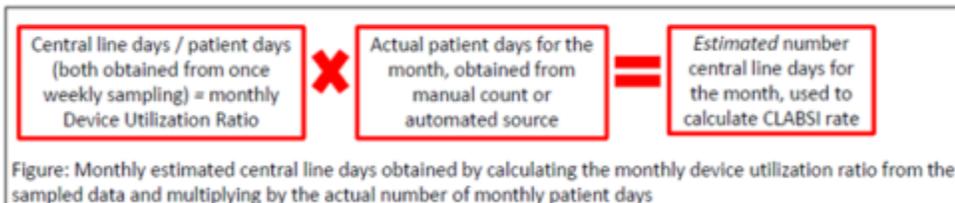




Denominator Simplification Project Update

CDC, in collaboration with the 10 state health departments [CA, CO, CT, GA, MD, MN, NM, NY, OR, TN] that participate in the CDC's Emerging Infections Program (EIP), is conducting a project to evaluate the use of a simplified, less resource-intensive method to collect denominator data for central line-associated bloodstream infection (CLABSI) surveillance in NHSN. Building upon prior efforts¹, the project goal is to evaluate the validity and feasibility of using a sampling method (e.g., collecting data one day a week) to obtain an estimate of central line days (figure below) in a large number and variety of facilities and inpatient unit types. Phase 1 of the project, retrospective evaluation of denominator data collected during 2009 and 2010, was conducted during the last quarter of 2010. Currently, 59 facilities and 113 inpatient locations have participated by submitting daily denominator logs.

Facilities have also been recruited to participate in Phase 2 of the project, which started in January 2011. Facilities are using the simplified method (data collection one day each week) and prospectively collecting denominator data in one or two current CLABSI surveillance locations. Data analysis will be performed at CDC to determine how well once-weekly sampling can approximate the monthly denominator data reported, and if NHSN denominator data collection practices could be augmented to include the use of a valid, less resource-intensive data collection method. If valid, adoption of a once-weekly sampling method could yield an 85% reduction in staff time used collecting CLABSI denominator data. We sincerely thank the facilities participating in this important project, and look forward to updating our users on the progress as it continues.



¹ Klevens et al. Sampling for collection of central line day denominators in surveillance for healthcare-associated bloodstream infections. *ICHE* 2006;27:338-42.

