Chapter 2 Overview – It's About Time!

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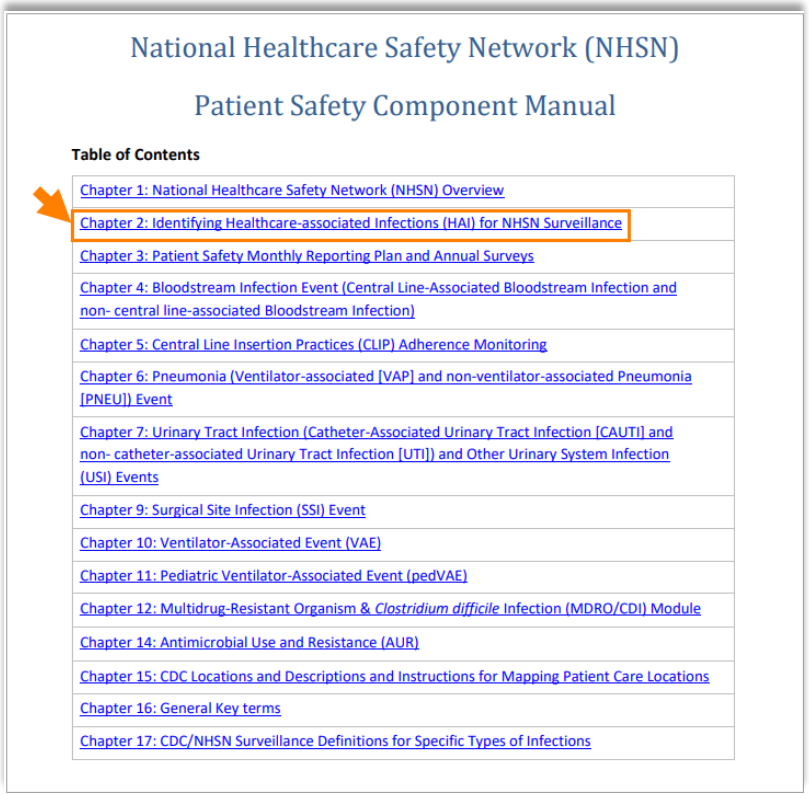
Chapter 2: Identifying Healthcare-associated Infections (HAI) for NHSN Surveillance



National Healthcare Safety Network (NHSN)

Patient Safety Component Manual

Table of Contents

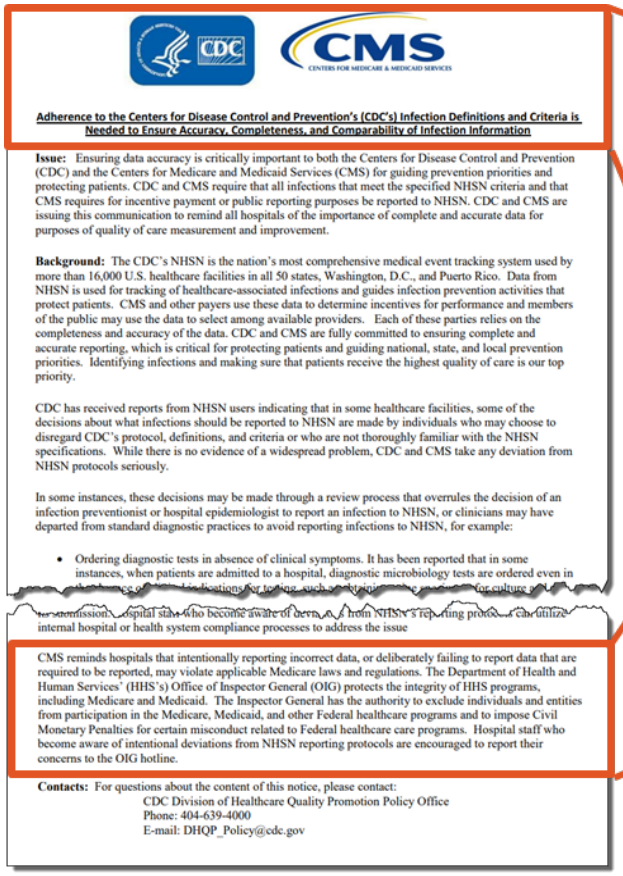
https://www.cdc.gov/nhsn/pdfs/pscmanual/pcsmanual_current.pdf

Agenda

Review the following Chapter 2 concepts/principles:

- Infection Window Period (IWP)
- Date of Event (DOE)
- Location of Attribution (LOA)
- Transfer Rule
- Repeat Infection Timeframe (RIT)
- Secondary BSI Attribution Period (SBAP)
- Pathogen Assignment Guidance

Accurate & Complete Reporting



Adherence to the Centers for Disease Control and Prevention's (CDC's) Infection Definitions and Criteria is Needed to Ensure Accuracy, Completeness, and Comparability of Infection Information

Issue: Ensuring data accuracy is critically important to both the Centers for Disease Control and Prevention (CDC) and the Centers for Medicare and Medicaid Services (CMS) for guiding prevention priorities and protecting patients. CDC and CMS require that all infections that meet the specified NHSN criteria and that CMS requires for incentive payment or public reporting purposes be reported to NHSN. CDC and CMS are issuing this communication to remind all hospitals of the importance of complete and accurate data for purposes of quality of care measurement and improvement.

Background: The CDC's NHSN is the nation's most comprehensive medical event tracking system used by more than 16,000 U.S. healthcare facilities in all 50 states, Washington, D.C., and Puerto Rico. Data from NHSN is used for tracking of healthcare-associated infections and guides infection prevention activities that protect patients. CMS and other payers use these data to determine incentives for performance and members of the public may use the data to select among available providers. Each of these parties relies on the completeness and accuracy of the data. CDC and CMS are fully committed to ensuring complete and accurate reporting, which is critical for protecting patients and guiding national, state, and local prevention priorities. Identifying infections and making sure that patients receive the highest quality of care is our top priority.

CDC has received reports from NHSN users indicating that in some healthcare facilities, some of the decisions about what infections should be reported to NHSN are made by individuals who may choose to disregard CDC's protocol, definitions, and criteria or who are not thoroughly familiar with the NHSN specifications. While there is no evidence of a widespread problem, CDC and CMS take any deviation from NHSN protocols seriously.

In some instances, these decisions may be made through a review process that overrules the decision of an infection preventionist or hospital epidemiologist to report an infection to NHSN, or clinicians may have departed from standard diagnostic practices to avoid reporting infections to NHSN, for example:

- Ordering diagnostic tests in absence of clinical symptoms. It has been reported that in some instances, when patients are admitted to a hospital, diagnostic microbiology tests are ordered even in the absence of [illegible] indications for testing, such as obtaining [illegible] for culture and [illegible]

for transmission. Hospital staff who become aware of deviations from NHSN's reporting protocols can utilize internal hospital or health system compliance processes to address the issue

CMS reminds hospitals that intentionally reporting incorrect data, or deliberately failing to report data that are required to be reported, may violate applicable Medicare laws and regulations. The Department of Health and Human Services' (HHS's) Office of Inspector General (OIG) protects the integrity of HHS programs, including Medicare and Medicaid. The Inspector General has the authority to exclude individuals and entities from participation in the Medicare, Medicaid, and other Federal healthcare programs and to impose Civil Monetary Penalties for certain misconduct related to Federal healthcare care programs. Hospital staff who become aware of intentional deviations from NHSN reporting protocols are encouraged to report their concerns to the OIG hotline.

Contacts: For questions about the content of this notice, please contact:
CDC Division of Healthcare Quality Promotion Policy Office
Phone: 404-639-4000
E-mail: DHQP_Policy@cdc.gov

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https://www.cdc.gov/nhsn/cms/cms-reporting.html

Excluded Organisms

All organisms are included in HAI criteria except:

- Those well-known to cause community associated infections and have long incubation periods:
  - *Blastomyces*
  - *Histoplasma*
  - *Coccidioides*
  - *Paracoccidioides*
  - *Cryptococcus*
  - *Pneumocystis*
- Organisms associated with latent infections (for example, herpes, shingles, syphilis, or tuberculosis)

The Building Blocks of NHSN Patient Safety Component HAI Surveillance Definitions

Table 1: **Exceptions** to application of Chapter 2

-	SSI*	LabID*	VAE*	PedVAE
Infection Window Period (IWP)†	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Date of Event (DOE)				
Present on admission (POA)				
Healthcare-associated infection (HAI)				
Repeat Infection Time Period (RIT)†				
Secondary BSI Attribution Period (SBAP)†				

†Extended in the Endocarditis (ENDO) criteria, see Chapter 17: CDC/NHSN Surveillance Definitions for Specific Types of Infections

**Surveillance protocols for Surgical Site Infection (SSI), Laboratory-Identified (LabID) Event, and Ventilator-Associated Events (VAE)*

Infection Window Period (IWP)

7-day window of **time** during which **all** site-specific infection criteria must be met.

