

# Troubleshooting Issues with Foley, Intermittent and Male External Catheters

**Webinar Education Series**  
**December 2016**

**Presented by Kelly Sparks, RN, BSN, CWOCN**

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MEDICAL SUPPLIES FOR CARE AT HOME SINCE 1957



# About the presenter:

## Kelly Sparks RN, BSN, CWOCN

- A graduate from in 1995. Kelly earned her BSN from California State Dominguez Hills and is a graduate of M.D. Anderson ET program. Currently employed at Mercy Folsom. Kelly provides wound, Ostomy and continence care for inpatients.
- Kelly has served as Communication Coordinator of the Pacific Coast Region of the WOCN Nursing Society; and Item Writer for the Exam Committee of the WOC Certification Board.



# Overview



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- Urinary catheters for patients with compromised bladder function come with a number of challenges and risks.
- No matter which type of urinary drainage device is used, each has its own problems and benefits. Learn how to care for these patients and minimize these risks.

This webinar will cover how to identify and solve common problems and improve the outcomes for these patients.





## Objectives:

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- **List two areas of risk** for patients using a foley catheter.
- **Identify two actions** that can minimize these risks.
- **Describe two steps** important in success use of intermittent catheters.
- **Name one benefit** of using male external catheters.

# Introduction and Purpose



## Clinical Practice guidelines

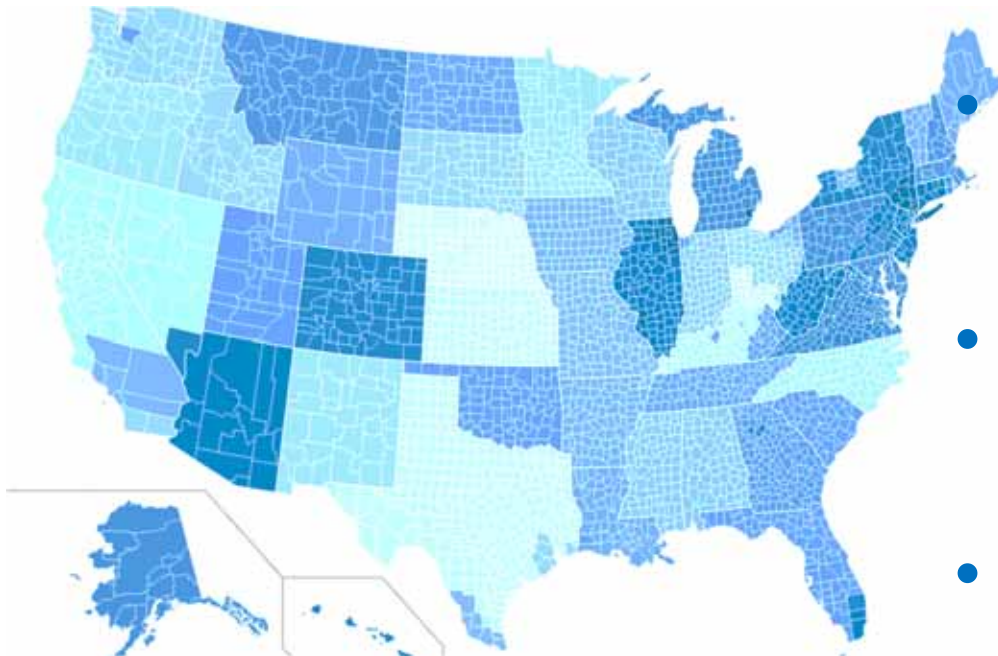
- Wound, Ostomy and Continence Nurses Society's Clinical Practice Continence Subcommittee as a best practice guide for clinicians (Wound, Ostomy and Continence Nurses Society [WOCN], 2009).

## Updated Guidelines

- Published expert opinion to facilitate the care and management of patients with urinary catheters.

# Significance in the United States

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- **15% to 25%**  
of hospitalized patients
- **5% to 10%**  
of long-term care residents
- **11%**  
of home care patients
- **21% to 63%**  
of use is inappropriate in  
acute care hospitals

Often there is no documentation of a need for the catheter.

# Selection of Urinary Catheters and Equipment

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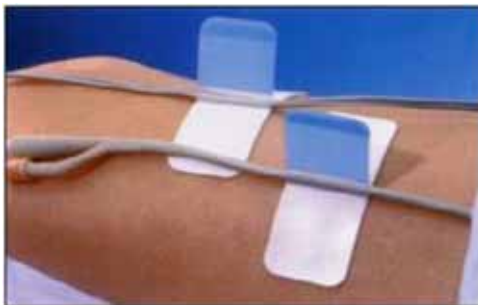


- Types of Catheters
- Catheter material
- Catheter size
- Catheter tip
- Catheter balloon
- Catheter inflation and deflation valves



# Selection of Urinary Catheters continued...

- Drainage Bags and Systems
- Securement Devices





# Indwelling Urethral Catheterization (IUC)



## ***Definition/Description***

- A urinary catheter is inserted into the urethra and advanced into the bladder allowing for the continuous, passive drainage of urine from the bladder.



