I Can See Clearly Now a CLABSI Exclusion is Met: BSI and CLABSI Exclusions Overview

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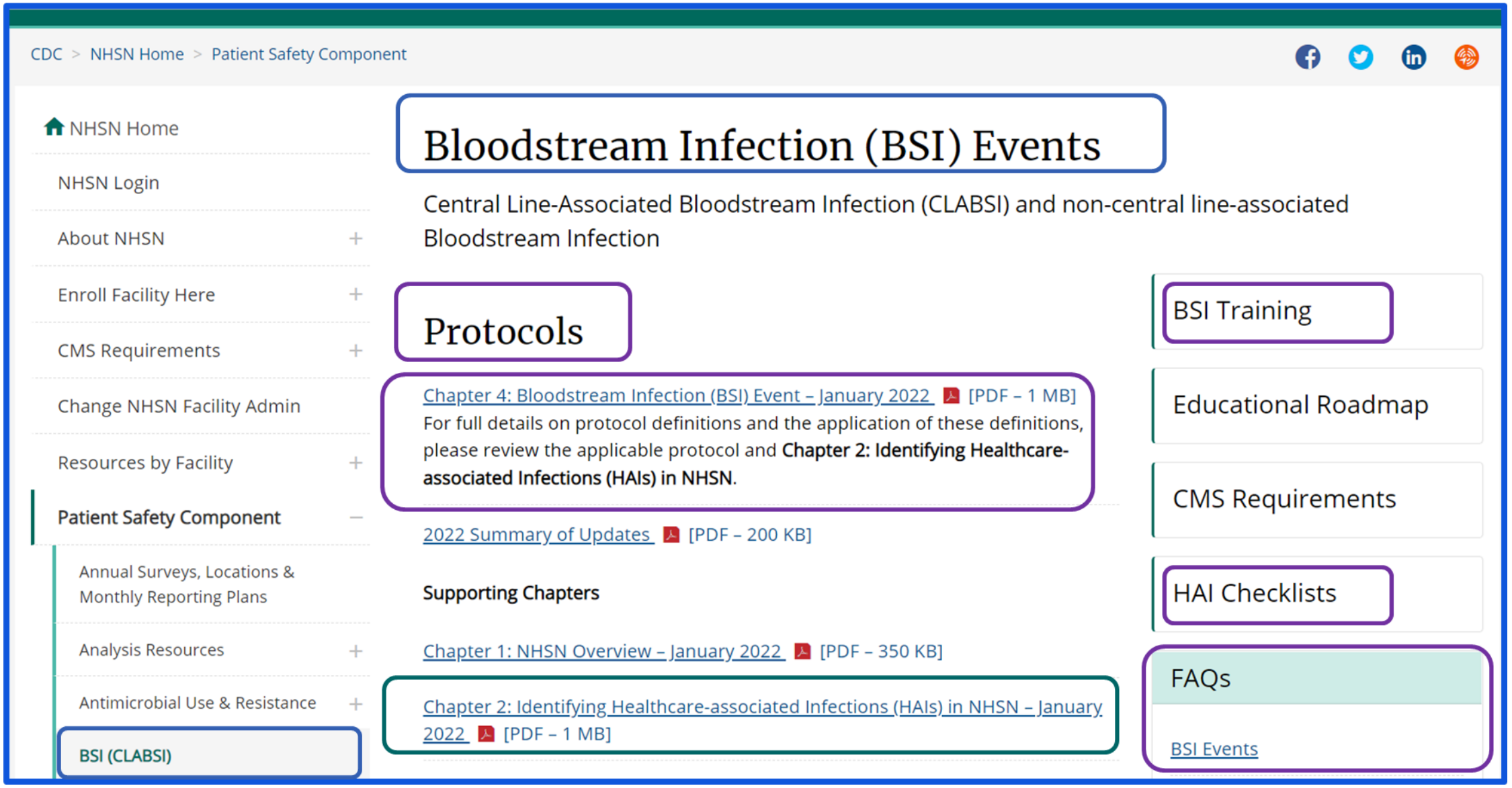
Dominique Godfrey-Johnson MPH, CPH, CIC

Infection Prevention Consultant

Objectives

- Define key terms for device-associated infections specifically CLABSI
- Provide an overview of central line association for BSI events
- Review the Central Line Associated Bloodstream Infection (CLABSI) exclusions
- Review denominator collection and CLABSI event reporting
- Assess current BSI knowledge through case scenarios

Where Can I Find the BSI Surveillance Protocol



Where Can I Find BSI Supporting Material

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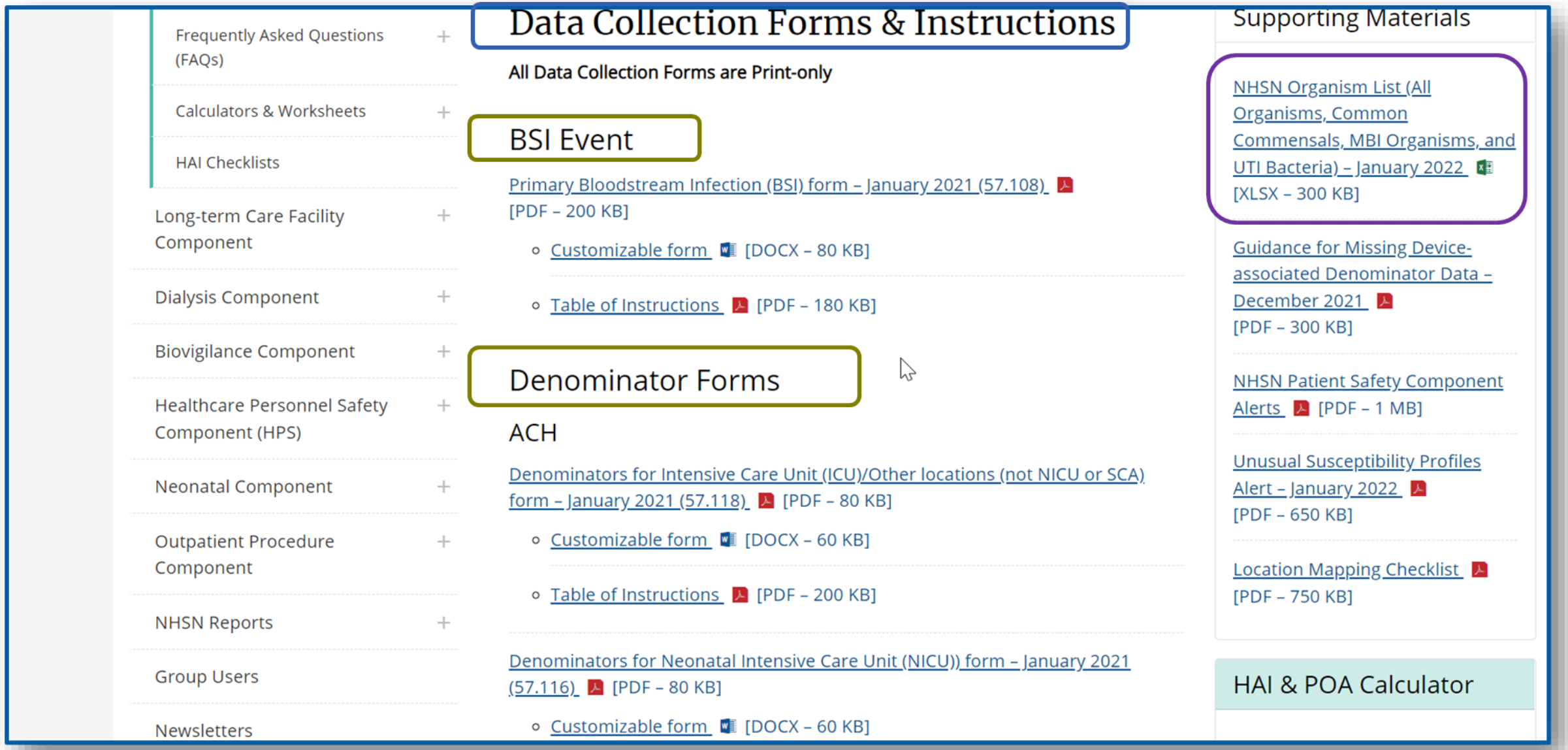


