

Welcome to *California*



NHSN Catheter-Associated Urinary Tract Infection Surveillance

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Vicki Keller and Lori Schaumleffel
Healthcare-Associated Infections Program
Center for Healthcare Quality
California Department of Public Health

Acknowledgment

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NHSN training courses
www.cdc.gov/nhsn

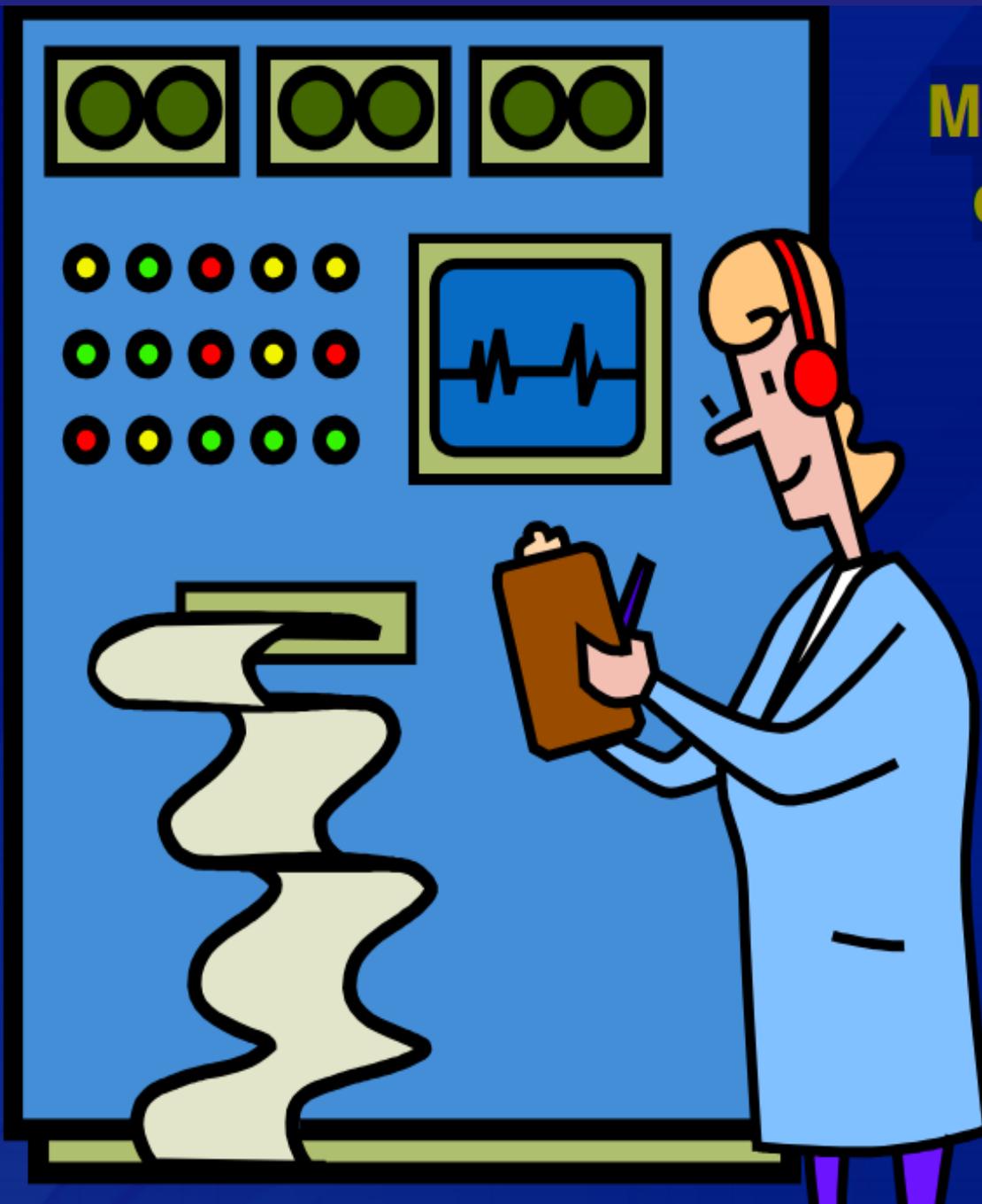


Objectives

- Describe NHSN CAUTI definitions and key concepts
- Identify the correct ways to
 - Count indwelling urinary catheter days to determine infection association
 - Distinguish between a single UTI with sequential positive urine cultures versus a separate UTI
 - Collect and report indwelling urinary catheter days and patient days
- Describe how to use the NHSN data collection form and table of instructions for performing UTI surveillance
- Apply CAUTI definitions to case scenarios

