Zero CAUTIs: Applying Evidence and Going Beyond Guidelines to Prevent Harm

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Zero CAUTIs: Applying Evidence and Going Beyond Guidelines to Prevent Harm

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Disclosures

- Hill-Rom Speaker Bureau & Consultant
- Eloquest Healthcare Speaker Bureau & Consultant
- Sage Products Speaker Bureau & Consultant

- Will be addressing an off label use of a 2% CHG pre-op prep cloth
Session Objectives

• Describe the forces within the current healthcare environment that are targeting zero for device related infections.
• Identify and detail the evidence-based practices around preventing CAUTI’s.
• Discuss possible barriers to practice changes and realistic solutions to assist the team in the implementation process.
“It may seem a strange principle to enunciate as the very first requirement in a Hospital that it should do the sick no harm.”

Florence Nightingale

Advocacy = Safety
PROTECT THE PATIENT FROM BAD THINGS HAPPENING ON YOUR WATCH

Implement Interventional Patient Hygiene
Interventional Patient Hygiene

- Hygiene…the science and practice of the establishment and maintenance of health
- Interventional Patient Hygiene….nursing action plan directly focused on fortifying the patients host defense through proactive use of evidence based hygiene care strategies

Hand Hygiene

Comprehensive Oral Care Plan

Incontinence Associated Dermatitis Prevention Program

Catheter Care

Bathing & Assessment

Pressure Ulcer Prevention
INTERVENTIONAL PATIENT HYGIENE (IPH)

VAP/HAP

Oral Care/Mobility

HAND

Patient

HYGIENE

Catheter Care

Skin Care/Bathing/Mobility

CA-UTI

CA-BS

SSI

Falls

HASI

Factors Impacting the ability to Achieve Quality Nursing Outcomes at the Point of Care

Building Resiliency Into Interventions

Forcing Functions and Constraints
Automation and Computerization
Standardization and Protocols
Checklist and Independent Check Systems
Rules and Policies
Education and Information
Vague Warning – “Be More Careful!”

Strongest
STRENGTH OF INTERVENTION
Weakest
## Why HAI's?
Protecting Patients From Harm

<table>
<thead>
<tr>
<th>Estimates: 183 Hospitals in 10 States</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAI:</td>
</tr>
<tr>
<td>HAI-related deaths:</td>
</tr>
<tr>
<td>Hospitalized patients develop infection:</td>
</tr>
<tr>
<td>Death due to sepsis/septic shock:</td>
</tr>
<tr>
<td>Money spent:</td>
</tr>
<tr>
<td>Increase risk of readmission:</td>
</tr>
</tbody>
</table>

HAI Progress Report

• 50% decrease in CLABSI between 2008 and 2014
• No change in overall CAUTI between 2009 and 2014
• Progress in non-ICU settings between 2009 and 2014, in all settings between 2013 and 2014, and even more progress in all settings toward the end of 2014
• 13% reduction in MRSA bactemia’s
• 17% decrease in SSI related to the 10 select procedures tracked in previous reports. Between 2008 and 2014:
  – 17% decrease in abdominal hysterectomy SSI
  – 2% decrease in colon surgery SSI

Economic Burden of HAIs: Build the Business Case

- Generated point estimates for attributable cost & LOS
- 5 Major Infections = 9.8 billion
  - SSI, CLABSI, VAP/VAE, CAUTI, C-Diff
- SSI (33.7%)
- VAP (31.6%)
- CLABSI (18.9%)
- C-Diff (15.4%)
- CAUTI (<1%)

<table>
<thead>
<tr>
<th>Per Case Basis</th>
<th>SSI</th>
<th>CLABSI</th>
<th>VAP</th>
<th>CAUTI</th>
<th>C-DIFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSI</td>
<td>$20,785</td>
<td>$45,814</td>
<td>$40,144</td>
<td>$896</td>
<td>$11,285</td>
</tr>
</tbody>
</table>

50% HAIs Preventable

CAUTI Cost Calculator
www.catheterout.org

Preventing CAUTIs Through Evidence Based Care Practices
The Why

- Urinary tract infection (UTI) are one of the most common hospital-acquired infections
- Along with other device associated infections (CLABSI and VAP) account for 25% of all hospital acquired infections
- 70-80% of CAUTI are due to urinary catheters
- 12-16% of inpatients are catheterized
- Leads to increased morbidity and costs ($896)
- Medicare no longer reimburses U.S. hospitals for the additional costs of certain infections
- CLA-BSI & CAUTI are 65% of the clinical conditions for VBP
- CAUTI prevention is part of the 2012 National Patient Safety Goal

