

NHSN Frequently Asked Questions: Central Line-Associated Bloodstream Infection (CLABSI)

Date	Topic	Question	Answer
Jan-14	How to apply secondary BSI to lower respiratory events in 2014	How do I identify a secondary BSI for lower respiratory events in 2014 in ventilated patients in adult locations?	<p>We understand this is an area of confusion. Please note, for purposes of NHSN, for a bloodstream infection to be determined to be secondary to a primary infection site, (i.e. related to an infection at another site, such that primary site of infection may have seeded the bloodstream secondarily) the patient must first meet one of the NHSN site specific definitions. For example, for a secondary bloodstream infection to be deemed secondary to PNEU, one of the NHSN PNEU definitions must be met first. You cannot call a bloodstream infection secondary to PNEU based on a clinical diagnosis of pneumonia.</p> <p>To figure out whether a positive blood culture can be called a secondary bloodstream infection (BSI) related to a lower respiratory tract event, consider the following steps:</p> <ol style="list-style-type: none"> 1) Does the patient meet any of the VAE definitions? <ol style="list-style-type: none"> a. If the Possible or Probable VAP definition is met, then you may attribute the blood culture to the VAE (as a secondary BSI) IF the blood culture meets the various requirements as outlined in the VAE protocol—the organism isolated from blood must match an organism isolated from the respiratory tract culture used in meeting the Possible or Probable VAP definition AND the blood culture must be collected during the 14-day VAE event period. b. If only the VAC or IVAC definition is met, then the positive blood culture CANNOT be secondary to the VAE (because recall that according to the VAE surveillance protocol, BSIs cannot be deemed secondary to VAC or to IVAC). 2) If the Possible VAP or Probable VAP definition is met, a positive blood culture can either be secondary to the VAE (if it meets the VAE secondary BSI criteria outlined in the protocol and summarized in 1a, above), or secondary to one of the other major HAI sites (e.g., if another Chapter 17 definition is met, including PNEU or LRI), or it may be a primary BSI/CLABSI. 3) If only the VAC or IVAC definition is met, or if no VAE definition is met, then the positive blood culture can be evaluated to see if it is secondary to any of the major sites as defined in Chapter 17—including PNEU or LRI. If the patient does not meet one of these other definitions, the BSI may need to be reported as a primary BSI/CLABSI.
Jan-14	Gap day between elements	Could you please explain what you mean by a gap day between any two elements?	<p>A gap day is a day without any of the infection elements. There can be no more than one gap calendar day between any 2 adjacent elements (e.g., culture result, symptoms, fever, etc.) Adjacent elements are those that occur next to each other on a timeline. See example below:</p> <p>Day 1 - Pt admitted and central line (CL) inserted Day 2 - CL still in place Day 3 - CL still in place; Fever > 100.4° Day 4 - Afebrile and no blood culture collected- This is the "gap" day Day 5 - Afebrile; (+) blood culture for <i>S. epidermidis</i> collected Day 6- Afebrile; (+) blood culture for <i>S. epidermidis</i> collected. No other cause of infection. Meets criteria for a LCBI 2 here</p> <p>If the there were no symptoms or positive lab results on Day 5, you could not attribute the fever on day 4 to that culture because there would have been a 2-day gap (day 4 and day 5) between adjacent elements. (See Common Commensals are Single Element, above.)</p>

