Patient Safety Component Making the HAI Call: Identifying Healthcare-associated Infections

2026 NHSN PSC Annual Training

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March 31, 2026

Objectives

By the end of this session, participants will be able to

- Define the key concepts outlined in Chapter 2: Identifying Healthcare-associated Infections (HAI) for NHSN Surveillance.
- Apply NHSN HAI surveillance definitions and guidance to case studies.

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Abbreviations used in HAI presentation

NHSN – National Healthcare Safety Network

HAI – Healthcare-associated Infection

IWP – Infection Window Period

DOE – Date of Event

POA – Present on Admission

LOA – Location of Attribution

RIT – Repeat Infection Timeframe

SBAP – Secondary Bloodstream infection (BSI) Attribution Period

BSI – Bloodstream infection

UTI – Urinary tract infection

PNEU – Pneumonia

ENDO – Endocarditis

BONE – Osteomyelitis

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Abbreviations used in HAI presentation, continued

SA – Spinal abscess/infection

IAB – Intraabdominal infection

SINU – Sinusitis

MEN – Meningitis

SUTI – Symptomatic urinary tract infection

HD – hospital day

S/S – signs/symptoms

T – temperature

CFU/ml – colony forming units per milliliter

BC – blood culture

CSF – cerebrospinal fluid

MRSA – methicillin-resistant *Staphylococcus aureus*

VRE – vancomycin-resistant *Enterococcus*

2026 NHSN Resources

- Chapter 2: Identifying Healthcare-associated Infections (HAI) for NHSN Surveillance
  - https://www.cdc.gov/nhsn/pdfs/pscmanual/2psc_identifyinghais_nhsncurrent.pdf
- Chapter 16: General Key Terms
  - https://www.cdc.gov/nhsn/pdfs/pscmanual/16psckeyterms_current.pdf
- Miscellaneous Frequently Asked Questions (FAQs)
  - https://www.cdc.gov/nhsn/faqs/faqs-miscellaneous.html
- Chapter 17: CDC/NHSN Surveillance Definitions for Specific Types of Infections
  - https://www.cdc.gov/nhsn/pdfs/pscmanual/17pscnosinfdef_current.pdf
- 2026 Patient Safety Component Manual
  - https://www.cdc.gov/nhsn/pdfs/pscmanual/pscmanual_current.pdf

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NHSN Site-specific Infection Definitions

Structure of NHSN HAI Site-specific Infection Definitions

- NHSN HAI site-specific definitions have a basic structure:

  NAME - Body Site/Type of infection
  Instruction for meeting the infection definition
  1. Criterion 1
  2. Criterion 2
  3. Criterion 3

- Criteria are composed of elements:
  - Signs and symptoms
  - Positive diagnostic tests
    - laboratory specimen collection
    - imaging test
    - procedure or exam

Site-specific Infection Definition - Example

SA – Spinal abscess/infection (spinal abscess, spinal subdural or epidural infection)

Spinal abscess/infection must meet at least ***one*** of the following criteria:

1. Patient has organism(s) identified from abscess or purulent material found in the spinal epidural or subdural space by a culture or non-culture based microbiologic testing method — Criterion 1: diagnostic test - laboratory specimen collection
2. Patient has an abscess or other evidence of spinal infection on gross anatomic or histopathologic exam — Criterion 2: diagnostic test – procedure or exam
3. Patient has at least ***one*** of the following localized signs or symptoms: fever, back pain or tenderness, radiculitis, paraparesis, or paraplegia — Criterion 3: signs/symptoms

   And at least ***one*** of the following:

   a. Organism(s) identified from blood

      AND

      Imaging test evidence definitive for spinal abscess/infection — Criterion 3a: diagnostic tests – laboratory specimen collection and imaging test

   b. Imaging test evidence definitive for spinal abscess/infection — Criterion 3b: diagnostic test – imaging test

Meeting a Site-specific Infection Definition

- Must meet at least one of the criteria
- Must meet all elements of the specific criterion

  Example: SA-Spinal abscess/infection, must meet at least one criterion:

  Criterion 1 – Single element: diagnostic test (laboratory)

  or

  Criterion 2 - Single element: diagnostic test (procedure/exam)

  or

  Criterion 3a – Multiple elements: at least one sign/symptom plus two diagnostic tests (laboratory AND imaging)

  or

  Criterion 3b – Multiple elements: at least one sign/symptom plus single diagnostic test (imaging)

- **Must meet Chapter 2 guidance for identifying HAIs**

Today's Topic: Applying Chapter 2 Guidance

Chapter 2: Identifying Healthcare-associated Infections (HAI) for NHSN Surveillance

- Purpose – to standardize the classification of infection events using the NHSN site-specific surveillance definitions
- Chapter 2 guidance applies to:
  - Bloodstream Infection (BSI) – Chapter 4
  - Pneumonia (PNEU) – Chapter 6
  - Urinary Tract Infection (UTI) – Chapter 7
  - CDC/NHSN Surveillance Definitions for Specific Types of Infections – Chapter 17

- Chapter 2 guidance does NOT apply to:
  - Surgical Site Infection (SSI) – Chapter 9
  - Ventilator-associated Event (VAE) – Chapter 10
  - Laboratory-Identified (LabID) Event – Chapter 12
  - Pediatric Ventilator-associated Event (PedVAE) – Chapter 11

General Instructions

Patients

- Include all patients in an inpatient location in:
  - All surveillance events designated in the monthly reporting plan
  - Denominator counts - patient days and device days
- Do not exclude:
  - Hospice, palliative, and comfort care patients
  - Observation patients admitted to an inpatient location
  - Newborns

- All patients cared for in an inpatient location are at risk for being given a healthcare-associated infection.

