Using the LTCF HAI Module for UTI Surveillance and Reporting

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HEALTHCARE ASSOCIATED INFECTION (HAI) MODULE
Urinary Tract Infections (UTI)
Learning Objectives

- Describe the rationale for monitoring urinary tract infections (UTI) in NHSN
- Describe the methodology, protocols, and definitions used in monitoring UTI events
- Correctly apply the UTI definitions and protocols through case studies
Why monitor urinary tract infections (UTIs) in long-term care facilities?

- UTIs are the most frequently reported infections in nursing homes and drive antibiotic use among residents.
- Focused monitoring of symptomatic UTIs, both catheter and non-catheter associated, helps identify trends in these infections and provide data to improve antibiotic use in the LTCF.
- Tracking these events will also inform infection prevention and control staff of the impact of targeted prevention efforts.
Purpose of UTI Event Reporting

- To calculate rates of UTI events among all residents in a facility
  - Non-catheter associated UTI rates will be calculated among all residents without a catheter in the facility
  - Catheter-associated UTI rates will be calculated among only those residents with indwelling urinary catheters
- To identify which residents get UTIs
  - Events related to urinary catheters
  - Organisms cause UTIs in a facility
- To monitor antibiotic use for UTIs
- To assess the impact of efforts to prevent UTI over time
- UTI protocol adapted from the 2012 Revised McGeer Criteria
- This paper can be accessed on the CDC-LTCF Resource Page for Clinicians - http://www.cdc.gov/longtermcare/staff/index.html
LTCF Website: https://www.cdc.gov/nhsn/ltc/index.html

- Access to event modules
  - Training
  - Protocols
  - Forms and instructions
  - Supporting materials (e.g., locations, key terms, etc.)
- Analysis resources
UTI Prevention Begins With Surveillance
Consistency is a Must!

- Surveillance criteria is designed to look at a population at risk.
- Identify residents meeting the criteria.
- Consistently apply the criteria.
- Ensures the comparability of the data.
Surveillance Considerations

- Are the symptoms new or acutely worse?
  - No set-time period for reporting second UTI for same resident
- Does the resident have an indwelling urinary device in place?
- Evidence of infection
  - does the resident have a positive urine culture?
  - does the clinical presentation of resident meet NHSN criteria?
What If There is Clinical Disagreement?

- Surveillance vs. clinical definitions
- Different purposes
- May not agree
- Comments section useful to note important factors
- Can submit questions to nhsn@cdc.gov
Settings

- Certified skilled nursing facilities/nursing homes (LTC:SKILLNURS), and intermediate/chronic care facilities for the developmentally disabled (LTC:DEVDIS).
Settings, continued

- Only UTI events presenting > 2 calendar days after admission (where date of admission is equal to day 1) are considered healthcare associated events for the LTCF.

- If a resident is transferred from an acute care facility and develops signs/symptoms of a UTI within the first 2 calendar days of admission to the LTCF, it would be considered present at the time of transfer to the LTCF and not reported to NHSN as a LTCF UTI event.

<table>
<thead>
<tr>
<th>Example: NHSN Classification of reportable LTCF UTI Events</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Admission date</strong></td>
</tr>
<tr>
<td>June 4&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>day 1</td>
</tr>
<tr>
<td>Not a LTCF reportable UTI event</td>
</tr>
<tr>
<td>LTCF reportable UTI event</td>
</tr>
</tbody>
</table>
Requirements

- A NHSN Monthly Reporting Plan for the LTCF (CDC 57.141) must be completed for each calendar month in which a facility plans to enter data into the NHSN.
- Facilities must report numerator (catheter-associated and non-catheter-associated UTI events) and denominator data for the entire facility, referred to as facility-wide inpatient (FacWideIN).
- UTI surveillance should be reported for at least 6 consecutive months to provide meaningful measures.
Monthly Reporting Plan (MRP) for UTI Module

- The MRP must be completed before reporting in the application is allowed.
- HAI Module: **UTI**
- Facility-wide Inpatient (**FacWideIN**) is default indicating UTI surveillance must be conducted for all resident care locations
NHSN Provides Customizable UTI Event Forms for LTCFs

**NHSN Numerator Form**

- **Urinary Tract Infection (UTI) for LTCF (CDC 57.140)**
URINARY TRACT INFECTION (UTI) KEY TERMS AND DEFINITIONS
Date of Event

The date when the first clinical evidence (signs/symptoms) of the UTI appeared or the date the urine culture specimen used to meet the infection criteria was collected, whichever comes first.
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/collection system (including leg bags); also called a Foley catheter.
An Indwelling Urinary Catheter is **NOT:**

