Technical Aspects and Cultivating Culture Change
Indiana HEN Sessions
May 1, 2014

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Boulder Community Hospital
Associate Clinical Professor of Medicine
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Project Goals for CAUTI are to:

1. reduce mean CAUTI rates in participating clinical units by 25 percent; and

2. improve safety culture as evidenced by improved teamwork and communication by employing CUSP methodology.
Objectives

- Review technical aspects of CAUTI prevention
- Understand the CUSP framework for culture change
- Apply culture change principles to case scenarios
Case

CAUTI

Urinary Catheter Harm

Increased Length of Stay

Patient dignity*

Trauma

Immobility

Pressure ulcers

Venous thromboembolism?

Falls?

*Saint S, Ann Intern Med 2002; 137: 125-7
Epidemiology

- HAIs result in 99,000 deaths & $30 billion annually

- CAUTI most frequent HAI
  - 35% of HAI
  - $565 million in costs
  - > 8,000 deaths per year

- Urinary catheters are frequently used in the hospital setting.

- The presence of the indwelling urinary catheter increases the risk of urinary tract infections.
## NHSN Surveillance Definitions for SUTI, January 2013

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Urinary Tract Infection (UTI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Symptomatic UTI (SUTI)</strong></td>
<td>Must meet at least 1 of the following criteria:</td>
</tr>
<tr>
<td>1a</td>
<td>Patient had an indwelling urinary catheter in place for &gt;2 calendar days, with day of device placement being Day 1, and catheter was in place when all elements of this criterion were first present together.</td>
</tr>
<tr>
<td></td>
<td>and</td>
</tr>
<tr>
<td></td>
<td>at least 1 of the following signs or symptoms: fever (&gt;38°C); suprapubic tenderness*; costovertebral angle pain or tenderness*</td>
</tr>
<tr>
<td></td>
<td>and</td>
</tr>
<tr>
<td></td>
<td>a positive urine culture of ≥10⁵ colony-forming units (CFU)/ml with no more than 2 species of microorganisms. Elements of the criterion must occur within a timeframe that does not exceed a gap of 1 calendar day (see Comments section below).</td>
</tr>
<tr>
<td></td>
<td>OR—______________________________</td>
</tr>
<tr>
<td></td>
<td>Patient had an indwelling urinary catheter in place for &gt;2 calendar days and had it removed the day of or the day before all elements of this criterion were first present together</td>
</tr>
<tr>
<td></td>
<td>and</td>
</tr>
<tr>
<td></td>
<td>at least 1 of the following signs or symptoms: fever (&gt;38°C); urgency*; frequency*; dysuria*; suprapubic tenderness*; costovertebral angle pain or tenderness*</td>
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<td>and</td>
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<td>*With no other recognized cause</td>
</tr>
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</table>
"Lifecycle" of the Urinary Catheter

1. Catheter Placement
2. Catheter Care
3. Catheter Removal
4. Catheter Replacement

Reducing Risk of CAUTI

Limit catheter use to indications (Avoid placing the catheter unless appropriately indicated)

Limit catheter use to indications (promptly remove those that are no longer necessary)

Appropriate Care of the Catheter

Proper Insertion Technique

Reduce urinary catheter days leading to a reduction in days at risk for CAUTI

Reduce risk of introducing organisms to the bladder leading to a reduction of risk of CAUTI when catheter in place
<table>
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<th>Appropriate Indications</th>
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<tr>
<td>Patient has acute urinary retention or obstruction</td>
</tr>
<tr>
<td>Need for accurate measurements of urinary output in <em>critically ill</em> patients.</td>
</tr>
<tr>
<td>Perioperative use for selected procedures:</td>
</tr>
<tr>
<td>• urologic surgery or other surgery on contiguous structures of genitourinary tract,</td>
</tr>
<tr>
<td>• anticipated prolonged surgery duration (removed in post-anesthesia unit),</td>
</tr>
<tr>
<td>• anticipated to receive large-volume infusions or diuretics in surgery,</td>
</tr>
<tr>
<td>• operative patients with urinary incontinence,</td>
</tr>
<tr>
<td>• need to intraoperative monitoring of urinary output.</td>
</tr>
<tr>
<td>To assist in healing of open sacral or perineal wounds in incontinent patients.</td>
</tr>
<tr>
<td>Requires prolonged immobilization (e.g., potentially unstable thoracic or lumbar spine)</td>
</tr>
<tr>
<td>To improve comfort for end of life care if needed.</td>
</tr>
</tbody>
</table>

