



TENNESSEE DEPARTMENT OF HEALTH
HEALTHCARE-ASSOCIATED INFECTIONS
AND ANTIMICROBIAL RESISTANCE PROGRAM

HAI Surveillance Definitions



URINARY TRACT INFECTION (UTI)

(Revised January 1, 2019)

Healthcare-Associated Infections (HAI): if the date of event of the NHSN site-specific infection criterion occurs on or after the 3rd calendar day of admission to an inpatient location where day of admission is calendar day 1.

Present on Admission (POA): if the date of event of the NHSN site-specific infection criterion occurs during the POA time period, which is defined as the day of admission to an inpatient location (calendar day 1), the 2 days before admission, and the calendar day after admission. For purposes of NHSN surveillance and determination of the Repeat Infection Timeframe, if the date of event is determined to be either of the two days prior to inpatient admission, then the date of event will be hospital day 1.

Urinary tract infections: (UTI) are defined using Symptomatic Urinary Tract Infection (SUTI) criteria, Asymptomatic Bacteremic UTI (ABUTI), and Urinary System Infection (USI) criteria. For additional information, see table below called “Associating Catheter Use to UTI” and condition specific checklist.

Note: UTI is a primary site of infection and cannot be considered secondary to another site of infection.

Date of Event (DOE): For a UTI, the date of event is the date when the first element used to meet the UTI infection criterion occurs for the first time within the 7-day Infection Window Period. (**See definition of Infection Window Period in “Additional information.”**) Synonyms: infection date, event date.

Indwelling urinary catheter: 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). These devices are also called Foley catheters. Condom or straight in-and-out catheters are not included nor are nephrostomy tubes, ileoconduits, or suprapubic catheters unless a Foley catheter is also present. Indwelling urethral catheters that are used for intermittent or continuous irrigation are included in CAUTI surveillance.

Catheter-associated UTI (CAUTI): A UTI where:

- An indwelling urinary catheter (IUC) was in place for >2 calendar days on the date of event, with day of device placement being Day 1*,
AND
- An indwelling urinary catheter was in place on the date of event or the day before. If an indwelling urinary catheter was in place for more than 2 consecutive days in an inpatient location and then removed, the date of event for the UTI must be the day of device discontinuation or the next day for the UTI to be catheter-associated.

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****If the IUC was in place prior to inpatient admission, the catheter day count that determines device-association begins with the admission date to the first inpatient location this allows for consistency with device denominator count. (see protocol table 3)***

EXAMPLE of Associating Catheter Use to UTI: A patient in an inpatient unit has an IUC inserted and the following day is the date of event for a UTI. Because the IUC has not been in place for more than 2 consecutive days in an inpatient location on the date of event, this is not a CAUTI. However, depending on the date of admission, this may be a healthcare-associated UTI and sets an RIT.

Notes:

- SUTI 1b and Urinary System Infection (USI) cannot be catheter-associated.
- SUTI 1b cannot be met in a patient >65 years of age with a fever >38°C as the only element within the Infection Window period.

Indwelling urinary catheters that are removed and reinserted: If, after an IUC removal, the patient is without an indwelling urinary catheter for at least 1 full calendar day (NOT to be read as 24 hours), then the IUC day count will start anew. If instead, a new IUC is inserted before a full calendar day has passed, the Indwelling urinary catheter device day count, to determine eligibility for a CAUTI, will continue uninterrupted.

Associating Catheter Use to UTI

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

Rationale: NHSN surveillance for infection is not aimed at a specific device. Instead, surveillance is aimed at identifying risk to the patient that is the result of device use in general.

- In the examples above, Patient A is eligible for a CAUTI beginning on March 31, through April 6, since an IUC was in place for some portion of each calendar day until April 6. A UTI with date of event on April 6 would be a CAUTI since the IUC had been in place >2 days and was removed the day before the date of event.
- Patient B is eligible for a CAUTI on March 31 (IUC 3) through April 3. The IUC had been in place >2 days and an HAI occurring on the day of device discontinuation or the following calendar day is considered a device-associated infection.



