Patient Safety Component Bloodstream Infection (BSI) Case Studies

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Objectives

- At the end of this presentation, you will be able to
  - Apply NHSN surveillance definitions to identify and classify bloodstream infections.
  - Differentiate primary vs. secondary bloodstream infections by correctly applying site-specific infection criteria and secondary BSI attribution rules.
  - Determine Infection Window Period (IWP), Date of Event (DOE), Repeat Infection Timeframe (RIT), and central line eligibility to accurately identify and attribute events.

Primary BSI Case Study #1

Refer to PSC Chapter 4 - Bloodstream Infection Event

Case #1 Details

- **10/1:** Admitted to Oncology Ward with acute myeloblastic leukemia (AML). Implanted port in place (placed 3 months prior). Port accessed for IV antibiotics. ANC 420 cells/mm^3.
- **10/2:** ANC 390 cells/mm^3
- **10/3:** Fever 38.4°C
- **10/4:** Blood cultures x2 (separate draws) → Viridans group *Streptococcus*
- **10/10:** Blood culture x1 → *Candida albicans* & coagulase-negative *Staphylococcus* (CoNS)
- **10/15:** Port needle removed ("de-accessed"), port remains implanted
- **10/17:** Fever 39.1°C and hypotension. Blood culture → *Staphylococcus aureus*. Patient transferred to ICU later same day.
- **10/18:** Port removed. New IJ central line inserted same day.
- **10/24:** Blood culture → *Pseudomonas aeruginosa*
- **No source of infections identified**

Knowledge Check #1

What is the first Infection Window Period (IWP)?

A. 10/1-10/7

B. 10/2-10/8

C. 10/3-10/9

Date	Location	Elements
10/1	ONC	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ONC	ANC 390
10/3	ONC	T 38.4°C
10/4	ONC	BC x2 (sep draws) → Viridans grp *Strep*.
10/10	ONC	BC x1 → *Candida albicans* & CoNS
10/15	ONC	Port needle removed ("de-accessed"); port remains.
10/17	ONC ICU	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day
10/18	ICU	Port removed. New IJ CL placed same day
10/24	ICU	BC → *Pseudomonas aeruginosa*

Knowledge Check #1 – Rationale

✅ **10/1 – 10/7**

- The first positive blood specimen was collected on 10/4
- IWP = 3 calendar days before + collection date + 3 calendar days after
- 10/1–10/7 represents the full 7-day window used to assess all elements

Date	Elements
10/1	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ANC 390
10/3	T 38.4°C
10/4	BC x2 (sep draws) → Viridans grp *Strep*. **First positive diagnostic test**
10/5	
10/6	
10/7	
10/8	
10/9	
10/10	BC x1 → *Candida albicans* & CoNS

Knowledge Check #2

Does this meet LCBI criteria?

A. No BSI

B. LCBI 1

C. LCBI 2

Date	Location	Elements
10/1	ONC	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ONC	ANC 390
10/3	ONC	T 38.4°C
10/4	ONC	BC x2 (sep draws) → Viridans grp *Strep*.
10/10	ONC	BC x1 → *Candida albicans* & CoNS
10/15	ONC	Port needle removed ("de-accessed"); port remains.
10/17	ONC ICU	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day
10/18	ICU	Port removed. New IJ CL placed same day
10/24	ICU	BC → *Pseudomonas aeruginosa*

Knowledge Check #2 – Rationale

✅ LCBI 2

- Patient has fever >38°C
- Same common commensal (Viridans group *Streptococcus*) identified from ≥2 blood specimens on separate occasions
- All elements fall within the defined IWP

Date	Elements
10/1	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ANC 390
10/3	T 38.4°C
10/4	BC x2 (sep draws) → Viridans grp *Strep*.
10/5	
10/6	
10/7	
10/8	
10/9	
10/10	BC x1 → *Candida albicans* & CoNS

Knowledge Check #3

What is the Date of Event (DOE)?

A. 10/1

B. 10/2

C. 10/3

D. 10/4

Date	Location	Elements
10/1	ONC	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ONC	ANC 390
10/3	ONC	T 38.4°C
10/4	ONC	BC x2 (sep draws) → Viridans grp *Strep*.
10/10	ONC	BC x1 → *Candida albicans* & CoNS
10/15	ONC	Port needle removed ("de-accessed"); port remains.
10/17	ONC ICU	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day
10/18	ICU	Port removed. New IJ CL placed same day
10/24	ICU	BC → *Pseudomonas aeruginosa*

Knowledge Check #3 – Rationale

✅ **DOE = 10/3**

- For LCBI 2, DOE is the **first** element used to meet the criterion within the IWP
- Fever on 10/3 occurred before the positive blood cultures
- DOE is not automatically the blood collection date

Date	Elements
10/1	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ANC 390
10/3	T 38.4°C **First element=DOE**
10/4	BC x2 (sep draws) → Viridans grp *Strep*.
10/5	
10/6	
10/7	
10/8	
10/9	
10/10	BC x1 → *Candida albicans* & CoNS

Knowledge Check #4

Is this present on admission (POA) or healthcare-associated infection (HAI)?

A. POA

B. HAI

Date	Location	Elements
10/1	ONC	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ONC	ANC 390
10/3	ONC	T 38.4°C
10/4	ONC	BC x2 (sep draws) → Viridans grp *Strep*.
10/10	ONC	BC x1 → *Candida albicans* & CoNS
10/15	ONC	Port needle removed ("de-accessed"); port remains.
10/17	ONC ICU	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day
10/18	ICU	Port removed. New IJ CL placed same day
10/24	ICU	BC → *Pseudomonas aeruginosa*

Knowledge Check #4 – Rationale

✅ **HAI**

- Admission date: 10/1
- DOE: 10/3 (Hospital Day 3)
- Events with DOE **on** or after HD 3 are healthcare-associated

Date	HD	Elements
10/1	HD1	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	HD2	ANC 390
10/3	HD3	T 38.4°C **Date of Event (DOE)**
10/4	HD4	BC x2 (sep draws) → Viridans grp *Strep*.
10/5	HD5	
10/6	HD6	
10/7	HD7	
10/8	HD8	
10/9	HD9	
10/10	HD10	BC x1 → *Candida albicans* & CoNS

Knowledge Check #5

Does this meet MBI-LCBI?

A. Yes

B. No

Date	Location	Elements
10/1	ONC	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ONC	ANC 390
10/3	ONC	T 38.4°C
10/4	ONC	BC x2 (sep draws) → Viridans grp *Strep*.
10/10	ONC	BC x1 → *Candida albicans* & CoNS
10/15	ONC	Port needle removed ("de-accessed"); port remains.
10/17	ONC ICU	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day
10/18	ICU	Port removed. New IJ CL placed same day
10/24	ICU	BC → *Pseudomonas aeruginosa*

Knowledge Check #5 – Rationale

✅ **Yes – MBI-LCBI 2**

- The event fully meets LCBI 2 criteria.
- Viridans group *Streptococcus* is an NHSN MBI organism.
- Patient was neutropenic (ANC <500) on ≥2 separate days within the 7-day IWP.
- No non-MBI organisms were identified that would disqualify the event.
- The DOE of 10/3 does NOT change, despite the ANC values during the POA timeframe.

Date	Elements
10/1	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ANC 390
10/3	T 38.4°C **Date of Event (DOE)**
10/4	BC x2 (sep draws) → Viridans grp *Strep*.
10/5	
10/6	
10/7	
10/8	
10/9	
10/10	BC x1 → *Candida albicans* & CoNS

Knowledge Check #6

Is this a CLABSI?

A. Yes

B. No

Date	Location	Elements
10/1	ONC	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ONC	ANC 390
10/3	ONC	T 38.4°C
10/4	ONC	BC x2 (sep draws) → Viridans grp *Strep*.
10/10	ONC	BC x1 → *Candida albicans* & CoNS
10/15	ONC	Port needle removed ("de-accessed"); port remains.
10/17	ONC ICU	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day
10/18	ICU	Port removed. New IJ CL placed same day
10/24	ICU	BC → *Pseudomonas aeruginosa*

Knowledge Check #6 – Rationale

✅ **Yes – CLABSI**

- Port accessed on 10/1 → CL Day 1
- CL Day 3 = 10/3
- DOE = 10/3
- Eligible central line present on DOE

❌ This event meets CLABSI definition but is **excluded** from the CLABSI SIR because it qualifies as MBI-LCBI.

Date	CL Day	Elements
10/1	CL1	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	CL2	ANC 390
10/3	CL3	T 38.4°C **Date of Event (DOE)**
10/4	CL4	BC x2 (sep draws) → Viridans grp *Strep*.
10/5	CL5	
10/6	CL6	
10/7	CL7	
10/8	CL8	
10/9	CL9	
10/10	CL10	BC x1 → *Candida albicans* & CoNS

Knowledge Check #7

What is the repeat infection timeframe (RIT)?

