



# Basics Rules for Healthcare-associated Infection Surveillance in the NHSN Patient Safety Component, and General Updates for 2019

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# Agenda

- Fundamental Surveillance Rules for HAI in NHSN
- Calculators, Checklists, and FAQs....oh my!!!
- 2019 Updates to Fundamental Surveillance Rules/ Those not Limited to Single Protocol
- Questions

**Rules**

# “Surveillanceers” Must

- Know protocol/criteria
- Consistently apply the criteria
- Report events meeting criteria; exclude those that don't
- Failure to do so:
  - Breach of NHSN Rules of Behavior
  - Decreased usefulness of national comparative data
  - Unfair comparisons between facilities
  - Possible validation discrepancies
  - Potential impact of CMS Inpatient Quality Reporting score & facility reimbursement

**Concerns about the criteria should be sent to NHSN - NOT addressed by**

- **non-reporting of events, or**
- **facility adjudication**

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



**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

# Excluded Organisms

The only organisms excluded from HAI criteria:

- Well-known community associated organisms with long incubations:
  - *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 <sup>†</sup>	<b>Not Applicable</b>	<b>Not Applicable</b>	<b>Not Applicable</b>	<b>Not Applicable</b>
Date of Event				
POA				
HAI				
Repeat Infection Timeframe (RIT) <sup>†</sup>				
Secondary BSI Attribution Period <sup>†</sup>				

<sup>†</sup>See ENDO criteria in Chapter 17: CDC/NHSN Surveillance Definitions for Specific Types of Infections for endocarditis

\*See SSI, LabID, VAE, and PedVAE surveillance protocols

- [http://www.cdc.gov/nhsn/PDFs/pscManual/2PSC\\_IdentifyingHAIs\\_NHSNcurrent.pdf](http://www.cdc.gov/nhsn/PDFs/pscManual/2PSC_IdentifyingHAIs_NHSNcurrent.pdf), page 2-2

# Infection Window Period (IWP)

- The 7-days 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

- Diagnostic test examples\*
  - Laboratory specimen collection
  - Imaging test
  - Procedure or exam
- Localized sign or symptom examples:
  - 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  
ENDO

Note: The element **MAY** have been present before the infection window period.

(slide #12 provides an example)

**It may often NOT be the date of the diagnostic test!!!!**

# Infection Window Period

Hospital Day	Criterion
8	
9	
10	Temp = 101.5° F Temp = 102.1° F Urine culture: >100,000 CFU/ml, <i>E. coli</i>
11	
12	
13	Urine culture: >100,000 CFU/ml, <i>E. coli</i>
14	
15	
16	
17	

**Diagnostic Test** →

**3 Before**

**3 After**

**7-Day Infection Window Period**

# Infection Window Period and Date of Event

Hospital Day	SUTI Criterion
8	
9	
10	
11	Temp = 101.5° F
12	Temp = 102.1° F
13	Urine culture: >100,000 CFU/ml, <i>E. coli</i>
14	
15	
16	
17	

**Date of event** →

7-Day Infection Window Period

# Infection Window Period and Date of Event

Hospital Day	SUTI Criterion
8	
9	Temp = 100.5° F
10	Temp = 100.7° F
11	
12	Temp = 102.1° F
13	Urine culture: >100,000 CFU/ml, <i>E. coli</i>
14	
15	
16	
17	

**Date of event** →

7-Day Infection Window Period

# Present on Admission (POA)

vs.

# Healthcare-Associated Infection (HAI)

- Present on Admission - date of event occurs on the day of admission or the day after admission to an inpatient location.
  - The POA time period includes the day of admission, 2 days before and the day after admission.
- Healthcare-Associated Infection - the date of event occurs on or after the 3<sup>rd</sup> calendar day of admission.

