2023 NHSN Laboratory Confirmed Bloodstream Infection (LCBI) Checklist

Laboratory Confirmed Bloodstream Infection (LCBI) Summary		
Criterion	**Criterion Met**	**Date of Event (DOE)**
LCBI 1	☐	
LCBI 2	☐	
LCBI 3	☐	
MBI-LCBI 1	☐	
MBI-LCBI 2	☐	
MBI-LCBI 3	☐	
Please refer to Chapter 4 Bloodstream Infection (BSI) Event of the Patient Safety Manual for additional information.		

Documentation Review Checklist		
Laboratory Confirmed Bloodstream Infection (LCBI)		
LCBI 1 If LCBI 1 criteria is met, consider MBI-LCBI 1		
Element	**Element Met**	**Date**
Patient of any age has		
• A recognized bacterial or fungal pathogen not included on the NHSN common commensal list: 1. Identified from one or more blood specimens obtained by a culture **OR** 2. Identified to the genus or species level by non-culture based microbiologic testing (NCT)* methods (for example, T2 Magnetic Resonance [T2MR] or Karius Test). ***Note:*** *If blood is collected for culture within 2 days before or 1 day after the NCT, disregard the result of the NCT and use only the result of the CULTURE to make an LCBI surveillance determination. If no blood is collected for culture within this time period, use the result of the NCT for LCBI surveillance determination.* *For the purposes of meeting LCBI 1, NCT is defined as a methodology that identifies an organism directly from a blood specimen without inoculation of the blood specimen to any culture media. For instance, NCT does not include identification by PCR of an organism grown in a blood culture bottle or any other culture media prior to performing PCR testing.	☐ ☐	
AND		
• Organism(s) identified in blood is not related to an infection at another site (See Chapter 4 Appendix B: Secondary BSI Guide).	☐	

Notes*:*

1. If a patient meets both LCBI 1 and LCBI 2 or LCBI 3criteria, report LCBI 1 with the recognized pathogen entered as pathogen #1 and the common commensal as pathogen #2.
2. No additional elements (in other words, no sign or symptom such as fever) are needed to meet LCBI 1 criterion; therefore, the LCBI 1 DOE will always be the collection date of the first positive blood specimen used to set the BSI IWP.

Comments/Notes:

Documentation Review Checklist		
Laboratory Confirmed Bloodstream Infection (LCBI)		
LCBI 2 If LCBI 2 criteria is met, consider MBI-LCBI 2		
Element	**Element Met**	**Date**
Patient of any age has at least ***one*** of the following signs or symptoms:		
• Fever (> 38°C)	☐	
• Chills	☐	
• Hypotension	☐	
AND		
• Organism(s) identified in blood is not related to an infection at another site (See Chapter 4 Appendix B: Secondary BSI Guide).	☐	
AND		
• The same NHSN common commensal is identified by a culture from two or more **blood specimens** collected on separate occasions (see Blood Specimen Collection). For the full list of common commensals, see the Common Commensals tab of the NHSN Organism List.	☐	

Notes:

1. Criterion elements must occur within the 7-day IWP (as defined in Chapter 2 Identifying HAIs for NHSN Surveillance) which includes the collection date of the positive blood specimen, the 3 calendar days before and the 3 calendar days after.
2. The two matching common commensal specimens represent a single element for use in meeting LCBI 2 criterion and the collection date of the *first* specimen is used to determine the BSI IWP.
3. At least one element (specifically, a sign or symptom of fever, chills, or hypotension) is required to meet LCBI 2 criterion; the LCBI 2 DOE will always be the date the ***first*** element occurs for the first time during the BSI IWP, whether that be a sign or symptom or the positive blood specimen.

Comments/Notes:

Documentation Review Checklist		
Laboratory Confirmed Bloodstream Infection (LCBI)		
LCBI 3 If LCBI 3 criteria is met, consider MBI-LCBI 3		
Element	**Element Met**	**Date**
Patient ≤ 1 year of age has at least ***one*** of the following signs or symptoms:		
• Fever (> 38°C)	☐	
• Hypothermia (< 36.0°C)	☐	
• Apnea	☐	
• Bradycardia	☐	
AND		
• Organism(s) identified in blood is not related to an infection at another site (See Chapter 4 Appendix B: Secondary BSI Guide).	☐	
AND		
• The same NHSN common commensal is identified by a culture from two or more **blood specimens** collected on separate occasions (see Blood Specimen Collection). For the full list of common commensals, see the Common Commensal tab of the NHSN Organism List.	☐	

Notes:

1. Criterion elements must occur within the 7-day IWP (as defined in Chapter 2 Identifying HAIs for NHSN Surveillance) which includes the collection date of the positive blood specimen, the 3 calendar days before and the 3 calendar days after.
2. The two matching common commensal specimens represent a single element for use in meeting LCBI 3 criterion and the collection date of the *first* specimen is used to determine the BSI IWP.
3. At least one element (specifically, a sign or symptom of fever, hypothermia, apnea, or bradycardia) is required to meet LCBI 3 criterion; the LCBI 3 DOE will always be the date the ***first*** element occurs for the first time during the BSI IWP whether that be a sign or symptom or the positive blood specimen.