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Jan-14	Updated common commensal list?	Some organisms that used to be included on the common commensal list have been taxonomically re-categorized and are no longer included on the list. Why?	NHSN has made a decision to only expand the common commensal organism list with organisms from the original list which have maintained their original genus identification and have only had a new species identification. This means that as organisms are identified to belong to a genus not originally on the list, they will be excluded from the common commensal list.
Jan-14	Secondary BSI and time-frame	How closely do the criteria for the BSI and the site specific infection have to fall together in order for the BSI to be considered secondary?	<p>Currently, we do not have a set-time period for which a BSI may or may not be considered secondary to another infection. Instead, our guidance is for users to use the clinical information available to determine if the time-period is reasonable.</p> <p>Although a patient does not necessarily have to meet all elements of the NHSN criteria for the primary infection on the exact day of the positive blood culture, the patient must have ongoing signs/symptoms related to the primary infection at the time of the positive blood culture. If the documentation support that the primary infection has resolved (e.g., symptoms resolved), then a positive blood culture must not be reported as secondary to that resolved infection. Likewise, if blood cultures are collected prior to the onset of the signs/symptoms of the primary infection but no other signs of infection on the date the blood culture is collected, then it is unlikely that the BSI is attributable to another infection.</p>
Jan-14	Defining "separate occasions"	What does the term "on separate occasions" mean in relation to blood cultures positive for common commensals?	The term "on separate occasions" is included among the requirements for laboratory-confirmed bloodstream infections when only common commensals are cultured from the blood (LCBI 2). Poor blood culture technique can result in contamination of blood specimens and the growth of common commensals on culture. The requirement for at least 2 blood cultures with matching common commensals to be collected during separate occasions was developed in order to avoid mis-identifying contamination due to poor blood culture technique as a true bacteremia. Blood cultures drawn from different sites or at different times should undergo separate decontamination (skin prep). Both of these are examples of "separate occasions". In each example, if both cultures sets are positive, the chances are less that contamination was the cause than if the 2 positive blood culture sets were collected from only a single blood collection,(e.g., collected using a vacutainer and attaching multiple bottles after a single decontamination). IF a person were to perform skin preparation, and then perform a single accession (either skin puncture OR accessing the same line or port) and collect multiple bottles, those would be considered a single accession (or occurrence). Think about "occasions" as referring to the act of disinfection of the access site. We want to ensure that the blood cultures are collected following different site disinfections.
Jan-14	Common Commensals Are Single Element	If blood culture with matching common commensals are the last element of the LCBI 2 criterion to be met, and they are drawn on consecutive days, which date should be used for the date of event?	The paired common commensal blood cultures are considered a single element of LCBI 2. Therefore, record the date of the first of the two positive blood cultures as the date of event.

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Jan-14	Secondary BSI	How do I determine if an LCBI is primary in nature or secondary to another site and therefore not reported as a CLABSI?	<p>If you believe that there is a non-blood source of infection to which an LCBI may be secondary, you must identify which type of infection from chapter 17 of the NHSN manual that is. You must identify the specific criteria that is met. Once you have done this, apply the necessary information to Appendix 1, Secondary BSI Guide, that is found at the end of Chapter 4 in the NHSN manual by identifying which of the 4 scenarios identified in that chapter is appropriate, and using that information and example(s) provided to determine if the BSI can be attributed as secondary.</p> <p>NOTE: If the patient does not meet any of the infection criterion in Chapter 17 then the LCBI must be reported as a primary LCBI (CLABSI).</p>
Jan-14	Collection of common commensal organisms and use of GAP Day rule	Does the GAP day rule apply to the collection of two matching common commensals? Does it mean that the two blood draws can have a gap day, for example drawn on Monday and Wednesday, to meet LCBI 2 criteria?	The matching common commensal component of the LCBI 2 criterion represents a single element. Therefore, the gap day rule does not apply to the timeframe between the collection of two common commensals. Common commensals must be collected on consecutive days or on the same day to meet requirements. This means blood draws on Monday and Tuesday are acceptable, but blood draws on Monday and Wednesday are too far apart to meet this criterion. See Comments section on page 4-9 for additional guidance and examples.
Jan-14	MBI-LCBI vs. secondary BSI	How do I determine if a positive blood culture otherwise meeting criteria for a Mucosal Barrier Injury-Laboratory Confirmed Bloodstream Infection (MBI-LCBI) should be reported as secondary to a gastrointestinal infection (GIT) when the patient has symptoms that may be due to their disease process <u>or</u> due to an infectious process (e.g., nausea, vomiting, diarrhea, etc.)?	<p>CLABSI surveillance is intended to capture BSIs that are associated with the central line itself. This association may be due to either suboptimal insertion or maintenance issues. In such an infection the blood is believed to be the primary site of infection.</p> <p>The purpose of the creation of the MBI-LCBI criteria was to enable NHSN to identify those BSIs that are believed to be the result of the patient's weakened immune state and the accompanying alteration of the gut. In such a situation, the patient truly has a <u>primary BSI</u>, because there is not an <u>infection</u> at another site. The gut is simply the source of colonizing organisms which seed the bloodstream.</p> <p>Both of the above situations, where the BSI is primary in nature, are different from those in which the BSI is believed to be secondary to an infection at another site. An example is a BSI that is secondary to a GIT infection in which the bloodstream becomes a second site of infection through seeding from the original infection site.</p> <p>The goal of adding MBI-LCBI criteria to CLABSI surveillance is:</p> <ol style="list-style-type: none"> 1. To capture as MBI-LCBI: BSIs that occur in the absence of other infections (i.e., primary BSI) but in the context of non-infectious disturbances (such as neutropenia or GVHD) 2. To avoid reporting as MBI-LCBIs those BSIs which are due to another site of infection (i.e. secondary BSI) <p>This is not always an easy determination. It will take some clinical judgment, but the aim should be to capture as MBI-LCBIs those BSIs where the patient's symptoms (nausea, vomiting, diarrhea, etc.) are felt to be due to the GVHD or treatment side effects and NOT due to an infectious process in the gut. The organisms involved may provide some suggestion in this determination. When clinical interpretation indicates that there is an infectious process occurring in the gut, AND the patient meets one of the GI infection criteria, AND the guidance in Appendix 1 Secondary BSI Guide is followed, then such BSIs should be considered secondary to another site of infection and not reported as CLABSI.</p>