- Frequently Asked Questions (FAQs)
- Calculators & Worksheets
- HAI Checklists
- Long-term Care Facility Component
- Dialysis Component
- Biovigilance Component
- Healthcare Personnel Safety Component (HPS)
- Neonatal Component
- Outpatient Procedure Component
- NHSN Reports
- Group Users
- Newsletters

Data Collection Forms & Instructions

All Data Collection Forms are Print-only

BSI Event

Primary Bloodstream Infection (BSI) form – January 2021 (57.108) [PDF – 200 KB]

- Customizable form [DOCX – 80 KB]
- Table of Instructions [PDF – 180 KB]

Denominator Forms

ACH

Denominators for Intensive Care Unit (ICU)/Other locations (not NICU or SCA) form – January 2021 (57.118) [PDF – 80 KB]

- Customizable form [DOCX – 60 KB]
- Table of Instructions [PDF – 200 KB]

Denominators for Neonatal Intensive Care Unit (NICU)) form – January 2021 (57.116) [PDF – 80 KB]

- Customizable form [DOCX – 60 KB]

Supporting Materials

NHSN Organism List (All Organisms, Common Commensals, MBI Organisms, and UTI Bacteria) – January 2022 [XLSX – 300 KB]

Guidance for Missing Device-associated Denominator Data – December 2021 [PDF – 300 KB]

NHSN Patient Safety Component Alerts [PDF – 1 MB]

Unusual Susceptibility Profiles Alert – January 2022 [PDF – 650 KB]

Location Mapping Checklist [PDF – 750 KB]

HAI & POA Calculator

Definitions and Key Terms BSI / CLABSI Surveillance

BSI / CLABSI Definitions

Infection Window Period (IWP)

The 7-day period: in which all site-specific infection criterion must be met. It includes the **date of collection of the first blood specimen** which identifies an organism in the blood, **3 calendar days before** and **3 calendar days after**

Date of Event (DOE)

LCBI 1: DOE will always be the **date of the blood specimen** collection which identifies an organism in the blood (will always be a recognized pathogen) ***No symptom required***

LCBI 2 or 3: DOE will always be the **first date an element** that is used to meet the LCBI 2 or 3 criteria (symptom or the first of 2 cultures with matching common commensal organisms) occurs within the BSI IWP ***Symptom required***

BSI Definitions

Laboratory Confirmed Bloodstream Infection (LCBI)

Primary BSI: Organism cultured from the blood that is **not** related to an infection at another site. LCBI 1, LCBI 2, LCBI 3

Primary BSIs will create a 14-day BSI Repeat infection Timeframe (RIT)

Secondary BSI

Bloodstream infection that is not reported as an LCBI because it is associated with a site-specific infection at another body site which has seeded the bloodstream

- ***Secondary BSI's do not create a BSI RIT***
- ***Site-specific infection will create a site-specific RIT***
- ***Site-specific infection will create a Secondary BSI Attribution Period***

BSI Definitions

Secondary BSI Attribution Period

The period in which a blood specimen must be collected for a secondary BSI attributed to a primary site of infection

SBAP = IWP + RIT

14-17 days depending on DOE

Eligible Organism

Any organism eligible to meet LCBI or MBI-LCBI criteria

Does not include excluded organism

BSI / CLABSI Definitions

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

- Aorta
- Pulmonary artery
- Superior vena cava
- Inferior vena cava
- Brachiocephalic veins
- Internal jugular veins
- Subclavian veins
- External iliac veins
- Common iliac veins
- Femoral veins
- Umbilical artery/vein (neonate)

Once deemed a central line, it stays a central line until removed.

BSI / CLABSI Definitions

Central Line Access

Line placement, needle into the port, infusion or withdrawal through the line, flushes, hemodynamic monitoring

Access = an eligible line for CLABSI events

Eligible Central Line Access

A central line (CL) that has been in place > 2 consecutive calendar days following the *first access* of the central line, in an inpatient location, during the current admission

NOTE: Eligible for CLABSI events until the day after removal from the body or patient discharge, whichever comes first.

Central Line Types: What's in a Name

Types of Central Lines

- **Temporary**: A non-tunneled, non-implanted catheter
- **Permanent:** A Tunneled (including certain dialysis) catheters or implanted port
- **Umbilical catheter:** Inserted through the umbilical artery or vein in a neonate

Central Line Types: What's in a Name

Devices that are NOT considered central lines for NHSN reporting

- Arterial Catheters
- Arteriovenous fistula
- Arteriovenous graft
- Atrial catheters (also known as transthoracic intra-cardiac catheters)
- Extracorporeal membrane oxygenation (ECMO)

- Hemodialysis reliable outflow (HERO) dialysis catheters
- Intra-aortic balloon pump (IABP) devices
- Ventricular Assist Devices (VAD)
- Peripheral IV's

Introducer

Examples of Associating the Use of Central Lines to BSI Events (CLABSI)

Central Line Associated BSI (CLABSI)

A laboratory-confirmed bloodstream infection where an **eligible BSI organism** is identified, and an **eligible central line** is present on the LCBI DOE or the day before

Note: The procedure for de-accessing a port involves ensuring patency of the line prior to removal of the needle which involves blood withdrawal, an IV flush and injection of an anticoagulant.

Date	31-Mar	1-Apr	2-Apr	3-Apr	4-Apr	5-Apr	6-Apr
Patient A: Port Status	Port in	Port in	Port in	Port in	Port in	Port in	Port in
Accessed	No	No	**Yes**	Yes	**Yes De-accessed***	No	No
Eligible for CLABSI event	No	No	No **CL Day 1**	No CL Day 2	**Yes-eligible CL** CL Day 3	Yes-eligible CL CL Day 4	Yes-eligible CL CL Day 5

Patient A becomes eligible for a CLABSI on 4/4 because an accessed port had been in place for some portion of > 2 consecutive calendar days making it an eligible CL on 4/4 (CL day 3). The port remains eligible for a CLABSI until it is removed, or the patient is discharged, whichever comes first.

Examples of Associating the Use of Central Lines to BSI Events (CLABSI)

Central Line Associated BSI (CLABSI)

A laboratory-confirmed bloodstream infection where an **eligible BSI organism** is identified, and an **eligible central line** is present on the LCBI DOE or the day before

Date	31-Mar	1-Apr	2-Apr	3-Apr	4-Apr	5-Apr	6-Apr
Patient B: CL Status	CL in	CL in	CL in	CL in	**CL in / CL out**	No device	No device
Accessed	No	No	**Yes**	Yes	**Removed**		
Eligible for CLABSI event	No	No	No **CL Day 1**	No CL Day 2	**Yes-eligible CL** CL Day 3	Yes-eligible CL	No

Patient B becomes eligible for a CLABSI on 4/4 (CL Day 3) through 4/5. An accessed CL had been in place > 2 consecutive calendar days making it an eligible CL on 4/4 (CL day 3). A BSI DOE on the day of or the day after device removal or patient discharge is considered device associated (CLABSI).

