Using the LTCF HAI Module for UTI Surveillance and Reporting

Angela Anttila, PhD, MSN, NP-C, CIC

Nurse Epidemiologist

March 20, 2017

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**

CHICAGO JOURNALS

SHEA The Society for Healthcare Epidemiology of America

- 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

Surveillance Definitions of Infections in Long-Term Care Facilities: Revisiting the McGeer Criteria

Author(s): Nimalie D. Stone, MD; Muhammad S. Ashraf, MD; Jennifer Calder, PhD; Christopher J. Crnich, MD; Kent Crossley, MD; Paul J. Drinka, MD; Carolyn V. Gould, MD; Manisha Juthani-Mehta, MD; Ebbing Lautenbach, MD; Mark Loeb, MD; Taranisia MacCannell, PhD; Preeti N. Malani, MD; Lona Mody, MD; Joseph M. Mylotte, MD; Lindsay E. Nicolle, MD; Mary-Claire Roghmann, MD; Steven J. Schweon, MSN; Andrew E. Simor, MD; Philip W. Smith, MD; K ...

Source: *Infection Control and Hospital Epidemiology*, Vol. 33, No. 10 (October 2012), pp. 965-977

Published by: The University of Chicago Press on behalf of The Society for Healthcare Epidemiology of America

Stable URL: http://www.jstor.org/stable/10.1086/667743

Accessed: 19/03/2015 10:11

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.

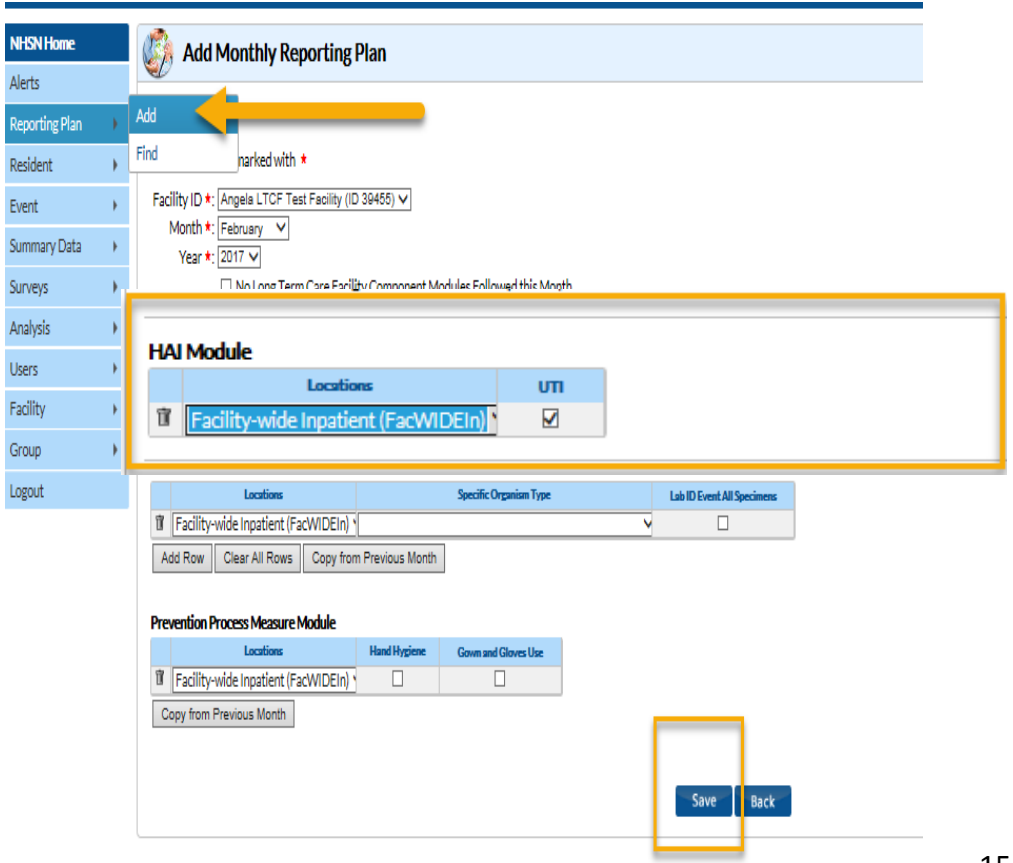
Example: NHSN Classification of reportable LTCF UTI Events				
Admission date June 4th	June 5th	June 6th	June 7th	June 8th
day 1	day 2	day 3	day 4	day 5
Not a LTCF reportable UTI event		**LTCF reportable UTI event**		

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)**
  - Blank form: http://www.cdc.gov/nhsn/forms/57.140_uti_ltcf_blank.pdf
  - Form instructions: http://www.cdc.gov/nhsn/forms/instr/57.140-toi-uti-toi_final.pdf

NHSN National Healthcare Safety Network

Form Approved
OMB No. 0920-0666
Exp. Date: 12/31/2018
www.cdc.gov/nhsn

Urinary Tract Infection (UTI) for LTCF

Page 1 of 4 *required for saving

*Facility ID: | Event #:
*Resident ID: | *Social Security #:
Medicare number (or comparable railroad insurance number):
Resident Name, Last: First: Middle:
*Gender: M F Other | *Date of Birth: __/__/____
Ethnicity (specify): | Race (specify):