# Short-Term Versus Long-Term Catheterization



Short-term  
catheterization:

**30 days or less**

-1 to 14 days of use

Long-term  
catheterization:

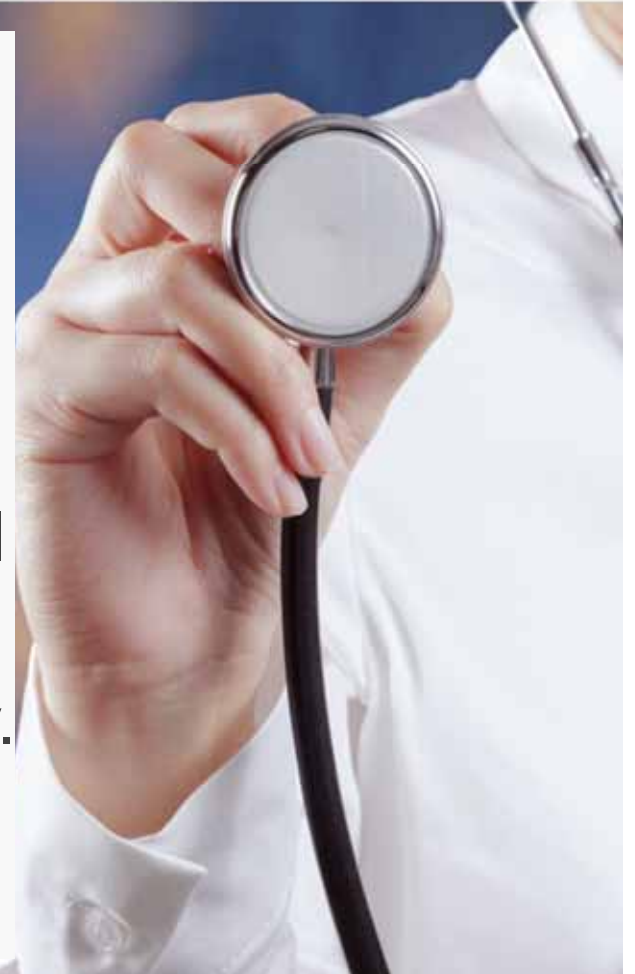
**30 days or more**

-Used to manage urinary retention and incontinence when other methods are not effective or practical.



# Indications for IUC

- Severe urine retention and obstruction of urine outflow (e.g., prostate enlargement).
- Comfort measures for patients who are terminally ill.
- Non-healing sacral, buttock, or perineal pressure injuries (stage III or IV)
- Perioperative use: – Prolonged surgery.
  - Surgeries on organs of the genitourinary tract.



# Additional indications

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- Operative patients with urinary incontinence.
- Hemodynamic monitoring during surgery.
- Continuous bladder irrigation for prevention of urethral obstruction from blood clots after genitourinary surgery.
- Measurement of urinary output in critically ill patients.
- Urodynamic testing.
- Imaging studies of the lower urinary tract.