Examples of Associating the Use of Central Lines to BSI Events (CLABSI)

Central Line Associated BSI (CLABSI)

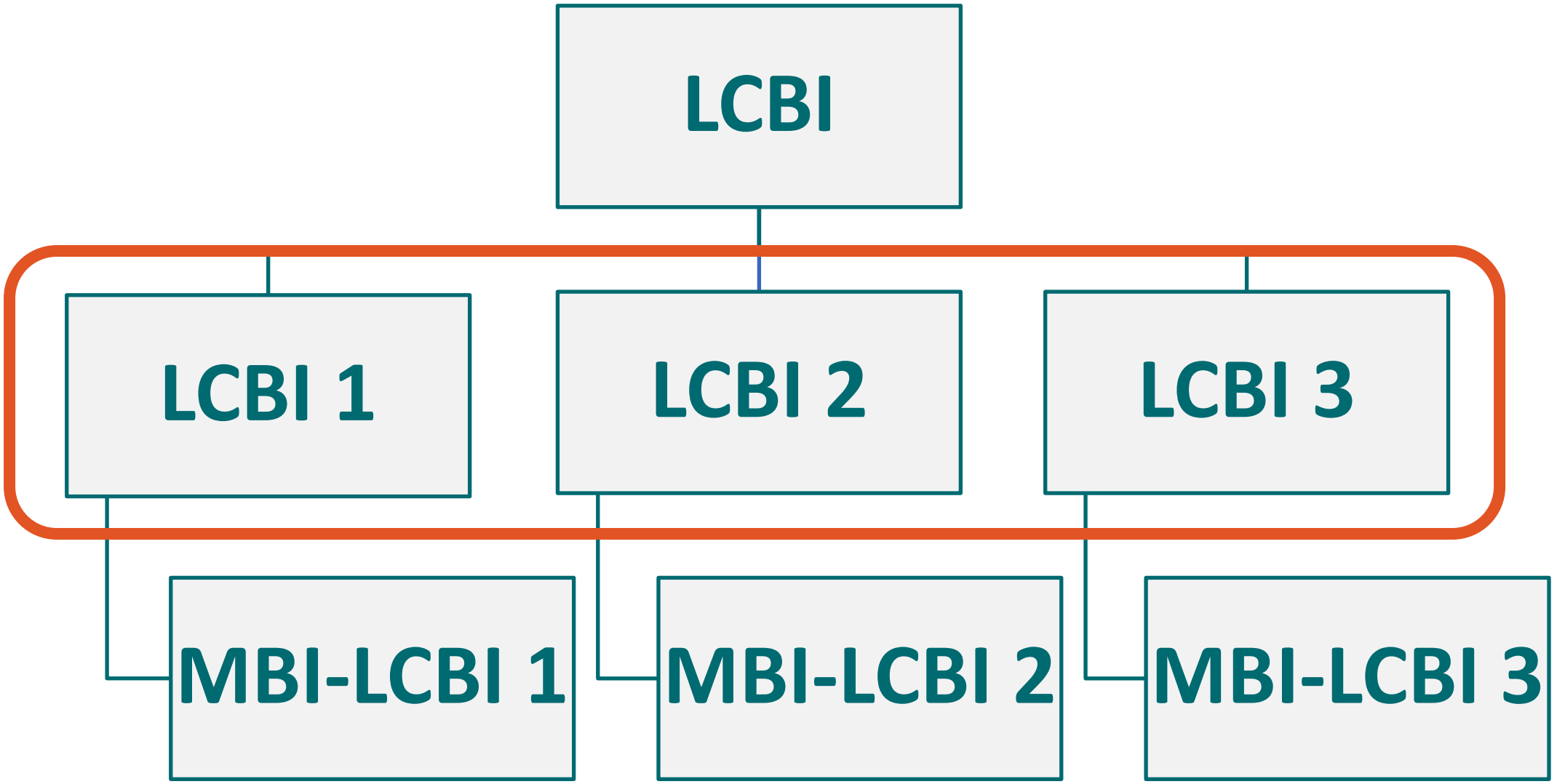
A laboratory-confirmed bloodstream infection where an **eligible BSI organism** is identified, and an **eligible central line** is present on the LCBI DOE or the day before

Date	31-Mar	1-Apr	2-Apr	3-Apr	4-Apr	5-Apr	6-Apr
Patient C: CL Status	CL in	CL in	**CL in/ CL out**	CL in	CL in	**CL in/ CL out**	No device
Accessed	Yes	Yes	**Removed**	**Placed**	Yes	**Removed**	
Eligible for CLABSI event	**Yes** **CL Day 3**	Yes CL Day 4	Yes CL Day 5	Yes CL Day 6	Yes CL Day 7	Yes CL Day 8	Yes

Patient C was admitted to an inpatient location on 3/29 with a central line in place. Patient C becomes eligible for a CLABSI on 3/31 (CL Day 3) through 4/6 because an accessed CL had been in place > 2 consecutive calendar days. A BSI DOE occurring on the day of or the day after device removal or patient discharge is considered a device-associated infection (CLABSI). The patient remains eligible for a CLABSI event through 4/6 because a full calendar day **did not pass** without a CL in place, therefore, device counts continue uninterrupted.

LCBI Criteria– The Building Blocks of BSI Surveillance

Laboratory Confirmed Bloodstream Infection



LCBI Criterion 1

- Patient of any age has a **recognized bacterial or fungal** pathogen not included on the NHSN common commensal list, identified from one or more blood specimens obtained by a culture or non-culture based microbiologic testing methods identified to the genus or genus and species level

AND

- Organism(s) identified in blood is not related to an infection at another site

NOTE: Primary BSI's do **NOT** have a secondary BSI attribution period

LCBI- Criteria 2 & 3

LCBI 2: **Any age** patient have at least one: **fever (>38.0° C), chills, or hypotension**

LCBI 3: A patient **≤ 1 year of age** have at least one: **fever (>38.0° C), apnea hypothermia, bradycardia**

AND

- Organism(s) identified from blood is not related to an infection at another site (See Appendix B: Secondary BSI Guide).

AND

- the same NHSN common commensal is identified from **two or more blood specimens** drawn on separate occasions by a culture

Investigating a Positive Blood Specimen: Review the Elements of the Case

Infection is suspected based on + blood specimen

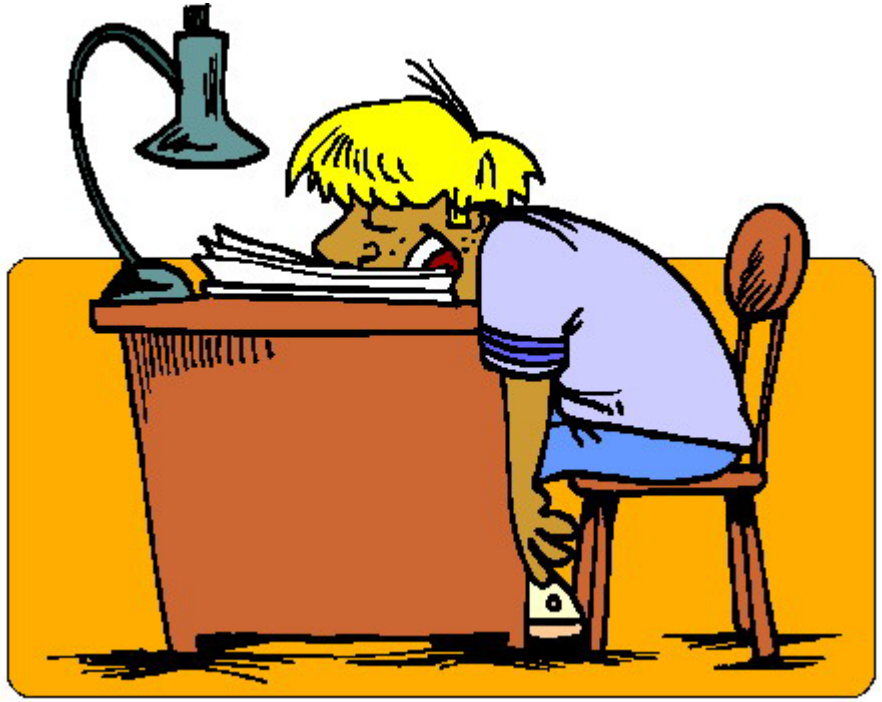
1. Determine the IWP
2. Determine elements present in IWP
3. Consider the organism & determine DOE
4. Determine if POA or HAI
   - If POA-stop, nothing to report

5. If an HAI determine device association & location of attribution
6. Determine RIT
7. Determine if another site specific source of infection present
   - If secondary, stop-no LCBI to report-go to secondary BSI
8. If not secondary: determine LCBI 1, LCBI 2 or LCBI 3 based on organism & symptom if required

Are We There Yet?

