



## Urinary Tract Infection (Catheter-Associated Urinary Tract Infection [CAUTI] and Non-catheter-associated Urinary Tract Infection [UTI] and Other Urinary System Infection [USI] Events

**Introduction:** Urinary tract infections (UTIs) are tied with pneumonia as the second most common type of healthcare-associated infection, second only to SSIs. UTIs account for more than 15% of infections reported by acute care hospitals<sup>1</sup>. Virtually all healthcare-associated UTIs are caused by instrumentation of the urinary tract.

CAUTI can lead to such complications as cystitis, pyelonephritis, gram-negative bacteremia, prostatitis, epididymitis, and orchitis in males and, less commonly, endocarditis, vertebral osteomyelitis, septic arthritis, endophthalmitis, and meningitis in all patients. Complications associated with CAUTI cause discomfort to the patient, prolonged hospital stay, and increased cost and mortality<sup>2</sup>. Each year, more than 13,000 deaths are associated with UTIs.<sup>3</sup>

Prevention of CAUTIs is discussed in the CDC/HICPAC document, *Guideline for Prevention of Catheter-associated Urinary Tract Infection*<sup>4</sup>.

**Settings:** Surveillance will occur in any inpatient locations where denominator data can be collected, which may include critical intensive care units (ICU), specialty care areas (SCA), step down units, and long term care wards. Neonatal ICUs may participate, but only off plan (not as a part of their monthly reporting plan). A complete listing of inpatient locations and instructions for mapping can be found in [CDC Locations and Descriptions](#) chapter.

**NOTE:** It is not required to monitor for CAUTIs after the patient is discharged from the facility. However, if discovered, any CAUTI with the date of event on the day of discharge or the next day should be reported to NHSN; day of discharge is considered Day 1. No additional indwelling catheter days are reported.

**Requirements:** Surveillance for HAI CAUTI is performed in at least one inpatient location in the healthcare institution for at least one calendar month as indicated in the *Patient Safety Monthly Reporting Plan* ([CDC 57.106](#)).

### Definitions:

**Present on Admission (POA):** Infections that are POA, as defined in [Chapter 2](#), 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 [Chapter 2](#) 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 ([Table 1](#)).

Date of event: For a UTI the date of event is the date when the first element used to meet the UTI infection criterion occurred. Synonym: infection 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 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 calendar days and then removed, the date of event for the UTI must be the day of discontinuation or the next day.

**NOTE: 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 without an indwelling urinary catheter has passed, the urinary catheter day count will continue.

**EXAMPLE:** A patient has a Foley catheter inserted on an inpatient unit and the following morning 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.

**NOTE:** SUTI 1b and USI, cannot be catheter-associated.

Location of attribution: The inpatient location where the patient was assigned on the date of the UTI event, which is further defined as the date when the first element used to meet the UTI criterion occurred (see exception below).



**EXCEPTION TO LOCATION OF ATTRIBUTION:**

*Transfer Rule:* If the date of event for a CAUTI is on the date of transfer or discharge, or the next day, the infection is attributed to the transferring/discharging location. Receiving facilities should share information about such HAIs with the transferring location or facility to enable reporting. This is called the Transfer Rule and examples are shown below:

- Patient with a Foley catheter in place in the SICU is transferred to the surgical ward. The next day, suprapubic tenderness occurs and UTI criteria are met. This is reported to NHSN as a CAUTI for the SICU.
- Patient is transferred in the morning to the medical ward from the MSICU after having the Foley catheter removed. Later that night, the patient experiences urinary frequency and the next day, UTI criteria are met. This is reported to NHSN as a CAUTI for the MSICU as the date of event (date of first element of UTI criteria) was the day after transfer from that location.
- On Monday, patient with a Foley catheter in place is transferred from the medical ward to the coronary care ICU (CCU). Wednesday in the CCU, patient has a fever and other UTI criteria are met. This is reported to NHSN as a CAUTI for the CCU, as the UTI event date is LATER THAN the day after transfer.
- Patient on the urology ward of Hospital A had the Foley catheter removed after it had been in place for 5 days and is discharged home a few hours later. The IP from Hospital B calls the next day to report that this patient has been admitted to Hospital B with urinary urgency and meeting UTI criteria. This CAUTI should be reported to NHSN for Hospital A and attributed to the urology ward.
- **NOTE:** Example of multiple transfers within the transfer rule time-frame:

3/22	3/23	3/24
Patient in Unit A	Patient transferred from Unit A to Unit B. Later that day, patient transferred from Unit B to Unit C. (day of transfer)	Patient transferred from Unit C to Unit D. This is also the date of event for a CAUTI. CAUTI is attributed to Unit A since Unit A was the original unit initiating the transfer in the 2 day time-frame. (day after transfer)



**Table 1. Urinary Tract Infection Criteria**

Criterion	Urinary Tract Infection (UTI)
	<p><b>Symptomatic UTI (SUTI)</b> Must meet at least 1 of the following criteria:</p>
<p><b>1a</b>  <b>Catheter-associated Urinary Tract Infection (CAUTI)</b></p>	<p>Patient had an indwelling urinary catheter <b>in place on the date of event</b> and the catheter had been in place for &gt;2 calendar days, on that date ( day of device placement = Day 1), <i>And</i> patient has at least one of the following:</p> <ul style="list-style-type: none"> <li>a. positive dipstick for leukocyte esterase and/or nitrite</li> <li>b. pyuria (urine specimen with <math>\geq 10</math> white blood cells [WBC]/mm<sup>3</sup> of unspun urine or &gt;5 WBC/high power field of spun urine)</li> <li>c. microorganisms seen on Gram's stain of unspun urine</li> <li>d. No urinalysis performed for leukocyte esterase, pyuria (as defined above), or nitrites.</li> </ul> <p><i>And</i> at least 1 of the following signs or symptoms: fever (&gt;38.0°C); suprapubic tenderness*; costovertebral angle pain or tenderness*, purulence around urinary catheter, or swelling or tenderness of epididymis, testes, or prostate <i>And</i> a positive urine culture of <math>\geq 10^3</math> colony-forming units (CFU)/ml and with no more than 2 species of microorganisms. Elements of the criterion must occur within a timeframe that does not exceed a gap of 1 calendar day between two adjacent elements.</p> <p style="text-align: center;">-----OR-----</p> <p>Patient had an indwelling urinary catheter <b>in place on the date of event</b> and the catheter had been in place for &gt;2 calendar days, on that date ( day of device placement = Day 1), <i>And</i> Urinalysis is negative for <u>all</u> of the following:</p> <ul style="list-style-type: none"> <li>a. dipstick for leukocyte esterase and/or nitrite</li> <li>b. pyuria (urine specimen with <math>\geq 10</math> white blood cells [WBC]/mm<sup>3</sup> of unspun urine or &gt;5 WBC/high power field of spun urine)</li> <li>c. microorganisms seen on Gram's stain of unspun urine</li> </ul> <p><i>And</i> Patient is neutropenic as defined by total WBC or ANC &lt;500 cells/mm<sup>3</sup> on at least 2 days within the 3 days before the negative U/A and the 3 days after the negative U/A <i>And</i> at least 1 of the following signs or symptoms: fever (&gt;38.0°C); suprapubic tenderness*; costovertebral angle pain or tenderness*, purulence around urinary catheter, or swelling or tenderness of epididymis, testes, or prostate <i>And</i></p>



