behavioral disorders.
Inpatient Pediatric Burn Ward	Hospital area specializing in the evaluation and treatment of patients ≤18 years who have tissue injury caused by burns.
Inpatient Pediatric Behavioral Health	Hospital area for evaluation and management of patients ≤18 years old with acute psychiatric or behavioral disorders.
Inpatient Pediatric Ear, Nose, Throat	Hospital area for evaluation and management of patients ≤18 years old with disorders of the ear, nose and/or throat.
Inpatient Pediatric Genitourinary	Hospital inpatient area where patients ≤ 18 years of age with disorders of the genitourinary system are evaluated and treated.
Inpatient Medical Pediatric Ward	Hospital inpatient area where patients ≤ 18 years of age with medical conditions or disorders are evaluated and treated.
Inpatient Pediatric Med/Surg Ward	Hospital inpatient area where patients ≤ 18 years old with medical and/or surgical conditions are managed.
Inpatient Pediatric Neurology Ward	Hospital inpatient area where patients ≤ 18 years old with neurological disorders are evaluated and treated.
Inpatient Pediatric Neurosurgical Ward	Hospital area for care of patients ≤ 18 years old whose primary reason for admission is to have neurosurgery or to be cared for by a neurosurgeon after head or spinal trauma.
Inpatient Pediatric Orthopedic Ward	Hospital area where patients ≤ 18 years old with orthopedic injuries or disorders are evaluated and treated.
Inpatient Pediatric Rehabilitation Ward	Hospital area for evaluation and restoration of function to patients ≤ 18 years old who have lost function due to acute or chronic pain, musculoskeletal problems, stroke, or catastrophic events resulting in complete or partial paralysis.
Inpatient Pediatric Surgical Ward	Hospital area for evaluation and treatment of patients ≤ 18 years old who have undergone a surgical procedure.
Step Down Units	
Step Down Unit (post Critical Care)	Hospital area for adult patients that are hemodynamically stable who can benefit from close supervision and monitoring, such as frequent pulmonary toilet, vital signs, and/or neurological and neurovascular checks.

Pediatric Step Down Unit	Patients ≤ 18 years old that are hemodynamically stable who can benefit from close supervision and monitoring, such as frequent pulmonary toilet, vital signs, and/or neurological and neurovascular checks.
Operating Rooms	
Inpatient Operating Room/Suite	A room or suite in a hospital equipped for the performance of surgical operations. Requirements for air changes, temperature, humidity and surfaces must be met.
Cardiac Catheterization Room/Suite	A room or rooms in a hospital equipped for the performance of heart catheterizations for diagnostic or therapeutic purposes. Operating Room requirements for air changes, temperature, humidity and surfaces must be met.
Cesarean Section Room/Suite	A room or suite in a hospital equipped for the performance of obstetric and gynecologic surgeries and for the care of the neonate immediately after birth. Operating Room requirements for air changes, temperature, humidity and surfaces must be met.
Post Anesthesia Care Unit/Recovery Room	Hospital area designated for monitoring patients for immediate effects of anesthesia before either going home or on to an in-patient care area.
AUR Documentation Only	
All Inpatient Wards (not ICU or SCA) combined	This location represents an aggregate of all inpatient care areas, excluding critical care, specialty care, and outpatient areas. This location is used for the purpose of reporting microbiology and pharmacy data as part of the AUR option only.
All Outpatient Areas	This location represents an aggregate of all outpatient areas and is used for the purpose of reporting microbiology data as part of the AUR Option only.
Miscellaneous Areas	
Soiled Utility Area	An area within a healthcare facility where used and/or soiled disposable or durable medical equipment is stored and/or cleaned in preparation for disposal or reprocessing/reuse.
Sleep Studies (for in and out patients)	Area where patients stay overnight and are evaluated for sleep disorders.
Pulmonary Function Testing	Area where the evaluation of a patient's respiratory status takes place.

