



NHSN: Urinary Tract Infection Event Reporting

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Official CDC UTI Training

- Available at
<http://www.cdc.gov/nhsn/PDFs/LTC/slides/NHSN-LTCF-UTI-Event-Training-v2.pdf>.

Background

- ❑ **Why monitor urinary tract infections 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 your LTCF
 - Tracking these events will also inform infection 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, and organisms cause UTIs in a facility**
- ❑ **To assess the impact of efforts to prevent UTI over time**

Settings for UTI Event Reporting

- ❑ Reporting is available for the following facility types
 - Certified skilled nursing facilities/nursing homes (LTC:SKILLNURS)
 - Intermediate/chronic care facilities for the developmentally disabled (LTC:DEVDIS)

Reporting Requirements

- ❑ Facilities must indicate UTI surveillance in the *Monthly Reporting Plan for LTCF*
- ❑ UTI surveillance must be reported for at least 6 consecutive months to provide meaningful measures
- ❑ UTI surveillance should be performed facility-wide

Monthly Reporting Plan for LTCF

 Department of Health and Human Services
Centers for Disease Control and Prevention

NHSN - National Healthcare Safety Network (April 2008 - Present)

Logged into NT Nursing Home (ID 11133) as NBCOLA
Facility NT Nursing Home (ID 11133) is following the LTCF component.

Add Monthly Reporting Plan

Mandatory fields marked with *

Facility ID*: NT Nursing Home (ID 11133) -

Month*: August -

Year*: 2012 -

No Long Term Care Facility Component Modules Followed this Month

HAI Module HELP	
Locations	UTI
<input type="checkbox"/> FACWIDEIN - FacWideIN -	<input checked="" type="checkbox"/>

LabID Event Module HELP		
Locations	Specific Organism Type	Lab ID Event All Specimens
<input type="checkbox"/> FACWIDEIN - FacWideIN -	-	<input type="checkbox"/>

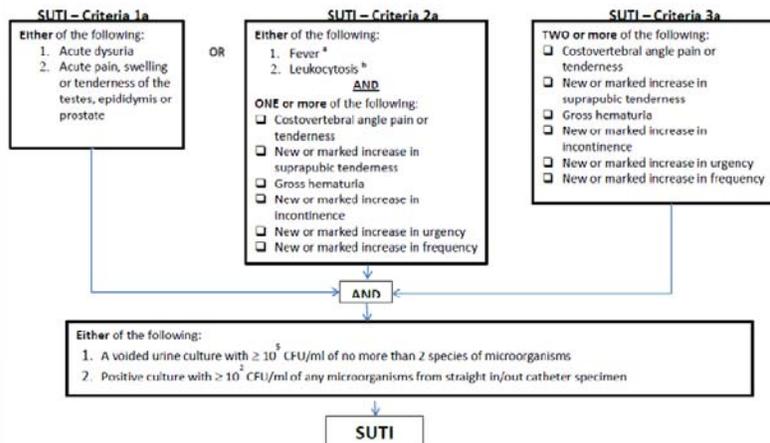
UTI Definitions

□ Symptomatic UTI (SUTI)

- Resident manifests signs and symptoms which localize the infection to the urinary tract
- Can occur in residents without urinary devices or residents managed with the following urinary devices: suprapubic catheters, straight in-and-out catheters and condom catheters
 - A resident cannot have an indwelling catheter in place or have been exposed to one that was removed within 2 calendar days prior to symptom onset (where date of removal= Day 1)
- Three criteria can be applied for identifying Symptomatic UTI (SUTI), which combine signs and symptoms with laboratory and culture data (see next slide)

SUTI Event

Resident *without* an indwelling catheter (Meets criteria 1a OR 2a OR 3a):



*Fever: Single temperature $\geq 37.8^{\circ}\text{C}$ ($>100^{\circ}\text{F}$), or $> 37.2^{\circ}\text{C}$ ($>99^{\circ}\text{F}$) on repeated occasions, or an increase of $>1.1^{\circ}\text{C}$ ($>2^{\circ}\text{C}$) over baseline
*Leukocytosis: $>14,000$ cells/mm³, or Left shift ($>6\%$ or 1,500 bands/mm³)