# CUSP & CAUTI Interventions

## Adaptive /Cultural

<table>
<thead>
<tr>
<th>CUSP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Educate on the Science of Safety</td>
</tr>
<tr>
<td>2. Identify Defects (Staff Safety Assessment)</td>
</tr>
<tr>
<td>3. Senior Executive Partnership</td>
</tr>
<tr>
<td>4. Learn from Defects</td>
</tr>
<tr>
<td>5. Implement Teamwork &amp; Communication Tools</td>
</tr>
</tbody>
</table>

## Technical

<table>
<thead>
<tr>
<th>CA-UTI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Insertion</td>
</tr>
<tr>
<td>Limiting use</td>
</tr>
<tr>
<td>Using aseptic technique for site prep, equip &amp; supplies</td>
</tr>
<tr>
<td>2. Maintenance</td>
</tr>
<tr>
<td>• Securing the catheter for unobstructed flow</td>
</tr>
<tr>
<td>• Maintaining the sterility of the urine collection system</td>
</tr>
<tr>
<td>• Replacing the urine collection system when required</td>
</tr>
<tr>
<td>• Collecting urine samples</td>
</tr>
</tbody>
</table>
## Mean CAUTI Rates

<table>
<thead>
<tr>
<th>Unit</th>
<th>2009 NHSN S-CAUTI Rate (per 1,000 catheter days)</th>
<th>2010 NHSN S-CAUTI Rate (per 1,000 catheter days)</th>
<th>2012 NHSN CAUTI Rate (per 1,000 catheter days)</th>
<th>2013 NHSN CAUTI Rate (per 1,000 catheter days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICU (med-surg, major teaching)</td>
<td>2.3</td>
<td>2.2</td>
<td>2.4</td>
<td>2.7</td>
</tr>
<tr>
<td>ICU (med-surg, &gt;15 beds)</td>
<td>1.2</td>
<td>1.3</td>
<td>1.6</td>
<td>1.7</td>
</tr>
<tr>
<td>General wards (med-surg)</td>
<td>1.6</td>
<td>1.5</td>
<td>1.4</td>
<td>1.3</td>
</tr>
</tbody>
</table>

Targeted Assessment for Prevention (TAP) Strategy

Target → Assess → Prevent

- Target facilities/units using TAP Report function available in NHSN
- Assess gaps in infection prevention in targeted facilities/units using Facility Assessment Tools
- Prevent infections by implementing interventions to address the gaps using Implementation Guidance

http://www.cdc.gov/hai/prevent/tap.html
The Five "W"s of the Targeted Assessment for Prevention (TAP) Strategy

WHAT is the TAP strategy?
The Targeted Assessment for Prevention (TAP) strategy is a method developed by the Centers for Disease Control and Prevention (CDC) to use data for action to prevent healthcare-associated infections (HAIs). The TAP strategy targets healthcare facilities and specific units within facilities with a disproportionate burden of HAIs so that gaps in infection prevention in the targeted locations can be addressed. The TAP report uses a metric called the cumulative attributable difference (CAD). The CAD is the number of infections that must be prevented to achieve a HAI reduction goal and is calculated by subtracting a numerical prevention target from an observed number of HAIs. The TAP report allows for the ranking of facilities, or locations within individual facilities, by the CAD to prioritize prevention efforts where they will have their greatest impact.
## GAP Analysis

**Facility Name or ID:**  

**Facility Type:**  

**Other, Please Specify:**

**Unit Name or ID (if unit-specific assessment):**  

**Unit Type:**

**Title or role of person completing tool:**

**Please Specify:**

**Years of experience at facility:**  

### I. General Infrastructure, Capacity, and Processes

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Comments (and/or “As Evidenced By”)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does your facility’s senior leadership actively promote CAUTI prevention activities?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Is unit-level leadership involved in CAUTI prevention activities?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Does your facility currently have a team/work group focusing on CAUTI prevention?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Does your facility have a staff person with dedicated time to coordinate CAUTI prevention activities?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Does your facility have a nurse champion for CAUTI prevention activities?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Does your facility have a physician champion for CAUTI prevention activities?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[http://www.cdc.gov/hai/prevent/tap.html](http://www.cdc.gov/hai/prevent/tap.html)
Isn’t this a patient safety issue, not just CAUTI?
Pathogenesis of CAUTI