*Resident type: ☐ Short-stay ☐ Long-stay
*Date of First Admission to Facility: __/__/____ *Date of Current Admission to Facility: __/__/____
*Event Type: UTI *Date of Event: __/__/____
*Resident Care Location: _____

*Primary Resident Service Type: (check one)
☐ Long-term general nursing ☐ Long-term dementia ☐ Long-term psychiatric
☐ Skilled nursing/Short-term rehab (subacute) ☐ Ventilator ☐ Bariatric ☐ Hospice/Palliative

*Has resident been transferred from an acute care facility to your facility in the past 3 months? ☐ Yes ☐ No
If Yes, date of last transfer from acute care to your facility: __/__/____
If Yes, did the resident have an indwelling urinary catheter at the time of transfer to your facility? ☐ Yes ☐ No

*Indwelling Urinary Catheter status at time of event onset (check one):
☐ In place ☐ Removed within last 2 calendar days ☐ Not in place
If indwelling urinary catheter status in place or removed within last 2 calendar days:
Site where indwelling urinary catheter Inserted (check one): ☐ Your facility ☐ Acute care hospital ☐ Other ☐ Unknown
Date of indwelling urinary catheter Insertion: ___/___/_____
If indwelling urinary catheter not in place, was another urinary device type present at the time of event onset? ☐ Yes ☐ No
If Yes, other device type: ☐ Suprapubic ☐ Condom (males only) ☐ Intermittent straight catheter

Event Details

*Specify Criteria Used: (check all that apply)

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 hypotension
☐ New onset confusion/functional decline
☐ 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 ☐ Costovertebral angle pain or tenderness
☐ Frequency ☐ Suprapubic tenderness
☐ Incontinence ☐ Visible (gross) hematuria

Laboratory & Diagnostic Testing
☐ Specimen collected from clean catch voided urine and positive culture with ≥ 10^5 CFU/ml of no more than 2 species of microorganisms
☐ Specimen collected from in/out straight catheter and positive culture with ≥ 10^2 CFU/ml of any microorganisms
☐ Specimen collected from indwelling catheter and positive culture with ≥ 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 culture

*Specific Event (Check one):
☐ Symptomatic UTI (SUTI) ☐ Symptomatic CA-UTI (CA-SUTI) ☐ Asymptomatic Bacteremic UTI (ABUTI)
Secondary Bloodstream Infection: Yes No | Died within 7 days of date of event: Yes No
*Transfer to acute care facility within 7 days: Yes No
*Pathogens identified: Yes No *If Yes, specify on page 2
Assurance of Confidentiality: The voluntarily provided information obtained in this surveillance system that would permit identification of any individual or institution is collected with a guarantee that it will

URINARY TRACT INFECTION (UTI) KEY TERMS AND DEFINITIONS

Date of Event

The date when the first clinical evidence (signs/symptoms) of the UTI appeared <u>or</u> 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

Symptomatic UTI (SUTI)

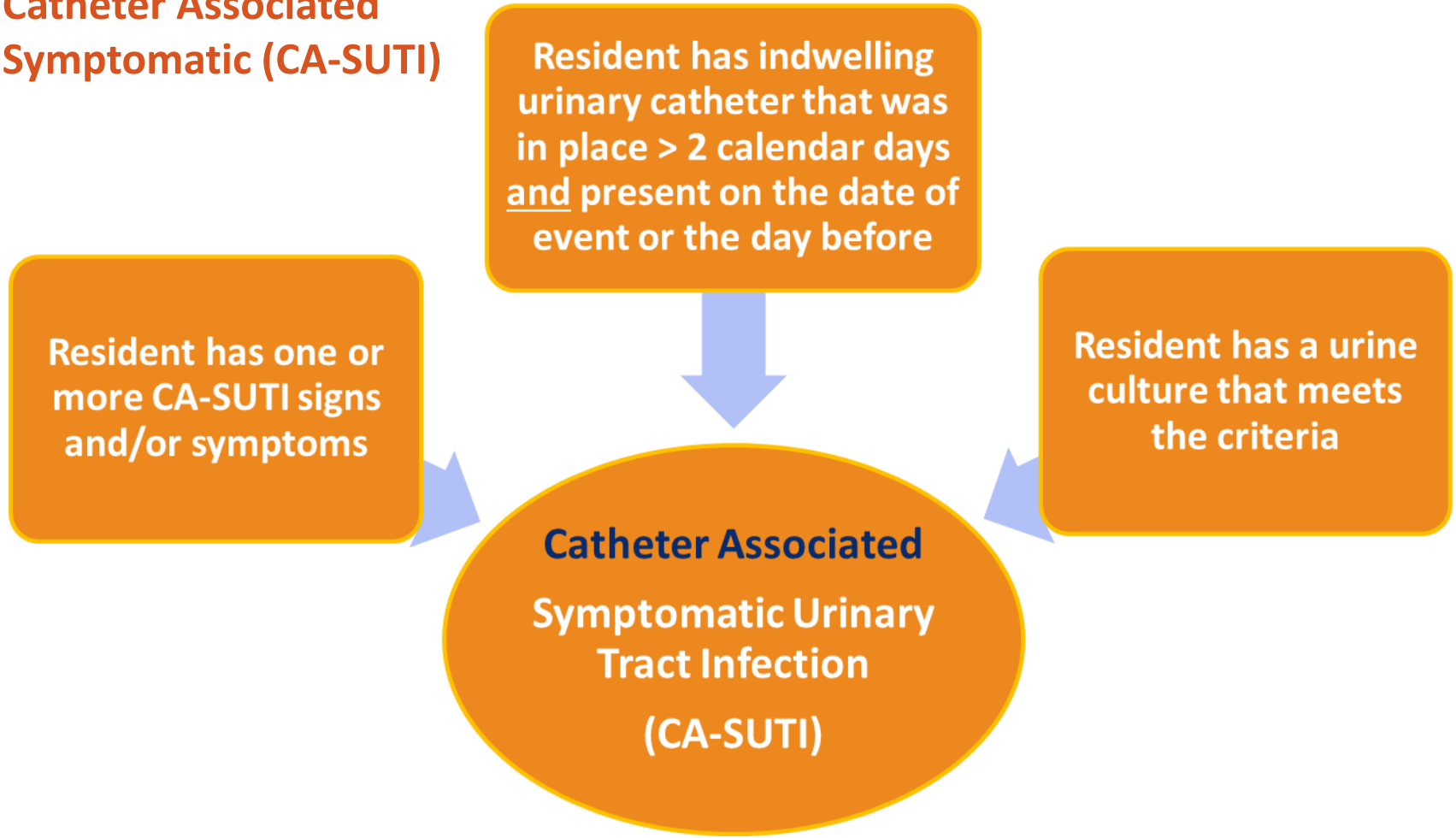
Resident demonstrates signs and symptoms that localize the infection to the urinary tract. These events can occur in residents with or without indwelling urinary devices.

