Catheter-Associated Urinary Tract Infection (CA UTI) Prevention
Prevent catheter-associated urinary tract infections by implementing four recommended components of care.

Domain

Patient Care Processes:
Clinical processes that ensure delivery of high-quality care to individual patients

Aims

Safe:
Delivery of care in a manner that minimizes any risk of harm to a patient

<table>
<thead>
<tr>
<th>Process Attributes</th>
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<tbody>
<tr>
<td><strong>Cost to Implement</strong></td>
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<tr>
<td>The monetary resources required to implement this process</td>
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<td><strong>Minimal</strong>: Just the cost of the improvement effort itself</td>
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<td><strong>Time to Implement</strong></td>
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<td>The amount of time, from months to years, it will take on average to establish this process</td>
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<tr>
<td><strong>Fewer than 12 months</strong></td>
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<td><strong>Difficulty to Implement</strong></td>
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<td>The challenges of implementing this process</td>
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<tr>
<td><strong>Moderately Challenging</strong>: Either involves multiple units or disciplines OR requires a substantial shift in culture and/or operations, but not both of these</td>
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<tr>
<td><strong>Level of Evidence</strong></td>
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<tr>
<td>The degree to which the actions in this process are supported by research and experience; based on the Cochrane scale</td>
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<tr>
<td><strong>Strong Evidence</strong>: Level I or Level II — Studies published using randomized trials</td>
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Details

Elements

- **Avoid unnecessary urinary catheters**
  - Develop criteria for appropriate catheter insertion based on published guidelines and require verification prior to every insertion.
  - Ensure adequate supplies of alternatives to indwelling catheters (e.g., intermittent and external condom catheters) are available in high-insertion areas of the hospital such as the emergency department.
  - Check for presence of a urinary catheter at arrival to inpatient unit and verify necessity.
  - Assess suspected urinary retention with bladder ultrasound before using catheter.

- **Insert urinary catheters using aseptic technique**
  - Utilize appropriate hand hygiene
  - Insert catheters using aseptic technique
  - Use as small a catheter as possible that is consistent with proper drainage

- **Maintain urinary catheters based on recommended guidelines**
  - Maintain a sterile, continuously closed drainage system
  - Keep catheter properly secured
  - Keep collection bag below the level of the bladder at all times
  - Maintain unobstructed urine flow
  - Empty collection bag regularly, using a separate collecting container for each patient, and avoid allowing the draining spigot to touch the collecting container

- **Review urinary catheter necessity daily against criteria**
  - Include catheter necessity in the nursing assessments at every shift, with the requirement to contact physician if criteria are not met.
  - Develop nursing protocols that allow for removal of urinary catheters if criteria for necessity are not met and there are no contraindications for removal.
  - Implement automatic stop orders for 48 to 72 hours after insertion, with continuation only when indication is documented in renewal order.
  - Use reminders or computer alerts requiring physicians to document indication for continuation of catheter.

Outcomes

- **Harm**: Decreased harm to patient (e.g., Harms per 100 patient days, as measured by the IHI Global Trigger Tool)
- **Cost of Care**: Decreased cost per inpatient case

Service Lines and Critical Functions

- Hospital Medicine, Adult
- Infection Prevention and Management
- Intensive Care

Key Measures

- **Percent of Unnecessary Urinary Catheters**
  - Numerator: Number of new indwelling urinary catheters inserted without appropriate indication documented at time of insertion
  - Denominator: Number of records reviewed of patients with new indwelling urinary catheters

- **Unnecessary Urinary Catheter Days**
  - Numerator: Number of days an indwelling urinary catheter is in place with no documentation of indication for continued necessity or documented indication does not meet criteria
  - Denominator: Number of indwelling urinary catheter days from records reviewed x 1000

- **Urinary Catheter-Associated Symptomatic Urinary Tract Infection (UTI) Rate**
  - Numerator: Number of symptomatic CA-UTIs
  - Denominator: Number of indwelling urinary catheter days x 1000

Reasons and Implications

**Importance for Patients and Families**

Catheters should be stopped as soon as they are not needed. This often makes patients more comfortable, reduces their exposure to infection, and shortens their time in the hospital.
Requirement, Standards, Policies, and Guidelines

- Association for Professionals in Infection Control and Epidemiology, Inc. (APIC)
- Centers for Disease Control and Prevention (CDC) Guideline for Prevention & Control of Catheter-Associated Urinary Tract Infections (UTI)
- Centers for Medicare & Medicaid Services (CMS)
- Infectious Diseases Society of America and The Society for Healthcare Epidemiology of America (IDSA-SHEA)
- National Quality Forum (NQF)
  Safe Practice for Better Healthcare—2009 Update
  Safe Practice 11: Intensive Care Unit Care
  Safe Practice 25: Catheter-Associated Urinary Tract Infection Prevention

Financial Implications

- Expense reduction due to decreased cost of treatment (e.g., antibiotics, hospital days).
- Revenue reduction can occur due to lost reimbursements due to the Centers for Medicare & Medicaid Services policy of not allowing higher DRG when infection is acquired in the hospital.

Prerequisites

None for this process
On The Cusp: Stop HAI
On The Cusp: Stop HAI is a joint effort of the Health Research & Educational Trust (HRET), the Johns Hopkins University Quality and Safety Research Group (JHU QSRG), and the Michigan Health and Hospital Association Keystone Center for Patient Safety and Quality (MHA Keystone), through a contract with the Agency for Healthcare Research and Quality (AHRQ), to dramatically reduce hospital-acquired infections in all 50 states, the District of Columbia and Puerto Rico.

Society for Healthcare Epidemiology of America/Infectious Disease Society of America (SHEA/IDSA)
Compendium of Strategies to Prevent Healthcare-Associated Infections in Acute Care Hospitals

Centers for Disease Control and Prevention (CDC)
Healthcare Infection Control Practices Advisory Committee (HICPAC)

The Joint Commission (TJC)
Case Study:
Using Data to Reduce Urinary Tract Infections

American Hospital Association (AHA)
Hospitals in Pursuit of Excellence – Individual Case Studies
CAUTI Reduced By Getting Docs Onboard
Our Lady of the Lake Regional Medical Center

Association for Professionals in Infection Control and Epidemiology, Inc. (APIC)
Guide to the Elimination of Catheter-Associated Urinary Tract Infections (CAUTIs)

US Department of Health and Human Services
Partnership for Patients

Agency for Healthcare Research and Quality (AHRQ)
Patient Safety & Quality: An Evidence-Based Handbook for Nurses [May 2008]
Chapter 42. Targeting Health Care-Associated Infections: Evidence-Based Strategies

North Carolina Center for Hospital Quality and Patient Safety
North Carolina Prevent Catheter-Associated Urinary Tract Infections Collaborative Toolkit

Agency for Healthcare Research and Quality (ARHQ)
Catheter-Associated Urinary Tract Infection (CAUTI) Prevention
Healthcare-Associated Infections, Quality Improvement

American Hospital Association (AHA)
Hospitals in Pursuit of Excellence – Individual Case Studies
Zero Infections
Health Central

American Hospital Association (AHA)
Hospitals in Pursuit of Excellence – Individual Case Studies
Empowering Nurses to Reduce Infections
Lancaster General Hospital

Agency for Healthcare Research and Quality (AHRQ)
Chapter 15. Prevention of Nosocomial Urinary Tract Infections

Information Compiled By
IHI