See UTI event protocol: http://www.cdc.gov/nhsn/PDFs/LTC/LTCF-UTI-protocol_FINAL_8-24-2012.pdf

CA-SUTI Definitions

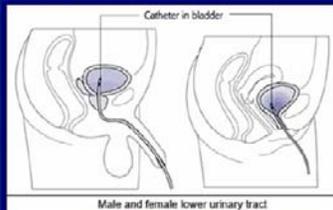
□ Catheter-associated Symptomatic UTI (CA-SUTI)

- SUTI which occurs in a resident while having an indwelling urinary catheter in place or removed within the 2 calendar days prior to event onset (day of removal = Day 1)
 - An indwelling urinary catheter should be in place for a minimum of 2 calendar days (Day 1= day of insertion) in order for the SUTI to be catheter-associated
- SUTIs in residents managed with suprapubic, straight in-and-out, or condom (males only) catheters are not considered CA-SUTIs

CA-SUTI Definitions

□ 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 closed collection system (e.g. Foley catheter)



- Does NOT include straight in-and-out catheters or catheters not placed in the urethra (e.g. suprapubic, condom)

CA-SUTI Event

Resident *with* an indwelling catheter:

CA-SUTI – Criteria

ONE or more of the following with no alternate source:

- Fever ^a
- Rigors
- New onset hypotension, with no alternate site of infection.
- New onset confusion/functional decline **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. A voided urine culture with $\geq 10^3$ CFU/ml of no more than 2 species of microorganisms
2. Positive culture with $\geq 10^3$ CFU/ml of any microorganisms from straight in/out catheter specimen

If urinary catheter in place:

3. Positive culture with $\geq 10^5$ CFU/ml of any microorganisms from indwelling catheter specimen

CA-SUTI

^aFever: Single temperature $\geq 37.8^\circ\text{C}$ ($\geq 100.5^\circ\text{F}$), or $> 37.2^\circ\text{C}$ ($\geq 99^\circ\text{F}$) on repeated occasions, or an increase of $>1.1^\circ\text{C}$ ($\geq 2^\circ\text{F}$) over baseline
^bLeukocytosis: $>14,000$ cells/mm³, or Left shift ($> 8\%$ or 1,500 bands/mm³)

See UTI event protocol: http://www.cdc.gov/nhsn/PDFs/LTC/LTCF-UTI-protocol_FINAL_8-24-2012.pdf

ABUTI Definitions

□ Asymptomatic Bacteremic UTI (ABUTI)

- Resident has NO signs and symptoms localizing to the urinary tract but has urine and blood cultures positive for the same bacteria
 - The microorganism in the blood and urine cultures should have the same genus and species to be considered a match
- Can occur in residents with or without an indwelling urinary catheter

ABUTI Event

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 alone would not exclude ABUTI if other criteria are met.*

AND

Any of the following:

1. A voided urine culture with $\geq 10^5$ CFU/ml of no more than 2 species of microorganisms
2. Positive culture with $\geq 10^2$ CFU/ml of any microorganisms from In/out catheter specimen
3. Positive culture with $\geq 10^5$ CFU/ml of any microorganisms from indwelling catheter specimen

AND

Positive blood culture with at least 1 matching organism in urine culture

ABUTI

http://www.cdc.gov/nhsn/PDFs/LTC/LTCF-UTI-protocol_FINAL_8-24-2012.pdf

Required Forms

- **Urinary Tract Infection (UTI) for LTCF Form**
 - Numerator data
 - Collect and report each SUTI, CA-SUTI or ABUTI that is identified during the months selected for surveillance.