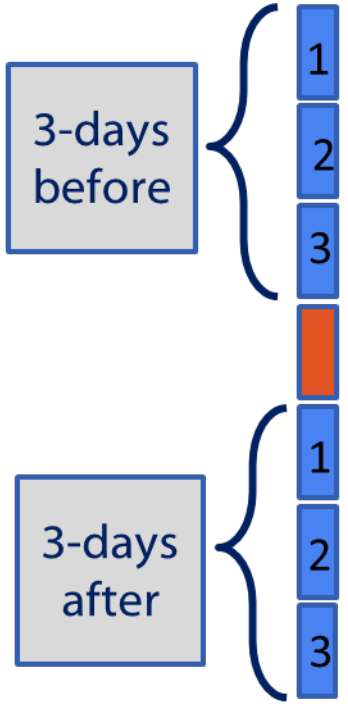
- the collection date of the first positive diagnostic test that is used as an element to meet the site-specific infection criterion,

PLUS

- the 3-calendar days before

and

- the 3-calendar days after



Infection Window Period

- Examples of diagnostic test *
  - Laboratory specimen collection
  - Imaging test
  - Procedure or exam

- Examples of localized signs or symptoms:
  - Diarrhea
  - Site-specific pain
  - Purulent exudate

* Use the **first diagnostic** test that creates an infection window period during which **all elements** of the criterion can be found

Date of Event (DOE)

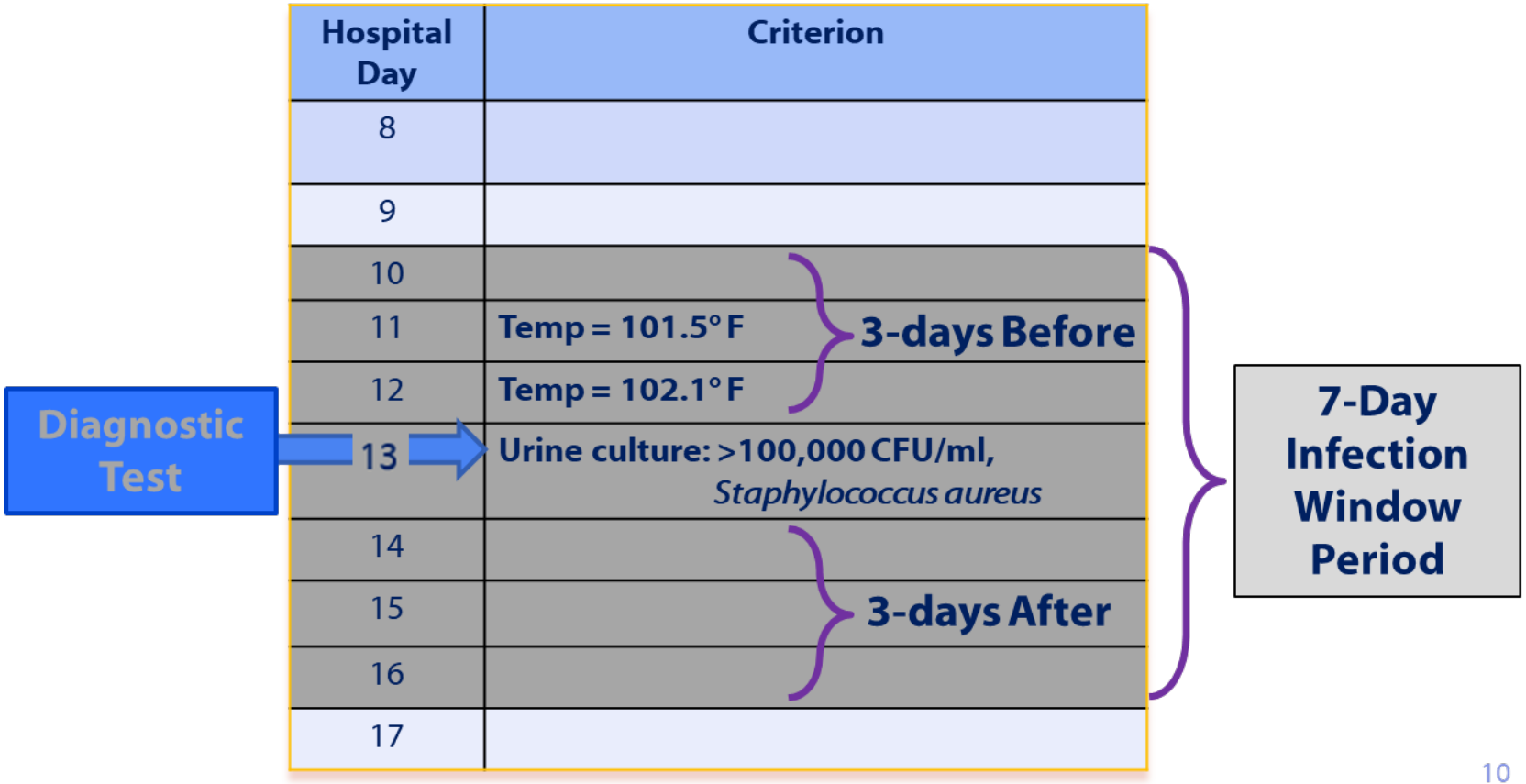
The date the first element used to meet the CDC NHSN site-specific infection criterion occurs for the first time within the seven-day infection window period

21 days for Endocarditis (ENDO)

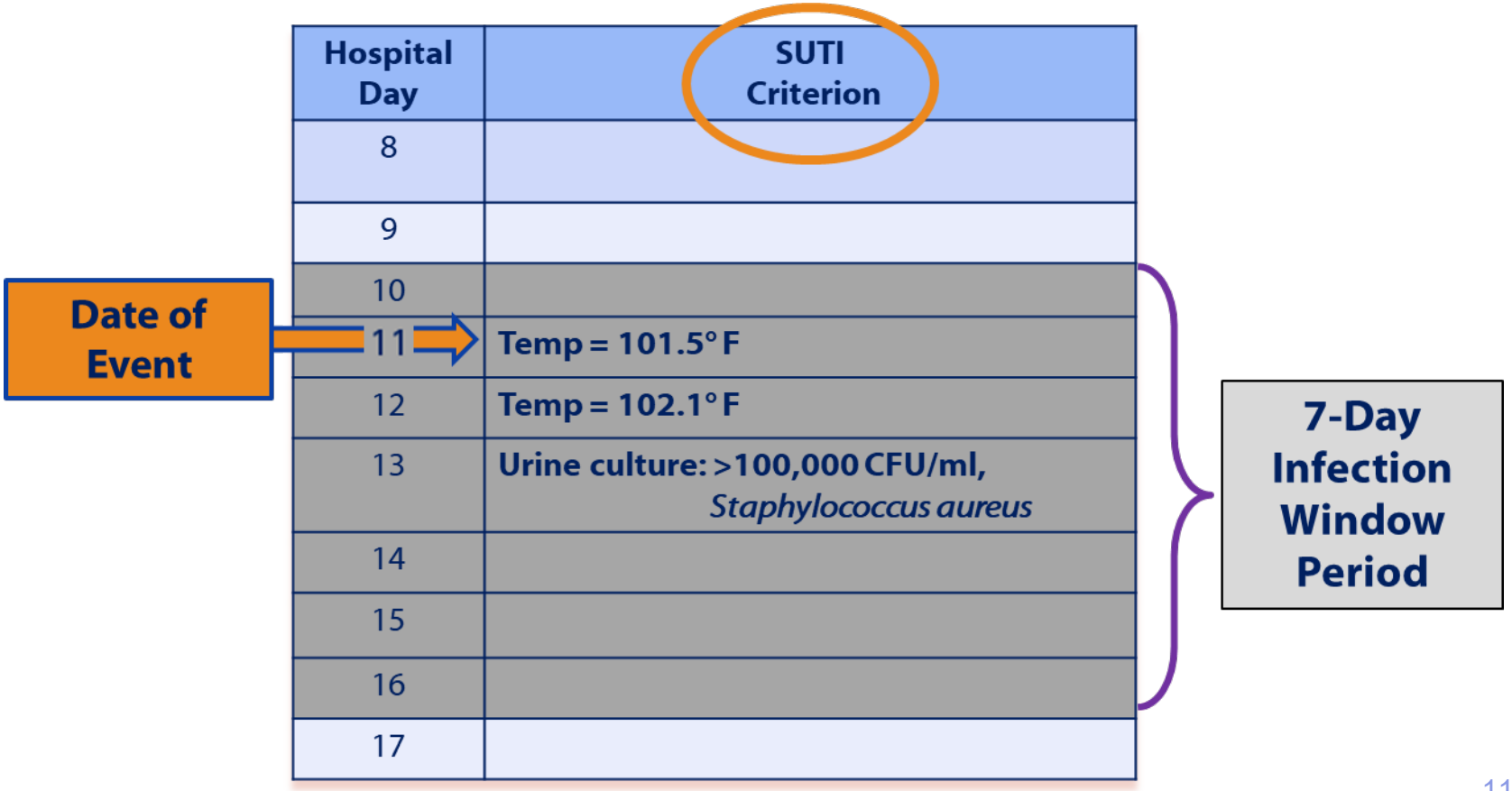
NOTE: The element MAY be present before the infection window period is established.

