Urinary Retention Toolkit: Resources and Strategies to Reduce Catheter-Associated Complications in Long-Term Care Facilities

Cassidy Keim, MPH Candidate
Capstone Project and Field Experience Presentation
Trotter Hall 112
Kansas State University
May 6, 2016
Presentation Overview

- Introduction
  - Field experience overview
  - Urinary retention in Long-term care (LTC)
- Management practices and challenges
  - Indwelling catheters
  - Intermittent catheters
  - Alternative management practices
- Establishment of toolkit
- Conclusions
Definitions

- **KDHE**: Kansas Department of Health and Environment
- **HAI**: Healthcare-associated Infection
- **KFMC**: Kansas Foundation for Medical Care
- **UR**: Urinary Retention
- **LTCF**: Long-Term Care Facility
- **CAUTI**: Catheter-Associated Urinary Tract Infection
Field Experience Overview
Kansas Department of Health and Environment

- Bureau of Epidemiology and Public Health Informatics (BEPHI)
- HAI program
  - Directed by Joseph Scaletta
  - Created in 2009
  - Monitors HAIs throughout Kansas
Kansas Foundation for Medical Care

• Not-for-profit organization
• “Leading innovation to improve the quality, effectiveness and safety of healthcare”
• Brenda Groves
Field Experience Objectives

- Develop resources relating to urinary retention and strategies to reduce urinary tract infections and catheter use for LTCFs
- Distribute toolkit to over 300 LTCFs in Kansas
- Present project at a Kansas Healthcare-Associated Infections Advisory Group Meeting
Field Experience Activities

- CDC - Zika virus national briefing call
- Numerous webinars focusing on infection prevention and control
- *Clostridium difficile* coaching calls
- Kansas Quality Improvement Partnership (KQIP) quarterly meeting
- Kansas Hospital Association (KHA) Infection Prevention (IP) conference in Wichita
- Epidemiology and Laboratory Capacity
- Presented toolkit at the Kansas Healthcare-Associated Infections Advisory Group meeting
- Patient notification for an infection prevention breach concerning flexible endoscope in an ambulatory surgical center
Overview of Long-Term Care
Long-Term Care

• Provide a residence to the elderly, disabled, and cognitively impaired
• Approximately 1.5 million older adults\(^1\)
• 1-3 million infections annually\(^2\)
• Limited financial resources
• Lack of current technology
• High turnover rates in staff members
Overview of Urinary Retention
The Urinary Tract
What is Urinary Retention?

• Inability to voluntarily and completely void urine
• Common condition of both sexes
• Prevalent in aging populations
  • Men > 70 have a 10% increased risk
  • Men > 80 have a 30% increased risk
Complications of UR

• Inability to urinate
• Frequent urination
• Pain or discomfort of the lower abdomen
• Weakening of the detrusor muscle of the bladder
Causes of UR

An individual may suffer from UR due to the following:

- Obstruction that can occur both intrinsically or extrinsically
- Infectious or inflammatory disease processes
- Being on certain medications
- Suffering from neurogenic bladder
- Experiencing trauma to the urethra or bladder\(^4\)
Urinary Retention Management Practices
Catheters

- Most common management practice for UR
- Pose severe health complications for residents
  - CAUTIs
  - Trauma to the urethra or bladder
  - Catheter blockage and subsequent urine reflux
  - Impaired mobility
  - Psychological impacts on quality of life
Indwelling Urethral Catheters

- Long term catheters
- Most common in LTCF residents
  - 5-10% of residents have an indwelling catheter\(^5\)
- Can cause an array of health issues in LTC residents
  - CAUTIs
CAUTIs

• CAUTIs are the most common adverse event associated with indwelling urethral catheters

• Indwelling catheters result in over 1 million CAUTIs annually\(^8\)

• Financial impact on LTCF
  • Each episode costs approximately $600
  • Subsequent infections also costly\(^9\)
Intermittent Urinary Catheters

• Insertion and removal of a catheter several times a day to void the bladder
• Preferred method of catheterization
• Complications include:
  • Urethritis
  • Urethral bleeding
  • Creation of a false passage\textsuperscript{10}
Alternative Management Practices for Urinary Retention
Bladder Scanners & Intermittent Catheters

- Used to measure post-voidal residual (PVR) volume
- Non-invasive machine
- Decrease residents risk of infections or trauma
- LTCF may lack financial resources to purchase machine
Scheduled Toileting & Bladder Retraining

• “A behavioral technique that calls for scheduled toileting at regular intervals”\textsuperscript{13}
• Developed after a three day toileting trial
• Helps to maintain bladder integrity
• Bladder retraining is also a behavioral technique
• Requires adequate personnel
<table>
<thead>
<tr>
<th>Management type</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catheters</td>
<td>- Effective way to empty bladder for immobile residents</td>
<td>- Infections</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Urethral damage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Alters residents quality of life</td>
</tr>
<tr>
<td>Bladders scanners/Intermittent catheters</td>
<td>- Non-invasive</td>
<td>- Cost prohibitive</td>
</tr>
<tr>
<td></td>
<td>- early removal of indwelling catheter</td>
<td>- Altered readings</td>
</tr>
<tr>
<td></td>
<td>- Decreased risk of CAUTIs</td>
<td>- Some complications related to catheters</td>
</tr>
<tr>
<td>Scheduled toileting plan</td>
<td>- Voiding at regular intervals</td>
<td>- Requires adequate personnel</td>
</tr>
<tr>
<td></td>
<td>- Prevents bladder damage</td>
<td>- Residents must maintain voiding diary</td>
</tr>
<tr>
<td></td>
<td>- Individualized program</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- No risk of catheter complications</td>
<td></td>
</tr>
</tbody>
</table>
Urinary Retention Toolkit
Establishment of a Toolkit

- Developed as a collaborative effort between the KDHE and the KFMC
Why a Toolkit?

