What are the Barriers and Facilitators to Nurses’ Utilization of a Nurse Driven Protocol for Indwelling Urinary Catheter Removal?

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Background

• The Joint Commission has recognized Catheter Associated Urinary Tract Infection (CAUTI) prevention as one of the National Patient Safety Goals (NPSG) for hospitals.

• The American Nurses Association (ANA) has classified CAUTI as one of the nurse-sensitive indicators.

• 2015- ANA published Evidence based practice (EBP) guidelines.
Background cont’d

• The Centers for Medicare and Medicaid Services (CMS) consider CAUTIs “never events” and will not reimburse hospitals for treatment of these events.

• The Centers for Disease Control (CDC) continue to redefine what constitutes a CAUTI.

• These factors have lead hospitals to change practice (Olson-Sitki et al., 2015).
• Urinary Tract Infections (UTIs) comprise 40% of hospital associated infections, 80% of these are associated with Indwelling Urinary Catheters (IUCs).

• Complications associated with CAUTIs cause patient discomfort, prolonged hospital stay, and increased cost and mortality.

• For each day an IUC is in place, the risk of infection increases by 5% (Olson-Sitki et al., 2015)
Background

• Maine Medical Center (MMC), has made a steady decrease in the CAUTI rate for inpatients with Indwelling Urinary Catheter (IUCs).

• The IUC utilization rate dropped significantly the first focus year (from 28% to 17%), but has shown very little change over the past three years.

• In daily tracking of MMC inpatients, the IUC utilization rate of 10-11% has plateaued despite a number of different interventions. MMC has had a Nurse Driven Protocol (NDP) since 2009.
Utilization Rate

Indwelling Urinary Catheter Utilization

<table>
<thead>
<tr>
<th>Period</th>
<th>Utilization Ratio</th>
<th># Catheter Days</th>
<th># Patient Days</th>
<th># CAUTIs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1Q15</td>
<td>0.12</td>
<td>5118</td>
<td>43321</td>
<td>7</td>
</tr>
<tr>
<td>2Q15</td>
<td>0.11</td>
<td>4912</td>
<td>44024</td>
<td>9</td>
</tr>
<tr>
<td>3Q15</td>
<td>0.11</td>
<td>4935</td>
<td>44403</td>
<td>10</td>
</tr>
<tr>
<td>4Q15</td>
<td>0.10</td>
<td>4464</td>
<td>43030</td>
<td>10</td>
</tr>
<tr>
<td>1Q16</td>
<td>0.11</td>
<td>5077</td>
<td>44814</td>
<td>2</td>
</tr>
<tr>
<td>2Q16</td>
<td>0.10</td>
<td>4701</td>
<td>44940</td>
<td>11</td>
</tr>
<tr>
<td>3Q16</td>
<td>0.11</td>
<td>4454</td>
<td>41957</td>
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<td>0.11</td>
<td>4812</td>
<td>45014</td>
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</tr>
<tr>
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<td>4909</td>
<td>45506</td>
<td>7</td>
</tr>
<tr>
<td>2Q17</td>
<td>0.10</td>
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<td>46174</td>
<td>6</td>
</tr>
<tr>
<td>3Q17</td>
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<td>4787</td>
<td>46623</td>
<td>5</td>
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<tr>
<td>4Q17</td>
<td>0.11</td>
<td>4996</td>
<td>46074</td>
<td>5</td>
</tr>
</tbody>
</table>
Background

• Evidence supports that a Nurse Driven Protocol (NDP) for removing IUCs will decrease both the CAUTI rate and IUC utilization rate for the inpatient population. (Olson-Stiki, et al., 2015)

• NDPs need approval by a physician body, but not all medical staff are aware of the NDP.
"Despite using sterile technique for catheter insertion, closed drainage systems, and structured daily care plans, CAUTIs regularly occur in acute care hospitals... meaningful reduction in CAUTI rates can only be achieved by reducing urinary catheter use." (Parry et al., 2013)
To answer the question:

In adult inpatients (age ≥ 18 years) who are candidates for Indwelling Urinary Catheter (IUC) removal, what are the barriers and facilitators to Nurses’ utilization of a NDP for IUC removal?
Process:

Literature search done April 2017 using the **Keywords:**

- CAUTI
- Indwelling urinary catheters
- Acute care hospitals
- Hospitalized patients
- Nurse driven protocol
- Evidence based practice
- Facilitators to care
- Barriers to care
Process cont’d:

Inclusion/exclusion criteria:

• Academic Journals/Articles published within the past 5 years
• Adult inpatients
• English language

Literature Review
20 articles were found with the assistance of a MMC librarian/5 were used:

- Articles were synthesized in tabular format

- Evidence was graded using the Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) Appraisal

- EBP has been defined as a decision-making process for patient care that uses the best evidence available combined with practice experience and the patient’s own values and preferences to guide patient care. (Johnson et al., 2016)
Articles

(1) Kristi Olson-Stiki, MSN, RN, NE-BC; Geri Kirkbride, PhD, RN, CPPS, CENP; Gordon Forbes, PhD

(2) Paul Quinn, PhD, CNM, RN-BC, NEA-BC, CEN, CCRN

(3) Pamela Johnson, DNP, RN; Anna Gilman, BSN, RN; Alicia Lintner, MSN, CRNP-BC, CCRN; Ellen Buckner, PhD, RN, CNE, AE-C

(4) Michael F. Parry, MD; Brenda Grant, RN; and Merima Sestovic, RN

(5) Elizabeth Dogherty, RN MSc; Margaret B. Harrison, RN, PhD; Ian D. Graham, PhD, FCAHS; Amanda Digel Vandyk, RN, MSc; Lisa Keeping-Burke, RN, PhD.
“Turning Knowledge into Action at the Point-of-Care: The Collective Experience of Nurses Facilitating the Implementation of Evidence Based Practice.” *Worldviews on Evidence-Based Nursing*, 2013,10:3, pp. 129-139
Summary of Literature Review Findings:

- IUC use and CAUTI rates can be effectively reduced by the application of evidence-based interventions and implementation of a NDP for IUC removal.

- Interprofessional partnership and collaboration are key in that success.
Summary of Literature Review Findings cont’d:

Facilitators to implementing EBP:

• Importance of the Issue
• Characteristics of the evidence
• Development of Interprofessional partnerships and a project team with the engagement of key stakeholders
• Strategic process
• Characteristics of the facilitator (Dogerty et al., 2013)
Barriers to implementing EBP:

- Lack of engagement and ownership
- Resource deficits
- Dissonance and conflict
- Team functioning and workload
- Lack of evaluation and sustainability (Dogerty et al., 2013)
Summary of Literature Review Findings cont’d:

• The most common reason IUCs remained in place was…“the inability to meet qualifying indicators, including the need for accurate urinary outputs in non-critically ill patients and patients with IUCs for chronic urinary retention.”

(Olson-Stiki, et al., 2015)
How are we doing?

Baseline 2012 = 131 infections!
Interventions on a Surgical Unit

The unit with the highest number of CAUTIs outside Intensive Care areas

- FY15 = 8
- FY16 = 6
- FY17 = 5
- FYTD18 = 0

- Weekly interprofessional FLO meetings in place for over 2 years, discussing all patients with IUCs
- Weekly bedside rounds with unit leadership reviewing need, patient education, and IUC care bundle compliance
- IUC utilization rate has decreased from 18% to 12% over the past 12 months
- The culture is changing with increased nursing empowerment and vigilance
- Bedside RNs are empowered to question providers for IUC need, alternatives, and appropriateness of urine cultures
The culture of Nursing... is, and has always been, the key.
Catheter Placement: Avoid unnecessary urinary catheters

