Do No Harm: Evidence Based Nursing Care Interventions for Preventing Non-Ventilated HAP & CAUTI

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Disclosures

- Hill-Rom Speaker Bureau & Consultant
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- Sage Products Speaker Bureau & Consultant
Session Objectives

• Create the link of patient advocacy to the basic nursing care
• Define key fundamental evidence based care practice that reduces CAUTI’s & non-vent HAP’s
• Discuss strategies to overcome barriers

Notes on Hospitals: 1859

“It may seem a strange principle to enunciate as the very first requirement in a Hospital that it should do the sick no harm.”

Florence Nightingale

Advocacy = Safety
PROTECT THE PATIENT FROM BAD THINGS HAPPENING ON YOUR WATCH

Implement Interventional Patient Hygiene

Interventional Patient Hygiene

- Hygiene…the science and practice of the establishment and maintenance of health
- Interventional Patient Hygiene….nursing action plan directly focused on fortifying the patients host defense through proactive use of evidence based hygiene care strategies

Incontinence Associated Dermatitis Prevention Program
INTERVENTIONAL PATIENT HYGIENE (IPH)

VAP/HAP
Oral Care/Mobility

HAND

Patient

HYGIENE

Catheter Care

Skin Care/Bathing/Mobility

CA-UTI

CA-BSI

SSI

HASI

Attitude & Accountability

Factors Impacting the ability to Achieve Quality Nursing Outcomes at the Point of Care

Achieving the Use of the Evidence
Building Resiliency Into Interventions

- Forcing functions and constraints
- Automation and computerization
- Standardization and protocols
- Checklists and independent check systems
- Rules and policies
- Education and information
- Vague warnings – Be more careful!

Why HAI's?
Protecting Patients From Harm

<table>
<thead>
<tr>
<th>Estimates: 183 Hospitals in 10 States</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAI: 722,000/year</td>
</tr>
<tr>
<td>HAI-related deaths: 75,000/year</td>
</tr>
<tr>
<td>Hospitalized patients develop infection: 1 out of 25 (4%)</td>
</tr>
<tr>
<td>Death due to sepsis/septic shock: 700/day</td>
</tr>
<tr>
<td>Money spent: $45 billion/year</td>
</tr>
<tr>
<td>Increase risk of readmission: 27days vs. 59 days</td>
</tr>
</tbody>
</table>

Health Care Associated Infection Data

<table>
<thead>
<tr>
<th>Measurement</th>
<th>NHSN 2012 3742 hospitals in US</th>
<th>Estimated # of Infections</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAP/per 1000 patient days</td>
<td></td>
<td>157,500 (21.8%)</td>
</tr>
<tr>
<td>VAP/per 1000 vent days</td>
<td>Range of pooled means</td>
<td>49,900</td>
</tr>
<tr>
<td></td>
<td>0.2 (Ped CVICU) -4.4 (Burn ICU)</td>
<td></td>
</tr>
<tr>
<td>CLA-BSI/per 1000 cath days</td>
<td>Range of pooled means</td>
<td>15,600</td>
</tr>
<tr>
<td></td>
<td>0.8 (CVICU)-3.4 (Burn ICU)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Step-down-Ward 0.3 (Adult Rehab) -2.4 (Burn)</td>
<td></td>
</tr>
<tr>
<td>CA-UTI/per 1000 cath days</td>
<td>Range of pooled means</td>
<td>35,600</td>
</tr>
<tr>
<td></td>
<td>0.7 (Peds Surgical)-5.0 (Neuro ICU)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.0 (Well Baby) – 4.1 (Peds rehab)</td>
<td></td>
</tr>
</tbody>
</table>


- 75% of HAI not related to devices (CAUTI, CLABSI, VAP)

- Recommendation:
  - As device-related infections decrease, expand surveillance and prevention activities to include other HAIs

Improvement Seen Except CAUTI’s

- 46 percent decrease in CLABSI between 2008 and 2013
- 19 percent decrease in SSI related to the 10 select procedures tracked in the report between 2008 and 2013
- 6 percent increase in CAUTI between 2009 and 2013
- 8 percent decrease in MRSA bacteremia between 2011 and 2013
- 10 percent decrease in C. difficile infections between 2011 and 2013

www.cdc.gov/hai/progress-report

Missed Nursing Care

- “Any aspect of required patient care that is omitted (either in part or whole) or significantly delayed.”
- A predictor of patient outcomes
- Measures the process of nursing care
Hospital Variation in Missed Nursing Care

![Graph showing elements of care most and least frequently missed.](image)

Figure 2. Elements of care most and least frequently missed. The solid bars represent the means across all 10 hospitals, and the range lines indicate the standard deviations.