- an in-and-out catheter (straight catheter);
- a suprapubic catheter;
- Condom catheter; nor
- a nephrostomy tube.
Urinary Tract Infection Definitions

There are *two specific types* of UTI:
- Symptomatic UTI (*SUTI*)
- Asymptomatic Bacteremic UTI (*ABUTI*)

For *BOTH Types*—surveillance must occur for both catheter and non-catheter associated UTI events.
Resident demonstrates signs and symptoms that localize the infection to the urinary tract. These events can occur in residents with or without indwelling urinary devices.
Asymptomatic Bacteremic UTI (ABUTI):

Events that occur when the resident has **NO** signs or symptoms localizing to the urinary tract, but has matching urine and blood cultures positive for at least one organism regardless of whether a catheter is in place or not.
CATHETER ASSOCIATED SYMPTOMATIC URINARY TRACT INFECTION CRITERIA
Catheter Associated Symptomatic (CA-SUTI)

Resident has indwelling urinary catheter that was in place > 2 calendar days and present on the date of event or the day before

Resident has one or more CA-SUTI signs and/or symptoms

Resident has a urine culture that meets the criteria

Catheter Associated Symptomatic Urinary Tract Infection (CA-SUTI)
Urine Culture Requirements for CA-SUTI

- If a urinary catheter is in place at time of specimen collection:
  - Positive urine culture with \( \geq 10^5 \text{ CFU/ml of any number of microorganisms} \), at least one of which is bacteria of \( \geq 10^5 \text{ CFU/ml} \)

- If a urinary catheter is not in place at time of specimen collection, but was removed within the 2 calendar days
  - Voided urine culture with \( \geq 10^5 \text{ CFU/ml of no more than 2 species of microorganisms} \), at least one of which is bacteria of \( \geq 10^5 \text{ CFU/ml} \)
    OR
  - Straight catheter specimen with \( \geq 10^2 \text{ CFU/ml of any number of microorganisms} \), at least one of which is bacteria of \( \geq 10^2 \text{ CFU/ml} \)
Urine Culture Requirements for CA-SUTI, *continued*

- At least one organism in the urine culture must be bacteria. Yeast and other microorganisms, which are not bacteria, are not acceptable UTI pathogens.
## CA-SUTI Signs and Symptoms *(one or more)*

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fever</strong></td>
<td>Single temperature $&gt;37.8,^\circ\mathrm{C}$ ($&gt;100,^\circ\mathrm{F}$), OR $&gt;37.2,^\circ\mathrm{C}$ ($&gt;99,^\circ\mathrm{F}$) on repeated occasions, OR an increase of $&gt;1.1,^\circ\mathrm{C}$ ($&gt;2,^\circ\mathrm{F}$) over baseline</td>
</tr>
<tr>
<td><strong>Rigors</strong></td>
<td>New onset <em>hypotension</em> (with no alternate non-infection cause)</td>
</tr>
<tr>
<td><strong>Leukocytosis</strong></td>
<td>$&gt;14,000$ cells/mm$^3$ or Left shift ($&gt;6%$ or $1,500$ bands/mm$^3$)</td>
</tr>
<tr>
<td><strong>Purulent discharge</strong></td>
<td>New or marked increase in <em>suprapubic pain</em> or <em>costovertebral angle pain or tenderness</em></td>
</tr>
<tr>
<td><strong>Acute pain, swelling or tenderness</strong></td>
<td>of the testes, epididymis or prostate</td>
</tr>
</tbody>
</table>
EXAMPLE of CA-SUTI

- Mrs. T is a resident in your facility. An indwelling urinary catheter was inserted on March 1. On March 5, the nurse practitioner documented that Mrs. T complained of suprapubic pain. The following day, on March 6, a specimen collected from the Foley catheter was sent to the lab and subsequently tested positive for greater than 100,000 CFU/ml of *E. coli*. Mrs. T does meet NHSN criteria for a CA-SUTI on March 5 since the indwelling urinary device was present on the day of the event and she had at least one qualifying documented symptom (*suprapubic pain*).
FEVER

- No specific route of measurement required.
- Use the temperature documented in the resident’s medical record (*no conversion based on route of collection*).
- Non-specific sign that can be used to meet criteria even in the presence of another possible infection source.
- Baseline = average of the resident’s previous documented temperatures, using the same method for fever assessment.
HYPOTENSION

- Use vital sign parameters per facility policy and practices for clinical practice.
- Non-specific sign that can be used to meet criteria even in the presence of another possible infection source.
- Exclude if documented non-infectious cause, such as new medication known to cause hypotension or cardiac event.
New Onset of Confusion