Criterion	Urinary Tract Infection (UTI)
	<p>a positive urine culture of <math>\geq 10^3</math> colony-forming units (CFU)/ml and with no more than 2 species of microorganisms. Elements of the criterion must occur within a timeframe that does not exceed a gap of 1 calendar day between two adjacent elements.</p> <p>-----OR-----</p> <p>Patient had an indwelling urinary catheter which was in place for &gt;2 calendar days and which was <b>removed on the day of or the day before the date of event</b></p> <p><i>And</i></p> <p>at least 1 of the following signs or symptoms: fever (&gt;38°C); urgency*; frequency*; dysuria*; suprapubic tenderness*; costovertebral angle pain or tenderness*, purulence around urinary catheter, or swelling or tenderness of epididymis, testes, or prostate</p> <p><i>And</i></p> <p>patient has at least one of the following:</p> <ul style="list-style-type: none"><li>a. positive dipstick for leukocyte esterase and/or nitrite</li><li>b. pyuria (urine specimen with <math>\geq 10</math> white blood cells [WBC]/mm<sup>3</sup> of unspun urine or &gt;5 WBC/high power field of spun urine)</li><li>c. microorganisms seen on Gram's stain of unspun urine</li><li>d. No urinalysis performed for leukocyte esterase, pyuria (as defined above), or nitrites.</li></ul> <p><i>And</i></p> <p>a positive urine culture of <math>\geq 10^3</math> colony-forming units (CFU)/ml and with no more than 2 species of microorganisms. Elements of the criterion must occur within a timeframe that does not exceed a gap of 1 calendar day between two adjacent elements.</p> <p>*With no other recognized cause</p> <p>-----OR-----</p> <p>Patient had an indwelling urinary catheter which was in place for &gt;2 calendar days and which was <b>removed on the day of or the day before the date of event</b></p> <p><i>And</i></p> <p>at least 1 of the following signs or symptoms: fever (&gt;38°C); urgency*; frequency*; dysuria*; suprapubic tenderness*; costovertebral angle pain or tenderness*, purulence around urinary catheter, or swelling or tenderness of epididymis, testes, or prostate</p> <p><i>And</i></p> <p>Urinalysis is negative for <u>all</u> of the following:</p> <ul style="list-style-type: none"><li>a. dipstick for leukocyte esterase and/or nitrite</li><li>b. pyuria (urine specimen with <math>\geq 10</math> white blood cells [WBC]/mm<sup>3</sup> of unspun urine or &gt;5 WBC/high power field of spun urine)</li><li>c. microorganisms seen on Gram's stain of unspun urine</li></ul> <p><i>And</i></p>



Criterion	Urinary Tract Infection (UTI)
	<p>Patient is neutropenic as defined by total WBC or ANC <math>&lt;500</math> cells/mm<sup>3</sup> on at least 2 days within the 3 days before the negative U/A and the 3 days after the negative U/A</p> <p><i>And</i></p> <p>a positive urine culture of <math>\geq 10^3</math> colony-forming units (CFU)/ml and with no more than 2 species of microorganisms. Elements of the criterion must occur within a timeframe that does not exceed a gap of 1 calendar day between two adjacent elements.</p> <p>*With no other recognized cause</p>
<p><b>1b</b></p> <p><b>Non-Catheter-associated Urinary Tract Infection (NonCAUTI)</b></p>	<p>Patient did <u>not</u> have an indwelling urinary catheter that was both: in place on the date of event or the day before AND had been in place for <math>&gt;2</math> calendar days on the date of event</p> <p><i>And</i></p> <p>has at least 1 of the following signs or symptoms: fever (<math>&gt;38^{\circ}\text{C}</math>) in a patient that is <math>\leq 65</math> years of age; urgency*; frequency*; dysuria*; suprapubic tenderness*; costovertebral angle pain or tenderness**, purulence around urinary catheter, or swelling or tenderness of epididymis, testes, or prostate</p> <p><i>And</i></p> <p>patient has at least one of the following:</p> <ol style="list-style-type: none"> <li>positive dipstick for leukocyte esterase and/or nitrite</li> <li>pyuria (urine specimen with <math>\geq 10</math> white blood cells [WBC]/mm<sup>3</sup> of unspun urine or <math>&gt;5</math> WBC/high power field of spun urine)</li> <li>microorganisms seen on Gram's stain of unspun urine</li> <li>No urinalysis performed for leukocyte esterase, pyuria (as defined above), or nitrites.</li> </ol> <p><i>And</i></p> <p>a positive urine culture of <math>\geq 10^3</math> CFU/ml and with no more than 2 species of microorganisms. Elements of the criterion must occur within a timeframe that does not exceed a gap of 1 calendar day between two adjacent elements.</p> <p>*With no other recognized cause</p> <p>-----OR-----</p> <p>Patient did <u>not</u> have an indwelling urinary catheter that was both: in place on the date of event or the day before AND had been in place for <math>&gt;2</math> calendar days on the date of event</p> <p><i>And</i></p> <p>has at least 1 of the following signs or symptoms: fever (<math>&gt;38^{\circ}\text{C}</math>) in a patient that is <math>\leq 65</math> years of age; urgency*; frequency*; dysuria*; suprapubic tenderness*; costovertebral angle pain or tenderness**, purulence around urinary catheter, or swelling or tenderness of epididymis, testes, or prostate</p> <p><i>And</i></p>