# Inappropriate Use of IUC

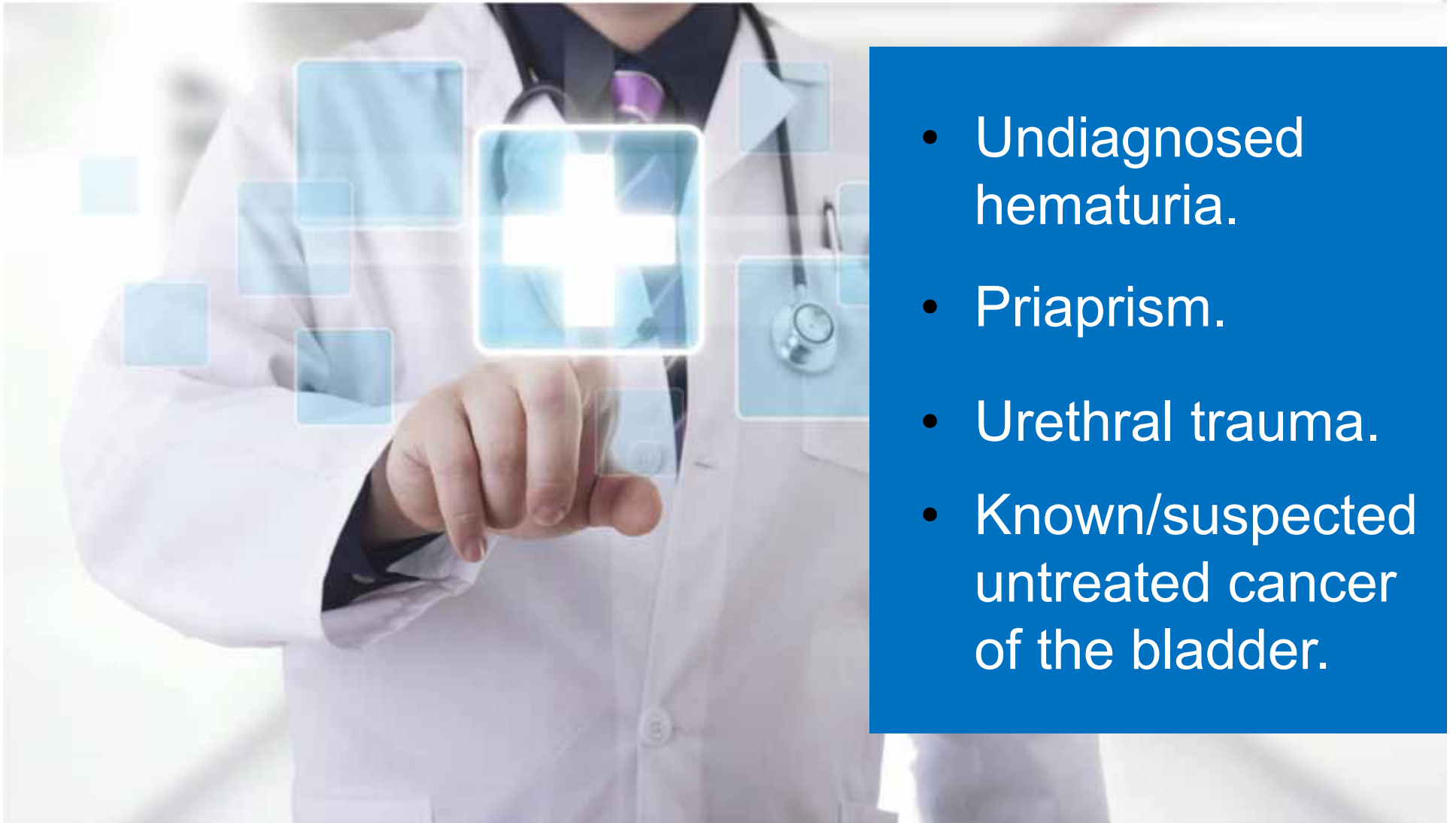
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- Urinary incontinence
- Incontinence-associated dermatitis
- Obtaining a urine culture for diagnostic tests when the patient can void
- Prolonged use after surgery
- Staff/caregiver convenience



# Contraindications for IUC

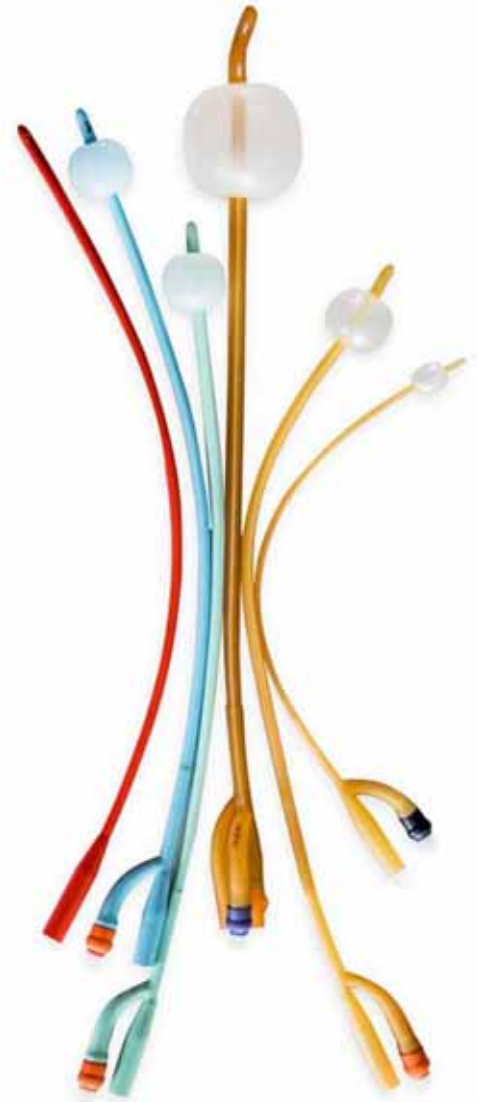


- Undiagnosed hematuria.
- Priapism.
- Urethral trauma.
- Known/suspected untreated cancer of the bladder.

# Management of IUC

## *Insertion*

- Do not inflate the balloon to test for inflation.
- Balloon inflation. – Inflate the balloon with sterile water according to the manufacturer's guidelines. Do not use saline or other electrolyte solutions, which can cause crystallization in the balloon's port



# IUC securement

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- Indwelling catheters should be secured to avoid traction on the catheter, which causes irritation and trauma to the urethra (e.g., urethritis, necrosis, erosion, stricture), and/or the bladder trigone muscle resulting in pain, spasm, and incontinence
- Securement is needed to prevent inadvertent dislodgement of the catheter





# IUC securement



*A recent study found that catheter securement practices are inadequate, despite several national guidelines recommending securement.*



- (18%) of the catheters were secured.
- Seven of the eight catheters were secured correctly;
- Six of eight (75%) were secured with a commercial adhesive device, which was available on 47% of the medical units and 92% of surgical units.