- Source: colonic or perineal flora on hands of personnel
- Microbes enter the bladder via extraluminal {around the external surface} (proportion = 2/3) or intraluminal {inside the catheter} (1/3)
- Daily risk of bacteriuria with catheterization is 3% to 10%; by day 30 = 100%
Disrupting the Lifecycle of the Urinary Catheter

1. Preventing Unnecessary and Improper Placement
2. Maintaining Awareness & Proper Care of Catheters
3. Prompting Catheter Removal
4. Preventing Catheter Replacement

(Meddings. Clin Infect Dis 2011)
Before Placing an Indwelling Catheter, Please Consider if These Alternatives Would be Appropriate:

- *Bedside commode, urinal, or continence garments:* to manage incontinence.
- *Bladder scanner:* to assess and confirm urinary retention, prior to placing catheter to release urine.
- *Straight catheter:* for one-time, intermittent, or chronic voiding needs.
- *External catheter:* appropriate for cooperative men without urinary retention or obstruction.
CDC, SHEA, IDSA and NHS: Indications for Placement

- Perioperative use for selected surgical procedures
- Urine output in critically ill patients
- Management of acute urinary retention and urinary obstruction
- Assistance in pressure ulcer healing for incontinent patients
- At a patient request to improve comfort (SHEA) or for comfort during end of life care (CDC)


33.3% reduction in average foley usage from time periods Jan 2012-July 2012 and Aug 2012 - Feb 2013

23.9% decrease in CAUTI rates per 1000 catheter days from time period Jan 2012-July 2012 and Aug 2012-Feb 2013
### Ann Arbor Criteria for Appropriate Use

#### Appropriate indications

- **Acute urinary retention without bladder outlet obstruction**
  - Example: medication-related urinary retention

- **Acute urinary retention with bladder outlet obstruction due to noninfectious, nontraumatic diagnosis**
  - Example: exacerbation of benign prostatic hyperplasia

- Caution: consider urology consultation for catheter type and/or placement for conditions, such as acute prostatitis and urethral trauma

- **Chronic urinary retention with bladder outlet obstruction†**

- **Stage III or IV or unstable pressure ulcers or similarly severe wounds of other types that cannot be kept clear of urinary incontinence despite wound care and other urinary management strategies‡**

- **Urinary incontinence in patients for whom nurses find it difficult to provide skin care despite other urinary management strategies§ and available resources, such as lift teams and mechanical lift devices**

  - Examples: turning causes hemodynamic or respiratory instability, strict prolonged immobility (such as in unstable spine or pelvic fractures), strict temporary immobility after a procedure (such as after vascular catheterization), or excess weight (>300 lb) from severe edema or obesity

- **Hourly measurement of urine volume required to provide treatment**

  - Examples: management of hemodynamic instability, hourly titration of fluids, drips (e.g., vasopressors, inotropes), or life-supportive therapy

- **Daily (not hourly) measurement of urine volume that is required to provide treatment and cannot be assessed by other volume§ and urine collection strategies‖**

  - Examples: acute renal failure work-up, or acute IV or oral diuretic management, IV fluid management in respiratory or heart failure

- **Single 24-h urine sample for diagnostic test that cannot be obtained by other urine collection strategies‖**

- **Reduce acute, severe pain with movement when other urine management strategies are difficult‡**

  - Example: acute unrepaired fracture

- **Improvement in comfort when urine collection by catheter addresses patient and family goals in a dying patient**

- **Management of gross hematuria with blood clots in urine**

- **Clinical condition for which ISC or external catheter would be appropriate but placement by experienced nurse or physician was difficult or patient for whom bladder emptying was inadequate with nonindwelling strategies during this admission**

---

Core Recommendations

- Insert catheters only for appropriate indications (1B)
- Leave catheters in only as long as needed (1B)
- Ensure that only properly trained persons insert and maintain catheters (1B)
- Insert catheters using aseptic technique and sterile equipment (acute care settings) (1C)
- Consider use of alternatives (II)
- Maintain a close drainage system (1B)
- Secure the system (1B)
- Maintain unobstructed urine flow (1B)
- Key the collecting bag below the level of the bladder at all times (1B)

# Simplified Insertion Checklist for Urinary Catheter

<table>
<thead>
<tr>
<th>Components of Checklist</th>
<th>Compliant</th>
</tr>
</thead>
<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, after 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>
</tr>
</tbody>
</table>
Core Recommendations