NOTE: The DOE may NOT always be the date of the diagnostic test!!!!

Infection Window Period



Infection Window Period and Date of Event



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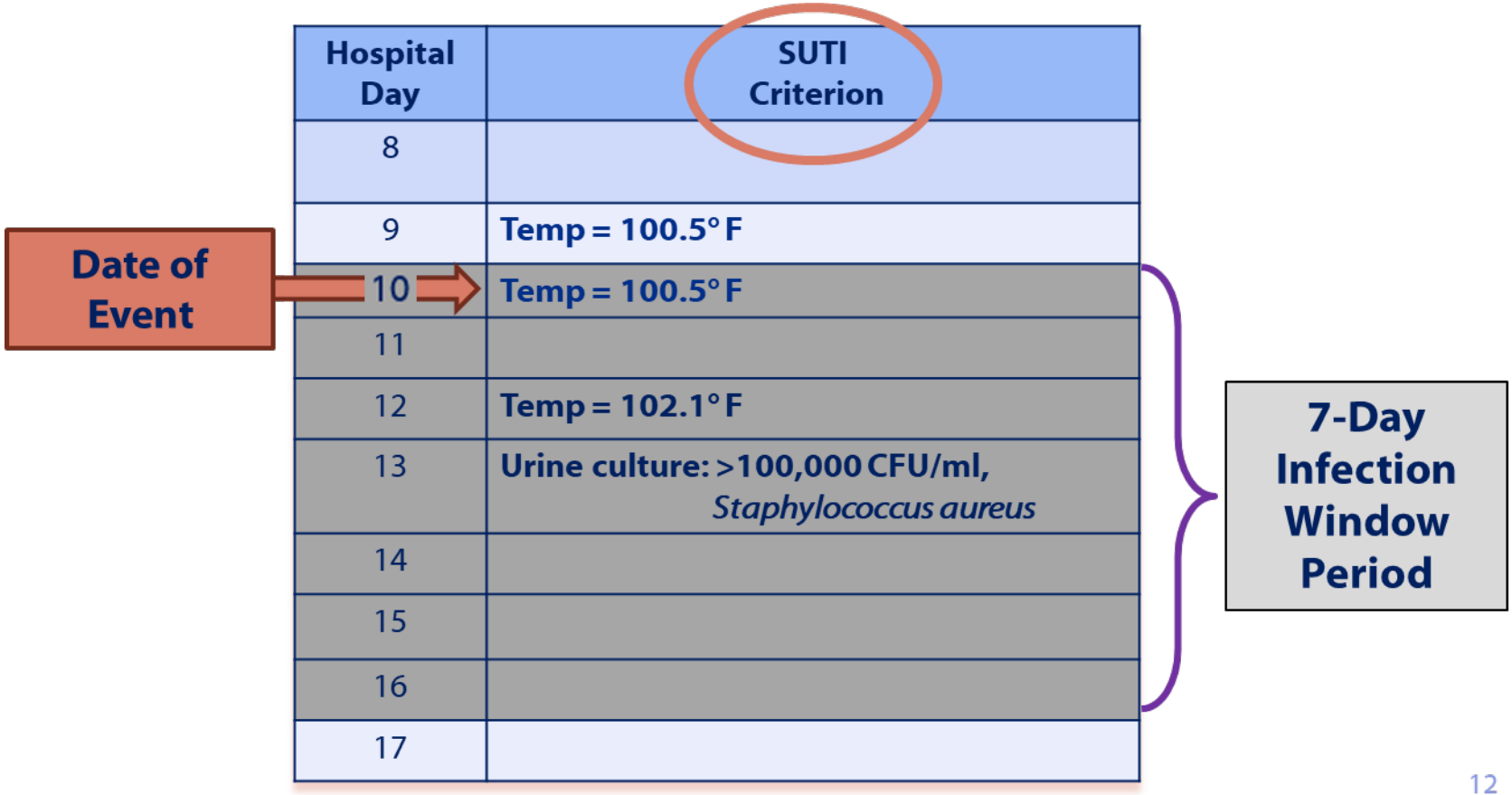


Date of Admission

Date that the patient is physically admitted to an inpatient location.

Time spent in the Emergency Department or other outpatient locations before admission, should NOT used to set the Date of Admission

Present on Admission (POA)

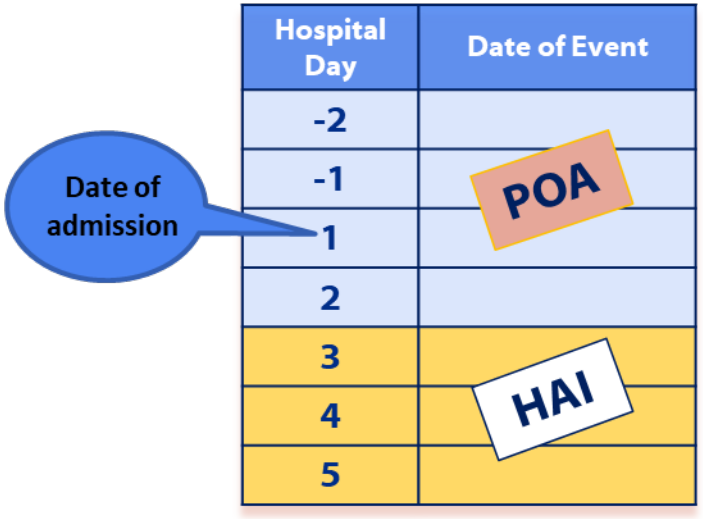
- Date of event occurs on either the
  - day of admission
  - day after admission to an inpatient location.

- POA time period = the day of admission, 2 days before and the day after admission.

*** If the date of event occurs before admission, the date of event = date of admission.**

Healthcare-Associated Infection (HAI)

- Date of event occurs on or after the 3rd calendar day of admission.



Associating an Infection to a Device

- An infection where the medical device✷ was in place (or central line✷ is accessed) for >2 calendar days on the date of event.

any part of the day

AND

- The device was also in place on the date of event or the day before.

AND

- The patient was in an inpatient location.