# IUC securement

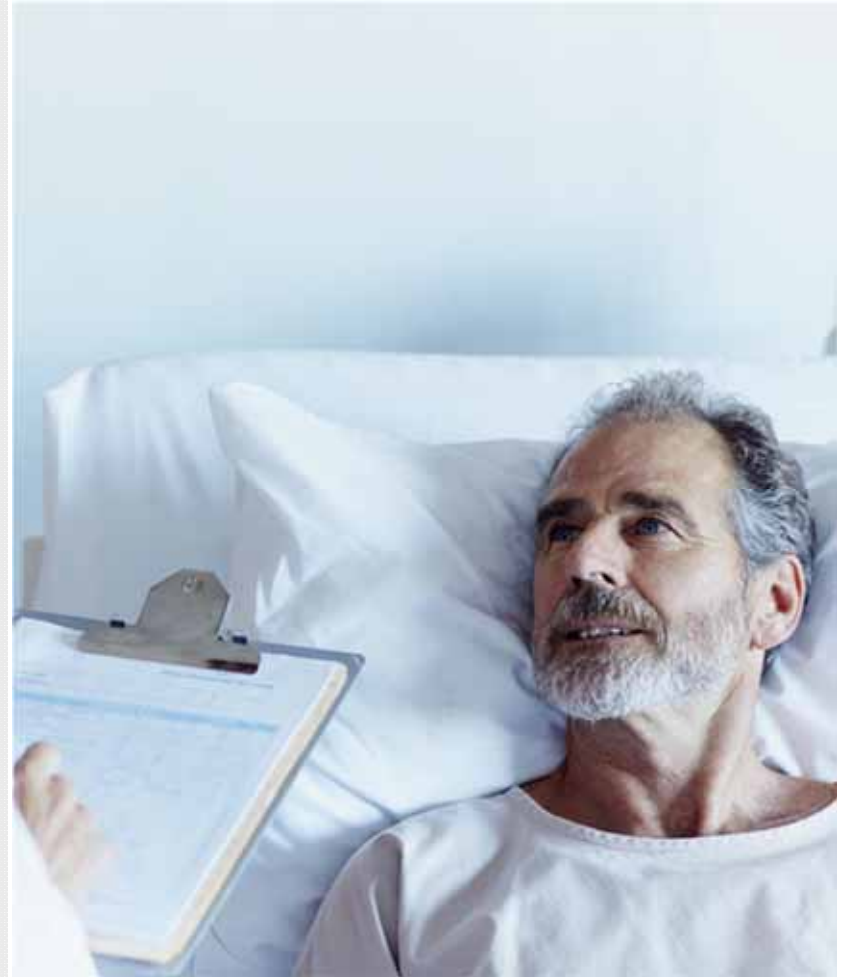


Catheter securement devices include the following products: Tapes, leg straps, and adhesive and non-adhesive stabilizers or anchors.

- Skin barrier products may be used to ensure adhesion of securement devices.
- **Use adhesive products and tapes cautiously**
  - adhesives can cause damage to the catheter's coating
  - tape can irritate the skin leading
  - adhesives should be completely removed from the external surface of the catheter
- **Use caution with constricting securement devices for high risk patients**
  - bleeding disorders, fragile skin, or sensitivities to adhesives; and in patients with phlebitis, impaired circulation, and diabetes.

# IUC securement

- Devices may be changed weekly
- Monitor the urethra daily
  - for irritation, erosion, or urine leakage; and assess the skin integrity under the securement device
- Positioning of the catheter securement device
  - catheters for both men and women can be secured to the abdomen or thigh as long as tension on the catheter is minimal during rest and activity



# Special Issues/Considerations for Insertion/Care of IUC

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- Urethritis/atrophic urethritis
- Urethral obstruction
- Iatrogenic trauma