Transport Service	Mobile unit used to transport patients to their home or from one healthcare setting to another non-emergently.
Long Term Care	
Long Term Care Unit	Area where care provided for persons with chronic disease or disabilities for extended periods of time.
Long Term Care Alzheimer's Unit	Area where care is provided to persons diagnosed with Alzheimer's syndrome for extended periods of time.
Long Term Care Behavioral Health/Psych Unit	Area where care is provided to individuals with psychiatric or behavioral-disorder diagnoses for extended periods of time.
Inpatient Hospice	Area where palliative care is provided to the dying patient.
Ventilator Dependent Unit	Area where care is provided to patients whose respirations depend on the use of a ventilator for extended periods of time.
Long Term Care Rehabilitation Unit	Area where evaluation and restoration of function is provided to patients who have lost function due to acute or chronic pain, musculoskeletal problems, stroke, or catastrophic events resulting in complete or partial paralysis.

OUTPATIENT LOCATIONS	
Acute Care	
Urgent Care Center	Area that provides medical care services for illnesses and injuries that are not life-threatening.
Outpatient Emergency Department	Area that provides emergency medical services; top priority is given to those with life-threatening illness or injury.
Pediatric Emergency Department	Area that provides emergency medical services to patients who are ≤ 18 years old; top priority is given to those with life-threatening illness or injury.
Mobile Emergency Services/EMS	Mobile unit that provides clinical and emergency medical services to individuals who require them in the pre-hospital setting.
Ambulatory Surgery Center	Area that is equipped for the performance of surgical operations; may be free-standing or part of a hospital. Operating Room requirements for air changes, temperature, humidity and surfaces must be met. Patients do not stay overnight.

Outpatient Pediatric Surgery Center	Area that is equipped for the performance of surgical operations for persons ≤ 18 years old, may be free-standing or part of a hospital.. Operating Room requirements for air changes, temperature, humidity and surfaces must be met. Patients do not stay overnight.
Outpatient Plastic Surgery Center	Area that is equipped for the performance of plastic surgery operations may be free-standing or part of a hospital. Operating Room requirements for air changes, temperature, humidity and surfaces must be met. Patients do not stay overnight.
Outpatient Surgery Recovery Room/Post Anesthesia Care Unit	Area designated for monitoring patients for the immediate effects of anesthesia before being sent home.
24-Hour Observation Area	Area where patients are monitored for suspected or non-life threatening conditions for 24 hours or less.
Clinic (Nonacute) Settings	
Allergy Clinic	An outpatient setting for the purpose of providing services to individuals with allergies.
Behavioral Health Clinic	An outpatient setting for the purpose of providing services to individuals with psychiatric or behavior-disorders.
Blood Collection Center	An outpatient setting where blood is collected from donors. This does not include donation centers that are temporarily set up in non-clinical settings (e.g., schools, churches) or mobile blood collection centers.
Cardiac Rehabilitation Center	An outpatient setting where patients with cardiac disease, in partnership with a multidisciplinary team of health professionals, are encouraged and supported to achieve and maintain optimal physical health through exercise, nutritional and psychological counseling.
Cardiology Clinic	An outpatient setting for the evaluation and management of individuals with cardiac problems.
Continence Clinic	An outpatient setting for the evaluation and management of individuals with incontinence problems.
Dermatology Clinic	An outpatient setting for the evaluation and management of dermatologic conditions by a dermatologist.
Diabetes/Endocrinology Clinic	An outpatient setting for the evaluation, education and management of persons with diabetes.

Ear, Nose, Throat Clinic	An outpatient setting for the evaluation and management of conditions related to the ear, nose and/or throat.
Family Medicine Clinic	An outpatient setting for patients who are managed by a family practice physician or group of physicians. Does not include private physician practice.
Genetics Clinic	An outpatient setting for testing and counseling of individuals may have genetic or hereditary disorders.
Gynecology Clinic	An outpatient setting for women for the evaluation and management of female reproductive tract conditions.
Holistic Medicine Center	An outpatient setting where alternative healthcare practices are used, focusing on the physical, mental, emotional, social and spiritual aspects of health.
Hyperbaric Oxygen Center	An outpatient setting where therapeutic hyperbaric oxygen is administered.
Infusion Center	An outpatient setting for the administration of fluids, blood products and medications.
Neurology Clinic	An outpatient setting for the diagnosis, evaluation, and treatment of persons with neurologic disorders.
Occupational Health Clinic	An outpatient setting where workplace physicals, workplace injury management and immunological evaluations take place.
Occupational Therapy Clinic	An outpatient setting where persons with injury or disability are helped to resume activities of daily living with exercise, massage and other therapies.
Ophthalmology Clinic	An outpatient setting for the diagnosis, evaluation and treatment of ophthalmologic disorders.
Orthopedic Clinic	An outpatient setting for the diagnosis, evaluation and treatment of orthopedic disorders.
Ostomy Clinic	An outpatient setting for the management of persons who have had surgical procedure for removing normal bodily wastes through a surgical opening (stoma) on the abdominal wall.
Outpatient Dental Clinic	An outpatient setting that provides dental services, including preventive teeth cleaning, emergency treatment, and comprehensive oral care. This may be a private or group practice or a teaching facility for dentists and/or dental hygienists.