A. 10/3-10/16

B. 10/3-10/17

C. 10/4-10/17

Date	Location	Elements
10/1	ONC	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ONC	ANC 390
10/3	ONC	T 38.4°C
10/4	ONC	BC x2 (sep draws) → Viridans grp *Strep*.
10/10	ONC	BC x1 → *Candida albicans* & CoNS
10/15	ONC	Port needle removed ("de-accessed"); port remains.
10/17	ONC ICU	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day
10/18	ICU	Port removed. New IJ CL placed same day
10/24	ICU	BC → *Pseudomonas aeruginosa*

Knowledge Check #7 – Rationale

✅ **10/3–10/16**

- DOE = 10/3 (Day 1)
- RIT = 14-day period
- No new LCBI reported during this timeframe
- Additional organisms during this period are added to the same event.

14-Day RIT

Date	Elements
10/1	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ANC 390
10/3	T 38.4°C **Date of Event (DOE)**
10/4	BC x2 (sep draws) → Viridans grp *Strep*.
10/5	
10/6	
10/7	
10/8	
10/9	
10/10	BC x1 → *Candida albicans* & CoNS
10/11	
10/12	
10/13	
10/14	
10/15	Port needle removed (“de-accessed”); port remains.
10/16	
10/17	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day

Chat and Q & A features are limited to only 1000 participants

Knowledge Check #8

Is the 10/10 positive blood culture:

A. A new BSI event

B. Added to the existing event

Date	Location	Elements
10/1	ONC	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ONC	ANC 390
10/3	ONC	T 38.4°C
10/4	ONC	BC x2 (sep draws) → Viridans grp *Strep*.
10/10	ONC	BC x1 → *Candida albicans* & CoNS
10/15	ONC	Port needle removed ("de-accessed"); port remains.
10/17	ONC ICU	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day
10/18	ICU	Port removed. New IJ CL placed same day
10/24	ICU	BC → *Pseudomonas aeruginosa*

Knowledge Check #8 – Rationale

✅ **Added to existing event**

- 10/10 falls within 10/3–10/16 RIT
- A single positive common commensal does not create a new event
- *Candida albicans* is a MBI organism
- Organism is added to the original MBI-LCBI event

14-Day RIT

Date	Elements
10/1	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ANC 390
10/3	T 38.4°C
10/4	BC x2 (sep draws) → Viridans grp *Strep*.
10/5	
10/6	
10/7	
10/8	
10/9	
10/10	BC x1 → *Candida albicans* & CoNS
10/11	
10/12	
10/13	
10/14	
10/15	Port needle removed (“de-accessed”); port remains.
10/16	
10/17	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day

Knowledge Check #9

Is 10/17 a new BSI event?

A. Yes

B. No

Date	Location	Elements
10/1	ONC	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ONC	ANC 390
10/3	ONC	T 38.4°C
10/4	ONC	BC x2 (sep draws) → Viridans grp *Strep*.
10/10	ONC	BC x1 → *Candida albicans* & CoNS
10/15	ONC	Port needle removed ("de-accessed"); port remains.
10/17	ONC ICU	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day
10/18	ICU	Port removed. New IJ CL placed same day
10/24	ICU	BC → *Pseudomonas aeruginosa*

Knowledge Check #9 – Rationale

✅ **Yes**

- Prior RIT ended 10/16
- 10/17 represents a new positive blood specimen after the prior RIT
- Must evaluate as a separate event

14-Day RIT

Date	Elements
10/1	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ANC 390
10/3	T 38.4°C
10/4	BC x2 (sep draws) → Viridans grp *Strep*.
10/5	
10/6	
10/7	
10/8	
10/9	
10/10	BC x1 → *Candida albicans* & CoNS
10/11	
10/12	
10/13	
10/14	
10/15	Port needle removed (“de-accessed”); port remains.
10/16	
10/17	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day

Outside of RIT

Chat and Q & A features are limited to only 1000 participants

Knowledge Check #10

What LCBI criterion is met?

A. LCBI 1

B. LCBI 2

Date	Location	Elements
10/1	ONC	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ONC	ANC 390
10/3	ONC	T 38.4°C
10/4	ONC	BC x2 (sep draws) → Viridans grp *Strep*.
10/10	ONC	BC x1 → *Candida albicans* & CoNS
10/15	ONC	Port needle removed ("de-accessed"); port remains.
10/17	ONC ICU	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day
10/18	ICU	Port removed. New IJ CL placed same day
10/24	ICU	BC → *Pseudomonas aeruginosa*

Knowledge Check #10 – Rationale

✅ LCBI 1

- *Staphylococcus aureus* is a recognized pathogen
- Only one positive blood culture is required
- No signs/symptoms needed
- No source of infection

Date	Elements
10/1	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ANC 390
10/3	T 38.4°C
10/4	BC x2 (sep draws) → Viridans grp *Strep*.
10/5	
10/6	
10/7	
10/8	
10/9	
10/10	BC x1 → *Candida albicans* & CoNS
10/11	
10/12	
10/13	
10/14	
10/15	Port needle removed (“de-accessed”); port remains.
10/16	
10/17	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day

Knowledge Check #11

What is the Date of Event (DOE)?

A. 10/15

B. 10/16

C. 10/17

D. 10/18

Date	Location	Elements
10/1	ONC	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ONC	ANC 390
10/3	ONC	T 38.4°C
10/4	ONC	BC x2 (sep draws) → Viridans grp *Strep*.
10/10	ONC	BC x1 → *Candida albicans* & CoNS
10/15	ONC	Port needle removed ("de-accessed"); port remains.
10/17	ONC ICU	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day
10/18	ICU	Port removed. New IJ CL placed same day
10/24	ICU	BC → *Pseudomonas aeruginosa*

Knowledge Check #11 – Rationale

✅ DOE = 10/17

- For LCBI 1, the only required element is the positive blood specimen.
- DOE is the collection date of that specimen.
- Unlike LCBI 2, no symptom-based DOE shift occurs.

Date	Elements
10/15	Port needle removed (“de-accessed”); port remains.
10/16	
10/17	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day
10/18	Port removed. New IJ CL placed same day
10/19	
10/20	
10/21	
10/22	
10/23	
10/24	BC → *Pseudomonas aeruginosa*
10/25	
10/26	
10/27	
10/28	
10/29	
10/30	
10/31	

Date of Event (DOE)

Knowledge Check #12

What is the Repeat Infection Timeframe (RIT)?

A. 10/16-10/29

B. 10/17-10/30

C. 10/16-10/30

Date	Location	Elements
10/1	ONC	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ONC	ANC 390
10/3	ONC	T 38.4°C
10/4	ONC	BC x2 (sep draws) → Viridans grp *Strep*.
10/10	ONC	BC x1 → *Candida albicans* & CoNS
10/15	ONC	Port needle removed ("de-accessed"); port remains.
10/17	ONC ICU	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day
10/18	ICU	Port removed. New IJ CL placed same day
10/24	ICU	BC → *Pseudomonas aeruginosa*

Knowledge Check #12 – Rationale

✅ **10/17–10/30**

- DOE (10/17) is Day 1
- RIT = 14 days
- DOE (10/17) is Day 1
- Any new positive blood within this timeframe is added to this event.
- Organisms do not need to match.

14-Day RIT

Date	Elements
10/15	Port needle removed (“de-accessed”); port remains.
10/16	
10/17	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day **Date of Event (DOE)**
10/18	Port removed. New IJ CL placed same day
10/19	
10/20	
10/21	
10/22	
10/23	
10/24	BC → *Pseudomonas aeruginosa*
10/25	
10/26	
10/27	
10/28	
10/29	
10/30	
10/31	

Knowledge Check #13

Is this a CLABSI?

A. Yes

B. No

Date	Location	Elements
10/1	ONC	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ONC	ANC 390
10/3	ONC	T 38.4°C
10/4	ONC	BC x2 (sep draws) → Viridans grp *Strep*.
10/10	ONC	BC x1 → *Candida albicans* & CoNS
10/15	ONC	Port needle removed ("de-accessed"); port remains.
10/17	ONC ICU	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day
10/18	ICU	Port removed. New IJ CL placed same day
10/24	ICU	BC → *Pseudomonas aeruginosa*

Knowledge Check #13 – Rationale

✅ Yes – CLABSI

- Central line remained implanted
- De-accessing (needle removal) **does NOT** remove the device from surveillance
  - CL counts continue
- Eligible central line present on DOE

  - Note: Port removed 10/18, but new CL placed same day
    - CL counts continue uninterrupted

Date	CL Day	Elements
10/15	CL15	Port needle removed (“de-accessed”); port remains.
10/16	CL16	
10/17	CL17	T 39.1°C + hypotension BC → *S. aureus* **Date of Event (DOE)** → ICU later same day
10/18	CL18	Port removed. New IJ CL placed same day
10/19	CL19	
10/20	CL20	
10/21	CL21	
10/22	CL22	
10/23	CL23	
10/24	CL24	BC → *Pseudomonas aeruginosa*
10/25	CL25	
10/26	CL26	
10/27	CL27	
10/28	CL28	
10/29	CL29	
10/30	CL30	
10/31	CL31	

Knowledge Check #14

What is the location of attribution (LOA)?

