It’s a Bird, It’s a Plane
No---It’s a Primary Bloodstream Infection

Review of Primary Bloodstream Infection Surveillance and Case Studies
March, 26 2019

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Infection Prevention Consultant
Objectives

- Provide an overview of the training resources, protocol, and supporting materials
- Define key terms for device-associated infections specifically CLABSI
- Discuss device-associated infection surveillance changes for 2019
- Provide an overview of the data collection process for mapped NHSN locations (Numerator & Denominator)
- Assess current BSI knowledge through case studies
Working toward the elimination of HAIs is a CDC priority.

The infection data are reported to CDC’s National Healthcare Safety Network (NHSN).

U.S. hospitals reported a significant decrease in CLABSIs between 2016 and 2017.

This report provides national- and state-level data about HAI incidence during 2016.

Provides a summary of select HAIs across four healthcare settings: acute care hospitals (ACHs), critical access hospitals (CAHs), inpatient rehabilitation facilities (IRFs) and long-term acute care hospitals (LTACHs).

Centers for Disease Control and Prevention
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
Division of Healthcare Quality Promotion (DHQP)
Retrieved from https://www.cdc.gov/hai/data/portal/progress-report.html
Where Can I Find the BSI Surveillance Protocol

Surveillance for Bloodstream Infections

Central Line-Associated Bloodstream Infection (CLABSI) and non-central line-associated Bloodstream Infection

Resources for NHSN Users Already Enrolled

For full details on protocol definitions and the application of these definitions, please review the applicable protocol and Chapter 2, Identifying Healthcare-associated Infection (HAI) for NHSN Surveillance in the NHSN Module.

- Bloodstream Infection (BSI) Event, January 2019 [PDF – 2 MB]
- NHSN Overview January, 2019 [PDF – 350 KB]
- Identifying Healthcare-associated Infections (HAIs) in NHSN, January 2019 [PDF – 1 MB]
- Patient Safety Monthly Reporting Plan, January 2019 [PDF – 250 KB]

Where Can I Find the BSI Training Resources

Where Can I Find the Frequently Asked Questions?
Where Can I Find BSI Supporting Material

Surveillance for Bloodstream Infections
Central Line-Associated Bloodstream Infection (CLABSI) and non-central line-associated Bloodstream Infection

Resources for NHSN Users Already Enrolled

- Training
- Protocols
- Frequently Asked Questions
- Data Collection Forms
- CMS Supporting Materials

Supporting Material

- **NHSN Patient Safety Component Alerts** [PDF - 1 MB]
- **Unusual Susceptibility Profiles Alert January 2019** [PDF - 362 KB]
- **CDC Location Labels and Location Descriptions, January 2019** [PDF - 1 MB]
- **NHSN Key Terms, January 2019** [PDF - 350 KB]
- **CDC/NHSN Surveillance Definitions for Specific Types of Infections, January 2019** [PDF - 1 MB]
- **NHSN Organism List (All Organisms, Common Commensals, MDR Organisms, and UTI Bacteria), January 2019** [XLS - 296 KB]
- **Guidance for Missing Device-associated Denominator Data** [PDF - 145 KB]
Definitions Specific to BSI / CLABSIs 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 CC) occurs within the BSI IWP  *Symptom required*
BSI / CLABSI Definitions

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

NOTE: Site-specific infection will create a site-specific RIT
Site-specific infection will create a Secondary BSI Attribution Period
BSI / CLABSI Definitions

**Secondary BSI Attribution Period (SBAP)**

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 BSI 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.

Great Vessels for CLABSI Reporting

- 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

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

- **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
A Note on Excluded Organisms

Excluded from LCBI Criteria
- Campylobacter spp.
- C. difficile
- Enterohemorrhagic E. coli
- Enteropathogenic E. coli
- Salmonella spp.
- Shigella spp.
- Listeria spp.
- Yersinia spp.
- Vibrio spp.
- Viruses
- Parasites

Excluded from ALL NHSN Definitions
- Blastomyces
- Histoplasma
- Coccidioides
- Paracoccidioides
- Cryptococcus
- Pneumocystis

Group B Strep:
Excluded for the first 6 days of life.
Considered an LCBI that creates an RIT but is NOT a CLABSI.
Recap of 2018 Revision: Denominator Device Day Counts and Central Line Day Counts
Recap: Denominator Device Day Counts and Central Line Day Counts

- **Denominator Device Day Counts**
  - Count will begin on the 1st day the central line is present

- **Central Line Day Counts for Making a CLABSI Determination**
  - Count will begin on the 1st day of access on an inpatient unit
## Denominator Device Day Counts