Outpatient GI Clinic	An outpatient setting for the diagnosis, evaluation and management of conditions related to the gastrointestinal tract. Usually includes an endoscopy suite.
Outpatient Hematology/Oncology Clinic	An outpatient setting for the diagnosis, evaluation and treatment of persons with hematologic and/or oncologic disorders. This may include chemotherapy or blood/blood products infusion services.
Outpatient Hemodialysis Clinic	An outpatient setting for chronic hemodialysis patients where they are evaluated and dialyzed several times weekly.
Outpatient HIV Clinic	An outpatient setting for the diagnosis, evaluation and treatment of persons who are HIV positive or who have AIDS.
Outpatient Medical Clinic	An outpatient setting for the diagnosis, evaluation and treatment of medical disorders.
Outpatient Rehabilitation Clinic	An outpatient setting where persons with injury or disability are evaluated and treated to resume activities of daily living, speech and language skills and maximum physical function. This may include social and psychological evaluation and treatment.
Pain Clinic	An outpatient setting for the evaluation and treatment of persons with chronic or intractable pain.
Pediatric Behavioral Health Clinic	An outpatient setting for the evaluation and management of persons ≤ 18 years old with psychiatric or behavior disorders.
Pediatric Cardiology Center	An outpatient setting for the evaluation and management of persons ≤ 18 years old with cardiac disorders.
Pediatric Clinic	An outpatient setting for the evaluation and treatment of children under the age of nineteen.
Pediatric Dental Clinic	An outpatient setting that provides dental services, including preventive teeth cleaning, emergency treatment, and comprehensive oral care to persons ≤ 18 years old. This may be a private or group practice or a teaching facility for dentists and/or dental hygienists.
Pediatric Dermatology Clinic	An outpatient setting for the evaluation and management of persons ≤ 18 years old with dermatologic disorders.
Pediatric Diabetes/Endocrinology Clinic	An outpatient setting for the evaluation and management of persons ≤ 18 years old with diabetes or other endocrine disorders.
Pediatric Gastrointestinal Clinic	An outpatient setting for the evaluation and treatment of patients ≤ 18 years old with gastrointestinal disorders.

Pediatric Hematology/Oncology Clinic	An outpatient setting for the evaluation and treatment of patients ≤ 18 years old with cancer and/or blood disorders.
Pediatric Nephrology Clinic	An outpatient setting for the evaluation and treatment of patients ≤ 18 years old with disorders of the genitourinary tract.
Pediatric Orthopedic Clinic	An outpatient setting for the evaluation and treatment of patients ≤ 18 years old with fractures or other orthopedic disorders.
Pediatric Rheumatology Clinic	An outpatient setting for the evaluation and treatment of patients ≤ 18 years old with rheumatology disorders.
Pediatric Scoliosis Clinic	An outpatient setting for the evaluation and treatment of patients ≤ 18 years old with scoliosis or other growth disorders of the spine.
Physical Therapy Clinic	An outpatient setting where persons with injury or disability are helped to obtain maximum physical function.
Physician's Office	A physician's office practice.
Podiatry Clinic	An outpatient setting for the evaluation and treatment of individuals with conditions or disorders of the feet.
Prenatal Clinic	An outpatient setting for the evaluation and treatment of pregnant women.
Pulmonary Clinic	An outpatient setting for the evaluation and treatment of persons with disorders of the respiratory tract.
Rheumatology Clinic	An outpatient setting for the evaluation and treatment of persons with autoimmune disorders, primarily rheumatoid arthritis.
School or Prison Infirmary	Area in a school or correctional facility that provides medical care to students/inmates. This area is not staffed or equipped for overnight stay patients.
Specimen Collection Area (Healthcare)	An area in within a healthcare facility where procedures are performed to collect blood, tissue and other specimens for diagnostic purposes.
Speech Therapy Clinic	An outpatient setting for the evaluation and treatment of persons with brain injury to maximize their speech, swallow and language functions.
Surgical Services Clinic	An outpatient setting for the pre-operative evaluation and the postoperative management of individuals undergoing a surgical procedure.