CAUTI Reporting Requirements in California

- California HAI public reporting laws do not require that general acute care hospitals report CAUTI to CDPH
- CMS does require CAUTI reporting as a component of their quality reporting program for hospitals



**Measuring the success
of CAUTI prevention
depends on high
quality data!**

Considerations for CAUTI Surveillance

- All CAUTIs require a positive urine culture
 - Routinely generate and review laboratory reports
- Know your laboratory's urine culture reporting policies
 - What are the ranges of colony forming units (CFU) reported?
 - What minimal CFU are reported? Does your laboratory report urine cultures as $\geq 100,000$ CFU/ml?
 - Are positive urine cultures reported for the unit on which they were collected? Or are results reported for the patient location when urine culture results are available?
- Consider reviewing positive cultures from the ED that may represent cultures from recently discharged patients

Urinary Tract Infection Definitions

There are two specific types of UTI:

- Symptomatic UTI (SUTI)
- Asymptomatic bacteremic UTI (ABUTI)

Both types, if catheter associated, must be reported to meet CMS CAUTI reporting requirements



UTI Overview

Any Age

Infant ≤ 1 yr

Any Age

SUTI 1

SUTI 2

ABUTI

A:
Catheter-associated

Catheter-associated

Catheter-associated

B:
Non-catheter associated

Non-catheter-associated

Non-Catheter-associated



UTI Pathogen Attribution

- Urine cultures with >2 organisms are routinely regarded as contaminated cultures
 - Not used for clinical care
 - Not used for NHSN CAUTI surveillance
- Urine cultures with “mixed flora” or equivalent are not used
- Organisms of the same genus but different species are considered as two different organisms (report both pathogens)
Example: *Pseudomonas aeruginosa* and *Pseudomonas stutzeri*
- The same organism with different antimicrobial susceptibilities is considered a single organism (report one pathogen _____)
Example: *S. aureus* sensitive to methicillin (MSSA) and *S. aureus* resistant to methicillin (MRSA)

UTI Infection Window Period



SUTI 1a, Catheter in Place

Patient must meet 1, 2, and 3 below:

1. Patient has an indwelling urinary catheter in place for the entire day, on the date of event, and catheter has been in place for >2 calendar days (day of device placement=Day 1)
2. Patient has at least one of the following signs or symptoms:
 - Fever (>38.0° C)
 - Suprapubic tenderness
 - Costovertebral angle pain or tenderness
3. Patient has urine culture with no more than two species of organisms, at least one of which is a bacteria of $\geq 10^5$ CFU/ml.



Note: All elements of the UTI criterion must occur during the infection window period

SUTI 1a, Catheter Recently Removed

Patient must meet 1, 2, and 3 below:

1. Patient had an indwelling urinary catheter in place for >2 days, which was removed on the day of or the day before the date of event
2. Patient has at least one of the following signs or symptoms:
 - Fever (>38.0° C)
 - Suprapubic tenderness
 - Costovertebral angle pain or tenderness
 - Urinary urgency
 - Urinary frequency
 - Dysuria
3. Patient has urine culture with no more than two species of organisms, at least one of which is a bacteria of $\geq 10^5$ CFU/ml



Note: All elements of the UTI criterion must occur during the infection window period

SUTI 1b, Not Catheter-Associated

Patient must meet 1, 2, and 3 below:

1. One of the following is true:

- Patient has or had an indwelling urinary catheter but not been in place >2 calendar days **-OR-**
- Patient did not have a urinary catheter in place on the date of event nor the day before the date of event

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

- Fever ($>38^{\circ}$ C) in patient ≤ 65 years
- Urinary urgency
- Suprapubic tenderness
- Urinary frequency
- Costovertebral angle pain or tenderness
- Dysuria

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



Note: All elements of the UTI criterion must occur during the infection window period

SUTI 2, Patient ≤ 1 year old

Patient must meet 1, 2, and 3 below:

1. Patient is ≤ 1 year of age, with or without an indwelling urinary catheter
2. Patient has at least **one** of the following signs or symptoms:
 - fever ($>38.0^{\circ}$ C)
 - hypothermia ($<36.0^{\circ}$ C)
 - Apnea
 - Bradycardia
 - Lethargy
 - Vomiting
 - Suprapubic tenderness
3. Patient has urine culture with no more than two species of organisms, at least one of which is a bacteria of $\geq 10^5$ CFU/ml



Note: All elements of the UTI criterion must occur during the infection window period

Clarifying “With No Other Recognized Cause”