Hospital Day	Date of Event
1 Date of admission	POA
2	
3	HAI
4	
5	

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

# Date of Admission

- 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, are NOT used to set the Date of Admission

# Associating an Infection to a Device

(Any part of)



- An infection where medical device was in place for >2 calendar days on the date of event, with day of device placement being Day 1\*. (See BSI guidance for central lines present on admission)

**AND**

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

*\*If an indwelling urinary catheter (IUC) was in place prior to inpatient admission, the IUC day count that determines device –association begins with the admission date to the first inpatient location. This allows for consistency with device denominator count.*

**Discontinued devices**: if a CL or indwelling urinary catheter was in place in an inpatient location for >2 calendar days and then removed, the DOE of the LCBI or UTI must be the day of discontinuation or the next day to be a CLABSI or CAUTI.

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

- Count all lines present at the time of the count regardless of access
- Includes urinary catheters, ventilators, and central lines
- Simplifies the counting of central line days

Date	Feb 1	Feb 2	Feb 3	Feb 4	Feb 5	Feb 6
Status	Admit w/ CL; Not accessed	Not accessed	CL remains in place; Not accessed	CL remains in place; Accessed	CL remains in place; Accessed	Not accessed
Include in CL denominator day count for Location/Month?	Yes	Yes	Yes	Yes	Yes	Yes

## Transfer Rule

- *Transfer Rule*: If the DOE is the day of transfer/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 DOE.

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

Key Terms	Admit Day Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	
Transfer Rule	ICU	ICU	ICU→ 5W	5W Date of event for an HAI	5W			HAI is attributable to the ICU
Transfer Rule	ICU	ICU	ICU→ 5W	5W	5W Date of event for an HAI			HAI is attributable to 5W
Transfer Rule	5W	5W	5W	5W→ Discharged Home	Admit to ED meeting infection criterion			Attributable to 5W
Multi - transfer Rule	ICU	ICU	ICU→ 5W→ CCU	CCU Date of event for an HAI	CCU			HAI is attributable to the ICU

# Repeat Infection Timeframe (RIT)

- Removes subjectivity of clinical determination that previous infection had resolved
- Uses date of event to determine a 14-day timeframe during which no new infections of the same type are reported
- The date of event is Day 1 of the 14-day Repeat Infection Timeframe
- If date of event for subsequent potential infection is within 14 days
  - Do not report new event
  - Additional pathogens identified are added to the original event

**Date  
of  
event**

Hospital Day	SUTI Criterion
8	Foley inserted
9	Foley
10	Foley
11	Temp = 101.5° F; Foley
12	Temp = 102.1°; Foley
13	Urine culture: >100,000 CFU/ml, <i>E. coli</i> ; Foley
14	Foley removed
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	

**14-Day UTI  
Repeat  
Infection  
Timeframe  
(RIT)**

**Date of event:  
SUTI not  
catheter-  
associated**

**14-Day UTI  
Repeat  
Infection  
Timeframe  
(RIT)**

Hospital Day	SUTI Criterion
8	
9	
10	
11	Temp = 101.5° F;
12	Temp = 102.1°;
13	Urine culture: >100,000 CFU/ml <i>E. coli</i>
14	
15	Foley inserted
16	Foley
17	Foley
18	Foley
19	Urine culture > 100,000 CFU/ml <i>E. faecium</i> ; Foley
20	No new date of event is set; Add <i>E. faecium</i>
21	
22	No new RIT is begun
23	
24	Does NOT change to catheter-associated UTI

# Repeat Infection Timeframe (RIT)

- The RIT will apply at the level of specific type of infection with the exception of Bloodstream Infection (BSI), Urinary Tract Infection (UTI) and Pneumonia (PNEU) where the RIT will apply at the major type of infection.
  - Patient will have no more than one BRST (specific type of major type SST)  
As opposed to:
    - Patient will have no more than one BSI (e.g., LCBI1, LCBI2, MBI-LCBI1, etc.)
    - Patient will have no more than one UTI (e.g., SUTI, ABUTI)
    - Patient will have no more than one PNEU (e.g., PNU1, PNU2, PNU3)

# RIT Major vs Specific Type Examples

Major Type	Specific Type
Skin and Soft Tissue Infection	
	BRST
	BURN
	CIRC
	DECU
	SKIN
	ST
	UMB
UTI	
	SUTI
	ABUTI