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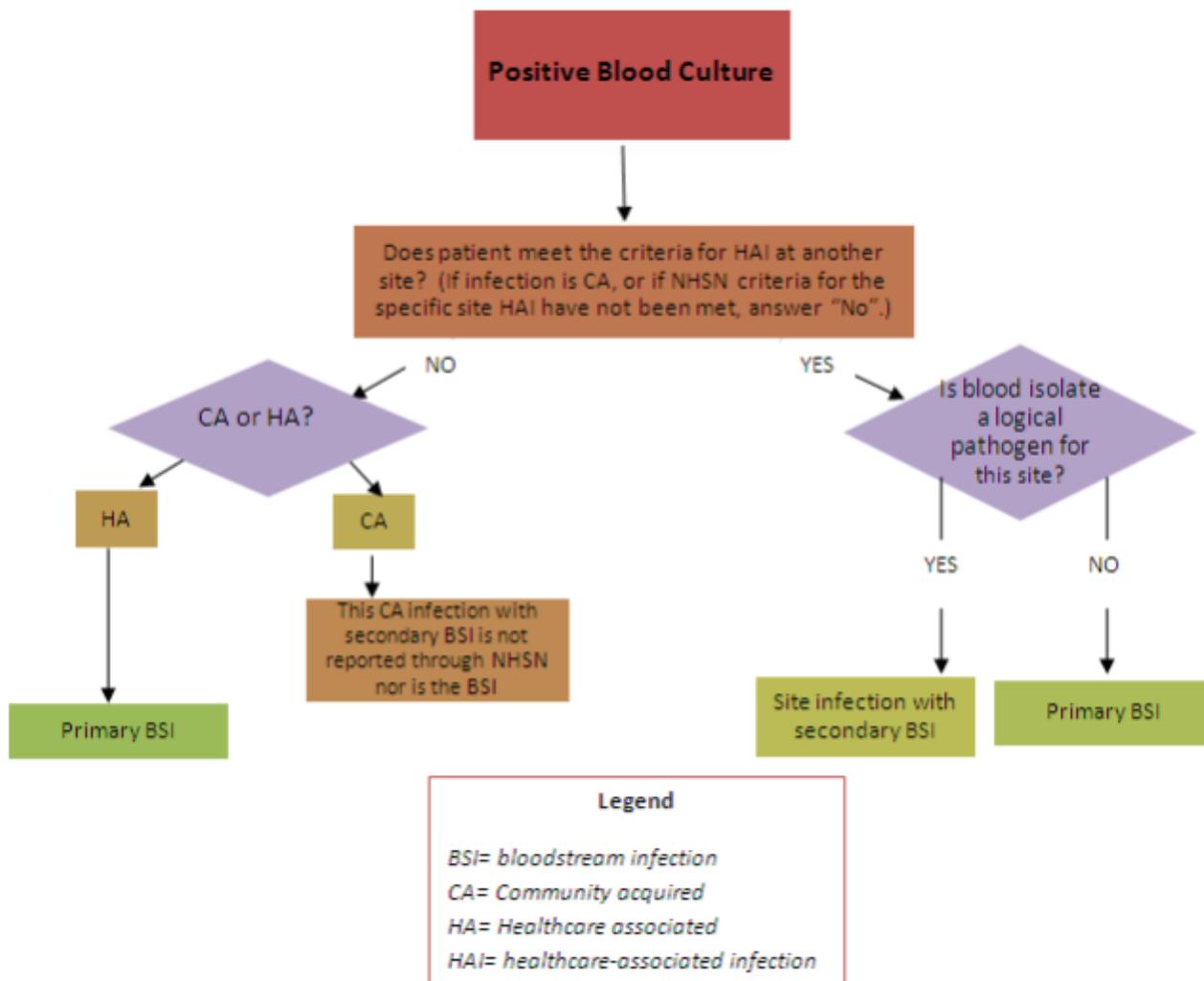
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Primary vs. Secondary BSI

What is the meaning of the statement “not related to infection at another site” in relation to a positive blood culture?

The purpose of using the CDC/NHSN infection criteria is to identify and consistently categorize infections that are healthcare-associated into major and specific infection sites or types. Several of the criteria include the caveat that signs, symptoms, and/or laboratory findings may not be related to infection at another site. When assessing positive blood cultures in particular, one must be sure that there is no other CDC-defined primary site of HAI that may have seeded the bloodstream secondarily; otherwise the bloodstream infection may be misclassified as a primary BSI or erroneously associated with the use of a central line, i.e., called a CLABSI.

If the criteria for the primary infection site require a culture, then at least one organism(s) cultured from that site must match an organism(s) in the blood culture. NOTE: As of 1/1/11, antibiograms of the blood and site isolates do not have to match. In these instances and others where a culture of the involved site is not required for the criteria, and no such culture is collected, it may be necessary to use clinical judgment regarding the likelihood of that organism causing a secondary bloodstream infection. In these instances, the following guidance may be used to help determine the relatedness of a primary site of infection to a positive blood culture:



Please see Secondary Bloodstream Infection Guide on the Resource Library page of the NHSN website @ <http://www.cdc.gov/nhsn/library.html>.

Evolving Uses of Healthcare-Associated Infection Surveillance Data

It's very likely that you have recently had some discussions with your quality improvement colleagues about the increasing number of ways HAI data are used. Nowadays they are not only used internally for quality improvement activities, but also externally by healthcare agencies for pay-for-reporting programs and by consumers for interfacility comparisons. This evolution has created some challenges for those involved. How does one adapt a system that has historically been used for quality improvement purposes, and has utilized surveillance definitions for this purpose, into one that can fill the additional needs? Can it be done with the current definitions and systems, or must some very basic changes be made?