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)



Urine Culture Requirements for CA-SUTI

- If a **urinary catheter is** in place at time of specimen collection:
  - Positive urine culture with **≥10^5 CFU/ml of *any number of microorganisms***, at least one of which is bacteria of ≥10^5 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 **≥10^5 CFU/ml of *no more than 2 species of microorganisms***, at least one of which is bacteria of ≥10^5 CFU/ml

    OR

  - **Straight catheter** specimen with **≥10^2 CFU/ml *of any number of microorganisms***, at least one of which is bacteria of ≥ 10^2 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*)
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 **hypotension** (with no alternate non-infection cause)
New onset **confusion or functional decline** (with no alternative diagnosis) **AND** **Leukocytosis**: >14,000 cells/mm^3 or Left shift (>6% or 1,500 bands/mm^3)
New or marked increase in **suprapubic pain** or **costovertebral angle pain or tenderness**
Acute pain, swelling or tenderness of the testes, epididymis or prostate
Purulent (pus) discharge from around the catheter

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

WBC ($x10^3$)	Bands %	Neut/segs %	Eos %	Baso %	Lymph %	Mono %
15	**10**	**65**	**1**	**1**	**20**	**3**

Neutrophilia: >14,000 leukocytes (WBC)

Left shift: elevation in immature WBC (Bands)

- >6% bands
- Total band count ≥1,500 bands/mm^3

KNOWLEDGE CHECK: Mr. Unforgettable

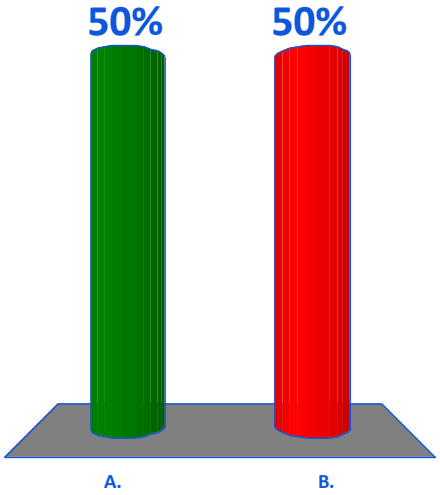
- Mr. Unforgettable, a resident from a local LTC facility has a urinary catheter in place for 3 days for acute urinary retention. On day 3, he spikes a fever of 100.9°F and has a cough with shortness of breath. The physician orders a urine culture and it comes back positive with $>10^5$ CFU/ml of *Pseudomonas 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

AND

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 $\geq 10^5$ 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 $\geq 10^2$ FU/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 $\geq 10^5$ CFU/ml