- Insert catheters only for appropriate indications (1B)
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- Key the collecting bag below the level of the bladder at all times (1B)

Challenges with Current Appropriate Alternatives: External Male Catheters

1 out of every 200 men is born with what’s medically known as ‘micro-penis'
Buried Penis
Condom Catheter
Common Problems

- Most common problems are:
  - Skin irritation and maceration
  - Difficult to keep the condom from falling off/retraction of the penis or decrease size
  - Ischemia and penile obstruction/tightness
  - Adherence: requires to secure on the shaft & adhesive mechanisms are challenging

A New Male External Catheter

- Hydrocolloid alternative
  - Hydrocolloid wafer shaped adheres to the glans penis
  - Acts as a skin protectant
  - Protects the glans penis from excessive moisture
  - The seal is reinforces by a second hydrocolloid strip
  - Can be used with circumcised and uncircumcised males
  - Clean glans penis with a remover & alcohol
Before & After QI Project

- 60-day comparison
- Use of novel EMC device vs. indwelling catheter
- Inclusion criteria:
  - No restraints
  - No BPH
  - No neurogenic bladder
  - Cooperative
  - Hospitalized ≥ 2 weeks
- Monitored wear time, evaluated skin

Foley utilization rate, before, during & after

<table>
<thead>
<tr>
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<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>FUR</td>
<td>38%</td>
<td>42%</td>
<td>25%</td>
<td>29%</td>
<td>34%</td>
<td>43%</td>
</tr>
<tr>
<td>Foley catheter days</td>
<td>556</td>
<td>629</td>
<td>363</td>
<td>429</td>
<td>499</td>
<td>552</td>
</tr>
<tr>
<td>Patient days</td>
<td>1445</td>
<td>1507</td>
<td>1441</td>
<td>1468</td>
<td>1463</td>
<td>1273</td>
</tr>
</tbody>
</table>

Average Wear Time = 24hrs
External Collection Device: Evidence Based Review and Expert Panel Deliberations


Indications for ECD Use in Men

- Patients requiring ECD when indwelling catheter is not appropriate
- Long-term care patients who experience urinary incontinence without retention
- Long-term urinary containment for selected men with neurogenic bladder dysfunction and incontinence without sensory awareness due to paralyzing spinal disorders such as spinal cord injury, transverse myelitis, or progressive multiple sclerosis
- Patients with delirium tremens
- Patients on powerful diuretic medications such as furosemide who require accurate documentation of fluid intake and urinary output (vs strict intake and output)
- Patients requiring procedural drainage such as after outpatient surgeries such as discectomy, arthroscopic surgeries
- Patients on observation for 6- to 8-h period postprocedure when deemed appropriate (observation for urinary retention)

Recommendations for Improving Use of ECD as a Component of an Intervention Bundle for Prevention of CAUTI

1. Incorporating ECDs into discussions of CAUTI prevention, emphasizing the need to avoid unnecessary Foley catheters while maintaining the ability to capture accurate intake and output.
2. Ensuring adequate buy-in of clinical team members when introducing an ECD; addressing key stakeholders and team at correct time points; engaging medical director and nursing director, WOC nurses as stakeholders, nurse educators, and CAUTI prevention champions.
3. Identifying champions/superusers as part of the quality improvement initiative.
4. Setting appropriate expectations regarding the learning curve for application of ECDs by nurses and presentation of the device as an evidence-based solution for CAUTI prevention; presenting the learning curve associated with ECDs as investment, which is part of the solution vs part of the problem.
5. Setting appropriate expectations regarding duration of ECD use and potential changes on a case-by-case basis; emphasizing evidence-based nursing.
6. Setting appropriate expectations for ECDs in unique patient populations in which application may be more complex (e.g., obese/uncircumcised).
7. Develop a customizable nurse-driven protocol for ECD usage in clinically appropriate situations.
8. Develop tools to demonstrate value of ECDs (cost avoidance).
9. Develop tools to ensure education/re-education on an every 6-mo basis (potentially annual basis) focused on appropriate ECD application to avoid rare complications.
10. Collect patient survey information in ambulatory patients (satisfaction, comfort, health-related quality of life) to measure patient satisfaction.
Core Recommendations

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- Leave catheters in only as long as needed (1B)
- Ensure that only properly trained persons insert and maintain catheters (1B)
- Insert catheters using aseptic technique and sterile equipment (acute care settings) (1C)
- Consider use of alternatives (II)
- Maintain a close drainage system (1B)
- Secure the system (1B)
- Maintain unobstructed urine flow (1B)
- Key the collecting bag below the level of the bladder at all times (1B)