Audience at the beginning of the presentation

Audience at the conclusion of the primary BSI presentation



Knowledge Checks

Mr. Over The Top

- **February 3rd:** Mr. Over T. Top was admitted to CICU after having a heart attack.
- **February 4th:** A central line was placed in CICU.
- **February 9th:** A blood culture was collected due to fever and chills
  - Culture positive for *Serratia marcescens* (recognized pathogen)
- No other source of infection was identified

Mr. Over The Top: Is LCBI Criteria Met?

A. No, there is only a single common commensal identified.
B. No, the fever is eligible for use, but the chills are not.
C. Yes, the organism identified is a recognized pathogen.
D. Yes, there is a common commensal identified and at least one eligible sign/symptom.

Mr. Over The Top: Is LCBI Criteria Met?

A. No, there is only a single common commensal identified.
B. No, the fever is eligible for use, but the chills are not.
C. Yes, the organism identified is a recognized pathogen.
D. Yes, there is a common commensal identified and at least one eligible sign/symptom.

Mr. Over The Top: Is the BSI Event a CLABSI?

A. No, the central line is not in place >2 consecutive calendar days on the BSI date of event or before.

B. Yes, the central line is in place >2 consecutive calendar days on the BSI date of event or before.

C. No, LCBI criteria are not met, so there is no BSI event.

Mr. Over The Top: Is the BSI Event a CLABSI?

A. No, the central line is not in place >2 consecutive calendar days on the BSI date of event or before.

B. Yes, the central line is in place >2 consecutive calendar days on the BSI date of event or before.

C. No, LCBI criteria are not met, so there is no BSI event.

Ms. Negative E. Motion

- March 18th : Ms. Negative E. Motion is admitted to the Oncology ward and a port was placed for chemotherapy.
- March 19th : She develops a fever (102º F).
- March 20th : Blood cultures are collected with the same time stamp but different accession numbers.
- *Coagulase-negative Staphylococcus (CNS)* x2 identified from both cultures
- March 22nd : Repeat blood cultures collected and grow *CNS*
- No other source of infection is identified

Ms. Negative E. Motion: Is LCBI Criteria Met?

A. No, there is only a single common commensal identified.

B. No, the fever is eligible for use, but the chills are not.

C. Yes, there are matching common commensal organisms identified and at least one eligible sign/symptom.

D. Yes, the organism identified is a recognized pathogen.

Ms. Negative E. Motion: Is LCBI Criteria Met?

A. No, there is only a single common commensal identified.

B. No, the fever is eligible for use, but the chills are not.

C. Yes, there are matching common commensal organisms identified and at least one eligible sign/symptom.

D. Yes, the organism identified is a recognized pathogen.

Ms. Negative E. Motion: Is this a Present on Admission (POA) or Healthcare associated infection (HAI)?

A. There is neither a POA or an HAI event because LCBI criteria is not met.

B. This is an HAI event because the positive blood cultures are collected on hospital day 3.

C. This is a POA event because the fever is on hospital day 2 and matching common commensal organisms are identified.

D. The blood specimens are considered contaminants.

Ms. Negative E. Motion: Is this a Present on Admission (POA) or Healthcare associated infection (HAI)?

A. There is neither a POA or an HAI event because LCBI criteria is not met.

B. This is an HAI event because the positive blood cultures are collected on hospital day 3.

C. This is a POA event because the fever is on hospital day 2 and common commensal organisms are identified.

D. The blood specimens are considered contaminants.

Cute T. Pi

- January 1st – 4 mo. Cute T. Pi is admitted. Afebrile with no symptoms of an infection.
- January 2nd - He develops a fever and periods of bradycardia.
  - Two blood cultures are collected on separate occasions
  - One specimen grows Micrococcus (common commensal)

Cute T. Pi: Is LCBI Criteria Met?

A. No, there is only a single common commensal identified.

B. No, the fever is eligible for use, but bradycardia is not given the patient's age.

C. Yes, there are matching common commensal organisms identified and at least one eligible sign/symptom.

D. Yes, the organism identified is a recognized pathogen.

Cute T. Pi: Is LCBI Criteria Met?

A. No, there is only a single common commensal identified.

B. No, the fever is eligible for use, but bradycardia is not given the patient's age.

C. Yes, there are matching common commensal organisms identified and at least one eligible sign/symptom.

D. Yes, the organism identified is a recognized pathogen.

Baby Girl Bri

- March 17th : Baby Girl Bri is admitted to NICU after being born 1 mo. premature.
- March 18th : New onset apnea. A central line is placed.
- March 21st : She developed a low-grade fever of 100.2^{o}F and 2 sets of blood cultures were drawn separately both growing *Staphylococcus hominis.* No other source of infection identified.

Baby Girl Bri: Is LCBI Criteria Met?

A. No, Bri does not meet the fever element for an LCBI-3 event.

B. Yes, there are matching common commensal organisms identified and at least one eligible sign/symptom.

C. Yes, the organisms identified are common commensals and no other element is needed.

D. No, all elements required to meet criteria are not captured in the 7-day infection window period.

Baby Girl Bri: Is LCBI Criteria Met?

A. No, Bri does not meet the fever element for an LCBI-3 event.

B. Yes, there are matching common commensal organisms identified and at least one eligible sign/symptom.

C. Yes, the organisms identified are common commensals and no other element is needed.

D. No, all elements required to meet criteria are not captured in the 7-day infection window period.

How Do I determine Matching Organisms?

If the organism is less definitively identified in one culture than the other, the identifications must be complementary.

