Implementation of an EBP Protocol to Reduce Use of Indwelling Urinary Catheters in the Long-term Care Environment
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The Problem

Use of indwelling urinary catheters (IUC) has been documented between 5–15% in long-term care (LTC) even though the CMS requires a valid medical justification for use.

IUCs to a number of consequences.
Consequences of IUCs

- IUC
- UTI
- Falls
- Urinary incontinence
- Delirium

One Point Restraint

Hospitalization
Purpose of Project

Implement the evidence based FIRM Protocol (Foley Insertion, Removal, and Maintenance)
FIRMS Protocol

Aimed at the reduction of infections and other complications by reduction of indwelling urinary catheter use in the LTC environment.

- Revision of an acute care protocol developed, implemented and evaluated by the authors
- Pilot implementation in 2 LTC settings
Framework

- Larrabee’s model of evidence-based practice change guided the implementation of the study
  - Incorporates evidence into practice

- Model of Technology, Nursing and Patient Safety
  - Nursing has responsibility for resident with IUC, IUC poses safety concern, and EHR was used to address appropriate use
FIRM Protocol

2 Key Components

- Electronic order sheet
  - removal reminder system

- Education program for health care providers regarding
  - use and care of IUC, and
  - prevention of CAUTIs.
FIRMS: Foley Insertion, Removal and Maintenance Sheet

Provide rationale for insertion:

**INDICATIONS FOR INSERTION:**
- (catheters are one point restraints, longer it stays, higher risk of infection). Mark box for rationale for insertion and use:

<table>
<thead>
<tr>
<th>Absolute Acute Indications:</th>
<th>Relative Indications:</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Obstruction distal to the bladder.</td>
<td>□ Morbid obesity &lt;400lbs</td>
</tr>
<tr>
<td>□ Alteration in blood pressure or volume status</td>
<td>□ Urinary Incontinence posing risk to patient (major skin breakdown or protection of nearby operative site)</td>
</tr>
<tr>
<td>□ Worsening renal failure</td>
<td>□ Congenital urologic abnormalities.</td>
</tr>
<tr>
<td>□ Continuous bladder irrigation</td>
<td>□ Palliative care</td>
</tr>
<tr>
<td>□ Neurogenic bladder.</td>
<td>□ Inability to perform self or intermittent catheterization</td>
</tr>
</tbody>
</table>

OR

**CMS Justifiable Indications beyond 14 Days (Tag F315):**
- □ Urinary retention that could not be otherwise corrected and was characterized by post-void residual volumes greater than 200 mL
- □ Infeasibility of intermittent catheterization and persistent overflow, symptomatic infection or renal dysfunction
- □ Patients with poorly healing Stage 3 or 4 pressure ulcers contaminated with urine
- □ Patients with terminal illness or severe impairment of whom reposition would be uncomfortable or painful

Other options if not justified:
If your reason for urinary catheter is not listed in the appropriate indications, patient may not need a urinary catheter. Please reconsider decision.

Alternatives for bladder management: Mark box of alternative to use:
- □ Condom catheter
- □ Bedside urinal
- □ Bladder toileting program (TAN)
- □ Briefs
- □ Intermittent straight catheterization

**Removal Order:**
- □ Remove catheter within 48 hours post insertion unless otherwise stated by physician (rate of infection increases each day left in) or justifiable indication beyond 14 days provided
- □ Place a reminder in the chart for catheters continued ≥ 48 hours if not justified.
- □ After urinary catheter is removed please follow bladder assessment for residual.

**Maintenance Care**
- □ Systematic Evidence Based Protocol (SEBP) to be followed for initiation, maintenance and removal of urinary catheter (Refer to nursing manual on each floor for details).
Foley Catheter Removal Guidelines

- Physicians Order Form for catheter with checklist
- Feedback to the prescribing provider about inappropriate use
- Automatic stop order after 72 hour
- Mandatory use of RUCR “Reminder for Urinary Catheter Removal”

Reminder for Urinary Catheter Removal (RUCR)
An alert system built into EMR

Alert: Catheter needs to be discontinued. In place longer than 72 hours.