A. Oncology

B. ICU

Date	Location	Elements
10/1	ONC	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ONC	ANC 390
10/3	ONC	T 38.4°C
10/4	ONC	BC x2 (sep draws) → Viridans grp *Strep*.
10/10	ONC	BC x1 → *Candida albicans* & CoNS
10/15	ONC	Port needle removed ("de-accessed"); port remains.
10/17	ONC ICU	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day
10/18	ICU	Port removed. New IJ CL placed same day
10/24	ICU	BC → *Pseudomonas aeruginosa*

Knowledge Check #14 – Rationale

✅ Oncology

- DOE occurred on 10/17
- Patient transferred later that same day
- Per Transfer Rule, events with DOE on date of transfer are attributed to the transferring location.

Date	LOA	Elements
10/15	ONC	Port needle removed (“de-accessed”); port remains.
10/16	ONC	
10/17	ONC ICU	T 39.1°C + hypotension BC → *S. aureus* **Date of Event (DOE)** → ICU later same day
10/18	ICU	Port removed. New IJ CL placed same day
10/19	ICU	
10/20	ICU	
10/21	ICU	
10/22	ICU	
10/23	ICU	
10/24	ICU	BC → *Pseudomonas aeruginosa*
10/25	ICU	
10/26	ICU	
10/27	ICU	
10/28	ICU	
10/29	ICU	
10/30	ICU	
10/31	ICU	

Knowledge Check #15

Is the 10/24 blood culture…

A. A new event

B. Added to the 10/17 event

Date	Location	Elements
10/1	ONC	Adm Onc (AML). Implanted port in place & accessed. ANC 420.
10/2	ONC	ANC 390
10/3	ONC	T 38.4°C
10/4	ONC	BC x2 (sep draws) → Viridans grp *Strep*.
10/10	ONC	BC x1 → *Candida albicans* & CoNS
10/15	ONC	Port needle removed ("de-accessed"); port remains.
10/17	ONC ICU	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day
10/18	ICU	Port removed. New IJ CL placed same day
10/24	ICU	BC → *Pseudomonas aeruginosa*

Knowledge Check #15 – Rationale

✅ Added to 10/17 event

- 10/24 falls within 10/17–10/30 RIT
- Same infection type (primary LCBI)
- No new event created; organism added to existing event

14-Day RIT

Date	Elements
10/15	Port needle removed (“de-accessed”); port remains.
10/16	
10/17	T 39.1°C + hypotension BC → *S. aureus* → ICU later same day
10/18	Port removed. New IJ CL placed same day
10/19	
10/20	
10/21	
10/22	
10/23	
10/24	BC → *Pseudomonas aeruginosa*
10/25	
10/26	
10/27	
10/28	
10/29	
10/30	
10/31	

Case Summary – Events Overview

Event #1

- **LCBI 2 → MBI-LCBI (HAI)**
  - DOE: **10/3 (HD3)**
  - IWP: **10/1–10/7**
  - RIT: **10/3–10/16**
  - Org: Viridans grp *Strep*
    - +*Candida* (10/10) → added within RIT
  - CL present & eligible → CLABSI **(excluded from SIR)**

Event #2

- **LCBI 1 → CLABSI (HAI)**
  - DOE: **10/17 (HD17)**
  - RIT: **10/17–10/30**
  - Org: *S. aureus*
    - +*Pseudomonas* (10/24) → added within RIT
  - Transfer same day → attributed to Oncology

Secondary BSI Case Study #2

Refer to IAB – Intraabdominal infection, Chapter 17, p. 17-21

Case #2 Details

2/6: 43-year-old male with Crohn's disease and type 1 diabetes mellitus presents to the Emergency Department (ED) with severe upper abdominal pain, nausea, and vomiting.

2/7: Patient is admitted to the inpatient medical unit for observation.

2/8: Patient reports worsening abdominal pain, nausea, vomiting. Abdominal CT scan shows small right upper quadrant (RUQ) fluid collection. Patient undergoes CT guided drainage of the RUQ fluid collection, and non-purulent fluid is aspirated and sent for culture. Physician orders ceftriaxone for suspected intraabdominal infection.

2/9: Intraabdominal fluid culture results positive for *Escherichia coli.* PICC line is inserted.

2/11: Patient develops fever of 38.7°C and hypotension. Blood cultures are collected and result positive for *Klebsiella oxytoca*.

Knowledge Check #1

What is the Infection Window Period (IWP)?

A. 2/5 – 2/11

B. 2/6 – 2/11

C. 2/8 – 2/14

Date	Location	Elements
2/6	ED	• Abdominal pain, nausea, and vomiting
2/7	ED -> Med Unit	
2/8	Med Unit	• Worsening symptoms • Imaging test evidence of infection (equivocal finding + clinical correlation)* • Intraabdominal fluid culture positive for *Escherichia coli*
2/9	Med Unit	PICC inserted
2/10	Med Unit	
2/11	Med Unit	• Fever, hypotension • Blood culture positive for *Klebsiella oxytoca* (MBI)

*An imaging finding of 'fluid collection' is an equivocal finding for infection; physician antimicrobial order for suspected intraabdominal infection meets as clinical correlation. Refer to Miscellaneous FAQ #19: https://www.cdc.gov/nhsn/faqs/faqs-miscellaneous.html

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Knowledge Check #1 – Rationale

- **The IWP is 2/5 – 2/11**
- The IWP is set by the first positive diagnostic test that is used as an element of the criterion:
  - 2/8 Imaging test
  - 2/8 Positive fluid culture
- The IWP includes the date of the diagnostic test, the 3 days before, and the 3 days after.
- The IWP can include the 2 days prior to admission (the POA timeframe).

Date	Hospital Day	Elements
2/5	2 days before admit	
2/6	1 day before admit	• Abdominal pain, nausea, and vomiting
2/7	Day of admit = Hospital Day 1	ED -> Med Unit
2/8	Hospital Day 2 **First positive diagnostic test**	• Worsening symptoms • Imaging test evidence of infection (equivocal finding + clinical correlation) • Intraabdominal fluid culture positive for *Escherichia coli*
2/9	Hospital Day 3	PICC inserted
2/10	Hospital Day 4	
2/11	Hospital Day 5	• Fever, hypotension • Blood culture positive for *Klebsiella oxytoca* (MBI)

Knowledge Check #2

Which IAB criteria are met?
(IAB IWP is 2/5 – 2/11)

A. IAB 1
B. IAB 3a
C. IAB 3b
D. IAB 1 and IAB 3a
E. IAB 1 and IAB 3b
F. IAB 3a and IAB 3b
G. No IAB criteria are met

Date	Location	Elements
2/5		
2/6	ED	• Abdominal pain, nausea, and vomiting
2/7	ED -> Med Unit	
2/8	Med Unit	• Worsening symptoms • Imaging test evidence of infection (equivocal finding + clinical correlation) • Intraabdominal fluid culture positive for *Escherichia coli*
2/9	Med Unit	PICC inserted
2/10	Med Unit	
2/11	Med Unit	• Fever, hypotension • Blood culture positive for *Klebsiella oxytoca* (MBI)

Knowledge Check #2- Rationale

- **IAB criterion 3a** is met with 2/8 organism identified from intraabdominal fluid culture and at least two eligible signs/symptoms.
- **IAB criterion 3b** is met with 2/8 positive imaging test, 2/11 positive blood culture with MBI organism, and at least two eligible signs/symptoms.
- If the 2 days prior to admission (POA timeframe) are included in the IWP, elements occurring on these days can be used to meet the criterion.

Date	Location	Elements
2/5		
2/6	ED	• Abdominal pain, nausea, and vomiting
2/7	ED -> Med Unit	
2/8	Med Unit	• Worsening symptoms • Imaging test evidence of infection (equivocal finding + clinical correlation) • Intraabdominal fluid culture positive for *Escherichia coli*
2/9	Med Unit	PICC inserted
2/10	Med Unit	
2/11	Med Unit	• Fever, hypotension • Blood culture positive for *Klebsiella oxytoca* (MBI)

Knowledge Check #3

What is the IAB date of event (DOE)?

A. 2/6

B. 2/7

C. 2/8

D. 2/11

Date	Location	Elements
2/5		
2/6	ED	• Abdominal pain, nausea, and vomiting
2/7	ED -> Med Unit	
2/8	Med Unit	• Worsening symptoms • Imaging test evidence of infection (equivocal finding + clinical correlation) • Intraabdominal fluid culture positive for *Escherichia coli*
2/9	Med Unit	PICC inserted
2/10	Med Unit	
2/11	Med Unit	• Fever, hypotension • Blood culture positive for *Klebsiella oxytoca* (MBI)

Knowledge Check #3 – Rationale

- **IAB date of event (DOE) is 2/7.**
- The date of event (DOE) is the date the first element used to meet the criterion occurs for the first time within the IWP.
- If the date of event (DOE) is determined to be either of the two days prior to inpatient admission, then the date of event (DOE) will be hospital day (HD) 1.