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Jan-14	Dialysis patients	If in-patients provided dialysis by dialysis staff members, either in the patient's room or in the dialysis unit, develop a CLABSI, to which location is the CLABSI attributed? Our unit nursing staff does not access the dialysis catheter and sometimes this is the patient's only central line.	In both circumstances, the CLABSI must be attributed to the inpatient location where the patient is housed overnight. In this scenario the dialysis unit does not have overnight patients. Therefore, there can be no patient day counts nor central line counts and there is no way within NHSN to perform CLABSI surveillance in this location. NOTE: A new optional field has been added to the BSI form in 2014: Any hemodialysis catheter present: Yes No. This may be utilized to identify issues that are believed to be related to dialysis care. Remember, the CLABSI will still need to be reported to NHSN for the unit in which the patient is housed.
Jan-14	Pre-existing central lines	When patients are admitted to an inpatient unit with a pre-existing central line in place, which is not accessed during the hospitalization, are those days included in the central line-day count?	No. Pre-existing central lines should be included in the central line-day count beginning on the first day that they are accessed and continuing until the patient is discharged or the line is discontinued, whichever comes first. Therefore, if a patient is admitted with a central line which is not accessed until hospital day 4, the line should <u>not</u> be included in the central-line day counts until day 4 and then included every day until the patient is discharged or the line is discontinued. If the line is never accessed, it is never counted in the central line day counts.
Jan-14	Removal and reinsertion of a central line	How do I count calendar days when a central line is removed and later reinserted?	If a central line is present for any part of a calendar day, then that day contributes to the minimum days requirement for the CLABSI. If a full calendar day passes without a central line being present, then the day count begins again for CL days, once the CL is reinserted.
Jan-14	Midline catheter	Does a midline catheter qualify as a central line?	Midline catheters by description are not intended to end in one of the great vessels. However, the location of the tip of the catheter is the determining factor and a recent chest x-ray report may indicate the true location. Also, consider what the line is being used for. To qualify as a central line, it must be used for infusion, withdrawal of blood, or hemodynamic monitoring.
Jan-14	Catheter tips	Are central line catheter tips used to meet the NHSN LCBi criteria? Why or why not?	No. Catheter tip cultures are not utilized for NHSN CLABSI surveillance for several reasons. Catheter tip cultures have been shown to have higher rates of contamination than blood cultures. Furthermore, not all laboratories are able to perform quantified catheter tip cultures. Catheter tips are a part of other types of non-NHSN surveillance such as catheter-related BSI (CRBSI) which is generally thought of as a clinical definition, used when diagnosing and treating patients. The Guidelines for the Prevention of Intravascular Catheter-Related Infections, 2011 address CRBSI and may be helpful when addressing a physician's questions: http://www.cdc.gov/hicpac/pdf/guidelines/bsi-guidelines-2011.pdf
Jan-14	Multiple central lines	If a patient has two central lines in at the same time, how do I determine to which line to attribute the positive blood culture?	You will not be required to attribute a CLABSI to a specific central line. Instead you will simply be required to answer whether or not a central line was in place greater than 2 calendar days on the date of the BSI event and also in place on the day of the event or the day before the event.
Jan-14	Purulent drainage from IV site	If a patient has purulent drainage from an old IV site, but a negative blood culture how do I report this to NHSN?	Consult the criteria for VASC-Arterial or Venous Infection available at http://www.cdc.gov/nhsn/PDFs/pscManual/17pscNosInfDef_current.pdf . Such a patient would meet criterion 4. If your facility is monitoring for these types of infection, enter this into NHSN as a VASC event.

