Catheter-Associated Urinary Tract Infection Surveillance
Objectives

• Review CAUTI surveillance definitions
• Discuss importance of accurate data collection
• Demonstrate how to report CAUTI data in NHSN
• Discuss NHSN data analysis and feedback to staff
Clinical vs Surveillance Definitions

Clinical criteria used by physicians for patient care and management may differ from surveillance criteria

• Clinical
  • Patient centered
  • Used for therapeutic decisions

• Surveillance
  • Population based
  • Applied exactly the same way each time
  • Physician diagnosis of infection is acceptable for some infections
CAUTI Surveillance Definitions

UTI may or may not be associated with use of a urinary catheter (CAUTI vs. UTI)

• For CAUTI:

  Catheter must be in place >2 days (Day 1 = day of insertion)

  Catheter still present or Catheter removed day of or day prior to when UTI criteria met

NHSN Patient Safety Module: Chapter 7
CAUTI Surveillance Definitions - 2

- NHSN infection window period
  - Seven days during which all site-specific infection criteria must be met
- Criteria for CAUTI include specific clinical symptoms and positive urine culture, and sometimes positive blood culture
- Includes the day the first positive diagnostic test (urine culture or blood culture for CAUTI) was obtained, 3 calendar days before and 3 calendar days after

NHSN Patient Safety Module: Chapter 7
CAUTI Infection Window Period
Acute Care Hospitals

- For CAUTI, the first diagnostic test will be either a positive urine or blood culture

<table>
<thead>
<tr>
<th>Infection Window Period:</th>
<th>3 days before first positive diagnostic test</th>
<th>FIRST POSITIVE DIAGNOSTIC TEST</th>
<th>3 days after first positive diagnostic test</th>
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</thead>
</table>
CAUTI Infection Criteria- Acute Care Hospitals

**Diagnostic Test for Possible CAUTI**

- Positive urine or blood culture

**Localized Sign or Symptom Examples for Possible CAUTI**

- Suprapubic tenderness
- Costovertebral angle pain
- Urgency
- Frequency
- Dysuria
- Fever

NHSN Patient Safety Module: Chapter 7
CAUTI Cannot Re-Occur in the Same Patient Within a 14-Day Period

No new CAUTI can be reported within a 14-day repeat infection timeframe (RIT)

- The date of the CAUTI event is considered day 1
- A new CAUTI is not reported until 14 days have elapsed
- If a new pathogen is identified in the urine within the 14-day period it should be added to the CAUTI already reported
- Refer to the NHSN CAUTI protocol for more details

NHSN Patient Safety Module: Chapter 7
CAUTI Location Attribution

- Attribute CAUTI to the inpatient location where the patient was assigned on the date of infection event.
- If all elements of CAUTI are present on the date of transfer or discharge, or the next day, the CAUTI is attributed to the transferring/discharging location.
Symptomatic CAUTI Surveillance Definition

Symptomatic CAUTI requires the patient to have both clinical and microbiologic findings within a 7-day window period

- Refer to written definitions frequently when performing UTI surveillance
- Urine culture must grow no more than two species of organisms, at least one of which is bacteria of > $10^5$ CFU/ml

NHSN Patient Safety Module: Chapter 7
Asymptomatic CAUTI with Bacteremia Surveillance Definition

**Asymptomatic** UTI with Bacteremia (ABUTI) requires the following **three** criteria within a 7-day window period:

1. Urine culture with no more than two species of organisms, at least one of which is a bacteria of $>10^5$ CFU/ml
2. Positive blood culture with at least one matching bacteria to the urine or 2 positive blood cultures with common commensal bacteria and a matching common commensal in the urine
3. **No** clinical signs or symptoms of CAUTI

NHSN Patient Safety Module: Chapter 7
Urinary Tract Infections in LTC: McGeer Criteria Surveillance Definitions

• Three types of symptomatic UTI in resident without catheter

Criteria 1- Dysuria or pain; and positive urine culture
Criteria 2- Fever or Leukocytosis; and one of listed symptoms; and positive urine culture
Criteria 3- Two or more of listed symptoms; and positive urine culture

• Refer to the NHSN LTC Facility Component, UTI, for more details

NHSN Long Term Care Facility Component, Urinary Tract Infection, 2017

- Symptomatic CAUTI in patient with a urinary catheter
  - Catheter in place or removed in last two days
  - Clinical and microbiological findings
- Asymptomatic UTI with bacteremia
  - Occurs with or without a device
  - Microorganisms in blood and urine cultures match

- Refer to the NHSN LTC Facility Component, UTI, for more details


NHSN Long Term Care Facility Component, Urinary Tract Infection, 2017
Add Monthly CAUTI Summary Data to NHSN

- Enter monthly denominator data for each patient location
  - Patient days
  - Urinary catheter days
Add CAUTI Event to NHSN

- Add CAUTI Events as they occur
- Collect criteria meeting definition to enter into NHSN
- NHSN has a worksheet available for data collection
NHSN CAUTI Analysis Reports

- Generate data set prior to creating a report
- Choose report according to need
  - SIR report - Your incidence compared to expected incidence
  - TAP report – Number of events that must be reduced to reach targeted goal - which locations are priority
## NHSN CAUTI SIR Reports

### Facility SIR

<table>
<thead>
<tr>
<th>summaryYH</th>
<th>infCount</th>
<th>numPred</th>
<th>numucathdays</th>
<th>SIR</th>
<th>SIR_pval</th>
<th>sir95ci</th>
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### SIR by Location

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### SUR by Location

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CAUTI TAP Report

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<th>Location</th>
<th>CDC Location</th>
<th>Events</th>
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- Prioritize locations with highest cumulative attributable difference (CAD) – the number of infections we would have needed to prevent to reach goal
Track Progress Over Time

Sample: California General Hospital
2016 CAUTI Progress

- Began CAUTI Initiative

SIR

2016 Q1  2016 Q2  2016 Q3  2016 Q4

Goal

SIR
CAUTI Surveillance Summary

- Consistent use of standard surveillance methods and CAUTI definitions are essential for accurate case finding.
- Capturing complete and accurate data is necessary for precise CAUTI SIR calculation.
- Perform surveillance and feedback CAUTI SIR with adherence monitoring results to all units and leadership.
References and Resources


• IHI Program to Prevent CAUTI http://www.ihi.org/topics/CAUTI/Pages/default.aspx


• IDSA Guidelines , Clin Infect Dis 50:625-63, 2010

• SHEA/IDSA Compendium, ICHE, 35:464-479, 2014

Questions?

For more information, please contact any HAI Liaison IP Team member

Or email HAIProgram@cdph.ca.gov