Patient Perceptions of Missed Nursing Care

![Table showing elements of nursing care by ability of patient to report and extent missed.](image)

Table 2. Elements of Nursing Care by Ability of Patient to Report and Extent Missed

<table>
<thead>
<tr>
<th>Fully Reportable</th>
<th>Partially Reportable</th>
<th>Not Reportable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* N. intravenous.

Why NV-HAP?

- HAP 1st most common HAI in U.S.
  - Increased morbidity $\rightarrow$ 50% are not discharged back home
  - Increased mortality $\rightarrow$ 18%-29%
  - Extended LOS $\rightarrow$ 4-9 days
  - Increased Cost $\rightarrow$ $28K$ to $109K$
  - 2x likely for readmission <30 day
- Understudied, under-addressed
- Focus has been on the other HAP $\rightarrow$ VAP
  - Surveillance not required....yet

Pennsylvania Dept. of Public Health (2010)

Hospital-Acquired Pneumonia: Non-Ventilated versus Ventilated Patients in Pennsylvania

- Purpose:
  - Compare VAP and NV-HAP incidence, outcomes
- Methods:
  - Pennsylvania Database queried
  - All nosocomial pneumonia data sets (2009-2011)

Results:

<table>
<thead>
<tr>
<th>Year</th>
<th>NV-HAP Cases</th>
<th>NV-HAP Deaths</th>
<th>% of NV-HAP Deaths Contributing to Death</th>
<th>VAP Cases</th>
<th>VAP Deaths</th>
<th>% of VAP Deaths Contributing to Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>1,976</td>
<td>363</td>
<td>18.4 (95% CI: 16.5 to 20.3)</td>
<td>922</td>
<td>163</td>
<td>17.7 (95% CI: 15.0 to 20.5)</td>
</tr>
<tr>
<td>2010</td>
<td>1,848</td>
<td>366</td>
<td>19.8 (95% CI: 17.8 to 21.8)</td>
<td>757</td>
<td>144</td>
<td>19.5 (95% CI: 16.3 to 22.7)</td>
</tr>
<tr>
<td>2011</td>
<td>1,773</td>
<td>315</td>
<td>17.8 (95% CI: 15.8 to 19.7)</td>
<td>640</td>
<td>127</td>
<td>19.8 (95% CI: 16.4 to 23.3)</td>
</tr>
<tr>
<td>Total</td>
<td>5,597</td>
<td>1,044</td>
<td>19.7 (95% CI: 17.5 to 20.8)</td>
<td>2,299</td>
<td>434</td>
<td>19.9 (95% CI: 17.1 to 20.7)</td>
</tr>
</tbody>
</table>

Note: NV-HAP refers to nonventilator-hospital-acquired pneumonia and VAP refers to ventilator-associated pneumonia.

- Mortality
- Incidence
- Total deaths
- Total cost
- Wide-spread


Incidence, Prevalence of NV-HAP: A Local Study (2010)

- Purpose:
  - Determine incidence and clinical factors of NV-HAP
- Method:
  - Descriptive, quasi-experimental study using retrospective data
  - Inclusion criteria:
    - All adult discharges
    - ICD-9 codes of pneumonia not POA
    - AND met CDC definition of HAP

NV-HAP SMCS Research Findings: 2010

24,482 patients and 94,247 patient days

Incidence:
- 115 adults
- 62% non-ICU
- 50% surgical
- Average age 66
- Common comorbidities:
  - CAD, COPD, DM, GERD
- Common Risk Factors:
  - Dependent for ADLs (80%)
  - CNS depressant meds (79%)

Cost:
- $4.6 million
- 23 deaths
- Mean Extended LOS 9 days
- 1035 extra days


Preventing NV-HAP Through Evidence Based Fundamental Nursing Care Strategies
**Pathogenesis → Prevention**