Date	Location	Elements
2/5		
2/6	ED **First element**	• Abdominal pain, nausea, and vomiting
2/7	ED -> Med Unit (HD 1)	**Date of Event (DOE)**
2/8	Med Unit	• Worsening symptoms • Imaging test evidence of infection (equivocal finding + clinical correlation) • Intraabdominal fluid culture positive for *Escherichia coli*
2/9	Med Unit	PICC inserted
2/10	Med Unit	
2/11	Med Unit	• Fever, hypotension • Blood culture positive for *Klebsiella oxytoca* (MBI)

Knowledge Check #4

Can the 2/11 +BC be deemed a secondary BSI to IAB?

A. No – the organisms in the blood culture and fluid culture do not match.

B. Yes – the organism identified from the blood specimen is used as an element to meet a site-specific criterion.

Date	Location	Elements
2/5		
2/6	ED	• Abdominal pain, nausea, and vomiting
2/7 **DOE**	ED -> Med Unit	
2/8	Med Unit	• Worsening symptoms • Imaging test evidence of infection (equivocal finding + clinical correlation) • Intraabdominal fluid culture positive for *Escherichia coli*
2/9	Med Unit	PICC inserted
2/10	Med Unit	
2/11	Med Unit	• Fever, hypotension • Blood culture positive for *Klebsiella oxytoca* (MBI)

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Knowledge Check #4 – Rationale

- **Yes, the BSI is secondary to IAB**
  - The 2/11 positive blood culture has a collection date in the IAB IWP and is an element that is used to meet IAB criterion 3b (Secondary BSI Scenario 2).
- If an NHSN infection definition can be met using more than one criterion in the IWP, the organisms from the blood and site-specific specimen may not match.
  - IAB 3a is met with the organism from the fluid specimen.
  - IAB 3b is met with the organism from the blood specimen.

Date	Location	Elements
2/5		
2/6	ED	• Abdominal pain, nausea, and vomiting
2/7 **DOE**	ED -> Med Unit	
2/8	Med Unit	• Worsening symptoms • Imaging test evidence of infection (equivocal finding + clinical correlation) • **Intraabdominal fluid culture positive for *Escherichia coli***
2/9	Med Unit	PICC inserted
2/10	Med Unit	
2/11	Med Unit	• Fever, hypotension • **Blood culture positive for *Klebsiella oxytoca* (MBI)**

Case #2 Details, continued

2/12: Infectious Disease consult note – “Continue ceftriaxone for coverage of *Klebsiella oxytoca* bacteremia and *Escherichia coli* intraabdominal infection.”

2/16: Patient develops a fever and chills. Blood cultures are collected and result positive for *Klebsiella oxytoca.*

2/20: Patient develops a fever. Blood cultures are collected and result positive for *Candida albicans*.

2/22: Infectious Disease progress note – “Add antifungal coverage for *Candida albicans* bacteremia, suspected line vs. intraabdominal source.”

Knowledge Check #5

IAB IWP is 2/5 – 2/11

IAB DOE is 2/7

IAB RIT is 2/7 – 2/20 (14-day timeframe; the DOE is day 1 of the RIT)

What is the IAB Secondary BSI attribution period (SBAP)?

A. 2/4 – 2/20

B. 2/5 – 2/21

C. 2/5 – 2/20

D. 2/7 – 2/20

Date	RIT	Elements
2/4		
2/5		
2/6		• Signs/symptoms
2/7 **DOE**	1	
2/8	2	• Positive imaging test • Fluid culture: *E. coli*
2/9	3	PICC inserted
2/10	4	
2/11	5	• BC: *K. oxytoca*
2/12	6	
2/13	7	
2/14	8	
2/15	9	
2/16	10	• BC: *K. oxytoca*
2/17	11	
2/18	12	
2/19	13	
2/20	14	• BC: *C. albicans*
2/21		

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Knowledge Check #5 – Rationale

- **The IAB SBAP is 2/5 – 2/20.**
- The SBAP includes the IWP combined with the RIT.
- The SBAP is 14-17 days in length, depending on the DOE.
- In this case, because the DOE is on the 2nd day of the IWP, the SBAP is 16 days in length – it extends from the first day of the IWP (2/5) through the last day of the RIT (2/20).

Date	RIT	SBAP	Elements
2/4			
2/5		1	
2/6		2	• Signs/symptoms
2/7 **DOE**	1	3	
2/8	2	4	• Positive imaging test • Fluid culture: *E. coli*
2/9	3	5	PICC inserted
2/10	4	6	
2/11	5	7	• BC: *K. oxytoca*
2/12	6	8	
2/13	7	9	
2/14	8	10	
2/15	9	11	
2/16	10	12	• BC: *K. oxytoca*
2/17	11	13	
2/18	12	14	
2/19	13	15	
2/20	14	16	• BC: *C. albicans*
2/21			

Knowledge Check #6

Can the 2/16 +BC be deemed secondary to IAB?

A. Yes

B. No

Date	RIT	SBAP	Elements
2/5		1	
2/6		2	• Signs/symptoms
2/7 **DOE**	1	3	
2/8	2	4	• Positive imaging test • Fluid culture: *E. coli*
2/9	3	5	PICC inserted
2/10	4	6	
2/11	5	7	• BC: *K. oxytoca*
2/12	6	8	
2/13	7	9	
2/14	8	10	
2/15	9	11	
2/16	10	12	• BC: *K. oxytoca*
2/17	11	13	
2/18	12	14	
2/19	13	15	
2/20	14	16	• BC: *C. albicans*

Knowledge Check #6 – Rationale

- **Yes, the 2/16 BSI is secondary to IAB.**
- The 2/16 blood culture has:
  - a collection date in the IAB SBAP

  and
  - an organism identified from the blood specimen (*K. oxytoca*) matches an organism identified from a specimen that was used to meet an IAB criterion
- Secondary BSI Scenario 1 is met.

Date	RIT	SBAP	Elements
2/5		1	
2/6		2	• Signs/symptoms
2/7 DOE	1	3	
2/8	2	4	• Positive imaging test • Fluid culture: *E. coli*
2/9	3	5	PICC inserted
2/10	4	6	
2/11	5	7	• **BC: *K. oxytoca***
2/12	6	8	
2/13	7	9	
2/14	8	10	
2/15	9	11	
2/16	10	12	• **BC: *K. oxytoca***
2/17	11	13	
2/18	12	14	
2/19	13	15	
2/20	14	16	• BC: *C. albicans*

Knowledge Check #7

Can the 2/20 +BC be deemed secondary to IAB?

A. Yes

B. No

Date	RIT	SBAP	Elements
2/5		1	
2/6		2	• Signs/symptoms
2/7 **DOE**	1	3	
2/8	2	4	• Positive imaging test • Fluid culture: *E. coli*
2/9	3	5	PICC inserted
2/10	4	6	
2/11	5	7	• BC: *K. oxytoca*
2/12	6	8	
2/13	7	9	
2/14	8	10	
2/15	9	11	
2/16	10	12	• BC: *K. oxytoca*
2/17	11	13	
2/18	12	14	
2/19	13	15	
2/20	14	16	• BC: *C. albicans*

Knowledge Check #7 – Rationale

- **No, the 2/20 BSI is not secondary to IAB.**
- The 2/20 blood culture has:
  - a collection date in the IAB SBAP

  but
  - the organism identified from the blood specimen (*C. albicans*) does not match an organism identified from a specimen that was used to meet an IAB criterion
- Secondary BSI Scenario 1 is not met.

Date	RIT	SBAP	Elements
2/5		1	
2/6		2	• Signs/symptoms
2/7 DOE	1	3	
2/8	2	4	• Positive imaging test • Fluid culture: *E. coli*
2/9	3	5	PICC inserted
2/10	4	6	
2/11	5	7	• BC: *K. oxytoca*
2/12	6	8	
2/13	7	9	
2/14	8	10	
2/15	9	11	
2/16	10	12	• BC: *K. oxytoca*
2/17	11	13	
2/18	12	14	
2/19	13	15	
2/20	14	16	• BC: *C. albicans*

Knowledge Check #8

Is the 2/20 BSI a CLABSI?