<table>
<thead>
<tr>
<th>Date</th>
<th>31-Mar</th>
<th>1-Apr</th>
<th>2-Apr</th>
<th>3-Apr</th>
<th>4-Apr</th>
<th>5-Apr</th>
<th>6-Apr</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient A:</strong></td>
<td>Inpatient Location ICU CL inserted</td>
<td>ICU CL in</td>
<td>ICU CL in</td>
<td>ICU CL in</td>
<td>ICU CL in</td>
<td>ICU CL in</td>
<td>ICU CL in</td>
</tr>
<tr>
<td><strong>Denominator Day Counts for Device Days</strong></td>
<td>Day 1*</td>
<td>Day 2</td>
<td>Day 3</td>
<td>Day 4</td>
<td>Day 5</td>
<td>Day 6</td>
<td>Day 7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>31-Mar</th>
<th>1-Apr</th>
<th>2-Apr</th>
<th>3-Apr</th>
<th>4-Apr</th>
<th>5-Apr</th>
<th>6-Apr</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient C:</strong></td>
<td>Inpatient Location ICU CL in place at time of admission</td>
<td>ICU CL in</td>
<td>ICU CL in/CL out</td>
<td>ICU CL in</td>
<td>ICU CL in</td>
<td>ICU CL in/CL out</td>
<td>ICU No device</td>
</tr>
<tr>
<td><strong>Denominator Device Day Count</strong></td>
<td>Day 1</td>
<td>Day 2</td>
<td>Day 3*</td>
<td>Day 4</td>
<td>Day 5</td>
<td>Day 6*</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>31-Mar</th>
<th>1-Apr</th>
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<th>4-Apr</th>
<th>5-Apr</th>
<th>6-Apr</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient E:</strong></td>
<td>Inpatient Location ICU Patient admitted with non-accessed port</td>
<td>Inpatient Location ICU Port not accessed</td>
<td>ICU Port not accessed</td>
<td>ICU Port accessed</td>
<td>ICU Port accessed</td>
<td>ICU Port accessed</td>
<td>ICU Port accessed</td>
</tr>
<tr>
<td><strong>Denominator Device Day Count</strong></td>
<td>Day 1</td>
<td>Day 2</td>
<td>Day 3</td>
<td>Day 4</td>
<td>Day 5</td>
<td>Day 6</td>
<td>Day 7</td>
</tr>
</tbody>
</table>
Recap: Denominator Device Day Counts and Central Line Day Counts

- **Denominator Device Day Counts**
  - Count will begin on the 1st day the central line is present

- **Central Line Day Counts for Making a CLABSI Determination**
  - Count will begin on the 1st day of access on an inpatient unit
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.

Table 4
Page 4-17

<table>
<thead>
<tr>
<th>Date</th>
<th>31-Mar</th>
<th>1-Apr</th>
<th>2-Apr</th>
<th>3-Apr</th>
<th>4-Apr</th>
<th>5-Apr</th>
<th>6-Apr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient A: Port Status Accessed</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Eligible for CLABSI event</td>
<td></td>
<td></td>
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<td></td>
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<tr>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yes De-accessed*</td>
<td>Yes-eligible CL</td>
<td>Yes-eligible CL</td>
<td>Yes-eligible CL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CL Day 1</td>
<td>CL Day 2</td>
<td>CL Day 3</td>
<td>CL Day 4</td>
<td>CL Day 5</td>
</tr>
<tr>
<td>Date</td>
<td>31-Mar</td>
<td>1-Apr</td>
<td>2-Apr</td>
<td>3-Apr</td>
<td>4-Apr</td>
<td>5-Apr</td>
<td>6-Apr</td>
</tr>
<tr>
<td>Patient B: CL Status Accessed</td>
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<tr>
<td>Eligible for CLABSI event</td>
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<td>CL in / CL out Removed</td>
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<td>No device</td>
<td>No device</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CL Day 1</td>
<td>CL Day 2</td>
<td>CL Day 3</td>
<td>CL Day 4</td>
<td>CL Day 5</td>
</tr>
<tr>
<td>Date</td>
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<td>3-Apr</td>
<td>4-Apr</td>
<td>5-Apr</td>
<td>6-Apr</td>
</tr>
<tr>
<td>Patient C: CL Status Accessed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eligible for CLABSI event</td>
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<td></td>
<td>CL in / CL out Removed</td>
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<td>No device</td>
<td>No device</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CL Day 3</td>
<td>CL Day 4</td>
<td>CL Day 5</td>
<td>CL Day 6</td>
<td>CL Day 7</td>
</tr>
</tbody>
</table>

* For some patients, the central line was de-accessed before the BSI was confirmed, which indicates that the central line was not the source of the infection.
New Changes and Revisions 2019: CLABSI Exclusions
I See What’s Happening Here: Can We Exclude This CLABSI?

- Presence of extracorporeal life support (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.