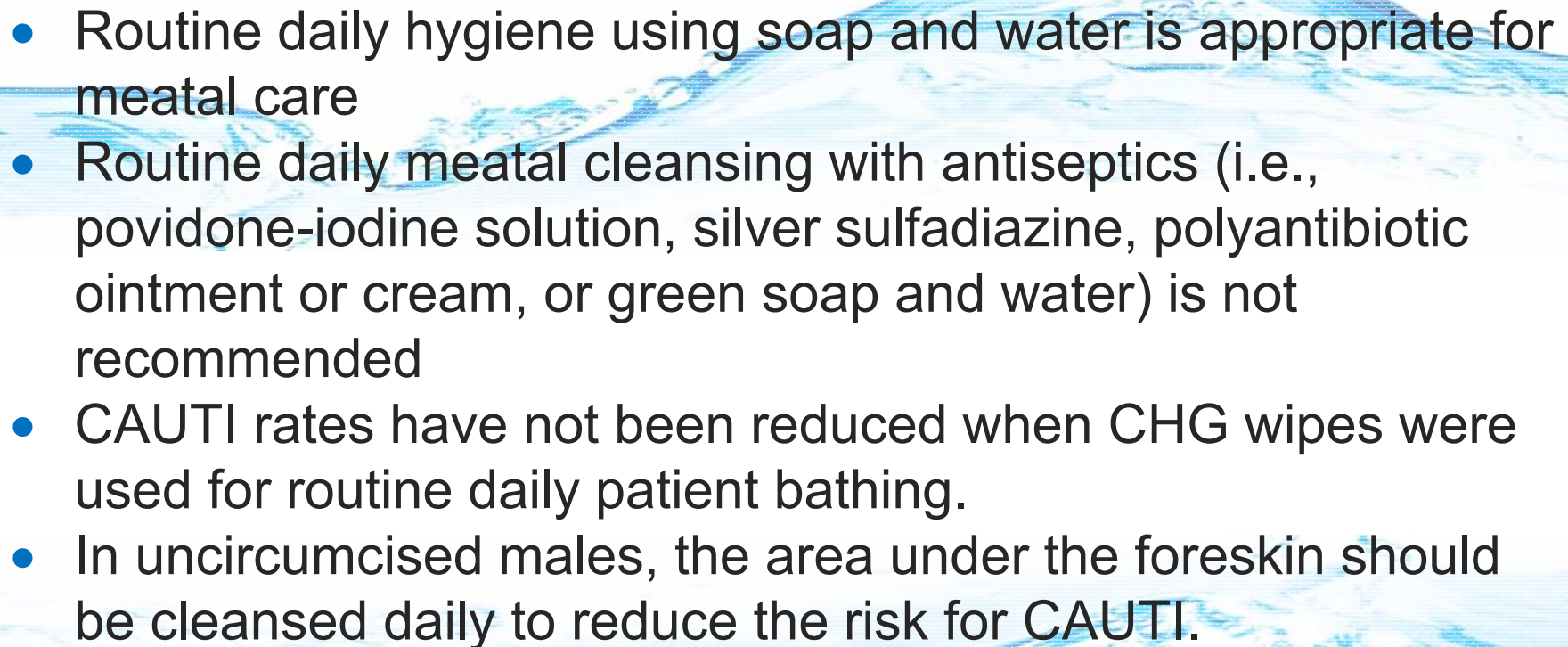




# General Principles: Management of Indwelling Urinary Catheters



## ***Routine Perineal Hygiene***

- Routine daily hygiene using soap and water is appropriate for meatal care
  - Routine daily meatal cleansing with antiseptics (i.e., povidone-iodine solution, silver sulfadiazine, polyantibiotic ointment or cream, or green soap and water) is not recommended
  - CAUTI rates have not been reduced when CHG wipes were used for routine daily patient bathing.
  - In uncircumcised males, the area under the foreskin should be cleansed daily to reduce the risk for CAUTI.
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# Routine Drainage Bag Care



- **Follow standard precautions**
  - Perform hand hygiene before and after manipulating the system, and use a new pair of non-sterile gloves with each patient.
- **When emptying the drainage bag**
  - use a separate, clean container for each patient and avoid contact between the tap and the container; wipe the tap with alcohol.
  - empty every 4 to 8 hours or when the bag is half full, and before transporting the patient.
- **Place the bag in a dependent position**
  - about 12 inches (30 cm) below the level of the hips. – Do not rest the bag on the floor.
- **Keep the tubing above the level of the drainage bag and free of kinks**
  - care should be taken to prevent backflow of urine from the bag (ie transports)
- **Tape the connections**
  - if there is a risk that the catheter and tubing may be disconnected (e.g., confused patient).
- **Do not place additives in the drainage bag**
  - No antiseptic or antimicrobial solutions
- **Replace the drainage bag monthly**
  - or more frequently if there is clouding, odor, or discoloration of the drainage bag.



# Drainage Bag Decontamination



- A closed system is considered the best way to prevent infection,
  - Insufficient evidence for either daily single use or multi-use drainage bags
- Insufficient evidence to recommend any particular cleaning method
  - i.e., tap water, acetic acid, hydrogen peroxide, bleach solutions, commercial products
- Preferred method for cleaning drainage bags
  - Disconnect the drainage bag from the catheter; replace with a clean bag.
  - Use a soft, plastic squirt bottle to rinse the used bag with tap water and drain.
    - Cleanse the drainage bag with a dilute solution of 1/10 part Bleach/Water
    - Drain the bleach solution, and allow the bag to air dry with the clamp open on the tap or cleanse the drainage bag with 120 mL of diluted acetic acid solution. Mix 1/3 white vinegar/water
- After cleansing, air-dry the bag
- Cap the drainage bag tubing between uses, and disinfect the end of the tubing before reconnecting it to the catheter



# Purple Urinary Bag Syndrome

- A blue to purple discoloration of the urine, catheter tubing, and collection bag.
- The discoloration is thought to be due to several processes:
  - ✓ Dietary tryptophan is metabolized into indole in the intestine converted by certain bacteria in the presence of alkaline urine, this mixture of pigments gives rise to the purple or blue color.
- The clinical course is generally considered benign without serious consequences.



