AHA/HRET HEN 2.0 CAUTI WEBINAR: OVERCOMING BARRIERS TO ASEPTIC CATHETER INSERTION

August 9, 2016
11:00 a.m. – 12:00 p.m. CT
WELCOME AND INTRODUCTIONS

Marina Levin, Program Manager | HRET | 11:00 – 11:05AM
<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Description</th>
<th>Presenter(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00-11:05 AM</td>
<td>Welcome and Introductions</td>
<td>Open and housekeeping information, including review of relevant HRET HEN resources, change packages and Listserv®.</td>
<td>Marina Levin, MPH Program Manager HRET</td>
</tr>
<tr>
<td>11:05-11:10 AM</td>
<td>HEN Data Update</td>
<td>Topic-specific data update – not limited to national percent reduction and percent reporting.</td>
<td>Mark Plunkett, PH.D Data Analyst HRET</td>
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<tr>
<td>11:10-11:40 AM</td>
<td>Didactic Education</td>
<td>Learn about the five key components of aseptic catheter insertion, the “four E’s” and associated strategies to guide overcoming barriers and apply the concept of mindfulness to catheter insertion.</td>
<td>Milisa Manojlovich, PhD, RN, CCRN Associate Professor University of Michigan Ann Arbor, MI</td>
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<tr>
<td>11:40-11:55 AM</td>
<td>Hospital Story</td>
<td>A hospital will share their cutting edge CAUTI prevention program that incorporates aseptic insertion techniques.</td>
<td>Rita Crasta, MSN, RN1V, OCN CAUTI prevention educator Covenant Health System Lubbock, TX</td>
</tr>
<tr>
<td>11:55 AM-12:00 PM</td>
<td>Bring it Home</td>
<td>Action items and tying together of didactic, hospital-level and improvement science information.</td>
<td>Marina Levin, MPH Program Manager HRET</td>
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</table>
SIGN UP TODAY: INFECTIONS LISTSERV®

• Infections Analytics Listserv® is available for:
  – Sharing of:
    • HRET Resources
    • Publicly Available Resources
    • Best Practices
    • Learnings from Subject Matter Experts
  – Troubleshooting for Data Reporting and Analysis

Sign Up Here
HEN DATA UPDATE

Mark Plunkett, Data Analyst | HRET | 11:05 – 11:10AM
FIGURE CAUTI-1: STANDARDIZED INFECTION RATIO (SIR)
FIGURE CAUTI-2: CAUTI RATES PER 1,000 URINARY CATHETER DAYS
FIGURE CAUTI-3: URINARY CATHETER UTILIZATION

Urinary catheter utilization ratio - All Inpatient locations excluding NICUs
Urinary catheter utilization ratio - ICUs excluding NICUs
DIDACTIC EDUCATION
Milisa Manojlovich, Associate Professor |University of Michigan|
11:10 – 11:40AM
By the end of this presentation participants will be able to:

1. Describe the five key components of aseptic catheter insertion.

2. Describe the “four E’s” and associated strategies to guide overcoming barriers to aseptic insertion.

3. Apply the concept of mindfulness to catheter insertion.
QUALITY IMPROVEMENT IN THE ED: A FOCUS ON URINARY CATHETER INSERTION

Study purpose:

• Determine if changes (in the hospital and nationwide) have contributed to improved catheter insertion practices.

• Explore barriers and facilitators to adherence of urinary catheter insertion guidelines.
METHODS

• Two teams of nursing students
• 0630 – 2100, in four or eight hour blocks of time
• January 29 – June 30, 2014
• Observation, checklists, field notes
RESULTS

• 65 patients and 81 insertions were observed.
• No one else was present (buddy system in use) in only 11 percent of cases.
• Mean insertion time = six minutes.
  – Range is two to twenty two
• No hand hygiene prior to 74 percent of insertions.
• No hand hygiene in 91 percent post insertion.
• 59 percent of insertion attempts were associated with a major break in sterile technique.
## CATEGORIES AND FREQUENCIES OF MAJOR BREAKS IN STERILITY