**NOTE:** Data Field Required in 2019
I See What’s Happening Here: Can We Exclude This CLABSI?

- **IVDA’s** - observed or suspected *injection* into their vascular access
  - Documentation must occur within the BSI IWP

- **Epidermolysis bullosa (EB)**
  - Documentation must occur during current admission

- **Munchausen Syndrome by Proxy (MSBP)** or “Factitious Disorder Imposed on Another”
  - Documentation during current admission of confirmed or suspected MSBP

**NOTE**: Optional – 2019 – Required 2020
I See What’s Happening Here: Can We Exclude This CLABSI?

- Pus at the Vascular Access Site
  - All of the following elements are needed:
    - Eligible 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

NOTE: Optional – 2019 – Required 2020
I See What’s Happening Here: Can We Exclude This CLABSI?

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
## Summary of 2019 CLABSI Exclusions

<table>
<thead>
<tr>
<th>CLABSI Exclusions</th>
<th>Exclusion Field Marked Yes or No</th>
<th>Central Line Field Marked Yes or No</th>
<th>Exclusion Reporting Requirement in 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extracorporeal membrane oxygenation (ECMO)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• ECMO present &gt; 2 days on BSI DOE and in place on the DOE or the day before</td>
<td>Y</td>
<td>Y</td>
<td>Required</td>
</tr>
<tr>
<td>• NOT present &gt; 2 days on BSI DOE, or NOT present on DOE or day before</td>
<td>N</td>
<td>Y</td>
<td>Required</td>
</tr>
<tr>
<td>Ventricular assist device (VAD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• VAD present &gt; 2 days on BSI DOE and in place on the DOE or the day before</td>
<td>Y</td>
<td>Y</td>
<td>Required</td>
</tr>
<tr>
<td>• NOT present &gt; 2 days on BSI DOE, or NOT present on DOE or day before</td>
<td>N</td>
<td>Y</td>
<td>Required</td>
</tr>
<tr>
<td>Epidermolysis Bullosa (EB)</td>
<td>Y</td>
<td>N</td>
<td>Optional</td>
</tr>
<tr>
<td>Munchausen’s syndrome by proxy (MSBP)</td>
<td>Y</td>
<td>N</td>
<td>Optional</td>
</tr>
<tr>
<td>Patient self-injection</td>
<td>Y</td>
<td>N</td>
<td>Optional</td>
</tr>
<tr>
<td>Pus at vascular site</td>
<td>Y</td>
<td>N</td>
<td>Optional</td>
</tr>
<tr>
<td>Group B Streptococcus BSI - 1st 6 days of life</td>
<td>Y</td>
<td>N</td>
<td>Optional</td>
</tr>
</tbody>
</table>

A CLABSI determination includes a LCBI with an eligible organism and an eligible CL present on the DOE or day before. Therefore, Table 3 implies there is an *eligible CL* in place in all of the following scenarios.
LCBI – The Criteria
Laboratory Confirmed Bloodstream Infection

LCBI

LCBI 1

MBI-LCBI 1

LCBI 2

MBI-LCBI 2

LCBI 3

MBI-LCBI 3
Investigating a Positive Blood Specimen: Where Do I Begin

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
LCBI-1 Criterion:

- 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

AND

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

Primary BSI’s do NOT have a secondary BSI attribution period
Knowledge Checks
Mr. OnEdge

- **February 3rd**: Mr. OnEdge was admitted to MICU after having a heart attack
- **February 4th**: A central line was placed in MICU
- **February 7th**: 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. OnEdge Rationale

- HAI LCBI 1 *S. marcescens* attributed to MICU
- Date of Event – 2/7
- Infection Window Period (IWP): 2/4 - 2/10
- BSI RIT: 2/7 – 2/20
- Central line-associated bloodstream infection
  - Central line in place > 2 calendar days on the day of event and still in place.
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 or non-culture based microbiologic testing method.
Do These Organisms Really Match

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 4-20 of the BSI protocol

<table>
<thead>
<tr>
<th>Culture Report</th>
<th>Companion Culture Report</th>
<th>Report as…</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coagulase-positive staphylococci</td>
<td><em>S. aureus</em></td>
<td><em>S. aureus</em></td>
</tr>
<tr>
<td><em>S. epidermidis</em></td>
<td>Coagulase-negative staphylococci</td>
<td><em>S. epidermidis</em></td>
</tr>
<tr>
<td><em>Enterococcus spp.</em></td>
<td><em>E. faecium</em></td>
<td><em>E. faecium</em></td>
</tr>
<tr>
<td>Bacillus spp. (not anthracis)</td>
<td><em>B. cereus</em></td>
<td><em>B. cereus</em></td>
</tr>
<tr>
<td><em>S. salivarius</em></td>
<td>Strep viridans</td>
<td><em>S. salivarius</em></td>
</tr>
</tbody>
</table>
Ms. Positive Polly

- March 18: Ms. Positive Polly was admitted to the Oncology ward and a port was placed for chemotherapy.
- March 19: She developed a fever (102°F)
- March 21: Blood cultures were collected that grew *Coagulase-negative Staphylococcus (CNS)* x2
- March 22: Repeat blood cultures collected grew *CNS*
- No other source of infection was identified
Ms. Positive Polly’s Rationale

- Date of Event is **3/19**, date first element identified in the IWP.
- The Date of Event occurred during the 3/16 – 3/19 POA timeframe.
  - 2 days before, day of and 1 day after admission.
Scenario for LCBI 2 or 3

- April 1st – 4 mo. old Baby Gray was admitted Afebrile with no symptoms of an infection
- April 2nd - He developed a fever and periods of bradycardia
  - Two blood cultures were collected.
  - One specimen grew Micrococcus
What LCBI Criteria is Met by Baby Gray?