May have BRST and DECU within 14-day period

SUTI or ABUTI but not both within 14 - day period

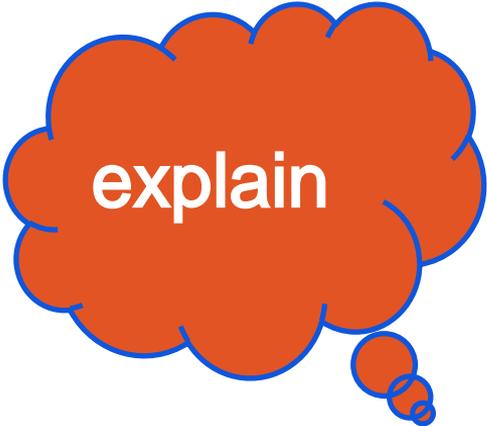
# Knowledge Test

- Your facility is performing CAUTI surveillance on your medical ward 5-West.
- Patient is admitted to 5-West on 1/15/2018 with urine culture positive for > 100,000 CFU/ml of *E. coli*. No NHSN UTI symptoms are present. Foley is inserted at time of urine culture.
- 9 days later (1/23/18), the Foley remains, and patient has temperature of 38.2°C and positive urine culture of > 100,000 CFU/ml of *E. coli*.

A CAUTI should be reported for this patient for 1/23/19?

True

False



explain

- UTI criteria not met related to the 1/15 urine culture
- No UTI RIT set
- Patient met criteria for CAUTI on 1/23 which will be reported.

# Sometimes Patients Meet More Than One Criterion

- Always use the earliest date of event and it's associated
  - RIT and
  - secondary BSI attribution period
- May be difference between POA vs HAI

DAY	JNT Criterion 1	JNT Criterion 3c	DAY
1 Adm		<i>Fever 100.7° F; hip pain; limited hip mobility; collection of positive blood culture: S. aureus</i>	1 Adm <b>DOE</b>
2			2
3			3
4 <del>DOE</del>	Aspirated joint fluid: <i>S. aureus</i> ,		4
5			5
6			6
7			7
8			8
9			9
10			10
11			11
12			12
13			13
14			14
15			15
16			16

# 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**

Date of event

Hospital Day	SUTI Criterion
9	
10	Temp = 101.5° F
11	
12	Temp = 102.1° F
13	Urine culture: >100,000 CFU/ml, <i>E. coli</i>
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	

Secondary BSI Attribution Period=

Infection Window Period

+

Repeat Infection Timeframe

14 days

Date of event

Secondary BSI Attribution Period =  
Infection Window Period  
+  
Repeat Infection Timeframe

17 days

Hospital Day	SUTI Criterion
9	
10	
11	
12	
13	Urine culture: >100,000 CFU/ml, <i>E. coli</i> ; costovertebral angle pain
14	Temp = 101.5° F
15	
16	
17	
18	
19	
20	
21	
22	
23	
24-26	

# 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

# Endocarditis (ENDO)- A Unique Infection

- 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.

# Secondary Bloodstream Infection (BSI) Rules

Only two ways

- Secondary bloodstream infections may be attributed to a primary-site infection during the Secondary BSI Attribution Period if they meet one of 2 requirements of the Secondary BSI Guide (Appendix 1)
  - Blood organism matches at least one organism found in the site-specific infection specimen used to meet the primary-site infection criterion

**OR**

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

Site-specific  
organism  
matches at least  
1 blood organism

Date  
of  
event

**Secondary  
BSI  
Attribution  
Period** Infection  
Window Period  
+  
Repeat Infection  
Timeframe

Day	SUTI Criterion
9	45-year old patient
10	
11	Temp = 101.5° F
12	Temp = 102.1° F
13	Urine culture: >100,000 CFU/ml, <i>E. coli</i>
14	
15	
16	
17	
18	Blood culture: <i>E. coli</i>
19	
20	
21	<b>SUTI with secondary BSI</b>
22	<b>Pathogen: E.coli</b>
23	<b>Date of Event: Day 11</b>
24	