Has the resident had an acute change in his/her mental status (*new or worsening*)?
LEUKOCYTOSIS

• An elevation in the number of white blood cells (WBC) in the blood.
• Identified through a complete blood count (CBC) and differential blood test.
• May see “Neutrophilia” or “Left Shift” documented in medical record
LEUKOCYTOSIS

Identified in complete blood count (CBC) and differential blood test

White Blood Cell (WBC) Differential

*Increased WBC, Left shift*

<table>
<thead>
<tr>
<th>WBC (x10³)</th>
<th>Bands %</th>
<th>Neut/seg %</th>
<th>Eos %</th>
<th>Baso %</th>
<th>Lymph %</th>
<th>Mono %</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>10</td>
<td>65</td>
<td>1</td>
<td>1</td>
<td>20</td>
<td>3</td>
</tr>
</tbody>
</table>

Neutrophilia: >14,000 leukocytes (WBC)

Left shift: elevation in immature WBC (Bands)

- >6% bands
- Total band count ≥1,500 bands/mm³
Mr. Unforgettable, a resident from a local LTC facility has a urinary catheter in place for 3 days for acute urinary retention. On day 3, he spikes a fever of 100.9°F and has a cough with shortness of breath. The physician orders a urine culture and it comes back positive with >10^5 CFU/ml of *Pseudomonas aeruginosa* and *Candida albicans*. Upon further work, up Mr. Unforgettable is determined not to have any other symptoms that meet the NHSN CA-SUTI criteria, but a chest X-ray does show infiltrates in the right upper lobe of the lung.
KNOWLEDGE CHECK: Mr. Unforgettable

Does Mr. Unforgettable have a reportable CA-SUTI?

✅ A. **YES**, because fever is considered a non-specific sign of infection, and urine culture positive for at least one bacteria of $\geq 10^5$ CFU/ml

B. **NO**, because the fever is likely due to a respiratory infection and the urine culture has a yeast, which is not an acceptable UTI pathogen
KNOWLEDGE CHECK: Mr. Unforgettable
Catheter Associated Symptomatic UTI (SUTI)

ONE or more of the following:
- Fever\(^a\)
- Rigors
- New onset hypotension, with no alternate noninfectious cause
- New onset confusion/functional decline with no alternate diagnosis AND Leukocytosis\(^b\)
- New costovertebral angle pain or tenderness
- New or marked increase in suprapubic tenderness
- Acute pain, swelling or tenderness of the testes, epididymis or prostate
- Purulent discharge from around the catheter

Any of the following:
If urinary catheter removed within last 2 calendar days:
1. Specimen collected from clean catch voided urine and positive culture with no more than 2 species of microorganisms, at least one of which is a bacterium of \(\geq 10^4\) CFU/ml
2. Specimen collected from in/out straight catheter and positive culture with any number of microorganisms, at least one of which is a bacterium of \(\geq 10^4\) CFU/ml

If urinary catheter in place:
3. Specimen collected from indwelling catheter and positive culture with any number of microorganisms, at least one of which is a bacterium of \(\geq 10^4\) CFU/ml

NOTE: Yeast and other microorganisms, which are not bacteria, are not acceptable UTI pathogens

\(^a\) Fever can be used to meet SUTI criteria even if the resident has another possible cause for the fever (e.g., pneumonia)
\(^b\) Fever: Single temperature \(\geq 37.8^\circ\)C \((\geq 100^\circ\)F), or \(\geq 37.2^\circ\)C \((\geq 99^\circ\)F) on repeated occasions, or an increase of \(\geq 1.1^\circ\)C \((\geq 2^\circ\)F) over baseline
\(^{b}\) Leukocytosis: >14,000 cells/mm\(^3\) or Left shift (> 6% or 1,500 bands/mm\(^3\))
NON-CATHETER ASSOCIATED SYMPTOMATIC URINARY TRACT INFECTION
Non-Catheter Associated Symptomatic (SUTI)

- Resident has one or more localized signs and/or symptoms
- Resident does not have an indwelling catheter in place or it was removed >2 calendar days prior to the date of event, where day of catheter removal is day 1
- Resident has a urine culture that meets the criteria

Non-catheter Associated Symptomatic Urinary Tract Infection (SUTI)
Symptomatic UTI (SUTI) without Indwelling Catheter

SUTI - Criteria 1
Either of the following:
1. Acute dysuria
2. Acute pain, swelling, or tenderness of the testes, epididymis or prostate