Criterion	<b>Urinary Tract Infection (UTI)</b>
	<p>Urinalysis is negative for all of the following:</p> <ol style="list-style-type: none"> <li>dipstick for leukocyte esterase and/or nitrite</li> <li>pyuria (urine specimen with <math>\geq 10</math> white blood cells [WBC]/mm<sup>3</sup> of unspun urine or <math>&gt; 5</math> WBC/high power field of spun urine)</li> <li>microorganisms seen on Gram's stain of unspun urine</li> </ol> <p><i>And</i></p> <p>Is neutropenic as defined by total WBC or ANC <math>&lt; 500</math> cells/mm<sup>3</sup> on at least 2 days within the 3 days before the negative U/A and the 3 days after the negative U/A</p> <p><i>And</i></p> <p>a positive urine culture of <math>\geq 10^3</math> CFU/ml and with no more than 2 species of microorganisms. Elements of the criterion must occur within a timeframe that does not exceed a gap of 1 calendar day between two adjacent elements.</p> <p><i>*With no other recognized cause</i></p>

3	<p>Patient <math>\leq 1</math> year of age with<sup>v</sup> or without an indwelling urinary catheter has at least 1 of the following signs or symptoms: fever (<math>&gt; 38.0^\circ\text{C}</math> core); hypothermia (<math>&lt; 36.0^\circ\text{C}</math> core); apnea*; bradycardia*; *; lethargy*; vomiting*; suprapubic tenderness* purulence around urinary catheter, or swelling or tenderness of epididymis, testes, or prostate,</p> <p><i>And</i></p> <p>a positive urine culture of <math>\geq 10^3</math> CFU/ml and with no more than 2 species of microorganisms. Elements of the criterion must occur within a timeframe that does not exceed a gap of 1 calendar day between two adjacent elements.</p> <p><i>*With no other recognized cause</i></p> <p><sup>v</sup> If patient had an indwelling urinary catheter in place for <math>&gt; 2</math> 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 .</p>
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Criterion	<b>Asymptomatic Bacteremic Urinary Tract Infection (ABUTI)</b>
	<p>Patient with* or without an indwelling urinary catheter has <u>no</u> signs or symptoms (i.e., for any age patient, <u>no</u> fever (<math>&gt; 38^\circ\text{C}</math>); urgency; frequency; dysuria; suprapubic tenderness; costovertebral angle pain or tenderness <u>OR</u> for a patient <math>\leq 1</math> year of age; <u>no</u> fever (<math>&gt; 38^\circ\text{C}</math> core); hypothermia (<math>&lt; 36^\circ\text{C}</math> core); apnea; bradycardia; dysuria; lethargy; or vomiting)</p> <p><i>and</i></p> <p>a positive urine culture of <math>\geq 10^5</math> CFU/ml and with no more than 2 species of uropathogen microorganisms** (see Comments section below)</p> <p><i>and</i></p>



