

URINARY TRACT INFECTION (UTI)

(Revised January 1, 2017)

Present on Admission (POA): Infections that are POA, as defined in the “Additional Information” checklist, are not considered HAIs and therefore are never reported to NHSN.

Healthcare-associated infections (HAI): All NHSN site specific infections must first meet the HAI definition as defined in the “Additional Information” checklist before a site specific infection (e.g., CAUTI) can be reported to NHSN.

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

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 occurred 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 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 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 >2 days and then removed, the date of event for the UTI must be the day of discontinuation or the next day for the UTI to be catheter-associated.

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

NOTE:

- SUTI 1b and Urinary System Infection (USI) cannot be catheter-associated.
- Indwelling urinary catheters that are removed and reinserted: If, after indwelling urinary catheter 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 urinary catheter day count will start anew. If instead, a new indwelling urinary catheter is inserted before a full calendar day has passed without an indwelling urinary catheter being present, the urinary catheter day count will continue.

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Associating Catheter Use to UTI

	March 31 (Hospital Day 3)	April 1	April 2	April 3	April 4	April 5	April 6
Patient A	Foley Day 3	Foley Day 4	Foley removed (Foley Day 5)	Foley replaced (Foley Day 6)	Foley Day 7	Foley removed Day 8	No Foley
Patient B	Foley Day 3	Foley Day 4	Foley removed (Foley Day 5)	No Foley	Foley replaced (Foley Day 1)	Foley Day 2	Foley 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 a Foley 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 catheter 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 (Foley Day 3) through April 3. The catheter 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.
- If the patient did not have a CAUTI by April 3, the patient is not eligible for CAUTI until April 6, when the second indwelling urinary catheter had been in place for greater than 2 days. (Note: NHSN will not require the UTI to be attributed to a specific indwelling urinary catheter when reporting).

Location of Attribution: The inpatient location where the patient was assigned on the date of the UTI event. For additional information, see “Date of event” definition above, and “Exception to Location of Attribution” below.

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** and examples are shown below. Receiving facilities should share information about such HAIs with the transferring location or facility to enable reporting.

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Examples of the Transfer Rule:

- Patient is transferred in the morning to the medical ward from the MSICU after having the Foley catheter removed, which had been in place for 6 days. The day of transfer is the date of event for the CAUTI. This is reported to NHSN as a CAUTI for the MSICU because the date of event (date when the first element of UTI criteria, first appeared during the infection window) was the day of transfer from that location.
- On Monday, patient with a Foley catheter in place is transferred from the medical ward to the coronary care unit (CCU). Wednesday in the CCU, patient has a fever and urine culture collected that day is positive for 100,000 CFU/ml of *E. coli*. This is reported to NHSN as a CAUTI for the CCU, because the UTI date of event is LATER THAN the day after transfer.
- A patient has a Foley catheter removed on catheter day 5 and is discharged the same day from hospital A's urology ward. The next day, the IP from Hospital B calls to report that this patient has been admitted to Hospital B meeting UTI criteria. This CAUTI should be reported to NHSN for Hospital A and attributed to the urology ward because the date of event is the next day after transfer.
- Patient in the MICU with a Foley catheter, which has been in place for 4 days, is transferred to the medical ward. The day after transfer is determined to be the date of event for a catheter-associated ABUTI. This is reported to NHSN as an ABUTI for the MICU because the date of event was the next day after transfer.



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Multiple Transfers: 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:

	3/22	3/23	3/24
Locations in which patient was housed	Unit A	Unit A Unit B Unit C	Unit C Unit D This is also the date of event for a CAUTI. CAUTI is attributed to a Unit A since Unit A was the first location in which the patient was housed the day before the date of event.

