



# Patient Safety Component

## CAUTION: Is it a CAUTI? Know your CAUTI Criteria.

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March 21, 2024

# Objectives

We will demonstrate how to perform CAUTI surveillance. By the end of this lesson, you will be able to:

- Define UTI criteria
- Explain UTI event and denominator requirements
- Assess and apply UTI criteria to UTI case studies
- Perform interactive knowledge checks

# UTI Burden

- 2017 - 160,833 CAUTI<sup>1</sup>.
  - 5.4 CAUTI/1000 discharges.
- The 2022 NHSN Progress Report:
  - 12% decrease in the overall CAUTI SIR between 2022 and 2021.
  - Largest unit decrease, 27%, in ACH ICUs between 2022 and 2021.
  - No significant change in IRFs and LTACs between 2022 and 2021.
- Average cost of a HAI CAUTI: \$13,793<sup>1</sup>.
- CAUTI Ranks 3<sup>rd</sup> in reportable events for NHSN.

<sup>1</sup>AHRQ National Scorecard on Hospital-Acquired Conditions Updated Baseline Rates and Final Results 2014-2017

# Where Can You Find CAUTI Information?

CAUTI Information can be found here:  
<https://www.cdc.gov/nhsn/psc/uti/index.html>

## Urinary Tract Infections (UTI) Events

Catheter-Associated Urinary Tract Infection (CAUTI) and Non-Catheter-Associated Urinary Tract Infection (UTI) (and Other Urinary System Infection (USI))

[Print](#)

### Protocols

[Chapter 7: Urinary Tract Infection \(UTI\) Event – January 2024](#) [PDF - 1 MB]  
For full details on protocol definitions and the application of these definitions, please review the applicable protocol and [Chapter 2: Identifying Healthcare-associated Infections \(HAIs\) in NHSN](#).

[2024 Patient Safety Component Summary of Updates](#) [PDF - 248 KB]

### Supporting Chapters

[Chapter 1: NHSN Overview – January 2024](#) [PDF - 350 KB]

[Chapter 2: Identifying Healthcare-associated Infections \(HAIs\) in NHSN – January 2024](#) [PDF - 1 MB]

[Chapter 3: Patient Safety Monthly Reporting Plan – January 2024](#) [PDF - 300 KB]

[Chapter 15: CDC Location Labels and Location Descriptions – January 2024](#) [PDF - 1 MB]

[Chapter 16: NHSN Key Terms – January 2024](#) [PDF - 300 KB]

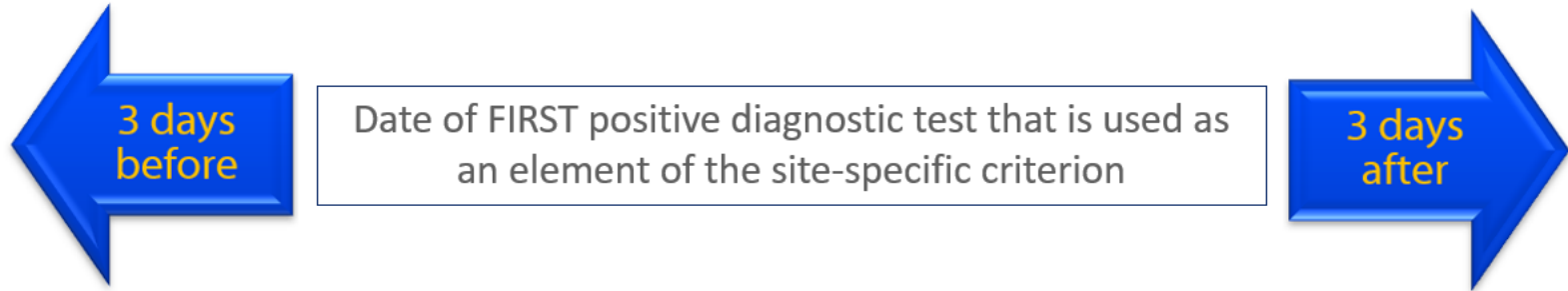
[Chapter 17: CDC/NHSN Surveillance Definitions for Specific Types of Infections – January 2024](#) [PDF - 1 MB]

- UTI Training
- Educational Roadmap
- CMS Requirements
- HAI Checklists
- FAQs
  - UTI Events
  - Analysis
  - Annual Surveys
  - Locations
  - Miscellaneous
  - CDA

# Chapter 2 Key Concepts

# Key Concept: Infection Window Period (IWP)

Positive Urine Culture Sets the IWP



# Key Concept: Date of Event (DOE)

- The UTI DOE is the date the first element used to meet a UTI criterion occurs for the first time within the 7-day IWP.
- First element may be a positive urine culture **OR** a NHSN UTI sign/symptom.

Date	SUTI Criterion	IUC Day
4/25 – Admit	Fall and IUC inserted	1
4/26	IUC present	2
4/27	IUC present	3
<b>4/28 DOE</b>	<b>Urine culture <math>\geq</math> 100K CFU/ml <i>S. aureus</i>. IUC present</b>	<b>4</b>
4/29	IUC present. Fever (38.2 C)	5
4/30	IUC removed	6
5/1	Urinary Frequency	7

# Key Concept: UTI Repeat Infection Timeframe (RIT)

- 14 -day timeframe where no 'new' UTI events are reported (SUTI or ABUTI). All UTI events identified set an RIT & SBAP - Includes non-catheter-associated **and POA** events.
- The RIT for a UTI event is a 'fixed' 14 days, specifically, the DOE of the UTI event and the following 13 days. Additional eligible urine cultures identified in the RIT that have different eligible pathogens from the original culture are added to the event.
- **Note:**
  - The original date of event is maintained.
  - The device association does **not** change during the RIT.



# Key Concept: Secondary BSI Attribution Period (SBAP)

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

- IWP combined with the RIT.
- Based on the date of the UTI event, the SBAP is 14 – 17 days.