Well Baby Clinic	An outpatient setting for the examination and treatment of normal newborns.
Wound Center	An outpatient setting for the evaluation and treatment of persons with acute or chronic wounds.
Wound Ostomy Continence Clinic	An outpatient area which provides acute and rehabilitative care for people with selective disorders of the gastrointestinal, genitourinary and integumentary (skin) systems.
Endoscopy Suite	An area where endoscopic procedures (e.g., upper gastrointestinal, lower gastrointestinal endoscopies, bronchoscopy) are performed on outpatients and/or inpatients. Patient care and processing of equipment may take place in this location.
Radiology, includes Nuclear Medicine	An area where diagnostic radiologic studies are done on outpatients and/or inpatients.
Mobile Blood Collection center	A self-contained mobile unit such as a bus or trailer that is specifically designed and equipped for the collection of blood and blood products from public donors. This unit typically moves from location to location.
Mobile MRI/CT	A self-contained mobile unit such as a bus or trailer that is equipped with MRI or CT radiologic equipment and that may be moved between health care locations (e.g., hospitals, clinics).

COMMUNITY LOCATIONS	
Blood Collection (Blood Drive Campaign)	A location that was not designed for nor equipped to perform healthcare functions (e.g., school gym or shopping mall) that has been set up specifically to collect donations of blood and blood products from the public.
Home Care	A patient's home location where medical services including routine non-invasive and other invasive procedures (e.g., insertion of indwelling urinary catheter, insertion of IV line, etc.) are performed by health care workers and family members under the supervision of a licensed independent practitioner (e.g., MD, CNP,PA)
Home-based Hospice	A patient's home location where end-of-life services are performed by health care workers, family members and volunteers.
Specimen Collection Area (Community)	A location that was not designed for nor equipped to perform healthcare functions (e.g., school gym or shopping mall) that has been set up specifically to collect body fluids for health care testing. Examples would be blood sugar or cholesterol screening clinics.

NON-PATIENT CARE LOCATIONS	
Assisted Living Area	A location where persons live and have available to them housekeeping, meal preparation, transportation and other non-medical services. Patient care is not done in this area.
Blood Bank	An area within a health care facility that may collect, store and distribute blood and blood products. Also perform diagnostic tests on blood/components to determine compatibilities.
Clinical Chemistry	An area within a diagnostic laboratory that does general clinical chemistry (clinical biochemistry), endocrinology, therapeutic substance monitoring, toxicology, blood pH and gases, urinalysis, and urine pregnancy testing.
Hematology	An area within a diagnostic laboratory that determines the specific properties of blood (e.g., CBC, white blood count).
Histology/Surgical Pathology	An area within a diagnostic laboratory that uses high-power microscopy to evaluate cells and tissues for the presence or absence of disease.
Microbiology	An area within a laboratory that performs diagnostic tests to determine the presence or absence of bacteria and its related properties.
Morgue/Autopsy Room	An area within a facility that is used for the storage and/or postmortem examination of deceased persons.
Serology Lab	An area within a diagnostic laboratory that performs blood tests to determine the presence or absence of certain diseases or the levels of immunity.
Virology Lab	An area within a diagnostic laboratory that performs tests and/or culturing to determine the presence or absence of specific viruses.
General Laboratory	An area which encompasses all clinical divisions within a diagnostic laboratory.
Administrative Areas	Areas within a healthcare facility where administrative functions take place. No patient care takes place in these areas.
Central Sterile Supply	An area within a healthcare facility where durable medical equipment is cleaned/decontaminated, wrapped, sterilized and stored in preparation for patient use.
Physical Plant Operations Center	An area within a healthcare facility where construction, renovation, and maintenance staff activities and supplies are coordinated. This may also include areas of machinery and equipment.
Facility Grounds	Any outdoor area adjacent to a healthcare facility that belongs to the facility (e.g. sidewalks, parking ramps, lawns, etc.).