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency (%)</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contamination of sterile field</td>
<td>22 (27%)</td>
<td>• Nurse touched items on sterile field with bare non-sterile hands.</td>
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<tr>
<td></td>
<td></td>
<td>• Stethoscope/garment/torso touched sterile field.</td>
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<tr>
<td>Contamination of the catheter</td>
<td>25 (31%)</td>
<td>• Patient’s labia closed over the catheter during insertion and contaminated the catheter; nurse did not get a new one.</td>
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<tr>
<td></td>
<td></td>
<td>• Catheter tip touched genitalia before being introduced into urethra.</td>
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<tr>
<td>Breach of sterile barrier</td>
<td>31 (38%)</td>
<td>• Sterile gloved hand used to swab genitalia (without tongs); same hand used to insert catheter.</td>
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<tr>
<td></td>
<td></td>
<td>• Nurse inserting catheter ripped her sterile gloves, did not get new ones.</td>
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BARRIERS TO ASEPTIC INSERTION TECHNIQUE

- Inconsistent or inconvenient locations for hand gel.
- Little room in cubicles to set up sterile field.
- Cotton wisps clung to tongs in kits.
- Common practice to don sterile gloves over clean gloves.
SUCCESSFUL STRATEGIES TO GUIDE PRACTICE CHANGE: 4 E’S

- Engagement
- Education
- Execution
- Evaluation
ENGAGEMENT

• The value of the activity has to resonate with nurses.

• Task?

• Evidence-based practice?
STRATEGIES TO PROMOTE ENGAGEMENT

• Evidence-based practices applies to all health care disciplines.

• Develop a culture where evidence-based practice is recognized and rewarded.

• Think in terms of nursing practice rather than a set of tasks to be completed.
EDUCATION

• Learning vs. practice environments.

• Work environment constraints.

• The downside of the buddy system.
EDUCATION STRATEGIES

• Competencies and competency testing.

• Oversight.

• Buddy system.

• Policy.
ALTERNATIVES

• Consider alternatives to indwelling urinary catheters first:
  – Bladder scanner.
  – Straight catheter.
  – Condom catheter.
APPROPRIATE INDICATIONS

• Acute urinary retention.
• Acute bladder outlet obstruction.
• Accurate output measurement.
• Assist in healing of open wounds to improve comfort at end-of-life.
• Strict prolonged immobilization (e.g., pelvic fracture).
• Select peri-operative needs.
COMPONENTS OF ASEPTIC INSERTION

• A sterile field.
• Hand hygiene immediately before and after.
• Sterile gloves, drapes and sponges.
• Appropriate antiseptic or sterile solution for cleaning and a single-use lubricant jelly packet for catheter tip.
• Discard an accidentally contaminated catheter and a get a new one.
### SAMPLE INSERTION CHECKLIST – ANA TOOL

**Indwelling Urinary Catheter (IUC) Insertion Checklist to Prevent CAUTI in the Adult Hospitalized Patient: Important Evidence-Based Steps.**

<table>
<thead>
<tr>
<th>Step</th>
<th>Details</th>
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<tbody>
<tr>
<td><strong>Before IUC insertion:</strong></td>
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<tr>
<td>1) Determine if IUC is appropriate per the CDC Guidelines (CDC, 2009) (See page 1, Box 1).</td>
<td>Yes</td>
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<tr>
<td>2) Select smallest appropriate IUC (14 Fr., 5ml or 10 ml balloon is usually appropriate unless ordered otherwise).</td>
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<td>3) Obtain assistance PRN (e.g., 2-person insertion, mechanical aids) to facilitate appropriate visualization/insertion technique.</td>
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<td>4) Perform hand hygiene.</td>
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<tr>
<td><strong>Patient Preparation/Insertion of IUC:</strong></td>
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<tr>
<td>1) Perform peri-care, then, re-perform hand hygiene.</td>
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</table>
| 2) Maintain strict aseptic technique throughout the actual IUC insertion procedure, re-perform hand hygiene upon completion.  
  - Use sterile gloves and equipment and establish/maintain sterile field.  
  - Do not pre-inflate the balloon to test it, as this is not recommended. | | | |