- **Germs in Mouth**
  - Dental plaque provides microhabitat
  - Bacteria replicate 5X/24 hrs

- **Aspirated into Lungs**
  - Most common route
  - 50% of healthy adults micro-aspirate in sleep

- **Weak Defenses**
  - Poor cough
  - Immunosuppressed
  - Multiple co-morbidities

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**Micro Aspiration During Sleep in Healthy Subjects**

- Prospective duplicate full-night studies
- 10 normal male's 22-55 yrs of age
- Methods:
  - Radioactive $^{99m}$Tc tracer inserted into the nasopharynx
  - Lung scans conducted immediately following final awakening
  - No difference in sleep efficacy btwn 2 study nights
- Results:
  - 50% of subjects had tracer in the pulmonary parenchyma upon final awakening
  - No difference in age, time spent in bed, efficacy of sleep, apnea-hyponea index, arousal plus awakening index or % sleep in the supine position between subjects that aspirated and those that did not.

Body Position: Supine versus Semi-recumbent (30-45 degrees)

Methodology
- 19 mechanically ventilated patients
- 2 period crossover trial
- Study supine and semirecumbent positions over 2 days
- Labeled gastric contents (Tc 99m sulphur colloid)
- Measured q 30 min content of gastric secretions in endobronchial tree in each position
- Sampled ET secretions, gastric juice & pharyngeal contents for bacteria


Results
- Radioactive contents higher in endobronchial secretions in supine patients
- Time dependent:
  - Supine: 298cpm/30min vs. 2592cpm/300min
  - HOB: 103cpm/30min vs. 216cpm/300min
- Same microbes cultured in all 3 areas 32% with HOB vs. 68% supine.

Prevention

Germs in Mouth
• Comprehensive oral care

Aspirated
• Aspiration prevention strategies

Weak Host
• Strengthen host defenses

Prevent HAP

ATS Guidelines (2005)
Risk Factors for Oral Bacteria in the Hospital

- Poor oral health in the U.S. (CDC, 2011)
- Increased bacteria counts
  - Plaque, gingivitis, tooth decay
  - Reduced salivary flow
- 24-48 hours for HAP pathogens in mouth
- If aspirated =100,000,000 bacteria/ml saliva into lungs


Oral Cavity & VAP

- 89 critically ill patients
  - Examined microbial colonization of the oropharynx through out ICU stay
  - Used pulse field gel electrophoresis to compare chromosomal DNA
  - Results:
    - Diagnosed 31 VAPs
    - 28 of 31 VAP’s the causative organism was identical via DNA analysis


- 49 elderly nursing home residents admitted to the hospital
  - Examined baseline dental plaque scores & microorganism within dental plaque
  - Used pulse field gel electrophoresis to compare chromosomal DNA
  - Results:
    - 14/49 adults developed pneumonia
    - 10 of 14 pneumonias, the causative organism was identical via DNA analysis

El-Solh AA, Chest. 2004;126:1575-1582
Role of Salivary Flow

- Provides mechanical removal of plaque and microorganisms
- Innate & specific immune components (IgA, cortisol, lactoferrin)
- Patients receiving mechanical ventilation have dry mouth which in turn contributes to accumulation of plaque & reduced distribution of salivary immune factors

Munro CL & Grap MJ. AJCC. 2004;13:25-34

http://helios.bto.ed.ac.uk/bto/microbes/biofilm.htm
Loesche, W. 2012
Impact of Oral Care on HAP

Phase 2: Could NV-HAP be decreased simply by brushing the patient’s teeth?
SMCS HAP Prevention Plan

Phase 2: Oral Care

- Formation of new quality team: Hospital-Acquired Pneumonia Prevention Initiative (HAPPI)
- New oral care **protocol** to include non-ventilated patients
- New oral care **products and equipment** for all patients
- Staff **education** and in-services on products
- Ongoing **monitoring and measurement** – Monthly audits