	<p>a positive blood culture with at least 1 matching uropathogen microorganism to the urine culture, or at least 2 matching blood cultures drawn on separate occasions if the matching pathogen is a common skin commensal. Elements of the criterion must occur within a timeframe that does not exceed a gap of 1 calendar day between two adjacent elements.</p> <p>*Patient had an indwelling urinary catheter in place for &gt;2 calendar days, with day of device placement being Day 1, and catheter was in place on the date of event.</p> <p>**Uropathogen microorganisms are: Gram-negative bacilli, <i>Staphylococcus spp.</i>, yeasts, beta-hemolytic <i>Streptococcus spp.</i>, <i>Enterococcus spp.</i>, <i>G. vaginalis</i>, <i>Aerococcus urinae</i>, and <i>Corynebacterium</i> (urease positive)<sup>†</sup>.</p> <p><sup>†</sup>Report <i>Corynebacterium</i> (urease positive) as either <i>Corynebacterium species unspecified</i> (COS) or as <i>C. urealyticum</i> (CORUR) if so speciated.</p> <p>(See complete list of uropathogen microorganisms at <a href="http://www.cdc.gov/nhsn/XLS/master-organism-Com-Commensals-Lists.xlsx#uropathogens">http://www.cdc.gov/nhsn/XLS/master-organism-Com-Commensals-Lists.xlsx#uropathogens</a>)</p>
<p><b>Comments</b></p>	<ul style="list-style-type: none"> <li>• Laboratory cultures reported as “mixed flora” represent at least 2 species of organisms. Therefore an additional organism recovered from the same culture, would represent &gt;2 species of microorganisms. Such a specimen cannot be used to meet the UTI criteria.</li> <li>• Urinary catheter tips should not be cultured and are not acceptable for the diagnosis of a urinary tract infection.</li> <li>• Urine cultures must be obtained using appropriate technique, such as clean catch collection or catheterization. Specimens from indwelling catheters should be aspirated through the disinfected sampling ports.</li> <li>• In infants, urine cultures should be obtained by bladder catheterization or suprapubic aspiration; positive urine cultures from bag specimens are unreliable and should be confirmed by specimens aseptically obtained by catheterization or suprapubic aspiration.</li> <li>• Urine specimens for culture should be processed as soon as possible, preferably within 1 to 2 hours. If urine specimens cannot be processed within 30 minutes of collection, they should be refrigerated, or inoculated into primary isolation medium before transport, or transported in an appropriate urine preservative. Refrigerated specimens should be cultured within 24 hours.</li> <li>• Urine specimen labels should indicate whether or not the patient is symptomatic.</li> <li>• Report only pathogens in both blood and urine specimens for ABUTI.</li> <li>• Report <i>Corynebacterium</i> (urease positive) as either <i>Corynebacterium species unspecified</i> (COS) or as <i>C. urealyticum</i> (CORUR) if speciated.</li> </ul>

<p><b>Criterion</b></p>	<p><b>Urinary System Infection (USI) (formerly OUTI) (kidney, ureter, bladder,</b></p>
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	<p>urethra, or tissue surrounding the retroperitoneal or perinephric space)</p> <p><b>Other infections of the urinary tract must meet at least 1 of the following criteria:</b></p>
	<p>1. <b>Patient has microorganisms isolated from culture of fluid (not urine) or tissue from affected site.</b></p>
	<p>2. <b>Patient has an abscess or other evidence of infection seen on direct examination, during an invasive procedure, or during a histopathologic examination.</b></p>
	<p>3. <b>Patient has at least 2 of the following signs or symptoms: fever (&gt;38°C), localized pain/tenderness*, at the involved site*</b></p> <p><i>and</i></p> <p><b>at least 1 of the following:</b></p> <p style="padding-left: 40px;">a. <b>purulent drainage from affected site</b></p> <p style="padding-left: 40px;">b. <b>organisms cultured from blood and imaging test evidence of infection (e.g., ultrasound, CT scan, magnetic resonance imaging [MRI], or radiolabel scan [gallium, technetium]).</b></p> <p><b>* With no other recognized cause</b></p>
	<p>4. <b>Patient <math>\leq</math>1 year of age has at least 1 of the following signs or symptoms: fever (&gt;38°C core), hypothermia (&lt;36°C core), apnea*, bradycardia*, lethargy*, or vomiting*</b></p> <p><i>and</i></p> <p><b>at least 1 of the following:</b></p> <p style="padding-left: 40px;">a. <b>purulent drainage from affected site</b></p> <p style="padding-left: 40px;">b. <b>organisms cultured from blood and imaging test evidence of infection, (e.g., ultrasound, CT scans, magnetic resonance imaging [MRI], or radiolabel scan [gallium, technetium]).</b></p> <p><b>* With no other recognized cause</b></p>
<p><b>Comment</b></p>	<ul style="list-style-type: none"> <li>• <b>Report infections following circumcision in newborns as SST-CIRC.</b></li> </ul>



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|  | <ul style="list-style-type: none"> <li>• <b>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.</b></li> </ul> |
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**Numerator Data:** The [Urinary Tract Infection \(UTI\) form](#) is used to collect and report each CAUTI that is identified during the month selected for surveillance. The [Instructions for Completion of Urinary Tract Infection form](#) include brief instructions for collection and entry of each data element on the form. The UTI form includes patient demographic information and information on whether or not an indwelling urinary catheter was present. Additional data include the specific criteria met for identifying the UTI, whether the patient developed a secondary bloodstream infection, whether the patient died, and the organisms isolated from cultures and their antimicrobial susceptibilities.