15 days

Blood organism  
is element of  
site-specific  
criterion

Date  
of  
event

**Secondary  
BSI  
Attribution  
Period** Infection  
Window Period  
+  
Repeat Infection  
Timeframe

Day	SUTI Criterion
9	68-year old patient
10	
11	Tender hip joint, evidence of effusion
12	Tender hip joint, evidence of effusion
13	Blood Culture: <i>S. aureus</i>
14	
15	
16	
17	
18	
19	
20	
21	JNT with secondary BSI
22	Pathogen: <i>S. aureus</i>
23	Date of Event: Day 11
24	

15 days

Patient  
meets JNT  
Cr 3c  
Positive  
blood  
culture is an  
element of  
Cr 3c

# Assignment of Organisms

# Assignment of Organisms

- During RIT
- During Secondary BSI Attribution Period (SBAP)

# Assignment of Organisms During an 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

**EASY**

# Assignment of Organisms in Blood During an SBAP

- At least 1 matching pathogen to
  - 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 (e.g., UTI, PNEU) 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

## Case for consideration\*

**January 1:** 45-year-old patient with Guillain-Barre is admitted to MICU.

**January 11:** Temp – 101.5° F

**January 12:** Temp – 102.1° F

**January 13:** Urine culture collected; “+” 100,000 CFU/ml *E. coli*

**January 14:** Blood culture collected; “+” *E. coli* and *C. albicans*

**January 18:** Urine culture collected; “+” 100,000 CFU/ml *Enterococcus*

\*your facility is reporting ALL healthcare-associated infections to NHSN

## Which of the following is true for NHSN reporting?

Patient has only an LCBI on January 14 with E. coli and C. albicans

Patient has a SUTI 1a on January 11 with E. coli and Enterococcus with a secondary BSI AND an LCBI with C. albicans on January 14

DAY	SUTI Criterion	LCBI Criterion	DAY
1 Adm		<b>LCBI</b> <b>Pathogen: C. albicans</b> <b>(excluded UTI pathogen)</b> <b>Date of Event: Jan 14</b>	1 Adm
9			9
10			10
11	Temp = 101.5° F		
12	Temp = 102.1° F		12
13	Urine culture: >100,000 CFU/ml, <i>E. coli</i>		13
14	Blood culture: <i>E.coli</i> , and <i>C. albicans</i>	Blood culture: <i>C. albicans</i>	14
15			15
16			16
17			17
18	Urine culture: >100,000 CFU/ml, <i>Enterococcus spp.</i>		18
19			19
20			20
21			21
22	<b>SUTI with Secondary BSI</b> <b>Pathogen: E.coli, Enterococcus</b> <b>Date of Event: Jan. 11</b>		22
23			23
24			24
25			25
26-27			26-27

UTI – Secondary BSI Attribution Period  
Infection Window +  
14-day RIT (=15 days)

BSI – 14-day 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 (e.g., UTI and IAB)

DAY	SUTI Criterion	IAB Criterion	DAY
8			8
9		Temp = 101.5 Abdominal pain	9
10			10
11	Temp = 101.5° F	CT guided drainage of abdominal fluid collection: <i>E.coli</i>	11
12	Temp = 102.1° F		12
13	Urine culture: >100,000 CFU/ml, <i>E. coli</i>		13
14			14
15			15
16			16
17	Blood culture: <i>E.coli</i>	Blood culture: <i>E.coli</i>	17
18			18
19			19
			20
			21
			22
			23
			24

**IAB (non-surgical)  
with Secondary  
BSI  
Pathogen: E.coli  
Date of Event: 9**

**IAB – Secondary BSI Attribution  
Period  
Infection Window + 14-day RIT**

**SUTI – Secondary  
BSI Attribution  
Period= Infection  
Window + 14-day  
RIT**

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

# 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			8
9		Blood culture: <i>Staph aureus</i>	9
10		<b>LCBI</b> <b>Pathogen: Staph aureus &amp; E.coli</b> <b>Date of Event: day 9</b>	
11	Temp = 101.5° F		
12	Temp = 102.1° F		
13	Urine culture: >100,000 CFU/ml, <i>E. coli</i>		
14			
15			14
16			15
17	Blood culture: <i>E.coli</i>	Blood culture: <i>E.coli</i>	16
18			17
19			18
20			19
21			20
22			21
23			22
24			23
			24