### ANOTHER TYPE OF CHECKLIST

<table>
<thead>
<tr>
<th>Procedural Steps</th>
<th>Yes</th>
<th>No</th>
<th>NA</th>
</tr>
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<tbody>
<tr>
<td>Place patient in supine position</td>
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<tr>
<td>Inspect the sterile catheterization kit and remove it from its outer packaging</td>
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<tr>
<td>Open the inner paper wrapping to form a sterile field</td>
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<td>Form sterile field on bedside table or other flat surface but not patient bed</td>
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<td>With washed hands carefully retrieve the absorbent pad from the top of the kit</td>
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<tr>
<td>Place absorbent pad beneath patient’s buttocks, with plastic side down</td>
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<tr>
<td>Don sterile gloves</td>
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<tr>
<td><strong>Cover patient’s abdomen and superior pubic region with fenestrated drape</strong></td>
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<tr>
<td>Organize contents of the tray on the sterile field</td>
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<tr>
<td>Pour antiseptic solution over the preparation swabs in the tray compartment</td>
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<tr>
<td>Squeeze some sterile catheter lubricant onto the tray to lubricate the catheter tip</td>
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<tr>
<td>Using gloved non-dominant hand, identify the urethra by spreading labia majora &amp; minora</td>
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<tr>
<td>Use the thumb and index finger to spread the inner labia with gentle traction and pulling upward towards patient’s head</td>
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<tr>
<td>Non-dominant hand is not removed from this position</td>
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<tr>
<td>Use an expanding circular motion to clean the opening with remaining swabs</td>
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<tr>
<td>Lubricate distal end of the catheter with the sterile jelly</td>
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<tr>
<td>Holding the catheter in the dominant hand, gently introduce the catheter tip into meatus</td>
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<tr>
<td>Slowly advance catheter through the urethra into the bladder</td>
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<tr>
<td>If catheter is accidentally contaminated, it is discarded, and a new sterile catheter is obtained</td>
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<tr>
<td>* If catheter is accidentally inserted into the vagina, it is left in place until a new sterile catheter is obtained and inserted correctly</td>
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<tr>
<td>Once urine is observed in tubing, the catheter is advanced another 3 – 5 cm.</td>
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<tr>
<td>Balloon is inflated with entire contents of 10cc. syringe of sterile water only after urine is observed in tubing</td>
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</tbody>
</table>
EXECUTION: LACK OF AWARENESS

• Those who insert catheters may not be aware of the consequences when aseptic insertion technique is violated.

• Patients move from the ED to other units and there is no systematic process to let ED staff know of patient outcomes.
EXECUTION: RAISING AWARENESS

• Unit and organizational level strategies:
  – Display rates for all units, so that comparisons can be seen.
• Does the catheter have to be inserted right NOW?
EXECUTION: LACK OF RESOURCES

• Variation in human resources contributes to poor execution as well:
  – High turnover
  – Understaffing
    • Nurse
    • IP
EXECUTION STRATEGIES THAT FOCUS ON IMPROVING OR REALLOCATING RESOURCES

- Adequate supplies.
- Adequate facilities for hand hygiene.
- Would individual supplies be better than a kit?
- Location:
  - Where are kits located in relation to where the procedure is to take place?
OTHER STRATEGIES TO IMPROVE EXECUTION

• A non-punitive culture.
• Visible and supportive leadership.
• Identify system-wide barriers to aseptic insertion:
  – Lack of adequate supplies.
  – Lack of space for sterile field set-ups.
  – Lack of manpower.
• Allocate resources to overcome as many barriers as possible.
EVALUATION