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**Gap Analysis**

<table>
<thead>
<tr>
<th>Best Practice</th>
<th>Our Gaps</th>
<th>Action To Take</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive oral care for all (CDC, SHEA)</td>
<td>ICU vent patients only</td>
<td>Develop inclusive oral care protocol</td>
</tr>
<tr>
<td>Oral CHG (0.12%) periop adult CV surgery and vent pts. (CDC, ATS, IHI).</td>
<td>Not using CHG on these patients.</td>
<td>Added to preprinted orders, and to protocol</td>
</tr>
<tr>
<td>Therapeutic oral care tools (ADA)</td>
<td>Poor quality oral care tools. Absence of denture care supplies.</td>
<td>New tools and supplies.</td>
</tr>
</tbody>
</table>
Protocol – Plain & Simple

<table>
<thead>
<tr>
<th>Patient Type</th>
<th>Tools</th>
<th>Procedure</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Care / Assist</td>
<td>Brush, paste, rinse, moisturizer</td>
<td>Provide tools brush 1-2 minutes rinse</td>
<td>4 X / day</td>
</tr>
<tr>
<td>Dependent / Aspiration Risk</td>
<td>Suction toothbrush kit (4)</td>
<td>Package instructions</td>
<td>4 X / day</td>
</tr>
<tr>
<td>Dependent / Vent</td>
<td>ICU Suction toothbrush kit (6)</td>
<td>Package instructions</td>
<td>6 X / day</td>
</tr>
<tr>
<td>Dentures</td>
<td>Tools + Cleanser Adhesive</td>
<td>Remove dentures &amp; soak brush gums, mouth rinse</td>
<td>4X / day</td>
</tr>
</tbody>
</table>

Provide Meaningful Data

- Ortho Unit had ZERO HAP cases in the last 4 months of 2013!!
- Great WORK!!
- Remember, the goal is to provide and document oral care after each meal and before bedtime.
Oral Care Knowledge & Attitude Survey:

- **Method:**
  - Staff survey
  - Pre – Post education
- **Results:**
  - Awareness of oral care protocol (77%)
  - Priority of care for NAs (96%)
  - RN perception that their patients received oral care (300%)

Mean Frequency of Oral Care in Relationship to NV- HAP
Frequency of Oral Care: Increased in the ICU

Frequency of Oral Care for Non-vented patients in the ICU ↑ 300%

NV-HAP Incidence
50 % Decrease from Baseline

Control chart for NV-HAP
January 2010 to December 2013

Baseline
Oral Care
Average
UCL
LCL

Number of non-ventilation HAP cases
Month/Year
Return on Investment

- 60 NV-HAP avoided Jan 1 – Dec. 31 2013
- $2,400,000 cost avoided
- - 117,600 cost increase for supplies
- $2,282,400 return on investment

• 12 lives saved

PRICELESS

Targeted CA-UTI Prevention
The Why

- Urinary tract infection (UTI) are one of the most common hospital-acquired infections
- Along with other device associated infections (CLABSI and VAP) account for 25% of all hospital acquired infections
- 70-80% of CAUTI are due to urinary catheters
- 12-16% of inpatients are catheterized
- Leads to increased morbidity and costs
- Medicare no longer reimburses U.S. hospitals for the additional costs of certain infections
- CAUTI prevention is part of the 2012 National Patient Safety Goal


CUSP & CAUTI Interventions

<table>
<thead>
<tr>
<th>Adaptive /Cultural CUSP</th>
<th>Technical CLAUTI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Educate on the Science of Safety</td>
<td>1. Insertion Limiting use Using aseptic technique for site prep, equip &amp; supplies</td>
</tr>
<tr>
<td>2. Identify Defects (Staff Safety Assessment)</td>
<td>2. Maintenance • Securing the catheter for unobstructed flow</td>
</tr>
<tr>
<td>3. Senior Executive Partnership</td>
<td>• Maintaining the sterility of the urine collection system</td>
</tr>
<tr>
<td>4. Learn from Defects</td>
<td>• Replacing the urine collection system when required</td>
</tr>
<tr>
<td>5. Implement Teamwork &amp; Communication Tools</td>
<td>• Collecting urine samples</td>
</tr>
</tbody>
</table>
Isn’t this a patient safety issue, not just CAUTI?