# Two Scenarios for 2nd BSI can be applied to UTI

- Scenario 1: **MATCHING ORGANISM CONCEPT** - At least one organism identified in a positive **BLOOD** culture matches an organism identified from the **URINE** culture used to meet SUTI criteria **AND** the blood culture is collected in the SBAP (IWP + RIT).

**OR**

- Scenario 2: **ABUTI** – The positive blood culture is used as an element in meeting the UTI criterion and collected during the UTI IWP.

# Key Concept: Location of Attribution (LOA)

Location of attribution: Inpatient location where the patient was assigned on the DOE.

- Non-bedded inpatient locations, for example Operating Room or Interventional Radiology, are not eligible for attribution for HAI events.
- **Must** be assigned to an inpatient location where denominator data (patient days, device days) are collected.

# Key Concept: Transfer Rule

## Rule of Transfer

- If a UTI DOE is the date of transfer/discharge, or the next calendar day, the UTI is attributed to the transferring/discharging location or facility.
- If the patient is in multiple locations or facilities within the transfer rule time frame, attribute the UTI to the first location in which the patient was housed the day before the UTI DOE.

# Transfer Rule Example

- Single Transfer

Location Example:

Date	Patient Location	Location of Attribution
3/22	Unit A	
3/23	Unit A Unit B	
<b>3/24 Date of Event</b>	Unit B	<b>Unit A</b>
3/25	Unit B	

Facility Example:

Date	Patient Location	Location of Attribution
3/22	Facility 1	
3/23	Facility 1 Facility 2	
<b>3/24 Date of Event</b>	Facility 2	<b>Facility 1</b>
3/25	Facility 2	

- Multiple Transfers

Date	Patient Location	Location of Attribution
3/22	Unit A	
3/23	Unit A Unit B Unit C	
<b>3/24 Date of Event</b>	Unit C Unit D	<b>Unit A</b>
3/25	Unit D	

# NHSN Chapter 7 Key Concepts

# Unless an IUC is also present, the following do NOT qualify as an IUC

- Suprapubic catheter
- Nephrostomy tubes
- Urostomy
- Ileal conduit
- Perineal urethrostomy

## NOTE:

Urine collected from **any** source, including the above sites, CAN be used to determine a UTI.

# Key Concept: Indwelling Urinary Catheter (IUC)

- A drainage tube that is inserted into the urinary bladder through the urethra, is left in place, and is connected to a drainage bag (including leg bags).
- IUCs are also often called Foley catheters.
- IUCs used for intermittent or continuous irrigation are also included in CAUTI surveillance.



# Urine Cultures

- **Eligible Urine Culture**

- $\geq 100\text{K}$  CFU/ml of at least one eligible organism.

AND

- No more than two organisms.

- **Urine Source**

- **Any** source, including urine collection devices, such as nephrostomy tubes.

# Urine Cultures

## Excluded Organisms

- Excluded organisms: Candida or yeast not otherwise specified, dimorphic fungi, parasites, or mold, **including** *Candida auris*.
- Excluded organisms **can** be in an eligible urine culture, **if** there is **one** bacterium with  $\geq 100\text{K CFU/ml}$  in addition to the excluded organism.

Example:

- Eligible urine culture:  $\geq 100\text{K CFU/ml}$  of *Escherichia coli* and  $\geq$  *Candida albicans*.
- Ineligible urine culture:  $\geq 100\text{K CFU/ml}$  of *Escherichia coli*,  $\geq 100\text{K CFU/ml}$  of *Klebsiella pneumoniae*, and yeast.

# Urine Cultures

## ■ Mixed Flora

- Implies > two organisms and does **not** meet NHSN UTI criteria
  - Ineligible urine culture:  $\geq 100\text{K}$  CFU/ml of *A. baumannii* and 10K CFU/ml of mixed flora

## ■ Sensitivities

- A urine culture that has sensitive and resistant bacteria in the same culture, it is **not** considered two different organisms.
  - Example:  $\geq 100\text{K}$  MSSA and  $\geq 100\text{K}$  MRSA are considered the same organism.

# Urine Cultures

- **Colony Count Ranges**

- 75K to 100K does **NOT** meet NHSN UTI criteria.

- **Morphology**

- Differing morphology does **NOT** affect organism count
- Eligible Urine Culture

- E. coli #1  $\geq 100,000$  CFU/ml
- E. coli #2  $> 10,000$  CFU/ml
- Staph Aureus  $\geq 100,000$  CFU/ml



## D4-Taylor-CAUTI – Q1

### Urine Culture Knowledge Check

- Can this urine culture be used to meet NHSN UTI criteria:  $\geq 100\text{K CFU/ml}$  of *E. faecium* and  $\geq 100\text{K CFU/ml}$  of *S. aureus*?

A. Yes

B. No

# Catheter Day Count

- Day of insertion = Catheter Day 1.
  - If the catheter is present at the time of admission, then the date of admission (DOA) = Catheter Day 1.
- Each day an IUC is in place for **any** portion of the day counts as an IUC day. When an IUC is removed and later replaced, the IUC day count continues uninterrupted **unless** the patient is without an IUC for at least 1 full calendar day (**NOT to be read as 24 hours**). If there is a full calendar day interruption, the IUC day count will start anew with new IUC placement.

# Catheter Day Count

Indwelling Urinary Catheter = IUC	March 29 <sup>th</sup>	March 30 <sup>th</sup>	March 31 <sup>st</sup>	April 1 <sup>st</sup>	April 2 <sup>nd</sup>	April 3 <sup>rd</sup>	April 4 <sup>th</sup>	April 5 <sup>th</sup>	April 6 <sup>th</sup>
Patient A	IUC (Day 1)	IUC (Day 2)	IUC (Day 3)	IUC (Day 4)	IUC removed (Day 5)	IUC inserted (Day 6)	IUC (Day 7)	IUC removed (Day 8)	NO IUC
Patient B	IUC (Day 1)	IUC (Day 2)	IUC (Day 3)	IUC (Day 4)	IUC removed (Day 5)	NO IUC	IUC (Day 1)	IUC (Day 2)	IUC (Day 3)