- Fever and hypothermia are non-specific symptoms of infection
 - Cannot be excluded from UTI surveillance determination even if considered to be due to another cause
- Other signs/symptoms that can be attributed to another cause can be excluded from meeting surveillance definitions

Asymptomatic Bacteremic UTI (ABUTI)

Patient must meet 1, 2, and 3 below:

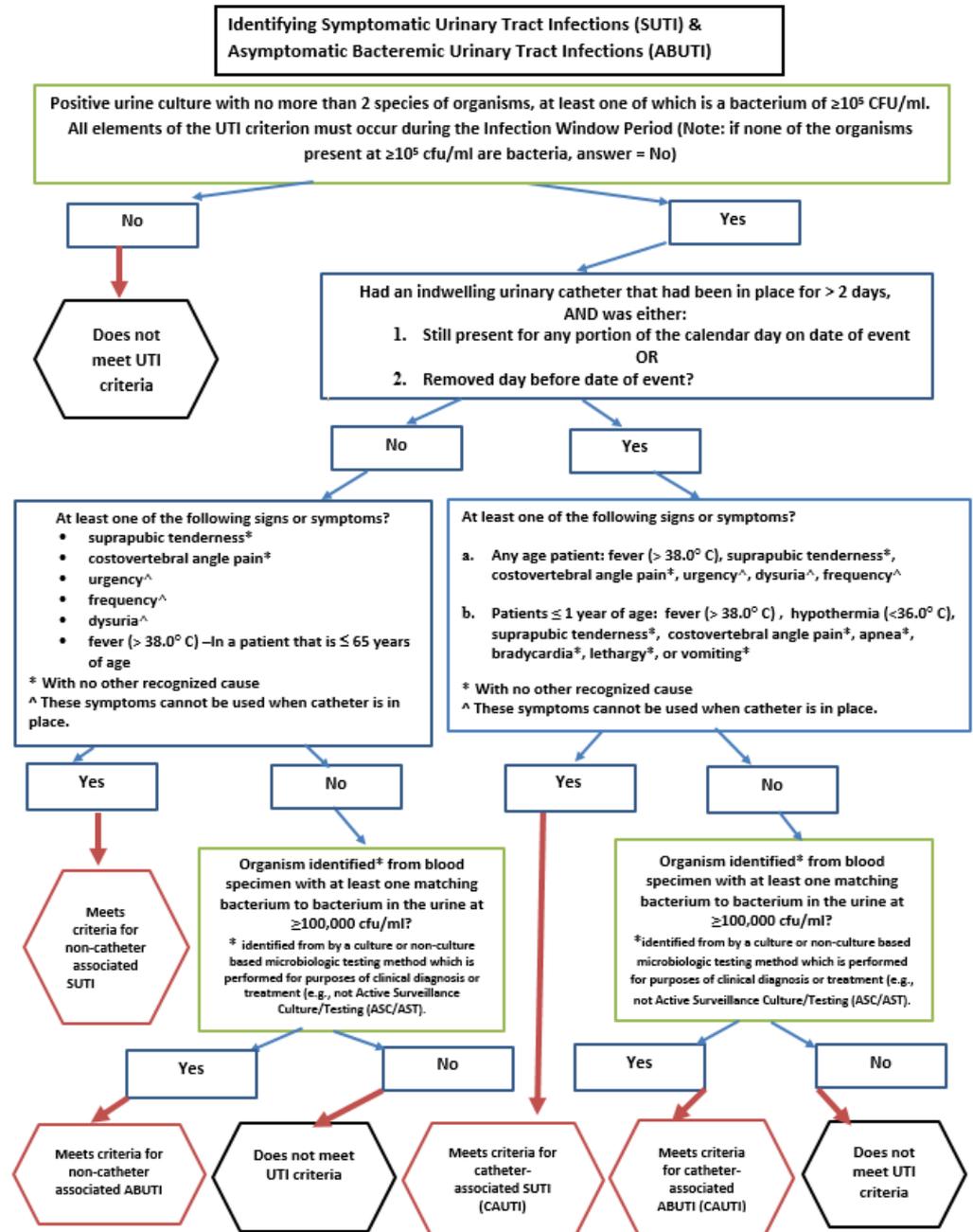
1. Patient with or without an indwelling urinary catheter has no signs or symptoms of SUTI 1 or 2 (per age)
 - Note: Patients >65 years of age with a non-catheter-associated ABUTI may have a fever and still meet the ABUTI criterion
2. Patient has a positive urine culture with no more than two species of organisms, at least one of which is a bacteria of $\geq 10^5$ CFU/ml
3. Patient has a positive blood culture with at least one matching bacteria to the urine culture
 - If common commensal organisms, must meet LCBI criterion 2 without fever and have matching common commensal(s) in the urine and blood cultures