Specimens

- Exclude:
  - Specimens collected during post-mortem examination/autopsy
    - Exceptions:
      - Brain tissue or dura specimen obtained during autopsy for meeting intracranial infection (IC) definition (criteria 3a and 4a)
      - Lung tissue obtained by transthoracic or transbronchial biopsy immediately after death for meeting pneumonia (PNEU) definition
  - Specimens collected from organ donation patients:
    - When the specimen is collected on or after the date of documentation of evidence of consent

      AND
    - The patient is being supported for organ donation purposes

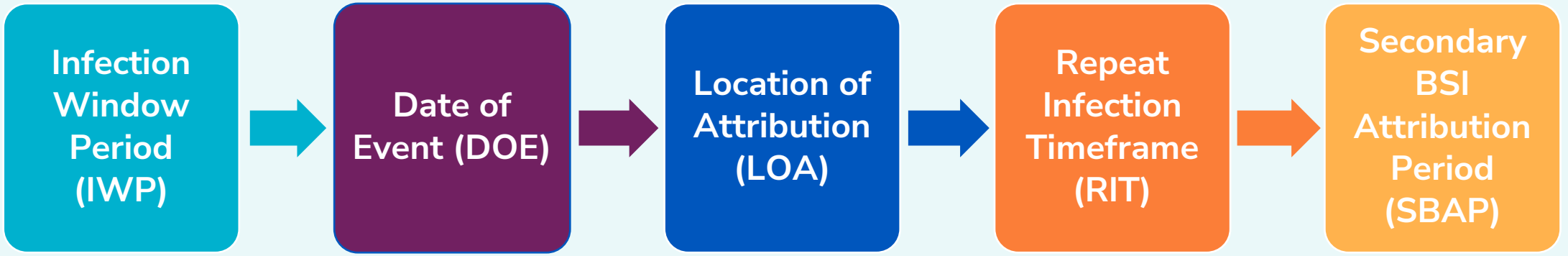
Organisms/Infections

- Exclude
  - Organisms that primarily cause community-associated infections
    - Fungi: *Blastomyces*, *Histoplasma*, *Coccidioides*, *Paracoccidioides*, *Cryptococcus*, *Pneumocystis*
    - **Vector-borne bacteria: *Anaplasma spp.*, *Ehrlichia spp.*, *Borrelia spp.*, *Rickettsia spp.*
  - Reactivation of latent infection
    - For example: herpes, shingles, syphilis, tuberculosis
  - Newborn infections acquired via transplacental transmission or passage through the birth canal
    - For example: herpes simplex, toxoplasmosis, rubella, syphilis, cytomegalovirus (CMV)

**New for 2026

Key Concepts for HAI Surveillance

Making the HAI Call: Key Concepts



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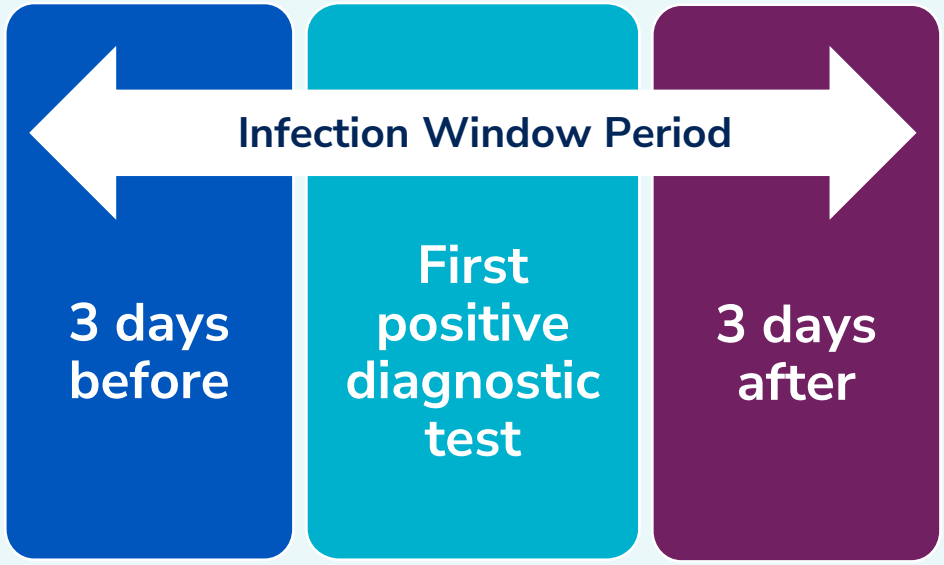
Infection Window Period (IWP)

Infection Window Period (IWP)

- IWP is the 7 days during which all site-specific infection criteria must be met
- IWP includes
  - collection date of the first positive diagnostic test used as an element to meet the site-specific infection criterion
  - 3 calendar days before
  - 3 calendar days after



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Defining the Infection Window Period (IWP)

Infection Window Period (IWP)

- **Diagnostic tests** considered for defining the IWP:
  - Laboratory specimen collection
  - Imaging test
  - Procedure or exam
- If **no** diagnostic test is included in the site-specific criterion, use the date of the **first documented localized sign or symptom** to define the IWP.
  - Examples of localized signs/symptoms: diarrhea, site-specific pain, purulent drainage from the site
  - Non-specific signs/symptoms (for example, fever, hypothermia) are not considered localized and therefore are not used to define the IWP

Infection Window Period Special Considerations

Infection Window Period (IWP)

- First Diagnostic Test
  - Use the **first positive diagnostic test** that establishes an IWP during which **all elements** of the criterion can be found.
- Multiple Criteria
  - When more than one criterion of a site-specific definition is met, identify the IWP that results in the **earliest date of event (DOE).**
- Endocarditis (ENDO) and **osteomyelitis (BONE)
  - The IWP is lengthened to accommodate the extended diagnostic timeframe that is frequently required to reach a clinical determination of endocarditis and osteomyelitis.
  - The IWP for ENDO and **BONE is **21 days**:
    - Date of first positive diagnostic test, 10 days before, and 10 days after

**New for 2026

IWP – Example #1

Infection Window Period (IWP)

SINU Criterion 2: at least one s/s plus imaging test

IWP: 3/1 – 3/7

1st + diagnostic test

Date	Elements
3/1	
3/2	fever > 38.0°C
3/3	
3/4	imaging: sinusitis
3/5	headache
3/6	
3/7	
3/8	
3/9	
3/10	

3 days before

Date of 1st diagnostic test

3 days after

7-Day IWP

IWP – Example #2

Infection Window Period (IWP)

IAB Criterion 3b: at least two s/s plus blood culture and imaging test

IWP: 2/8 – 2/14

1st + diagnostic test

Date	Elements	
2/7		
2/8		3 days before
2/9		
2/10	fever > 38.0°C	
2/11	blood culture: *E. coli*	Date of 1st diagnostic test
2/12		3 days after
2/13	abdominal pain	
2/14	imaging: intraabdominal abscess	
2/15		
2/16		
2/17		

7-Day IWP

IWP – Example #3

Infection Window Period (IWP)

IAB Criterion 3b: at least two s/s plus blood culture and imaging test

Incorrect diagnostic test: IWP does <u>not</u> include all elements to meet criterion