# Chapter 7: All About ABUTIs and SUTIs

Protocol and Criterion



# Urinary Tract Infection Definitions

There are **two specific types** of UTI:

- Symptomatic UTI (**SUTI**)
- Asymptomatic Bacteremic UTI (**ABUTI**)

# SUTI 1A: Catheter-associated Urinary Tract Infection (CAUTI) Criteria (ANY Age) Patient must meet **1, 2, and 3** below:

1. Patient had an indwelling urinary catheter (IUC) that had been in place for more than 2 consecutive days in an inpatient location AND the IUC was either:
<ul style="list-style-type: none"><li>• Present for any portion of the calendar day on the <b>date of event</b></li></ul> <p><b>OR</b></p> <ul style="list-style-type: none"><li>• Removed the day before the <b>date of event</b></li></ul>
2. Patient has at least one of the following signs or symptoms:
<ul style="list-style-type: none"><li>• Fever (&gt;38.0°C)</li><li>• Costovertebral angle pain or tenderness*</li><li>• Urinary urgency ^</li><li>• Urinary frequency^</li><li>• Suprapubic tenderness*</li><li>• Dysuria ^</li></ul> <p>*No other recognized cause</p> <p>^These symptoms cannot be used when catheter is in place</p>
3. Patient has a urine culture with no more than two species of organisms identified, at least one of which is a bacterium of $\geq 100K$ CFU/ml

***All elements of the UTI criterion MUST occur during the IWP***

# No Other Recognized Cause: What does that mean?

[https://www.cdc.gov/nhsn/faqs/faq\\_ut.html](https://www.cdc.gov/nhsn/faqs/faq_ut.html)

*Would NHSN accept low back pain to describe costovertebral pain?*

Left or right or bilateral lower back or flank pain is acceptable. Generalized “low back pain” in the medical record is not interpreted as CVA pain or tenderness, as there can be many causes of low back pain.

- Fever
- Suprapubic tenderness\*
- Costovertebral angle pain or tenderness\*
- Urinary urgency ^
- Urinary frequency^
- Dysuria ^

**\*No other recognized cause**

**^These symptoms cannot be used when catheter is in place**

*Can abdominal pain be used to meet NHSN's UTI symptom of suprapubic tenderness?*

There are many causes of abdominal pain, and this symptom is too generalized to meet the localized UTI symptom of suprapubic tenderness. Low abdominal pain or bladder or pelvic discomfort are acceptable symptoms to meet NHSN's UTI symptom of suprapubic tenderness

# D4-Taylor-CAUTI – Q2

## SUTI 1A Knowledge Check

- Is this a SUTI 1A?

- A. Yes
- B. No

Correct Answer: Yes, this a SUTI 1A.

Date	Details
2/22	Admitted and IUC inserted
2/23	IUC present
2/24	38.8 C/101.8 F; IUC present. $\geq$ 100K E. coli
2/25	IUC present
2/26	IUC present
2/27	IUC removed
2/28	Discharged

# SUTI 1b: Non-Catheter-associated Urinary Tract Infection (Non-CAUTI) (ANY Age) Patient must meet **1, 2, and 3** below:

1. One of the following is true:
<ul style="list-style-type: none"><li>• Patient has/had an indwelling urinary catheter, but it has/had not been in place for more than 2 consecutive days in an inpatient location on the <b>date of event</b></li></ul> <p><b>OR</b></p> <ul style="list-style-type: none"><li>• Patient did not have a urinary catheter in place on the date of event nor the day before the <b>date of event</b></li></ul>
2. Patient has at least <u>one</u> of the following signs or symptoms:
<ul style="list-style-type: none"><li>• Fever (&gt;38.0C)</li><li>• Suprapubic tenderness*</li><li>• Costovertebral angle pain or tenderness*</li><li>• Urinary urgency ^</li><li>• Urinary frequency^</li><li>• Dysuria ^</li></ul>
3. Patient has a urine culture with no more than two species of organisms identified, at least one of which is a bacterium of $\geq 10^5$ CFU/ml.

**\*No other recognized cause**

**^These symptoms cannot be used when catheter is in place**

***All elements of the UTI criterion MUST occur during the IWP***

# D4-Taylor-CAUTI-Q3

## SUTI 1B Knowledge Check

- Is this a SUTI 1B?
  - Yes
  - No

Correct Answer: A .Yes, this is a SUTI 1B.

Date	Details
2/22	Admitted and IUC inserted
2/23	101.8 F (38.8 C); IUC present. E. coli
2/24	IUC present
2/25	IUC present
2/26	IUC present
2/27	IUC removed
2/28	Discharged

# SUTI 2: CAUTI or Non-CAUTI in patients 1 year of age or less

Patient must meet **1, 2, and 3** below:

1. Patient is  $\leq 1$  year of age (with or without an indwelling urinary catheter)

2. Patient has at least one of the following signs or symptoms:

- Fever ( $>38^{\circ}\text{C}$ )
- **Hypothermia ( $<36.0^{\circ}\text{C}$ )**
- **Apnea\***
- **Bradycardia\***
- **Lethargy\***
- **Vomiting\***
- Suprapubic tenderness\*

**\*No other recognized cause**

3. Patient has a urine culture with no more than two species of organisms identified, at least one of which is a bacterium of  $\geq 10^5$  CFU/ml

***All elements of the UTI criterion must occur during the IWP***

## D4-Taylor-CAUTI-Q4

### SUTI 2 Knowledge Check

- True or False: Patients of any age can meet SUTI 2 criteria?
  
  
  
  
  
  
  
  
  
  
- Correct Answer: False. Patients  $\leq 1$  year of age.



# Asymptomatic Bacteremic Urinary Tract Infection (ABUTI)- ANY age

Patient must meet **1, 2, and 3** below:

1. Patient with or without an indwelling urinary catheter has **no signs or symptoms** of SUTI 1 or 2.
2. Patient has a urine culture with no more than two species of organisms identified, at least one of which is a bacterium of  $\geq 10^5$  CFU/ml.
3. Patient has organism identified from blood specimen with at least **one matching bacterium** to the bacterium identified in the urine specimen OR meets LCBI criterion 2 (without fever) and matching common commensal(s) in the urine.

