



Clinical Practice Guidelines

*Care of the Patient with an
Indwelling Catheter*

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Introduction

Nurses have long provided care of the catheterized patient. Much of this care has been individual company policy, care based on anecdotal data, or care provided based on insurance-allowable time frames. To provide the best care possible for each patient, the care must be grounded in scientific-based research.

The *Guideline for Prevention of Catheter-Associated Urinary Tract Infections* is a governmental guideline that can be found at www.cdc.gov/ncidod/hip/guide/uritract.htm. The guideline rates recommendations based on an extensive review of scientific literature. The summary is as follows:

Category I: Strongly Recommended for Adoption

1. Educate staff on proper catheter insertion/care.
2. Utilize catheter only when necessary.
3. Utilize strict handwashing principles.
4. Utilize sterile technique with catheter insertion.
5. Secure catheter properly.
6. Maintain closed sterile system.
7. Obtain urine samples aseptically.
8. Maintain free flow to urine (no obstruction).

Category II. Moderately Recommended for Adoption

1. Re-educate staff periodically.
2. Use smallest size (bore) catheter.
3. Avoid irrigation unless needed to relieve/prevent obstruction.
4. Do not perform daily meatal care as described in texts.
5. Do not change catheters at arbitrary fixed intervals.

Category III. Weakly Recommended for Adoption

1. Consider alternatives to indwelling urethral catheters.
2. Replace the collecting system when sterile closed drainage has been compromised.
3. Separate infected from uninfected catheterized patients.
4. Avoid routine bacteriologic monitoring.

Patient Education

In reviewing recently published literature, these recommendations remain acceptable. *Handwashing* remains the single most important step in preventing the spread of infection. Health care personnel should use good handwashing principles before and after direct patient care. Patient education is very important. This should be reinforced at each encounter.

- *Daily skin care isn't needed.* Studies have failed to show any benefit to the application of antibiotic ointments or betadine to the urethral meatus. Application of oil-based lubricants should also be avoided.
- *Adequate fluid intake is necessary.* 30 cc/kg of body weight is currently recommended as adequate intake. This should allow for a daily urinary output of 1,500-2,000 cc (1-4 ml/kg/24 hour) or so; unless, individual patient health care concerns dictate otherwise. This output serves to keep urine dilute and will help decrease catheter encrustations.
- *Maintain a closed system whenever possible.* If the patient changes from a leg bag to a larger overnight bag, careful handwashing must be done, and cleaning the contact ports with an antiseptic such as alcohol is recommended.
- *The care of the collection bags must be done daily with a commercially available product, a household bleach solution diluted in a 1:10 ratio with tap water as recommended by current research, while previous practice utilized a vinegar (1 part vinegar: 3 parts water) solution.* To follow the evidenced-based guidelines for use of the bleach solution, it is essential to follow the instructions for use. Bags are rinsed twice and agitated with water. Then fill the bag with 150ml of **'diluted'** bleach solution allowing 30cc for tubing and spigot; 'vigorously' agitate, **drain**, and allow to air dry. When using the bleach solution, patients need to be cautioned to wear protective gloves and avoid eye contact. Skin irritation can occur if bleach is allowed to contact with skin surfaces.
- *The bag should be emptied when 1/2 to 2/3 full or every 3 to 6 hours.* This helps to prevent undue trauma/traction on the urethra related to the weight of the bag.

Nursing Considerations

- *Handwashing remains the #1 infection control practice.*
- *No evidence supports rigid timing of catheter changing.* Currently the mainstay of practice is to change chronic catheters every 4 weeks; however, the catheter should be changed as needed. The frequency of catheter exchange should be based on clinical symptoms: catheter encrustations, leakage, bleeding, catheter-associated UTIs, etc. This should be individually tailored and may be needed every 3 to 6 weeks.
- *The size of the catheter should be as small as possible.* This reduces urethral trauma, and allows for adequate drainage of the peri-urethral glands.
- *Use sterile water for balloon inflation per manufacturer-suggested guidelines.* Typically a 5 cc balloon is inflated with 10 cc water to allow symmetrical filling of the catheter balloon (this allows better drainage of the bladder). Do not use saline which can crystallize and make it difficult to remove. Do not use air which can allow it to "float" in the bladder and result in inadequate drainage. Remember, silicone catheters may lose fluid in the balloon over time due to permeability; therefore, assessing balloon volume is recommended every 2 weeks and as clinically indicated. Add sterile water as needed.
- *Secure the catheter to either the patient's thigh or the abdomen.* This helps to decrease the risk of bleeding, trauma, meatal necrosis, and bladder spasms from pressure and traction.
- *No evidence supports the common practice of advising patients to take supplemental vitamin C, cranberry pills, or consuming cranberry juice.* The need for

adequate hydration with resultant adequate urinary output helps to decrease the encrustations of the catheters, stone development, and catheter-associated UTIs.

- *The routine collection of urine cultures is not recommended.* If the patient has a catheter-associated UTI, the old catheter should be removed and the specimen should be collected using sterile technique when the new catheter is placed.
- *Bacterial colonization of the urethra and the bladder is inevitable.* This will result in expected “urine dip” reactivity for nitrite and possibly leukocyte reactivity. Treatment of a “UTI” is not indicated based on the “urine dip-stick” reactivity. Some studies state that unless there are >10 WBCs/HPF or the patient is having clinical symptoms of a catheter-associated UTI, they should not be treated.
- Routine irrigation of long-term catheters is not indicated.

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