Date	Elements
2/7	
2/8	
2/9	
2/10	
2/11	blood culture: *E. coli*
2/12	
2/13	abdominal pain
2/14	imaging: intraabdominal abscess
2/15	fever > 38.0°C
2/16	
2/17	

Correct diagnostic test: IWP includes all elements to meet criterion

Date	Elements
2/7	
2/8	
2/9	
2/10	
2/11	blood culture: *E. coli*
2/12	
2/13	abdominal pain
2/14	imaging: intraabdominal abscess
2/15	fever > 38.0°C
2/16	
2/17	

IWP: 2/11 – 2/17

Choose the first positive diagnostic test that creates an IWP in which all elements to meet the criterion occur

Date of Event (DOE)

Date of Event (DOE)

- DOE is the date the **first** element used to meet an NHSN site-specific criterion occurs for the **first** time **within the 7-day IWP.**
- Accurate DOE determination is important!
- DOE determines:
  - Present on admission (POA) or healthcare-associated infection (HAI)
  - Location of attribution (LOA)
  - Device association
  - Day 1 of the repeat infection timeframe (RIT)

Date of Event (DOE): POA vs. HAI

Date of Event (DOE)

Present on Admission (POA) Timeframe

- Day of admission* to inpatient location
- 2 calendar days before admission
- 1 calendar day after admission

POA

*Day of admission = Calendar day 1

HAI Timeframe

- On or after 3rd calendar day of admission* to an inpatient location

HAI

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DOE – Example #1

Date of Event (DOE)

SINU Criterion 2: at least one s/s plus imaging test

POA SINU
IWP: 3/1 – 3/7
DOE: 3/2

1st element

1st + diagnostic test

Date	HD	Elements
3/1	1	
3/2	2 **DOE** **HD 2 = POA**	fever > 38.0°C
3/3	3	
3/4	4	imaging: sinusitis
3/5	5	headache
3/6	6	
3/7	7	
3/8	8	
3/9	9	

7-Day IWP

DOE – Example #2

IAB Criterion 3b: at least two s/s plus blood culture and imaging test

Date of Event (DOE)

HAI IAB
IWP: 2/8 – 2/14
DOE: 2/10
Organism: *E. coli*

1st element

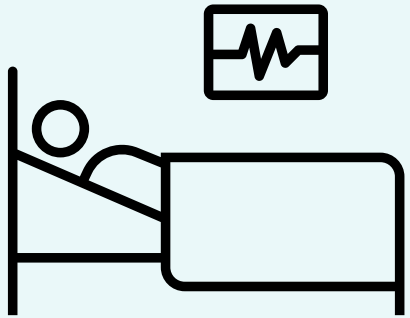
1st + diagnostic test

Date	HD	Elements
2/7	1	
2/8	2	
2/9	3	
2/10	4 **DOE** **HD 4 = HAI**	fever > 38.0°C
2/11	5	blood culture: *E. coli*
2/12	6	
2/13	7	abdominal pain
2/14	8	imaging: intraabdominal abscess
2/15	9	
2/16	10	

7-Day IWP

Location of Attribution (LOA)

- LOA is the inpatient location where the patient was assigned on the date of event (DOE).
  - The LOA must be assigned to an inpatient location where denominator data (patient days, device days) can be collected.
- Locations **not eligible** for LOA assignment for HAI events include:
  - Outpatient locations (Emergency Department, 24-hour Observation, etc.)
  - Non-bedded inpatient locations (Operating Room, procedural areas, etc.)



Location of Attribution (LOA) – Transfer Rule

Location of Attribution (LOA)

- Transfer Rule exception to location of attribution (LOA)
  - If the date of event (DOE) for an infection occurs on the **date of** transfer/discharge or the **day after** transfer/discharge
    - Attribute the infection to the transferring/discharging location
  - If the patient has been in multiple locations within this timeframe
    - Attribute the infection to the first bedded location where the patient was housed on the day before the date of event (DOE)

Implementing LOA and Transfer Rule

Location of Attribution (LOA)

DOE **not** on date of transfer or next day
-> Attribute to **current** location

Date	Patient Location	LOA
1/5	7 East	
1/6	7 East	
1/7	7 East -> ICU	
1/8	ICU	
1/9	ICU	
1/10 **DOE**	ICU	**ICU**
1/11	ICU	

DOE on day of transfer
-> Attribute to **transferring** location

Date	Patient Location	LOA
3/7	CCU	
3/8	CCU	
3/9	CCU	
3/10 **DOE**	CCU -> Stepdown	**CCU**
3/11	Stepdown	
3/12	Stepdown	
3/13	Stepdown	

DOE on day after transfer
-> Attribute to **transferring** location

Date	Patient Location	LOA
10/4	MS unit	
10/5	MS unit	
10/6	MS unit -> OR -> SICU	
10/7 **DOE**	SICU	**MS unit**
10/8	SICU	
10/9	SICU	

LOA – Example

Location of Attribution (LOA)

If a patient is discharged and readmitted on the day of discharge or the next day – during the transfer rule and POA timeframe – a positive diagnostic test can result in both an HAI and a POA event.

- Admitted to Hospital A from 5/1 – 5/4
- Admitted to Hospital B on 5/5
  - fever, positive urine culture
  - meets SUTI with DOE 5/5
- DOE is day after discharge from Hospital A admission – apply Transfer Rule
  - **LOA is discharging location: Hosp A Tele**
  - HAI SUTI for Hospital A
- DOE is also Day 1 for Hospital B admission
  - POA SUTI for Hospital B

Date	Case Scenario
5/1	Admitted to Hospital A - Tele
5/2	
5/3	
5/4	Discharged from Hospital A - Tele
5/5 **DOE**	Admitted to Hospital B – ICU Meets SUTI criterion: • fever > 38.0°C • urine culture: >100,000 CFU/ml *Escherichia coli*
5/6	

Transfer Rule – Sharing of Information

Location of Attribution (LOA)

- Post-discharge surveillance is **not** required.
- However, if an infection event is identified with a date of event (DOE) on the day of discharge or the day after discharge from a facility:
  - The receiving facility should share all necessary information regarding the infection event with the discharging/transferring facility.
  - The infection event is attributable to the discharging location.
  - The discharging facility must report the infection event in any data reported to NHSN for that location.

Repeat Infection Timeframe (RIT)

Repeat Infection Timeframe (RIT)

- RIT is a 14-day timeframe during which no new infections of the same type are reported.
  - DOE is Day 1 of the 14-day RIT.
  - RIT applies to both POA and HAI event determinations.