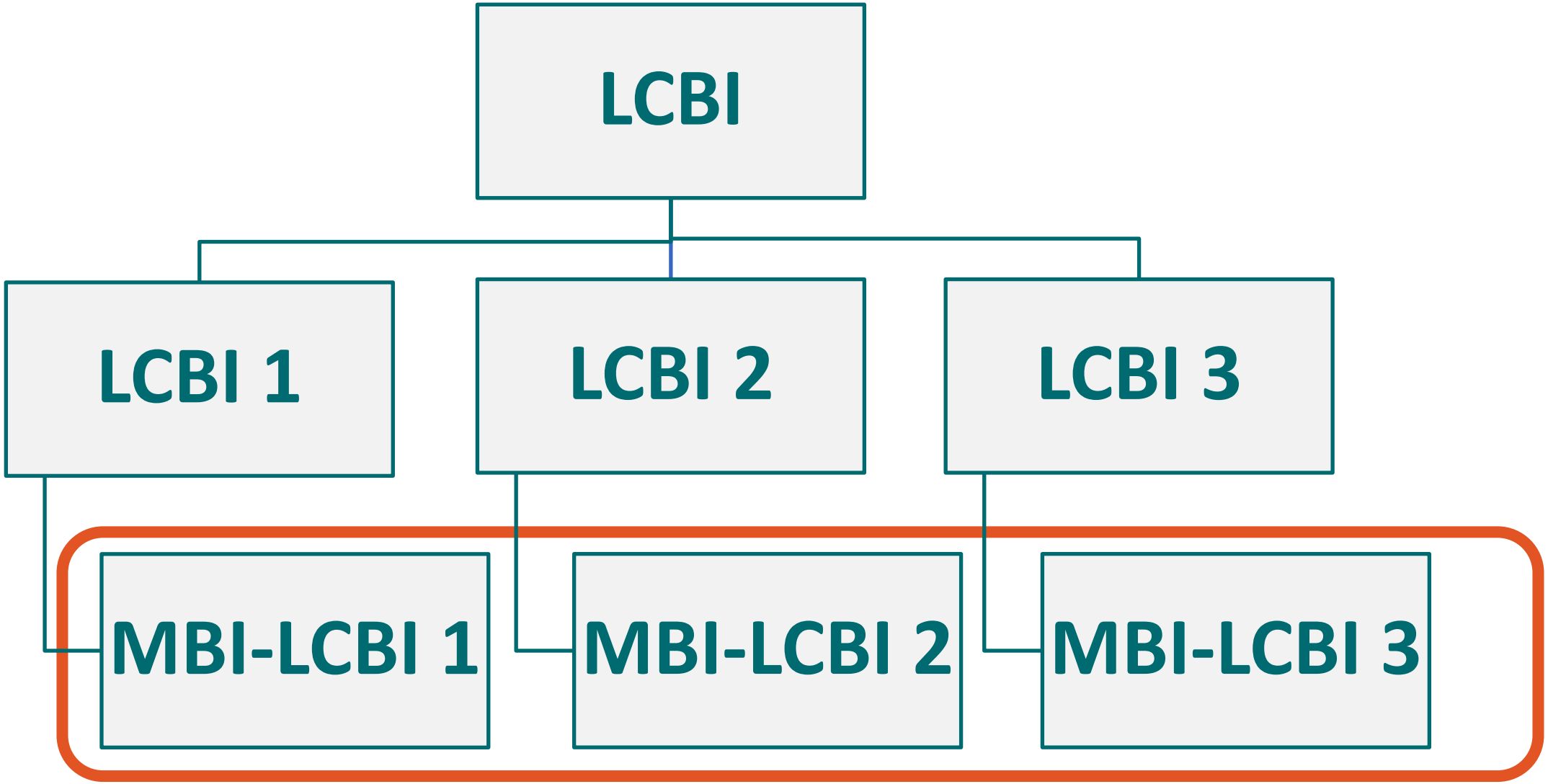
- Ex: A blood culture growing ***CNS*** and a blood culture growing ***S. epidermidis*** are considered a **match** because ***S. epidermidis is a CNS***
- Ex: A blood culture growing ***CNS*** and a blood culture growing ***Staphylococcus*** are **NOT considered matching** because ***Staphylococcus can be either CNS or CPS***

How to Report Speciated & Un-Speciated Results

Table found on page 4-19 of the BSI protocol

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

Mucosal Barrier Injury-LCBI (MBI-LCBI)



MBI-LCBI Table

Table 2: Mucosal Barrier Injury Laboratory-Confirmed Bloodstream Infection (MBI-LCBI)

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 criteria.

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.

Must meet **one** of the following MBI-LCBI criteria

MBI-LCBI 1	MBI-LCBI 2	MBI-LCBI 3
Patient of **any age** fully meets LCBI 1 criterion	Patient of **any age** fully meets LCBI 2 criterion	Patient **<1 year of age** fully meets LCBI 3 criterion
with at least **one** blood specimen	with at least **two matching** blood specimens	
with **ONLY intestinal organisms** from the NHSN MBI organism list*	with **ONLY Viridans Group *Streptococcus*** *and/or* ***Rothia spp.*** alone but no other organisms†	
identified by culture or non-culture based microbiologic testing method	identified by culture	

AND

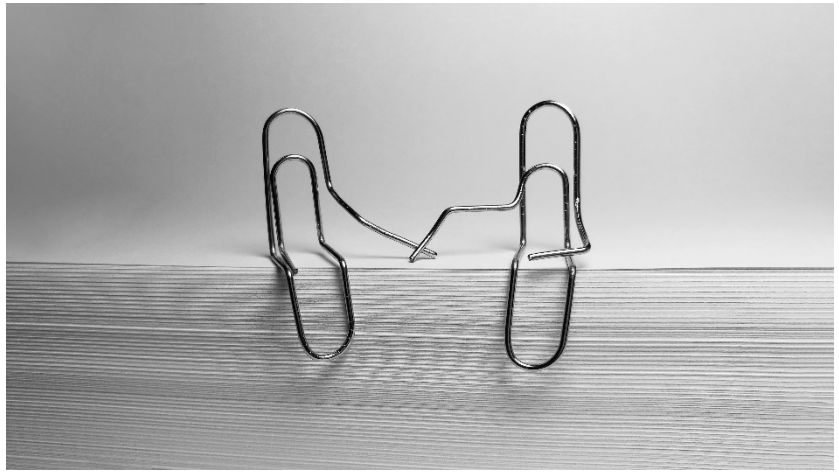
Patient meets at least *one* of the following:

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 Table 5).

These criteria are a subset of LCBI criteria. See Table 2 on page 4-10.



Mucosal Barrier Injury - LCBI Criterion 1

Patient of any **age meets LCBI-1 criterion** with at least one blood specimen identified by a culture or non-culture based microbiologic testing method, with ONLY intestinal organisms from the MBI Organism List 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 culture:
    a. Grade III or IV gastrointestinal graft versus host disease (GI GVHD)
    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 7 calendar days before the date the positive blood culture is collected.
2. Is **neutropenic, defined as at least 2 separate days** with values of absolute neutrophil count (ANC) or total white blood cell count (WBC) <500 cells/mm^3 within a 7-day period which includes the date the positive blood culture was collected (Day 1), the 3 calendar days before and the 3 calendar days after.

Mucosal Barrier Injury - LCBI Criterion 1

Patient of any **age meets LCBI-1 criterion** with at least one blood specimen identified by a culture or non-culture based microbiologic testing method, with ONLY intestinal organisms from the MBI Organism List 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 culture:
    a. Grade III or IV gastrointestinal graft versus host disease (GI GVHD)
    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 7 calendar days before the date the positive blood culture is collected.

NOTE: The diarrhea risk factor for MBI LCBI-1b must have a measured volume to meet this risk factor.

MBI-LCBI Neutropenia Criteria

Table 5: Examples Illustrating the MBI-LCBI Criteria for Neutropenia

		Day -7	Day -6	Day -5	Day -4	Day -3	Day -2	Day -1	Day 1*	Day 2	Day 3	Day 4
Pt. A	WBC	100	800	400	300	ND	ND	320	400 + BC* w/ *Candida* spp. x1	ND	550	600
Pt. B	ANC	ND	410	130	ND	ND	120	110	ND +BC* w/ viridans strep x2 and fever >38°C	110	300	320
Pt. C	WBC	100	800	400	300	ND	ND	ND	600 + BC* w/ *Candida* spp. x1	230	ND	400

*ND = not done; *Day the positive blood specimen was collected*

Qualifying ANC/WBC timeframe (7 days) includes the
Day of the + blood specimen, 3 days before and 3 days after

Calculating Absolute Neutrophil Count

Calculating Absolute Neutrophil Count (ANC)

- The ANC is not always reported directly in the chart
- The WBC in the chart is usually reported in terms of thousand cell/mm^3

ANC = Absolute Segs + Absolute Bands

OR

$$ANC = WBC \times \frac{(\%Segs + \%Bands)}{100}$$

EXAMPLE:

WBC:	Segs:	Bands:	
2 K/mm^3	20%	20%	ANC = 2000 X (20+20)/100 = 800cells/mm^3

Knowledge Checks

Ms. Sur Vei Lance

- **March 13th: Ms. Sur V. Lance** has a central line inserted on admission
- **March 16th:** she had an ANC level of 400 cells/mm^3
- **March 17th:** two BC's drawn + *Enterococcus faecalis* (recognized pathogen)
- **March 19th:** WBC level 210 cells/mm^3
- No other source of infection was identified

Ms. Sur Vei Lance: Is MBI LCBI Criteria Met?