Housekeeping/Environmental Services	An area within a healthcare facility where housekeeping/environmental services staff activities are coordinated and supplies are stored.
Laundry Room	An area within a healthcare facility where laundry is sorted, washed, dried and prepared for transport and use.
Pharmacy	An area within a healthcare facility where medications are prepared and labeled for patient use.
Public Area in Facility	Any indoor area within a healthcare facility that is not used for patient care and that is available to the public (e.g., waiting rooms, cafeterias, hallways).
Central Trash Area	An area adjacent to a healthcare facility where biohazardous and non-biohazardous wastes are collected in preparation for transport to a landfill or incineration.

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Authority

(1) These rules are promulgated pursuant to enactment of House Bill 2524 by the 74th Legislative Assembly, which mandates that administrative rules for reporting and disclosure of health care acquired infections be adopted no later than July 1, 2008.

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Definitions

(1) “Administrator” means the Administrator of the Office for Oregon Health Policy and Research as defined in ORS 442.011, or the Administrator’s designee.

(2) “ASC” means ambulatory surgical center as defined in ORS 442.015 (4) and that is licensed pursuant to ORS 441.015.

(3) “CBGB” means coronary bypass graft surgery with both chest and donor incisions, as defined by the CDC.

(4) “CBGC” means coronary bypass graft surgery with chest incision only, as defined in by the CDC.

(5) “CDC” means the federal Centers for Disease Control and Prevention.

(6) “CLABSI” means central line associated bloodstream infection as defined by the CDC.

(7) “CMS” mean the federal Centers for Medicare and Medicaid Services.

(8) “Committee” means the Health Care Acquired Infections Advisory Committee as defined in ORS 442.838.

(9) “Dialysis facility” means outpatient renal dialysis facility as defined in ORS 442.015 (29).

(10) “Disclosure” means the intentional or negligent release of, transfer of, provision of access to, or divulgence of information in any other manner, except disclosures specifically allowed or required under federal or state rules, regulations, or statutes.

(11) “Follow-up” means post-discharge surveillance intended to detect SSI cases occurring after a procedure, using methods described by the CDC.

(13) “HAI” means health care acquired infection as defined in ORS 442.838.

(14) “Health care facility” has the meaning given that term in ORS 442.015 (16).

(15) "Hospital" means a facility as defined in ORS 442.015 (19) and that is licensed pursuant to ORS 441.015.

(16) “ICU” means an intensive care unit as defined by the CDC.

(17) “KPRO” means knee prosthesis procedure as defined by the CDC.

(18) “LTC facility” means Long Term Care facility as defined in ORS 442.015 (22).

(19) “NICU” means a neonatal intensive care unit as defined by the CDC.

(21) “Office” means the Office for Oregon Health Policy and Research as defined in ORS 442.011.

(22) “Patient information” means individually identifiable health information as defined in ORS 179.505 (c).

(24) “Person” has the meaning given that term in ORS 442.015 (30).

(25) “Procedure” means an operative procedure as defined by the CDC.

(26) “Provider” means health care services provider as defined in ORS 179.505 (b).

(27) “SCIP” means the Surgical Care Improvement Project.

(28) “SCIP-Inf-1” means the HAI process measure published by SCIP defined as: Prophylactic antibiotic received within one hour prior to surgical incision.

(29) “SCIP-Inf-2” means the HAI process measure published by SCIP defined as: Prophylactic antibiotic selection for surgical patients.

(30) “SCIP-Inf-3” means the HAI process measure published by SCIP defined as: Prophylactic antibiotics discontinued within 24 hours after surgery end time (48 hours for cardiac patients.

(31) “SSI” means a surgical site infection event as defined by the CDC.

(32) “State agency” shall have the meaning given that term in ORS 192.410 (5).

(33) “The Program” means the Health Care Acquired Infections Reporting Program housed with the Office.

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Purpose and Intent

(1) The general purpose of this division is to implement the health care acquired infection (HAI) reporting, public disclosure, and other applicable mandates of House Bill 2524.

(2) These rules are intended, but are not limited, to prescribe the following:

(a) HAI reporting for hospitals.

(b) HAI reporting for ambulatory surgical centers.

(c) HAI reporting for outpatient renal dialysis facilities.

(d) HAI reporting for long term care facilities.