These and other questions are being addressed on a daily basis by NHSN staff and are the subject of an upcoming article by Russ Olmsted, President of the Association for Professionals in Infection Control and Epidemiology, and Dr. Scott Fridkin of the CDC's Division of Healthcare Quality Promotion. The article is titled "Meaningful measure of performance: a foundation built on valid, reproducible findings from surveillance of healthcare-associated infections" and will be published in the March 2011 issue of the *American Journal of Infection Control*. The article outlines current and future activities to respond to the tension created by these sometimes competing data requirements. Check it out. It might be useful for starting or continuing dialogue within your facility.

Update on NHSN Pediatric-Neonatal Work Group

CDC staff organized an internal NHSN Pediatric-Neonatal Work Group in 2009 and has been busy ever since reviewing the NHSN pediatric definitions, reaching out to users, and communicating with SHEA's Pediatric Leadership Council and APIC's Pediatric Section. This past summer the group participated in the National Association of Children's Hospitals and Related Institutions' (NACHRI) PICU and Hematology-Oncology CLABSI definition survey. Excellent information about interpretation and understanding of NHSN CLABSI surveillance definitions was shared by both groups and participants. In addition, the group is developing case studies focusing on infants and children for inclusion in the popular AJIC series.

Efforts for 2011 include vetting proposed new necrotizing enterocolitis (NEC) criteria and the removal of umbilical catheter days from the denominator data collection for NICUs, and clarifying the unique requirements needed for better surveillance of surgical site infections among infants and children. These efforts will culminate in incorporation into the NHSN protocols. Through research, collaboration, and communication, the NHSN Pediatric-Neonatal Work Group strives to meet the surveillance requirements of these special populations so that effective prevention strategies can be implemented and their progress monitored.

Enrolling Multiple Outpatient Dialysis Clinics in NHSN

Users are encouraged to limit Outpatient Hemodialysis Clinic locations to one per facility. If a facility has multiple Outpatient Hemodialysis Clinics intending to participate in Dialysis Event surveillance (e.g., satellite locations), these additional Outpatient Hemodialysis Clinics should enroll as separate facilities.

One person, who is designated as the NHSN Facility Administrator, can enroll multiple facilities without having to obtain a new digital certificate each time as long as the email address associated with the digital certificate is the same one used when enrolling subsequent facilities. To enroll multiple facilities, the NHSN Facility Administrator needs the NHSN Enrollment Activity on his digital certificate. The NHSN Enrollment Activity is exchanged for the NHSN Reporting Activity at the time the first facility is activated. To regain the NHSN Enrollment Activity, the NHSN Facility Administrator must email the NHSN helpdesk at nhsn@cdc.gov and explicitly state the need to enroll more than one Outpatient Dialysis Clinic facility in NHSN. It is extremely helpful to list the names of the additional facilities in the email so that helpdesk staff can be on the lookout for them and keep the NHSN Enrollment Activity available to the NHSN Facility Administrator until all facilities have been successfully enrolled. Once the email request is processed, the NHSN Facility Administrator will receive email notification that NHSN Enrollment Activity is approved. The NHSN Facility Administrator can then select this link from the Homepage to enroll additional facilities in NHSN. If you have questions about this process, or about enrolling multiple facilities in general, please contact the NHSN helpdesk at nhsn@cdc.gov.

Only "In Plan" CLABSI Data will be Shared with CMS

When NHSN releases 2011 CLABSI data to CMS for those hospitals participating in the Centers for Medicare and Medicaid Services' Hospital Inpatient Quality Reporting Program (CMS Reporting Program), only those months in which the facility included CLABSI in its NHSN monthly reporting plan (MRP) will be included (i.e., in Plan CLABSI). Therefore, it is vitally important that every facility participating in the CMS Reporting Program ensures that its MRPs include CLABSI surveillance participation for the months and locations they wish reported to CMS. As a reminder, only CLABSI identified in adult, pediatric, and neonatal critical care units (level III and level II/III) are included in the CMS Reporting Program. NHSN will not share with CMS CLABSI data for other patient care locations listed in the MRP.