- Exception:
  - RIT for endocarditis (ENDO) and **osteomyelitis (BONE) is extended to include the remainder of the patient's current admission

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Repeat Infection Timeframe (RIT)

Repeat Infection Timeframe (RIT)

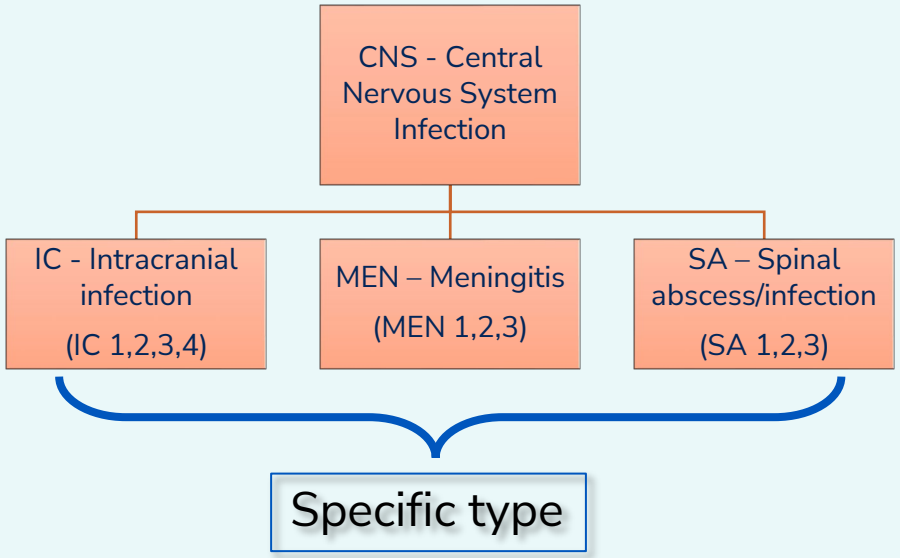
- If criteria for the same type of infection event are met and the DOE is within the 14-day RIT:
  - A new event is **not** identified or reported.
  - Original DOE and original RIT are **maintained.**
  - Additional pathogens recovered during the RIT from the same type of infection are **added** to the existing event and do **not** have to match.
  - Device association and location of attribution do **not** change.

- Readmission to same facility:
  - If patient is readmitted to the same facility, the RIT does **not** carry over from one admission to another.
  - RIT applies during a patient's **single** admission, including:
    - day of discharge
    - day after discharge

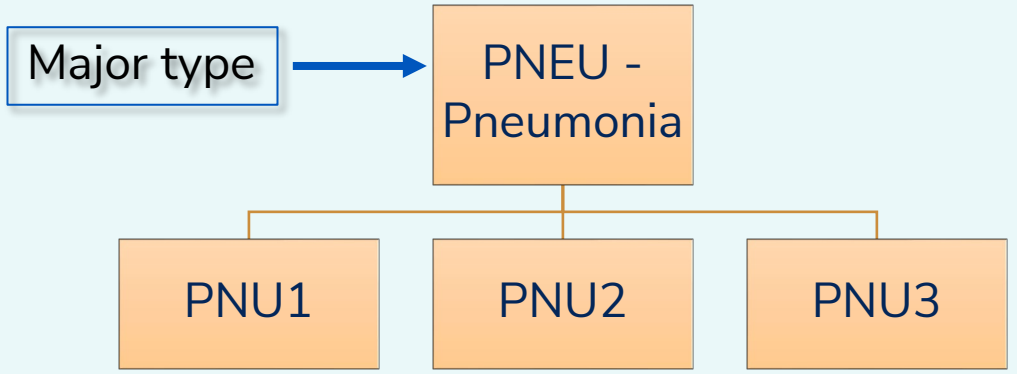
Repeat Infection Timeframe (RIT)

Repeat Infection Timeframe (RIT)

- RIT will apply at the level of the specific type of infection.



- Exception: BSI, UTI, and PNEU – RIT applies at the major type of infection



RIT – Example #1

SINU Criterion 2: at least one s/s plus imaging test

Repeat Infection Timeframe (RIT)

POA SINU
IWP: 3/1 – 3/7
DOE: 3/2
RIT: 3/2 – 3/15
Organism: MRSA

14-Day RIT

7-Day IWP

Date	RIT	Elements
3/1		
3/2	1 **DOE**	fever > 38.0°C
3/3	2	
3/4	3	imaging: sinusitis
3/5	4	headache
3/6	5	
3/7	6	
3/8	7	
3/9	8	
3/10	9	
3/11	10	sinus fluid: MRSA
3/12	11	
3/13	12	
3/14	13	
3/15	14	
3/16		

Pathogens identified during the RIT from the same type of infection are added to the event.

RIT – Example #2

IAB Criterion 3b: at least two s/s plus blood culture and imaging test

HAI IAB
IWP: 2/8 – 2/14
DOE: 2/10
RIT: 2/10 – 2/23
Organisms: *E. coli*, *Candida spp.*

Pathogens identified during the RIT from the same type of infection are added to the event, and do not have to match.

Repeat Infection Timeframe (RIT)

14-Day RIT

7-Day IWP

Date	RIT	Elements
2/7		
2/8		
2/9		
2/10	1 **DOE**	fever > 38.0°C
2/11	2	blood culture: *E. coli*
2/12	3	
2/13	4	abdominal pain
2/14	5	imaging: intraabdominal abscess
2/15	6	
2/16	7	
2/17	8	
2/18	9	
2/19	10	intraabdominal fluid: *Candida spp.*
2/20	11	
2/21	12	
2/22	13	
2/23	14	
2/24		

Secondary BSI Attribution Period (SBAP)

Secondary BSI Attribution Period (SBAP)

- SBAP is the timeframe during which a blood specimen must be collected for a secondary bloodstream infection (BSI) to be attributed to a primary site of infection.
- SBAP includes the IWP combined with the RIT.
- SABP is 14-17 days in length, depending on the DOE.