(e) HAI reporting for other health care facilities.

(f) HAI public disclosure.

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Review

(1) Unless otherwise directed by the Administrator, the Program shall review this division no later than January 1, 2007 and thereafter at least biennially.

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HAI Reporting for Hospitals

(1) The HAI reporting system for HAI outcome measures shall follow national standards where appropriate, or use reporting systems with consideration of the recommendations by the Committee. The Program will notify hospitals no later than 6 months prior to change of reporting requirements.

(a) Hospitals shall begin reporting on or before January 1, 2009.

(b) Hospitals shall report the HAI outcome measures prescribed in (3)(a) and (3)(b).

(c) Hospitals shall comply with processes and methods prescribed by the Administrator for reporting. This includes, but is not limited to, the following:

(A) Definitions.

(B) Collecting data.

(C) Reporting data.

(D) Administrative and training requirements.

(d) Hospitals shall identify ICUs by the patient population served.

(A) If at least 80% are adult specialty patients (oncology, trauma, neurology, etc.), then the ICU shall be identified as a specialty ICU.

(B) A non-specialty ICU shall be identified as a Medical ICU if it serves predominantly adult medical patients, as a Surgical ICU if it serves predominantly adult surgical patients, or as a combined Medical/Surgical ICU if it serves roughly equal proportions of adult medical and surgical patients.

(C) NICUs shall be identified as described by the CDC.

(2) The reporting system for HAI process measures shall be the Reporting Hospital Quality Data for Annual Payment Update (RHQDAPU) program, or its successor.

(a) Hospitals shall begin reporting HAI process measures on January 1, 2009.

(b) Hospitals shall report HAI process measures prescribed in (3)(c).

(c) Hospitals shall comply with reporting processes and methods prescribed by CMS for the RHQDAPU program. This includes, but is not limited to, the following:

(A) Definitions.

(B) Collecting data.

(C) Reporting data.

(D) Administrative and training requirements.

(3) Reportable HAI shall include, but are not limited to, the following:

(a) CLABSI reportable in NICUs, medical ICUs, surgical ICUs, and combined medical/surgical ICUs.

(b) Surgery Site Infections:

(1) CBGB
(2) CBGC
(3) KPRO

(c) HAI process measures SCIP-Inf-1, SCIP-Inf-2, and SCIP-Inf-3.

(d) The Administrator, with consideration of the recommendation of the Committee, shall modify outcome or process measures required for reporting. The Administrator shall announce any changes no later than 6 months prior to becoming reportable.

(4) Unless otherwise directed by the Administrator, the HAI reporting period shall be:

(a) Monthly for outcome measures, effective for the entire calendar year.

(b) Quarterly for HAI process measures, effective for the entire calendar year, or as otherwise specified by CMS for the RHQDAPU program.

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HAI Reporting for Ambulatory Surgery Centers

(1) The Administrator, in consultation with the Committee recommendations, shall prescribe the HAI reporting methodology for HAI outcome and process measures and shall follow national standards where appropriate. The Administrator will notify ASCs of the prescribed reporting methodology no later than July 1, 2009 and reporting will be mandatory beginning on January 1 2010.

(2) The Administrator, in consultation with the Committee recommendations, shall prescribe reportable HAI. The Program shall announce these no later than 6 months prior to becoming reportable.

(a) The Administrator, in consultation with the Committee recommendations may modify outcome and process measures required for reporting. The Program shall announce any changed no later than 6 months prior to becoming reportable.

(3) Unless otherwise directed by the Administrator, the HAI reporting period shall be:

(a) Monthly for outcome measures, effective for the entire calendar year.

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HAI Reporting for Dialysis Facilities

(1) The Administrator, in consultation with the Committee recommendations, shall prescribe the HAI reporting methodology for HAI outcome and process measures and shall follow national standards where appropriate. The Administrator will notify Dialysis Facilities of the prescribed reporting methodology no later than July 1, 2009 and reporting will be mandatory beginning on January 1 2010.

(2) The Administrator, in consultation with the Committee recommendations, shall prescribe reportable HAI. The Program shall announce these no later than 6 months prior to becoming reportable.

(a) The Administrator, in consultation with Committee recommendations may modify outcome and process measures required for reporting. The Program shall announce any change no later than 6 months prior to becoming reportable.