***All elements of the ABUTI criterion MUST occur during the IWP***


## D4-Taylor-CAUTI-Q5

### ABUTI Knowledge Check

- Is this a reportable UTI?  
A. Yes  
B. No

Correct Answer: A. Yes,  
this is a HAI catheter  
associated ABUTI.

Date	Details
3/15	Admitted. No s/s. IUC inserted.
3/16	No UTI signs/symptoms (s/s)
3/17	Elevated WBCs. No UTI s/s. + blood with S. aureus and positive urine culture with $> 10^5$ CFU/ml S. aureus
3/18	IUC present. No UTI s/s. Elevated WBCs.
3/19	IUC present. Discharged to home.
3/20	IUC removed. Discharged.



# Event Reporting for UTI Surveillance

# UTI Event Form

[https://www.cdc.gov/nhsn/forms/57.114\\_UTI\\_BLANK.pdf](https://www.cdc.gov/nhsn/forms/57.114_UTI_BLANK.pdf)

## Data Collection Forms & Instructions

All Data Collection Forms are Print-only

### UTI Event

[Urinary Tract infection \(UTI\) form – January 2021 \(57.114\)](#) [PDF – 180 KB]

[Customizable form](#) [DOC – 60 KB]

[Table of Instructions](#) [PDF – 250 KB]

Form Approved  
OMB No. 0928-0666  
Exp. Date: 12/31/2024  
www.cdc.gov/nhsn

**NHSN**  
NATIONAL HEALTHCARE  
SAFETY NETWORK

### Urinary Tract infection (UTI)

Page 1 of 4 \*required for saving \*\*required for completion

Facility ID:	Event #:
*Patient ID:	Social Security #:
Secondary ID:	Medicare #:
Patient Name, Last:	First: Middle:
*Gender: F M Other	*Date of Birth:
Ethnicity (Specify):	Race (Specify):
*Event Type: UTI	*Date of Event:
Post-procedure UTI: Yes No	Date of Procedure:
NHSN Procedure Code:	ICD-10-PCS or CPT Procedure Code:

\*MDRO Infection Surveillance:  
 Yes, this infection's pathogen & location are in-plan for Infection Surveillance in the MDRO/CDI Module  
 No, this infection's pathogen & location are **not** in-plan for Infection Surveillance in the MDRO/CDI Module

\*Date Admitted to Facility: \*Location:

**Risk Factors**

\*Urinary Catheter status:  
 In place – Urinary catheter in place > 2 days on the date of event or present for any portion of the calendar day  
 Removed – Urinary catheter in place > 2 days and removed the day before the date of event  
 Neither – Not catheter associated – Neither in place nor removed

Location of Device Insertion: \_\_\_\_\_ Date of Device Insertion: \_\_\_/\_\_\_/\_\_\_\_\_  
If NICU, birth weight (gms): \_\_\_\_\_

**Event Details**

\*Specific Event:  Symptomatic UTI (SUTI)  Asymptomatic Bacteremic UTI (ABUTI)

\*Specify Criteria Used: (check all that apply)

**Signs & Symptoms**

Any Patient		≤ 1 year old	Laboratory & Diagnostic Testing
<input type="checkbox"/> Fever	<input type="checkbox"/> Urgency	<input type="checkbox"/> Fever	<input type="checkbox"/> Positive culture with no more than 2 species of organisms, at least one of which is a bacterium of ≥ 10 <sup>5</sup> CFU/ml
<input type="checkbox"/> Frequency	<input type="checkbox"/> Dysuria	<input type="checkbox"/> Hypothermia	
<input type="checkbox"/> Suprapubic tenderness		<input type="checkbox"/> Apnea	
<input type="checkbox"/> Costovertebral angle pain or tenderness		<input type="checkbox"/> Bradycardia	
		<input type="checkbox"/> Lethargy	<input type="checkbox"/> Organism(s) identified from blood specimen
		<input type="checkbox"/> Vomiting	
		<input type="checkbox"/> Suprapubic tenderness	

# Risk Factors: CAUTI

## Required Field: Urinary Catheter

**Risk Factors**

Urinary Catheter \*: REMOVE - Urinary catheter in place > 2 days but removed the day before the date of event ▼

Location of Device Insertion:

Date of Device Insertion:  24

**Optional:** Patient location where indwelling urinary catheter inserted.

**Optional:** Date indwelling urinary catheter inserted.

### Three options:

**INPLACE**- Urinary catheter in place for more than 2 consecutive days on the date of event

**REMOVE** – Urinary catheter in place for more than 2 consecutive days but was removed the day before the date of event

**NEITHER** – If no urinary catheter was in place on the day of or the day before the date of event OR not in place >2 calendar days on the date of event

# **Catheter Days**


## **(Denominator and Summary Data)**

# Collecting Summary Denominator Data

## Manual Collection

For all locations, count at the same time each day

- Number of patients on the inpatient unit
- Number of patients with an indwelling urinary catheter