A. Yes

B. No

Date	RIT	SBAP	Elements
2/5		1	
2/6		2	• Signs/symptoms
2/7 **DOE**	1	3	
2/8	2	4	• Positive imaging test • Fluid culture: *E. coli*
2/9	3	5	PICC inserted
2/10	4	6	
2/11	5	7	• BC: *K. oxytoca*
2/12	6	8	
2/13	7	9	
2/14	8	10	
2/15	9	11	
2/16	10	12	• BC: *K. oxytoca*
2/17	11	13	
2/18	12	14	
2/19	13	15	
2/20	14	16	• BC: *C. albicans*

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Knowledge Check #8 – Rationale

- **Yes, the 2/20 BSI is a CLABSI**
  - The 2/11 and 2/16 BSIs were determined to be secondary to IAB
    - BSI RIT is not in place (secondary BSIs do not create a BSI RIT)
  - The 2/20 BSI cannot be assigned as secondary to another site of infection
    - primary BSI (meets LCBI 1 criterion), date of event (DOE) 2/20
  - PICC was inserted 2/9 and is still in place on the BSI DOE 2/20
    - BSI is a CLABSI

Case Summary – Events Overview

Event #1

- **POA IAB with a secondary BSI**
  - DOE: **2/7 (HD 1)**
  - IWP: **2/5 - 2/11**
  - RIT: **2/7 - 2/20**
  - SBAP: **2/5 - 2/20**
  - 2/11 and 2/16 BSI are secondary
  - Org: ***E. coli, K. oxytoca***

Event #2

- **HAI LCBI 1 (primary BSI)**
  - DOE: **2/20 (HD 14)**
  - BSI RIT: **2/20 - 3/5**
  - Org: ***C. albicans***
  - CL present & eligible → **CLABSI**

Secondary BSI Case Study #3

Refer to ENDO – Endocarditis, Chapter 17, p. 17-29

2/1: 62 y/o pt. I.C. presents for her bi-annual cardiology visit post AVR 2022. Patient is noticeably short of breath and somewhat lethargic but says it's because she's still recovering from a bad case of strep throat shared by her grandchildren during their holiday visit. BP is 100/60, temp 99.8F. MD sends IC directly to the hospital OP radiology for CXR suspecting pneumonia. During CXR, pt. becomes dangerously hypotensive and codes; resuscitation efforts are successful, pt. ventilated and transported to ACH ICU under the care of an Intensivist.

2/1: CXR confirms pneumonia, antimicrobials and BP meds initiated, BC collected from recently placed TLC to rule out sepsis, later reported as no growth .

2/4: Cardiologist visits, relays history of prosthetic valve most recent ECHO August 2025 showing no aortic stenosis, small mass on aortic valve of uncertain significance. Recommends ECHO and suggest transfer to Heart Hospital when stable for surgical consult for possible re-do AVR.

2/7: Pt. Extubated to Hi-flow NC; BP low on meds, now mild chest pain. ECHO ordered.

2/9: Temp to 102F, BC x 2 collected from TLC - *Strep pyogenes* (GAS), awaiting ECHO.

2/10: CP persists, fever, new BC x2 TLC - *Strep pyogenes* (GAS), awaiting ECHO.

2/11: Cardiologist visits – detects new aortic valvular regurgitation on auscultation. No ECHO.

2/14: Persistent fever, BC x1 peripheral draw - *Pseudomonas aeruginosa.* Emergent transfer to Heart hospital.

Case #3 Details – Timeline for evidence of infection

2/1: SOB, lethargic, CXR, hypotensive and code.

2/1: Pt. Ventilated, admit to ICU, CXR = pneumonia, antimicrobials and BP meds initiated, BC x1 collected from recently placed TLC, later reported as no growth.

2/4: Cardiologist documents history of 2022 AVR (prosthetic valve). ECHO August 2025 - no aortic stenosis, small mass on aortic valve of uncertain significance.

2/7: Pt. Extubated to Hi-flow NC; BP low on meds, now mild chest pain. ECHO ordered.

2/9: Temp to 102F, BC x 2 collected from TLC -*Strep pyogenes* (GAS), awaiting ECHO.

2/10: CP persists, fever, new BC x2 TLC - *Strep pyogenes* (GAS), awaiting ECHO.

2/11: Cardiologist detects new aortic valvular regurgitation on auscultation. No ECHO.

2/14: Persistent fever, BC x1 peripheral draw - *Pseudomonas aeruginosa;* discharged.

** the case reviewer wants to account for all +BC as secondary BSI to site-specific infection

Knowledge Check # 1
What is the IWP in this case?

1. Help !! I'm unsure
2. 1/31 - 2/14 for PNEU
3. 1/31 - 2/3 for POA
4. 1/31- 2/14 for ENDO

Date		Diagnostic tests	Signs	Culture
1-30	HD -2			
1-31	HD -1			
2-1	Admit HD 1	CXR - PNEU		
2-2				
2-3				
2-4		h/o AVR		
2-5				
2-6				
2-7				
2-8				
2-9			Temp 102F	+BC St. pyogenes X2
2-10			Fever	+BC St. pyogenes X2
2-11		New valve regurgitation	On auscultation	
2-12				
2-13				
2-14	discharge		Fever	+BC Pseudo aeruginosa x1

Knowledge Check # 1
What is the IWP in this case?

1. Help !! I'm unsure
2. 1/30 - 2/14 for PNEU
3. 1/30 - 2/3 for POA
4. **1/30- 2/14 for ENDO**

Date		Diagnostic tests	Signs	Culture	
1-30	HD -2				
1-31	HD -1				
2-1	Admit HD 1				
2-2					
2-3					
2-4					
2-5					
2-6					
2-7					
2-8					
2-9			Fever	+BC St. pyogenes	X2
2-10			Fever	+BC St. pyogenes	X2
2-11		On auscultation- New valve regurgitation			
2-12					
2-13					
2-14					

Rationale: Evidence of infection consistent with endocarditis; first diagnostic test 2/9. The IWP for ENDO is 21 days (date of first diagnostic test, 10 days prior and 10 days following – or until discharge whichever comes first).

Knowledge Check # 2
What Site-Specific Infection criteria is met?

1. Help !! I'm unsure
2. ENDO 4
3. ENDO 5
4. ENDO 6
5. PNEU

Date		Diagnostic tests	Signs	Culture
1-30	HD -2			
1-31	HD -1			
2-1	Admit HD 1	CXR - PNEU		
2-2				
2-3				
2-4		h/o AVR		
2-5				
2-6				
2-7				
2-8				
2-9			Temp 102F	+BC St. pyogenes X2
2-10			Fever	+BC St. pyogenes X2
2-11		New valve regurgitation	On auscultation	
2-12				
2-13				
2-14	discharge		Fever	+BC Pseudo aeruginosa x1

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The Scenarios for Secondary BSI Attribution

Scenario 1

At least one organism from the blood specimen matches an organism identified from the site-specific specimen that is used as an element to meet the NHSN site-specific infection criterion

AND

the blood specimen is collected during the secondary BSI attribution period (infection window period + repeat infection timeframe).

Scenario 2

An organism identified in the blood specimen is an element that is used to meet a NHSN site-specific infection criterion

AND

therefore, is collected during the site-specific infection window period.

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Endocarditis of a natural or prosthetic heart valve must meet at least ***one*** of the following criteria:

ENDO 1[1]
Organism(s) identified from cardiac vegetation[2], cardiac tissue, explanted prosthetic valve or sewing ring, ascending aortic graft (with evidence of valve involvement[3]), endovascular intracardiac implantable electronic device (CIED), or arterial embolus by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).
ENDO 2
Endocarditis[4] seen on histopathologic examination of cardiac vegetation, cardiac tissue, explanted prosthetic valve, or sewing ring, ascending aortic graft (with evidence of valve involvement[3]), endovascular intracardiac implantable electronic device (CIED), or embolus by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).
ENDO 3
Intraoperative evidence of endocarditis on gross anatomical exam during a cardiac operative procedure.
ENDO 4

At least ***one*** of the following echocardiographic or cardiac CT imaging test evidence of endocarditis[5]:	**OR**	At least **one** of the following 18 F-fluorodeoxyglucose positron emission tomography/computed tomography (FDG PET/CT) imaging test(s) shows evidence of endocarditis[5]:
i. vegetation on cardiac valve or supporting structures[2] ii. valvular/leaflet perforation iii. valvular/leaflet aneurysm iv. perivalvular or peri graft abscess v. pseudoaneurysm vi. intracardiac fistula vii. significant new valvular regurgitation as compared with previous imaging (on echocardiography only)[6] viii. new partial dehiscence of prosthetic valve (compared with previous imaging)		ix. abnormal metabolic activity involving a native or prosthetic valve[7], ascending aortic graft (with evidence of valve involvement), intracardiac device leads or other intracardiac prosthetic material >3 months after cardiac surgery. x. abnormal metabolic activity ≤3 months after implantation of prosthetic valve[7], ascending aortic graft (with evidence of valve involvement), intracardiac device leads or other intracardiac prosthetic material.