Note: All elements of the UTI criterion must occur during the infection window period

Example: SUTI and ABUTI Flowchart

NHSN CAUTI Event Surveillance, Chapter 7, Figure 3, page 7-12



UTI Repeat Infection Timeframe

- 14-day timeframe during which a UTI is deemed the same infection (no new UTIs are reported)
- Date of event is the date the first element used to meet UTI criterion occurs for the first time within the 7-day infection window period
- If subsequent urine cultures identify an additional pathogen(s), it should be added to the event record



Meet Grandpa Unlucky



- Grandpa Unlucky has received inpatient care in a rehabilitation facility following multiple fractures sustained while rock climbing in Iceland.
- He is now transferred to your hospital with a Foley catheter that has been in place for 2 weeks.
- He had a fever of 38.5° C and a change in mental status the day before transfer as reported by a rehabilitation facility nurse.
- He is afebrile on admission to your hospital. Urine cultures from hospital day 1 are positive for 10,000 CFU/ml of *E. coli*. The UA is positive for nitrites.

Which of the following is most accurate?

1. Grandpa does not have a CAUTI as defined by NHSN.
2. Grandpa has a CAUTI attributed to the new hospital.
3. Grandpa has a CAUTI attributable to the rehab facility, which was present-on-admission to the hospital.

Grandpa Unlucky Rationale

- ✓ Urine cultures must have a minimum of 100,000 CFU/ml to be used as an element to meet NHSN UTI definitions.



Determining if UTI is an HAI

A UTI is considered an HAI if

- NONE of the elements used to meet the NHSN UTI definition were present-on-admission (as defined by the POA time period)

–AND–

- The date of UTI event occurred on or after the 3rd calendar day of admission to the facility

Note: Calendar day 1 starts when a patient is admitted to an inpatient unit

UTI Date of Event

- Defined as the date the first element used to meet the CDC NHSN UTI criterion occurs for the first time within the seven day infection window period.

Applying the Transfer Rule to UTI

- If the date of the UTI is on the date of transfer or discharge, or the next day, the UTI is attributed to the transferring/discharging location
- Receiving facilities should share information about UTIs with the transferring location or facility

Indwelling Urinary Catheter

- Defined as a drainage tube that is inserted into the urinary bladder through the urethra, is left in place, and is connected to a collection system. This includes a collection system that is used for irrigation of any type or duration (e.g., intermittent, continuous)
 - Also called a Foley catheter
 - Does not include straight in-and-out catheters, suprapubic catheters, or nephrostomy tubes

Note: If a patient has a urinary and a suprapubic catheter or nephrostomy tube, he/she meets the criteria for having an indwelling urinary catheter

Device-associated UTI = CAUTI

- CAUTI is defined as a UTI where an indwelling urinary catheter was in place for >2 calendar days on the date of event

- and -

- An indwelling urinary catheter was in place on the date of event or the day before

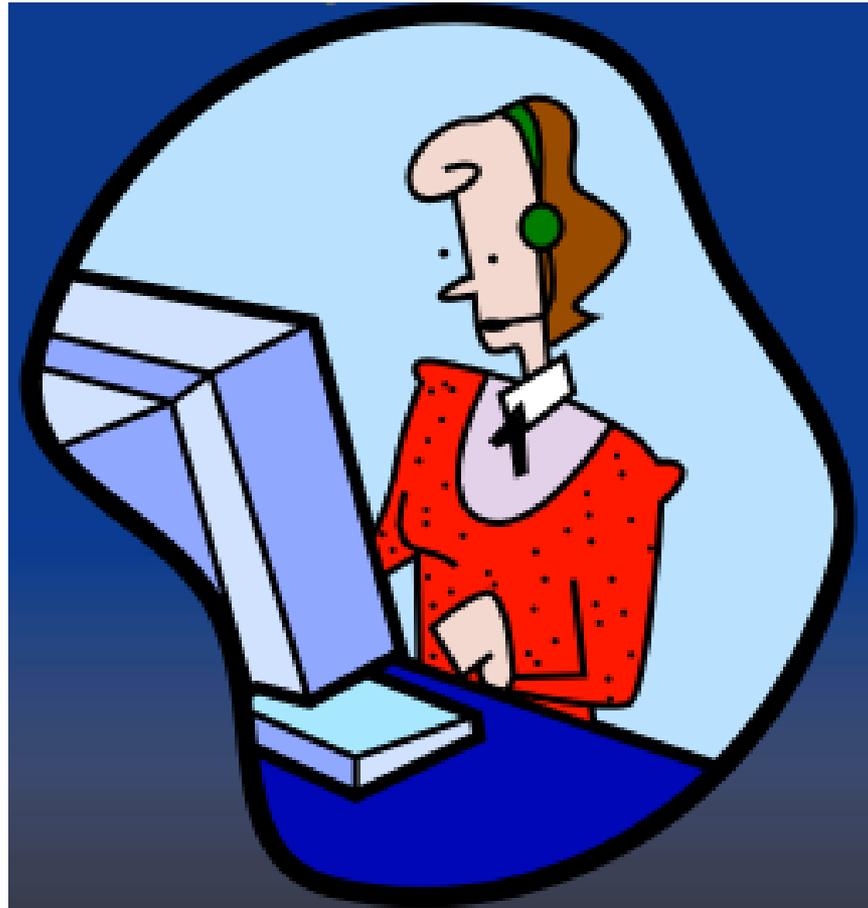
Note: If an indwelling urinary catheter was in place for >2 calendar days and then removed, to meet UTI criteria the date of event must be the day the catheter was discontinued or the next day