Order options:
- Discontinue
- Continue with catheter care for the following reason(s):
  - Monitor urine output in critically ill/Unstable patient
  - Assist perineal wound healing in incontinent patient (Stage 3 & 4)
  - Urinary retention/inability to void
  - Bladder Outlet Obstruction
  - Acute Urinary Retention
  - S/P urologic/Gynecologic/Perineal surgery
  - Significant Hematuria
  - Chronic indwelling catheter
  - Comfort care/Hospice
  - Orthopedic fracture prior to surgery
  - Patient requires prolonged immobilization
  - Other

Comments: _____________________________________

- See Pre printed progress note/department standing orders
On-line Education Program

• On-line hour long education program available at Medline University

• Continuing Education Credit upon completion (certificate)

https://www.medlineuniversity.com/
Overview of Urinary Catheters

Importance of topic
- Consequences

Insertion guideline

Care management guide

Removal guidelines

Use of the electronic documentation
Content Examples
Introduction to CAUTIs

Indwelling Urinary Catheter (Foley) Definition

- Closed, sterile system
- Insertion of a flexible tube in the bladder
- Allows for continual bladder drainage
- Retention balloon (10 cc) prevents dislodgement

Lumen for inflation and deflation of retention balloon

Lumen for urine drainage and connection to drainage tubing and bag

Coude / curved tip

Symmetrical 10 cc balloon
Insertion of Catheter: Considerations for the Older Women

- Difficulty with catheter insertion related to:
  - Less elasticity of the skin of labia minora
  - Thinning of the perineal epithelium
  - Urinary meatus sinks down into vagina

- To enhance visualization:
  - separate the labia minora,
  - with the thumb about an inch below the clitoris push slightly upward and inward bringing the urinary meatus up and visible.

- If the catheter is inserted into the vagina leave it in place to help with the placement into the urinary meatus.
Insertion and Management

Foley Catheter Management Guidelines
H1. Urinary Appliances

- Check all that applied in last 5 days:
  - a. Indwelling bladder catheter
  - b. External (condom) catheter
  - c. Ostomy (suprapublic catheter, ileostomy)
  - d. Intermittent catheterization
  - e. None of the above

**H0100. Appliances**

<table>
<thead>
<tr>
<th>Check all that apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Indwelling catheter (including suprapubic catheter and nephrostomy tube)</td>
</tr>
<tr>
<td>B. External catheter</td>
</tr>
<tr>
<td>C. Ostomy (including urostomy, ileostomy, and colostomy)</td>
</tr>
<tr>
<td>D. Intermittent catheterization</td>
</tr>
<tr>
<td>Z. None of the above</td>
</tr>
</tbody>
</table>
Types of Absorbent Incontinence Products

Light to Moderate Urine Loss

- **Pantiliners**
  - Very thin, discreet. Designed for light urine loss.

- **Perineal Pads**
  - Designed for urine loss with super absorbent materials. Available in several absorbency levels.

- ** Guards for Men**
  - Designed to fit a man's anatomy.
  - Can be comfortably worn inside close-fitting underwear.

Moderate to Heavy Urine Loss

- **Undergarment**
  - Open-sided design and stretchy straps for comfort.
  - Gentle leg gathers help prevent leakage.

- **Protective Underwear**
  - Slim-fitting, comfortable and discreet. Designed to slip on like regular underwear.