Pathogenesis of CAUTI

- Source: colonic or perineal flora on hands of personnel
- Microbes enter the bladder via extraluminal (around the external surface) (proportion = 2/3) or intraluminal (inside the catheter) (1/3)
- Daily risk of bacteriuria with catheterization is 3% to 10%; by day 30 = 100%
Disrupting the Lifecycle of the Urinary Catheter

1. Preventing Unnecessary and Improper Placement
2. Maintaining Awareness & Proper Care of Catheters
3. Prompting Catheter Removal
4. Preventing Catheter Replacement

CDC, SHEA, IDSA and NHS: Indications for Placement

- Perioperative use for selected surgical procedures
- Urine output in critically ill patients
- Management of acute urinary retention and urinary obstruction
- Assistance in pressure ulcer healing for incontinent patients
- At a patient request to improve comfort (SHEA) or for comfort during end of life care (CDC)

Core Recommendations

- Insert catheters only for appropriate indications (1B)
- Leave catheters in only as long as needed (1B)
- Ensure that only properly trained persons insert and maintain catheters (1B)
- Insert catheters using aseptic technique and sterile equipment (acute care settings) (1C)
- Consider use of alternatives (II)
- Maintain a close drainage system (1B)
- Secure the system (1B)
- Maintain unobstructed urine flow (1B)
- Key the collecting bag below the level of the bladder at all times (1B)

Simplified Insertion Checklist for Urinary Catheter

<table>
<thead>
<tr>
<th>Components of Checklist</th>
<th>Compliant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand hygiene before and after procedure</td>
<td>Yes, after correction</td>
</tr>
<tr>
<td>Sterile gloves, drapes, sponges, aseptic sterile solution for cleaning, and single use packet lubricant used</td>
<td></td>
</tr>
<tr>
<td>Aseptic insertion technique (no contamination during placement)</td>
<td></td>
</tr>
<tr>
<td>Proper securement of urinary catheter post-procedure</td>
<td></td>
</tr>
<tr>
<td>Closed drainage system and bag below patient post-procedure</td>
<td></td>
</tr>
</tbody>
</table>

Core Recommendations

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Challenges with Current Appropriate Alternatives: External Male Catheters

1 out of every 200 men is born with what's medically known as 'micro-penis'

Buried Penis
Condom Catheter

Common Problems

- Most common problems are:
  - Skin irritation and maceration
  - Difficult to keep the condom from falling off/retraction of the penis or decrease size
  - Ischemia and penile obstruction/tightness
  - Adherence: requires to secure on the shaft & adhesive mechanisms are challenging

Before & After QI Project

- 60 day comparison
- Use of a novel EMC device vs. indwelling catheter
- Inclusion criteria:
  - No restraints
  - No BPH
  - No neurogenic bladder
  - Cooperative
  - Hospitalize 2 wks or greater
- Monitored wear time and evaluated the skin

Average Wear Time = 24hrs

Core Recommendations

- Insert catheters only for appropriate indications (1B)
- Leave catheters in only as long as needed (1B)
- Ensure that only properly trained persons insert and maintain catheters (1B)
- Insert catheters using aseptic technique and sterile equipment (acute care settings) (1C)
- Consider use of alternatives (II)
- Maintain a close drainage system (1B)
- Secure the system (1B)
- Maintain unobstructed urine flow (1B)
- Key the collecting bag below the level of the bladder at all times (1B)
Securement Devices

Core Recommendations

- Insert catheters only for appropriate indications (1B)
- Leave catheters in only as long as needed (1B)
- Ensure that only properly trained persons insert and maintain catheters (1B)
- Insert catheters using aseptic technique and sterile equipment (acute care settings) (1C)
- Consider use of alternatives (II)
- Maintain a close drainage system (1B)
- Secure the system (1B)
- Maintain unobstructed urine flow (1B)
- Key the collecting bag below the level of the bladder at all times (1B)
Traditional Bathing

Why are there so many bugs in here?