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Secondary BSI Requirements

Secondary BSI Attribution Period (SBAP)

A bloodstream infection (BSI) can only be determined secondary to another site of infection if the following requirements are met:

- An **NHSN site-specific definition must be met** (UTI, PNEU, Chapter 17)

  AND

- One of the following scenarios must be met:
  - **Scenario 1:** Blood specimen organism matches primary site infection organism, and blood specimen has a collection date within the SBAP

    OR
  - **Scenario 2:** Blood specimen organism is used as an element to meet the NHSN site-specific infection criterion, and blood specimen is collected in the IWP

SBAP Special Cases

Secondary BSI Attribution Period (SBAP)

- Surgical site infections (SSI) and ventilator-associated events (VAE)
  - Follow guidance specific to these events in Chapter 9 SSI and Chapter 10 VAE
- Necrotizing enterocolitis (NEC)
  - Criteria do not include a site-specific specimen or an organism identified from a blood specimen
  - Exception for assigning a BSI secondary to NEC is provided—see Chapter 4 BSI
- Endocarditis (ENDO) and **osteomyelitis (BONE)
  - SBAP includes the 21-day infection window period and all subsequent days of the patient's current admission.
  - Secondary BSI pathogen assignment is limited to organisms identified in the blood specimen that match the organisms used to meet the ENDO or BONE definition.

**New for 2026

SBAP – Example #1

IAB Criterion 3a: at least two s/s plus positive intraabdominal culture

HAI IAB with **2ndry BSI**
IWP: 6/8 – 6/14
DOE: 6/8
RIT: 6/8 – 6/21
SBAP: 6/8 – 6/21 (14 days)
Organism: *K. oxytoca*

Secondary BSI Attribution Period (SBAP)

Date	HD	RIT	Elements
6/6	1		
6/7	2		
6/8	3 **DOE**	1	fever > 38.0°C
6/9	4	2	
6/10	5	3	abdominal pain
6/11	6	4	intraabdominal culture: ***K. oxytoca***
6/12	7	5	
6/13	8	6	
6/14	9	7	
6/15	10	8	
6/16	11	9	
6/17	12	10	
6/18	13	11	blood culture: ***K. oxytoca***
6/19	14	12	
6/20	15	13	
6/21	16	14	
6/22	17	15	

14-Day RIT

SBAP 14 days

The SBAP extends from the first day of the IWP through the last day of the RIT.

6/18 BSI is secondary to IAB by Scenario 1.

SBAP – Example #2

IAB Criterion 3b: at least two s/s plus blood culture and imaging test

HAI IAB with **2ndry BSI**
IWP: 2/8 – 2/14
DOE: 2/10
RIT: 2/10 – 2/23
SBAP: 2/8 – 2/23 (16 days)
Organism: *E. coli, Candida spp.*

Secondary BSI Attribution Period (SBAP)

Date	HD	RIT	Elements
2/7	1		
2/8	2		
2/9	3		
2/10	4 **DOE**	1	fever > 38.0°C
2/11	5	2	blood culture: ***E. coli***
2/12	6	3	
2/13	7	4	abdominal pain
2/14	8	5	imaging: intraabdominal abscess
2/15	9	6	
2/16	10	7	
2/17	11	8	
2/18	12	9	
2/19	13	10	intraabdominal fluid: *Candida spp.*
2/20	14	11	
2/21	15	12	
2/22	16	13	
2/23	17	14	

14-Day RIT

SBAP 16 days

The SBAP extends from the first day of the IWP through the last day of the RIT.

2/11 BSI is secondary to IAB by Scenario 2.

Reporting Pathogens Identified in RIT or SBAP

- **Eligible Pathogens:**
  - **Eligible** pathogens identified following the initial secondary BSI during the RIT from the same type of infection are added to the event.
- **BSI Pathogen Matching:**
  - *If* at least **one BSI pathogen** collected in the SBAP **matches** an **organism from a site-specific specimen or a blood specimen** used to meet a site-specific infection criterion,
  - *Then* **additional eligible pathogens** from the **same blood specimen** are also considered secondary and reported with the event.
- **Order of Reporting:**
  - Report all site-specific pathogens first, then report secondary BSI pathogens.

SBAP – Excluded Pathogens

- Pathogens **excluded** from site-specific infection definitions are **also excluded** as pathogens for BSIs secondary to that type of infection and they **cannot** be added the infection as a pathogen (examples: yeast for UTI, *Enterococcus* spp. for PNEU)
- The excluded pathogen must be accounted for as either
  - A primary bloodstream infection (BSI)

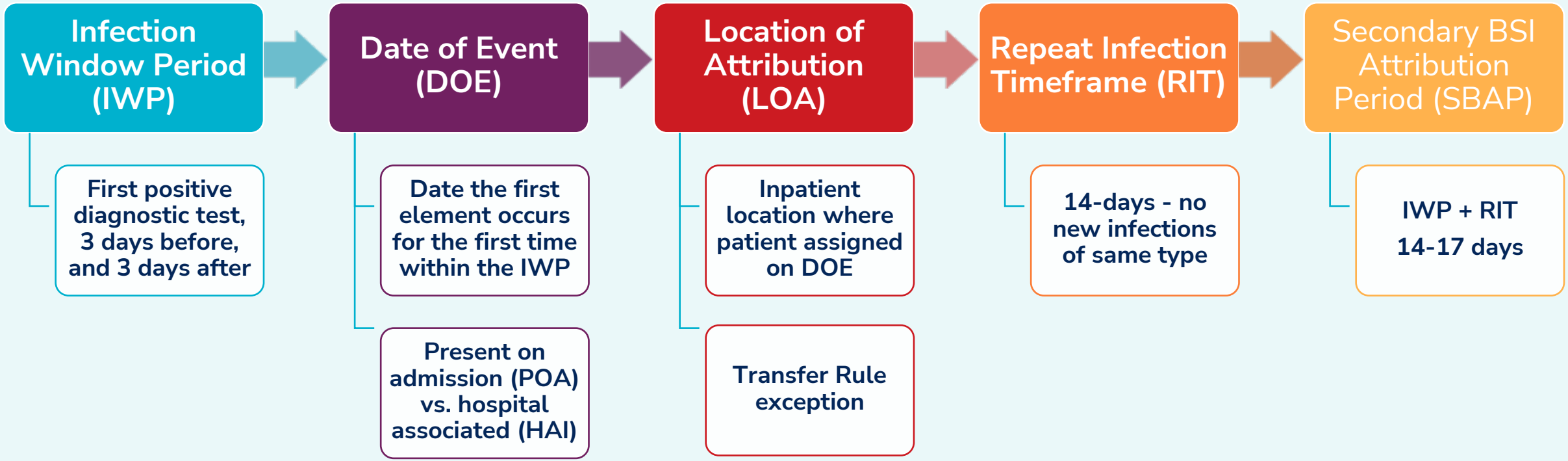
    Or
  - A secondary BSI attributed to another primary site of infection

BSI Pathogen Assignment

- BSI pathogens may be assigned to more than one infection source at the same time:
  - BSI pathogen assigned as secondary pathogen to two different site-specific infections

    Or
  - BSI pathogen assigned as a secondary pathogen to a site-specific infection and assigned as a primary pathogen to a primary BSI event

Making the HAI Call: Steps to Successfully Identify Healthcare-associated Infections



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Making the HAI Call

Case Details

1/6: 36-year-old with an indwelling ventricular-peritoneal (VP) shunt arrives at the Emergency Department (ED) with complaints of headache, nausea, vomiting, and blurred vision. VP shunt malfunction is suspected. Imaging studies are performed, and do not show evidence of VP shunt malfunction.