- **Denominators for LTCF Locations Form**
 - Denominator data
 - Resident-days
 - Catheter-days

UTI for LTCF Event Form

- **“Numerator” – one form per UTI Event**



OMB No. 0920-0666
 Exp. Date: 01-31-2015
 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: <input type="checkbox"/> Short-stay <input type="checkbox"/> 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)		
<input type="checkbox"/> Long-term general nursing <input type="checkbox"/> Long-term dementia <input type="checkbox"/> Long-term psychiatric <input type="checkbox"/> Skilled nursing/Short-term rehab (subacute) <input type="checkbox"/> Ventilator <input type="checkbox"/> Bariatric <input type="checkbox"/> 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: / /		
*Urinary Catheter status (Check one):		
<input type="checkbox"/> In place <input type="checkbox"/> Removed within last 2 calendar days <input type="checkbox"/> Not in place		

See UTI event protocol: http://www.cdc.gov/nhsn/PDFs/LTC/forms/57.140-TOI-UTI-TOI_FINAL.pdf

Add Event

Mandatory fields marked with *

Fields required for record completion marked with **

Resident Information [HELP](#)

Facility ID*: State Memorial Long-term Care Facility (ID 30203) ▾

Resident ID*: WI12345

Find

Find Events for Resident

Social Security #*: 123-45-6789

Medicare number (or comparable railroad insurance number):

Last Name: Badger

First Name: Bucky

Middle Name:

Gender*: M - Male ▾

Date of Birth*: 06/01/1929

Ethnicity:

Race: American Indian/Alaska Native Asian

Black or African American

Native Hawaiian/Other Pacific Islander

White

Resident type*: LS - Long Stay ▾

Date of First Admission to Facility*: 12/10/2010

Date of Current Admission to Facility*: 10/06/2012

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Event Information

Event Type*: UTI - Urinary Tract Infection ▾

Date of Event*: 07/15/2013

Resident Care Location*: 1W - FIRST FLOOR WEST ▾

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

Has resident been transferred from an acute care facility to your facility in the past 3 months*? N - No ▾

Urinary Catheter status at time of specimen collection*: INPLACE - In place ▾

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

Site where Device Inserted*: FAC - Your facility ▾

Device Type*: INDWEL - Indwelling ▾

Date of Device Insertion: 07/01/2013

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Site where Device Inserted*: FAC - Your facility

Device Type*: INDWEL - Indwelling

Date of Device Insertion: 07/01/2013

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/functional decline
- New onset confusion
- Acute pain, swelling or tenderness of the testes, epididymis, or prostate
- Acute dysuria
- Purulent drainage at catheter insertion site

Laboratory & Diagnostic Testing

- A voided urine culture with $\geq 10^5$ CFU/ml of no more than 2 species of microorganisms
- Positive culture with $\geq 10^2$ CFU/ml of any microorganisms from in/out catheter specimen
- Positive culture with $\geq 10^5$ CFU/ml of any microorganisms from indwelling catheter specimen
- Leukocytosis (14,000 cells/mm³) or left shift (>6% or 1,500 bands/mm³)
- Positive blood culture with 1 matching organism in urine

New and/or marked increase in (check all that apply):

- Urgency
- Frequency
- Incontinence
- Costovertebral angle pain or tenderness
- Suprapubic tenderness
- Visible (gross) hematuria

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

Secondary Bloodstream Infection*: N - No

Transfer to acute care facility*: N - No

Died within 30 days of Date of Event: N - No

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

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Pathogens

Pathogen 1: *Candida albicans* - CA Search 7 drugs required

* ANID <input type="radio"/> S <input checked="" type="radio"/> NS <input type="radio"/> N	* CASPO <input type="radio"/> S <input checked="" type="radio"/> NS <input type="radio"/> N	* FLUCO <input checked="" type="radio"/> S <input type="radio"/> S-DD <input type="radio"/> R <input type="radio"/> N	* FLUCY <input type="radio"/> S <input checked="" type="radio"/> R <input type="radio"/> I <input type="radio"/> N	* ITRA <input checked="" type="radio"/> S <input type="radio"/> S-DD <input type="radio"/> R <input type="radio"/> N	* MICA <input checked="" type="radio"/> S <input type="radio"/> NS <input type="radio"/> N	* VORI <input type="radio"/> S <input type="radio"/> S-DD <input type="radio"/> R <input checked="" type="radio"/> N
--	---	---	--	--	--	--