Soap and water basin bath was an independent predictor for the development of a CLABSI

Bath Basins: Potential Source of Infection

- Multicenter sampling study (3 ICU’s) of 92 bath basins
- Identify & quantify bacteria in patients basins
- Sampling done on basins used > 2x in patients hospitalized > 48 hours & performed 2 hours post bath
- Cultures sent to outside laboratory
- Qualitative vs. quantitative measures used to exclude growth that may have occurred in transport
- Bathing practices not controlled & no antiseptic soaps used to bathe

The Evidence: Bath Basins
Potential Source of Infection

Multicenter Sample Study to Identify and Quantify Bacteria in Basins

- Enterococci: 54%
- Gram negative: 32%
- S. aureus: 23%
- VRE: 13%
- Less than 10% growth rates
  - MRSA: 8%
  - P. aeruginosa: 5%
  - Candida albicans: 3%
  - E. coli: 2%

98% grew bacteria


Bath Basins
Potential Source of Infection

Large multi-center study evaluates presence of multi-drug resistant organisms

- Contaminated: 62%
  - 686 basins/88 Hospital
- Gram negative bacilli: 45%
  - 495 basins/86 hospitals
- Colonized w/ VRE: 35%
  - 385 basins/80 hospitals
- MRSA: 3%
  - 36 basins/28 hospitals

Mechanisms of Contamination

- Skin flora
- Multiple-use basins
  - Incontinence cleansing
  - Emesis
  - Product storage
- Bacterial biofilm from tap water


Waterborne Infection

**Hospital Tap Water**

- Bacterial biofilm
- Most overlooked source for pathogens
- 29 studies demonstrate an association with HAIs and outbreaks
- Transmission:
  - Drinking
  - Bathing
  - Rinsing items
  - Contaminated environmental surfaces
- Immunocompromised patients at greatest risk

Impact on UTI with Basin Bathing

UTI Rate - Removal of Prepackaged Bath Product QTR 3 FY05

The Effect of Bathing with Basin and Water and UTI Rate, LOS and Costs

| Unit Census: 14 |
|-----------------|-----------------|---------------|-----------------|-----------------|
| Phases          | Product Cost/   | No. of UTI    | Median\(^4\)    | Median\(^4\)    |
|                 |                 |               | LOS 17 Days     | Cost (4857.00)  |
| I- Pre-Packaged Bathing Washcloths (9 months) | $10,530\(^1\) ($3.00) | 25 | 175 | $117,175 |
| II- Basin/Water (9 months) | $3,510\(^2\) ($1.00) | 48 | 336 | $224,916 |
| III- Additional Product Cost, UTI, LOS, COSTS | $7,020 | 23\(^3\) | 151 | $107,741 |

\(^1\) Based on 3 packages of 8 towels each \(^2\) Based on product cost of towels, soap, and basin \(^3\) Difference between phase I pre-package/phase II basin water \(^4\) McGuckin M, et al. AJIC, 2008;36:59-62
For Successful Banning of Basins for Patient Care

- We need to provide alternatives for the other functions:

<table>
<thead>
<tr>
<th>Current</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emesis</td>
<td>Emebags being installed in every adult and ped pt. room, ACU, PACU</td>
</tr>
</tbody>
</table>
| Storage of patient items                     | Clear plastic “baggies”  
Trial of “Concierge List” to decrease waste of unused/unneeded products |
| Foot soaks                                    | Shampoo caps, prepackaged                                 |
| Shampoo patient’s hair                       | Shampoo caps par’d on all units                           |
| 24 hour urine, ice                           | Store some basins in lab to be dispensed with each 24 hour jug. |
| Bath cloths with no insulation, cold halfway through bath. | Bath cloths with insulation to stay warm longer          |

Quinn B, et al. Presented at NACNS National Conference, March 5-7th, 2015, San Diego Ca

Cleansing of Patients with Indwelling Catheter

- Indwelling catheter care should occur with the daily bath (basinless bathing)*, as a separate procedure using clean technique
- There is no evidence to support 2x a day indwelling catheter care
- If a large liquid stool occurs, bathe the patient with basin less bathing
- Use separate cloths to clean front to back in the perineal area and 6 inches of the catheter**
- Apply barrier cloth to area of skin requiring protection


* Sage recommends following hospital policy
Additional Recommendations: SHEA Compendium Update 2014

- Replace the catheter and the collecting system using aseptic technique when breaks in aseptic technique, disconnection, or leakage occur (quality of evidence: III).
- For examination of fresh urine, collect a small sample by aspirating urine from the needleless sampling port with a sterile syringe/cannula adaptor after cleansing the port with disinfectant (quality of evidence: III).
- Unresolved
  - Antiseptic or sterile saline for meatal cleaning before insertion