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

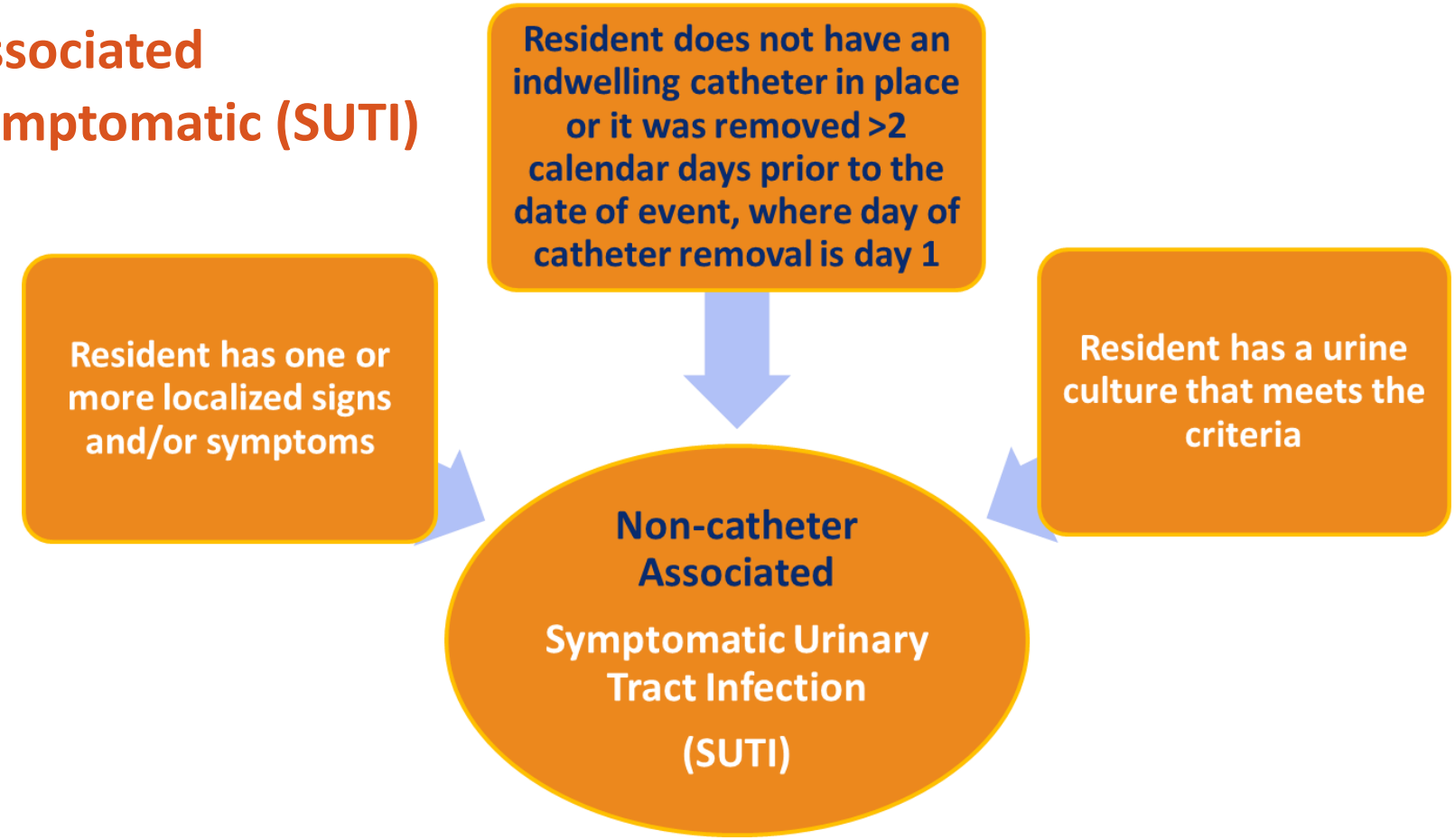
[+] Fever can be used to meet SUTI criteria even if the resident has another possible cause for the fever (e.g., pneumonia)

[a] Fever: Single temperature ≥ 37.8ºC (>100ºF), or > 37.2ºC (>99ºF) on repeated occasions, or an increase of >1.1ºC (>2ºF) 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)



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

OR

SUTI - Criteria 2

Either of the following:

1. Fever[+ a]
2. Leukocytosis[b]

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

OR

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

AND

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

Example of Non-Catheter Associated SUTI

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

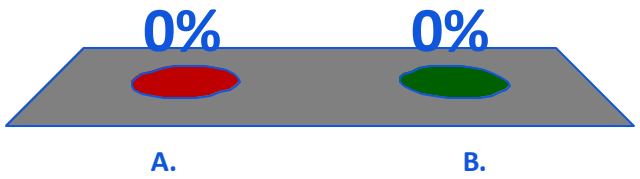
- Day 1: Mrs. Unforgettable, a LTC resident, complains of burning when she urinates and states that her urine looks and smells funny. She has not had an indwelling urinary device in the past month. However, a straight catheter was used three days ago for urinary retention.
- Day 2: A clean catch voided 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 <u>AND</u> 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.



KNOWLEDGE CHECK: Mrs. Unforgettable

LABORATORY AND DIAGNOSTIC REQUIREMENT

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 bacteria of ≥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 ≥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

NHSN - National Healthcare Safety Network

AANTTILA
Angela LTCF Test Facility

NHSN Home
Alerts
Reporting Plan
Resident
Event
Summary Data
Surveys
Analysis
Users
Facility
Group
Logout

Add
Find
Incomplete

NHSN Long Term Care Facility Component Home Page

COMPLETE THESE ITEMS

Add UTI Event
Resident Type

NHSN - National Healthcare Safety Network

NHSN Home
Alerts
Reporting Plan
Resident
Event
Summary Data
Surveys
Analysis
Users
Facility
Group
Logout

Add Event

Mandatory fields marked with *
Fields required for record completion marked with **