- **March 13th: Ms. Sur V. Lance** has a central line inserted on admission
- **March 16th:** she had an ANC level of 400 cells/mm^3
- **March 17th:** two BC's drawn + *Enterococcus faecalis* (recognized pathogen)
- **March 19th:** WBC level 210 cells/mm^3
- No other source of infection was identified

Ms. Sur Vei Lance: Is MBI LCBI Criteria Met?

A. No, there is only one ANC level of 400 cells/mm^3 in the 7-day timeframe.

B. Yes, the ANC and WBC values in the 7-day timeframe can be combined to meet MBI LCBI-1 criterion.

C. No, there is only one WBC level 210 cells/mm^3 in the 7-day timeframe.

D. Yes, there are two blood cultures positive for Enterococcus faecalis.

Mucosal Barrier Injury - LCBI 2 & 3

MBI-LCBI 2 Patient of any age meets criterion 2 for LCBI
MBI-LCBI 3 Patient ≤ 1 year of age meets criterion 3 for LCBI

with at least two blood specimens identified by a culture with ***viridans group strep or Rothia spp.*** and no other organisms.

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 culture:
    a. Grade III or IV gastrointestinal graft versus host disease (GI GVHD)
    b. ≥1 liter diarrhea in 24-hourur period (or ≥20 mL/kg in a 24-hour period for patients <18 years of age) with onset on or within 7 calendar days before the date the positive blood culture is collected.
2. Is neutropenic, defined as at least 2 separate days with values of absolute neutrophil count (ANC) or total white blood cell count (WBC) <500 cells/mm^3 within a 7-day period which includes the date the positive blood culture was collected (Day 1), the 3 calendar days before and the 3 calendar days after.

MBI-LCBI 2 Criteria- Example

Day #	-7	-6	-5	-4	-3	-2	-1	1	2	3	4
ANC	Not tested	410	130	Not tested	Not tested	120	110	+ BC* w/ *viridans group strep X2 and fever 38.1° C*	110	300	320

CLABSI Exclusions: The Proof is in the Presence of an Eligible Central Line

CLABSI Exclusion: Important points to Remember

- The event is reported to NHSN but is NOT considered central line associated.

- The Central Line field is marked “Yes” if an eligible central line has been in place for more than 2 consecutive calendar days on the BSI DOE and is still in place on the BSI DOE or the day before.

- The events do not contribute to the CLABSI SIR measure.

CLABSI Exclusion: Important points to Remember

- In each instance where the date of event of subsequent positive blood specimens are outside of the established BSI RIT, meeting the exclusion criteria, the subsequent positive blood must be investigated as primary or secondary to another site-specific infection.
  - The CLABSI exclusion criteria must be met again in a new BSI IWP to determine if the positive blood specimen is central line associated.

Note: Meeting LCBI criteria in all situations noted on the following slides will result in setting a BSI RIT and any associated device days should be included in counts for denominator summary data.

CLABSI Exclusion: Extracorporeal life support or Ventricular assist device

- Presence of extracorporeal life support (ECLS or ECMO)

  - Device must be in place **> 2 consecutive calendar days on the BSI DOE and is still in place on the DOE or day before.**

- Ventricular assist device (VAD)

  - Device must be in place **> 2 consecutive calendar days on the BSI DOE and is still in place on the DOE or day before.**

CLABSI Exclusion: Self-Injection, Epidermolysis bullosa, and Munchausen Syndrome by Proxy

- Self-Injection - observed or suspected **injection** into their vascular access
  - **Documentation must occur within the BSI IWP**

- Epidermolysis bullosa (EB)
  - **Documentation of a diagnosis during current admission**

- Munchausen Syndrome by Proxy (MSBP) or “Factitious Disorder Imposed on Another”
  - **Documentation or a diagnosis of known or suspected MSBP**

CLABSI Exclusion: Pus at the Vascular Access Site

- Pus at the Vascular Access Site
  - **<u>All</u> the following elements are needed:**
    - Central line
    - Another vascular access device
    - Pus at the site of the vascular access device
    - Specimen collected during the BSI IWP from the vascular access site with at least one matching organism to an organism identified in blood

CLABSI Exclusion: Pus at the Vascular Access Site

Vascular access devices included in this exception are limited to:

- Arterial catheters
- Arteriovenous fistulae
- Arteriovenous grafts
- Atrial catheters (also known as transthoracic intra-cardiac catheters, those catheters inserted directly into the right or left atrium via the heart wall)
- Hemodialysis reliable outflow (HERO) dialysis catheters
- Intra-aortic balloon pump (IABP) devices
- Non-accessed CL (those neither inserted nor used during current admission)
- Peripheral IV or Midlines

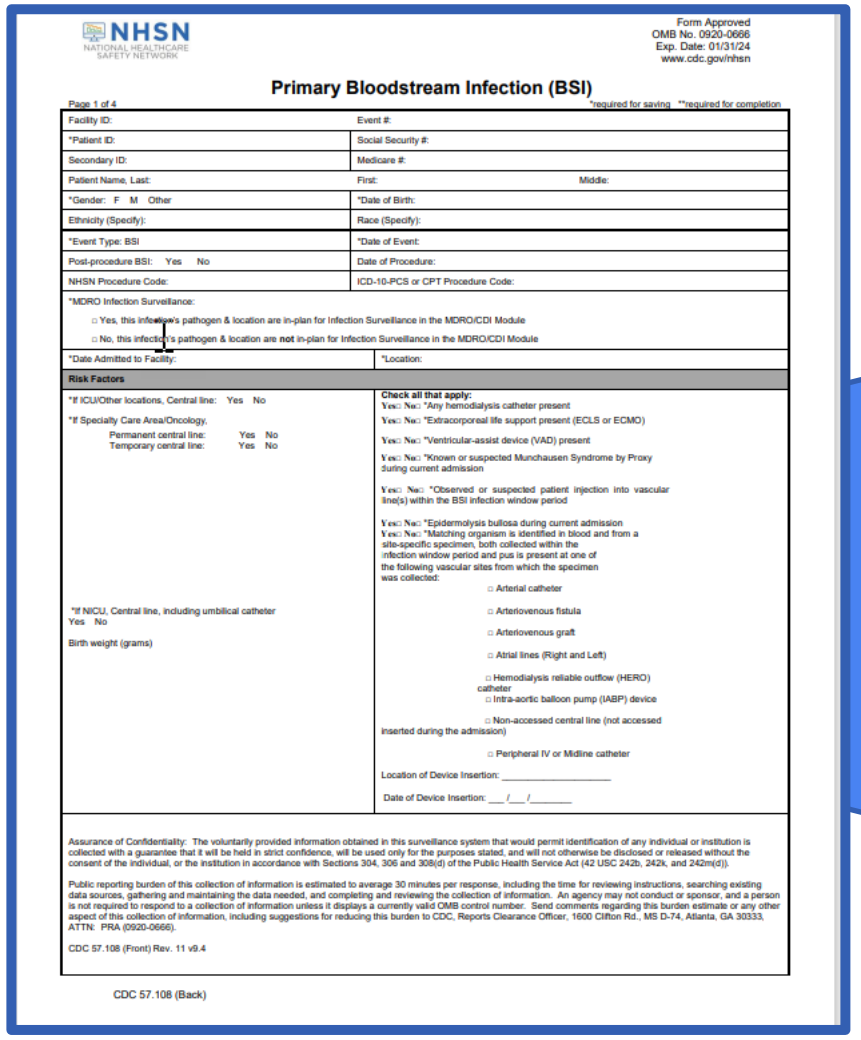
Data Collection

CLABSI Data Accuracy

The accuracy of NHSN data is dependent on the accuracy of surveillance determinations, data collection and entry