#### REPORTING INSTRUCTIONS:

- If no CAUTIs are identified during the month of surveillance, the Report No Events box must be checked on the appropriate denominator summary screen, e.g., [Denominators for Intensive Care Unit \(ICU\)/Other Locations \(Not NICU or SCA/ONC\)](#).

**Denominator Data:** Device days and patient days are used for denominators (See [Key Terms](#) chapter). Indwelling urinary catheter days, which are the number of patients with an indwelling urinary catheter device, are collected daily, at the same time each day, according to the chosen location using the appropriate form (CDC [57.117](#) and [57.118](#)). These daily counts are summed and only the total for the month is entered into NHSN. Indwelling urinary catheter days and patient days are collected separately for each of the locations monitored. When denominator data are available from electronic databases, these sources may be used as long as the counts are not substantially different (+/- 5%) from manually collected counts, pre-validated for a minimum of 3 months.

**Data Analyses:** The Standardized Infection Ratio ([SIR](#)) is calculated by dividing the number of observed infections by the number of predicted infections. The number of predicted infections is calculated using CAUTI rates from a standard population during a baseline time period, which represents a standard population's CAUTI experience.<sup>5</sup>

NOTE: The SIR will be calculated only if the number of expected HAIs (numExp) is  $\geq 1$  to help enforce a minimum precision criterion.

NOTE: In the NHSN application, "predicted" is referred to as "expected".



$$\text{SIR} = \frac{\text{Observed (O) HAIs}}{\text{Expected (E) HAIs}}$$

While the CAUTI SIR can be calculated for single locations, the measure also allows you to summarize your data by multiple locations, adjusting for differences in the incidence of infection among the location types. For example, you will be able to obtain one CAUTI SIR adjusting for all locations reported. Similarly, you can obtain one CAUTI SIR for all specialty care areas in your facility.

NOTE: Only those locations for which baseline data have been published will be included in the SIR calculations.

The CAUTI rate per 1000 urinary catheter days is calculated by dividing the number of CAUTIs by the number of catheter days and multiplying the result by 1000. The Urinary Catheter Utilization Ratio is calculated by dividing the number of urinary catheter days by the number of patient days. These calculations will be performed separately for the different types of ICUs, specialty care areas, and other locations in the institution, except for neonatal locations.

Descriptive analysis options of numerator and denominator data are available in the NHSN application, such as line listings, frequency tables, and bar and pie charts. SIRs and CAUTI rates and run charts are also available. Guides on using NHSN analysis features are available from: <http://www.cdc.gov/nhsn/PS-Analysis-resources/reference-guides.html>.

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<sup>1</sup>Magill SS, Hellinger W, et al. Prevalence of healthcare-associated infections in acute care facilities. *Infect Control Hosp Epidemiol.* 2012;33:283-91.

<sup>2</sup>Scott Rd. The Direct Medical Costs of Healthcare-Associated Infections in U.S. Hospitals and the Benefits of Prevention, 2009. Division of Healthcare Quality Promotion, National Center for Preparedness, Detection, and Control of Infectious Diseases, Coordinating Center for Infectious Diseases, Centers for Disease Control and Prevention, February 2009.

<sup>3</sup>Klevens RM, Edward JR, et al. Estimating health care-associated infections and deaths in U.S. hospitals, 2002. *Public Health Reports* 2007;122:160-166.

<sup>4</sup>Gould CV, Umscheid CA, Agarwal RK, Kuntz G, Pegues DA. Guideline for prevention of catheter-associated urinary tract infections 2009. *Infect Control Hosp Epidemiol.* 2010;31:319-26.

<sup>5</sup>Dudeck MA, Horan TC, Peterson KD, et al. National Healthcare Safety Network (NHSN) report, data summary for 2009, device-associated module, issued January 2011. *Am J Infect Control* 2011;39:349-67.