✷See Additional Information on next slides

Additional Information for Associating an Infection to a Device

#1 *A central line is eligible for central line-associated bloodstream infection (CLABSI) event following the **first access** of the central line*

Keep in mind that the following must be met:

- Device in place > 2 days
- Device in place on the date of event or before
- Patient is in an inpatient location

Hospital Day	Note from medical record	Device Association
N/A	Pt admitted with central line in place (not accessed)	N/A
1 – Admission to inpatient location	--	Ineligible for CLABSI
2	--	Ineligible for CLABSI
3	--	Ineligible for CLABSI
4	--	Ineligible for CLABSI
5	Central line accessed	Eligible for CLABSI
6	--	Eligible for CLABSI

Additional Information for Associating an Infection to a Device

#2

If an indwelling urinary catheter (IUC) is in place **prior to** inpatient admission, the IUC day count that determines device-association begins with the **admission date to the first inpatient location**.

Hospital Day	Note from medical record	Device Association
N/A	Indwelling urinary catheter in place prior to admission	N/A
1 – Admission to inpatient location	-	Ineligible for CAUTI
2	-	Ineligible for CAUTI
3	-	Eligible for CAUTI
4	-	Eligible for CAUTI
5	-	Eligible for CAUTI
6	-	Eligible for CAUTI

Removed/Discontinued Devices

If a central line or indwelling urinary catheter is in place in an inpatient location for >2 calendar days and then **removed/discontinued** – the device is eligible for event attribution if the date of event is **on the date** the device is discontinued or the **next day**.

Hospital Day	Notes from medical record	Device
1 – Admission to inpatient location		
2	• Indwelling urinary catheter inserted	
3		
4		
5	• Urine culture = >100,00 E. coli • indwelling urinary catheter discontinued	**Eligible**
6		**Eligible**
7		**Ineligible**

day discontinued
or
day after

Determining Denominator Device Day Counts for a Location and Month (a.k.a. Denominator Data)

- Count all devices present at the time of the count
  - Central lines are counted regardless of whether it is accessed; this simplifies the counting of central line days
- Includes urinary catheters, ventilators, and central lines

Hospital Day	Note from medical record	Device Association	Denominator Device Day Count
	Pt admitted with central line in place (not-accessed)	Ineligible for CLABSI	N/A
1 – Admission to inpatient location		Ineligible for CLABSI	1
2		Ineligible for CLABSI	2
3		Ineligible for CLABSI	3
4		Ineligible for CLABSI	4
5	Central line accessed	Eligible for CLABSI	5
6		Eligible for CLABSI	6

Transfer Rule

If the date of event is the day of transfer or discharge, or the next day, the infection is attributed to the transferring location.

Otherwise, the infection is attributed to the location in which the patient is housed on the date of event.

Date	Patient Location	Location of Attribution
1/18	5 East	
1/20	5 East 7 South	
1/21	7 South	**5 East**
1/22	7 South	

Date of Event

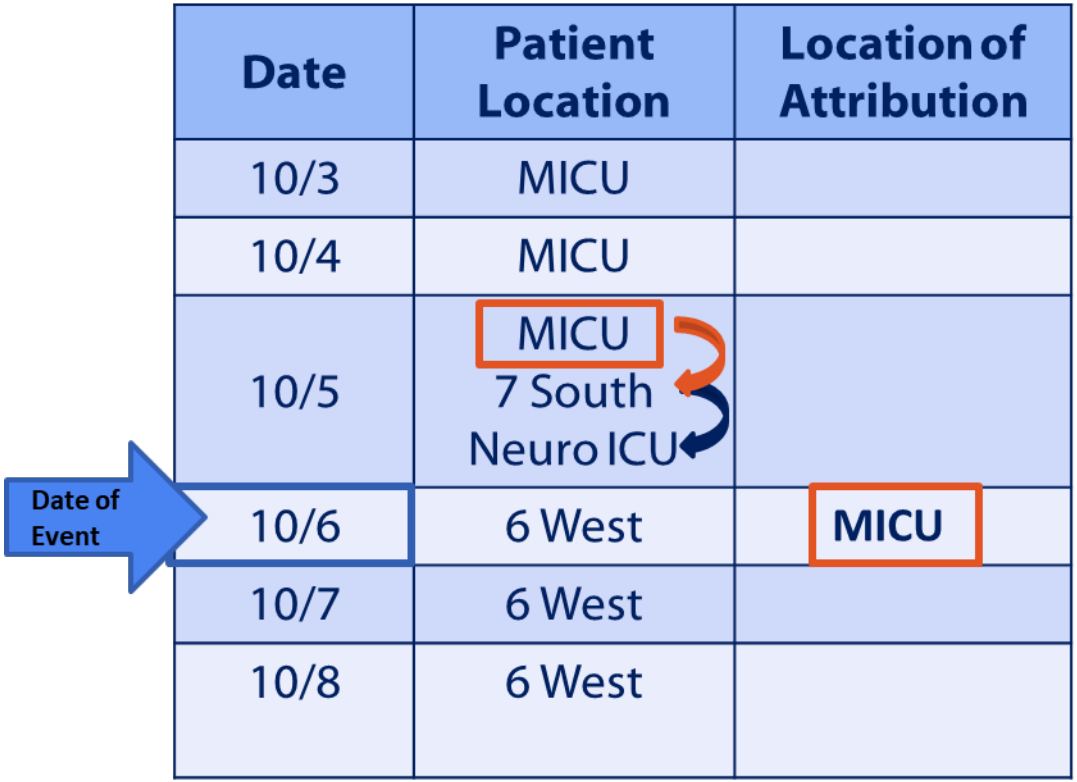
The Transfer Rule addresses the issue of incubation of infection.

Transfer Between Multiple Locations

- Attribute the infection to the ***first*** location in which the patient was housed on the day before the day of event

- This provides the longest incubation time during the Transfer Rule period

Transfer Rule – Examples



Repeat Infection Timeframe (RIT)

- 14-day time period during which no new infections of the same type are reported
  - Endocarditis (ENDO) is extended to include the remainder of the patient's current admission.
- Day 1 of the RIT is the date of event
- If a subsequent infection of the same type occurs within this 14-day time frame
  - Do not report a new event
  - Additional pathogens identified are added to the original event

Date of event

Hospital Day	SUTI Criterion
8	indwelling catheter inserted
9	indwelling catheter in-place
10	indwelling catheter in-place
11	Temp = 100.5°F; indwelling catheter in-place
12	Temp = 101.1°F; indwelling catheter in-place
13	Urine culture: >100,000 CFU/ml, *Klebsiella pneumoniae* indwelling catheter in-place
14	indwelling catheter in-place
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	

14-Day UTI Repeat Infection Timeframe (RIT)

Date of event: Symptomatic UTI (SUTI) not catheter associated

Hospital Day	SUTI Criterion
8	
9	
10	
11	Temp = 101°F
12	Temp = 100.8°F
13	Urine culture: >100,000 CFU/ml, *Staphylococcus aureus*
14	
15	indwelling catheter inserted
16	indwelling catheter in-place
17	indwelling catheter in-place
18	indwelling catheter in-place
19	Urine culture: >100,000 CFU/ml E. coli indwelling catheter in-place
20	
21	
22	
23	
24	

14-Day UTI Repeat Infection Timeframe (RIT)

- No change in date of event
- No new RIT is established
- Event designation does not change to catheter associated (CAUTI)
- E. coli is added as a pathogen to the UTI event

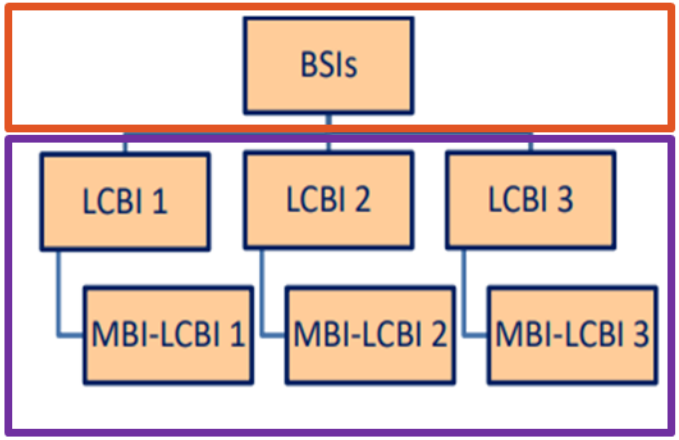
Repeat Infection Timeframe (RIT)

- The RIT will apply at the level of specific type of infection, meaning a patient will have no more than specific type during the RIT.
  - Exception for Bloodstream Infection (BSI), Urinary Tract Infection (UTI) and Pneumonia (PNEU) – the RIT will apply at the major type of infection.