- LCBI-1
- LCBI-3
- LCBI Criteria is not Met

A

B

C
Baby Gray
What LCBI Criterion is Met?

- Baby Gray was admitted with no signs or symptoms
- Hospital day 2 he developed fever and periods of bradycardia
- A single common commensal was identified

Baby Gray does not meet either LCBI 2 or LCBI 3 criteria
Baby Girls Belle and Bella

- 5/5: Baby Girls Belle and Bella were admitted to NICU after being born 1 mo. premature
- 5/8: New onset apnea
  - A central line was placed
- 5/9: Both developed a low grade fever of 100°F and 2 sets of blood cultures were drawn separately both growing *Staphylococcus hominis*
- No other source of infection identified
What LCBI Criterion is Met by Baby Girls Belle and Bella?

LCBI-2

LCBI-1

LCBI-3
Baby Girls Belle and Bella Rationale

- 5/9 *S. hominis* blood cultures create 5/6 – 5/12 IWP
- Date of Event is 5/8, date first element (apnea), identified in the IWP
- HAI LCBI 3, 5/8
Mucosal Barrier Injury-LCBI (MBI-LCBI)
Table 2: Mucosal Barrier Injury Laboratory-Confirmed Bloodstream Infection (MBI-LCBI)
Must meet one of the following MBI-LCBI criteria

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 was met. Abnormal ANC and WBC values reflect risk factors for acquiring an MBI-LCBI but not symptoms of infection and therefore are not used in DOE determinations.

<table>
<thead>
<tr>
<th>MBI-LCBI 1</th>
<th>MBI-LCBI 2</th>
<th>MBI-LCBI 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient of any age fully meets LCBI 1 criteria</td>
<td>Patient of any age fully meets LCBI 2 criteria</td>
<td>Patient ( \leq 1 ) year of age fully meets LCBI 3 criteria</td>
</tr>
<tr>
<td>with at least one blood specimen</td>
<td>with at least two blood specimens</td>
<td></td>
</tr>
<tr>
<td>identified by culture or non-culture based microbiologic testing method</td>
<td></td>
<td></td>
</tr>
<tr>
<td>with ONLY intestinal organisms from the NHSN MBI organism list*</td>
<td>with ONLY Viridans Group Streptococcus or Rothia spp. but no other organisms</td>
<td></td>
</tr>
</tbody>
</table>

**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]
   b. \( \geq 1 \)-liter diarrhea in a 24-hour period (or \( \geq 20 \) 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.
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 6).
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/mm³ 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 Neutropenia Criteria

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/mm³

ANC = Absolute Segs + Absolute Bands

OR

\[
ANC = WBC \times \frac{\% \text{Segs} + \% \text{Bands}}{100}
\]

EXAMPLE:

| WBC: 2 K/mm³ | Segs: 20% | Bands: 20% | ANC = 2000 \times \frac{20+20}{100} = 800 cells/mm³ |
Ms. Petty Patty

- **June 13th**: Ms. Patty had a central line inserted on admission
- **June 16th**: she had an ANC level of 400 cells/mm³
- **June 17th**: two BC’s drawn + *Enterococcus faecalis*
- **July 19th**: WBC level 210 cells/mm³
- No other source of infection was identified
Did Ms. Petty Patty meet MBI LCBI-1 Criterion?

No

Yes
**Petty Patty Rationale**

- **HAI CLABSI**
- **MBI-LCBI 1, 6/17**
- **Risk Factors (neutropenia)**
  - ANC: 400
  - WBC: 200

<table>
<thead>
<tr>
<th>Hospital Day</th>
<th>Date</th>
<th>First Diagnostic Test</th>
<th>IWP</th>
<th>DOE</th>
<th>ANC or WBC values</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6/13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Admitted. Central Line inserted</td>
</tr>
<tr>
<td>2</td>
<td>6/14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>6/15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>6/16</td>
<td>Blood culture- E. coli</td>
<td>IWP</td>
<td>DOE</td>
<td>ANC – 400 cells/mm³</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>6/17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6/18</td>
<td></td>
<td></td>
<td></td>
<td>WBC – 200 cells/mm³</td>
<td></td>
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<tr>
<td>7</td>
<td>6/19</td>
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<td></td>
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<td>8</td>
<td>6/20</td>
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<tr>
<td>9</td>
<td>6/21</td>
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<tr>
<td>10</td>
<td>6/22</td>
<td></td>
<td></td>
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<tr>
<td>11</td>
<td>6/23</td>
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<td>12</td>
<td>6/24</td>
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<tr>
<td>13</td>
<td>6/25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
with at least two blood specimens identified by a culture or non-culture based microbiologic testing method, 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 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/mm³ 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

