An Education Program on *Indwelling Urethral Catheter Care* for HEALTHCARE WORKERS in a Medicine and Geriatric Unit (2014)

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Introduction
Introduction

• Incidence of urinary retention
  – Poststroke: 21 to 41% (Kong & Young, 2000)
  – Aged home residents: 3 to 12% (Nicolle, 2014)
• Catheter-associated urinary tract infection [CAUTI]
  – The most common hospital-acquired infection (SIGN, 2012)
  – Account up to 30 to 40% in hospital settings (CHP, 2010)
• CHP (2010) & NICE (2012) recommendations:
  – Educate staff on the preventive measures of CAUTI
  – Ensure health care personnel, who involve in urinary catheter care, are trained and assessed to be competent to perform the care
Aim & Objectives

Aim:
• To empower healthcare workers in caring patients with indwelling urethral catheter [IUC] in the Medicine and Geriatric Unit.

Objectives:
• to promote perineal hygiene in less independent patients with IUC;
• to increase healthcare workers’ knowledge on IUC; and
• to enhance healthcare workers’ skills in caring for patients with IUC.
Program design

- Anatomy of male and female urinary system
- Principle of IUC
- Appropriate care for the IUC and drainage system

Theoretical

- Meatal care for both gender
- Demonstration and return demonstration on manikins

Practical
## Program design

<table>
<thead>
<tr>
<th>Time</th>
<th>Contents</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:30 – 2:35</td>
<td>Pre-test</td>
<td>Test paper</td>
</tr>
<tr>
<td>2:35 – 2:40</td>
<td>Introduction of the course</td>
<td>Computer</td>
</tr>
<tr>
<td>2:40 – 3:00</td>
<td>Brief anatomy of female and male urinary system</td>
<td>Powerpoint, Foley catheter</td>
</tr>
<tr>
<td></td>
<td>Principle of indwelling urethral catheter</td>
<td>10 ml syringe</td>
</tr>
<tr>
<td></td>
<td>Proper catheter &amp; meatal care</td>
<td></td>
</tr>
<tr>
<td>3:00 – 3:10</td>
<td>Demonstration of catheter and meatal care</td>
<td>Female &amp; male manikins</td>
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<tr>
<td></td>
<td></td>
<td>Cotton wipe</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cleansing soap</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Foley catheter</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drainage bag</td>
</tr>
<tr>
<td>3:10 – 3:15</td>
<td>Post-test</td>
<td>Test paper</td>
</tr>
</tbody>
</table>
Urinary system
Principle of indwelling urethral catheter

- Bladder
- Urethra
- Balloon
- Catheter
- Size: in French scale and millimeters
- Balloon port
- Urine drainage port
- Balloon
- Bladder opening

An Education Program on Indwelling Urethral Catheter Care for Healthcare Workers in a Medicine and Geriatric Unit (2014)
Care for indwelling urethral catheter
(CHP, 2010; COC Internal Medicine, 2003; COC Nursing, 2012; NICE, 2012; UCH, 2014a, 2014b)

- Maintain a sterile, closed continuous drainage system
- Secure the urethral catheter in position
- Do not disconnect the catheter and drainage tube unless for good clinical reasons
- Maintain unobstructed flow
- Keep outlet of the drainage bag clear of the floor
- Keep drainage bag below the level of the bladder
- Avoid kicking or pulling the catheter and collecting tube
Care for indwelling urethral catheter

- Emptying drainage bag (UCH, 2014b)
  - Wash hands prior to emptying the bag
  - Clean the outlet before emptying with 70% alcohol swab
  - Open the opening, empty the drainage bag
  - Close the opening, clean the outlet using 70% alcohol swab
  - Wash hands
Meatal care (GHP, 2010; COC Internal Medicine, 2003; NICE, 2012; UCH, 2014b)

- Meatal care
  - Expose the urethral opening
  - Cleaning cotton wipe and soap
    - (female) from front to back
    - (male) outward in circular motion

- Cleaning the catheter
  - Cleaning cotton wipe and soap
  - From proximal to distal
Evaluation methods

**Written test**
- Pre- & Post-test
- 10 Multiple choice questions
- **PASS**: Score > 50% in post-test
- **FAIL**: Re-take the class and re-test

**Clinical exam**
- Self-developed assessment tool
- 10 ax items; 4-point Likert scale
- **PASS**: Any item rated > “1”
- **FAIL**: Personal tutor and re-exam
Written test

• Anatomy of urinary system (3)
  – Which of the below is not included in the urinary system?
    Ans: Urinary bladder / Kidney / Uterus / Urethra

• Principle of IUC (3)
  – How does an IUC secured inside the urinary bladder?
    Ans: A tape / Water balloon / Tension / Friction

• Care for the IUC system (4)
  – How do you appropriately provide meatal care for female?
    Ans: Pulling backward the foreskin / Wipe from front to back / Wipe from back to front / Wipe outward in circular motion
Clinical exam