1/7: Patient is admitted to the neurology medical-surgical unit (NeuroMS). The VP shunt tap is tapped, and cerebrospinal fluid (CSF) culture shows no organism growth.

1/10: Patient complains of sudden-onset severe headache and fever of 39.2ºC is noted. Patient is transferred to the neurosurgery intensive care unit (NSICU). The VP shunt is tapped and CSF culture results positive for methicillin-resistant *Staphylococcus aureus* (MRSA). Physician initiates antibiotics for meningitis.

1/15: Patient develops fever and chills. Blood cultures are collected and result positive for (MRSA) and vancomycin-resistant *Enterococcus* (VRE).

1/17: Despite treatment, the patient's symptoms of meningitis reappear. Follow-up CSF culture is positive for *Enterobacter cloacae*. Physician adjusts antibiotics, and monitoring continues.

MEN – Meningitis or ventriculitis

Meningitis or ventriculitis must meet at least ***one*** of the following criteria:

1. Patient has organism(s) identified from cerebrospinal fluid (CSF) by a culture or non-culture based microbiologic testing method.

2. Patient has suspected meningitis or ventriculitis and at least ***two*** of the following:
   i. fever (>38.0°C) or headache (Note: Elements of "i" alone may not be used to meet the two required elements)
   ii. meningeal sign(s)
   iii. cranial nerve sign(s)

   And at least *one* of the following:
   a. increased white cells, elevated protein, and decreased glucose in CSF (per reporting laboratory's reference range).
   b. organism(s) seen on Gram stain of CSF.
   c. organism(s) identified from blood by a culture or non-culture based microbiologic testing method.
   d. diagnostic single antibody titer (IgM) or ≥4-fold increase in paired sera (IgG) for organism.

Case Question #1

Infection Window Period (IWP)

What is the infection window period (IWP)?

A. 1/5 – 1/11
B. 1/6 – 1/12
C. 1/7 – 1/13
D. 1/12 – 1/18

The IWP is set by the first positive diagnostic test that is used as an element to meet the criterion.

The IWP includes the date of the diagnostic test, the 3 days before, and the 3 days after.

1/6: Patient arrives in ED
c/o headache, nausea, vomiting, blurred vision

1/7: Admit to NeuroMS unit
CSF culture negative

1/10: Patient with headache, fever
Transferred to NSICU
CSF culture: MRSA

1/15: Patient with fever, chills
BC: MRSA and VRE

1/17: Patient with meningitis symptoms
CSF: *Enterobacter cloacae*

Case Question #1 - Rationale

Infection Window Period (IWP)

IWP: 1/7 – 1/13

Date	HD	Element
1/6		Patient in ED; headache, nausea, vomiting, blurred vision
1/7	1	Admitted to NeuroMS; CSF culture: no growth
1/8	2	
1/9	3	
1/10	4	Headache, fever; transfer to NSICU; **CSF culture: MRSA**
1/11	5	
1/12	6	
1/13	7	
1/14	8	
1/15	9	Fever, chills; blood culture: MRSA and VRE
1/16	10	
1/17	11	Meningitis S/S: CSF culture: *E. cloacae*

3 days before

Date of 1st diagnostic test

3 days after

1st + diagnostic test

7-Day IWP

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Case Question #2

Date of Event (DOE)

What is the date of event (DOE)?

A. 1/6

B. 1/7

C. 1/10

D. 1/15

The DOE is the date the first element used to meet a site-specific infection criterion occurs for the first time within the 7-day IWP.

1/6: Patient arrives in ED
c/o headache, nausea, vomiting, blurred vision

1/7: Admit to NeuroMS unit
CSF culture negative

1/10: Patient with headache, fever
Transferred to NSICU
CSF culture: MRSA

1/15: Patient with fever, chills
BC: MRSA and VRE

1/17: Patient with meningitis symptoms
CSF: *Enterobacter cloacae*

Case Question #2 - Rationale

MEN criterion 1
IWP: 1/7 – 1/13
DOE: 1/10
Organism: MRSA

1st + diagnostic test

1st element in IWP

Date	HD	Element
1/6		Patient in ED; headache, nausea, vomiting, blurred vision
1/7	1	Admitted to NeuroMS; CSF culture: no growth
1/8	2	
1/9	3	
1/10 **DOE**	4	Headache, fever; transfer to NSICU; **CSF culture: MRSA**
1/11	5	
1/12	6	
1/13	7	
1/14	8	
1/15	9	Fever, chills; blood culture: MRSA and VRE
1/16	10	
1/17	11	Meningitis S/S: CSF culture: *E. cloacae*
1/18	12	

Date of Event (DOE)

7-Day IWP

MEN – Meningitis or ventriculitis

Meningitis or ventriculitis must meet at least ***one*** of the following criteria:

1. Patient has organism(s) identified from cerebrospinal fluid (CSF) by a culture or non-culture based microbiologic testing method.

2. Patient has suspected meningitis or ventriculitis and at least ***two*** of the following:
   i. fever (>38.0°C) or headache (Note: Elements of "i" alone may not be used to meet the two required elements)
   ii. meningeal sign(s)
   iii. cranial nerve sign(s)

   And at least *one* of the following:
   a. increased white cells, elevated protein, and decreased glucose in CSF (per reporting laboratory's reference range).
   b. organism(s) seen on Gram stain of CSF.
   c. organism(s) identified from blood by a culture or non-culture based microbiologic testing method.
   d. diagnostic single antibody titer (IgM) or ≥4-fold increase in paired sera (IgG) for organism.

Case Question #3

Date of Event (DOE)

Is the meningitis (MEN) a present on admission (POA) or a healthcare-associated infection (HAI) event?