**Appropriate** indications for catheters:

1. Perioperative use for selected surgical procedures.
2. Strict urine output monitoring for critically ill patients (Only in ICUs)
3. Management of acute urinary retention and urinary obstruction not controlled by other means. (e.g., prostatic hypertrophy with obstruction, urethral obstruction, urinary blood clots with obstruction, and neurogenic bladder or trauma to spinal cord.)
4. Complex perineal wounds such as burn or stage 3 or 4 pressure ulcer healing for incontinent patients (if patient is continent, not an indication)
5. End of life care if needed.
Interventions: Appropriate Cultures

- A provider order set was implemented in June 2017 with indications for appropriate urine cultures
- Clinical nurses were educated on appropriate urine cultures
- Partnership with nursing, providers, & lab to determine if urine culture is appropriate
- The number of inappropriate urine cultures & urine cultures overall has decreased
# Urinary Retention after Indwelling Urinary Catheter Removal Guideline

- *Adult Urinary Retention Guidelines*
- Do not initiate retention protocol with pediatric and renal transplant patients. Discuss plan of care with primary team.

<table>
<thead>
<tr>
<th>No void in 4-6 hours after REMOVAL or bladder discomfort</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bladder scan</td>
</tr>
<tr>
<td>2. Volume ≥ 300-500 ml, initiate prompted void. If no void, straight catheterize</td>
</tr>
<tr>
<td>3. If &lt;300-500 ml, monitor for spontaneous void or discomfort for 2 more hours. Repeat steps 1 &amp; 2</td>
</tr>
</tbody>
</table>

## Overstretching the bladder beyond a volume of 500 ml can exacerbate/cause urinary retention.

If urine volumes are consistently 500 ml or greater or patient is receiving **high fluid volumes or diuretics**, **scan more frequently** than every 4-6 hours and straight cath if indicated.

## Incomplete bladder emptying

Patient is voiding in small frequent amounts (under 180 ml each time) or incontinent, **consider retention** and assess.

## Contact Provider to discuss plan of care if:

- No spontaneous void or incomplete emptying for 24 hours
- Pain, bleeding, difficulty passing the catheter/resistance
- Patient requesting Foley catheter even after counseling about risks

## Considerations for causes of urinary retention:

- Enlarged prostate, medications, epidural analgesia, constipation.
- Consider Urology or Pharmacy consult.

03/30/2015
Catheter Protocol: PeriOp Urinary Care

**Pre-Op**
- **ASK THE PATIENT TO URINATE!**
  - Must be done pre-op
  - Are they able to void?
    - Yes: No further action required.
    - No: Bladder Scan: >300 ml in the bladder? Need straight cath order.

**Post-Op**
- **Does the patient have a foley catheter?**
  - No: Continue with usual care.
  - Yes: Follow Order
    - **Follow Order**
      - Yes: Monitor for urinary retention per CAUTI initiative protocol.
      - No: Contact Primary team and request catheter orders that reflect their plan.

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**OR**
- **All catheters to be placed in OR**
  - **Insert Catheter**
    - Enter Catheter Order in EPIC
    - Send pt to PACU with Catheter
  - **No catheter needed intra-op.**
    - If >2 liters of IVF used or longer than 2 hour case:
      - Bladder Scan; >300 -500ml?
        - Yes: Straight cath (order needed) prior to transfer to PACU if appropriate.
        - No: Follow Order
          - Yes: Monitor for urinary retention per CAUTI initiative protocol.
          - No: Contact Primary team and request catheter orders that reflect their plan.

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**Note:** Providers must place an order for indwelling catheter insertion.

*If “Per Nursing Protocol” then remove before patients leaves PACU*
Next steps:

• A brief survey will be emailed in Quarter 3, 2018 to RNs on adult inpatient units to obtain feedback about their use of the NDP for IUC removal, and facilitators and barriers to its use.

• The results of the survey will be used to inform the development of an intervention/education to increase bedside nurses’ use of the NDP.
Acknowledgements

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