*It often resolves after treatment of the UTI and changing the catheter and collection bag.*



# Frequency of Catheter Changes



- Changing indwelling catheters or drainage bags at routine, fixed intervals is not recommended.
- There is insufficient evidence that routine catheter changes reduce the risk of asymptomatic bacteriuria or CAUTI in patients with long-term catheters.
- Catheters and drainage bags should be changed based on clinical indications such as infection, obstruction, or when the closed system is compromised.
- Patients who form encrustations need more frequent catheter changes (i.e., weekly or twice weekly)
- Monitoring the time between the blockages can guide timing
- Also testing the urine pH can help.
- Schedule the catheter change before the blockage is expected.
- When changing a long-term indwelling catheter, it has been recommended to leave the catheter out for at least 1 hour, but no longer than 2 hours to allow the urethral glands to drain.

# Intermittent Catheterization (IC)



## *Definition/Description*

Intermittent catheterization (IC) is a safe and effective method to empty the bladder in patients with voiding disorders and should be considered as an alternative to short-term or long-term IUC.

- IC involves the use of a short, flexible catheter that is inserted through the urethra into the bladder to drain urine.
- Long-term IC is preferable to indwelling urethral or suprapubic catheters in patients with bladder emptying dysfunctions, and IC is associated with an infection risk between 0.5% and 8% .



# Indications for IC

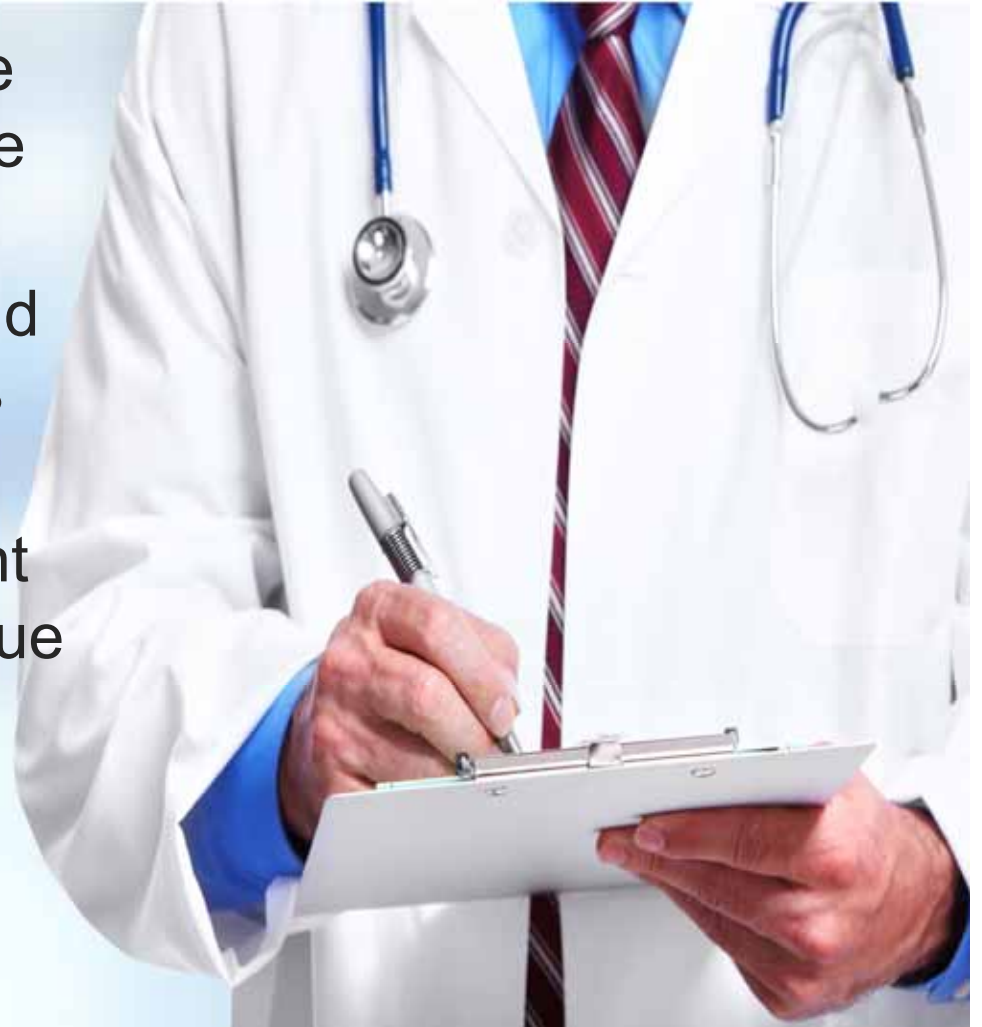
- Urinary incontinence, select cases
- Alternative to short-term or long-term IUC
- Acute urinary retention without bladder outlet obstruction
- Acute urinary retention with bladder
- Chronic urinary retention as an alternative to an indwelling catheter
- Installation of medications into the bladder
- Collection of random urine samples