 **NHSN**  
NATIONAL HEALTHCARE  
SAFETY NETWORK

Form Approved  
OMB No. 0920-0666  
Exp. Date: 01/31/24  
www.cdc.gov/nhsn

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

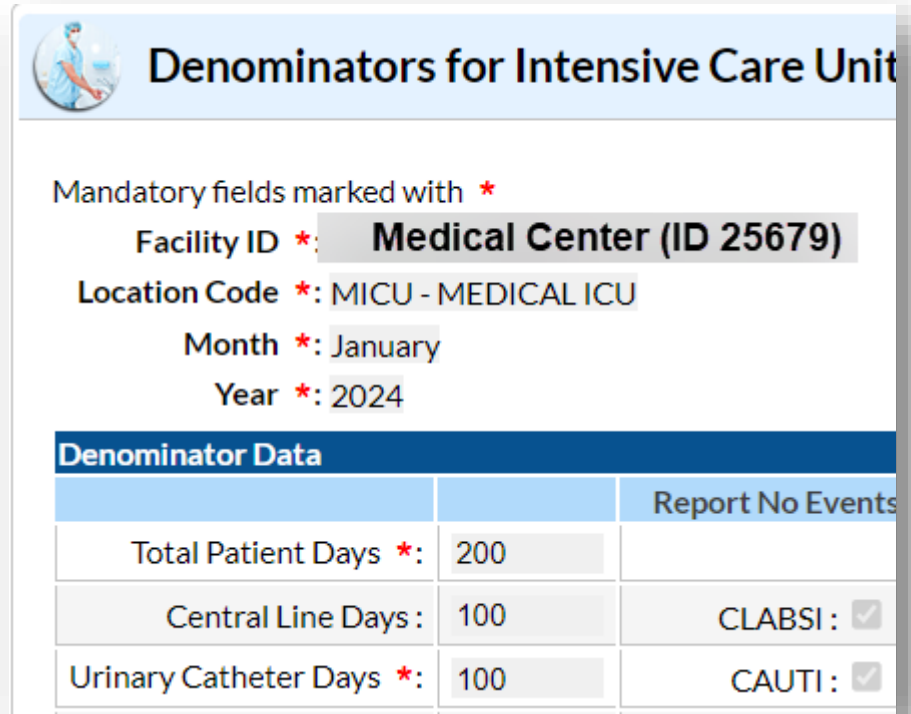
Page 1 of 1

\*required for saving  
Facility ID: XXXXX \*Location Code: ICU \*Month: February \*Year: 2022

Date	*Number of Patients	**Number of patients with 1 or more central lines	**Number of patients with a urinary catheter	**Number of total patients on a ventilator	Number of patients on APRV	Number of Episodes of Mechanical Ventilation
1	9	5	6	2	0	1
2						

# Denominator data

- Each month by individual unit, IUC days are provided.
- If no events occurred that month (each unit) check the "Report No Events" box.



**Denominators for Intensive Care Unit**

Mandatory fields marked with \*

Facility ID \*: **Medical Center (ID 25679)**

Location Code \*: MICU - MEDICAL ICU

Month \*: January

Year \*: 2024

Denominator Data		
		Report No Events
Total Patient Days *	200	
Central Line Days	100	CLABSI: <input checked="" type="checkbox"/>
Urinary Catheter Days *	100	CAUTI: <input checked="" type="checkbox"/>



# Case Studies

# Steps to Investigating a Positive Urine Culture

1.	Determine the date of the urine culture collection. Is this an eligible urine culture (at least one eligible organism $\geq 100K$ CFU/ml and no more than two organisms)? If yes, continue reviewing the event. If no, <b>STOP</b> (cannot have a UTI event without an eligible urine culture).
2.	From the date of the urine culture determine the 7-day IWP: 3 days before the urine culture, the day of the urine culture and 3 days after the urine culture for a total of 7 days.
3.	Determine if all the elements of the UTI are met during the IWP. If yes, there is an infection event. If no, there is no event.
4.	Determine the DOE : the date that the <u>first element</u> occurs for the first time within the IWP.
5.	POA or HAI? POA = DOE is the date of admission, to an inpatient location, the 2 days before admission, or the calendar day after admission). HAI = DOE occurred on or after hospital day 3.
6.	CAUTI or Non-CAUTI? CAUTI: IUC in place for > 2 consecutive days in an inpatient location on the DOE or removed the before the DOE. Non-CAUTI: IUC present, but not in place for > 2 consecutive days in an inpatient location or the patient did not have an IUC in place on the date of event nor the day before the date of event.

# Case Study 1

- **May 27<sup>th</sup>:** Catheterina Coude sustained multiple serious injuries from a motor vehicle accident (MVA) and had an IUC placed in the emergency department (ED).
- **May 27<sup>th</sup>:** Catheterina Coude was admitted to the stepdown unit.
- **May 30<sup>th</sup>:** Catheterina Coude develops a fever (38.3 °C).
- **May 31<sup>st</sup>:** Urine culture ordered and resulted: > 100K CFU/ml *Escherichia coli*.
- **June 1<sup>st</sup>:** Antibiotics started.
- **June 2<sup>nd</sup>:** IUC removed.
- **June 3<sup>rd</sup>:** Catheterina Coude moves to the medical unit and is on the road to recovery.

# D4-Taylor-CAUTI-Q6

## Case Study 1

Does this patient have a UTI?

- A. Yes, SUTI 1A (CAUTI)
- B. Yes, SUTI 1B (non-catheter-associated)
- C. Yes, SUTI 2 (CAUTI)
- D. Yes, SUTI 2 (non-catheter-associated)
- E. Yes ABUTI (CAUTI)
- F. Yes, ABUTI (non-catheter-associated)
- G. No UTI

# Case Study 1 Rationale

Does this patient have a UTI?

- A. Yes, SUTI 1A (CAUTI)
- B. Yes, SUTI 1B (non-catheter-associated)
- C. Yes, SUTI 2 (CAUTI)
- D. Yes, SUTI 2 (non-catheter-associated)
- E. Yes ABUTI (CAUTI)
- F. Yes, ABUTI (non-catheter-associated)
- G. No UTI

- ✓ Positive urine culture with  $\geq 100K$  CFU/ml of *E. coli* (May 31<sup>st</sup>).
- ✓ IWP (May 28<sup>th</sup> – June 3<sup>rd</sup>).
- ✓ Fever (38.3 °C) meets NHSN UTI criteria (May 30<sup>th</sup>).
- ✓ IUC present for > 2 consecutive days in an inpatient location.
- ✓ HAI SUTI 1A and DOE May 30<sup>th</sup>.

## Case Study 2

- **May 28<sup>th</sup>:** Magnetica Resonance was searching for treasure with her metal finder, stepped on a rusty piece of metal, fell and hurt her ankle. Magnetica was rushed to the ED.
- **May 28<sup>th</sup>:** Magnetica was admitted, received a tetanus shot, had an IUC placed, and had ankle repair surgery.
- **May 29<sup>th</sup>:** IUC removed.
- **May 30<sup>th</sup>:** Urinary frequency.
- **May 31<sup>st</sup>:** Suprapubic tenderness.
- **June 1<sup>st</sup>:** Urine culture:  $\geq 100\text{K CFU/ml}$  *Staphylococcus aureus*.