AND

At least *one* of the following:

AND

At least *one* of the following:

a. typical infectious endocarditis organism(s): *Staphylococcus aureus, Staphylococcus lugdunensis, Enterococcus faecalis*, all streptococcal species (except for *Streptococcus pneumoniae* and *Streptococcus pyogenes*), *Granulicatella* spp., *Abiotrophia spp., Gemella spp.,* HACEK group microorganisms *(Haemophilus* species, *Aggregatibacter actinomycetemcomitans, Cardiobacterium hominis, Eikenella corrodens,* and *Kingella kingae*) identified from ≥2 matching blood collections drawn on separate occasions with no more than 1 calendar day between specimen collection by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).

b. typical infectious endocarditis organism(s) in the presence of prosthetic material: *coagulase-negative Staphylococci, Corynebacterium striatum, Corynebacterium jeikeium, Serratia marcescens, Pseudomonas aeruginosa, Cutibacterium acnes,* non-tuberculous mycobacteria, and *Candida* spp. identified from ≥2 matching blood collections drawn on separate occasions with no more than 1 calendar day between specimen collection by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).

c. non-typical infectious endocarditis organism(s) identified from ≥3 matching blood collections drawn on separate occasions with no more than 1 calendar day between specimen collection by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).

d. *Coxiella burnetii* identified by anti-phase I IgG antibody titer >1:800 or identified from a single

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ENDO 5

At least ***three*** of the following ***(Note: Meaning one element from i, ii, iii, iv, or v and only one condition within each element can be used.)***

i. prior endocarditis, prosthetic valve, previous valve repair, endovascular cardiac implantable electronic devices (CIED), uncorrected congenital heart disease[8], more than mild valvular regurgitation or valvular stenosis of any etiology, hypertrophic obstructive cardiomyopathy, or known IV drug use[9].

ii. fever (>38.0°C)

iii. new valvular regurgitation on auscultation (when an echocardiogram is not available).

iv. vascular phenomena: major arterial emboli (specifically, embolic stroke, renal infarct, splenic abscess, cerebral abscess, digital ischemic/gangrene from embolic source), septic pulmonary infarcts, mycotic aneurysm (documented by imaging, seen in surgery, or described in gross pathological specimen), intracranial hemorrhage, conjunctival hemorrhages, or Janeway's lesions documented.

v. immunologic phenomena: immune complex-mediated glomerulonephritis[10] (documented in medical record), Osler's nodes, Roth's spots, or positive rheumatoid factor.

AND

At least *one* of the following:

a. typical infectious endocarditis organism(s): *Staphylococcus aureus, Staphylococcus lugdunensis, Enterococcus faecalis*, all Streptococcal species (except for *Streptococcus. pneumoniae* and *Streptococcus pyogenes*), *Granulicatella* spp., *Abiotrophia* spp., *Gemella* spp., HACEK microorganisms group *(Haemophilus* species, *Aggregatibacter actinomycetemcomitans, Cardiobacterium hominis, Eikenella corrodens,* and *Kingella kingae*) identified from ≥2 matching blood collections drawn on separate occasions with no more than 1 calendar day between specimens by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).

b. typical infectious endocarditis organism(s) in the presence of prosthetic material: *coagulase negative staphylococci, Corynebacterium striatum; C. jeikeium, Serratia marcescens, Pseudomonas aeruginosa, Cutibacterium acnes, non-tuberculous mycobacteria, and Candida spp.* identified from ≥2 matching blood collections drawn on separate occasions with no more than 1 calendar day between specimens by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).

c. non-typical infectious endocarditis organism(s) identified from ≥3 matching blood collections drawn on separate occasions with no more than 1 calendar day between specimen collections by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).

d. *Coxiella burnetii* identified by anti-phase I IgG antibody titer >1:800 or identified from blood by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).

e. indirect immunofluorescence assays (IFA) for detection of IgM and IgG antibodies to *Bartonella henselae* or *Bartonella quintana* with IgG titer >1:800.

f. *Coxiella burnetii*, *Bartonella* species, or *Tropheryma whipplei* identified in blood by PCR or other non-culture-based testing method.

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for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).

b. typical infectious endocarditis organism(s) in the presence of prosthetic material: *coagulase negative staphylococci, Corynebacterium striatum; C. jeikeium, Serratia marcescens, Pseudomonas aeruginosa, Cutibacterium acnes, non-tuberculous mycobacteria, and Candida spp.* identified from ≥2 matching blood collections drawn on separate occasions with no more than 1 calendar day between specimens by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).

c. non-typical infectious endocarditis organism(s) identified from ≥3 matching blood collections drawn on separate occasions with no more than 1 calendar day between specimen collections by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).

d. *Coxiella burnetii* identified by anti-phase I IgG antibody titer >1:800 or identified from blood by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).

e. indirect immunofluorescence assays (IFA) for detection of IgM and IgG antibodies to *Bartonella henselae* or *Bartonella quintana* with IgG titer >1:800.

f. *Coxiella burnetii*, *Bartonella* species, or *Tropheryma whipplei* identified in blood by PCR or other non-culture-based testing method.

ENDO 6

At least ***one*** of the following echocardiographic or cardiac CT imaging test evidence of endocarditis[5]: i. vegetation on cardiac valve or supporting structures[2] ii. perivalvular or peri graft abscess iii. new partial dehiscence of prosthetic valve iv. valvular/leaflet perforation v. valvular/leaflet aneurysm vi. pseudoaneurysm vii. intracardiac fistula viii. significant new valvular regurgitation as compared with previous imaging (on echocardiography only)[6]	**OR**	At least one of the following 18 F-fluorodeoxyglucose positron emission tomography/computed tomography (FDG PET/CT) imaging test evidence of endocarditis[5]: ix. abnormal metabolic activity involving a native or prosthetic valve[7], ascending aortic graft (with accompanying evidence of valve involvement), intracardiac device leads or other intracardiac prosthetic material >3 months after cardiac surgery. x. abnormal metabolic activity ≤3 months implantation of prosthetic valve[7], ascending aortic graft (with evidence of valve involvement), intracardiac device leads or other intracardiac prosthetic material.

AND

At least one condition from three of the following elements (Note: Meaning one element from a, b, c, d, or e and only one condition within each element can be used.):

a. prior endocarditis, prosthetic valve, previous valve repair, endovascular cardiac implantable

AND

At least one condition from three of the following elements (Note: Meaning one element from a, b, c, d, or e and only one condition within each element can be used.):

a. prior endocarditis, prosthetic valve, previous valve repair, endovascular cardiac implantable electronic devices (CIED), uncorrected congenital heart disease[8], more than mild valvular regurgitation or valvular stenosis of any etiology, hypertrophic obstructive cardiomyopathy, or known IV drug use[9]

b. fever (>38.0°C)

c. vascular phenomena: major arterial emboli (specifically, embolic stroke, renal infarct, splenic abscess, cerebral abscess, digital ischemic/gangrene from embolic source), septic pulmonary infarcts, mycotic aneurysm (documented by imaging, seen in surgery, or described in gross pathological specimen), intracranial hemorrhage, conjunctival hemorrhages, or Janeway's lesions documented.

d. immunologic phenomena: immune complex-mediated glomerulonephritis[10] (documented in medical record), Osler's nodes, Roth's spots, or positive rheumatoid factor.

e. identification of organism(s) from the blood by at least ***one*** of the following methods:
   - recognized pathogen(s) identified from blood by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).
   - same common commensal organism(s) identified from ≥2 blood collections drawn on separate occasions on the same or consecutive days by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).

ENDO – appendix

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ENDO 7

One condition from each of the following elements (a, b, c, d, e, and f):

a. prior endocarditis, prosthetic valve, previous valve repair, endovascular cardiac implantable electronic devices (CIED), uncorrected congenital heart disease[8], more than mild valvular regurgitation or valvular stenosis of any etiology, hypertrophic obstructive cardiomyopathy, or known IV drug use[9].

b. fever (>38.0°C)

c. new valvular regurgitation on auscultation (when an echocardiogram is not available).

d. vascular phenomena: major arterial emboli (specifically, embolic stroke, renal infarct, splenic abscess, cerebral abscess, digital ischemic/gangrene from embolic source), septic pulmonary infarcts, mycotic aneurysm (documented by imaging, seen in surgery, or described in gross pathological specimen), intracranial hemorrhage, conjunctival hemorrhages, or Janeway's lesions documented.

e. immunologic phenomena: immune complex-mediated glomerulonephritis[10] (documented in medical record), Osler's nodes, Roth's spots, or positive rheumatoid factor.

f. identification of organism(s) from the blood by at least ***one*** of the following methods:
   - recognized pathogen(s) identified from blood by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).
   - same common commensal organism(s) identified from ≥2 blood collections drawn on separate occasions on the same or consecutive days by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).