<table>
<thead>
<tr>
<th>Day #</th>
<th>-7</th>
<th>-6</th>
<th>-5</th>
<th>-4</th>
<th>-3</th>
<th>-2</th>
<th>-1</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANC</td>
<td>Not tested</td>
<td>X</td>
<td>X</td>
<td>Not tested</td>
<td>Not tested</td>
<td>120</td>
<td>110</td>
<td>+ BC* w/ viridans group strep X2 and fever &gt;38.1°C</td>
<td>110</td>
<td>300</td>
<td>320</td>
</tr>
</tbody>
</table>

**MBI-LCBI 2**
What information is needed to assist with a primary BSI or secondary BSI determination?

If investigating a positive blood culture:

- Admission date
- Central line insertion date
- Central line discontinuation date *if applicable*
- Date(s) and results of any positive blood cultures
What information is needed to assist with a primary BSI or secondary BSI determination?

If investigating a positive blood culture:

- All organisms identified in the blood culture(s)
- Signs/symptoms and *associated dates* if evaluating LCBI-2/3 criteria
- Date of first access in an inpatient location (if patient is admitted with a central line in place)
- MBI LCBI risk factors (if evaluating MBI LCBI criteria)
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
### Denominator Requirements by Location & Device

<table>
<thead>
<tr>
<th>Location</th>
<th>All Locations</th>
<th>SCA-Oncology, dialysis</th>
<th>NICU</th>
</tr>
</thead>
<tbody>
<tr>
<td>All pts with &gt; 1 CL = 1 CL Day</td>
<td>CL Days</td>
<td>CL Days by: Permanent Temporary If both a permanent &amp; a temporary line present- report temporary line</td>
<td>CL Days by: Central line</td>
</tr>
<tr>
<td>All patients in an inpatient location = 1 Pt Day</td>
<td>All In-Pt Days</td>
<td>All In-Pt Days</td>
<td>All In-Pt Days by: Birth Weight ≤ 750 gms 751-1000 gms 1001-1500 gms 1501-2500 gms &gt;2501 gms</td>
</tr>
</tbody>
</table>
Check Your Denominator Data

- Ensure your denominator data is correct
- Examples of potential problems:
  - Counting a patient with 2 CLs as 2 rather than 1 CL day
  - Electronic data import happening twice a day rather than once
# Collecting Denominator & Entering Summary Data for ICU / Wards

## Denominators for Intensive Care Unit (ICU)/Other Locations (not NICU or SCA)

<table>
<thead>
<tr>
<th>Date</th>
<th>*Number of Patients</th>
<th><strong>Number of patients with 1 or more central lines</strong></th>
<th><strong>Number of patients with a urinary catheter</strong></th>
<th><strong>Number of total patients on a ventilator</strong></th>
<th>Number of patients on APRV</th>
<th>Number of Episodes of Mechanical Ventilation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
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<tr>
<td>3</td>
<td></td>
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</tr>
</tbody>
</table>
Collecting Denominator & Entering Summary Data for ICU / Wards

For all locations, count at the same time each day:
- Number of patients on the unit
- Number of patients with a central line

Check box if NO CLABSI events to report

Sum for Month

For all locations, count at the same time each day:
# Collecting Denominator & Entering Summary Data for SCA/Oncology

## Denominators for Specialty Care Area (SCA)/Oncology (ONC)

<table>
<thead>
<tr>
<th>Date</th>
<th><strong>Number of Patients</strong></th>
<th><strong>Location Code:</strong></th>
<th><strong>Month:</strong></th>
<th><strong>Year:</strong></th>
<th><strong>Number of patients with at least 1 central line</strong> (if patient has both, count as Temporary only)</th>
<th><strong>Number of Total patients with a urinary catheter</strong></th>
<th><strong>Number of Total patients on a ventilator</strong></th>
<th><strong>Number of patients on APRV</strong></th>
<th><strong>Number of Episodes of Mechanical Ventilation</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>2</td>
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<td>3</td>
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</tr>
</tbody>
</table>
Collecting Denominator & Entering Summary Data for SCA Oncology

Central Lines stratified by Device Type
- Number of patients on the unit
- Number of patients with a permanent central line
- Number of patients with a Temporary central line
- For patients with both a temporary & permanent line: enter denominator data for the temporary line