Comments/Notes:

Documentation Review Checklist		
Mucosal Barrier Injury Laboratory-Confirmed Bloodstream Infection (MBI-LCBI)		
Must meet <u>one</u> of the following MBI-LCBI criteria		
MBI-LCBI 1		
Element	**Element Met**	**Date**
Patient of **any age** fully meets LCBI 1 criterion with at least **one** blood specimen:		
1. Identified from one or more blood specimens obtained by a culture **<u>OR</u>** 2. Identified to the genus or species level by non-culture based microbiologic testing (NCT) methods (for example, T2 Magnetic Resonance [T2MR] or Karius Test). ***Note**: If blood is collected for culture within 2 days before or 1 day after the NCT, disregard the result of the NCT and use only the result of the CULTURE to make an LCBI surveillance determination. If no blood is collected for culture within this time period, use the result of the NCT for LCBI surveillance determination.*	☐	
<u>AND</u>		
ONLY intestinal organisms from the NHSN MBI organism list are identified*	☐	
<u>AND</u> **Patient meets at least *<u>one</u>* of the following:**		
1. Is an allogeneic hematopoietic stem cell transplant recipient within the past year with **one of the following** documented during same hospitalization as positive blood specimen:	☐	
a. Grade III or IV gastrointestinal graft versus host disease [GI GVHD]	☐	
OR		
b. ≥1-liter diarrhea in a 24-hour period (or ≥20 mL/kg in a 24-hour period for patients <18 years of age) with onset on or within the 7 calendar days before the date the positive blood specimen was collected.	☐	
OR		
2. Is neutropenic, defined as at least two separate days with ANC and/or WBC values <500 cells/mm^3 collected within a 7-day time period which includes the collection date of the positive blood specimen, the 3 calendar days before and the 3 calendar days after (See Chapter 4 Table 5).	☐	

MBI-LCBI 2		
Patient of **any age** fully meets LCBI 2 criterion with at least **two matching** blood specimens identified by culture	☐	
AND		
ONLY Viridans Group *Streptococcus* and/or ***Rothia* spp.** alone but no other organisms are identified†	☐	
AND **Patient meets at least *one* of the following:**		
1. Is an allogeneic hematopoietic stem cell transplant recipient within the past year with **one of the following** documented during same hospitalization as positive blood specimen:	☐	
a. Grade III or IV gastrointestinal graft versus host disease [GI GVHD]	☐	
OR		
b. ≥1-liter diarrhea in a 24-hour period (or ≥20 mL/kg in a 24-hour period for patients <18 years of age) with onset on or within the 7 calendar days before the date the positive blood specimen was collected.	☐	
OR		
2. Is neutropenic, defined as at least two separate days with ANC and/or WBC values <500 cells/mm^3 collected within a 7-day time period which includes the collection date of the positive blood specimen, the 3 calendar days before and the 3 calendar days after (See Chapter 4 Table 5).	☐	

MBI-LCBI 3		
Patient **≤1 year of age** fully meets LCBI 3 criterion with at least **two matching** blood specimens identified by culture	☐	
AND		
ONLY Viridans Group *Streptococcus* and/or ***Rothia* spp.** alone but no other organisms are identified†	☐	
AND **Patient meets at least *one* of the following:**		
1. Is an allogeneic hematopoietic stem cell transplant recipient within the past year with **one of the following** documented during same hospitalization as positive blood specimen:	☐	
a. Grade III or IV gastrointestinal graft versus host disease [GI GVHD]	☐	
OR		
b. ≥1-liter diarrhea in a 24-hour period (or ≥20 mL/kg in a 24-hour period for patients <18 years of age) with onset on or within the 7 calendar days before the date the positive blood specimen was collected.	☐	
OR		
2. Is neutropenic, defined as at least two separate days with ANC and/or WBC values <500 cells/mm^3 collected within a 7-day time period which includes the collection date of the positive blood specimen, the 3 calendar days before and the 3 calendar days after (See Chapter 4 Table 5).	☐	

- An MBI-LCBI is a subset of the LCBI criteria; therefore, a BSI event must fully meet an LCBI criterion before evaluating for the corresponding MBI-LCBI criterion.
- The MBI-LCBI DOE will always be the date the prerequisite LCBI criteria are met. Abnormal ANC and WBC values reflect risk factors for acquiring an MBI-LCBI, not symptoms of infection and therefore are not used in DOE determinations.