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ENDO Footnotes

1. The following are also eligible to ENDO 1:
   - Positive culture from a pacemaker/defibrillator lead or ventricular assist device (VAD) components within the heart.
2. Cardiac vegetation can be found on a cardiac valve, endovascular CIED (including pacemaker/defibrillator leads), explanted prosthetic valve or sewing ring, or ventricular assist device (VAD) components within the heart.
3. "with evidence of valve involvement" is defined as **one** of the following:
   - Echocardiography and/or cardiac CT showing aortic valve vegetation, valvular/leaflet perforation, valvular/leaflet aneurysm.
   - Significant new aortic valve regurgitation on echocardiography as compared with previous imaging.
   - New partial dehiscence of prosthetic aortic valve as compared with previous imaging.
   - Positron emission computed tomography with 18F-FDG: abnormal metabolic activity involving prosthetic aortic valve (implanted >3 months ago) or involving native aortic valve.
   - Aortic valve vegetation, valvular/leaflet perforation, valvular/leaflet aneurysm, or partial dehiscence of prosthetic aortic valve documented by direct inspection during heart surgery.
4. Endocarditis is defined as:
   - Active endocarditis—vegetations, leaflet destruction, or adjacent tissue of native or prosthetic valves showing variable degrees of inflammatory cell infiltrates and healing.
   - Acute endocarditis—vegetations or cardiac/aortic tissue lesions of native or prosthetic valves showing active inflammation without significant healing or organizational change.
   - Subacute/chronic endocarditis—vegetations or cardiac/aortic tissue lesions of native or prosthetic valves demonstrating evidence of healing or attempted healing: maturing granulation tissue and fibrosis showing variable mononuclear cell infiltration and/or calcification.
5. Which if equivocal is supported by clinical correlation (specifically, physician or physician designee documentation of antimicrobial treatment for endocarditis).
6. "Significant new valvular regurgitation" is defined as moderate or severe valvular regurgitation. This imaging finding is valve-specific and cannot be pre-existing. Worsening of this condition is **not** eligible for use (ex. mild to moderate tricuspid regurgitation).
7. For prosthetic valve endocarditis (PVE): intense, focal/multifocal, or heterogeneous FDG uptake patterns; for native valve endocarditis and cardiac device leads, any abnormal uptake pattern.
8. Includes cyanotic CHD (tetralogy of Fallot, univentricular heart, complete transposition, truncus arteriosus, hypoplastic left heart); endocardial cushion defects; ventricular septal defect; left-

Knowledge Check # 2
What Site-Specific Infection criteria is met?

1. Help !! I'm unsure
2. ENDO 4
3. **ENDO 5**
4. ENDO 6
5. PNEU

Date		Diagnostic tests	Signs	Culture
1-30	HD -2			
1-31	HD -1			
2-1	Admit HD 1	CXR - PNEU		
2-2				
2-3				
2-4		h/o AVR		
2-5				
2-6				
2-7				
2-8				
2-9			Temp 102F	+BC St. pyogenes X2
2-10			Fever	+BC St. pyogenes X2
2-11		New valve regurgitation	On auscultation	
2-12				
2-13				
2-14	discharge		Fever	+BC Pseudo aeruginosa x1

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Knowledge Check # 2
What Site-Specific Infection criteria is met?

✓ ENDO 5

ENDO 5

At least ***three*** of the following ***(Note: Meaning one element from i, ii, iii, iv, or v and only one condition within each element can be used.)***

i. prior endocarditis, prosthetic valve, previous valve repair, endovascular cardiac implantable electronic devices (CIED), uncorrected congenital heart disease[8], more than mild valvular regurgitation or valvular stenosis of any etiology, hypertrophic obstructive cardiomyopathy, or known IV drug use[9].

ii. fever (>38.0°C)

iii. new valvular regurgitation on auscultation (when an echocardiogram is not available).

iv. vascular phenomena: major arterial emboli (specifically, embolic stroke, renal infarct, splenic abscess, cerebral abscess, digital ischemic/gangrene from embolic source), septic pulmonary infarcts, mycotic aneurysm (documented by imaging, seen in surgery, or described in gross pathological specimen), intracranial hemorrhage, conjunctival hemorrhages, or Janeway's lesions documented.

v. immunologic phenomena: immune complex-mediated glomerulonephritis[10] (documented in medical record), Osler's nodes, Roth's spots, or positive rheumatoid factor.

AND

At least *one* of the following:

a. typical infectious endocarditis organism(s): *Staphylococcus aureus, Staphylococcus lugdunensis, Enterococcus faecalis*, all Streptococcal species (except for *Streptococcus. pneumoniae* and *Streptococcus pyogenes*), *Granulicatella* spp., *Abiotrophia* spp., *Gemella* spp., HACEK microorganisms group *(Haemophilus* species, *Aggregatibacter actinomycetemcomitans, Cardiobacterium hominis, Eikenella corrodens,* and *Kingella kingae*) identified from ≥2 matching blood collections drawn on separate occasions with no more than 1 calendar day between specimens by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).

b. typical infectious endocarditis organism(s) in the presence of prosthetic material: *coagulase negative staphylococci, Corynebacterium striatum; C. jeikeium, Serratia marcescens, Pseudomonas aeruginosa, Cutibacterium acnes, non-tuberculous mycobacteria, and Candida spp.* identified from ≥2 matching blood collections drawn on separate occasions with no more than 1 calendar day between specimens by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).

c. non-typical infectious endocarditis organism(s) identified from ≥3 matching blood collections drawn on separate occasions with no more than 1 calendar day between specimen collections by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).

d. *Coxiella burnetii* identified by anti-phase I IgG antibody titer >1:800 or identified from blood by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).

e. indirect immunofluorescence assays (IFA) for detection of IgM and IgG antibodies to *Bartonella henselae* or *Bartonella quintana* with IgG titer >1:800.

f. *Coxiella burnetii*, *Bartonella* species, or *Tropheryma whipplei* identified in blood by PCR or other non-culture-based testing method.

Knowledge Check # 3
What is the DOE for ENDO 5?

1. Help!! I'm unsure
2. 2/1
3. 2/4
4. 2/9
5. 2/11

IWP

Date		Diagnostic tests	Signs	Culture
1-30	HD -2			
1-31	HD -1			
2-1	Admit HD 1	CXR - PNEU		
2-2				
2-3				
2-4		h/o AVR		
2-5				
2-6				
2-7				
2-8				
2-9			Temp 102F	+BC St. pyogenes X2
2-10			Fever	+BC St. pyogenes X2
2-11		New valve regurgitation	On auscultation	
2-12				
2-13				
2-14	discharge		Fever	+BC Pseudo aeruginosa x1

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Knowledge Check # 3
What is the DOE for ENDO 5?

1. Help!! I'm unsure
2. 2/1
3. 2/4
4. **2/9** ✓
5. 2/11

Rationale: ENDO footnote 9: 5i should not be used to set the DOE. The first eligible element used to meet ENDO 5 is on 2/9 making this the date of event

Date		Diagnostic tests	Signs	Culture	
1-30	HD -2				
1-31	HD -1				
2-1	Admit HD 1	CXR - PNEU			
2-2					
2-3					
2-4		h/o AVR			
2-5					
2-6					
2-7					
2-8					
2-9			Temp 102F	+BC St. pyogenes X2	
2-10			Fever	+BC St. pyogenes X2	
2-11		New valve regurgitation	On auscultation		
2-12					
2-13					
2-14			Fever	+BC Pseudo aeruginosa	

Knowledge Check # 4
What is the RIT in this case?

1. Help !! I'm unsure
2. 1/31 - 2/5 for PNEU
3. 2/1 - 2/7 for ENDO
4. 2/9 - 2/14 for ENDO

Date		Diagnostic tests	Signs	Culture	RIT
1-30	HD -2				
1-31	HD -1				
2-1	Admit HD 1	CXR - PNEU			
2-2					
2-3					
2-4		h/o AVR			
2-5					
2-6					
2-7					
2-8					
2-9			Temp 102F	+BC St. pyogenes X2	
2-10			Fever	+BC St. pyogenes X2	
2-11		New valve regurgitation	On auscultation		
2-12					
2-13					
2-14	discharge		Fever	+BC Pseudo aeruginosa x1	

Knowledge Check # 4
What is the RIT in this case?

1. Help !! I'm unsure
2. 2/1 - 2/14for PNEU
3. 2/1 - 2/14 for ENDO
4. **2/9 - 2/14 for ENDO**

Date		Diagnostic tests	Signs	Culture	RIT
1-30	HD -2				
1-31	HD -1				
2-1	Admit HD 1	CXR - PNEU			
2-2					
2-3					
2-4		h/o AVR			
2-5					
2-6					
2-7					
2-8					
2-9	DOE		Temp 102F	+BC St. pyogenes X2	
2-10			Fever	+BC St. pyogenes X2	
2-11		New valve regurgitation	On auscultation		
2-12					
2-13					
2-14	discharge		Fever	+BC Pseudo aeruginosa x1	

Rationale: The DOE sets the RIT – the RIT for Endocarditis (ENDO) is extended to include the remainder of the patient's current admission (patient is discharged 2-14)

Knowledge Check # 5
What is the SBAP in this case?

1. Help !! I'm unsure
2. 2/1 - 2/14 for PNEU
3. 1/30 - 2/14 for ENDO
4. 2/4 - 2/14 for ENDO

IWP

Date		Diagnostic tests	Signs	Culture	RIT
1-30	HD -2				
1-31	HD -1				
2-1	Admit HD 1	CXR - PNEU			
2-2					
2-3					
2-4		h/o AVR			
2-5					
2-6					
2-7					
2-8					
2-9	DOE		Temp 102F	+BC St. pyogenes X2	
2-10			Fever	+BC St. pyogenes X2	
2-11		New valve regurgitation	On auscultation		
2-12					
2-13					
2-14	discharge		Fever	+BC Pseudo aeruginosa x1	

Knowledge Check # 5
What is the SBAP in this case?