SUTI - Criteria 2
Either of the following:
1. Fever
2. Leukocytosis
 AND
ONE or more of the following:
- Costovertebral angle pain or tenderness
- New or marked increase in suprapubic tenderness
- Gross hematuria
- New or marked increase in incontinence
- New or marked increase in urgency
- New or marked increase in frequency

SUTI - Criteria 3
TWO or more of the following:
- Costovertebral angle pain or tenderness
- New or marked increase in suprapubic tenderness
- Gross hematuria
- New or marked increase in incontinence
- New or marked increase in urgency
- New or marked increase in frequency

Either of the following:
1. Specimen collected from clean catch voided urine and positive culture with no more than 2 species of microorganisms, at least one of which is a bacterium of $\geq 10^5$ CFU/ml
2. Specimen collected from in/out straight catheter and positive culture with any number of microorganisms, at least one of which is a bacterium of $\geq 10^2$ CFU/ml

NOTE: Yeast and other microorganisms, which are not bacteria, are not acceptable UTI pathogens
Mrs. T, is a resident in your nursing home. On March 1, she developed an increase in incontinence and new suprapubic pain. Later that day a Foley catheter was inserted. The following day, on March 2, a specimen collected from the Foley catheter was sent to the lab and subsequently tested positive for greater than 100,000 \((\geq 10^5)\) CFU/ml of E. coli. Mrs. T does meet criteria for a SUTI, but it is not considered as a CA-SUTI because the Foley catheter had not been in place >2 calendar days on the date of event (March 1).
KNOWLEDGE CHECK: Mrs. Unforgettable

- Day 1: Mrs. Unforgettable, a LTC resident, complains of burning when she urinates and states that her urine looks and smells funny. She has not had an indwelling urinary device in the past month. However, a straight catheter was used three days ago for urinary retention.
- Day 2: A clean catch voided urine specimen is collected.
- Day 3: No symptoms are documented.
- Day 4: The urine culture is positive for mixed flora, E. coli, and Candida glabrata $10^5$ CFU/ml.
KNOWLEDGE CHECK: Mrs. Unforgettable

Is this a reportable SUTI

A. YES, because She has acute dysuria AND the urine culture positive for at least one bacteria of $>10^5$ CFU/ml

B. NO, because the urine culture grew more than 2 species of microorganisms.
1. Specimen collected from clean catch voided urine and positive culture with no more than 2 species of microorganisms, at least one of which is bacteria of $\geq 10^5$ CFU/ml

2. Specimen collected from in/out straight catheter and positive culture with any microorganism, at least one of which is bacteria of $\geq 10^2$ CFU/ml
ASYMPTOMATIC BACTEREMIC URINARY TRACK INFECTION (ABUTI) EVENT
Asymptomatic Bacteremic Urinary Track Infection (ABUTI) Event

Resident with or without an indwelling catheter:

Resident has no localizing urinary signs or symptoms (i.e., no urgency, frequency, acute dysuria, suprapubic tenderness, or costovertebral angle pain or tenderness). If no catheter is in place, fever as only sign would not exclude ABUTI if other positive culture criteria are met.

AND

Any of the following:
1. Specimen collected from clean catch voided urine and a positive culture with no more than 2 species of microorganisms, at least one of which is a bacterium of $\geq 10^5$ CFU/ml
2. Specimen collected from in/out straight catheter and positive culture with any number of microorganisms, at least one of which is a bacterium of $\geq 10^2$ CFU/ml
3. Specimen collected from indwelling catheter and positive culture with any number of microorganism, at least one of which is a bacterium of $\geq 10^5$ CFU/ml

NOTE: Yeast and other microorganisms which are not bacteria, are not acceptable UTI pathogens

AND

Positive blood culture with at least 1 matching organism in urine culture
Bacteriuria vs. Bacteremia

- **Asymptomatic bacteriuria (ASB)**
  - *Not* included in NHSN surveillance definitions.
  - Not considered as meaningful infections, but common in LTCFs, especially among chronically catheterized residents.
  - Often mistreated with antimicrobials resulting in potential adverse drug reactions and development of antimicrobial resistance.

- **Asymptomatic bacteremic UTI (ABUTI)**
  - Included in NHSN surveillance definitions
  - Considered as meaningful infections since a positive blood culture is present.
Submitting a UTI Event in the NHSN
Add UTI Event
Add UTI Event

Resident Type

Short-stay: Resident has been in facility for ≤ 100 days from date of first admission.

Long-stay: Resident has been in facility for > 100 days from date of first admission.
Add UTI Event
First and Current Admission

Date resident first entered the facility. This date remains the same even if the resident leaves the facility (e.g., transfers to another facility) for short periods of time (<30 consecutive days).