• CAUTI rates, catheter days and costs of urinary tract infections.
• Compliance with catheter insertion guidelines.
• Compliance with catheter maintenance and care.
• Hand hygiene rates.
OTHER RESOURCES

• www.Catheterout.org

• Strategies to Prevent CAUTI in Acute Care Hospitals, 2014 Update from SHEA:
  http://www.jstor.org/stable/10.1086/675718
MINDFUL PRACTICE

• Catheter insertion is really a very complex task:
  – Multiple steps.
  – Something can go wrong at any point.
  – Does not evoke visceral response, yet harms are very real.
BECOMING MINDFUL

• Mindful practice is a cognitive process that tailors evidence-based practice recommendations to the individual patient by considering patient and contextual factors.
• Maintain a big picture view.
• Stay “in the moment.”

http://www.jstor.org/stable/10.1086/673147
MINDFULNESS

• A way of thinking based on sorting and prioritizing cognitive tasks.
• Used to achieve organizational goals.
• A flexible state of mind “engaged in the present with acute awareness of external events.”
CONCLUSION

- Urinary catheters should only be inserted if there is an appropriate indication.
- Aseptic insertion technique is strongly recommended, but multiple barriers can arise.
- An approach that blends the “four E’s” with mindfulness may be successful at overcoming barriers.
• Children’s hospital
• Cancer research and treatment center
• Heart and vascular institute
• Orthopedics
• Women’s services
• ACS verified level II trauma center
Home of Buddy Holly

Lubbock, TX
TESTS OF CHANGE AND WHAT WE LEARNED

Problem:
- Despite intensive education, the CAUTI SIR remained elevated.

Analysis:
- Perform daily rounds in CCU, MICU, SICU and ED and collect data to determine opportunities for improvement.
- Discovered multiple knowledge deficits and gaps:
  - Aseptic insertion
  - Peri-care (or lack thereof)
  - Gaps in maintenance bundle

Tactic:
- Online Bard Foley Catheter education and simulation lab
- Once online education was completed, nurse and nurse technician had to complete mandatory simulation lab:
  - Aseptic insertion of Foley catheter
  - Maintenance of urine sample collection
  - Insertion and removal criteria with documentation
FY 2015 COMPARED TO FY 2016

**Maintenance Bundle Compliance**

<table>
<thead>
<tr>
<th>Location</th>
<th>Pre-Implementation</th>
<th>Post-Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SICU</td>
<td>67% 2.37</td>
<td>97% 1.34</td>
</tr>
<tr>
<td>MICU</td>
<td>75% 3.3</td>
<td>98% 1.3</td>
</tr>
<tr>
<td>HC4</td>
<td>46% 3.91</td>
<td>97% 0.89</td>
</tr>
</tbody>
</table>

*CAUTI Rate*

**Rate per 1,000 device days**

**UTI By Location**

<table>
<thead>
<tr>
<th>Event Location</th>
<th>No. Of CAUTI</th>
<th>Patient Days</th>
<th>Urinary Catheter Days</th>
<th>CAUTI Rate**</th>
</tr>
</thead>
<tbody>
<tr>
<td>HC4</td>
<td>16</td>
<td>7221</td>
<td>4097</td>
<td>3.91</td>
</tr>
<tr>
<td>MICU</td>
<td>12</td>
<td>5206</td>
<td>3635</td>
<td>3.3</td>
</tr>
<tr>
<td>SICU</td>
<td>13</td>
<td>7329</td>
<td>5456</td>
<td>2.37</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>41</strong></td>
<td><strong>19756</strong></td>
<td><strong>13228</strong></td>
<td><strong>3.10</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Event Location</th>
<th>No. Of CAUTI</th>
<th>Patient Days</th>
<th>Urinary Catheter Days</th>
<th>CAUTI Rate**</th>
<th>% change from FY2015 to FY2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>HC4</td>
<td>4</td>
<td>7581</td>
<td>4514</td>
<td>0.89</td>
<td>77.24</td>
</tr>
<tr>
<td>MICU</td>
<td>5</td>
<td>5285</td>
<td>3839</td>
<td>1.3</td>
<td>60.61</td>
</tr>
<tr>
<td>SICU</td>
<td>8</td>
<td>8740</td>
<td>5979</td>
<td>1.34</td>
<td>43.46</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>21606</strong></td>
<td><strong>14332</strong></td>
<td><strong>1.19</strong></td>
<td><strong>61.73</strong></td>
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</table>
BARRIERS AND HOW WE RESOLVED