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Jan-14	Intraaortic balloon pumps (IABP)	Are intraaortic balloon pumps (IABP) considered central lines?	No. Because IABPs are not generally used for infusion, blood withdrawal or for hemodynamic monitoring, they are not considered central lines.
Jan-14	Femoral arterial lines	Are femoral arterial lines considered central lines in NHSN?	No. Because the femoral artery is not among the list of great vessels defined for CLABSI surveillance in NHSN, a catheter in this vessel is not considered a central line. Do not include femoral artery catheter days in your count of central line days.
Jan-14	Chronic dialysis patients	When performing central line-associated bloodstream infection (CLABSI) surveillance in an inpatient dialysis location, should chronic dialysis inpatients be included?	Yes. If CLABSI surveillance in an inpatient dialysis location is part of your monthly reporting plan, all patients in that location must be included in CLABSI surveillance. (Note: inpatient dialysis locations that are not bedded locations, i.e., patients do not spend the night in these locations, but instead are transported there for dialysis and return to another bedded location for the remainder of their care, cannot participate in the NHSN CLABSI protocol at this time).
Jan-14	MBI-LCBI-organisms list	How was the list of organisms included in the Mucosal Barrier Injury-Laboratory Confirmed Bloodstream Infection (MBI-LCBI) criteria, developed?	The list of organisms included in the MBI-LCBI was developed by consensus of the HICPAC surveillance working group, made up of infectious disease professionals, healthcare epidemiologist, infection preventionists, and state public health representatives. The list of organisms included in the definition is intended to represent those that are most likely to be attributed to mucosal barrier injury. We recognize that not all mucosal barrier injury related bloodstream infections will be categorized as MBI-LCBI. CDC staff will be evaluating the list of MBI-LCBI organisms on an ongoing basis to determine if changes are needed.
Jan-14	Patient reported fever	Can I use patient reported fever to meet CDC/NHSN LCBI criterion 2 for present on admission (POA)?	No. Patient reported signs and symptoms (e.g., fever) cannot be used as an element to meet CDC/NHSN site-specific criteria unless also observed and documented by a healthcare provider. For example, a patient is transferred from a nursing home and is afebrile upon admission to the hospital. The nursing home documentation indicates that the patient had a fever the morning of admission. If the nursing home documented or reported fever is included as part of the patient's admission/facility record, then it can be used as one of the elements to meet CDC/NHSN LCBI criterion 2.
Jan-14	Hypotension	What is the definition of hypotension when evaluating common commensal for CLABSI?	NHSN does not provide a specific value for this vital sign. Instead, each facility should use the vital sign parameters as stated in its policies and procedures for clinical documentation.

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Jan-14	Distinguishing serial reportable infections from single, unresolved infection	Is there a time period following the identification of an infection during which another of the same type of infection cannot be reported?	No. At present time NHSN does not have a set time period during which only 1 infection of the same event type may be reported for the same patient. (VAE and LabID Event reporting is the exception, for which there is a 14-day window [see individual protocols for VAE and LabID Events].) Following an infection which is either present on admission (POA) or a healthcare-associated infection (HAI), clinical information must be utilized to determine that the original infection had resolved, before reporting a second infection at the same site. Information which may be useful to consider to determine if the infection has resolved includes signs and symptoms as well as completion of antimicrobial therapy. If the original infection had not resolved before subsequent positive cultures are collected from the same site or treatment for the original infection was on-going, add the pathogens recovered from the subsequent cultures to those reported for the first infection, if it was an HAI. Discussions are underway regarding creating a minimum time period between infections at the same site, however no final decisions have been made and no changes would be made before 2015.
Jan-14	Common Commensals	I recently encountered a patient who had S. capitis in one culture and S. auricularis in another (on consecutive days). I know that if either one of the cultures had not been speciated and left as coagulase-negative staphylococcus, then I could consider them as companion cultures. However, because they speciated both cultures would I be correct to call this a contamination?	Since the cultures were speciated and were found to be of different species, they are not considered as companion (i.e., matching) cultures and, therefore, do not meet LCBI 2 criteria.
Jan-14	Contracted staff	How should CLABSIs be reported when they develop in patients whose only central line is accessed solely by contracted dialysis staff?	Facilities are responsible for all of the care which is provided in their facilities. This includes care provided by employed staff and contracted staff alike. Therefore such a CLABSI would be reported for the facility in which the patient is housed.
Jan-14	Blood culture collection methods	If two blood cultures are drawn, one through a central line, and one from a venipuncture and the venipuncture culture is negative for growth but the line culture grows an NHSN pathogen, does this meet the CLABSI criteria?	Yes. Blood cultures collected by any means, either through venipuncture or collected through existing vascular catheters must be considered in your surveillance of BSI. Therefore, a blood culture which is collected through a vascular catheter and that is positive for an organism, is considered a positive blood culture for CLABSI surveillance.

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Jan-14	Patient manipulation of central line	If an inpatient is suspected of accessing their own vascular catheter e.g., injecting illicit drugs, and a BSI develops, is this BSI attributed to the facility?	Yes, if the patient meets the definition of a BSI this is attributable to your facility. A facility must protect the line as best they can. Prevention efforts may include providing a patient sitter and/or removal of the catheter as soon as is clinically possible.