Notes:

1. If a patient meets both MBI-LCBI 1 and MBI-LCBI 2 criteria (specifically has Viridans Group *Streptococcus* and/or *Rothia* spp. plus **only other MBI organisms** in the blood specimen), report organisms as MBI-LCBI 1 with the recognized pathogen as pathogen #1 and the common commensal as pathogen #2.
2. Any combination of ANC and/or WBC values can be used to meet neutropenic criteria provided they are collected on separate days within the 7-day period that includes the date of the positive blood specimen, the 3 calendar days before and the 3 calendar days after.
3. When a blood specimen positive for an organism not included on the NHSN MBI organism list is collected during the BSI RIT of an MBI-LCBI, the initial MBI-LCBI event is edited to an LCBI and the identified non-MBI organism is added.

See MBI organism tab on the NHSN Organism List for the full list of MBI organisms.

†Eligible positive blood specimens must be collected on separate occasions and limited to the following:

- Viridans Group *Streptococcus* identified in at least two sets of blood specimens
- *Rothia* spp. identified in at least two sets of blood specimens
- Viridans Group *Streptococcus* ***and*** *Rothia* spp. identified in at least two sets of blood specimens

Blood Specimen Collection

1. The "two or more blood specimens drawn on separate occasions" criterion is met when any of the below are noted:

    a. blood from at least two separate blood draws is collected on the same or consecutive calendar days
    OR
    b. two separate site preparations (decontamination steps) are performed during specimen collection
    OR
    c. the blood cultures are assigned separate specimen numbers, processed individually, and are reported separately in the final laboratory report.

    - The guidance above is intended to reduce misidentification of contaminated blood specimens as LCBIs. For example, aseptic technique indicates separate site decontaminations would be performed for blood specimens drawn from different sites (in other words, different venipunctures, a combination of venipuncture and lumen withdrawal, or different lumens of the same central line), or at different times.
    - If both culture sets are positive, there is less chance that contamination was the cause than if 2 positive blood cultures were collected from a single blood draw (in other words, collected using a vacutainer or via venipuncture and attaching multiple bottles after a single decontamination of the site), these specimens would be considered a single access (or the same occasion).
2. Specimen Collection Considerations: Blood specimens drawn through central lines can have a higher rate of contamination than blood specimens collected through peripheral venipuncture. However, all positive blood specimens, regardless of the site from which they are drawn or the purpose for which they are collected, must be included when conducting in-plan CLABSI surveillance (for example, weekly blood cultures performed in hematology and oncology locations).
3. Catheter tip cultures cannot be used in place of blood specimens for meeting LCBI criteria.
4. In MBI-LCBI 1, 2 and 3, "No other organisms" means there is no identification of a non-MBI-LCBI pathogen (such as *S. aureus*) or 2 matching common commensals (such as coagulase-negative *staphylococci*) collected from the blood on separate occasions that would otherwise meet LCBI criteria. If this occurs, the infection does not meet MBI-LCBI criteria.
5. When a blood specimen positive for an organism not included on the NHSN MBI organism list is collected during the BSI RIT of an MBI-LCBI, the initial MBI-LCBI event is edited to an LCBI and the identified non-MBI organism is added.

    MBI RIT Exception: *An MBI-LCBI designation will not change to an LCBI event if the following criteria are met:*

    1. *The blood culture with the non-MBI organism is collected during an existing BSI (MBI-LCBI) RIT* ***AND***
    2. *The bood culture with the non-MBI organism is determined secondary to an NHSN site-specific infection*

    (Please see Example 5 in Chapter 4 Appendix B: Secondary BSI Guide and Example 2b in Chapter 2 Pathogen Assignment.)

****Please note, once an LCBI is identified, refer to Chapter 4 Bloodstream Infection (BSI) Event of the NHSN Patient Safety Component Manual at https://www.cdc.gov/nhsn/pdfs/pscmanual/4psc_clabscurrent.pdf for Reporting Instructions and additional guidance on making central line associated (CLABSI) determinations and exclusions.**