Resident Information

Facility ID *: Angela LTCF Test Facility (ID 39455)
Resident ID *: 12345 Find Find Events for Resident
Social Security # *: 545-48-9637
Medicare number (or comparable railroad insurance number):
Last Name: Sue
First Name: Mary
Middle Name:
Gender *: F - Female
Date of Birth *: 01/25/1940
Ethnicity:
Race: American Indian/Alaska Na
Black or African American
White

Resident type *:
SS - Short-stay
LS - Long Stay

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

NHSN - National Healthcare Safety Network

NHSN Home
Alerts
Reporting Plan
Resident

Add Event

Mandatory fields marked with *
Fields required for record completion marked with **

Find

Black or African American
White

Resident type *: LS - Long Stay

Date of First Admission to Facility *: 05/05/2015

Date of Current Admission to Facility *: 12/20/2016

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

Add Event

Mandatory fields marked with *
Fields required for record completion marked with **

Resident Information

Facility ID *: Angela LTCF Test Facility (ID 39455
Resident ID *: 2468 Find Fin
Last Name: Summer
Middle Name:
Gender *: F - Female
Ethnicity: NOHISP - Not Hispanic or Not Latinc
Race: American Indian/Alaska Native
Black or African American
White
Resident type *: LS - Long Stay
Date of First Admission to Facility *: 12/10/2014 15

Event Information

Event Type *:
LABID - Laboratory-identified MDRO or CDI Event
UTI - Urinary Tract Infection

Date of Event *: 15

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, <u>whichever comes first</u>

Add UTI Event
Resident Care Location

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

Resident Care Location *:

1 D - DEMENTIA UNIT
1 SOUTH - GENERAL
2 PSY - PSYCHIATRIC
2W - 2 WEST DEMENTIA
3 REHAB - SHORT TERM REHAB
4 GEN - GENERAL UNIT
5 HOS - HOSPICE UNIT
DEMENTIA - LOCKED UNIT

Date of Event *: 02/14/2017

Add UTI Event
Primary Service Type

Event Information

Primary Resident Service Type *:

- BARIA - Bariatric
- HOSP - Hospice/Palliative
- DEMENT - Long-term dementia
- GENNUR - Long-term general nursing
- PSYCH - Long-term psychiatric
- SKNUR - Skilled nursing/short term rehab
- VENT - Ventilator

Date of Event *: 02/14/2017

Select the NHSN Primary Resident Service Type on the date of event

Add UTI Event
Transfer from Acute Care Facility

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 *?

Y - Yes
N - No

Was the resident <u>directly</u> admitted to your facility from an acute care facility in past 4 weeks? If 'YES' is selected, additional data must be entered

If Yes, *date of last transfer* from acute care to your facility *:

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……

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 *: 01/20/201

If Yes, did the resident have an indwelling urinary catheter at th ... or transfer to your

Indwelling Urinary Catheter status at time of event onset *: INPLACE - In place

If indwelling urinary catheter status In place or Removed within last 2 calendar days:

Site where indwelling urinary catheter Inserted *:

FAC - Your facility
AC - Acute care hospital
OTH - Other
UNK - Unknown

Date of indwelling urinary catheter Insertion:

"**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

Date of Event *: 02/14/2017

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 *? Y - Yes

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? *: N - No

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? * Y - Yes

If Yes, other device type:

SUPRA - Suprapubic

INTER - Intermittent straight catheter

Add UTI Event
Specify UTI Criteria Used (Check all that apply)

Specify Criteria Used * (check all that apply):

Signs & Symptoms

- [x] 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 >= 10^5 CFU/ml of no more than 2 species of microorganisms
- [ ] Specimen collected from in/out straight catheter and positive culture with >= 10^2 CFU/ml of any microorganisms
- [x] Specimen collected from indwelling catheter and positive culture with >= 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

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

Specific event will auto-populate based on the above event criteria selected

Add UTI Event
Additional Questions

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

Secondary Bloodstream Infection *:

Transfer to acute care facility within 7 days *:

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

Died within 7 days of Date of Event:

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

Add UTI Event

Select Pathogens Identified in Urine Culture

Pathogens identified *: Y - Yes If Yes, specify below ->

Pathogens

Pathogen 1: *Escherichia coli - EC* Search

* AMK ○S ○R ○I ○N	* AMP ○S ○R ○I ○N	* CEFOX ○S ○R ○I ○N	CTET ○S ○R ○I ○N	* CIPRO ○S ○R ○I ○N	LE ○S ○I
* COL ○S ○R ○N	PB ○S ○R ○N	* DORI ○S ○R ○I ○N	MERO ○S ○R ○I ○N	* DOXY ○S ○R ○I ○N	MI ○S ○I
* AMPSUL ○S ○R ○I ○N	AMXCLV ○S ○R ○I ○N	* CEFOT ○S ○R ○I ○N	CEFTRX ○S ○R ○I ○N	* AZT ○S ○R ○I ○N	* C ○S ○I ○N ○I/S-DD ○N
* CEFTAZ ○S ○R ○I ○N	* CEFUR ○S ○R ○I ○N	* ERTA ○S ○R ○I ○N	* GENT ○S ○R ○I ○N	* IMI ○S ○R ○I ○N	* PIPTAZ ○S ○R ○I ○N	* TIG ○S ○R ○I ○N
* TMZ ○S ○R ○I ○N	* TOBRA ○S ○R ○I ○N				