11

9

**LCBI**  
**Pathogen: Staph aureus & E.coli**  
**Date of Event: day 9**

BSI – 14 day RIT

UTI – Secondary BSI Attribution Period Infection Window + 14 day RIT

**SUTI with Secondary BSI**  
**Pathogen: E.coli**  
**Date of Event: day 11**

**Checklists, Worksheets, and  
Worksheet Generators  
Oh my!!**

# NHSN Infection Checklists

- For each infection type
- Modeled after the TN HAI Checklists

## 2019 NHSN Ventilator-Associated Event (VAE) Checklist

Ventilator-Associated Event (VAE) Summary		
Criterion	Criterion Met	Date of Event (DOE)
VAC	<input type="checkbox"/>	
IVAC	<input type="checkbox"/>	
PVAP	<input type="checkbox"/>	
Please refer to <a href="#">Chapter 10 Ventilator-Associated Event (VAE)</a> of the Patient Safety Manual for additional information.		

Documentation Review Checklist	
Ventilator Associated Event (VAE)	
Ventilator Associated Condition (VAC)	
Element	Element Met
Patient has at least <b>one</b> of the following:	
<ul style="list-style-type: none"> <li>• Baseline period of stability* on the ventilator</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• Baseline period of improvement* on the ventilator</li> </ul>	<input type="checkbox"/>
<b>AND</b> After a period of stability or improvement (as above), patient has at least <b>one</b> of the following indicators of worsening oxygenation:	
1. Increase in daily minimum** FiO <sub>2</sub> of ≥ 0.20 (20 points) over daily minimum FiO <sub>2</sub> of the first day in the baseline period, sustained for ≥ 2 calendar days	<input type="checkbox"/>
2. Increase in daily minimum†† PEEP values of ≥ 3 cm H <sub>2</sub> O† over daily minimum PEEP of the first day in the baseline period, sustained for ≥ 2 calendar days	<input type="checkbox"/>
<p><b>Note:</b>            *Stability or improvement is defined by ≥ 2 calendar days of stable or decreasing daily minimum<sup>†</sup> FiO<sub>2</sub> or PEEP values. The baseline period is defined as the 2 calendar days immediately preceding the first day of increased daily minimum PEEP or FiO<sub>2</sub>.            **Daily minimum defined by lowest value of FiO<sub>2</sub> or PEEP during a calendar day that is maintained for &gt; 1 hour.            †Daily minimum PEEP values of 0-5 cm H<sub>2</sub>O are considered equivalent for the purposes of VAE surveillance.</p>	
Comments/Notes:	

Materials for Enrolled Facilities -

Ambulatory Surgery Centers +

Acute Care Hospitals/Facilities +

Long-term Acute Care Hospitals/Facilities +

Long-term Care Facilities +

Outpatient Dialysis Facilities +

Inpatient Rehabilitation Facilities +

Inpatient Psychiatric Facilities +

MDRO & CDI LabID Event Calculator

VAE Calculator

PedVAE Calculator

HAI & POA Worksheet Generator

HAI Checklists



# Surveillance Reporting for Enrolled Facilities

## Reporting & Surveillance Resources for Enrolled Facilities

### Acute Care Hospitals/Facilities



Urgent care or other short-term stay facilities (e.g. critical access facilities, oncology facilities, military/VA facilities)

More

### Ambulatory Surgery Centers



Outpatient surgery centers.

More

### Long-term Acute Care Facilities



Long-term acute care hospitals (LTACs).

More

### Long-term Care Facilities



Nursing homes, assisted living and residential care, chronic care

### Outpatient Dialysis Facilities



### Inpatient Rehabilitation Facilities



Inpatient Rehabilitation Facilities.