During the RIT a patient will have:

- No more than one BONE infection (specific type) but may have another BJ-Bone & Joint Infection (major type) during an RIT.
- No more than one BSI (major type). Examples of specific types are LCBI1, LCBI2, and MBI-LCBI1.
- No more than one UTI (major type). Examples of specific types are SUTI and ABUTI.
- No more than one PNEU (major type). Examples of specific types are PNU1, PNU2, and PNU3.

Example of Major vs Specific Infection Type



Major type

Specific type

BJ – Bone and Joint Infection

BONE – Osteomyelitis

DISC – Disc space infection

JNT – Joint or bursa infection

PJI – Periprosthetic Joint Infection

Repeat Infection Timeframe (RIT)

- The RIT applies during a patient's single admission, including the day of discharge and the day after
  - In other words, the RIT does not carry over from one admission to another, even if readmission is to the same facility.

Secondary Bloodstream Infection (BSI) Attribution Period (SBAP)

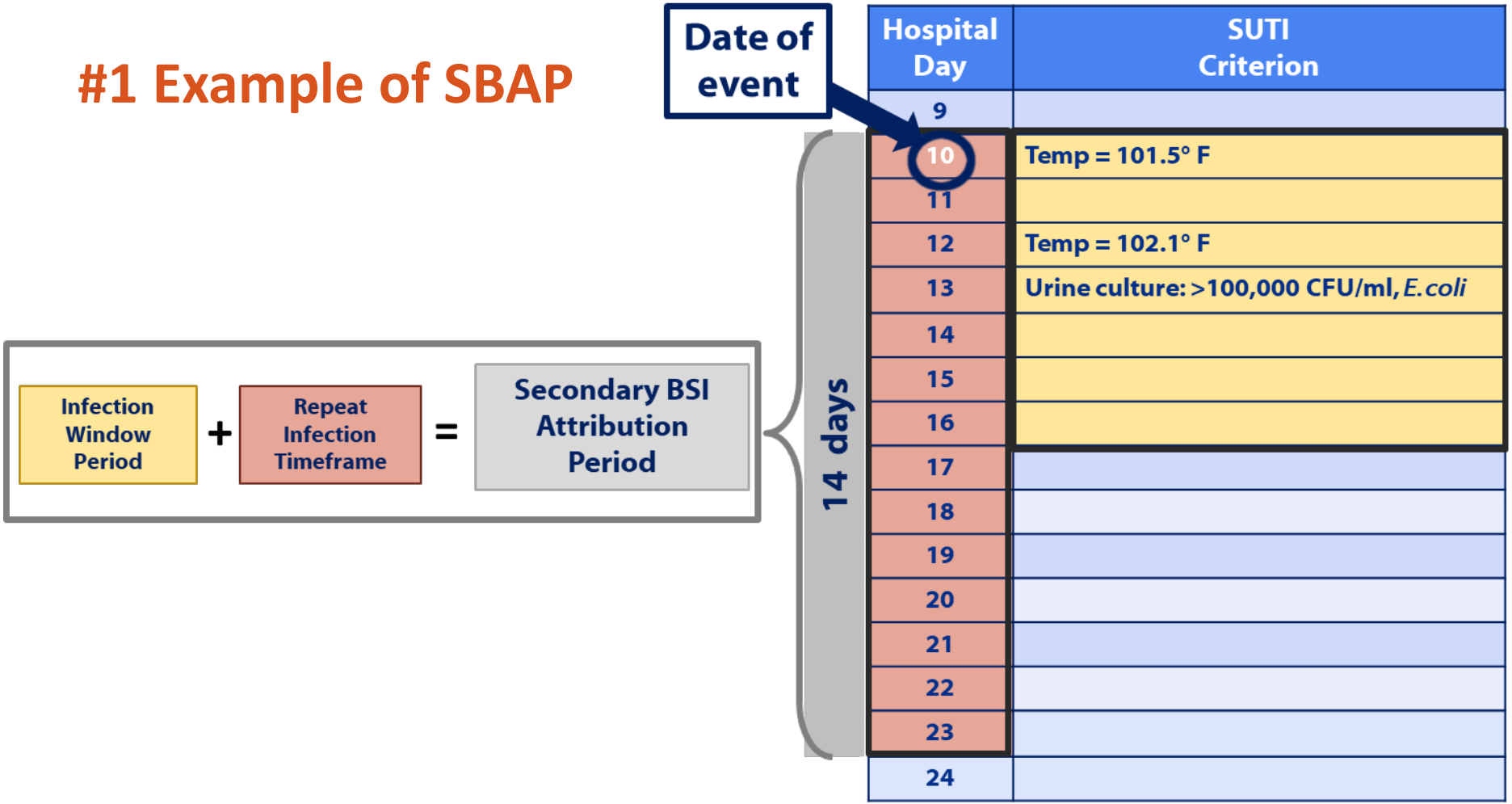
- The period in which a positive blood specimen must be collected to be considered a secondary bloodstream infection to a primary site infection when matching a primary site organism.

- Infection Window Period plus the Repeat Infection Timeframe (RIT).

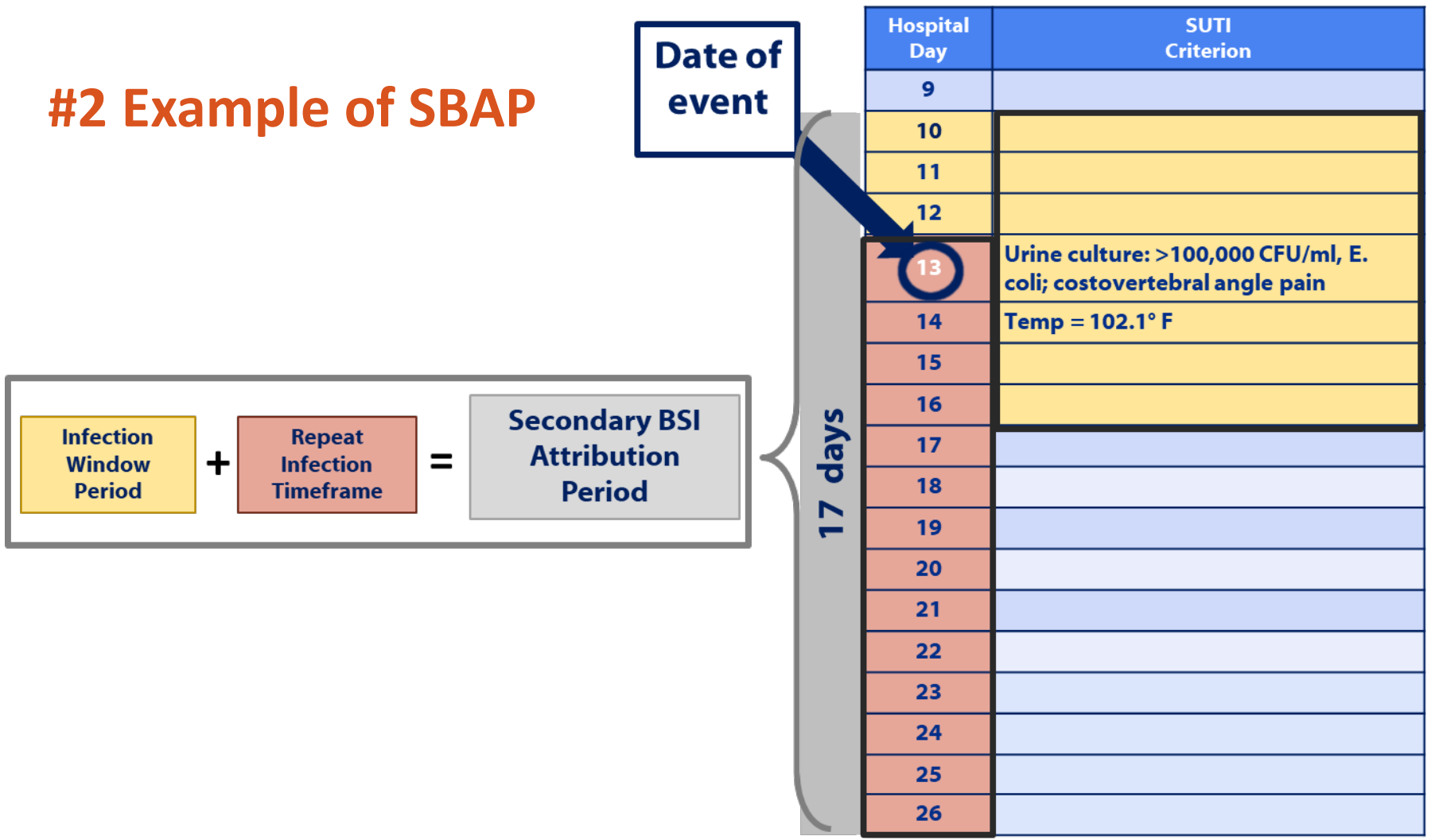
- 14 – 17 days duration depending on where the date of event falls within the IWP.