Add Drug

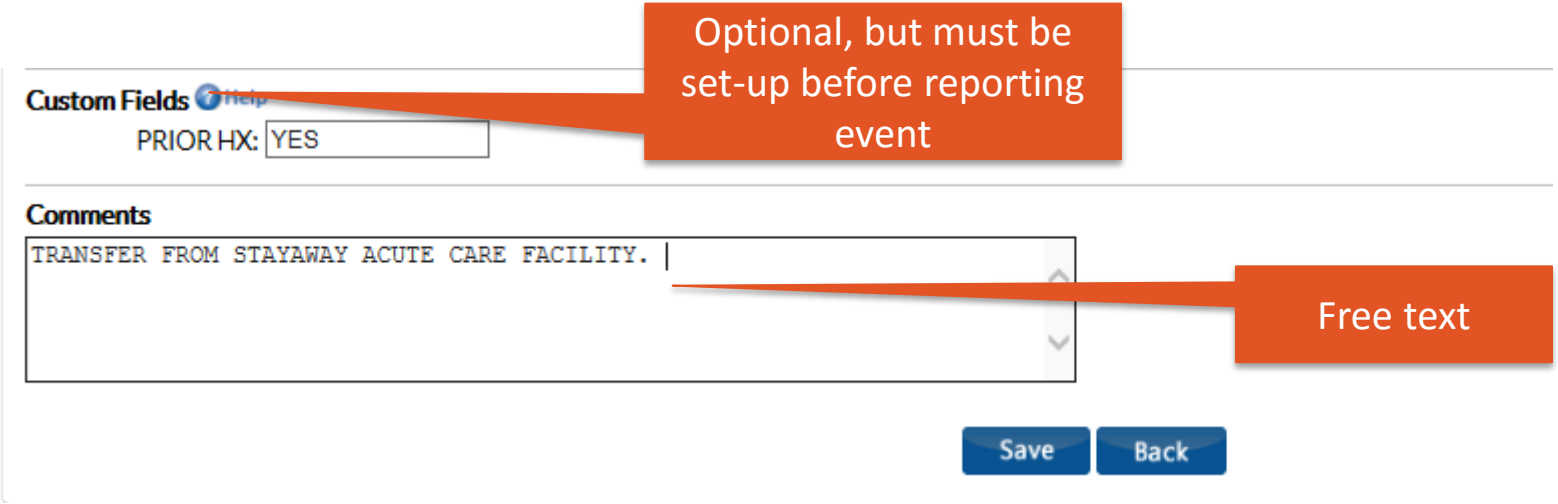
Pathogen 2: Search

Abiotrophia - ABISP
Abiotrophia adiacens - GRADJ
Abiotrophia adjacens - GRADJ
Abiotrophia defectiva - STRDF
Abiotrophia elegans - GRANELEG
Acholeplasma - ACHOSP
Acholeplasma laidlawii - ACHOLAID
Acholeplasma oculi - ACHOOCUL
Achromobacter - ACHSP
Achromobacter denitrificans - ACHDENI
Achromobacter piechaudii - ACHPIEC
Achromobacter ruhlandii - ACHRUHL
Achromobacter xylosoxidans - ALCXYL
Achromobacter xylosoxidans xylosoxidans - ACHXYL
Achromobacter, group Vd biotype 1 - ACHVD1
Achromobacter, group Vd biotype 2 - ACHVD2
Acid-fast bacillus - AFB
Acidaminococcus - ACISP
Acidaminococcus fermentans - ACIFE
Acidovorax - ACIDSP
Acidovorax delafieldii - ACDEL
Acidovorax facilis - ACIDFACI
Acidovorax temperans - ACIDTEMP

S = Susceptible
I = Intermediate
R = Resistant
NS = Non-susceptible
S-DD = Susceptible-dose dependent
N = Not tested