<https://www.cdc.gov/nhsn/enrolled-facilities/index.html>

# HAI and POA Worksheet Generator

## Designed to identify the

- 7-day Infection Window Period
- Date of Event and POA or HAI determination
- 14-day Repeat Infection Timeframe (RIT)
- Secondary Bloodstream Infection Attribution Period

# HAI and POA Worksheet Generator

- Does not store any information
- Does not send any information to NHSN
- Location: Supporting Materials

Potentially:  
CAUTI and  
CLABSI  
calculators

Enroll Here +

Materials for Enrolled Facilities -

Ambulatory Surgery Centers +

Acute Care Hospitals/Facilities -

Surveillance for Antimicrobial Use and Antimicrobial Resistance Options

Surveillance for BSI (CLABSI)

**Surveillance for UTI (CAUTI)**

Surveillance for C. difficile, MRSA, and other Drug-resistant Infections

Surveillance for CLIP

Surveillance for SSI Events

Surveillance for VAE

Surveillance for PedVAE

Surveillance for PNFI1 (ndVAP)

## Resources for NHSN Users Already Enrolled

Training	+
Protocols	+
Frequently Asked Questions	+
Data Collection Forms	+
CMS Supporting Materials	+
Supporting Material	+
<b>Worksheet Generator (electronic) and Worksheets (manual)</b>	-

- [Healthcare-associated Infection \(HAI\) and Present on Admission Infection \(POA\) Worksheet Generator](#) (must have JavaScript enabled)
- [Worksheet for Determining Date of Event, Infection Window Period, Repeat Infection Timeframe, and Secondary BSI Attribution Period 2017](#) [XLSX - 18K]
- [Example Worksheet for Determining Date of Event, Infection Window Period, Repeat Infection Timeframe, and Secondary BSI Attribution Period 2017](#) [XLSX - 21K]

Analysis Resources

## New Users - Start Enrollment Here



Step 1: Enroll into NHSN

Step 2: Set up NHSN

Step 3: Report

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Worksheets

# HAI and POA Worksheet Generator

Relies on user to

- Ensure that all elements of infection criterion are met and are entered into the worksheet generator
- Enter correct dates

Therefore the WG determination is not a confirmation of NHSNevent!!!!!!

**Garbage In = Garbage Out**

# Example of Worksheet Generator Determination -Correct

Admit date: 2/2/2019

Hospital Day/Date	First Diagnostic Test	Infection Window Period (*)	Date of Event	Repeat Infection Timeframe (*)	Secondary BSI Attribution Period (*)
2/1/2019		<input type="checkbox"/>			
1. - 2/2/2019 - Admit Date		<input checked="" type="checkbox"/> Swelling, pain, limited motion	- POA		
2. - 2/3/2019		<input type="checkbox"/>			
3. - 2/4/2019	✓	<input checked="" type="checkbox"/> Blood culture collection positive for S. aureus			
4. - 2/5/2019		<input type="checkbox"/>			
5. - 2/6/2019		<input type="checkbox"/>			
6. - 2/7/2019		<input type="checkbox"/>			
7. - 2/8/2019					
8. - 2/9/2019					
9. - 2/10/2019					
10. - 2/11/2019		JNT			
11. - 2/12/2019		Criterion 3c			
12. - 2/13/2019					
13. - 2/14/2019					
14. - 2/15/2019					

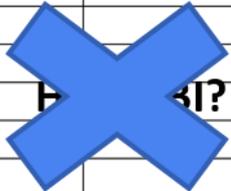
# Example of Worksheet Generator Determination - Incorrect