- **Fitted Briefs**
  - Elastic at the waist and legs for a close fit. Adhesive tapes for fastening.
Pathway following Removal of IUC

Remove Indwelling Urinary Catheter

- No Void in 4-6 hours Perform Bladder Scan
  - If Bladder Scan Volume is b/w 400-500 mls, initiate intermittent catheterization ***
  - If Bladder Scan Volume is <400 ml Monitor for an Additional 2 hrs for Spontaneous Void.
    - If No Void After 8 hours Discuss Plan with Prescribers
- Spontaneous Void in 4-6 hours >300 ml
  - PVR Volume <100 ml STOP No Further Interventions Required
  - PVR Volume >100 ml Recheck PVR q6 x 24 hours
- Spontaneous Void in 4-6 hours <300 ml
  - Bladder Scan Immediately
  - PVR Volume >100 ml but <400 ml Initiate Prompted Voiding
  - PVR Volume <100 ml STOP No Further Interventions Required
  - Recheck with Bladder Scan in 2 hrs

***For Urine Volume >500 mls Obtain Order for Reinsertion of IUC for 24 hours and Reattempt Algorithm for Removal
Foley Catheter Audit

Monitor daily number of Foley catheters

Determine # of catheters with appropriate indications

FOLEY CATHETER AUDIT
January 25, 2007

There are 17 residents as of this date with a urinary catheter (foley or suprapubic).

Of the 17 residents with catheters audited, 7 had no diagnosis for the catheter.
Two had notes regarding high PVRs, another had a diagnosis in the H&P of urethral obstruction with pyelonephritis, and one had a diagnosis of prostate CA on the H&P. The diagnoses that were in the H&P did not make it to the orders section of the chart.

Of the 17 residents with catheters audited, 6 did not have orders for catheter changes.

All of the 17 catheter charts had appropriate care plans in place.

All 17 residents with catheters had dignity bags in place.

Of the 17 residents with catheters, 1 did not have a leg strap on. It was applied.

Actions:
1. Physicians were given a memo in the beginning of December to remind them to add the diagnosis for catheters.
2. Nursing will contact Pharmacy and have the admission and renewal physician order forms to include a section for catheters providing a space for diagnosis and the WHNC policy for catheter changes.
3. Nursing will continue to monitor the catheters on a monthly basis and will randomly monitor the new admissions with catheters.

Submitted by:
Director of Nursing
Method

- Settings
  - 14 LTC settings implementation sites
  - 17 LTC settings comparison sites

- The on-line hour long education program was introduced via repeated Webinars to implementation sites

- Pretest and posttest at the host site for both groups.
Results: Staff Knowledge

- Significant increase in knowledge scores of the staff of the intervention sites compared to baseline and comparison group.

<table>
<thead>
<tr>
<th>Site</th>
<th>Baseline mean score</th>
<th>Post-education mean score</th>
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</thead>
<tbody>
<tr>
<td>Intervention (N=340)</td>
<td>65.8%</td>
<td>77.2%</td>
</tr>
<tr>
<td>Comparison (N=193)</td>
<td>65.3%</td>
<td>65.3%</td>
</tr>
</tbody>
</table>

- Note: group comparison as staff logged in under one name.
Results: Staff Knowledge

Comparison site (N=193)

Intervention site (N=340)
Review of EHRs over 3 months following implementation revealed 81 documented IUCs
- 13 at intervention sites
- 68 at comparison sites

100% of the IUCs at intervention sites had an order for use compared to only 70.6% having an order for use at the comparison sites.
Comparison of Number of Indwelling Urinary Catheter with and without an Order for the Intervention (N=14) and Control (N=17) Sites

- Intervention: 100%
- Control: 70.6%
Conclusions

- Implementation of the FIRM Protocol was effective in decreasing the inappropriate use of IUC in a LTC environment (during implementation)

- Retrospective electronic chart review currently in progress to allow for comparison of data before and after implementation of the protocol

- Recommendations for revisions in the protocol to promote utility and efficacy are necessary
Recommendations based on Lessons Learned

SIMPLE YET ESSENTIAL Protocol

- Champion to ensure adherence
- Patience for system changes
- Integration with EHR order set
- Communication with health care providers
- Continual feedback of surveillance data with praise
Recommendations based on Lessons Learned

- Education component
  - Integration into yearly requirement
  - New employee orientation requirement

Focus on SUSTAINABILITY