Discontinuation and Reinsertion of an Indwelling Urinary Catheter

- If a catheter is discontinued, and a full calendar day passes before being reinserted, the day count for determining catheter-associated UTI begins anew
- If a catheter is reinserted within the same day, the day count continues from the previous catheter

	March 31 (Hospital day 3)	April 1	April 2	April 3	April 4	April 5
Example A	Foley Day 3	Foley Day 4	Foley removed (Foley Day 5)	Foley replaced (Foley Day 6)	Foley Day 7	Foley Day 8
Example B	Foley Day 3	Foley Day 4	Foley removed (Foley Day 5)	No Foley	Foley replaced (Foley Day 1)	Foley Day 2

Entering CAUTI Events into NHSN



Collecting CAUTI Denominator Data: Daily Manual Data Collection

For all locations, count **at the same time each day**

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

 **Denominators for Intensive Care Unit (ICU)/
Other locations (not NICU or SCA)** * require

Facility ID: **10000** *Location Code: **ORTHO** *Month: **July** *Year: **07**

Date	*Number of patients	**Number of patients with 1 or more central lines	**Number of patients with a urinary catheter	**Num ve
1	23		8	
2	18		5	
3	21		6	
4				

Collecting CAUTI Denominator Data: Electronic Data Collection

- Must first validate the electronic data collection method against the manual method
- Requires 3 months of concurrent data collection using both methods
- Difference between the two methods must be within 5% (+/-)



Collecting CAUTI Denominator Data: Weekly Denominator Sampling Method

- Hospitals can use an alternative method for collecting CAUTI denominator data in eligible locations types
 - Reduces time spent on daily manual collection of denominator data.
 - Can be used in most location types that have >75 urinary catheter days per month
 - Excluded locations include special care areas/oncology ward(SCA/ONC) and neonatal ICUs (NICU)
- Allows collection of urinary catheter days on a single day once per week (e.g., every Tuesday)



Note: Collecting patient days for every day of the month remains a requirement; most hospitals use daily census

Collecting CAUTI Denominator Data: Weekly Denominator Sampling Method (continued)

- Upon entry of the data into NHSN, an estimate of urinary-catheter days will automatically be calculated at the end of the month.
- Used as CAUTI denominator data
- To ensure units/ward are eligible, review device days from prior year (i.e., 12 months) for each location.
- Urinary catheter days must be >75 each month

Note: This sampling method is optional. The traditional method, counting device days every day of a month, remains available

Example: Weekly Denominator Sampling Form

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

[HELP](#)

Mandatory fields marked with *

[Print Form](#)

Facility ID*: 10000 (DHQP Memorial Hospital)

Location Code*: MICU-2 - MEDICAL ICU

Month*: January

Year*: 2015

Report No Events

Total Patient Days*:

Central Line Days*:

Urinary Catheter Days*:

Ventilator Days:

APRV Days:

CLABSI:

CAUTI:

VAE:

PedVAP:

Check box(es)
if sampling
used

Sample Patient Days:

Sample Central Line Days:

Sample Urinary Catheter Days:

Custom Fields [HELP](#)

Save

Back

NHSN CAUTI Surveillance Forms

- 57.106: Monthly Reporting Plan
- 57.114: Urinary Tract Infection
- 57.118: Denominators for Intensive Care Unit (ICU)/Other locations (not NICU or SCA)