Securement Devices
Core Recommendations

- Insert catheters only for appropriate indications (1B)
- Leave catheters in only as long as needed (1B)
- Ensure that only properly trained persons insert and maintain catheters (1B)
- Insert catheters using aseptic technique and sterile equipment (acute care settings) (1C)
- Consider use of alternatives (II)
- Maintain a close drainage system (1B)
- Secure the system (1B)
- Maintain unobstructed urine flow (1B)
- Key the collecting bag below the level of the bladder at all times (1B)
- Unresolved-
  - Antiseptic or sterile saline for meatal cleaning before insertion

How We Bathe May Impact CA-UTI’s

Why are there so many bugs in here?
Bath Basins
Potential Source of Infection

Large multi-center study evaluates presence of multi-drug resistant organisms

Total hospitals: 88
Total basins: 1103

- Contaminated: 62%
  - 686 basins/88 Hospital

- Gram negative bacilli: 45%
  - 495 basins/86 hospitals

- Colonized w/ VRE: 35%
  - 385 basins/80 hospitals

- MRSA: 3%
  - 36 basins/28 hospitals

Method of Basin Contamination

• Skin flora

• Multiple-use basins
  – Incontinence cleansing
  – Emesis
  – Product storage

• Bacterial biofilm from tap water

Waterborne Infection

Hospital Tap Water
- Bacterial biofilm
- Most overlooked source for pathogens
- 29 studies demonstrate an association with HAIs and outbreaks
- Transmission:
  - Drinking
  - Bathing
  - Rinsing items
  - Contaminated environmental surfaces
- Immunocompromised patients at greatest risk

Reducing UTI’s Through Basinless Bathing

CA-UTI 7.5 per 1000 catheter days to 4.42 per 1000 catheter days, then to .46 per 1000 catheter days

Stone S, APIC 2010
Impact on UTI with Basin Bathing

UTI Rate - Removal of Prepackaged Bath Product QTR 3 FY05

The Effect of Bathing with Basin and Water and UTI Rate, LOS and Costs

<table>
<thead>
<tr>
<th>Unit Census: 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phases</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>I- Pre-Packaged Bathing Washcloths (9 months)</td>
</tr>
<tr>
<td>II- Basin/Water (9 months)</td>
</tr>
<tr>
<td>III- Additional Product Cost, UTI, LOS, COSTS</td>
</tr>
</tbody>
</table>

\(^1\)Based on 3 packages of 8 towels each  
\(^2\)Based on product cost of towels, soap, and basin  
\(^3\)Difference between phase I pre-package/phase II basin water  
Impact of 2% CHG Cloth Bath*: Follow Up Analysis On Universal Decolonization on Bacteriuria & Candiduria

3 protocols tested:

a) Swab for MRSA on admission to ICU
   - Isolate if positive
b) Swab for MRSA on admission to ICU
   - Isolate if positive
   - Nasal mucopiricin x 5 days
   - 2% CHG cloth* bathing for entire ICU stay
c) No swab
   - Nasal mucopiricin x 5 days
   - 2% CHG cloth bath* for entire ICU stay

*2% CHG cloth for bathing is considered an off-label use of the product

**CHG Bathing Process**

2% CHG Bathing Protocol

- 6 cloths used in the following order:
  - neck, shoulders, and chest (clean neck well, even if it is not visibly soiled).
  - arms, hands, web spaces, and axilla.
  - abdomen, groin/perineum.
  - right leg, right foot, and web spaces.
  - left leg, left foot, and web spaces.
  - back of neck, back, and buttocks.
- Additional cloths should be used for larger patients.

Cleansing of Perineum/vagina

- The Perineum and vagina are a critical area for cleaning and decolonization.
- CHG is safe to use on the perineum and external mucosa of vagina.
- Do not use CHG inside of the vagina.
- Important to use 2% CHG cloth after incontinence care.

Key Points

- Not to be used above the jawline.
- To be firmly massaged into skin with CHG cloths.
- Do not rinse, wipe off, or dry with another cloth or towel. Let skin air dry for 2 minutes.
- Tubing from foleys, drains, G-tubes/J-tubes, rectal tubes and chest tubes should be cleaned within 6 inches of patient.
- Use only CHG compatible products with CHG wipes.
- Do not save, reheat or reuse bags.