Sum for Month

Check box if NO CLABSI events for central line type to report

### Denominator Data

<table>
<thead>
<tr>
<th>Total Patient Days</th>
<th>Report No Events</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Report No Events</td>
</tr>
<tr>
<td>Temporary Central Line Days</td>
<td>TCLAB: □</td>
</tr>
<tr>
<td>Permanent Central Line Days</td>
<td>PCLAB: □</td>
</tr>
<tr>
<td>Urinary Catheter Days</td>
<td>CAUTI: □</td>
</tr>
<tr>
<td>Ventilator Days</td>
<td>VAE: □, PedVAP: □</td>
</tr>
<tr>
<td>APRV Days</td>
<td></td>
</tr>
<tr>
<td>Episodes of Mechanical Ventilation</td>
<td></td>
</tr>
</tbody>
</table>

Sum for Month
Collecting Denominator & Entering Summary Data for NICU

### Denominators for Neonatal Intensive Care Unit (NICU)

<table>
<thead>
<tr>
<th>Facility ID</th>
<th><em>Location Code:</em></th>
<th><em>Month:</em></th>
<th><em>Year:</em></th>
<th>Birth Weight Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Date:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>≤750 g</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>751-1000 g</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1001-1500 g</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1501-2500 g</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&gt;2500 g</td>
</tr>
<tr>
<td></td>
<td>Pt*</td>
<td><strong>CL</strong></td>
<td><strong>VNT</strong></td>
<td>Pt*</td>
</tr>
<tr>
<td></td>
<td><strong>CL</strong></td>
<td><strong>VNT</strong></td>
<td>Urc</td>
<td>EMV</td>
</tr>
<tr>
<td></td>
<td>Pt*</td>
<td><strong>CL</strong></td>
<td><strong>VNT</strong></td>
<td>Pt*</td>
</tr>
<tr>
<td></td>
<td><strong>CL</strong></td>
<td><strong>VNT</strong></td>
<td>Urc</td>
<td>EMV</td>
</tr>
<tr>
<td></td>
<td>Pt*</td>
<td><strong>CL</strong></td>
<td><strong>VNT</strong></td>
<td>Pt*</td>
</tr>
<tr>
<td></td>
<td><strong>CL</strong></td>
<td><strong>VNT</strong></td>
<td>Urc</td>
<td>EMV</td>
</tr>
<tr>
<td></td>
<td>Pt*</td>
<td><strong>CL</strong></td>
<td><strong>VNT</strong></td>
<td>Pt*</td>
</tr>
<tr>
<td></td>
<td><strong>CL</strong></td>
<td><strong>VNT</strong></td>
<td>Urc</td>
<td>EMV</td>
</tr>
</tbody>
</table>

**Required for saving**

**Conditionally required according to the events indicated in Plan**
Collecting Denominator & Entering Summary Data for NICU

<table>
<thead>
<tr>
<th>Birth Weight</th>
<th>Patient Days</th>
<th>CL Days</th>
<th>No CLABSI</th>
<th>Vent Days</th>
<th>No PedVAE</th>
<th>No PedVAP</th>
<th>EMV</th>
<th>Urc Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;=750</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>751-1000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1001-1500</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>1501-2500</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;2500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Check appropriate box if NO CLABSI events to report in a BW category

Patient Days & CL stratified by Birth Weight

# of patients on the unit by birth weight:
- <=750gms
- 751-1000gms
- 1001-1500gms
- 1501-2500gms
- >2501gms

Sum for Month
Electronic Collection of Summary Data

Electronic capture of summary data is acceptable:

- Following validation of the electronic method against the manual method
  
  - 3 months concurrent data collection with both methods
  
  - Difference between methods must be within +/- 5% of each other
  
  - If difference > 5% address issues, and revalidate for 3 months; repeat cycle until difference ≤5%
Once Weekly Denominator Collection

- Reduces NHSN Data Collection Burden
- Eligible ICU and ward location types may use
  - Must have 75 or more CL days per month
- Patient days
  - Collected daily
  - Record both:
    - Total of weekly samples (e.g., every Tuesday)
    - Monthly total (every day in month)
- Central line days
  - Collected on a single day, once a week (ex. Every Tuesday)
Entering Summary Data (ICU/Wards)

When sampling, complete each of the fields highlighted below
2019 NHSN BSI Protocol Changes Summary

- Exclusion of viruses and parasites from LCBI-1 criterion
- Required Data Field CLABSI Exclusions
  - Extracorporeal membrane oxygenation (ECMO)
  - Ventricular assist device (VAD)
- Addition of Data Fields for Optional CLABSI Exclusion in the NHSN application and on the BSI event form
  - Epidermolysis Bullosa (EB)
  - Munchausen Syndrome by Proxy (MSBP)
  - Patient self-injection
  - Pus at vascular site
  - Group B Strep 1\textsuperscript{st} 6 days of Life
In Summary

- Surveillance and Clinical definitions may not always align
  - Surveillance definitions must be adhered to strictly and consistently

- CLABSIs result in significant morbidity and mortality in U.S. hospitals
  - Progress has been made but the journey continues

- According to the 2017 HAI report:
  - Nationally, among acute care hospitals there was about 9% decrease in CLABSI between 2016 and 2017
Primary BSI Wrap Up