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- If the patient did not have a CAUTI by April 3, the patient is not eligible for CAUTI until April 6, when the second IUC had been in place for greater than 2 days.

Location of Attribution: The inpatient location where the patient was assigned on the date of the UTI event, is the location of attribution. Non-bedded patient locations, (for example Operating room (OR) or Interventional Radiology (IR) are not eligible for assignment of location of attribution for HAI events. Location of attribution must be assigned to a location where denominator data (for example, patient days, device days) can be collected.

EXCEPTION TO LOCATION OF ATTRIBUTION:

Transfer Rule: If the date of event for a UTI is on the date of transfer or discharge, or the next day, the infection is attributed to the transferring/discharging location. This is called the **Transfer Rule**. If the patient was in multiple locations within the transfer rule time frame, attribute the infection to the **first** location in which the patient was housed the **day before** the infection's date of event. Receiving locations or facilities should share information about such HAIs with the transferring location or facility to enable accurate reporting.

Note: Surveillance after the patient is discharged from the facility is not required. However, if discovered, any infection with a date of event (DOE) on the day of discharge or the next day is attributable to the discharging location and should be included in any data reported to NHSN for that location. No additional device days are reported.

Location Example:

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

Facility Example:

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



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Multiple Transfers within the same facility during the same admission

Example: In instances where a patient has been transferred to more than one location on the date of a UTI, or the day before, attribute the UTI to the **first** location in which the patient was housed the **day before** the UTI's date of event.


NOTE: Example of multiple transfers within the transfer rule time-frame:

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

URINARY TRACT INFECTION (UTI)


SUTI – Symptomatic Urinary Tract Infection

(Revised January 1, 2019)


DEFINITION: A Symptomatic Urinary Tract Infection must meet at least **ONE**  of the following criteria:

 **Criterion 1a:** SUTI 1a – Catheter-Associated Urinary Tract Infection (CAUTI)

- Patient has **BOTH**  of the following:

-  an indwelling urinary catheter (IUC) that had been in place for more than 2 consecutive days in an inpatient location on the date of event

-  **ONE**  of the following occurred:


-  Present for any portion of the calendar day on the date of event⁺


⁺When entering event into NHSN, choose “INPLACE” for Risk Factor for IUC

-  removed the day before the date of event⁺⁺

⁺⁺When entering event into NHSN, choose “REMOVE” for Risk Factor for IUC


AND


- Patient has at least **ONE**  of the following signs or symptoms: **with no other recognized cause*

-  fever (>38°C): To use fever in a patient >65 years of age, the IUC needs to be in place for more than 2 consecutive days in an inpatient location on **date of event and is either still in place OR was removed the day before the date of event.**

-  suprapubic tenderness*

-  costovertebral angle pain or tenderness*

-  urinary urgency[^]

-  urinary frequency[^]

-  dysuria[^]

AND

- 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. (see Comments) All elements of the SUTI criterion must occur during the Infection Window Period.


NOTE: Fever is a non-specific symptom of infection and cannot be excluded from UTI determination because it is clinically deemed due to another recognized cause

[^] *These symptoms cannot be used when IUC is in place. An indwelling urinary catheter in place could cause patient complaints of “frequency” “urgency” or “dysuria.”*


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□ **Criterion 1b:** SUTI 1b – Non-Catheter associated Urinary Tract Infection (Non-CAUTI)


- Patient has/had **ONE**  the following:

-  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 date of event[†]

- [†]*When entering event into NHSN, choose “NEITHER” for Risk Factor for IUC*

-  did not have a indwelling urinary catheter in place on the date of event nor the day before the date of event[†]

- [†]*When entering event into NHSN, choose “NEITHER” for Risk Factor for IUC*

- Patient has at least **ONE**  of the following signs or symptoms:

-  fever (>38.0°C) in a patient that is ≤65 years of age

-  suprapubic tenderness*

-  costovertebral angle pain or tenderness*

-  urinary frequency^

-  urinary urgency^

-  dysuria^

AND

- 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 (see Comments). All elements of the SUTI criterion must occur during the Infection Window Period.