The most recent date the resident entered the facility. If the resident enters the facility for the first time and has not left for > 2 calendar days, then the date of current admission will be the same as the date of first admission. If the resident leaves the facility for > 2 calendar days (the day the resident left the facility = day 1) and returns, the date of current admission should be updated to the date of return to the facility.
Example: First and Current Admission

A resident in your facility since February 1, 2016 is transferred from your facility to an acute care facility on June 2, 2016 and returns on June 10, 2016, the current admission date would be 06/10/2016 since he was in away from the facility for greater than two calendar days. The date of first admission remains as 2/1/2016 since the resident did not leave the LTCF for greater than 30 days.

One week later, the same resident goes to the emergency department for evaluation on June 15, 2016 and returns on June 16, 2016. The date of current admission stays as 06/10/2016 since he was not away from the LTCF for greater than two calendar days.
Add UTI Event

Type and Date of Event

The date when the first clinical evidence (signs/symptoms) of the UTI appeared or the date the urine culture specimen used to meet the infection criteria was collected, whichever comes first.
Add UTI Event

Resident Care Location

Select location of resident on the date of event. Note: These are locations set-up by the facility.
Add UTI Event

**Primary Service Type**

Select the NHSN Primary Resident Service Type on the date of event.
Add UTI Event

Transfer from Acute Care Facility

Was the resident **directly** admitted to your facility from an acute care facility in past 4 weeks? If ‘YES’ is selected, additional data must be entered.

- **Event Information**
  - Event Type: UTI - Urinary Tract Infection
  - Resident Care Location: 4 GEN - GENERAL UNIT
  - Primary Resident Service Type: GENUR - Long-term general nursing
  - Has resident been transferred from an acute care facility in the past 4 weeks? *?
    - Y - Yes
    - N - No

- **Additional Data**
  - If Yes, date of last transfer from acute care to your facility: [15]
  - If Yes, did the resident have an indwelling urinary catheter at the time of transfer to your facility? *: [ ]
Add UTI Event

Indwelling Urinary Catheter status at time of event onset......

"In place" - in place on the date of the event
"Removed within last 2 calendar days" - removed within 2 calendar days prior to the date of event
"Not in place" - not in place on the date of event
Add UTI Event

Indwelling Urinary Catheter status at time of event onset......

Event Information

Event Type: UTI - Urinary Tract Infection

Resident Care Location: 4 GEN - GENERAL UNIT

Primary Resident Service Type: GENNUR - Long-term general nursing

Has resident been transferred from an acute care facility in the past 4 weeks?

If Yes, date of last transfer from acute care to your facility: 01/20/2017

If Yes, did the resident have an indwelling urinary catheter at the time of transfer to your facility?

Indwelling Urinary Catheter status at time of event onset: NEITHER - Not in place

If indwelling urinary catheter not in place, was another urinary device type present at the time of event onset?

If Yes, other device type:

- SUPRA - Suprapubic
- INTER - Intermittent straight catheter
### Add UTI Event

**Specify UTI Criteria Used (Check all that apply)**

#### Criteria Used

- **Signs & Symptoms**
  - Fever: Single temperature > 37.8°C (>100°F) or >37.2°C (>99°F) on repeated occasions, or an increase of > 1.1°C (>2°F) over baseline
  - Rigors
  - New onset confusion/functional decline
  - New onset hypotension
  - Acute pain, swelling or tenderness of the testes, epididymis, or prostate
  - Acute dysuria
  - Purulent drainage at catheter insertion site

- **New and/or marked increase in (check all that apply):**
  - Urgency
  - Frequency
  - Incontinence
  - Costovertebral angle pain or tenderness
  - Suprapubic tenderness
  - Visible (gross) hematuria

#### Laboratory & Diagnostic Testing

- Specimen collected from clean catch voided urine and positive culture with $\geq 10^5$ CFU/ml of no more than 2 species of microorganisms
- Specimen collected from indwelling catheter and positive culture with $\geq 10^2$ CFU/ml of any microorganisms
- Specimen collected from indwelling catheter and positive culture with $\geq 10^5$ CFU/ml of any microorganisms
- Leukocytosis (14,000 cells/mm$^3$) or left shift (>6% or 1,500 bands/mm$^3$)
- Positive blood culture with 1 matching organism in urine

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**Specific Event **: CA-SUTI - Catheter-associated symptomatic UTI
Add UTI Event

Additional Questions

- Yes, only if resident has at least one matching organism reported in urine and blood

- Optional. Yes if resident died from ANY cause within 7 days after the Date of Event