# D4-Taylor-CAUTI-Q7

## Case Study 2

Does this patient have a UTI?

- A. Yes, SUTI 1A (CAUTI)
- B. Yes, SUTI 1B (non-catheter-associated)
- C. Yes, SUTI 2 (CAUTI)
- D. Yes, SUTI 2 (non-catheter-associated)
- E. Yes ABUTI (CAUTI)
- F. Yes, ABUTI (non-catheter-associated)
- G. No UTI

## Case Study 2 Rationale

A. Yes, SUTI 1A (CAUTI)

B. Yes, SUTI 1B (non catheter-associated)

C. Yes, SUTI 2 (CAUTI)

D. Yes, SUTI 2 (non catheter-associated)

E. Yes ABUTI (CAUTI)

F. Yes, ABUTI (non-catheter-associated)

G. No UTI

- ✓ Positive urine culture with  $\geq 100K$  CFU/ml of *S. aureus* (June 1<sup>st</sup>).
- ✓ IWP (May 29<sup>th</sup> – June 4<sup>th</sup>).
- ✓ Urinary frequency meets NHSN UTI criteria (May 30<sup>th</sup>).
- ✓ IUC not present for > 2 consecutive days in an inpatient location.
- ✓ HAI SUTI 1B and DOE May 30<sup>th</sup>.



## Case Study 3

- **May 25th:** Perry Tinitis is hospitalized with a GI bleed.
- **May 29th:** Central line and IUC inserted.
- **May 31st:** Patient becomes unresponsive, is intubated, and WBC = 23.0 mg/microliter, Temp = 39.0°C. Blood and urine specimens were collected.
- **May 31st:** Blood cultures and urine both grow *Streptococcus pyogenes* – urine >100K CFU/ml. Antibiotics started.
- **June 1<sup>st</sup>:** Temp = 37.8 °C and WBC = 15.0 mg/microliter.

# D4-Taylor-CAUTI-Q8

## Case Study 3

Does this patient have a UTI?

- A. Yes, SUTI 1A (CAUTI) and Secondary BSI
- B. Yes, SUTI 1B (non-catheter-associated)
- C. Yes, SUTI 2 (CAUTI)
- D. Yes, SUTI 2 (non-catheter-associated)
- E. Yes ABUTI (CAUTI)
- F. Yes, ABUTI (non-catheter-associated)
- G. No UTI

## Case Study 3 Rationale

- A. Yes, SUTI 1A (CAUTI)
- B. Yes, SUTI 1B (non catheter-associated)
- C. Yes, SUTI 2 (CAUTI)
- D. Yes, SUTI 2 (non catheter-associated)
- E. Yes ABUTI (CAUTI)
- F. Yes, ABUTI (non-catheter-associated)
- G. No UTI

- ✓ Positive urine culture with  $\geq 100\text{K}$  CFU/ml of *S. pyogenes* (May 31<sup>st</sup>).
- ✓ Positive blood culture with *S. pyogenes* (May 31<sup>st</sup>).
- ✓ IWP (May 28<sup>th</sup> – June 3<sup>rd</sup>).
- ✓ Fever (39.0 °C) on May 31<sup>st</sup>
- ✓ IUC present for > 2 consecutive days in an inpatient location.
- ✓ HAI SUTI 1A and Secondary BSI and DOE May 31<sup>st</sup>.

## Case Study 4

- **March 1<sup>st</sup>:** Staphy Aureus, a resident a Happy Valley Nursing Home was having trouble breathing and was transported to the ED via ambulance.
- **March 1<sup>st</sup>:** Ms. Aureus was admitted, and testing showed Ms. Aureus had influenza and pneumonia. An IUC was inserted.
- **March 3<sup>rd</sup>:** Ms. Aureus had a fever of 38.8 C.
- **March 4<sup>th</sup>:** Ms. Aureus began showing signs of delirium. A UA with reflex to a UC showed 50 – 75K CFU/ml of E. coli.
- **March 6<sup>th</sup>:** IUC was removed, and Ms. Aureus was discharged back to Happy Valley.

## Case Study 4

- **March 7<sup>th</sup>:** Ms. Aureus was readmitted to the hospital, after falling and breaking her hip at Happy Valley. Ms. Aureus also complained of suprapubic tenderness.
- **March 7<sup>th</sup>:** An IUC was inserted, and a urine culture was done and showed  $\geq 100\text{K}$  CFU/ml of E. coli
- **March 8<sup>th</sup>:** Ms. Aureus had a hip replacement.
- **March 10<sup>th</sup>:** Ms. Aureus was discharged with the IUC in place and transferred to Whole Again Rehab Facility.

# D4-Taylor-CAUTI-Q9

## Case Study 4

Does this patient have a UTI?

- A. Yes, SUTI 1A (CAUTI)
- B. Yes, SUTI 1B (non catheter-associated)
- C. Yes, SUTI 1A (CAUTI) and SUTI 1B ABUTI (non-catheter associated)
- D. Yes, ABUTI
- E. No UTI

## Case Study 7 Rationale

- A. Yes, SUTI 1a (CAUTI)
- B. Yes, SUTI 1b (non catheter-associated)
- C. Yes, SUTI 1A (CAUTI) and POA SUTI 1B (non-catheter associated)
- D. Yes, ABUTI
- E. No UTI

- ✓ Positive urine culture  $\geq$  100K CFU/ml of E. coli (March 7<sup>th</sup>)
- ✓ Suprapubic tenderness (March 7<sup>th</sup>)
- ✓ Transfer Rule Invoked
- ✓ HAI SUTI 1A for first admission
- ✓ POA SUTI 1B for second admission. Set RIT
- ✓ Yes, HAI SUTI 1A and SUTI 1B, DOE: March 7<sup>th</sup>

## Case Study 5

- May 25th: Hal Omonas was admitted to the cardiovascular intensive care unit (CVICU) after a successful coronary artery bypass graft (CABG).
- May 25th: IUC Inserted.
- May 31st: Increase in white blood cells (WBC) to 14.2 mg/microliter
- June 1st: Blood and urine specimens collected, Blood and urine both positive with *Klebsiella pneumoniae* – urine > 100K CFU/ml.