A. Present on admission (POA)

B. Healthcare-associated (HAI)

An infection is considered POA if the DOE occurs in the POA timeframe (the calendar day of admission to an inpatient location, the 2 days before admission, and the day after admission).

An infection is considered HAI if the DOE occurs on or after the 3rd calendar day of admission.

1/6: Patient arrives in ED
c/o headache, nausea, vomiting, blurred vision

1/7: Admit to NeuroMS unit
CSF culture negative

1/10: Patient with headache, fever
Transferred to NSICU
CSF culture: MRSA

1/15: Patient with fever, chills
BC: MRSA and VRE

1/17: Patient with meningitis symptoms
CSF: *Enterobacter cloacae*

Case Question #3 - Rationale

HAI MEN
IWP: 1/7 – 1/13
DOE: 1/10
Organism: MRSA

- The calendar day of admission to an inpatient location is hospital day (HD) 1.
- The ED is not an inpatient location.
  - 1/6 is not counted as a hospital day.
- NeuroMS is an inpatient location.
  - 1/7 is the 1st calendar day of admission to an inpatient location and starts the hospital day count (HD 1).
- Date of event (DOE) occurs on the 4th calendar day of admission (HD 4).
  - **Healthcare-associated infection (HAI)**

Date	Hospital Day (HD)	Patient Location
1/5		
1/6		ED
1/7	1 Day of admission	ED NeuroMS
1/8	2	NeuroMS
1/9	3	NeuroMS
1/10 **DOE**	4 **HAI**	NeuroMS NSICU
1/11	5	NSICU
1/12	6	NSICU
1/13	7	NSICU
1/14	8	NSICU
1/15	9	NSICU
1/16	10	NSICU
1/17	11	NSICU
1/18	12	NSICU

POA

HAI

Case Question #4

Location of Attribution (LOA)

What is the location of attribution (LOA)?

A. NSICU

B. NeuroMS

The LOA is the inpatient location where the patient was assigned on the DOE.

Transfer Rule exception: If the DOE is on the date of transfer or the day after transfer, the infection is attributed to the transferring location.

1/6: Patient arrives in ED
c/o headache, nausea, vomiting, blurred vision

1/7: Admit to NeuroMS unit
CSF culture negative

1/10: Patient with headache, fever
Transferred to NSICU
CSF culture: MRSA

1/15: Patient with fever, chills
BC: MRSA and VRE

1/17: Patient with meningitis symptoms
CSF: *Enterobacter cloacae*

Case Question #4 – Rationale

HAI MEN
LOA: NeuroMS
IWP: 1/7 – 1/13
DOE: 1/10
Organism: MRSA

- The DOE is on the day of transfer from NeuroMS to NSICU
  - Transfer Rule applies
- Infection event is attributed to the transferring location
  - **LOA is NeuroMS**

Date	Hospital Day (HD)	Patient Location
1/5		
1/6		ED
1/7	1 Day of admission	ED NeuroMS
1/8	2	NeuroMS
1/9	3	NeuroMS
1/10 DOE	4 **Day of transfer**	NeuroMS NSICU
1/11	5	NSICU
1/12	6	NSICU
1/13	7	NSICU
1/14	8	NSICU
1/15	9	NSICU
1/16	10	NSICU
1/17	11	NSICU
1/18	12	NSICU

Location of Attribution (LOA)

Case Question #5

Repeat Infection Timeframe (RIT)

What is the repeat infection timeframe (RIT)?

A. 1/7 – 1/20

B. 1/7 – 1/23

C. 1/10 – 1/23

D. 1/14 – 1/27

The RIT is a 14-day timeframe during which no new infections of the same type are reported. The DOE is day 1 of the 14-day RIT.

1/6: Patient arrives in ED
c/o headache, nausea, vomiting, blurred vision

1/7: Admit to NeuroMS unit
CSF culture negative

1/10: Patient with headache, fever
Transferred to NSICU
CSF culture: MRSA

1/15: Patient with fever, chills
BC: MRSA and VRE

1/17: Patient with meningitis symptoms
CSF: *Enterobacter cloacae*

Case Question #5 – Rationale

HAI MEN
IWP: 1/7 – 1/13
DOE: 1/10
RIT: 1/10 – 1/23
Organism: MRSA

- DOE is the first day of the RIT
- DOE is 1/10
- **RIT is 1/10 – 1/23**

14-day RIT

Date	RIT	Element
1/6		
1/7		CSF culture: no growth
1/8		
1/9		
1/10 DOE	1	**CSF culture: MRSA**
1/11	2	
1/12	3	
1/13	4	
1/14	5	
1/15	6	Blood culture: MRSA and VRE
1/16	7	
1/17	8	CSF culture: *E. cloacae*
1/18	9	
1/19	10	
1/20	11	
1/21	12	
1/22	13	
1/23	14	

Repeat Infection Timeframe (RIT)

7-Day IWP

Case Question #6

Secondary BSI Attribution Period (SBAP)

What is the secondary BSI attribution period (SBAP)?

A. 1/7 – 1/20

B. 1/7 – 1/23

C. 1/10 – 1/23

D. 1/14 – 1/27

The SBAP is the period in which a blood specimen must be collected for a secondary BSI to be attributed to a primary site infection.

The SBAP is 14 – 17 days in length depending on the DOE.

1/6: Patient arrives in ED
c/o headache, nausea, vomiting, blurred vision

1/7: Admit to NeuroMS unit
CSF culture negative

1/10: Patient with headache, fever
Transferred to NSICU
CSF culture: MRSA

1/15: Patient with fever, chills
BC: MRSA and VRE

1/17: Patient with meningitis symptoms
CSF: *Enterobacter cloacae*

Case Question #6 – Rationale

HAI MEN
IWP: 1/7 – 1/13
DOE: 1/10
RIT: 1/10 – 1/23
SBAP: 1/7 – 1/23
Organism: MRSA

- **SBAP is IWP + RIT = 1/7 – 1/23**
- **SBAP is 17 days in this case**
- The SBAP extends from the first day of the IWP through the last day of the RIT.

14-day RIT

Date	RIT	Element
1/6		
1/7		CSF culture: no growth
1/8		
1/9		
1/10 DOE	1	**CSF culture: MRSA**
1/11	2	
1/12	3	
1/13	4	
1/14	5	
1/15	6	Blood culture: MRSA and VRE
1/16	7	
1/17	8	CSF culture: *E. cloacae*
1/18	9	
1/19	10	
1/20	11	
1/21	12	
1/22	13	
1/23	14	

Secondary BSI Attribution Period (SBAP)

SBAP 17 days

Case Question #7

Secondary BSI Attribution Period (SBAP)

Can the positive blood culture be deemed secondary to the event?