Add Drug

Pathogen 2: Search

Custom Fields

ANTIBIOTIC NAME: NUMBER OF DAYS :

Comments [HELP](#)

Save Back

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Completing the UTI Event Form: Instructions for key data fields

□ Date of Event

- 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*.
- **Example:** A resident had a Foley catheter in place and had documentation of new suprapubic pain on June 1st. The resident had a urine specimen collected and sent for culture June 3rd. The date of event would be June 1st since this is the date of symptom onset and occurred before the date of culture collection.

Completing the UTI Event Form: Instructions for key data fields

□ Urinary catheter status

- Defined as the status of a urinary catheter device on the Date of Event
- One of three options is selected to describe urinary catheter status
 - "In place": an indwelling urinary catheter was present on the date of the event
 - "Removed within last 2 calendar days": an indwelling urinary catheter was recently taken out
 - "Not in place": No indwelling urinary catheter was in place, or recently removed > 2 calendars ago
- **This field does not refer to how the specimen was collected**

Collecting Resident Denominators

- ❑ **Resident days**
 - The monthly sum of the total number of residents present in the facility each day of that month

- ❑ **Catheter days**
 - ❑ The monthly sum of the number of residents with an **indwelling** catheter each day of that month
 - ❑ None of the following should be included when counting indwelling catheter days: suprapubic catheters, in/out straight catheters or condom catheters

- ❑ Counts are collected daily for all residents in the facility

Denominators Form



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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	*Number of admissions
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

Denominators Form



Denominators for LTCF

Page 1 of 1 *required for saving

Facility ID: _____ *Location Code: _____ *Month: _____ *Year: _____

OMB No. 0920-0666
Exp. Date: 01-31-2015
www.cdc.gov/nhsn

Date	*Number of residents	*Number of residents with a urinary catheter
1		
2		
3		
4		
5		
...		
31		
*Total		
	Resident-days	Urinary catheter-days

Record the # of residents With catheters each day

Record the totals for the month

Add Monthly Summary Data

Mandatory fields marked with *

Fields required for record completion marked with **

Facility ID*: State Memorial Long-term Care Facility (ID 30203) ▾

Month*: June ▾

Year*: 2013 ▾

Denominators for Long Term Care Locations [HELP](#)

Location Code	Total Resident Days	Urinary Catheter Days	Report No UTI	
FACWIDEIN - FacWideIN ▾	1000 *	450 *	<input checked="" type="checkbox"/> **	

MDRO & CDI LabID Event Reporting [HELP](#)

Location Code	Resident Admissions:	Resident Days:	LabID Event (All specimens)	MRSA	VRE	CephR-Klebsiella	CRE-Ecoli	CRE-Klebsiella	C. difficile	MDR-Acinetobacter
FACWIDEIN - FacWideIN ▾	* **	1000 *	LabID Event (All specimens) Report No Events	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
				<input type="checkbox"/> **	<input type="checkbox"/> **	<input type="checkbox"/>	<input type="checkbox"/> **	<input type="checkbox"/> **	<input type="checkbox"/> **	<input type="checkbox"/> **

Prevention Process Measures [HELP](#)

Location Code	Hand Hygiene		Gown and Gloves		
	Performed	Indicated	Used	Indicated	
FACWIDEIN - FacWideIN ▾	*	*			

SUTI Data Analysis

□ Calculating the SUTI Rate

- SUTI incidence rate per 1,000 "non-catheter" resident days

$$\text{SUTI Rate} = \frac{\text{\# SUTIs identified}}{\text{Resident days – urinary catheter days}} \times 1000$$

- Only SUTIs which are NOT catheter-associated are included
 - Remember: Events in residents with other urinary devices such as suprapubic catheters are counted as SUTI