# D4-Taylor-CAUTI-Q10

## Case Study 5

Does this patient have a UTI?

- A. Yes, SUTI 1A (CAUTI)
- B. Yes, SUTI 1B (non catheter-associated)
- C. Yes, SUTI 2 (CAUTI)
- D. Yes, SUTI 2 (non catheter-associated)
- E. Yes ABUTI (CAUTI)
- F. Yes, ABUTI (non-catheter-associated)
- G. No UTI

## Case Study 5 Rationale

- A. Yes, SUTI 1A (CAUTI)
- B. Yes, SUTI 1B (non catheter-associated)
- C. Yes, SUTI 2 (CAUTI)
- D. Yes, SUTI 2 (non catheter-associated)
- E. Yes, ABUTI (CAUTI)
- F. Yes, ABUTI (non-catheter-associated)
- G. No UTI

- ✓ Positive urine culture with  $\geq 100K$  CFU/ml of *K. pneumoniae* (June 1<sup>st</sup>).
- ✓ Positive blood culture with *K. pneumoniae*
- ✓ IWP (May 29<sup>th</sup> – June 4<sup>th</sup>).
- ✓ No UTI signs/symptoms
- ✓ IUC was present for > 2 consecutive days in an inpatient location.
- ✓ HAI ABUTI and DOE June 1<sup>st</sup>.

## Case Study 6

- **June 1<sup>st</sup> 7pm:** Myco Bacterium fell off his bike on May 31<sup>st</sup>, however, Myco did not clean his wound well and ended up in the ED when he noticed a raised red bump getting bigger.
- **June 1<sup>st</sup> 9pm:** Urine culture 10K CFU/ml *Staphylococcus epidermidis* and 25K CFU/ml *Pseudomonas aeruginosa*, and 25K *Flavobacterium*.
- **June 2<sup>nd</sup> 1am:** Placed in observation unit and received a DTAP vaccine and IV antibiotics for his infected wound.
- **June 2<sup>nd</sup> 7pm:** Discharged.

# D4-Taylor-CAUTI-Q11

## Case Study 6

Does this patient have a UTI?

- A. Yes, SUTI 1A (CAUTI)
- B. Yes, SUTI 1B (non catheter-associated)
- C. Yes, SUTI 2 (CAUTI)
- D. Yes, SUTI 2 (non catheter-associated)
- E. Yes ABUTI (CAUTI)
- F. Yes, ABUTI (non-catheter-associated)
- G. No UTI

## Case Study 6 Rationale

- A. Yes, SUTI 1A (CAUTI)
- B. Yes, SUTI 1B (non catheter-associated)
- C. Yes, SUTI 2 (CAUTI)
- D. Yes, SUTI 2 (non catheter-associated)
- E. Yes ABUTI (CAUTI)
- F. Yes, ABUTI (non-catheter-associated)
- G. No UTI

- ✓ Positive urine culture with 50K CFU/ml *S. epidermidis*, 25K CFU/ml *P. aeruginosa*, and 25K *Flavobacterium* (June 1<sup>st</sup>).
- ✓ Ineligible urine culture.
- ✓ No signs or symptoms that meet NHSN UTI criteria.
- ✓ IUC not present.
- ✓ No UTI.

## Case Study 7

- **May 31<sup>st</sup>:** Due to poor feeding, two-month-old Baby Jane is directly admitted to the hospital from her two-month well-child visit.
- **June 1<sup>st</sup>:** Baby Jane is now lethargic and vomiting.
- **June 1<sup>st</sup>:** Urine is obtained from an in/out catheterization and results positive with  $\geq 100\text{K}$  CFU/ml *Escherichia coli*.
- **June 2<sup>nd</sup>:** Antibiotics and fluid started.
- **June 3<sup>rd</sup>:** Baby Jane discharged 😊.

# D4-Taylor-CAUTI-Q12

## Case Study 7

Does this patient have a UTI?

- A. Yes, SUTI 1A (CAUTI)
- B. Yes, SUTI 1B (non-catheter-associated)
- C. Yes, SUTI 2 (CAUTI)
- D. Yes, SUTI 2 (non-catheter-associated)
- E. Yes ABUTI (CAUTI)
- F. Yes, ABUTI (non-catheter-associated)
- G. No UTI

# Case Study 7 Rationale

- A. Yes, SUTI 1A (CAUTI)
  - B. Yes, SUTI 1B (non-catheter-associated)
  - C. Yes, SUTI 2 (CAUTI)
  - D. Yes, SUTI 2 (non-catheter-associated)**
  - E. Yes ABUTI (CAUTI)
  - F. Yes, ABUTI (non-catheter-associated)
  - G. No UTI
- ✓ Positive urine culture with  $\geq 100K$  CFU/ml of *E.coli* (June 1st).
  - ✓ IWP (May 29<sup>th</sup> – June 4<sup>th</sup>).
  - ✓ Lethargy (June 1<sup>st</sup>) meets NHSN UTI criteria.
  - ✓ IUC was not present.
  - ✓ POA SUTI 2 and DOE June 1<sup>st</sup>.**



# Tips for Common Misapplications

# Tip #1 Primary Source of Infection

- UTIs are **always** a primary site of infection.
- Some site-specific infections can be secondary to a UTI. See Chapter 4 for more information.