## Instructions for Completion of Urinary Tract Infection (UTI) Form (CDC 57.114)

Data Field	Instructions for Data Collection/Entry
Facility ID	The NHSN-assigned facility ID will be auto-entered by the computer.
Event #	Event ID number will be auto-entered by the computer.
Patient ID	Required. Enter the alphanumeric patient ID number. This is the patient identifier assigned by the hospital and may consist of any combination of numbers and/or letters.
Social Security #	Optional. Enter the 9-digit numeric patient Social Security Number.
Secondary ID	Optional. Enter the alphanumeric ID number assigned by the facility.
Medicare #	Optional. Enter the patient's Medicare number.
Patient name	Optional. Enter the last, first, and middle name of the patient.
Gender	Required. Check Female, Male, or Other to indicate the gender of the patient.
Date of birth	Required. Record the date of the patient birth using this format: MM/DD/YYYY.
Ethnicity	Optional. Specify if the patient is either Hispanic or Latino, or Not Hispanic or Not Latino.
Race	Optional. Specify one or more of the choices below to identify the patient's race: American Indian/Alaska Native Asian Black or African American Native Hawaiian/Other Pacific Islander White
Event type	Required. UTI.
Date of event	Required. The date when the <u>first</u> element used to meet the UTI infection criterion occurred. Enter date of this event using this format: MM/DD/YYYY. NOTE: If a device has been pulled on the first day of the month in a location where there are no other device days in that month, and a device-associated infection develops after the device is pulled, use the last day of the previous month as the Date of Event.
Post-procedure UTI	Optional. Check Y if this event occurred after an NHSN-defined procedure but before discharge from the facility, otherwise check N.
Date of procedure	Conditionally required. If Post-procedure UTI = Y, enter the date the procedure was done.
NHSN procedure code	Conditionally required. If Post-procedure UTI = Y, enter the



Data Field	Instructions for Data Collection/Entry
	<p>appropriate NHSN procedure code.  <b>NOTE:</b> A UTI cannot be “linked” to an operative procedure unless that procedure has already been added to NHSN. If the procedure was previously added, and the “Link to Procedure” button is clicked, the fields pertaining to the operation will be auto-entered by the computer.</p>
ICD-9-CM procedure code	<p>Optional. The ICD-9-CM code may be entered here instead of (or in addition to) the NHSN Procedure Code. If the ICD-9-CM code is entered, the NHSN code will be auto-entered by the computer. If the NHSN code is entered first, you will have the option to select the appropriate ICD-9-CM code. In either case, it is optional to select the ICD-9-CM code. Only those ICD-9-CM codes identified in Table 1 of the Surgical Site Infection Event Chapter (Chapter 9 of NHSN Manual: Patient Safety Component Protocol) are allowed.</p>
MDRO Infection Surveillance	<p>Required. Enter “Yes”, if the pathogen is being followed for Infection Surveillance in the MDRO/CDI Module in that location as part of your Monthly Reporting Plan: MRSA, MSSA (MRSA/MSSA), VRE, CephR-<i>Klebsiella</i>, CRE-E. coli, CRE-<i>Enterobacter</i>, CRE-<i>Klebsiella</i>, MDR-<i>Acinetobacter</i> or <i>C. difficile</i>.            If the pathogen for this infection happens to be an MDRO but your facility is not following the Infection Surveillance in the MDRO/CDI Module in your Monthly Reporting Plan, answer “No” to this question.</p>
Location	<p>Required. Enter the inpatient location to which the patient was assigned on the date of the UTI event. If the date of the UTI occurs on the day of transfer or discharge or the next day, indicate the transferring/discharging location, not the current location of the patient, in accordance with the Transfer Rule (see Key Terms section).</p>
Date admitted to facility	<p>Required. Enter date patient admitted to facility using this format: MM/DD/YYYY. An NHSN Inpatient is defined as a patient whose date of admission to the healthcare facility and the date of discharge are <u>different</u> calendar days. When determining a patient’s admission dates to both the facility and specific inpatient location, the NHSN user must take into account all such days, including any days spent in an inpatient location as an “observation” patient before being officially admitted as an inpatient to the facility, as these days contribute to exposure risk. Therefore, all such days are included in the counts of admissions and patient days for the facility and specific location, and facility and admission dates must be moved back to the first day spent in the inpatient location.</p>