A. Yes

B. No

A BSI with a collection date in the SBAP can be attributed as a secondary BSI to a primary site infection if at least one of the blood specimen organisms matches primary site infection organism.

1/6: Patient arrives in ED
c/o headache, nausea, vomiting, blurred vision

1/7: Admit to NeuroMS unit
CSF culture negative

1/10: Patient with headache, fever
Transferred to NSICU
CSF culture: MRSA

1/15: Patient with fever, chills
BC: MRSA and VRE

1/17: Patient with meningitis symptoms
CSF: *Enterobacter cloacae*

Case Question #7 – Rationale

HAI MEN with 2ndry BSI
IWP: 1/7 – 1/13
DOE: 1/10
RIT: 1/10 – 1/23
SBAP: 1/7 – 1/23
Organism: MRSA, VRE

- **1/15 BSI is secondary to MEN**
  - The blood specimen collection date is in the SBAP.
  - The blood culture and CSF culture have a matching organism—MRSA.
- Additional eligible organisms in the blood specimen are also considered secondary.
  - **VRE is added as an organism to the 1/10 HAI MEN event.**

Date	RIT	Element
1/6		
1/7		CSF culture: no growth
1/8		
1/9		
1/10 DOE	1	**CSF culture: MRSA**
1/11	2	
1/12	3	
1/13	4	
1/14	5	
1/15	6	**Blood culture: MRSA** and VRE
1/16	7	
1/17	8	CSF culture: *E. cloacae*
1/18	9	
1/19	10	
1/20	11	
1/21	12	
1/22	13	
1/23	14	

Secondary BSI Attribution Period (SBAP)

SBAP

Case Question #8

Repeat Infection Timeframe (RIT)

Can the 1/17 positive CSF culture be added to the event?

A. Yes

B. No

Additional pathogens recovered during the RIT from the same type of infection are added to the event.

The pathogens are not required to match.

1/6: Patient arrives in ED
c/o headache, nausea, vomiting, blurred vision

1/7: Admit to NeuroMS unit
CSF culture negative

1/10: Patient with headache, fever
Transferred to NSICU
CSF culture: MRSA

1/15: Patient with fever, chills
BC: MRSA and VRE

1/17: Patient with meningitis symptoms
CSF: *Enterobacter cloacae*

Case Question #8 – Rationale

HAI MEN with 2ndry BSI
IWP: 1/7 – 1/13
DOE: 1/10
RIT: 1/10 – 1/23
SBAP: 1/7 – 1/23
Organism: MRSA, VRE, *E. cloacae*

- The 1/17 CSF culture with *E. cloacae* has a collection date in the MEN RIT.
- ***E. cloacae* is added as an organism to the 1/10 HAI MEN event.**
- Organisms from same type of infection do not have to match.

14-day RIT

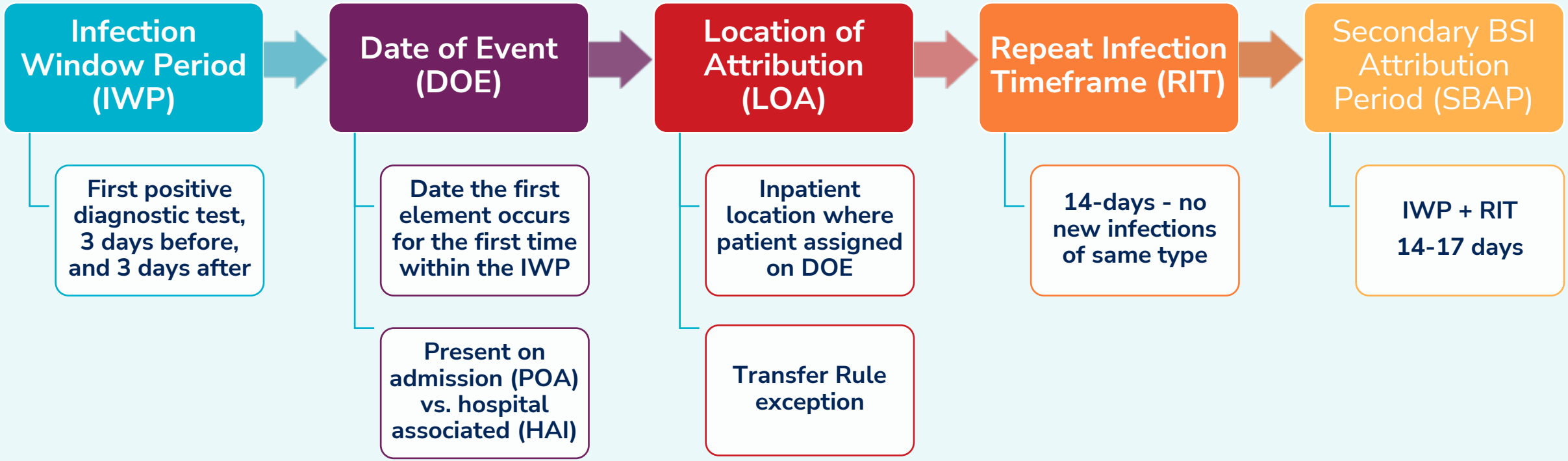
Date	RIT	Element
1/6		
1/7		CSF culture: no growth
1/8		
1/9		
1/10 **DOE**	1	**CSF culture: MRSA**
1/11	2	
1/12	3	
1/13	4	
1/14	5	
1/15	6	Blood culture: MRSA and VRE
1/16	7	
1/17	8	**CSF culture: *E. cloacae***
1/18	9	
1/19	10	
1/20	11	
1/21	12	
1/22	13	
1/23	14	

Repeat Infection Timeframe (RIT)

Case Summary

- HAI MEN criterion 1, with a Secondary BSI
- IWP: 1/7 – 1/13
  - 1st positive diagnostic test 1/10
- DOE: 1/10 (Hospital day 4)
  - 1st element for meeting MEN criterion in the IWP
- LOA: NeuroMS (as per Transfer Rule)
- RIT: 1/10 – 1/23
- SBAP: 1/7 – 1/23
- Organisms
  - Primary site: MRSA
    - *E. cloacae* – identified in RIT
  - Secondary BSI: MRSA, VRE - identified in SBAP

Making the HAI Call: Accomplished!



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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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