Monitor for compliance by assessing amount of CHG on the skin (Assay).

Prevent sub-optimal concentrations


*2% CHG cloth for bathing is consider an off label use of the product.*

Cleansing of Patients with Indwelling Catheter

- Indwelling catheter care should occur with the daily bath (basinless bathing)*, as a separate procedure using clean technique
- There is no evidence to support 2x a day indwelling catheter care
- If a large liquid stool occurs, bathe the patient with basin less bathing
- Use separate cloths to clean front to back in the perineal area and 6 inches of the catheter**
- Apply barrier cloth to area of skin requiring protection

“Even if you are on the right track, you will get run over if you just sit there.”

Will Rogers
Additional Recommendations: SHEA Compendium Update 2014

- Replace the catheter and the collecting system using aseptic technique when breaks in aseptic technique, disconnection, or leakage occur (quality of evidence: III).

- For examination of fresh urine, collect a small sample by aspirating urine from the needleless sampling port with a sterile syringe/cannula adaptor after cleansing the port with disinfectant (quality of evidence: III).

Additional Recommendations: SHEA Compendium Update 2014

• Develop a protocol for management of post-op urinary retention
  – Bladder scanner
  – Intermittent catheterization
• Do not routinely use antimicrobial/antiseptic impregnated catheters
• Do not screen for asymptomatic bacteriuria in catheterized patients

How did your first Foley catheter insertion go?
Terrible!! I got so nervous that I put it in the wrong "opening."

Don't be so hard on yourself. It's difficult to find the meatus on an old lady.

I know... but it wasn't an old lady, it was a man!!

Oh...
THINGS TO CONSIDER
Cost-Benefit Ratio

CA-UTI vs. IAD & Pressure Ulcer
Moisture Injury: Incontinence Associated Dermatitis

- Inflammatory response to the injury of the water-protein-lipid matrix of the skin
  - Caused from prolonged exposure to urinary and fecal incontinence
- Top down injury
- Physical signs on the perineum & buttocks
  - Erythema, swelling, oozing, vesiculation, crusting and scaling

Brown DS & Sears M, OWM 1993;39:2-26
IAD: Multisite Epidemiological Study

- 5342 patients in 424 facilities in Acute & Long Term Care in US
- Prevalence study
  - To measure the prevalence of IAD in the acute care setting,
  - To describe clinical characteristics of IAD, and
  - To analyze the relationship between IAD and prevalence of sacral/coccygeal pressure ulcers
- Results: 1716 patients incontinent (44%)
  - 57% both FI and UI, 27% FI, 15% UI
  - 24% IAD rate
    - 60% mild
    - 27% moderate
    - 5% severe
  - 73% was facility acquired
- ICU a 36% rate
- IAD 5x more likely to develop a HAPU

Giuliana K. Presented at the CAACN September 25-27th Winnipeg, Manitoba, CA
Gray M. Presenting a Wound Care Conference, 2016, New York City, NY
## Hospital Survey on Incontinence & Related Skin Injury

### Instructions:
This survey is limited to inpatient care areas and excludes the following: Labor & Delivery, Obstetrics, Nursery, Emergency Department & Operating Room. 

**Note:** Completes ONLY ONE form for each unit.

### Date of Survey: ____/____/____

### Unit:

Please check the unit specialty that best describes the care provided.

- **Bum**: LTAC, Psychiatric - Geriatric
- **Cardiac Surgery**: ICU, Med/Surg
- **CCU - General**: ICU, Intensive Care Unit
- **CDU - Interventional**: ICU, Medical
- **CDU - Interventional**: ICU, Cardiovascular
- **CCU - General**: ICU, General
- **ICU - Medical**: ICU, Neuro
- **ICU - Neonatal**: ICU, Neonatal
- **ICU - Pediatric**: ICU, Pediatric
- **ICU - Surgical**: ICU, Surgical

### Patient Census of Unit at Time of Survey: ____

### Incontinence Collection Products:

<table>
<thead>
<tr>
<th>Product Type</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pads/Chux</td>
<td>Pad</td>
</tr>
<tr>
<td>Reusable Cloth</td>
<td>Reusable cloth</td>
</tr>
<tr>
<td>Disposable Plastic-backed</td>
<td>Disposable plastic-backed</td>
</tr>
<tr>
<td>Disposable Air flow-backed</td>
<td>Disposable Air flow-backed</td>
</tr>
</tbody>
</table>