- Yes if resident transferred to acute care facility for any reason in the 7 days after the Date of Event
Add UTI Event

Select Pathogens Identified in Urine Culture

Enter up to 2 pathogens for UTI without secondary BSI. If secondary BSI is YES, user may enter up to 3 pathogens.
Add UTI Event:
Optional: Custom Fields and Comments

Optional, but must be set-up before reporting event

Free text
Denominator Data
Denominator Reporting (Monthly Summary)

- **CDC 57.142: Denominators for LTCF**
  - One form for the month to collect UTI denominator data (*may also be used to collect LabID event data*)
  - Allows daily counts that must be summed at the end of the month
  - Only the monthly totals will be entered into the NHSN application

Forms and Table of Instructions (TOIs) available under Data Collection Forms at: [https://www.cdc.gov/nhsn/ltc/cdiff-mrsa/index.html](https://www.cdc.gov/nhsn/ltc/cdiff-mrsa/index.html)
Entering Denominator Data into NHSN

- At the end of the month, enter **monthly totals**
- Locate ‘Summary Data’ on left-hand navigation Bar, and then ‘Add’
- Enter the Facility ID, month, and year for which denominator data will be reported
Entering Denominator Data into NHSN: 
*Total Resident Days*

- **Total Resident Days**: For each day of the month, record the number of residents in the facility.
  - Do not include residents for whom a bed is being held but are not actually present in the facility.

### Denominators for Long Term Care Locations

<table>
<thead>
<tr>
<th>Location Code</th>
<th>Total Resident Days</th>
<th>Urinary Catheter Days</th>
<th>Report No UTI</th>
<th>New Antibiotic Starts for UTI Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility-wide Inpatient (FacWIDEIn)</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>
Entering Denominator Data into NHSN: Urinary Catheter Days

- For each day of the month, count and record the number of residents in the facility who have an indwelling urinary catheter. The aggregate count for the calendar month should be entered as the total Urinary-Catheter Days.
  - Do not include straight in-and-out catheters, suprapubic catheters, or condom catheters in your count.
## Entering Denominator Data into NHSN: *Report No UTI*

- If UTI surveillance was included on the NHSN Monthly Reporting Plan (MRP), but the facility did not identify and report at least one UTI event during the month, a check mark must be placed in the box “Report No UTI”

### Denominators for Long Term Care Locations

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<td>*</td>
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<td>*</td>
<td>*</td>
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</table>
New Antibiotic Starts for UTI Indication

- Monthly sum of all new prescriptions/orders for antibiotics given to residents suspected or diagnosed with having a UTI.
- Count antibiotic starts even if the infection being treated did not meet NHSN criteria for a symptomatic UTI event.
- Capture all new antibiotic orders, regardless of number of doses or days of therapy.
- Do not include antibiotic courses started by another healthcare facility prior to the resident’s admission or readmission back to your facility, even if the resident continues to take the antibiotic while in the facility.

<table>
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<th>Total Resident Days</th>
<th>Urinary Catheter Days</th>
<th>Report No UTI</th>
<th>New Antibiotic Starts for UTI Indication</th>
<th>Number of new antibiotic orders for the month</th>
<th>Custom Fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility-wide Inpatient (FacWIDEIn)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Number of Urine Cultures Ordered

- New urine cultures ordered for a resident regardless of whether the resident has a UTI meeting the NHSN event criteria.
- Do not include urine cultures ordered by another healthcare facility prior to the resident’s admission or readmission back to your facility.
- Data may be collected daily or summarized at the end of each month.
✓ UTI surveillance includes residents with or without indwelling urinary devices.

✓ The **Symptomatic UTI (catheter and non-catheter associated)** protocol criteria combine sign and symptoms with laboratory and culture data.

✓ **The Asymptomatic Bacteremic UTI:** resident has NO signs and symptoms localizing to the urinary tract, but has urine and blood cultures positive for the **same bacteria.**
✓ “Mixed flora” is not considered an organism and cannot be submitted to NHSN as a pathogen.

✓ Yeast cannot be reported as an organism for a UTI. Urine culture with yeast can be included only if there is at least one qualifying bacterium.

✓ To be considered as catheter associated, the catheter must be in place for a minimum of 2 calendar days (day of insertion = day 1), and in-place at the time of the event or removed within the 2 calendar days prior to event onset (day of removal = Day 1).
✓ **Date of Event** is the date when the first clinical evidence (signs/symptoms) of the UTI appeared or the date the specimen used to make diagnosis was collected, whichever comes first

✓ Infections should be attributed as an HAI for the LTCF if

  ✓ (a) there is no evidence of an incubating infection at the time of admission to the facility *(on the basis of clinical documentation of appropriate signs and symptoms and not solely on screening microbiologic data)*; and

  ✓ (b) onset of clinical manifestation occurs >2 calendar days after admission
The LTCF UTI protocol does **not** have a set time period during which only one UTI may be reported for the same resident.