• There was a knowledge deficit despite the fact that the insertion of a Foley catheter is a basic nursing practice.

• Foley catheters are ‘taken for granted’ and seen more as a convenience than a risk.
  – A definite culture change was needed.
  – Had to emphasize the rationale and purpose of evidence based practice to avoid infection in the patient.

• The simulation lab gave nursing staff the opportunity to have open discussion in a safe environment.
MEASURES – WHAT AND HOW

- Daily rounding performed by the CAUTI team on all critical care patients.
- Foley maintenance measures were monitored and the medical necessity of the catheter was addressed daily with chart reviews and communication with physicians, nurses and patients on the importance of removal.
- This rounding was completed using a patient log for monitoring insertion date, auto stop date, actual removal date and UA/Culture results.
- We used the following measures:

<table>
<thead>
<tr>
<th>SICU</th>
<th>M#</th>
<th>Age</th>
<th>Sex</th>
<th>Admission Date</th>
<th>Insertion Date</th>
<th>Foley Inserted by what unit?</th>
<th>Total Device Days</th>
<th>Auto-Stop Date</th>
<th>Removal Date</th>
<th>UA Date</th>
<th>Culture Ordered</th>
<th>Result</th>
<th>Necessity</th>
<th>Comments</th>
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<td>Room</td>
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- Data was found on the patient record while rounding.
- Data was shared monthly with each unit.
ADVICE FOR OTHERS

• Start with one or two units.
• Gain support from CNO and director of nursing.
• Perform the assessment.
  – You need actual eyes on the practice that occurs day to day.
  – Aseptic insertion means different things to different people – find one common definition.
• Peri-Care and perineal cleansing prior to and after insertion are critical elements.
• Do not assume that all understand the ‘why’ behind the proposed practice.
• Use stories to make a point.
WRAP UP AND NEXT STEPS

• Summary
• We are planning to expand this program to medical-surgical units next!
• Questions?
• Contact Info (if you’re willing to share):
• Rita Crasta: rcrasta@covhs.org
BRING IT HOME

Marina Levin, Program Manager | HRET | 11:55 – 12:00PM
What are you going to do by next Tuesday?

- Perform the assessment.
  - Find one common definition for aseptic insertion.

What are you going to do in the next month?

- Discuss with leadership the components of aseptic leadership, how to overcome barriers of implementation and the rationale/purpose of evidence based practice to avoid infection in the patient.
UNIT-BASED TEAM ACTION ITEMS

What are you going to do by next Tuesday?
- Display rates on all units allowing staff to compare and review outcomes.

What are you going to do in the next month?
- Identify system-wide barriers to aseptic insertion.
  - Adequate supplies?
  - Staff turn over?
  - Location of resources?
HOSPITAL LEADERS ACTION ITEMS

What are you going to do by next Tuesday?
- Implement new competency testing for nurses.
- Evaluate policy and protocol.

What are you going to do in the next month?
- Evaluate hand hygiene rates, cost of urinary tract infections and CAUTI rates.
UPCOMING EVENTS

- ADE Office Hours – 8/11
- Data (OB) Office Hours – 8/16
- Pressure Ulcers – 8/18

Register Now! [http://www.hret-hen.org/events/index.dhtml](http://www.hret-hen.org/events/index.dhtml)
THANK YOU!

Find more information on our website: www.hret-hen.org

Questions/Comments: hen@aha.org