### Incontinence Cleanup & Skin Protection:

**Cleansing:**
- Barrier Protection (Tubes, Bottles or Sprays):
  - Must contain one of the "active ingredients" listed below:
    - Petroleum
    - Zinc Oxide
    - Dimethicone
    - Liquid Film Barrier
    - Other

### Moisturizers:
- All-in-one products:
  - Barrier cloth with skin protectant
  - Barrier cloth with skin protectant

### Section 2 - Complete only for incontinent patients

**Contributing Factors & Co-Morbidities**
- Check all that apply

<table>
<thead>
<tr>
<th>Condition</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low albumin</td>
<td>Albumin levels less than 30 g/L</td>
</tr>
<tr>
<td>Dialysis dependency</td>
<td>Dependent on dialysis for cleaning fluids</td>
</tr>
<tr>
<td>Immunosuppression</td>
<td>Immunosuppressed patients</td>
</tr>
</tbody>
</table>

### Section 3 - Complete only for incontinent patients with rashiness of buttock or perineal skin

**Perineal Skin Injury**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Intact</th>
<th>Flaccid or open wounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laceration</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Stab wound</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Pressure Ulcer (over or under buttock)</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

**Containment Products:**
- Barrier Cream
- Disposable plastic-backed
- Non-adhesive

---

Reminder Systems May Reduce Inpatient Catheter Use and Associated UTIs

Reminder
56% reduction

Stop Order
41% reduction

Nurse Driven Protocol

- Assessment of criteria for insertion
- Examine alternatives to indwelling catheters
  - External condom catheters for male patients without urinary retention or bladder outlet obstruction*
  - Intermittent catheterization several times per day (post-op)
- Use of the bedside bladder ultrasound to assess urinary retention (reduce rates by 30-50%)
  - If minimal or no urine found in the bladder alternative strategies should be considered prior to catheterization
- Prevalence evaluation to determine number of catheters versus the number of catheters that met criteria

*Saint S, et al. J am Geriatr Sco. 2006;54(7)1055-1061
Nurse Directed Catheter Removal

- 300 bed community teaching hospital
- Implementation of a nurse directed urinary catheter removal protocol
  - Protocol linked to physician catheter order
  - Physician documentation of catheter insertion criteria & device specific charting in progress notes
  - Bi-weekly unit specific feedback
- Results: 50% ↓ in catheter use & 70% ↓ in CAUTI

Parry MF, et al. AM J Of Infect Control, 2013;41:1178-81
Removal of No-Longer Indicated Catheters

• Nurse-driven removal of no longer needed catheters
  – Pilot study: 45% reduction in unnecessary catheter utilization (Fakih et al, Infect Control Hosp Epidemiol 2008; 29: 815-9)

• Most of the units involved were non-intensive care
Tools Used with Intervention

- Lecture for nurses
- Pocket cards, posters

Tools Used with Intervention

- Lecture for nurses
- Pocket cards, posters
Stop catheter-associated urinary tract infections (CAUTI) in critically ill patients.

1. RAISE AWARENESS & UNDERSTAND THE RISKS.

Possible misconceptions:
- "It’s just a Foley, so what’s the big deal?"
- "All immobile ICU patients need Foley catheters."
- "Incontinent patients need a urinary catheter to prevent hospital-acquired pressure ulcers."
- "CAUTI prevention isn’t my responsibility."
- "My team needs precise input and output data for our patients throughout their ICU stay."

What the science & evidence show:
- CAUTI is a serious patient safety issue.
- Complications associated with CAUTI result in increased length of stay, patient discomfort, excess healthcare costs, and even death.
- It’s about more than just the Foley: Unnecessary catheterization puts patients at risk for urinary tract infections and may cause other complications such as the urinary tract infection.
- In some cases, unnecessary catheterization leads to increased risk of infection.
- Not all critically ill, immobile patients need Foley catheters.
- All team members—from frontline staff to leaders—have a responsibility to help prevent CAUTI.
- CAUTI prevention is also tied to the "bottom line" with potential financial implications associated with CMS and Healthcare Acquired Conditions, Value Based Purchasing, and population health.
- CAUTI outcome measures are used to assess performance.