- Accurate numerators
  - Strict Adherence to the Definitions & Reporting Instructions
- Accurate denominators
  - Mapping Accuracy (see NHSN online training)
  - Collection Accuracy
    - Specific Requirements by Location Type
    - Validation of Electronic Collection

BSI Event Data Collection Form: Manual



NHSN
NATIONAL HEALTHCARE SAFETY NETWORK

Form Approved
OMB No. 0920-0666
Exp. Date: 01/31/24
www.cdc.gov/nhsn

Primary Bloodstream Infection (BSI)

Page 1 of 4

*required for saving **required for completion

Facility ID:	Event #:
*Patient ID:	Social Security #:
Secondary ID:	Medicare #:
Patient Name, Last:	First: Middle:
*Gender: F M Other	*Date of Birth:
Ethnicity (Specify):	Race (Specify):
*Event Type: BSI	*Date of Event:
Post-procedure BSI: Yes No	Date of Procedure:
NHSN Procedure Code:	ICD-10-PCS or CPT Procedure Code:

*MDRO Infection Surveillance:

□ Yes, this infection's pathogen & location are in-plan for Infection Surveillance in the MDRO/CDI Module

□ No, this infection's pathogen & location are **not** in-plan for Infection Surveillance in the MDRO/CDI Module

*Date Admitted to Facility:	*Location:

Risk Factors

*If ICU/Other locations, Central line: Yes No

*If Specialty Care Area/Oncology,
Permanent central line: Yes No
Temporary central line: Yes No

*If NICU, Central line, including umbilical catheter
Yes No

Birth weight (grams)

Check all that apply:
Yes□ No□ *Any hemodialysis catheter present
Yes□ No□ *Extracorporeal life support present (ECLS or ECMO)
Yes□ No□ *Ventricular-assist device (VAD) present
Yes□ No□ *Known or suspected Munchausen Syndrome by Proxy during current admission
Yes□ No□ *Observed or suspected patient injection into vascular line(s) within the BSI infection window period
Yes□ No□ *Epidermolysis bullosa during current admission
Yes□ No□ *Matching organism is identified in blood and from a site-specific specimen, both collected within the infection window period and pus is present at one of the following vascular sites from which the specimen was collected:
□ Arterial catheter
□ Arteriovenous fistula
□ Arteriovenous graft
□ Atrial lines (Right and Left)
□ Hemodialysis reliable outflow (HERO) catheter
□ Intra-aortic balloon pump (IABP) device
□ Non-accessed central line (not accessed inserted during the admission)
□ Peripheral IV or Midline catheter

Location of Device Insertion: _____

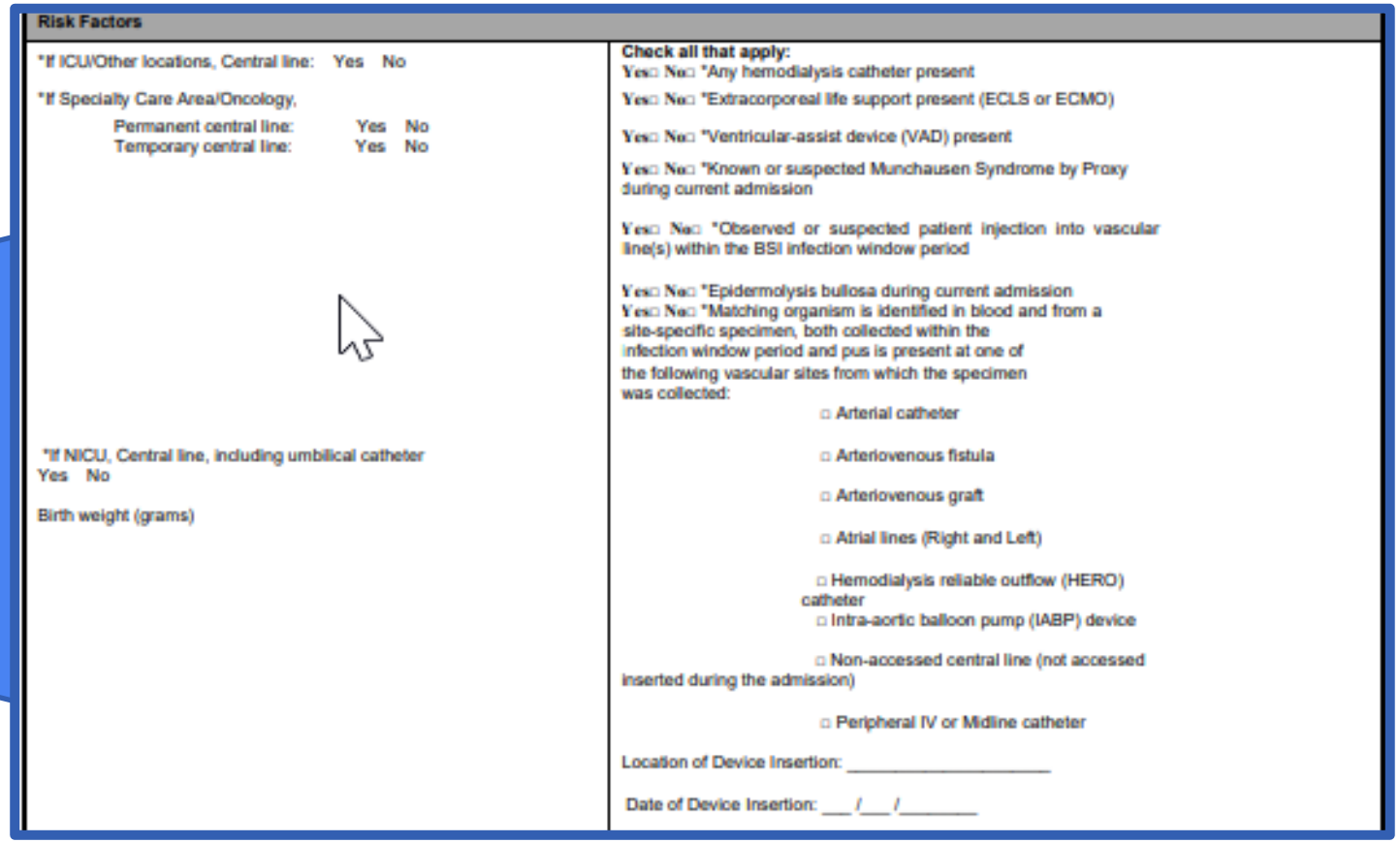
Date of Device Insertion: ___/___/_____

Assurance of Confidentiality: The voluntarily provided information obtained in this surveillance system that would permit identification of any individual or institution is collected with a guarantee that it will be held in strict confidence, will be used only for the purposes stated, and will not otherwise be disclosed or released without the consent of the individual, or the institution in accordance with Sections 304, 306 and 308(d) of the Public Health Service Act (42 USC 242b, 242k, and 242m(d)).

Public reporting burden of this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to CDC, Reports Clearance Officer, 1600 Clifton Rd., MS D-74, Atlanta, GA 30333, ATTN: PRA (0920-0666).