# Inappropriate Use of IC



- Hourly measurements of urine volume are required to provide treatment
- The patient can voluntarily void for collection of urine samples
- May not be an appropriate option for urinary management in patients at the end of life, due to concerns about potential discomfort from IC
- Management of incontinence-associated dermatitis





# Contraindications for IC

- High intravesical pressure, which would require continuous free drainage to avoid renal damage.
- Spasticity interfering with catheterization, incontinence despite anticholinergic agents, or an unhygienic environment, which would prohibit a clean procedure.
- Limited dexterity and poor technique in the absence of an appropriately trained caregiver.



# Insertion technique

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- IC is performed by inserting a short, flexible catheter (15 cm to 40 cm) into the urethral opening and advancing it into the bladder to drain the urine.
- Catheter diameter sizes for IC vary from 14 Fr to 22 Fr for adults.
- Catheter lengths of approximately 12 inches (40 cm) are appropriate for males; females may use shorter catheters ranging from 6 inches (20 cm)
- The size of the catheter should be the smallest size that passes easily into the bladder and allows adequate drainage.
- No single technique for insertion or type of catheter material has been determined to be the best for IC, because these choices depend on the anatomical, social, and economic factors for each patient



# Insertion and Management of IC - continued

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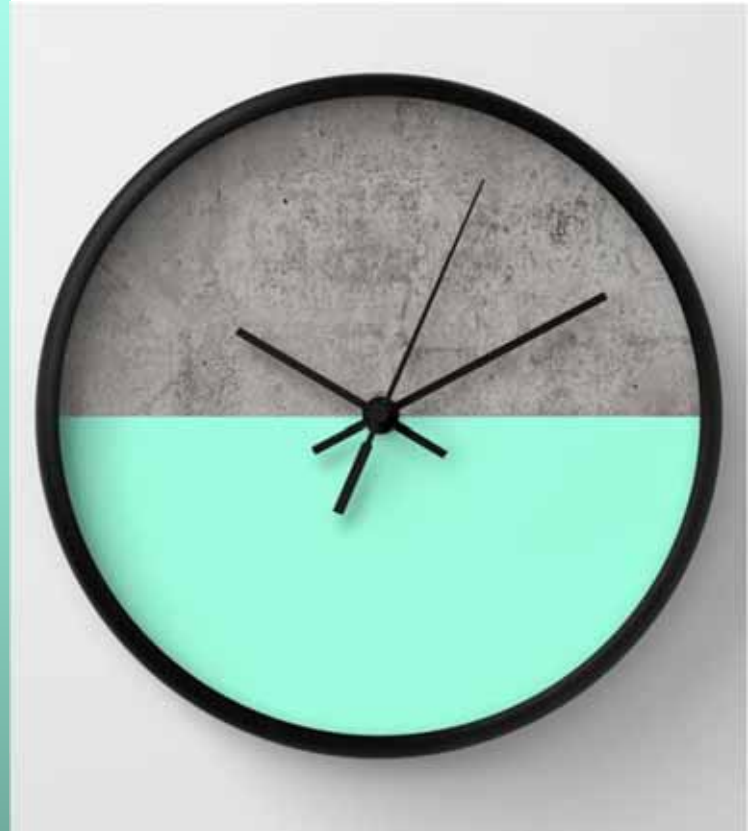
- In the acute care setting, aseptic technique and sterile equipment is recommended for IC.
- Several national guidelines have reported no differences in the risk of bacteriuria or CAUTI between sterile or clean IC technique, use of sterile/single-use or multiple-use catheters, whether multiple-use catheters were changed daily or weekly, and use of hydrophilic or standard catheters.
- In the non-acute care setting, clean technique is an acceptable and practical alternative to sterile technique for patients needing long-term IC.
- Using a clean “no-touch” technique for IC reduces microbial contamination of the catheter, but has not been proven superior to the sterile technique.
- A moist towelette or non-irritating soap and water can be used to wash the hands and urethra before and after IC; there has been no proven benefit from any particular type of meatal care.
- Only properly trained patients or care providers should perform IC to reduce the risk for cross-infection.
- Routine antibiotic prophylaxis is not recommended