2. CONSIDER ALTERNATIVES TO USING AN INDWELLING CATHETER TO MEASURE URINE INTAKE AND OUTPUT.

- Daily weighings
- Condom catheter
- Female and male urinals
- Straight intermittent catheterization
- Patient commodes
- Absorbent briefs or under pads that can be weighed to obtain urine output

3. RETHINK THE "CULTURE OF CULTURING" URINE.

- Urine cultures may lead to C. difficile infection.
- Asymptomatic bacteruria + exposure to unnecessary antibiotics + possible C. difficile infection
- If a patient develops a new fever, ... SBP, C. It is a reachable target for a clinical assessment but not necessarily a laboratory or radiologic evaluation for infection.
- Don’t assume an ICU patient’s fever is due to a urinary tract infection.
- Other causes could include: respiratory tract infection, gastrointestinal infection, bloodstream infection, neurological pathology that may result in altered thermoregulation.

4. TACKLE CAUTI.

1. Pause and validate that the patient has an approved indication before catheter insertion.
2. Involve a second person during insertion to facilitate aseptic technique.
3. Evaluate continued need daily.
4. Empower nursing staff to discontinue catheter use as soon as possible.

Make a difference. Change the culture. Learn more about the On the CUSP: Stop CAUTI program.

Visit www.onthecusptopupai.org for more information, including frequently asked questions.

References:
Tier 1 Protocol: Use of Indwelling Urinary Catheter Kit

- Assess daily the necessity of the indwelling catheter
- Encourage use of alternatives to indwelling catheter
- Use standard indwelling urinary catheter kit with pre-sealed junction
- Ensure proper aseptic insertion technique
- Follow maintenance and removal template for care and removal of the catheter
- Measure CAUTI rates monthly

Monitor CAUTI rates closely. Proceed to Tier 2 if either of the following conditions are met over a period of 6 months:

1. **ICU** ≥ 9 CAUTIs/10,000 patient days
2. **Non-ICU, Acute Care** ≥ 3 CAUTIs/10,000 pt days & 2 CAUTIs/1,000 catheter days


- Assess and document competency of health care workers performing insertion
- Consider Root Cause Analysis or Focused Review of CAUTI or catheter use to identify improvement opportunities
- Measure monthly for 6 months; re-evaluate. If rate has dropped below indicated levels proceed back to Tier 1

Sources:
- HICPAC CDC Guidelines on CAUTI Prevention
- www.catheterout.org

(Department of Veterans Affairs, VISN 11)
Gap Analysis

- **Strong Action**
  - Standardize equipment
    - Urometer’s house wide
    - Type of alternatives

- **Intermediate Action**
  - Training/yearly competencies
  - EMR link order & nurse removal protocol
  - Included in structured handoff

Questions:
- Variation in routine hygiene & incontinence care
- Hand hygiene
- *Measuring pads
- Education of transport people
- **Culture process – catheter change/urine kept cool

Advocacy Starts with Us
How to Sustain Your Success

• After implementing the program, identify unit champions to promote the need to evaluate the appropriateness of urinary catheter use

• Incorporate the following questions during nursing rounds:
  – Does the patient have a urinary catheter?
  – What is the reason for use?

• Provide feedback on performance to nurse managers related to prevalence of utilization

• If no improvement in utilization is seen, evaluate appropriateness of utilization (indications vs. non-indications)

• Look closely at the emergency department and intensive care units. Both areas utilize a high number of urinary catheters

• The long term goal is for the patient care nurses to own the process of evaluation of urinary catheter need

• Continued Process Improvement
It is not enough to do your best, you have to know what to do and then do your best.
E Deming
Forbid yourself to be deterred by poor odds just because your mind has calculated that the opposition is too great. If it were easy, everyone would do it.
Questions?

- Please type your questions into the Question Box, located at the left hand side of your screen.
References

5. HICPAC Guidelines to Prevent Catheter Associated Urinary Tract Infections. CDC.gov/pdf/cauti/cautiguidelines2009
8. BT Conner, TJ Kelechi, LS Nemeth, M Mueller, BJ Edlund, SL Krein Exploring factors associated with nurses’ adoption of an evidence-based practice to reduce duration of catheterization Journal of Nursing Care Quality, October/December 2013, 28(4), pages 319-326
10. Fakih et al, Urinary catheters in the emergency department: Very elderly women are at high risk for unnecessary utilization Am J Infect Control 2010;38:683-8


14. MG Fakih, C George, B Edson, C Goeschel, S Saint Implementing a National Program to Reduce Catheter-Associated Urinary Tract Infection: A Quality Improvement Collaboration of State Hospital Associations, Academic Medical Centers, Professional Societies, and Governmental Agencies Infection Control and Hospital Epidemiology, October 2013, 34(10), pages 1048-1054