- To determine if a second UTI should be reported for the same resident, clinical information must be used to determine that the original infection had resolved before reporting a second UTI.

- Information that may be useful include a new onset of signs and symptoms, as well as completion of antimicrobial therapy. Using this logic, if UTI signs/symptoms resolved prior to the onset of any new signs/symptoms and a new urine culture, a second UTI must be considered for NHSN surveillance.
Case Scenario 1: If DHQP nursing home is interested in submitting UTI data to the NHSN only for the Dementia Unit, which locations must be selected when setting up the NHSN monthly reporting plan?

A. The Dementia Unit if it has been mapped (set-up) in the NHSN as a resident care location.

Facility-wide inpatient (FacWideIN) must be selected on the NHSN monthly reporting plan and UTI surveillance must be performed for all resident care locations.

C. Facility-wide inpatient (FacWideIN) must be selected on the NHSN monthly reporting plan, but the facility can limit UTI surveillance to include only the Dementia Unit.
Setting for UTI Surveillance

Urinary Tract Infection (UTI) surveillance and reporting for LTCFs require facility-wide inpatient (FacWideIN), which means all residents in all locations in the facility must be monitored for catheter and non-catheter associated UTIs.
Case Scenario 2

- During the monitoring month at DHQP Skilled Nursing Facility, a newly admitted 69 year-old female has a clean catch urine culture growing >100,000 colonies of E Coli, reported from the lab on 2/16/17.
- She was admitted from a local hospital on 2/1/17 with an indwelling urinary catheter but had it removed 2/4/17.
- Medical record was reviewed and showed she had fever of 101°F, new incontinence, sweating and suprapubic tenderness on 2/13/17.
- A urine culture was ordered and a clean catch voided urine was collected on 2/14/17.
Case Scenario 2
Does this resident have a UTI? If So, what type?

YES, SUTI

What is the UTI Event date?  2/13/17

The date when the first clinical evidence (signs/symptoms) of the UTI appeared or the date the specimen was collected that was used to make or confirm the diagnosis, whichever comes first.

Is this SUTI Event catheter-associated?

NO, the urinary device was removed > 2 days prior to event onset

What is her Resident Type?

Short Stay  She was newly admitted in the LTCF (≤100 days from admission)
Case Scenario 2: Symptomatic UTI (SUTI) without Indwelling Catheter

SUTI – Criteria 1
Either of the following:
1. Acute dysuria
2. Acute pain, swelling, or tenderness of the testes, epididymis or prostate

SUTI – Criteria 2
Either of the following:
1. Fever
2. Leukocytosis

AND

ONE or more of the following:
- Costovertebral angle pain or tenderness
- New or marked increase in suprapubic tenderness
- Gross hematuria
- New or marked increase in incontinence
- New or marked increase in urgency
- New or marked increase in frequency

SUTI – Criteria 3
TWO or more of the following:
- Costovertebral angle pain or tenderness
- New or marked increase in suprapubic tenderness
- Gross hematuria
- New or marked increase in incontinence
- New or marked increase in urgency
- New or marked increase in frequency

Either of the following:
1. Specimen collected from clean catch voided urine and positive culture with no more than 2 species of microorganisms, at least one of which is a bacterium of $\geq 10^5$ CFU/ml
2. Specimen collected from in/out straight catheter and positive culture with any number of microorganisms, at least one of which is a bacterium of $\geq 10^2$ CFU/ml

NOTE: Yeast and other microorganisms, which are not bacteria, are not acceptable UTI pathogens
Case Scenario 2: What if the resident had the same signs and symptoms, but the urine culture grew >100,000 colonies of E Coli, <50 colonies of Klebsiella species, and mixed flora?