• Recognize the health and economic issues with commonly used UR management practices such as indwelling catheters
• To provide resources and strategies for alternative UR management options
• Demonstrate how alternative management can be beneficial
Toolkit Learning Objectives

- Define the term UR
- Identify causes of UR
- Identify how UR is managed in LTCFs
- Describe why indwelling catheters are a health hazard in LTCFs
- Identify and describe alternative management practices for UR in LTCFs
Toolkit Content

- Section 1: Introduction to UR
  - Background information
  - Bladder physiology
  - Epidemiology of UR
  - Causes of UR
Toolkit Content

• Section 2: Assessing for UR
• Follows nursing assessment steps
  1. Assessment
  2. Diagnosis
  3. Plan
  4. Implementation
  5. Evaluation
Toolkit Content

• Section 3: UR Management Practices
• Indications for use, complications, and benefits of each of the following are discussed
  • Indwelling catheters
  • Intermittent catheters
  • Bladders scanners and Intermittent catheters
  • Scheduled toileting and bladder retraining
  • Small section on bladder massages and the benefits
**SBAR Communication Form**

**and Progress Note**

**Before Calling MD / NP / PA:**
- [ ] Evaluate the Residents: Complete relevant aspects of the SBAR form below
- [ ] Check Vital Signs: BP, pulse, and/or apical heart rate, temperature, respiratory rate, oximetry, and finger stick glucose, if indicated
- [ ] Review Records: Recent progress notes, labs, orders
- [ ] Review an INTERACT Care Plan or Acute Change in Condition File Card, if indicated
- [ ] Have Relevant Information Available when Reporting
  (Include medical record, vital signs, advance directives such as Do Not Resuscitate and other care-limiting orders, allergies, medication list)

**SITUATION**

The change in condition, symptoms, or signs I am calling about is are

This started on __________ / __________ / __________
Since this started has it gotten: [ ] Worse [ ] Better [ ] Stayed the same

Things that make the condition or symptom worse are

Things that make the condition or symptom better are

This condition, symptom, or sign has occurred before: [ ] Yes [ ] No

Treatment for last episode (if applicable)

Other relevant information

**BACKGROUND**

Resident Description
- [ ] Post-Acute Care
- [ ] Long-Term Care

Primary diagnoses

Other pertinent history (e.g. medical diagnosis of CHF, DM, COPD)

Medication Alerts
- [ ] Changes in the last week (describe below)
- [ ] Resident is on warfarin/coadjusted: Result of last INR __________ Date __________ / __________

Allergies

Vital Signs
- [ ] BP __________ Pulse __________ Apical HR __________ RR __________ Temp __________ Weight __________ lbs (date __________ / __________ / __________)

For CHF, edema, or weight loss, last weight before the current one was __________ on __________ / __________ / __________

Oximetry % __________ [ ] on room air [ ] on O2 (liters/minute)

Residents Name

(continued)
Toolkit Content

- World Health Organization Hand Hygiene
Urinary Retention: A General Overview of the Condition and Causes

Cassidy Keim, Intern
Healthcare Associated Infections Program Epidemiologist
Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Urinary Retention: Assessment and Treatment in Long-Term Care Facilities

Cassidy Keim, Intern
Healthcare Associated Infections Program Epidemiologist
Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Urinary Retention Management Practices

Cassidy Keim, Intern
Healthcare Associated Infections Program Epidemiologist
Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Urinary Retention: Resident Education

Cassidy Keim, Intern
Healthcare Associated Infections Program Epidemiologist
Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment
Toolkit Content

- Educational resources for healthcare providers
- Information on filling out Medical Data Sheets
## Jeopardy

**Urinary Retention**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>
Core Competencies

- **Pathogens/Pathogenic mechanisms**
  - Infectious organisms causing urinary tract infections

- **Immunology/Host response**
  - Aging adults have weakened immune systems
  - More susceptible to disease

- **Environmental influences**
  - Characteristics of LTCFs lead to increase rates of infection

- **Disease surveillance**
  - National Healthcare Safety Network (NHSN)
  - Kansas does not have a mandate to report HAIs

- **Effective communication**
  - Toolkit is an effective communication tool
  - Identifies issue of infections related to catheter use in LTCFs
  - Provides resources to individuals working in healthcare
Conclusions

- CAUTIs are a major public health issue
- Toolkit provides resources and strategies to reduce catheter use in LTCFs; therefore reducing catheter-associated complications
- Ultimate goal is to improve resident health and quality of living in LTCFs
Acknowledgements

- KDHE
  - Joseph Scaletta
  - Karen Crawford
  - EPI staff
- KFMC
  - Brenda Groves
  - Nadyne Hagmeier
- Committee members
  - Dr. Annelise Nguyen – Major professor
  - Dr. Abbey Nutsch
  - Dr. Dana Vanlandingham
- KSU
  - Barta Stevenson
References

Questions?