CDC 57.108 (Front) Rev. 11 v9.4

CDC 57.108 (Back)



Risk Factors

*If ICU/Other locations, Central line: Yes No

*If Specialty Care Area/Oncology,
Permanent central line: Yes No
Temporary central line: Yes No

*If NICU, Central line, including umbilical catheter
Yes No

Birth weight (grams)

Check all that apply:
Yes□ No□ *Any hemodialysis catheter present
Yes□ No□ *Extracorporeal life support present (ECLS or ECMO)
Yes□ No□ *Ventricular-assist device (VAD) present
Yes□ No□ *Known or suspected Munchausen Syndrome by Proxy during current admission
Yes□ No□ *Observed or suspected patient injection into vascular line(s) within the BSI infection window period
Yes□ No□ *Epidermolysis bullosa during current admission
Yes□ No□ *Matching organism is identified in blood and from a site-specific specimen, both collected within the infection window period and pus is present at one of the following vascular sites from which the specimen was collected:
□ Arterial catheter
□ Arteriovenous fistula
□ Arteriovenous graft
□ Atrial lines (Right and Left)
□ Hemodialysis reliable outflow (HERO) catheter
□ Intra-aortic balloon pump (IABP) device
□ Non-accessed central line (not accessed inserted during the admission)
□ Peripheral IV or Midline catheter

Location of Device Insertion: _____

Date of Device Insertion: ___/___/_____

BSI Event Data Collection Form: Electronic

Patient Information

Facility ID *: DHQP Memorial Hospital (10000)
Patient ID *: 06050125
Secondary ID:
Last Name: Veilance
Middle Name:
Gender *: M - Male
Ethnicity: NOHISP - Not Hispanic or Not Latino
Race: ☑ American Indian/Alaska Native ☐ Asian ☐ Black or African American ☑ Native Hawaiian/Other Pacific Islander ☐ White

Event #: 47392986
Social Security #:
Medicare #:
First Name: Sur
Date of Birth *: 06/05/1991

Event Information

Event Type *: BSI - Bloodstream Infection
Post-procedure:
MDRO Infection Surveillance *: No, this infection's pathogen/location are not in-plan for Infection Surveillance in the MDRO/CDI Module
Location *: MED ICU - MEDICAL ICU
Date Admitted to Facility >: 09/30/2021

Date of Event *: 10/19/2021

Risk Factors

Central line *: Y - Yes
Any hemodialysis catheter present *: N - No
Location of Device Insertion:
Date of Device Insertion:

Extracorporeal life support present (e.g. ECMO) *: N - No
Ventricular assist device (VAD) present *: N - No

Select all that apply: If any option(s) from below are selected 'Yes', then mark the "Central Line" risk factor field 'Yes' if an eligible central line was also in place.

Known or suspected Munchausen Syndrome by Proxy during current admission *:	N - No
Observed or suspected patient injection into vascular line(s) within the BSI infection window period *:	N - No
Epidermolysis bullosa during current admission *:	N - No
Matching organism is identified in blood and from a site-specific specimen, both collected within the infection window period and pus is present at one of the following vascular sites from which the specimen was collected *:	N - No

Event Details

Specific Event >: LCBI - Laboratory confirmed bloodstream infection

Specify Criteria Used *

Signs & Symptoms (check all that apply)

Any patient
- ☐ Fever
- ☐ Chills
- ☑ Hypotension

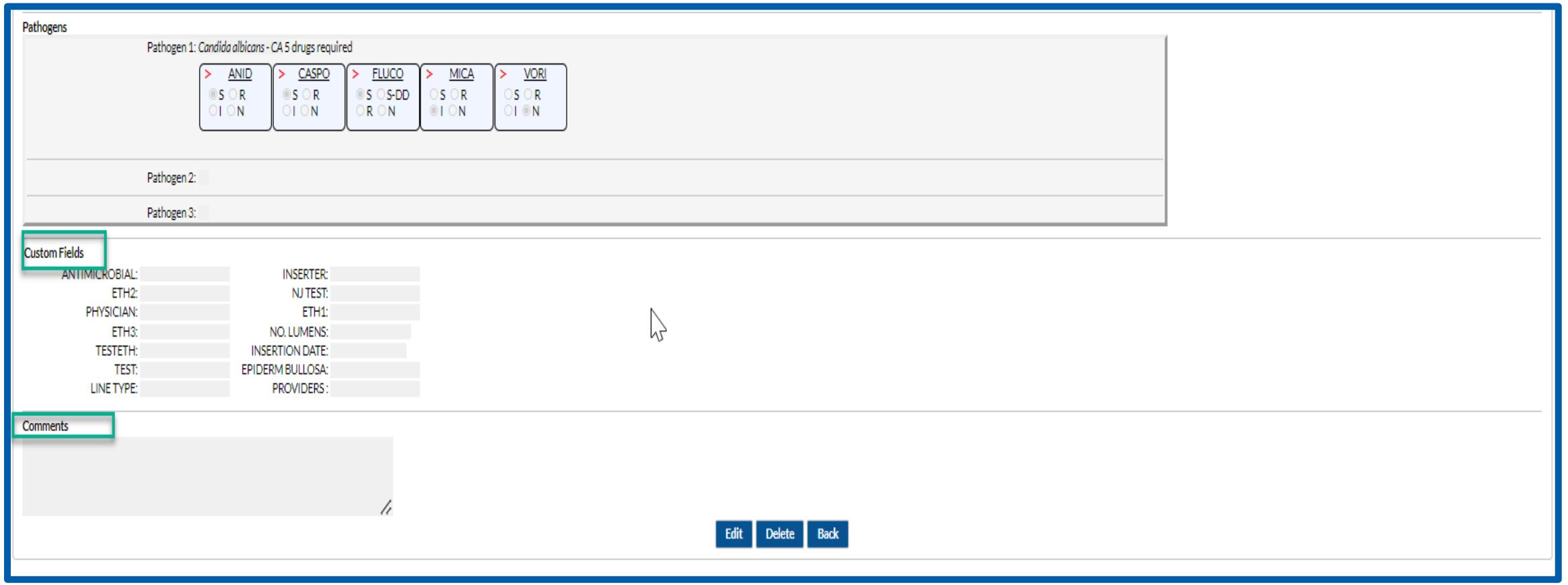
<=1 year old
- ☐ Fever
- ☐ Hypothermia
- ☐ Apnea
- ☐ Bradycardia

Laboratory (check one)
- ☑ Recognized pathogen(s) from one or more blood specimens
- ☐ Common commensal from >= 2 blood specimens

Underlying Conditions for MBI-LCBI (check all that apply)
- ☐ Allo-SCT with Grade >= 3 GI GVHD
- ☐ Allo-SCT with diarrhea
- ☐ Neutropenia

Died **: N - No
COVID-19:
Discharge Date:
Pathogens Identified: Y - Yes If Yes, specify below ->

BSI Event Data Collection Form: Electronic



Denominator Requirements by Location & Device

Location	All Locations	SCA-Oncology, dialysis	NICU
All pts with ≥ 1 CL = 1 CL Day	CL Days	CL Days by: Permanent Temporary If both a permanent & a temporary line present- report temporary	CL Days by: Central line
All patients in an inpatient location = 1 Pt Day	All In-Pt Days	All In-Pt Days	All In-Pt Days by: Birth Weight ≤ 750 gms 751-1000 gms 1001-1500 gms 1501-2500 gms ≥2501 gms

Birth Weight

≤ 750 gms
751-1000 gms
1001-1500 gms
1501-2500 gms
≥2501 gms

In Summary

- Investigating a positive blood specimen is key to determine if LCBI criteria is met
- Several resources are available on the NHSN website to aid in surveillance and training
- Accurate surveillance and data collection are essential for both the numerator and denominator
- Surveillance and Clinical definitions may not always align
  - Surveillance definitions must be adhered to strictly and consistently
- NHSN has developed an exclusive list of CLABSI Exclusions, and each require meeting the eligible central line definition

Resources for BSI Reporting

- **CLABSI protocols, forms, etc.:**
  - http://www.cdc.gov/nhsn/acute-care-hospital/clabsi/index.html
  - http://www.cdc.gov/nhsn/newsletters.html
- **Operational guidance for CMS reporting:**
  - http://www.cdc.gov/nhsn/cms/index.html
  - http://www.cdc.gov/nhsn/acute-care-hospital/clabsi/index.html
- **NHSN training:**
  - http://www.cdc.gov/nhsn/training/

Questions?

Questions: email user support
nhsn@cdc.gov

NHSN Website:
http://www.cdc.gov/nhsn/