Investigating a Positive Urine Culture as Possible CAUTI

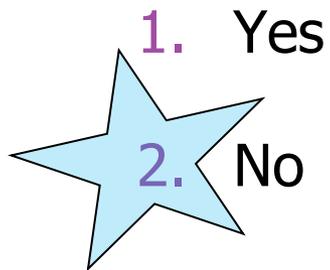
Proceed in this order*:

1. Determine infection window period (IWP)
2. Determine if all criteria occur within IWP, i.e., is it an event? Yes= continue; No = Stop no event
3. Determine date of event (DOE).
4. Determine if present on admission (POA) or healthcare-associated (HAI).
 - If POA, previously discharged that day or day before? Yes= UTI attributable to discharging location; No = Stop, POA.
 - If HAI, continue
5. Determine if device-associated.
6. Determine attributable location/facility.
7. Determine Repeat Infection Timeframe
8. Determine Secondary BSI Attribution Period (if necessary)

Device-Associated UTI Scenario 1

- Aug 1 – Admitted to hospital
- Aug 5 – Foley inserted; asymptomatic
- Aug 6 – Foley remains in place; Fever 38.2°C
- Aug 7 – 38.6° C
- Aug 8 – 100,000 CFU *E. coli* in urine

Is this SUTI catheter-associated?



Scenario 1 rationale:

- Infection window period = Aug 5-11
- The date of event is hospital day 6 (Aug 6) when patient had fever
- Aug 6 was indwelling urinary catheter day 2
- Indwelling urinary catheter not in place >2 days on date of event
- This is a SUTI but not catheter-associated

Device-Associated UTI Scenario 2

- Day 1 – Admit to ICU
- Day 4 – Foley inserted
- Day 8 – Foley removed; asymptomatic
- Day 9 – No Foley in place; Fever 100.5 ° F
- Day 10 – Fever 100.5° F; Urine (+) 100,000CFU/ml *E. faecium*

Is this a CAUTI?

Yes, this is a CAUTI.

Rationale: The date of event was day 9, one day after catheter removal. The catheter was in in place >2 calendar days.

SC
STUDIESE
CASE

Case 1

- 03/02/15: 66 year old to OR from ED for exploratory laparotomy. Foley inserted in OR. Transferred to surgical ward post-op.
- 03/03/15: Patient stable. Foley in place.
- 03/05/15: Foley remains in place. Patient febrile (38.9°C) and complaining of pain in right lower back. WBC increased to 19,000/mcl. Cloudy, foul smelling urine. Urine collected for culture positive for >100,000 CFU/ml *E. coli*.

Is this a CAUTI? If so, what type?

- No UTI
- Yes, catheter-associated SUTI criterion 1a
- Yes, catheter-associated SUTI criterion 2a
- Yes, catheter-associated ABUTI

Case 1 Rationale

SUTI 1a. Patient must meet 1, 2, and 3 below:

- Patient has indwelling urinary catheter in place for the entire day on the date of event and catheter was in place for >2 calendar days, on that date (day of device placement = Day 1)
- Patient has one of the following signs or symptoms:
 - Fever ($>38.0^{\circ}$ C)
 - Suprapubic tenderness*
 - Costovertebral angle pain or tenderness*
- Patient has a urine culture with no more than two species of organisms, at least one of which is a bacteria of $\geq 10^5$ CFU/ml



*With no other recognized cause

Case 2

- Day 1: 58-year-old patient is admitted to the ED with GI bleed. Foley inserted.
- Day 2: Patient spikes temp of 38.6° C. Indwelling catheter remains in place.
- Day 3: Urine specimen is collected.
- Day 4: Results of urine culture with 100,000 CFU/ml *Pseudomonas aeruginosa*. Antibiotics started.
- Day 5: Patient asymptomatic and afebrile.

Is this an HAI? If so, what type?

1. Yes, it is an HAI. It is a healthcare-associated UTI, but not a CAUTI because catheter had not been in for >2 calendar days
2. No, it is not an HAI. It is a UTI that is present on admission
3. Yes, it is an HAI. It is a healthcare-associated, catheter-associated UTI, specifically CAUTI SUTI criterion 1a

Case 2 Rationale

- Date that the first element of the SUTI 1a criterion occurred during the infection window period was on hospital day 2
- Date of event is hospital day 2, which is within the POA time period.