Inappropriate Indications for Indwelling Urinary Catheter Use

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<th>Inappropriate Indications</th>
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<td>As a substitute for nursing care of the patient or resident with incontinence</td>
</tr>
<tr>
<td>As a means of obtaining urine for culture or other diagnostic tests when the patient can voluntarily void</td>
</tr>
<tr>
<td>For prolonged postoperative duration without appropriate indications (e.g., structural repair of urethra or contiguous structures, prolonged effect of epidural anaesthesia, etc.)</td>
</tr>
<tr>
<td>Routinely for patients receiving epidural anesthesia/analgesia.</td>
</tr>
</tbody>
</table>

Urinary Catheter Removal

- Study by Jain (1995) examined number of unjustified or inappropriately placed urinary catheters
  - Time of insertion, 21%
  - Several days later, 47%
  - “Urinary Incontinence” was most common reason cited

Jain. Arch Int Med 1995
Urinary Catheter Removal

- Change in patient status
  - hemodynamic stability, post-op
- Change in patient location
  - ICU, PACU/OR, ED to floor
- Change in shift
  - Daily huddle or rounds
- Patient request
Urinary Catheter Insertion

• Ensure that only properly trained persons insert catheters.
  – Competencies for urinary catheter placement?

• Insert using aseptic technique
  – Goal is to avoid contamination of the sterile catheter during the insertion process

• Don’t make it a one-person job
## Urinary Catheter Insertion Checklist

<table>
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<tr>
<th>Components of checklist</th>
<th>Compliant</th>
</tr>
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<tbody>
<tr>
<td>Hand hygiene before and after procedure</td>
<td>Yes</td>
</tr>
<tr>
<td>Sterile gloves, drapes, sponges, aseptic sterile solution for cleaning, and single use packet lubricant used</td>
<td>Yes, with correction</td>
</tr>
<tr>
<td>Aseptic insertion technique (no contamination during placement)</td>
<td></td>
</tr>
<tr>
<td>Proper securement of urinary catheter post-procedure</td>
<td></td>
</tr>
<tr>
<td>Closed drainage system and bag below patient post-procedure</td>
<td></td>
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</table>
Make the Steps for Insertion Easier
Urinary Catheter Maintenance

- Use securement device
- Maintain a closed drainage system
Maintain Unobstructed Flow

- Free of loops or kinks
- Keep it simple & safe
Urinary Catheter Maintenance

- Use routine hygiene
  - do not clean the peri-urethral area with antiseptics
- Keep collection bag below the bladder
- Empty the bag regularly
Objectives

- Review technical aspects of CAUTI prevention
- **Understand the CUSP framework for culture change**
- Apply culture change principles to case scenarios
Project Overview

**Project Goals** for CAUTI are to:

1. reduce mean CAUTI rates in participating clinical units by 25 percent; and

2. improve safety culture as evidenced by improved teamwork and communication by employing CUSP methodology.
Organizational Culture

...the shared set of social values and beliefs, both explicit and implicit, that guides actions and decisions within the organization.
Foley Catheter

- **size**: In French scale and millimeters
- **balloon**: Volume of fluid recommended to inflate balloon marked
- **bladder opening**: 10 ml
- **urine drainage port**: 8F / 8.0 mm
- **balloon port**: 16F / 8.0 mm
CUSP Culture

CUSP

Science of Safety
  Standardize
  Checks for processes
  Learn from defects

Teamwork
  Integration

Communication
  Process
  Structure
CAUTI Culture

CAUTI

Indications
  Orders
  HICPAC

Insertion and Maintenance
  Technique
  Competency

Removal
  Process
  Structure
For anything to change, someone has to start acting differently.
Can you get people to start behaving in a new way?