- Reviewed the BSI forms, data collection techniques, and data entry requirements for BSI events
- Reviewed key definitions for BSI and CLABSI surveillance
- Provided an overview of the 2019 BSI protocol with key changes
- Located the protocols & training materials on the NHSN website
- Assessed current knowledge of the BSI protocol through knowledge checks
Federal Register Open Comment Period

- Currently, NHSN is piloting a means of soliciting comments and suggestions via the Federal Register (FR)
- Comments can be submitted between February 14-April 15, 2019
- Opportunity to identify issues and areas for potential improvement beginning in 2020
- If you would like to submit your comment for review, please use the information below. If you experience difficulty posting a comment, please contact nhsn@cdc.gov with “BSI Protocol” in the subject line
  - Step 1: Website for Submission: https://www.regulations.gov/
  - Step 2: Enter Docket Number for BSI comments: CDC-2019-0007 and Click the Search button
  - Step 3: Click the “Comment Now” button
American Journal of Infection Control
NHSN Case-Study Series

- Additional educational tool
  - Perfect for reliability testing of ICP teams, APIC chapters, etc.
- Target: quarterly publication
- Address common surveillance scenarios
  - CLABSI, CAUTI, VAE, SSI, MDRO/CDI
- Test your knowledge
- Quiz and answers via web link

Practice Makes Permanent!
Resources for BSI Reporting

- **CLABSI protocols, forms, etc.**
  - [http://www.cdc.gov/nhsn/newsletters.html](http://www.cdc.gov/nhsn/newsletters.html)

- **Operational guidance for CMS reporting:**

- **Contact list for QIO/QINs:**

- **NHSN training:**
  - [http://www.cdc.gov/nhsn/training/](http://www.cdc.gov/nhsn/training/)
  - [http://www.cdc.gov/nhsn/newsletters.html](http://www.cdc.gov/nhsn/newsletters.html)
Questions?
Questions: Email user support
nhsn@cdc.gov

NHSN Website:
http://www.cdc.gov/nhsn/
Case Study
Case Study Part 1: Ms. Polly Microbial

- 2/4: 32 year-old female admitted to the ED with fever (102°F) and abdominal pain. Patient has a port in place at the time of admission. Past medical history – cervical cancer & cardiomyopathy due to a history of drug use
- 2/5: Admitted to the oncology floor and port is flushed
- 2/6: Patient complains of pain at the port site (10/10) and the insertion site is red. Narcotics requested. 15 mg of oxycodone is given
- 2/8: Blood cultures collected- Positive for
  - *Micrococcus* x 1, *Candida albicans*, and *Enterococcus faecalis*
Case Study Part 1: Question 1

What criterion did Ms. Polly meet?

A. LCBI 2
B. MBI LCBI 1
C. LCBI 1
D. Ms. Polly did not meet any criteria
Case Study Part 1: Question 1 Rationale

- 2/8: Blood cultures collected- Positive for
  - *Micrococcus* x 1, *Candida albicans*, and *Enterococcus faecalis*
  - Single common commensal (*Micrococcus*) and recognized pathogens (*C. albicans* and *E. faecalis*) are isolated in the blood culture
  - The single common commensal is considered a contaminant and is not eligible for use to meet LCBI criteria
  - Ms. Polly will meet LCBI 1 criterion

4. A common commensal identified in a single blood specimen is considered a contaminant. It will not be used to meet LCBI 2 or 3 criteria nor will it prevent a case from meeting MBI-LCBI criteria when the organism requirements call for ”only” a specific organism or type of organism (for example, “only intestinal organisms from the MBI list”).
Case Study Part 1: Question 2

Is this a POA or HAI event?

A. POA
B. HAI
Case Study Part 1: Question 2 Rationale

- 2/5: Admitted to the oncology floor and port is flushed
- 2/8: Blood cultures collected - Positive for
  - *Micrococcus* x 1, *Candida albicans*, and *Enterococcus faecalis*
  - Blood culture collection date occurs on or after HD 3
  - HAI event because the date of event occurred on calendar day 4

An infection is considered a **Healthcare-associated Infection (HAI)** if the date of event of the NHSN site-specific infection criterion occurs on or after the 3rd calendar day of admission to an inpatient location where day of admission is calendar day 1.
Case Study Part 1: Question 3

What is the date of event?