Admit date: 2/2/2019

Hospital Day/Date	First Diagnostic Test	Infection Window Period (*)	Date of Event	Repeat Infection Timeframe (*)	Secondary BSI Attribution Period (*)
2/1/2019		<input type="checkbox"/>	-		
1. - 2/2/2019 - Admit Date		<input type="checkbox"/>			
2. - 2/3/2019		<input type="checkbox"/>			
3. - 2/4/2019	✓	<input checked="" type="checkbox"/> Blood culture collection positive for S. aureus	HAI		
4. - 2/5/2019		<input type="checkbox"/>			
5. - 2/6/2019		<input type="checkbox"/>			
6. - 2/7/2019		<input type="checkbox"/>			
7. - 2/8/2019					
8. - 2/9/2019					
9. - 2/10/2019					
10. - 2/11/2019					
11. - 2/12/2019					
12. - 2/13/2019					
13. - 2/14/2019					
14. - 2/15/2019					
15. - 2/16/2019					
16. - 2/17/2019					

← Missing element!!!

↓ Wrong determination!



# Worksheet for Surveillance

- *To promote consistent surveillance data collection*
- *Worksheet, and example of a completed worksheet with explanation*
- *<http://www.cdc.gov/nhsn/acute-care-hospital/clabsi/index.html>*
- *First 2 documents under “Supporting Materials”*
- *Note: 2 tabs at the bottom of each*
- *Highly recommend use*

- Helpful Tips for CAUTI Reporting for the Centers for Medicare and Medicaid Services’ PPS-Exempt Cancer Hospital Quality Reporting (PCHQR) Program  [PDF - 116 KB] September, 2013
- Using the “Rate Table - CAUTI Data for CMS PPS-Exempt Cancer Hospitals” Output Option  [PDF - 170 KB] July 2014

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## Supporting Materials

- Worksheet for Determining Date of Event, Infection Window Period, Repeat Infection Timeframe, and Secondary BSI Attribution Period  [XLSX - 12 KB]
- Example Worksheet for Determining Date of Event, Infection Window Period, Repeat Infection Timeframe, and Secondary BSI Attribution Period  [XLSX - 22 KB]
- Unusual Susceptibility Profiles Alert  [PDF - 585 KB] January 2015
- CDC Location Labels and Location Descriptions  [PDF - 379 KB] January 2015
- NHSN Key Terms  [PDF - 140 KB] January 2015
- CDC/NHSN Surveillance Definitions for Specific Types of Infections  [PDF - 235 KB] January 2015
- NHSN Data Entry and Analysis
- NHSN Organism List (All Organisms, Top Organisms, Common Commensals, MBI Organisms, and UTI Bacteria)  [XLS - 223 KB] January 2015



# Worksheet for Surveillance

Patient Name: \_\_\_\_\_

Location(s): \_\_\_\_\_

Month: \_\_\_\_\_ Yr: \_\_\_\_\_

Admission Date: \_\_\_\_\_

Date / Hospital Day	First diagnostic test or first sign/symptom	Infection Window Period	Date of Event	RIT (Repeat Infection Time frame)	Secondary BSI Attribution Period	Date / Hospital Day	First diagnostic test or first sign/symptom	Infection Window Period	Date of Event	RIT (Repeat Infection Time frame)	Secondary BSI Attribution Period	Date / Hospital Day	First diagnostic test or first sign/symptom	Infection Window Period	Date of Event	RIT (Repeat Infection Time frame)	Secondary BSI Attribution Period
1						1						1					
2						2						2					
3						3						3					
4						4						4					
5						5						5					
6						6						6					
7						7						7					
8						8						8					
9						9						9					
10						10						10					
11						11						11					
12						12						12					