Data Field	Instructions for Data Collection/Entry
	NOTE Recently Discharged Patients: If a previously unreported UTI is identified on the day of discharge or the day after discharge, enter the previous date of admission.
Risk factor: Urinary catheter status when all elements of the UTI criterion were first present together	Required. Check one of the following <ul style="list-style-type: none"> <li>• “In place” if urinary catheter that had been in place for more than 2 days was in place on the date of event</li> <li>• “Removed” if a urinary catheter that had been in place for more than 2 calendar days was removed the day of or the day before the date of event</li> <li>• “Neither” if no urinary catheter was in place on the day of or the day before the date of event OR the urinary catheter was not in place for more than 2 calendar days on the date of event. Date of insertion = Day 1.</li> </ul>
Location of device insertion	Optional. Enter the patient location where the indwelling urethral catheter was inserted.
Date of device insertion	Optional. Enter the date the indwelling urethral catheter was inserted.
Event details: Specific event: UTI	Required. Check Symptomatic UTI (SUTI), Asymptomatic Bacteremic UTI (ABUTI), or Urinary System Infection (USI), for the specific event type you are reporting.
Event details: UTI Specify criteria used	Required. Check each of the elements of the criteria that were used to identify the specific type of UTI being reported.
Event Details: Secondary bloodstream infection	Required. Check Y if there is a culture-confirmed bloodstream infection (BSI) and a related UTI, otherwise check N. For detailed instructions on identifying whether the blood culture represents a secondary BSI, refer to the Secondary BSI Guide ( <a href="#">Appendix 1 of the BSI</a> chapter).
Event Details: Died	Required. Check Y if patient died during the hospitalization, otherwise check N.
Event Details: UTI contributed to death	Conditionally required. If patient died, check Y if the UTI contributed to death, otherwise check N.
Event Details: Discharge date	Optional. Date patient discharged from facility.
Event Details: Pathogens identified	Required. Enter Y if pathogen identified, N if otherwise. If Y, specify organism name on reverse. For SUTI with secondary BSI and ABUTI, enter only the matching organism(s) identified in <u>both</u> urine and blood cultures. For ABUTI, the organism listed as pathogen number 1, must be a uropathogen (See ABUTI criterion).
Pathogen # for specified Gram-positive Organisms,	Up to three pathogens may be reported. If multiple pathogens are identified, enter the pathogen judged to be the most important cause of infection as #1, the next most as #2, and the



Data Field	Instructions for Data Collection/Entry
Gram-negative Organisms, Fungal Organisms, or Other Organisms	<p>least as #3 (usually this order will be indicated on the laboratory report). If the species is not given on the lab report or is not found on the NHSN organism list, then select the “spp” choice for the genus (e.g., <i>Bacillus natto</i> is not on the list so would be reported as <i>Bacillus</i> spp.).</p> <p>If the event reported is an ABUTI, then pathogen #1 must be a uropathogen. (Uropathogen microorganisms are: Gram-negative bacilli, <i>Staphylococcus</i> spp., yeasts, beta-hemolytic <i>Streptococcus</i> spp., <i>Enterococcus</i> spp., <i>G. vaginalis</i>, <i>Aerococcus urinae</i>, and <i>Corynebacterium</i> (urease positive)*.</p> <p>*Report <i>Corynebacterium</i> (urease positive) as either <i>Corynebacterium</i> species unspecified (COS) or as <i>C. urealyticum</i> (CORUR) if speciated.</p>
Antimicrobial agent and susceptibility results	<p>Conditionally required if Pathogen Identified = Y.</p> <ul style="list-style-type: none"> <li>• For those organisms shown on the back of an event form, susceptibility results are required only for the agents listed.</li> <li>• For organisms that are not listed on the back of an event form, the entry of susceptibility results is optional.</li> </ul> <p>Circle the pathogen’s susceptibility result using the codes on the event forms.</p> <p>Additional antimicrobial agents and susceptibility results may be reported for up to a total of 20 agents.</p>
Custom Fields	<p>Optional. Up to 50 fields may be customized for local or group use in any combination of the following formats: date (MM/DD/YYYY), numeric, or alphanumeric.</p> <p>NOTE: Each Custom Field must be set up in the Facility/Custom Options section of the application before the field can be selected for use.</p>
Comments	Optional. Enter any information on the event.