* *with no other recognized cause*

[^]*These symptoms cannot be used when IUC is in place. An indwelling urinary catheter in place could cause patient complaints of “frequency” “urgency” or “dysuria”.*


NOTE: Fever is a non-specific symptom of infection and cannot be excluded from UTI determination because it is clinically deemed due to another recognized cause.








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□ **Criterion 2:** SUTI 2 - CAUTI or Non-CAUTI in patients 1 year of age or less

- Patient ≤1 year of age (with[‡] or without an indwelling urinary catheter

AND

- Patient has at least **ONE**  of the following signs or symptoms:

-  fever (>38.0°C)
-  hypothermia (<36.0°C)
-  apnea*
-  bradycardia*
-  lethargy*
-  vomiting*
-  suprapubic tenderness*

AND

- 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. (see Comments) All elements of the SUTI criterion must occur during the Infection Window Period.**

**** See “Additional Information” checklist for definition of Infection Window Period.**

[‡] If patient had an indwelling urinary catheter in place for more than 2 consecutive days in an inpatient location, and the IUC was in place on the date of event or the previous day the CAUTI criterion is met. If no such indwelling urinary catheter was in place, UTI (non-catheter associated) criterion is met.

*** With no other recognized cause**

NOTE: Fever and hypothermia are non-specific symptoms of infection and cannot be excluded from UTI determination because they are clinically deemed due to another recognized cause.

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COMMENTS: (Revised January 1, 2019)

“Mixed flora” is not available in the pathogen list within NHSN. Therefore, it cannot be reported as a pathogen to meet the NHSN UTI criteria. Additionally, “mixed flora” represent at least two species of organisms. Therefore, an additional organism recovered from the same culture, would represent >2 species of organisms. Such a specimen also cannot be used to meet the UTI criteria.

The following excluded organisms cannot be used to meet the UTI definition:

- Any *Candida* species as well as a report or “yeast” that is not otherwise specified
- Mold
- Dimorphic fungi or
- Parasites

An acceptable urine specimen may include these organisms as long as one bacterium of greater than or equal to 100,000 CFU/ml is also present. Additionally, these non-bacterial organisms identified from blood cannot be deemed secondary to a UTI since they are excluded as organisms in the UTI definition.

- Suprapubic tenderness whether elicited by palpation (tenderness-sign) or provided as a subjective complaint of suprapubic pain (pain-symptom), documentation of either found in the medical record is acceptable as a part of SUTI criterion if documented in the medical record during the Infection Window Period.
- Lower abdominal pain or bladder or pelvic discomfort are examples of symptoms that can be used as suprapubic tenderness. Generalized “abdominal pain” in the medical record is not to be interpreted as suprapubic tenderness as there are many causes of abdominal pain and this symptom is too general.
- Left or right lower back or flank pain are examples of symptoms that can be used as costovertebral angle pain or tenderness. Generalized “low back pain” is not to be interpreted as costovertebral pain.

URINARY TRACT INFECTION (UTI)

ABUTI – Asymptomatic Bacteremic Urinary Tract Infection

DEFINITION: Asymptomatic bacteremic urinary tract infection must meet **ALL** ☐ of the following criteria:

☐ **Criterion 1:** (Revised January 1, 2019)

- Patient with* or without an indwelling urinary catheter

**Patient had an indwelling urinary catheter in place for more than 2 consecutive days in an inpatient location on the date of event, and the indwelling urinary catheter was in place on the date of event or the day before.*

AND

- Patient has no signs or symptoms of SUTI 1 or 2 according to age (Note: Patients >65 years of age with a non-catheter-associated ABUTI **may** have a fever and still meet the ABUTI criterion)

AND

- 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 (see Comment section below)

AND

- Patient has organism identified [#] from blood specimen with **ONE** ☐ of the following:
 - ☐ at least 1 matching bacterium to the bacterium identified in the urine specimen
 - ☐ meets LCBI criterion 2 (without fever) and matching common commensal(s) in the urine.

All elements of the ABUTI criterion must occur during the Infection Window Period**.