CA-SUTI Data Analysis

□ Calculating the CA-SUTI Rate

- CA-SUTI incidence rate per 1,000 indwelling catheter days

$$\text{CA-SUTI Rate} = \frac{\text{\# CA-SUTIs identified}}{\text{Urinary catheter days}} \times 1000$$

- Only symptomatic events which develop at the time an indwelling catheter is in place or has been removed in the last 2 calendar days will be included

Urinary Catheter Use Analysis

□ Urinary catheter utilization ratio

$$\text{Urinary catheter utilization} = \frac{\text{Urinary catheter days}}{\text{Resident days}}$$

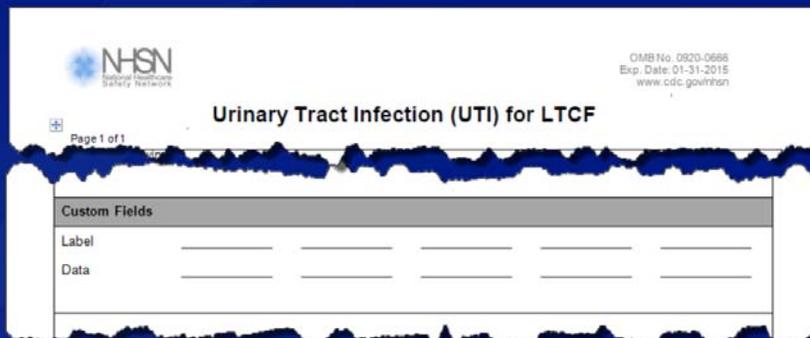
- Device utilization ratio measures the proportion of total resident-days in which indwelling urinary catheters were used

UTI Event Metrics

- **Total UTI Rate/1,000 resident-days** = Number of all UTI events per month (i.e., SUTI + CA-SUTI + ABUTI) / Total resident-days per month x 1,000
 - *Percent that is SUTI* = Number of SUTI events / Total number of UTI events x 100
 - *Percent that is CA-SUTI* = Number of CA-SUTI events / Total number of UTI events x 100
 - *Percent that is ABUTI* = Number of ABUTI events / Total number of UTI events x 100
- **SUTI incidence rate/1,000 resident-days** = Number of SUTI events / (Total resident-days – urinary catheter-days) x 1,000
- **CA-SUTI incidence rate/1,000 catheter-days** = Number of CA-SUTI events / Urinary catheter-days x 1,000
- **Urinary Catheter Utilization Ratio** = Total urinary catheters-days / Total resident-days

Custom Fields

- Additional data entry fields which users can name (labels) and capture text or numeric data
- Available on each event form
- User can customize or expand data collected and submitted at your facility using these optional fields



The screenshot shows the NHSN (National Healthcare Safety Network) form for Urinary Tract Infection (UTI) for LTCF. The form includes the NHSN logo, OMB No. 0920-0686, Exp. Date: 01-31-2015, and www.cdc.gov/nhsn. The title is "Urinary Tract Infection (UTI) for LTCF" and it is labeled as "Page 1 of 1". Below the title is a section titled "Custom Fields" which contains a table with two rows: "Label" and "Data". Each row has four empty input fields.

Custom Fields				
Label				
Data				

Let's Review!



- ❑ **You can perform monitoring of all urinary tract infections, both non-catheter associated and catheter-associated.**
- ❑ **To get the most from your data:**
 - Minimum reporting is six months during a calendar year
 - Monitoring should be done facility-wide
 - Keeping a daily log of residents with indwelling urinary catheters will make it easier to calculate total urinary catheter days at the end of the month

NHSN Resources

- ❑ **NHSN Home Page**
 - <http://www.cdc.gov/nhsn/>
- ❑ **NHSN LTCF Component**
 - <http://www.cdc.gov/nhsn/ltc/>
- ❑ **LTCF Component UTI Event Reporting**
 - <http://www.cdc.gov/nhsn/ltc/uti/>

Questions?

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