- educate
- engage
- execute and evaluate
- direct the rider
- motivate the elephant
- shape the path
Can you get people to start behaving in a new way?

What looks like resistance is often a lack of clarity.
Can you get people to start behaving in a new way?

What looks like laziness is often exhaustion.
Can you get people to start behaving in a new way?

What looks like a people problem is often a situation problem.
Can you get people to start behaving in a new way?

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# CUSP Culture Change

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<th>Team leaders</th>
<th>Staff</th>
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<td>Engage</td>
<td><em>How does this make the world a better place?</em></td>
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<td>Educate</td>
<td><em>What do we need to do?</em></td>
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| Execute | *What keeps me from doing it?*  
*How can we do it with my resources and culture?* |
| Evaluate | *How do we know we improved safety?* |
Challenging ...So Many Solutions?
What is HSOPS?
Hospital Survey on Patient Safety Culture

- Overall perceptions of safety
- Frequency of events reported
- Number of events reported
- Overall patient safety grade
- Staffing
- Hospital management support for patient safety
- Teamwork across hospital units
- Hospital handoffs and transitions
- Supervisor/manager expectations & actions promoting safety
- Organizational learning – continuous improvement
- Teamwork within units
- Communication openness
- Feedback and communication about error
- Non-punitive response to error

References:
AHRQ (Agency of Healthcare Research and Quality)
http://www.ahrq.gov/qual/patientsafetyculture/hospsurvindex.htm#Resources
MHA Keystone Center for Patient Safety & Quality
Evaluate

On the CUSP- Stop CAUTI Timeline

Learning Session #1 (March 17-31)

Learning Session #2 (September 2014)

Learning Session #3 (June 2015)

15 Month Intervention

State Lead Assessment

Onboarding Calls (April 8 – June 18)

Readiness Assessment

Data-Baseline

Data-Imp

Data-Sustainability

Monthly Coaching to Identified Teams - MHA Led

Monthly Coaching to Identified Teams - State Led

Site Visits

TCT - Q3

TCT - Q4

TCT - Q1

TCT - Q2

Phase 1: Startup

Phase 2: Planning

Phase 3: Execution

Phase 4: Sustainability
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## Sample Costs

<table>
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<tr>
<th>Daily Census</th>
<th>ALOS</th>
<th>Yearly Admits</th>
<th>Foley Rate</th>
<th>Annual Savings</th>
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<tbody>
<tr>
<td>800</td>
<td>4</td>
<td>73,000</td>
<td>25%</td>
<td>$1.1M</td>
</tr>
<tr>
<td>400</td>
<td>4</td>
<td>36,500</td>
<td>25%</td>
<td>$552k</td>
</tr>
<tr>
<td>200</td>
<td>4</td>
<td>18,250</td>
<td>25%</td>
<td>$276k</td>
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[www.catheterout.org](http://www.catheterout.org)
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Alternatives to Urinary Catheters
Execute

• Insertion
  – Mandatory order with indication
  – Urinary retention protocol

• Insertion and maintenance technique
  – Competency evaluation

• Removal
  – Nurse driven protocol
• ...the shared set of social values and beliefs, both explicit and implicit, that guides actions and decisions within the organization
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Case Scenarios
Case Scenario #1

• Three months into the initiative you find that >50% of the seals are broken in ICU patients with urinary catheters.
• You investigate and find that urinary catheters placed in the ED do not have urimeters.
Case Scenario #1

• What are the possible reasons for a lack of urimeters in urinary catheters placed in the ED?
• What are possible solutions?
Case Scenario #2

• Ten months into the initiative, you hear that one specific physician is overriding the urinary catheter placement order set by listing the reason as “other” and ordering foley catheters for I&O monitoring in non-critically ill patients.
Case Scenario #2

• You interview the physician who says it is very important to have good I’s and O’s.
• He also says he doesn’t have a problem with CAUTI.
Case Scenario #2

• What is preventing this physician from changing his practice?
• How would you facilitate a change in this physician’s practice with regards to urinary catheters?
Thank You!