1. Help !! I'm unsure
2. 1/31 - 2/14 for PNEU
3. **1/30 - 2/14 for ENDO**
4. 2/4 - 2/14 for ENDO

Rationale: When meeting the Endocarditis (ENDO) definition, the secondary BSI attribution period includes the 21-day infection window period and all subsequent days of the patient's current admission.

Date		Diagnostic tests	Signs	Culture	RIT	SBAP
1-30	HD -2					
1-31	HD -1					
2-1	Admit HD 1	CXR - PNEU				
2-2						
2-3						
2-4		h/o AVR				
2-5						
2-6						
2-7						
2-8						
2-9	DOE		Temp 102F	+BC St. pyogenes X2		
2-10			Fever	+BC St. pyogenes X2		
2-11		New valve regurgitation	On auscultation			
2-12						
2-13						
2-14	discharge		Fever	+BC Pseudo aeruginosa x1		

Knowledge Check # 6
Is there a Secondary BSI for this case?

1. Ummm…what????
2. Yes – the +BC source is pneumonia
3. Yes – *Strep pyogenes* and *Pseudomonas aeruginosa*
4. Yes – only *Strep pyogenes*
5. Yes – only *Pseudomonas aeruginosa*

Date		Diagnostic tests	Signs	Culture	RIT	SBAP
1-30	HD -2					
1-31	HD -1					
2-1	Admit HD 1	CXR - PNEU				
2-2						
2-3						
2-4		h/o AVR				
2-5						
2-6						
2-7						
2-8						
2-9	DOE		Temp 102F	+BC St. pyogenes X2		
2-10			Fever	+BC St. pyogenes X2		
2-11		New valve regurgitation	On auscultation			
2-12						
2-13						
2-14	discharge		Fever	+BC Pseudo aeruginosa x1		

Knowledge Check # 6
Is there a Secondary BSI for this case?

1. Ummm…what????
2. Yes – the +BC source is pneumonia
3. Yes – *Strep pyogenes* and *Pseudomonas aeruginosa*
4. **Yes – only *Strep pyogenes***
5. Yes – only *Pseudomonas aeruginosa*

Date		Diagnostic tests	Signs	Culture	RIT	SBAP
1-30	HD -2					
1-31	HD -1					
2-1	Admit HD 1	CXR - PNEU				
2-2						
2-3						
2-4		h/o AVR				
2-5						
2-6						
2-7						
2-8						
2-9	DOE		Temp 102F	+BC St. pyogenes X2		
2-10			Fever	+BC St. pyogenes X2		
2-11		New valve regurgitation	On auscultation			
2-12						
2-13						
2-14	discharge		Fever	+BC Pseudo aeruginosa x1		

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Knowledge Check # 6
Is there a Secondary BSI for this case?

✔ **Yes – only *Strep pyogenes***

Rationale: Secondary BSI

Scenario 2: An organism identified in the blood specimen is an element that is used to meet the NHSN site-specific infection criterion and therefore is collected during the site-specific infection window period.

IWP

Date		Diagnostic tests	Signs	Culture	RIT	SBAP
1-30	HD -2					
1-31	HD -1					
2-1	Admit HD 1	CXR - PNEU				
2-2						
2-3						
2-4		h/o AVR				
2-5						
2-6						
2-7						
2-8						
2-9	DOE		Temp 102F	+BC St. pyogenes X2		
2-10			Fever	+BC St. pyogenes X2		
2-11		New valve regurgitation	On auscultation			
2-12						
2-13						
2-14	discharge		Fever	+BC Pseudo aeruginosa x1		

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Knowledge Check # 6
Is there a Secondary BSI for this case?

✔ **Yes – only *Strep pyogenes***

Rationale: As a result of the lengthy secondary BSI attribution period, secondary BSI pathogen assignment for ENDO is limited to organism(s) identified in blood specimen that match the organism(s) used to meet the ENDO definition.

Date		Diagnostic tests	Signs	Culture	RIT	SBAP
1-30	HD -2					
1-31	HD -1					
2-1	Admit HD 1	CXR - PNEU				
2-2						
2-3						
2-4		h/o AVR				
2-5						
2-6						
2-7						
2-8						
2-9	DOE		Temp 102F	+BC St. pyogenes X2		
2-10			Fever	+BC St. pyogenes X2		
2-11		New valve regurgitation	On auscultation			
2-12						
2-13						
2-14	discharge		Fever	+BC Pseudo aeruginosa x1		

Knowledge Check # 7
What about the 2-14 +BC?

1. Ummm…what????
2. The patient has a prosthetic valve; apply ENDO 5 b
3. The 2/14 +BC are in the SBAP so scooped into the 2nd BSI determination
4. The 2/14 +BC is investigated as a primary CLABSI

Date		Diagnostic tests	Signs	Culture	RIT	SBAP
1-30	HD -2					
1-31	HD -1					
2-1	Admit HD 1	CXR - PNEU				
2-2						
2-3						
2-4		h/o AVR				
2-5						
2-6						
2-7						
2-8						
2-9	DOE		Temp 102F	+BC St. pyogenes X2		
2-10			Fever	+BC St. pyogenes X2		
2-11		New valve regurgitation	On auscultation			
2-12						
2-13						
2-14	discharge		Fever	+BC Pseudo aeruginosa x1		

Knowledge Check # 7
What about the 2-14 +BC?

1. Ummm…what????
2. The patient has a prosthetic valve; apply ENDO 5 b
3. The 2/12 +BC are in the SBAP so scooped into the 2nd BSI determination
4. **The 2/14 +BC is investigated as a primary CLABSI**

Date		Diagnostic tests	Signs	Culture	RIT	SBAP
1-30	HD -2					
1-31	HD -1					
2-1	Admit HD 1	CXR - PNEU				
2-2						
2-3						
2-4		h/o AVR				
2-5						
2-6						
2-7						
2-8						
2-9	DOE		Temp 102F	+BC St. pyogenes X2		
2-10			Fever	+BC St. pyogenes X2		
2-11		New valve regurgitation	On auscultation			
2-12						
2-13						
2-14	discharge		Fever	+BC Pseudo aeruginosa x1		

Knowledge Check # 7
What about the 2-14 +BC?

The 2/14 +BC is investigated as a primary CLABSI

Rationale: The 2/14 blood culture organism Pseudomonas aeruginosa is not a match to the blood culture organism *Strep pyogenes* and therefore is not 'scooped' into the existing secondary BSI determination. A single +BC for *Pseudomonas aeruginosa* can't meet ENDO criteria. If the 2/14 blood culture cannot be associated to a site- specific infection other than ENDO, it is investigated as a primary BSI (CLABSI) meeting LCBI 1 definition.

Date		Diagnostic tests	Signs	Culture	RIT	SBAP
1-30	HD -2					
1-31	HD -1					
2-1	Admit HD 1	CXR - PNEU				
2-2						
2-3						
2-4		h/o AVR				
2-5						
2-6						
2-7						
2-8						
2-9	DOE		Temp 102F	+BC St. pyogenes X2		
2-10			Fever	+BC St. pyogenes X2		
2-11		New valve regurgitation	On auscultation			
2-12						
2-13						
2-14	discharge		Fever	+BC Pseudo aeruginosa x1		

Knowledge Check # 7
****BONUS*****
Is the 2-14 +BC a CLABSI?

✓1. Yes

2. No

Rationale: The 2-14 Ps. Aeruginosa blood culture meets LCBI 1 criteria for a primary BSI determination. The central line was placed 2-1 and remains in place on 2-14 making the event a HAI CLABSI

Date		Diagnostic tests	Signs	Culture	RIT	SBAP
1-30	HD -2					
1-31	HD -1					
2-1	Admit HD 1	CXR - PNEU				
2-2						
2-3						
2-4		h/o AVR				
2-5						
2-6						
2-7						
2-8						
2-9	DOE		Temp 102F	+BC St. pyogenes X2		
2-10			Fever	+BC St. pyogenes X2		
2-11		New valve regurgitation	On auscultation			
2-12						
2-13						
2-14	discharge		Fever	+BC Pseudo aeruginosa x1		

Case Summary – Events Overview

Event #1

- **HAI ENDO with Secondary BSI**
  - DOE: 2/9 **(HD 9)**
  - IWP: 1/31 - 2/14
  - RIT: 2/9 - 2/14
  - SBAP: 1/31 - 2/14
  - Org: *Strep pyogenes*

Event #2

- **LCBI 1 (HAI CLABSI)**
  - DOE: 2/14 **(HD14)**
  - TLC placed 2/1, in use to discharge; DOE is central line day 14
  - Org: *Pseudomonas aeruginosa*

Thank you.

For any questions or concerns, contact the NHSN Helpdesk.

- **NHSN-ServiceNow** to submit questions to the NHSN Help Desk.
- Access the portal at **https://servicedesk.cdc.gov/nhsncsp**.
- If you do not have a SAMS login or are unable to access ServiceNow, you can email the NHSN Help Desk at nhsn@cdc.gov.

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