# Worksheet Example

Date / Hospital Day	First diagnostic test or first sign/symptom	Infection Window Period	Date of Event	RIT (Repeat Infection Timeframe)	Secondary BSI Attribution Period	Date / Hospital Day	First diagnostic test or first sign/symptom	Infection Window Period	Date of Event	RIT (Repeat Infection Timeframe)	Secondary BSI Attribution Period	Explanation
1						1						In the first section you will note a urine culture col is found to be positive with > 100,000 cfu/ml of E. c test, an element used to meet the SUTI criterion 1a infection window period (day of diagnostic test, 3 days after). Documented evidence of fever on the January is noted in the medical record. January 7 is element used to meet the SUTI infection criterion c time during the infection window period and theref event. Date of event is day one of the 14 day Repe Timeframe (RIT). The RIT includes January 7 - 20. (within the RIT) another urine culture is collected a 100,000 cfu/ml of S. aureus. The pathogen, S. aureu report of the SUTI. A new SUTI is not reported sin collection date is within the repeat infection timefr on January 15 a positive blood culture with pathog albicans is identified within the BSI attribution time (infection window period + RIT). Because the blo at least one organism that matches an organism (S the site- specific (UTI) infection culture that was u specific infection criterion, the BSI is determined to the SUTI. However, C. albicans is an excluded patf the UTI criteria and therefore cannot be assigned a
2						2						
3						3						
4						4						
5						5						
6						6						
7		Fever	SUTI			7						
8		Fever				8						
9	Urine Cx > 100,000 EC					9						
10						10						
11				Ur Cx > 100 SA		11						
12						12						
13						13						
14						14						
15				Bld SA/CA		15	Bld Cx CA	LCBI				
16						16						
17						17						
18						18						
19						19						

**NEW for 2019**

# What Else is New???

Additional 2019 Infection Protocols/Criteria Updates Not Limited to Single Protocol

# Chapter 17:

## Modification to Spinal Abscess Criteria

- Title “SA – Spinal Abscess” had been updated to “SA – Spinal Abscess/infection”
- SA criterion 1 has been updated to add the language “or from purulent material found”
- Changes allow identification of SA when the word “abscess” may not be used, but alternative documentation of infection

# Resources

- “Identifying Healthcare-associated Infections (HAI) for NHSN Surveillance” at: [https://www.cdc.gov/nhsn/pdfs/pscmanual/2psc\\_identifyinghais\\_nhsncurrent.pdf](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>
- [HAI and POA Worksheet Generator at:: https://www.cdc.gov/nhsn/poa/index.html](https://www.cdc.gov/nhsn/poa/index.html)
- <https://www.cdc.gov/nhsn/faqs/faqs-miscellaneous.html> (Miscellaneous Frequently Asked Questions document)
- [NHSN@cdc.gov](mailto: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)

# Summary

- Pathogen assignment
  - Add on if in RIT and not an excluded organism
  - Organism may be added to more than 1 event
- Tools available
  - HAI-specific Checklists
  - Electronic HAI POA Worksheet Generator
    - Requires user to ensure infection criterion are met and to enter correct dates
    - Generates worksheet with IWP, DOE, RIT, 2° BSI Attribution Period
  - Worksheet for Surveillance

# Summary

- Changes for 2019 not limited to single protocol
  - Amplification of Spinal Abscess criteria to capture cases where “abscess” not documented, but infection documented

# American Journal of Infection Control

## NHSN Case-Study Series

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

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journal homepage: [www.ajic.com](http://www.ajic.com)

Practice Forum

Health care–associated infection surveillance project: An American Journal of Infection Control and National Healthcare Safety Network data quality collaboration case study. Bloodstream infection—patient injection into vascular access 2017

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**Give it a Try!!**

**Key Words:**  
Intravenous injection  
Central line–associated bloodstream infection  
NHSN

This case study is part of a series centered on the Centers for Disease Control and Prevention/National Healthcare Safety Network (NHSN) health care–associated infection surveillance definitions. These cases reflect some of the complex patient scenarios infection preventionists have encountered in their daily surveillance of health care–associated infections using NHSN definitions and protocols. Teaching points for this case study are:

- Device day counts for denominator data
- Eligible central line (CL) day counts for device attribution
- Associating bloodstream infections with CLs
- Documentation required for use of the NHSN CL-associated bloodstream infection exclusion for observed or suspected patient injection.

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This case study is a continuation of a published series in the *American Journal of Infection Control*. These cases reflect the examples of staff. We hope you will take advantage of this educational opportunity by actively participating, and we look forward to providing

## Reminder

- Never send patient identifiable information to [NHSN@cdc.gov](mailto: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](mailto:NHSN@cdc.gov)

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