1. Maintain unobstructed flow; avoid kinks or twists
2. Do not disconnect the catheter and drainage tube
3. Keep outlet of the drainage bag clear of the floor
4. Keep drainage bag below the level of the bladder
5. Avoid pulling the catheter and collecting tube
6. Meatal care
   i. Expose the urethral opening by separating the labia or pulling backward the foreskin
   ii. (female) wipe from front to back
   iii. (male) wipe outward in circular motion
7. Catheter cleansing
   i. Wipe from proximal to distal
8. Patient’s cleanliness
9. Patient’s comfort
Clinical exam
Results

- 13 healthcare workers
- All female
- All Chinese-literate
# Written Test

<table>
<thead>
<tr>
<th>Questions</th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Which is not included in the urinary system?</td>
<td>10 (76.9)</td>
<td>11 (84.6)</td>
</tr>
<tr>
<td>2. Which organ stores urine?</td>
<td>13 (100)</td>
<td>13 (100)</td>
</tr>
<tr>
<td>3. Which of the following is false? Men get UTI more easily than women</td>
<td>7 (53.8)</td>
<td>11 (84.6)</td>
</tr>
<tr>
<td>4. Which of the following is true? IUC is consisted of &gt;1 lumens</td>
<td>7 (53.8)</td>
<td>10 (76.9)</td>
</tr>
<tr>
<td>5. How does an IUC secured inside the urinary bladder?</td>
<td>11 (84.6)</td>
<td>12 (92.3)</td>
</tr>
<tr>
<td>6. Which is not the function of IUC? Keep perineum clean</td>
<td>1 (7.7)</td>
<td>8 (61.5)</td>
</tr>
<tr>
<td>7. The appropriate care for IUC includes⋯</td>
<td>9 (69.2)</td>
<td>12 (92.3)</td>
</tr>
<tr>
<td>8. Steps of emptying urinary bag are⋯</td>
<td>11 (84.6)</td>
<td>13 (100)</td>
</tr>
<tr>
<td>9. How do you appropriately provide meatal care for female?</td>
<td>10 (76.9)</td>
<td>9 (69.2)</td>
</tr>
<tr>
<td>10. How do you appropriately wipe the IUC?</td>
<td>6 (46.2)</td>
<td>9 (69.2)</td>
</tr>
</tbody>
</table>

*Expressed in number (percentage)*
Written test

• Pre-test score: 65.4% (range 30 – 90%)
• Post-test score: 83.1% (range 30 – 100%)
• Statistical significant improvement (P-value: 0.022, Wilcoxon Signed Ranks test)

• One failed at post-test: 30%
• Retook: 90%
## Clinical exam

<table>
<thead>
<tr>
<th>Questions</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Maintain unobstructed flow; avoid kinks or twists</td>
<td>3.8 (96.2)</td>
<td>3.8 (93.8)</td>
</tr>
<tr>
<td>2. Do not disconnect the catheter and drainage tube</td>
<td>4.0 (100)</td>
<td>4.0 (100)</td>
</tr>
<tr>
<td>3. Keep outlet of the drainage bag clear of the floor</td>
<td>3.5 (88.5)</td>
<td>4.0 (100)</td>
</tr>
<tr>
<td>4. Keep drainage bag below the level of the bladder</td>
<td>3.8 (94.2)</td>
<td>3.8 (95.8)</td>
</tr>
<tr>
<td>5. Avoid pulling the catheter and collecting tube</td>
<td>3.9 (98.1)</td>
<td>3.8 (95.8)</td>
</tr>
<tr>
<td>6. Meatal care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Expose the urethral opening</td>
<td>3.5 (88.5)</td>
<td>3.9 (97.9)</td>
</tr>
<tr>
<td>ii. (female) wipe from front to back</td>
<td>3.8 (96.2)</td>
<td>-</td>
</tr>
<tr>
<td>iii. (male) wipe outward in circular motion</td>
<td>-</td>
<td>3.5 (87.5)</td>
</tr>
<tr>
<td>7. Catheter cleansing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Wipe from proximal to distal</td>
<td>3.8 (94.2)</td>
<td>3.6 (89.6)</td>
</tr>
<tr>
<td>8. Patient’s cleanliness</td>
<td>3.7 (92.3)</td>
<td>3.7 (91.7)</td>
</tr>
<tr>
<td>9. Patient’s comfort</td>
<td>3.7 (92.3)</td>
<td>3.8 (95.8)</td>
</tr>
</tbody>
</table>

Expressed in number (percentage)
Clinical exam

- Female: 94%
- Male: 94.8%

- One failed: “Keep outlet of the drainage bag clear of the floor”
- Retook and passed
Conclusion

• Effective to increase healthcare workers’ knowledge on IUC
• Appeared to be effective to enhance healthcare workers’ skills on caring the catheter system
• Recommend to yearly conduct refresher training
References

• COC Internal Medicine, Hospital Authority (2003). *Clinical guidelines on geriatric urinary incontinence*. HKSAR: Author.
Thank you