NOTE: A primary BSI will not have a Secondary BSI Attribution Period

#1 Example of SBAP



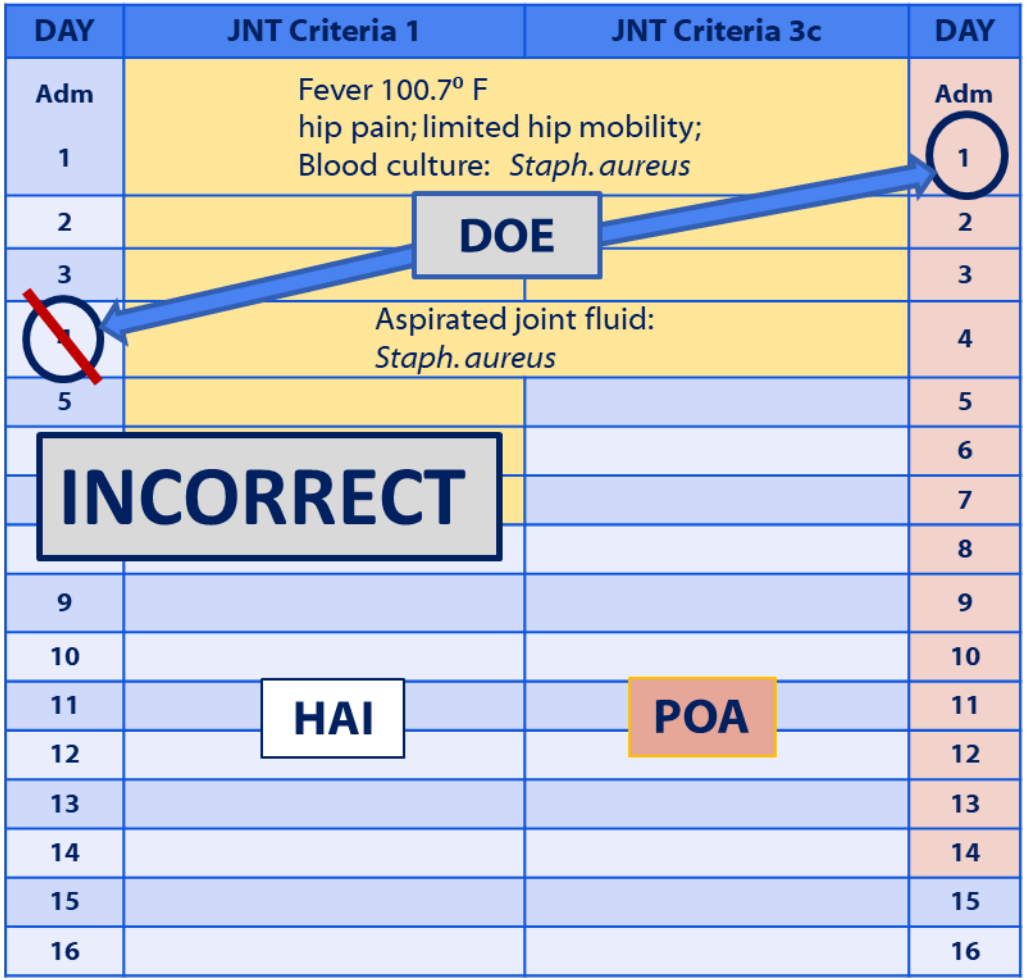
#2 Example of SBAP



When more than one criterion is met

- Always use the **earliest** date of event as well the related RIT and secondary BSI attribution period

- May be the difference between a POA vs HAI event



Endocarditis (ENDO) - A Unique Infection

- IWP = 21 days duration
  - the collection date of the first positive diagnostic test that is used as an element to meet the site-specific infection criterion,
  - the 10-calendar days before, and
  - the 10-calendar days after
- RIT = the remainder of the patient's admission
- SBAP = the 21-day infection window period and all subsequent days of the patient's current admission
  - limited to organism(s) identified in blood specimen that match the organism(s) used to meet the ENDO definition.

Example of Endocarditis (ENDO)

Date of event

Date	Details	IWP	ENDO RIT	SBAP
1	Adm			
2	Central line inserted			
3				
4		1		
5		2		
6		3		
7		4		
8		5		
9		6		
10		7		
11		8		
12		9		
13		10		
14	Blood culture: *Enterococcus faecium & Staphylococcus epidermidis* fever hypotension	11		
15		12		
16	Blood culture: *Enterococcus faecium & Staphylococcus epidermidis* TTE: "Aortic valve with obvious mobile echodensity. Considering patient's history high suspicion for vegetation".	13		
17	Continue IV antibiotic probable endocarditis	14		
18		15		
19		16		
20		17		
21		18		
22		19		
23		20		
24		21		
25				
26				
27				
28				
29	Patient discharged on home health for IV antibiotic			

Secondary Bloodstream Infection (BSI) Rules

Secondary bloodstream infections may be attributed to a primary-site of infection during the Secondary BSI Attribution Period (SBAP) if they meet one of 2 requirements of the Secondary BSI Guide (Appendix 1)

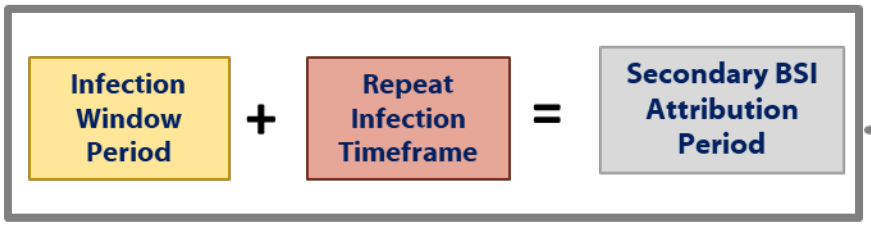
1. Blood organism **matches at least one organism** found in the site-specific infection specimen used to meet the primary-site infection criterion

OR

2. The organism identified in the **blood specimen is an element** used to meet the primary-site infection criterion

Scenario 1:

Matching Organisms



Date of event

15 days

Day	SUTI Criterion
9	
10	
11	Temp = 101.5° F
12	Temp = 102.1° F
13	Urine culture: >100,000 CFU/ml, *Klebsiella pneumoniae*
14	
15	
16	
17	
18	Blood culture: *Klebsiella pneumoniae, Klebsiella oxytoca*
19	
20	
21	
22	
23	
24	

SUTI with secondary BSI
Pathogens: *Klebsiella pneumoniae & Klebsiella oxytoca*
Date of Event: Day 11

What does it mean for a blood specimen to be an element of the criteria?

JNT-Joint or bursa infection (not for use as Organ/Space SSI after HPRO or KPRO procedures)

Joint or bursa infections must meet at least ***one*** of the following criteria:

1. Patient has organism(s) identified from joint fluid or synovial biopsy by culture or non-cu
   microbiologic testing method which is performed for purposes of clinical diagnosis and t
   example, not Active Surveillance Culture/Testing (ASC/AST).
2. Patient has evidence of joint or bursa infection on gross anatomic or histopathologic exa
3. Patient has at least two of the following signs or symptoms: swelling*, pain* or tenderne
   evidence of effusion*, or limitation of motion*.