Case 2 (Continued)

- Day 15: Foley remains in place. Patient completed treatment for present-on-admission UTI on hospital day 11 and has been afebrile since. Hospitalization has been complicated by development of DVT. Temperature today 38.1° C, cough productive of yellow phlegm, rhonchi present.
- Day 16: Urine cloudy, fever 37.9° C, cough continues. Sputum specimen collected.
- Day 17: Urine specimen collected.
- Day 18: Urine and sputum cultures both positive for *S. aureus* . Urine culture with >100,000 CFU/ml.

Should another UTI be reported?

1. No. The UTI is secondary to a respiratory infection.
2. No. The UTI date of event related to this positive urine culture occurs during a repeat infection timeframe. It has been less than 14 days since the previous UTI.
3. Yes. This is another UTI. The first UTI resolved and treatment finished.

Review: Repeat Infection Timeframe, UTI

Hosp Day	Dev-ice	UTI Criterion	
1	Foley (F)		Infection Window Period
2	F	Temp 38.6°C	
3	F	Urine culture ("+" 10 ⁵ CFU/ml <i>P. aeruginosa</i>)	
4	F		
5	F		
6	F		
7	F		
8	F		
9	F		
10	F		
13	F		
14	F		
15	F	Temp 38.1°C	
16	F		
17	F	Urine culture collection (positive 10 ⁵ CFU/ml <i>S. aureus</i>)	

Date of event → (points to Hosp Day 2)

14 Day Repeat Infection Timeframe (RIT) (bracketed from Hosp Day 2 to 15)

Date of event → (points to Hosp Day 15)

Case 2 Rationale

- UTI cannot be a secondary infection to another infection site
- Fever cannot be attributed to another source of infection
- The UTI date of event is hospital day 15 (date of fever), which is within the 14-day repeat infection timeframe for the day 2 present-on-admission UTI.

Case 3

04/05/15:

- Patient admitted from LTAC hospital at 8 a.m. for surgical debridement of sacral decubitus. Medical history notable for severe rheumatoid arthritis, CHF, and atrial fibrillation.
- Routine admission UA performed, which is positive for leukocyte esterase, and 3 WBC by HPF of spun urine. Patient afebrile, denies urinary urgency, frequency, or pain. No suprapubic or CVA pain.
- Foley catheter present on admission. Peripheral IV inserted in OR. Transferred post-operatively to telemetry unit.

04/06/15:

- Wound care specialist documents wound clean. Temperature 37.4° C. Foley draining cloudy urine.

Case 3 continued

04/07/15:

- Transferred to surgical ward. WBCs 12,100/mcl. Temperature 37.9° C. Foley removed. Fluids encouraged. Urine specimen sent to lab for culture and sensitivity.

04/08/15:

- Patient complains of dysuria and tenderness with palpation to suprapubic area. Bactrim started.

04/09/15:

- Results of urine specimen sent on 04/07 are positive for *Candida albicans*, 100,000 CFU/ml. Patient afebrile. Preparing for discharge back to LTAC hospital.

As of 4/9/15, does this patient have a UTI and, if so, is it a CAUTI?

1. No. UTI criterion not yet met
2. Yes. CAUTI was present on admission.
 1. Yes. Patient has a SUTI 1a and it is a CAUTI
 2. Yes. Patient has a SUTI 1b but it is not a CAUTI

Case 3 Rationale

- The only organism, *Candida spp*, present at $\geq 100,000$ CFU/ml is not a pathogen used to meet NHSN UTI criteria.
- If everything was the same except that the urine culture result was also positive for *S. aureus* 100,000 CFU/ml, this would be a SUTI attributed to the pathogen, *S. aureus*

Case 4

May 15:

- 48-year-old male involved in motorcycle accident admitted to hospital. Closed head injury and multiple fractures. Taken to OR for ORIF and evacuation of subdural hematoma. Foley catheter and left subclavian central line placed in ED. Patient leaves OR on a ventilator. Lungs clear bilaterally.

May 21:

- Temperature 99.8° F. Lungs clear bilaterally. Foley remains in place draining clear yellow urine. Patient remains ventilated. Sputum production slightly increased.

May 22:

- Temperature 100.4° F. Vent settings stable. No change to sputum production.

Case 4 continued

May 23:

- Temp max 100.4° F; WBC 14,000/mcl, lungs sound clear, CXR clear, remains on vent, Foley and central line remain in place. Pan cultures sent. Empiric antibiotic treatment begun.

May 24:

- Urine culture: >100,000 CFU/ml of *P. aeruginosa* and >100,000 CFU/ml of *C. glabrata*. Blood culture: *P. aeruginosa*. Physical assessment normal. No patient response to suprapubic or costovertebral angle palpation.