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



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

NHSN National Healthcare Safety Network

Form Approved
OMB No. 0920-0666
Exp. Date: 11/30/2019
www.cdc.gov/nhsn

Denominators for LTCF

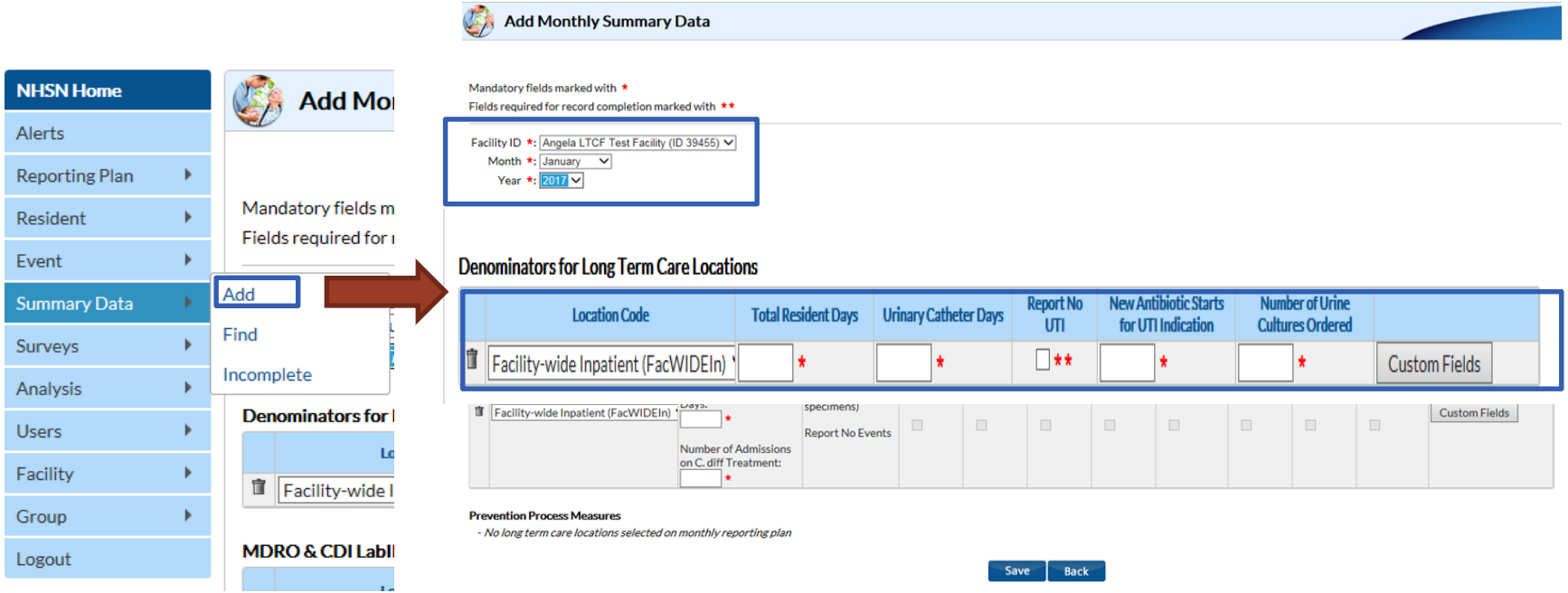
Page 1 of 1 *required for saving

Facility ID		*Location Code:			*Month:	*Year:
Date	**Number of residents**	***Number of residents with a urinary catheter**	***New antibiotic starts for UTI indication**	***Number of urine cultures ordered**	***Number of admissions**	**Number of admissions on *C. diff* treatment**
1						
2						
3						
4						
5						
6						
7						

*Total						
	Resident-days	**Urinary-catheter days**	**Total antibiotic starts for UTI indication**	**Total urine cultures ordered**	**Resident-admissions**	**Resident-admissions on *C. diff* treatment**

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

	Location Code	Total Resident Days	Urinary Catheter Days	Report No UTI	New Antibiotic Starts for UTI Indication
	Facility-wide Inpatient (FacWIDEIn)	*	*		*

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.

Denominators for Long Term Care Locations

	Location Code	Total Resident Days	Urinary Catheter Days	Report No UTI	New Antibiotic Starts for UTI Indication
	Facility-wide Inpatient (FacWIDEIn)	*	*		*

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

	Location Code	Total Resident Days	Urinary Catheter Days	Report No UTI	lew Antibiotic Starts for UTI Indication
🗑	Facility-wide Inpatient (FacWIDEIn)	*	*	☐	

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.

Denominators for Long Term Care Locations

	Location Code	Total Resident Days	Urinary Catheter Days	Report No UTI	New Antibiotic Starts for UTI Indication		
	Facility-wide Inpatient (FacWIDEIn)	*	*	**	*	*	Custom Fields

Number of new antibiotic orders for the month

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.

Number of urine cultures ordered

Denominators for Long Term Care Locations

	Location Code	Total Resident Days	Urinary Catheter Days	Report No UTI	New Antibiotic Starts for UTI Indication	Number of Urine Cultures Ordered	
	Facility-wide Inpatient (FacWIDEIn) *	*	*	**	*	*	Custom Fields

- ✓ 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.

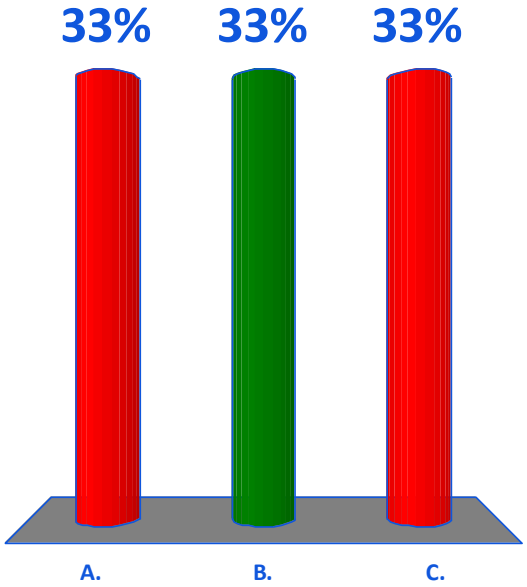
KNOWLEDGE CHECK

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.