Update on NHSN Pneumonia Surveillance Definitions

Surveillance for ventilator-associated pneumonia (VAP) using current NHSN pneumonia (PNEU) definitions is often regarded as being more burdensome than surveillance for other healthcare-associated infections (HAIs). Problems with the PNEU definitions that are frequently cited by users are that the definitions are too complex, too subjective, or too time-consuming. In particular, users have identified difficulties with the requirement for radiographic evidence of pneumonia. Infection preventionists may find it necessary to seek input from critical care physicians or radiologists to interpret chest radiograph findings, and physicians' interpretations and the language used to report chest radiograph findings may vary widely within and between facilities. In an era where public reporting and benchmarking of HAI rates is becoming more common, definitional elements that introduce variability in how HAI events are detected in different healthcare facilities are potentially problematic.

The Division of Healthcare Quality Promotion (DHQP) at CDC has been engaged in efforts to clarify the burden and sources of confusion associated with the PNEU definitions, particularly related to VAP, and identify potential areas for simplification. During the past year, DHQP epidemiologists and NHSN team members have worked with partners, including the CDC Prevention Epicenters, on projects exploring a streamlined draft surveillance definition of ventilator-associated lower respiratory infection that incorporated criteria based on readily available, objective data elements. Elements included in the draft definition were measures of worsening oxygenation and objective signs of inflammation/infection; chest radiograph findings were not included in the first draft of this definition. The draft definition also required that criteria be met after ≥ 4 calendar days of mechanical ventilation. Results of preliminary assessments of the draft definition will be presented at the March 2011 annual meeting of the Society for Healthcare Epidemiology of America.

The draft definition criteria and preliminary results were shared with experts during two September 2010 meetings: a Department of Health and Human Services (HHS)-sponsored experts meeting held in Atlanta on September 2, 2010, and a HHS meeting on "Progress Toward Eliminating Healthcare-Associated Infections," held from September 23-24, 2010 in Arlington, VA. Meeting participants recognized the need for a definition with greater reliability than the current PNEU definitions, but also emphasized the importance of developing a clinically credible definition and demonstrating that the events detected by the new definition are preventable. As efforts to modify and evaluate the draft definition continue at CDC, additional input from the critical care community will be needed, and specific modifications for pediatric and neonatal patients will be considered. Stay tuned for future updates in the NHSN e-News on the progress of these efforts.

Outpatient Dialysis Event Surveillance Updates

With the release of NHSN version 6.4 anticipated in April 2011, outpatient dialysis event surveillance will be changed to reflect current practices in dialysis settings. New documents will be posted to the [Dialysis Event website](#), when the new NHSN release occurs. Document changes include an updated Dialysis Event Protocol, Dialysis Event Form and the Denominators for Outpatient Dialysis Monthly Census Form, as well as corresponding Tables of Instructions in the Patient Safety Component Manual. Users are strongly recommended to review these documents when they become available.

The most notable changes include the following:

Dialysis Event (DE) definitions:

- No changes to "Positive blood cultures" or "IV antimicrobial starts"

- A new DE has been added: "Pus, redness, or increased swelling at the vascular access site(s)"

- The DE "Hospitalization" has been removed; only hospitalizations that are the result of the updated DE definitions will be collected (see Dialysis Event Outcomes)

Dialysis Event (DE) Outcomes:

- 2 outcomes options have been added to the DE form: "Hospitalization" and "Death"

- Users will report outcomes only for events that meet a DE definition

Vascular access terminology:

- "Permanent central line" has been replaced by "Tunneled central line"

- "Temporary central line" has been replaced by "Nontunneled central line"

- "Other access devices (e.g., hybrid)" is a new vascular access option

- Ports are no longer a specific option, but users may report them under "Other access device"

Questions about these changes can be directed to the NHSN mailbox (nhsn@cdc.gov.)

Annual Update of ICD-9-CM Codes

The National Center for Health Statistics (NCHS) and the Centers for Medicare and Medicaid Services (CMS) have published their annual update of ICD-9-CM codes. The SSI protocol and NHSN Reporting application will be updated to accept these changes with version 6.4 which is expected to be released in April 2011. For your preparation, the changes are provided here.