   And at least *one* of the following:
   a. elevated joint fluid white blood cell count (per reporting laboratory's reference ra
      positive leukocyte esterase test strip of joint fluid.
   b. organism(s) and white blood cells seen on Gram stain of joint fluid.
   c. organism(s) identified from blood by culture or non-culture based microbiologic te
      which is performed for purposes of clinical diagnosis and treatment, for example,
      Surveillance Culture/Testing (ASC/AST).
   d. imaging test evidence suggestive of infection (for example, x-ray, CT scan, MRI, ra
      [gallium, technetium, etc.]), which if equivocal is supported by clinical correlation,
      physician documentation of antimicrobial treatment for joint or bursa infection.

** With no other recognized cause*

Reporting Instruction

- If a patient meets both organ space JNT and BONE report the SSI as BONE.

OREP- Deep pelvic tissue infection or other infection of the male or female reproductive tract (for example, epididymis, testes, prostate, vagina, ovaries, uterus) including chorioamnionitis, but excluding vaginitis, endometritis or vaginal cuff infections

Other infections of the male or female reproductive tract must meet at least ***one*** of the following criteria:

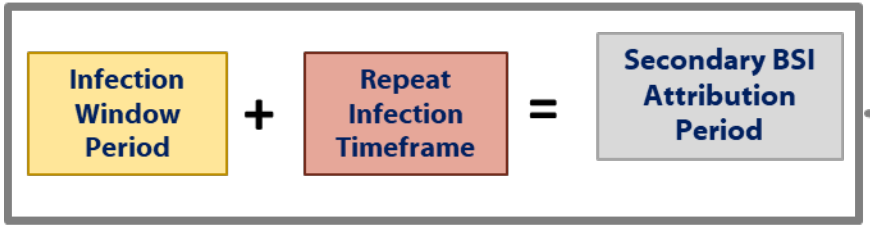
1. Patient has organism(s) identified from tissue or fluid from affected site (excludes urine and vaginal swabs) by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).
2. Patient has an abscess or other evidence of infection of affected site on gross anatomic or histopathologic exam.
3. Patient has **suspected infection of** one of the listed OREP sites and ***two*** of the following localized signs or symptoms: fever (>38.0°C), nausea*, vomiting*, pain or tenderness*, or dysuria*

   And at least *one* of the following:
   a. organism(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).
   b. physician initiates antimicrobial therapy within ***two*** days of onset or worsening of symptoms.

** With no other recognized cause*

Scenario 2:

Blood Specimen is an Element



Patient meets OREP criterion 3a where a positive blood culture is an element of the criterion.

Date of event

15 days

Day	OREP Criterion
9	
10	
11	
12	Abdominal tenderness, fever
13	Blood Culture: *Staphylococcus aureus*
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	

OREP with secondary BSI
Pathogen: *Staphylococcus aureus*
Date of Event: Day 12

How to Assign Pathogens Associated with Site-specific Infections That are Identified During the:

- Repeat infection timeframe (RIT)
- Secondary BSI attribution period (SBAP)

Assignment of Organisms During the RIT

- Additional eligible pathogens identified from same type of infection within a Repeat Infection Timeframe are added to the event
- No need to determine that infection criteria are met

Assignment of Organisms in Blood During an SBAP

- At least 1 matching pathogen to the organism from a specimen (site-specific or blood) that was used to meet a site-specific infection criterion
  - Eligible BSI pathogens are also considered secondary to the event

- Pathogen exclusions for specific infection definitions (such as yeast in UTI) also apply to secondary bloodstream infection pathogen assignment
  - Excluded pathogens must be attributed to another primary site-specific infection as either a secondary BSI or identified as a primary BSI

Pathogen Assignment During RIT & SBAP

DAY	SUTI Criterion	LCBI Criterion	DAY
1 Adm			
9			
10			
11	**Temp = 101.5° F**		
12	**Temp = 102.1° F**		12
13	**Urine culture: >100,000 CFU/ml, E. coli**		13
14	**Blood culture: E. coli & C. albicans**	**Blood culture: C. albicans**	**14**
15			15
16			16
17			17
18	**Urine culture: >100,000 CFU/ml, Enterococcus spp.**		18
19			19
20			20
21			21
22			22
23			23
24			24
25			25
26-27			26-27

LCBI
Pathogen: *C. albicans*
(excluded UTI pathogen)
Date of Event: Day14

Secondary BSI Attribution Period

SUTI with Secondary BSI
Pathogen: *E. coli & Enterococcus*
Date of Event: Day 11

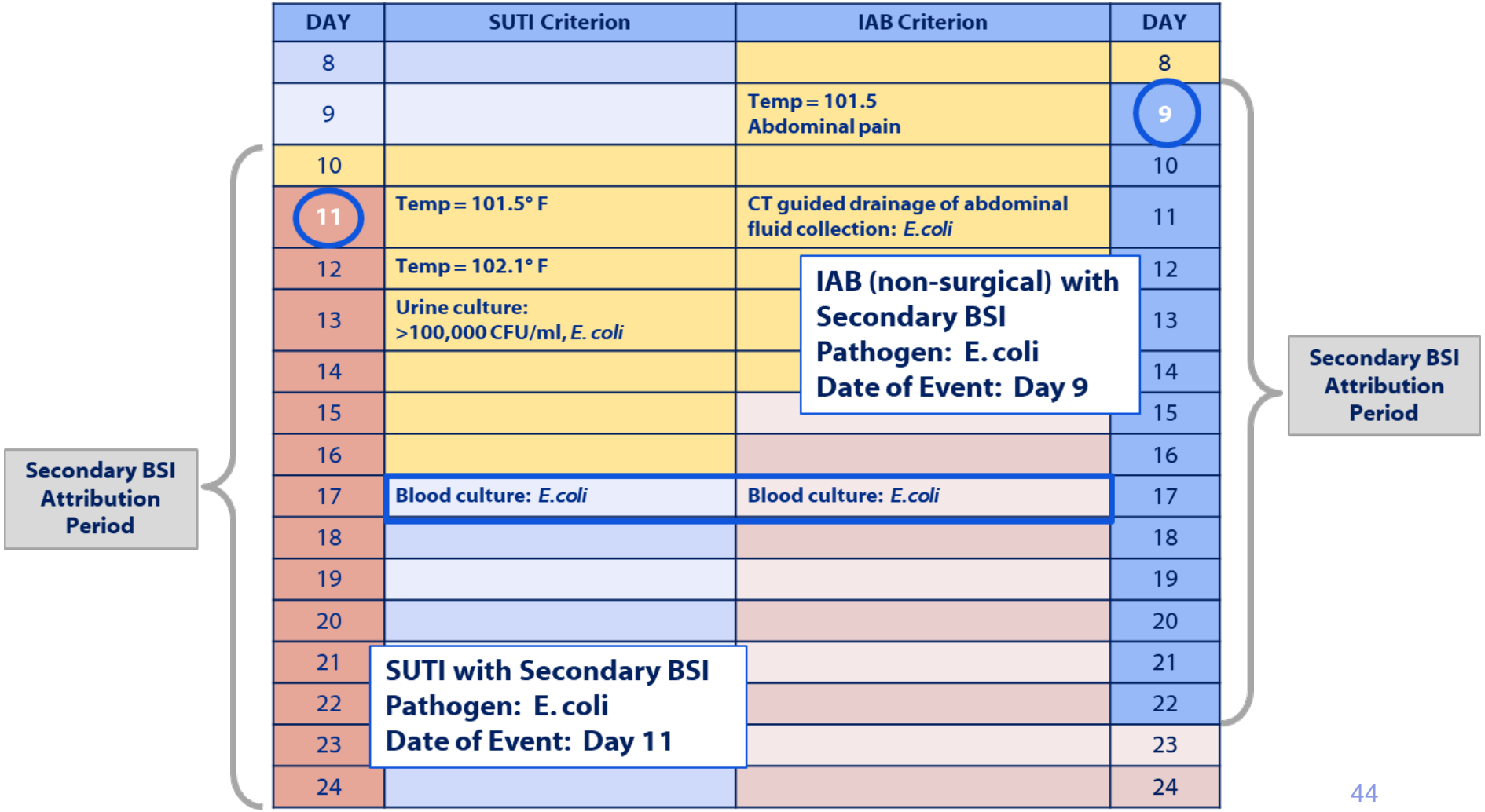
14-day BSI RIT

Assignment of Organisms Continued

- A BSI pathogen may be reported for more than one infection source

Example 1:

  - Assigned as a secondary BSI pathogen to different primary site infections (such as UTI and IAB)

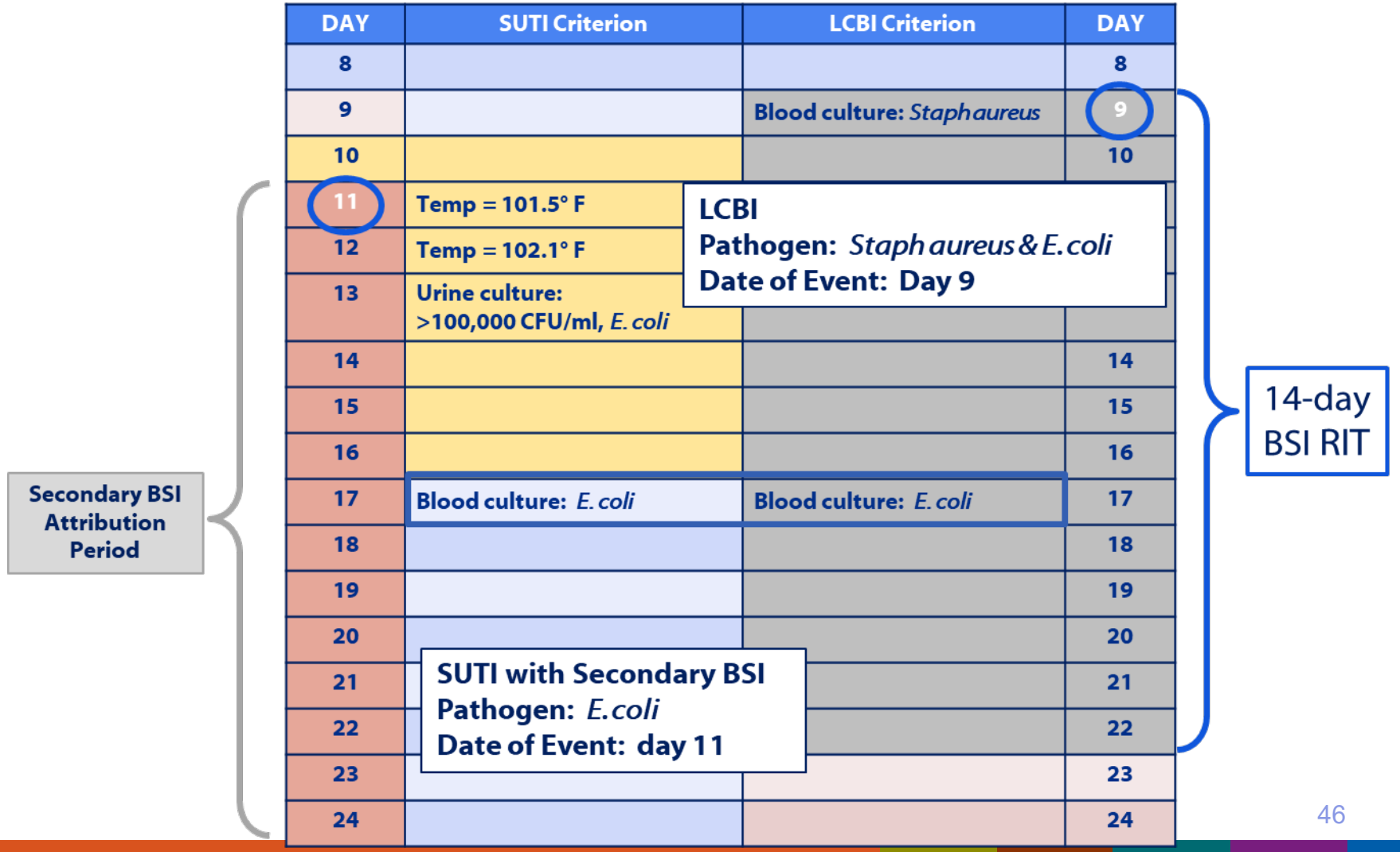

DAY
SUTI Criterion
IAB Criterion
DAY
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
Temp = 101.5
Abdominal pain
Temp = 101.5° F
CT guided drainage of abdominal fluid collection: E.coli
Temp = 102.1° F
Urine culture: >100,000 CFU/ml, E. coli
Blood culture: E.coli
Blood culture: E.coli
IAB (non-surgical) with Secondary BSI
Pathogen: E. coli
Date of Event: Day 9
SUTI with Secondary BSI
Pathogen: E. coli
Date of Event: Day 11
Secondary BSI Attribution Period
Secondary BSI Attribution Period

Organism Assignment

- BSI organisms may be assigned to more than one infection source

  Example 2

  - Assigned as a secondary BSI organism to a site-specific infection (e.g., UTI) and assigned as an **additional** organism to a primary BSI event


DAY
SUTI Criterion
LCBI Criterion
DAY
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
Blood culture: Staph aureus
Temp = 101.5° F
Temp = 102.1° F
Urine culture: >100,000 CFU/ml, E. coli
Blood culture: E. coli
Blood culture: E. coli
LCBI
Pathogen: Staph aureus & E. coli
Date of Event: Day 9
SUTI with Secondary BSI
Pathogen: E. coli
Date of Event: day 11
Secondary BSI Attribution Period
14-day BSI RIT

Resources

- Chapter 2 - “Identifying Healthcare-associated Infections (HAI) for NHSN Surveillance”: https://www.cdc.gov/nhsn/pdfs/pscmanual/2psc_identifyinghais_nhsncurrent.pdf
- Quick Learn Videos: https://www.cdc.gov/nhsn/training/patient-safety-component/index.html
- Miscellaneous Frequently Asked Questions: https://www.cdc.gov/nhsn/faqs/faqs-miscellaneous.html
- NHSN@cdc.gov

Summary

- Basic rules apply for identifying device-associated events (other than LabID, SSI, VAE)
  - Infection Window Period (IWP)
  - Date of Event (DOE)
  - Repeat Infection Timeframe (RIT)
  - Secondary BSI Attribution Period (SBAP)
- Pathogen assignment
  - Add on if in RIT, if not an excluded organism
  - Organism may be added to more than 1 event

American Journal of Infection Control NHSN Case-Study Series

- Written to address common surveillance scenarios related to CLABSI, CAUTI, VAE, SSI, MDRO/CDI
- Educational tools that be used for reliability testing of ICP teams, APIC chapters, etc.
- Test your knowledge
- Quiz and answers via web link
- Open access: https://www.sciencedirect.com/

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Clinical Case Study

Healthcare-associated infections studies project: An American Journal of Infection Control and National Healthcare Safety Network data quality collaboration

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Key Words:
Pneumonia
Ventilator-associated events
Bloodstream infections
COVID-19

This case study is part of a series centered on the Centers for Disease Control and Prevention/National Healthcare Safety Network (NHSN) healthcare-associated infection (HAI) surveillance definitions. This specific case study focuses on the application of the Pneumonia (PNEU), Ventilator-associated event (VAE), and Bloodstream infections (BSI) surveillance definitions to a patient with COVID-19. The intent of the case study series is to foster standardized application of the NHSN HAI surveillance definitions among Infection Preventionists (IPs) and encourage accurate determination of HAI events.

This National Healthcare Safety Network (NHSN) surveillance case study is part of a case-study series in the American Journal of Infection Control (AJIC). These cases reflect some of the complex patient scenarios Infection Preventionists (IPs) have encountered in their daily surveillance of healthcare-associated infections (HAI) using NHSN definitions. Objectives have been previously published.[1]

We hope that you will take advantage of this offering, and we look forward to your active participation. The online survey may be found at: https://www.surveymonkey.com/r/NHSNCOVID.

We strongly recommend participants review or reference the website and *NHSN Patient Safety Component Manual* Device-Associated Module for information that may be needed to answer the case study questions. The website links are https://www.cdc.gov/nhsn/

Reminder

- Never send patient identifiable information to NHSN@cdc.gov
- Violation of Healthcare Insurance Portability and Accountability Act (HIPAA)
- Email will be deleted, and de-identified version will need to be sent again

Thank You

For questions email NHSN@cdc.gov

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.