B. 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

OR

SUTI - Criteria 2

Either of the following:

1. Fever[+ a]
2. Leukocytosis[b]

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

OR

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

AND

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

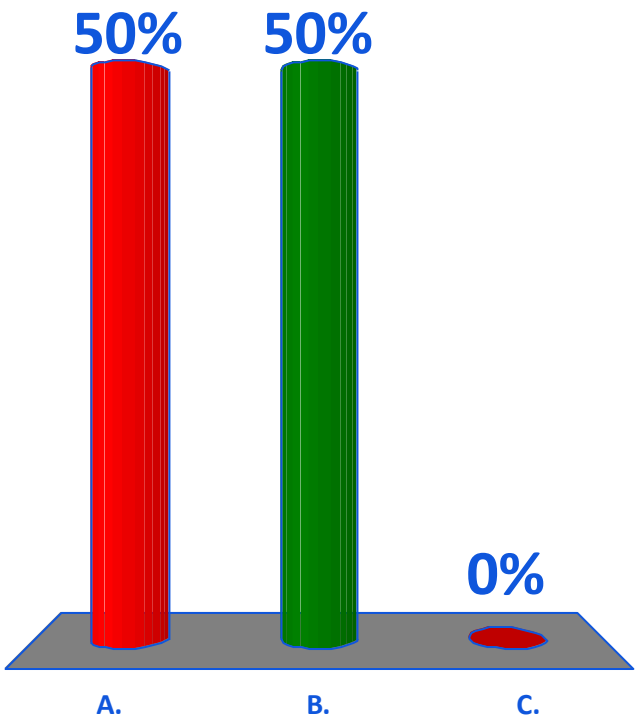
NOTE: Yeast and other microorganisms, which are not bacteria, are not acceptable UTI pathogens

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

OR

SUTI - Criteria 2

Either of the following:

1. Fever[+ a]
2. Leukocytosis[b]

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

OR

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

AND

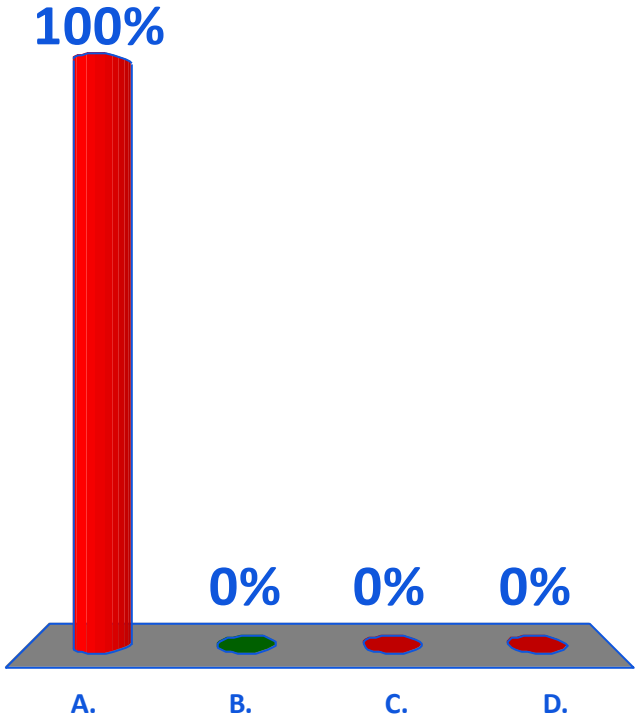
Either of the following:

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

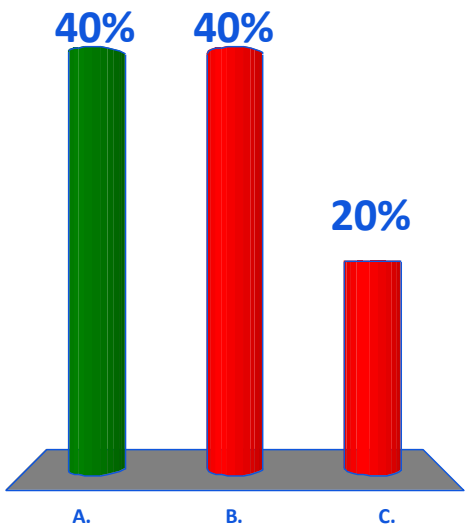
Case Scenario 3: Define Date of Event for an UTI

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



Case Scenario 5

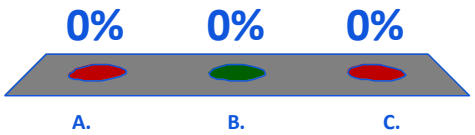
- Mr. T is an 94 year old resident in the facility. He has a history of multiple medical issues. On 3/3/17, blood, urine, and foot cultures were collected.

- 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.

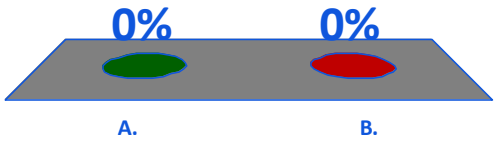
Case Scenario 5: Does Mr. T have an UTI?

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



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 $\geq 10^2$ 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 Cather Count at 12 Noon on May 2

How many indwelling catheter days?

A. 6
B. 5
C. 4
D. 3 ✓
E. 2
F. 1

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

Not in place at time of count