FY 2011 CHANGES

NEW Procedure Codes Effective October 1, 2010

NHSN Operative Procedure Category

01.20 Cranial implantation or replacement of neurostimulator pulse generator	CRAN
01.29 Removal of cranial neurostimulator pulse generator	CRAN
37.12 Pericardiectomy	CARD
37.24 Biopsy of pericardium	NO
37.37 Excision or destruction of other lesion or tissue of heart, thoracoscopic approach	CARD
39.81 Implantation or replacement of carotid sinus stimulation device, total system	OTH
39.82 Implantation or replacement of carotid sinus stimulation lead(s) only	OTH
39.83 Implantation or replacement of carotid sinus stimulation pulse generator only	OTH
39.84 Revision of carotid sinus stimulation lead(s) only	OTH
39.85 Revision of carotid sinus stimulation pulse generator	OTH
39.86 Removal of carotid sinus stimulation device, total system	OTH
39.87 Removal of carotid sinus stimulation lead(s) only	OTH
39.88 Removal of carotid sinus stimulation pulse generator only	OTH
39.89 Other operations on carotid body, carotid sinus and other vascular bodies	OTH
81.88 Reverse total shoulder replacement	OTH
84.94 Insertion of sternal fixation device with rigid plates	OTH
85.55 Fat graft to breast	BRST
86.87 Fat graft of skin and subcutaneous tissue	OTH
86.90 Extraction of fat for graft or banking	OTH

REVISED Procedure Codes Effective October 1, 2010

83.21 Open biopsy of soft tissue	Changed category from NO to OTH
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NHSN Questions & Answers

Q: Is a surgical procedure in which a drain extends through the incision considered an operative procedure in NHSN, and if infection develops, can it be reported as an SSI?

A: No. Anything which prevents the surgical incision from being closed primarily, i.e., the skin edges from being entirely approximated, does not meet the definition of an NHSN operative procedure. As a reminder, an NHSN operative procedure is one which (1) is performed on a patient who is an NHSN inpatient or an NHSN outpatient, (2) takes place during an operation 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 operating room, and (3) is included in Chapter 9, Table 1.

Therefore, any infection that develops at the site of a procedure that does not meet this definition may not be reported as an SSI. If necessary, it can be reported as a healthcare-associated infection, e.g., SST-SKIN.

Q: Our critical care unit is actually both a medical critical care and step-down unit because we don't have a step-down unit in our hospital. So would the location designation for this type of unit be "Mixed Acuity" ward and if yes, would CLABSIs need to be reported for participation in the Centers for Medicare and Medicaid Services' (CMS) Hospital Inpatient Quality Reporting Program?

A: The location type "Mixed Acuity" ward location was created to capture data for patient care areas that have a mixture of patients of various acuity levels. This includes areas with patients of differing acuity levels present at the same time, as well as those that utilize a "Universal Bed" patient care model. In a Universal Bed system, one patient will occupy the same bed over the course of a hospitalization receiving critical, step down, and ward level care without reassignment to different beds or patient care areas. Because this location type will include patients at various levels of risk for HAI, the usefulness of data aggregated across facilities for HAI prevention has not yet been determined. The following guidance is provided for determining the appropriateness of the use of this location type in your facility.

1. When mapping your locations to CDC location descriptions, apply the 80% rule. If 80% of the patients are of a certain type (e.g., medical critical care patients) then that area is designated as that type of location (in this case, an Inpatient Medical Critical Care).
2. If the 80% rule can not be met, you should determine if there is a way of separating the medical critical care and step-down patient data (infection events, device days, and patient days). If this is possible, the unit should be "divided" into 2 separate location types and appropriately mapped. In the example given, this would yield a MICU location and a step-down location. Remember that the purpose for location designation is to group patients of similar risk for HAI to permit internal and external comparison with like patient care areas.
3. Only if neither 1 nor 2 can be accomplished, can the unit be labeled a Mixed Acuity ward location.

Please be aware, based on CMS information that is currently available, Mixed Acuity wards do not have to report CLABSI data to CMS for the Quality Reporting Program. Your Quality Improvement or CMS-compliance staff may be able to provide further guidance on CMS reporting requirements. Please contact the NHSN helpdesk (nhsn@cdc.gov) if you have any questions about location mapping.