(3) Unless otherwise directed by the Administrator, the HAI reporting period shall be:

(a) Monthly for outcome measures, effective for the entire calendar year. .

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HAI Reporting for Long Term Care Facilities

(1) The Administrator, in consultation with the Committee recommendations, shall prescribe the HAI reporting methodology for HAI outcome and process measures and shall follow national standards where appropriate. The Administrator will notify Long Term Care Facilities of the prescribed reporting methodology no later than July 1, 2009 and reporting will be mandatory beginning on January 1 2010.

(2) The Administrator, in consultation with the Committee recommendations, shall prescribe reportable HAI . The Program shall announce these no later than 6 months prior to becoming reportable.

(a) The Administrator, in consultation with Committee recommendations, may modify outcome and process measures required for reporting. The Program shall announce any changed no later than 6 months prior to becoming reportable.

(3) Unless otherwise directed by the Administrator, the HAI reporting period shall be:

(a) Monthly for outcome measures, effective for the entire calendar year.**xxx.xxx.xxxx**

HAI Reporting for Other Health Care Facilities

(1) The Administrator's shall in consultation with the Committee, prescribe, HAI reporting for any or all other health care facilities.

(a) The Administrator, in consultation with the Committee, shall prescribe the HAI reporting system for other health care facilities pending recommendations from the Committee.

(b) The Administrator, in consultation with the Committee, shall prescribe reportable HAI pending selection of a reporting methodology and the system. The Administrator shall announce these 6 months prior to becoming reportable.

(A) At the Administrator's discretion additional outcome or process measures may be prescribed for reporting. The Administrator shall announce these 6 months prior to becoming reportable.

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HAI Public Disclosure

(1) The Program shall disclose updated state-level and facility-level data to the public.

(a) The frequency of disclosure shall be:

(A) At least biannually beginning in 2010.

(B) At least quarterly beginning in 2011.

(b) Data shall be disclosed in a format which facilitates access and usage by interested persons as prescribed by the Administrator, in consultation with the Committee.

(2) The Program shall summarize HAI reporting by health care facilities in an annual report.

(a) The Program shall publish the annual report no later than April 30 of each calendar year.

(b) The Program shall publish the first annual report in 2010.

(c) The Program shall undertake reasonable efforts to present information in the annual report using a format that is as easily comprehensible as is feasible.

(d) The Program shall undertake reasonable efforts to publicize the annual report to interested persons.

(3) Pending recommendations from the Committee, the Program shall publish reports intended to serve the public's interest.

(a) The Committee shall review the reports prior to publication.

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HAI Data Processing and Security

(1) Unless otherwise directed by the Administrator, the Program shall collect the HAI data files at least biannually.

(a) The Program shall download Hospital process measures data files from the CMS Hospital Compare web site, or its successor.

(2) The Program shall calculate state-level and facility-level statistics to facilitate HAI public disclosure.

(a) If applicable, the Program shall use statistically valid and clinically intuitive risk adjustment methods.

(A) For each HAI measure a minimum of 20 denominator observations is required for inclusion in risk adjustment calculations.

(b) If feasible and appropriate, the Program shall use statistically valid methods to make comparisons with state, regional, or national statistics.

(A) For each HAI measure a minimum of 20 denominator observations is required for inclusion in state, regional, or national comparisons.

(c) The Program shall document the methods used to calculate statistics and perform comparisons.

(3) The Program shall undertake reasonable precautions to prevent unauthorized disclosure of the raw data files. These include, but are not limited to:

(a) Restricting staff access to the raw data files.

(b) If applicable, restricting network access to the raw data files.

(c) If applicable, storing patient information within a strongly-encrypted and password-protected virtual drive or using other methods to reliably achieve the same level of security.

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Prohibited Activities

(1) Unless specifically required by state or federal rules, regulations, or statutes, the Program is prohibited from undertaking the following activities:

(a) Disclosure of patient information.

(b) Intentionally linking or attempting to link individual providers to individual HAI events.

(c) Providing patient-level or provider-level reportable HAI data to any state agency for enforcement or regulatory actions in relation to a health care facility participating in the Program.

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Compliance

(1) At the Administrator's discretion, health care facilities that fail to comply with these rules are subject to civil penalties as defined in ORS 442.445.