Does this patient have a UTI? If so, what type and pathogen(s) ?

1. No, he does not have a UTI.
2. Yes, ABUTI *with P. aeruginosa and C. glabrata*
3. Yes, ABUTI *with P. aeruginosa*
4. Yes, SUTI 1a

Case 4 Rationale

- ✓ Patient without UTI symptoms in the presence of a blood culture that matches a urine culture ($\geq 100,000$ CFU/ml) = ABUTI
- ✓ Candida is not a UTI pathogen per NHSN definition
- ✓ Note: Fever must be GREATER than 100.4° F to meet the fever requirements in NHSN definitions

Consideration of Urine Culturing Practices in Your Facility

- Change long-dwelling catheters before collecting urine to exclude colonization
- For reflex urine cultures, send UA along with culture. Only perform culture if UA is positive
- Have clear indications for urine cultures
- Improve diagnostic practices for
 - Improving antimicrobial stewardship
 - Improving patient safety
 - Decreasing CAUTI rates



Summary

- All CAUTI definitions require a positive urine culture
- A urine culture can have no more than two species of organisms, at least one of which is a bacteria of $\geq 10^5$ CFU/ml
- Fever and hypothermia in the presence of a positive urine culture cannot be attributed to another cause
- There are two specific types of UTI, symptomatic (SUTI) and asymptomatic with bacteremia (ABUTI)

NHSN CAUTI Resources

Central Line-associated
Bloodstream Infections

Surgical Site Infection

► **Catheter-associated
Urinary Tract Infection**

FAQs about CAUTI

Ventilator-associated
Pneumonia

Diseases and Organisms

Preventing HAIs

Map: HAI Prevention
Activities

Research

Patient Safety

Outpatient Settings

Laboratory Resources

Outbreak and Patient
Notifications

Widgets, Buttons and
Badges

Catheter-associated Urinary Tract Infections (CAUTI)

A urinary tract infection (UTI) is an infection involving any part of the urinary system, including urethra, bladder, ureters, and kidney. UTIs are the most common type of healthcare-associated infection reported to the [National Healthcare Safety Network \(NHSN\)](#). Among UTIs acquired in the hospital, approximately 75% are associated with a urinary catheter, which is a tube inserted into the bladder through the urethra to drain urine. Between 15-25% of hospitalized patients receive urinary catheters during their hospital stay. The most important risk factor for developing a catheter-associated UTI (CAUTI) is prolonged use of the urinary catheter. Therefore, catheters should only be used for appropriate indications and should be removed as soon as they are no longer needed.

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- [Resources for Patients](#)
- [Guideline](#)
- [Prevention](#)

Resources for Patients

- [Frequently Asked Questions about CAUTIs](#)
- [FAQ's about Catheter-associated Urinary Tract Infection](#) 8.5" by 11" poster is available in the following formats:
 - [FAQs about Catheter-associated Urinary Tract Infection](#)  [PDF - 208 KB]
 - [FAQs about Catheter-associated Urinary Tract Infection - Black and White format](#)  [PDF - 180 KB]
 - [Download FAQs about UTI Larger text PDF for printing](#)  [PDF - 210 KB]
 - [En español: Preguntas frecuentes "Infección urinaria asociada al catéter urinario"](#)  [PDF - 217 KB]



Guideline

CDC, in collaboration with other organizations, has developed guidelines for the prevention of Catheter-associated UTIs and other types of healthcare-associated infections.

- [Guideline for Prevention of Catheter-associated Urinary Tract Infections 2009](#)
- [CAUTI Guideline Fast Facts](#)
-  Watch this Podcast: [Dr. Sanjay Saint discusses Catheter-associated UTIs](#)

www.cdc.gov/hai/ca_uti/uti.html

NHSN Training Resources

- NHSN Enrollment & Facility Set-up:
<http://www.cdc.gov/nhsn/training/enrollment-setup/index.html>
- Overview of the Patient Safety Component, Device-associated module: <http://www.cdc.gov/nhsn/training/patient-safety-component/index.html>
- Data Entry, Surveillance, Analysis, Import, and Customization:
<http://www.cdc.gov/nhsn/training/analysis/index.html>
- Introduction to the Device-associated Module (Training Course with quiz): <http://www.cdc.gov/nhsn/training/patient-safety-component/index.html>
- Catheter-associated Urinary Tract Infection (CAUTI) (Training Course with quiz): <http://www.cdc.gov/nhsn/training/patient-safety-component/index.html>



For more information, please contact
the HAI Program at

HAIProgram@cdph.ca.gov

Thank you!