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SUTI – Symptomatic Urinary Tract Infection

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

SUTI 1a - Catheter-Associated Urinary Tract Infection (CAUTI)

☐ **Criterion 1a:** (Revised January 1, 2017)

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

- ☐ an indwelling urinary catheter that had been in place for > 2 calendar days on the date of event, (day of device placement = Day 1)

- ☐ **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 Urinary Catheter)

- ☐ the urinary catheter was removed the day before the date of event⁺⁺

(++When entering event into NHSN, choose “REMOVE” for Risk Factor for Urinary Catheter)

AND

- Patient had at least **ONE** ☐ of the following signs or symptoms: (*with no other recognized cause)

- ☐ fever (>38°C)

- ☐ 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 $\geq 10^5$ colony-forming units CFU/ml. (see Comments) All elements of the UTI 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


^An indwelling urinary catheter in place could cause patient complaints of “frequency”, “urgency” or “dysuria” and therefore these cannot be used as symptoms when catheter is in place.

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URINARY TRACT INFECTION (UTI)**Criterion 1b:** (Revised January 1, 2017)**SUTI 1b - Non-Catheter associated Urinary Tract Infection (Non-CAUTI)**

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


-  indwelling urinary catheter, but it has/had not been in place for > 2 calendar days on the date of event⁺

(+When entering event into NHSN, choose “NEITHER” for Risk Factor for Urinary Catheter)

-  did not have a 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 Urinary Catheter)


AND

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

-  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 $\geq 10^5$ colony-forming units CFU/ml (see Comments). All elements of the SUTI criterion must occur during the Infection Window Period.

NOTE:

- An indwelling urinary catheter in place could cause patient complaints of “frequency” “urgency” or “dysuria” and therefore these cannot be used as symptoms when catheter is in place.
- 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: (Revised January 1, 2017)








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:

(*with no other recognized cause)

-  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 $\geq 10^5$ colony-forming units 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 >2 calendar days, and catheter 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 (see Comments)

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.

URINARY TRACT INFECTION (UTI)

COMMENTS: (Revised January 1, 2017)

“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 microorganisms. Such a specimen also cannot be used to meet the UTI criteria.

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

- Candida species or yeast not otherwise specified
- Mold
- Dimorphic fungi or
- Parasites

An acceptable urine specimen may include these organisms as long as one bacterium of 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.

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ABUTI – Asymptomatic Bacteremic Urinary Tract Infection

DEFINITION: Asymptomatic bacteremic urinary tract infection must meet the **FOLLOWING** ☐ criterion:

☐ **Criterion 1:** (Revised January 1, 2017)

- Patient with* or without an indwelling urinary catheter
*(*Patient had an indwelling urinary catheter in place for ≥ 2 calendar days on the date of event, with day of device placement being Day 1, and catheter was in place on the day 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 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 (e.g., not Active Surveillance Culture/Testing (ASC/AST)).

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COMMENTS: (Revised January 1, 2017)

“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 microorganisms. Such a specimen also cannot be used to meet the UTI criteria.

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

- *Candida* species or yeast not otherwise specified
- Mold
- Dimorphic fungi or
- Parasites

An acceptable urine specimen may include these organisms as long as one bacterium of 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.

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Urinary System Infection (USI)
(Formerly OUTI) (kidney, ureter, bladder, urethra,
or tissue surrounding the retroperitoneal or perinephric space)

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

☐ **Criterion 1:** *Revised January 1, 2017)*

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

☐ **Criterion 2:** *(Revised January 1, 2017)*

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

☐ **Criterion 3:** *(Revised January 1, 2017)*

- Patient has at least **ONE** ☐ of the following signs or symptoms: (** with no other recognized cause*)
 - ☐ 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 (e.g., ultrasound, CT scan, magnetic resonance imaging [MRI], **or** radiolabel scan [gallium, technetium]) which if equivocal is supported by clinical correlation (i.e., physician documentation of antimicrobial treatment for urinary system infection)

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Criterion 4: (Revised January 1, 2017)

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

(* with no other recognized cause)

△ 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 (e.g., ultrasound, CT scan, magnetic resonance imaging [MRI], or radiolabel scan [gallium, technetium])

[#] **Organisms identified by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (e.g., 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”.

**Surveillance Definitions
URINARY TRACT INFECTION (UTI)**

**Identifying Symptomatic Urinary Tract Infections (SUTI) and
Asymptomatic Bacteremic Urinary Tract Infections (ABUTI)**

(Revised January 1, 2017)