January 2024

Device-associated Module  
BSI

Table B1: Secondary BSI Guide: List of all NHSN primary site-specific definitions available for making secondary BSI determinations using Scenario 1 or Scenario 2

Scenario 1		Scenario 2	
A positive blood specimen must contain at least one eligible matching organism to the site-specific specimen		Positive blood specimen must be an element of the site-specific definition	
And the blood specimen is collected in the site-specific secondary BSI attribution period		And blood specimen is collected in the site-specific infection window period	
And an eligible organism identified from the site-specific specimen is used as an element to meet the site-specific definition		And an eligible organism identified in a blood specimen is used as an element to meet the site-specific definition	
Site	Criterion	Site	Criterion
ABUTI	ABUTI	ABUTI	ABUTI
BONE	1	BONE	3a
BRST	1	BURN	1
CARD	1	DISC	3a
CIRC	2 or 3	ENDO	4a, 4b, 5a or 5b (specific organisms) 6a or 7a plus other criteria as listed
CONJ	1a	GIT	1b or 2c
DECU	1	IAB	2b or 3b
DISC	1	JNT	3c
EAR	1, 3, 5 or 7	MEN	2c or 3c
EMET	1	OREP	3a
ENDO	1	PNEU	2 or 3
EYE	1	SA	3a
GE	2a	UMB	1b
GIT	2a, 2b (only yeast)	USI	3b or 4b
IAB	1 or 3a		
IC	1		
JNT	1		
LUNG	1		
MED	1		
MEN	1		
ORAL	1, 3a, 3d (only yeast)		
OREP	1		
PJI	1 or 3e		
PNEU	2 or 3		
SA	1		
SINU	1		
SSI	SI, DI or OS		
SKIN	2a		
ST	1		
UMB	1a		
UR	1a or 3a		
USI	1		
SUTI	1a, 1b or 2		
VASC only as SSI	1		
VCUF	3		

## Tip #2 Signs and Symptoms on Admission

- Signs or symptoms present on admission do not automatically equate to a UTI being present on admission.
- Fever on 4/4 and 4/5 occurred during the POA, however, they did not occur during the IWP.
- 4/9 + urine culture IWP (4/6 – 4/12). Suprapubic tenderness (4/9)
- HAI SUTI 1A due to *K. pneumoniae*. DOE: 4/9

Date	SUTI Criterion
4/4	Admitted. Fever, 38.2 C
4/5	Fever 38.7 C
4/6	IUC inserted
4/7	IUC present
4/8	IUC present
4/9	IUC present. Positive urine culture $\geq$ 100K <i>K. pneumoniae</i>
4/10	IUC present. suprapubic pain
4/11	IUC present.
4/12	IUC removed. Discharged.

Not POA. No positive urine culture associated with the fever.

SUTI 1A  
DOE: 4/9

I  
W  
P

## Tip #3 Positive Urine Culture POA

- An eligible positive urine culture does **not** automatically equate to a UTI being POA
- No S/S occurred during the 4/4 + urine culture IWP (4/2 – 4/7).
- 4/8 + urine culture IWP (4/5 – 4/11). Fever on 4/8.
- HAI SUTI 1A due to *E. coli*. DOE: 4/8.

Date	SUTI Criterion
4/2	No s/s
4/3	No s/s
4/4	Admitted. + urine culture $\geq$ 100K <i>E. coli</i>
4/5	IUC inserted. No s/s
4/6	IUC present. No s/s
4/7	IUC present. No. s/s
4/8	IUC present. Fever, 38.5 C
4/9	IUC present. + urine culture $\geq$ 100K <i>E. coli</i>
4/10	IUC present.
4/11	IUC removed. Discharged.

No UTI Event

SUTI 1A  
DOE: 4/8

I  
W  
P

I  
W  
P

## Tip #4 Transfer Rule

- Close discharges and readmissions, one urine culture can be both POA and HAI
- + Urine culture on 4/8 occurred the day after discharge, eligible for transfer rule
- HAI SUTI 1A for first admission (4/2 – 4/7). POA SUTI 1B for second admission (4/8 – 4/11)

Date	SUTI Criterion
4/2	Admitted. IUC inserted
4/3	IUC present.
4/4	IUC present. <span style="border: 1px solid black; border-radius: 50%; padding: 5px;">No UTI Event</span>
4/5	IUC present. + urine culture $\geq$ 100K CFU/ml E. coli
4/6	IUC present. No s/s
4/7	IUC removed. Discharged
4/8	Readmitted. IUC Inserted. Fever, 38.5 C. + urine culture $\geq$ 100K E. coli
4/9	IUC present. + urine culture $\geq$ 100K E. coli
4/10	IUC present. <span style="border: 1px solid black; border-radius: 50%; padding: 5px;">HAI SUTI 1A DOE: 4/8 AND POA SUTI 1B DOE: 4/8</span>
4/11	IUC removed. Discharged.

# USEFUL RESOURCES

- NHSN UTI FAQs
  - <https://www.cdc.gov/nhsn/faqs/faq-uti.html>
- NHSN Terminology Browser
  - <https://cdcnhsn.clinicalarchitecture.com/SymedicalCDCNHSNViewpoint/#/search>
- NHSN Patient Safety Component Manual
  - [https://www.cdc.gov/nhsn/pdfs/pscmanual/pcsmanual\\_current.pdf](https://www.cdc.gov/nhsn/pdfs/pscmanual/pcsmanual_current.pdf)
    - Chapter 2 Identifying Healthcare-associated Infections (HAI) for NHSN Surveillance
    - Chapter 7 Urinary Tract Infection (Catheter-Associated Urinary Tract Infection [CAUTI] and Non-Catheter-Associated Urinary Tract Infection [UTI]) Events
- NHSN HAI/POA Worksheet Generator
  - <https://www.cdc.gov/nhsn/poa/index.html>

# For any questions or concerns, contact the NHSN Helpdesk using

**NHSN-ServiceNow** to submit questions to the NHSN Help Desk.

The new portal can be accessed at <https://servicedesk.cdc.gov/nhsncsp>.

Users will be authenticated using CDC's Secure Access Management Services (SAMS) the same way you access NHSN. If you do not have a SAMS login, or are unable to access ServiceNow, you can still email the NHSN Help Desk at [nhsn@cdc.gov](mailto:nhsn@cdc.gov).

## For more information please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333

Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348

E-mail: [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov) Web: [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.