Additional Recommendations: SHEA Compendium Update 2014

- Develop a protocol for management of post-op urinary retention
  - Bladder scanner
  - Intermittent catheterization
- Do not routinely use antimicrobial/antiseptic impregnated catheters
- Do not screen for asymptomatic bacteriuria in catheterized patients

Nurstoons by Carl Elbins

1. How did your first Foley catheter insertion go?
   Terrible!!! I got so nervous that I put it in the wrong opening.

2. Don’t be so hard on yourself. It’s difficult to find the meatus on an old lady.

3. I know... but it wasn’t an old lady. It was a man!!

www.nurstoons.com

THINGS TO CONSIDER
Cost-Benefit Ratio

CA-UTI vs. IAD & Pressure Ulcer

IAD Assessment Tool

Hospital Survey on Incontinence & Related Skin Injury

Cost-Benefit Ratio

CA-UTI vs. IAD & Pressure Ulcer

IAD Assessment Tool

Hospital Survey on Incontinence & Related Skin Injury

Reminder Systems May Reduce Inpatient Catheter Use and Associated UTIs


Reminder
56% reduction

Stop Order
41% reduction

<table>
<thead>
<tr>
<th>Study</th>
<th>RR(95% CI)</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Aparasitshenyanik (2007)</td>
<td>0.24 (0.15, 0.37)</td>
<td>10.34</td>
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<tr>
<td>Crousset (2007)</td>
<td>0.55 (0.38, 0.82)</td>
<td>11.09</td>
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<tr>
<td>Huwng (2004)</td>
<td>0.72 (0.54, 0.96)</td>
<td>16.72</td>
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<tr>
<td>gsc (2006)</td>
<td>0.94 (0.33, 1.20)</td>
<td>10.35</td>
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<tr>
<td>Overall (P = 0.7% P &lt; .001)</td>
<td>0.84 (0.51, 1.37)</td>
<td>37.49</td>
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Nurse Directed Catheter Removal

- 300 bed community teaching hospital
- Implementation of a nurse directed urinary catheter removal protocol
  - Protocol linked to physician catheter order
  - Physician documentation of catheter insertion criteria & device specific charting in progress notes
  - Bi-weekly unit specific feedback
- Results: 50% ↓ in catheter use & 70% ↓ in CAUTI

Parry MF, et al. AM J Of Infect Control, 2013;41:1178-81
Stop catheter-associated urinary tract infections (CAUTI) in critically ill patients.

1. RAISE AWARENESS & UNDERSTAND THE RISKS.

Possible misconceptions:
- It's just a catheter, so what's the big deal?
- We always used to use catheters, nothing new.
- We can't prevent CAUTI without changing the patient’s care.
- We must get some antibiotic to help prevent CAUTI.

What the science & evidence show:
- In a typical patient, the risk of CAUTI is high.
- The most effective way to prevent CAUTI is to avoid the use of indwelling catheters when possible.
- CAUTI can be prevented by using aseptic technique during catheter insertion.
- Antimicrobial prophylaxis is effective in preventing CAUTI in high-risk patients.

2. CONSIDER ALTERNATIVES TO USING AN INDWELLING CATHETER TO MEASURE URINE INFLUX AND OUTPUT.

Daily weights
- Hemodynamic monitoring

3. REBUILD THE “CULTURE OF CULTURING” (WMT).

Can reduce catheter-related bloodstream infections (CRBSI) by up to 80%.
- Monitoring catheter output
- Reassessing catheter output
- Using closed drainage systems
- Stopping catheter use when not needed

4. Tackle CAUTI.

1. Pause and validate that the patient has an approved indication before catheter insertion.
2. Implement a second person during insertion to facilitate aseptic technique.
3. Evaluate continued need daily.
4. Empower nursing staff to discontinue catheter use as soon as possible.

Make a difference. Change the culture. Learn more about the On the Cusp: Stop CAUTI program.

Visit www.onthecuspcatusp.org for more information, including frequently asked questions.

WHEN WOULD NOW BE A GOOD TIME TO DO THIS?

Prevention Bundles Work
Advocacy Starts with Us

Forbid yourself to be deterred by poor odds just because your mind has calculated that the opposition is too great. If it were easy, everyone would do it.