****See “Additional Information” checklist for definition of Infection Window Period.**

[#]Organisms identified by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing (ASC/AST).

Catheter-associated ABUTI is reportable if the location is in the facility’s reporting plan.



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COMMENTS: *(Revised January 1, 2019)*

“Mixed flora” cannot be used to meet the urine criterion.

Additionally, the following excluded organisms cannot be used to meet the UTI definition:

- Any *Candida* species as well as a report of “yeast” not otherwise specified
- Mold
- Dimorphic fungi or
- Parasites

An acceptable urine specimen may include these excluded organisms as long as one bacterium of greater than or equal to 100,000 CFU/ml is also present. Additionally, these non-bacterial organisms identified from blood cannot be deemed secondary to a UTI since they are excluded as organisms in the UTI definition.

URINARY TRACT INFECTION (UTI)

Urinary System Infection (USI) (Formerly OUTI)

(kidney, ureter, bladder, urethra, or perinephric space)

(Revised January 1, 2019)

DEFINITION: Other infections of the urinary tract must meet at least **ONE** □ of the following criteria:

□ **Criterion 1:** *Revised January 1, 2019*

- Patient has organisms identified[#] from **ONE** △ of the following:
 - △ from fluid (excluding urine) from affected site
 - △ tissue from affected site

□ **Criterion 2:** *(Revised January 1, 2019)*

- Patient has **ONE** △ of the following:
 - △ an abscess seen during **ONE** ◇ of the following:
 - ◇ gross anatomical exam
 - ◇ during invasive procedure
 - ◇ on histopathologic examination
 - △ other evidence of infection seen during **ONE** ◇ of the following:
 - ◇ gross anatomical exam
 - ◇ during invasive procedure
 - ◇ on histopathologic examination

□ **Criterion 3:** *(Revised January 1, 2019)*

- Patient has at least **ONE** △ of the following signs or symptoms:
 - △ fever (>38.0°C)
 - △ localized pain or tenderness*

AND

- Patient has at least **ONE** △ of the following:
 - △ purulent drainage from affected site
 - △ **BOTH** ◇ of the following:
 - ◇ organisms identified from blood[#]
 - ◇ imaging test evidence of infection (for example, ultrasound, CT scan, magnetic resonance imaging [MRI], or radiolabel scan [gallium, technetium]) which if equivocal is supported by clinical correlation (specifically, physician documentation of antimicrobial treatment for urinary system infection)

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□ **Criterion 4:** (Revised January 1, 2019)

- Patient ≤1 year of age has at least **ONE** △ of the following signs or symptoms:

- △ fever (>38.0°C)
- △ hypothermia (<36.0°C)
- △ apnea*
- △ bradycardia*
- △ lethargy*
- △ vomiting*

AND

- Patient has at least **ONE** △ of the following:

- △ purulent drainage from affected site

- △ **BOTH** ◇ of the following:

- ◇ organisms identified from blood[#]
- ◇ imaging test evidence of infection (for example, ultrasound, CT scan, magnetic resonance imaging [MRI], or radiolabel scan [gallium, technetium])

* with no other recognized cause

[#] Organisms identified by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing (ASC/AST).

NOTE:

- Fever and hypothermia are non-specific symptoms of infection and cannot be excluded from USI determination because they are clinically deemed due to another recognized cause.
- All elements of the USI criterion must occur during the Infection Window Period^{**}. (****See “Additional Information” checklist for definition of Infection Window Period.**)

COMMENTS:

- Report infections following circumcision in newborns as SST-CIRC.
- If patient meets USI criteria and they also meet UTI criteria, report UTI only, unless the USI is a surgical site organ/space infection, in which case, only USI should be reported.
- For NHSN reporting purposes, Urinary System Infection (USI) cannot be catheter associated, therefore, USI will only present as specific event type if urinary catheter status is marked “neither.”

URINARY TRACT INFECTION (UTI)

**Identifying Symptomatic Urinary Tract Infections (SUTI)
and Asymptomatic Bacteremic Urinary Tract Infections (ABUTI)**
(Revised January 1, 2019)