A. 2/6
B. 2/8
C. 2/5
Case Study Part 1: Question 3 Rationale

- Ms. Polly met LCBI 1 criterion since recognized pathogens (*C. albicans* and *E. faecalis* were isolated in the blood culture)
- No additional signs/symptoms are needed to meet LCBI1 criterion
- Identification of a positive blood culture is the only element required to meet LCBI 1 criterion, 2/8 is the date of event
Case Study Part 2: Ms. Polly Microbial

- 2/9: Port is de-accessed after specimen collection and port removal is scheduled due to positive blood culture results. Peripherally Inserted Central Catheter (PICC) is placed for temporary access
  - After administration of meds patient leaves the floor to visit w/ friends
  - Central line (CL) is disconnected and capped by nurse so patient can leave the floor
  - Patient returns to the unit slurring words and unable to keep eyes open
  - Safety cap is missing & the CL is un-clamped. Nurse suspects the patient is tampering w/ the CL
2/10: Physician informed of events and orders the discontinuation of the PICC and all narcotics

- Nurse documents patient is suspected of injecting into the CL
- Patient alert but unhappy about removal of CL and discontinuation of narcotics

2/12: Patient spikes a fever of 101.2°F and has increased white blood cell (WBC) count

- Blood cultures collected & are negative
- Patient transferred to ICU
Case Study Part 2: Question 1

On February 8\textsuperscript{th} how many CL days have occurred to determine if the BSI is a CLABSI?

A. 6 CL days  
B. 4 CL days  
C. 2 CL days  
D. 0, the patient does not have a CL
Case Study Part 2: Question 1 Rationale

- 2/5: Admitted to the oncology floor and port is flushed
  - CL day counts begin once the CL is accessed (2/5)
  - Blood culture collection date occurs on 2/8 and LCBI 1 criterion is met (eligible organisms)
  - Patient has 4 CL days on 2/8, the DOE (eligible central line)
  - Ms. Polly has a CLABSI event
Case Study Part 2: Question 2

Is the patient self-injection CLABSI exclusion met?

A. Yes
B. No
Case Study Part 2: Question 2 Rationale

- Blood culture collection date occurs on 2/8 and LCBI 1 criterion is met
  - Positive blood cultures on 2/8 will establish an IWP of 2/5-2/11
  - To meet the IVDA CLABSI exclusion the documentation must occur during the BSI IWP
  - Specifically state the patient was observed or suspected of injecting into their vascular access
  - Nurses documentation occurs during the BSI IWP
Case Study Part 2: Question 3

Which statement is eligible for use to meet this CLABSI exclusion?

A. Nurse suspects the patient is tampering with the CL
B. The patient returns to the unit slurring words and unable to keep eyes open. Nurse suspects the patient is tampering w/ the CL
C. Nurse documents patient is suspected of injecting into the CL. Physician informed and orders discontinuation of the PICC and all narcotics
Case Study Part 3: Ms. Polly Microbial

- **2/22:** Patient develops arrhythmias, lower extremity edema, and complains of shortness of breath - patient has a cardiac arrest
  - R femoral TLC inserted
  - Chest X-ray shows severe, late stage heart failure due to cardiomyopathy
  - VAD inserted to relieve heart failure

- **2/25:** VAD remains in place, patient develops acute renal failure & spikes fever (101.6°F)
  - HD catheter placed and blood cultures positive for:
    - *Enterococcus faecium* and *Klebsiella oxytoca*
Case Study Part 3: Question 1

What criterion did Ms. Polly meet?

A. LCBI 2
B. MBI LCBI 1
C. LCBI 1
D. Ms. Polly did not meet any criteria
Case Study Part 3: Question 1 Rationale

- 2/25: Blood cultures collected- Positive for
  - Recognized pathogens (*E. faecium* and *K. oxytoca*)
  - No additional signs/symptoms are needed to meet LCBI 1 criterion
  - Identification of a positive blood culture is the only element required to meet LCBI 1 criterion
  - Ms. Polly will meet LCBI 1 criterion
Case Study Part 3: Question 2

On February 25\textsuperscript{th} how many CL days have occurred to determine if the BSI is a CLABSI?

A. 5 CL days
B. 1 CL days
C. 4 CL days
Case Study Part 3: Question 2 Rationale

- 2/22: Patient has a R femoral TLC inserted
  - CL day counts begin once the CL is accessed (2/22 line placement)
  - Blood culture collection date occurs on 2/25 and LCBI 1 criterion is met (eligible organisms)
  - Patient has 4 CL days on 2/25, the DOE (eligible central line)
  - Ms. Polly has a CLABSI event
Case Study Part 3: Question 3

How should you answer the CL field when reporting this event?

A. CL=Yes
B. CL=No
Case Study Part 3: Question 3 Rationale

- Starting in 2019, central line data field should be marked “Yes” if there is an eligible central line and a ventricular assist device (VAD) present
  - VAD must be present for more than 2 days on the BSI DOE, and still in place on the DOE or the day before
  - VAD inserted on 2/22 and the BSI DOE is 2/25
Case Study Part 3: Question 3

How should you answer the device field when reporting this event?

A. VAD=Yes
B. VAD=No
Case Study Part 3: Question 3 Rationale

- Starting in 2019, central line data field should be marked “Yes” if there is an eligible central line and a ventricular assist device (VAD) present for more than 2 days on the BSI DOE, and the VAD is still in place on the DOE or the day before.
  - Events should be reported by marking the “Central Line” risk factor field “Yes” as well as the VAD field.