A. This resident would be considered as having a super infection.
B. The NHSN UTI definition is not met and a UTI should not be reported.
C. The NHSN UTI definition is still met and a UTI should be reported.
Case Scenario 2: Symptomatic UTI (SUTI) without Indwelling Catheter

SUTI – Criteria 1

Either of the following:
1. Acute dysuria
2. Acute pain, swelling, or tenderness of the testes, epididymis or prostate

SUTI – Criteria 2

Either of the following:
1. Fever
2. Leukocytosis

AND

ONE or more of the following:
- Costovertebral angle pain or tenderness
- New or marked increase in suprapubic tenderness
- Gross hematuria
- New or marked increase in incontinence
- New or marked increase in urgency
- New or marked increase in frequency

SUTI – Criteria 3

TWO or more of the following:
- Costovertebral angle pain or tenderness
- New or marked increase in suprapubic tenderness
- Gross hematuria
- New or marked increase in incontinence
- New or marked increase in urgency
- New or marked increase in frequency

Either of the following:
1. Specimen collected from clean catch voided urine and positive culture with no more than 2 species of microorganisms, at least one of which is a bacterium of $\geq 10^5$ CFU/ml
2. Specimen collected from in/out straight catheter and positive culture with any number of microorganisms, at least one of which is a bacterium of $\geq 10^6$ CFU/ml

NOTE: Yeast and other microorganisms, which are not bacteria, are not acceptable UTI pathogens
Case Scenario 3: Define Date of Event for an UTI

A. Date the urine culture was collected.
B. Date when the first clinical evidence (signs or symptoms) of infection appeared or the date the specimen used to meet the infection criteria was collected, whichever comes first.
C. Date urine culture is ordered
D. Whatever date I decide is correct
Case Scenario 4: A resident had a Foley catheter in place for 3 days, and had documentation of new suprapubic pain on March 1st. The resident had a urine specimen collected and sent for culture March 3rd that was positive for >100,000 CFU/ml of E. coli. What would be the date of event?

A. March 1st since this is the date of symptom onset and it occurred before the date of culture collection

B. March 3rd since this is the date the urine culture was collected

C. The date the urine culture results were reported

A. 40%  B. 40%  C. 20%
Case Scenario 5

- Mr. T is an 94 year old resident in the facility. He has a history of multiple medical issues. On 3/3/17, blood, urine, and foot cultures were collected.

- You receive the following lab reports, reported on 3/5/17:
  - Blood culture positive for >100,000 of Streptococcus pyogenes.
  - Urine culture positive for >100,000 of Streptococcus pyogenes.
  - Foot culture positive for Pseudomonas aeruginosa.

- Mr. J does have an indwelling catheter that has been in place for the past 10 days, but you do not find documentation indicating signs or symptoms of a urinary tract infection.
Case Scenario 5: Does Mr. T have an UTI?

A. No. Because he does not have signs or symptoms of a UTI
B. Yes. He has an ABUTI
C. Not sure

A. B. C. 0% 0% 0%
Case Scenario 5 (cont.):
Is the UTI catheter-associated?

A. YES. Indwelling catheter in place at time of specimen collection and was in place > 2 calendar days
B. NO. An indwelling catheter does not qualify.
Case Scenario 5: ABUTI

Resident with or without an indwelling catheter:

**ABUTI Criteria**

Resident has no localizing urinary signs or symptoms (i.e., no urgency, frequency, acute dysuria, suprapubic tenderness, or costovertebral angle pain or tenderness). If no catheter is in place, fever as only sign would not exclude ABUTI if other positive culture criteria are met.

AND

Any of the following:

1. Specimen collected from clean catch voided urine and positive culture with $\geq 10^5$ CFU/ml of no more than 2 species of microorganisms
2. Specimen collected from in/out straight catheter and positive culture with $\geq 10^5$ CFU/ml of any microorganisms
3. Specimen collected from indwelling catheter and positive culture with $\geq 10^5$ CFU/ml of any microorganisms

AND

Positive blood culture with at least 1 matching organism in urine culture
Case Scenario 6
Indwelling Urinary Catheter Count at 12 Noon on May 2

How many indwelling catheter days?
A. 6
B. 5
C. 4
D. 3 ✓
E. 2
F. 1

<table>
<thead>
<tr>
<th>Resident</th>
<th>Urinary Status</th>
</tr>
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<tbody>
<tr>
<td>101 Black</td>
<td>Indwelling catheter</td>
</tr>
<tr>
<td>102 White</td>
<td>Condom catheter</td>
</tr>
<tr>
<td>103 Gray</td>
<td>Voiding</td>
</tr>
<tr>
<td>104 Orange</td>
<td>Foley</td>
</tr>
<tr>
<td>105 Green</td>
<td>Suprapubic to direct drainage</td>
</tr>
<tr>
<td>106 Berry</td>
<td>Indwelling Foley</td>
</tr>
<tr>
<td>107 Brown</td>
<td>Straight cath Q3 hours</td>
</tr>
<tr>
<td>108 Sunny</td>
<td>Foley placed at 2 pm on May 2</td>
</tr>
<tr>
<td>109 Summer</td>
<td>Voiding. Straight cath for UA</td>
</tr>
</tbody>
</table>