Q: What is the difference between Laboratory-identified (LabID) Event and Infection Surveillance in the MDRO and CDI Module?

A: Infection Surveillance involves reporting infections which are caused by one of the listed MDROs or *C. difficile* that were "not present or incubating on admission". The infection must meet one of the CDC/NHSN-defined healthcare-associated infection (HAI) criteria (http://www.cdc.gov/nhsn/PDFs/pscManual/17pscNosInfDef_current.pdf).

LabID Event monitoring involves reporting proxy infection events based on laboratory results, specimen collection dates, and admission dates. No HAI infection criteria must be met. The NHSN Reporting application will use this information to categorize the event as Healthcare Facility-Onset (HO), Community-Onset (CO), or Community-Onset Healthcare Facility-Associated (CO-HCFA), where the latter category is used only for *C. difficile* LabID events.

Q: Can the LabID Event categories (HO, CO, CO-HCFA) be used for Infection Surveillance events?

A: No, the categorizations apply **only** to LabID events.

Healthcare Facility-Onset (HO): Specimens collected > 3 days after admission to the facility (i.e., on or after day 4)

Community-Onset (CO): Specimens collected ≤ 3 days after admission to the facility (i.e., days 1, 2, or 3 of admission)

Community-Onset Healthcare Facility-Associated (CO-HCFA): CO specimens collected from a patient who was discharged from the facility ≤ 4 weeks prior (for *C. difficile* only)

Did you know...?

Submitting Questions to the NHSN Mailbox

NHSN continues to undergo record growth with 340 new facilities enrolled in the last 60 days. Because of this increase, though we continue to strive to respond in as timely a manner as possible, it may take us a little more time to respond to your questions than it has in the past. Unfortunately, some NHSN users are sending the same question more than once in the hopes of getting a faster response. Doing so will not hasten our response but instead slow the system by clogging the mailbox. Of course, if you have not received a response within a week, please send an inquiry to the mailbox (nhsn@cdc.gov). Also, for quicker processing, please remember to include your Facility ID number on all communications. Your cooperation and patience are greatly appreciated!

NHSN Members Meeting at SHEA-Dallas

Surveillance of healthcare-associated infections is a hot topic and changes and updates are on the horizon. If you are attending the annual SHEA conference, come learn what's new in NHSN for this year. Plan to attend the NHSN members meeting on Sunday, April 2, from 12:15-1:15 p.m. Boxed lunches will be available in the meeting room for the first 175 participants. Location will be announced at the conference. Don't miss the chance to meet the NHSN team and hear the latest about infection definition and protocol updates, CMS Reporting Program through NHSN, HAI prevalence study, and more.

NHSN Hands-On Analysis Workshop at SHEA-Dallas

Will you be attending the SHEA Annual Scientific Meeting in Dallas? Do you also need help with using the NHSN Analysis tools? Members of the NHSN Team will be providing a 4-hour pre-conference workshop, "Using NHSN Data for Prevention", on Friday, April 1, at 12-4 p.m. This workshop will provide users of NHSN with hands-on experience to improve skills with the analysis capabilities of the NHSN web-based system. Participants will use their own laptops and use a demonstration copy of NHSN to be guided through exercises, such as sub-setting data, using the statistics calculator, creating output report sets, exporting datasets, and interpreting results.

Please note that pre-registration through SHEA is required and space is limited. For more information and participation requirements, visit: <http://shea.confex.com/shea/2011/webprogram/Session1373.html>

The Centers for Disease Control and Prevention (CDC)

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The National Healthcare Safety Network (NHSN) is a voluntary, secure, internet-based surveillance system that integrates patient and healthcare personnel safety surveillance systems managed by the Division of Healthcare Quality Promotion (DHQP) at CDC.

During 2008, enrollment in NHSN was opened to all types of healthcare facilities in the United States, including acute care hospitals, long-term acute care hospitals, psychiatric hospitals, rehabilitation hospitals, outpatient dialysis centers, ambulatory surgery centers, and long term care facilities.