# Frequency of IC



- Perform IC at regular intervals (**4 to 6 times per day**) to empty the bladder, prevent overdistention of the bladder (< 500 mL), help protect the kidneys from reflux, prevent incontinence, reduce the risk of bacterial growth/infection, and reduce stone formation by promoting good drainage, while lowering pressure inside the bladder
- Using a portable, bladder ultrasound scanner to estimate bladder volume and help determine the frequency needed for IC has been found to reduce incontinence, the number of catheterizations, and cost





# Catheter types for IC

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- Data are insufficient to determine whether the incidence of UTI is affected by:
  - a specific type of catheter or technique;
  - use of single (sterile) or multiple-use (clean) catheters;
  - or the method of cleaning multiple-use catheters
- Only standard PVC catheters can be reused after washing with soap and water
- Multi-use catheters can be washed with soap and water, air-dried, stored in a clean, sealed plastic bag or container; and may be reused for up to four subsequent catheterizations.
- Practices vary from single use in some settings to reuse of the catheter for 1 to 7 days or longer.
- Procedures shown to reduce bacterial contamination of reused catheters have not been proven to prevent CA-bacteriuria or CAUTI

# Complications of IC



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- IC is widely viewed to be associated with fewer complications compared to IUC.
- IC-related UTI rates vary in published studies according to the technique used, definitions of UTI, methods of evaluation, and patient characteristics.

# Specific challenges for the patient in performing IC may include:

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- Inadequate/inaccessible bathroom facilities.
- Inconvenience or difficulty in cleaning catheters; individual feels it is unaesthetic to carry and/or reuse catheters.
- Cost and/or lack of optimal supplies.
- Inability or unwillingness to perform frequent catheterizations.
- Anatomical constraints: urethral strictures, false passages, or bladder neck obstruction.
- Physical limitations: upper extremity impairment, visual problems, or difficulty in positioning (females).
- Co-morbid conditions: inability to feel the catheter being inserted, spasticity, and obesity.

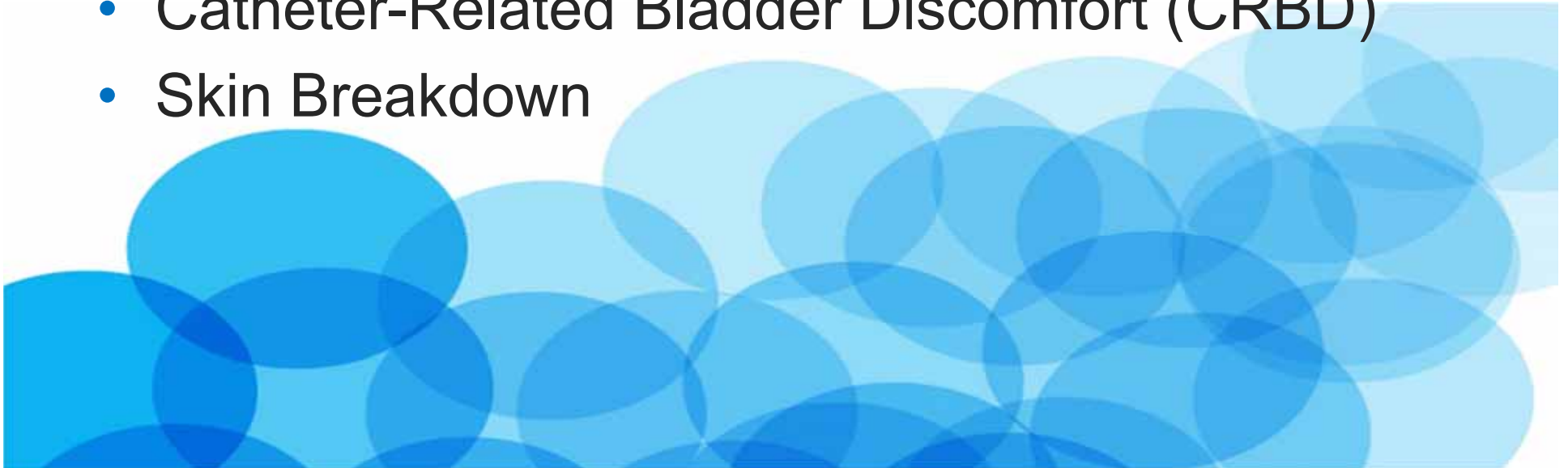




# Prevention and Management of Catheter Complications

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- Catheter-Associated Urinary Tract Infection (CAUTI)
- Obstruction
- Bypass Leakage
- Catheter-Related Bladder Discomfort (CRBD)
- Skin Breakdown





# Catheter-Associated Urinary Tract Infection (CAUTI)

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## *Definition/description*

- CAUTI refers to urinary tract infections in which the patient is currently catheterized or was catheterized within the previous 48 hours before onset of the infection, and has at least one sign or symptom (i.e., fever, costovertebral angle pain, suprapubic tenderness, dysuria, urgency, frequency) that is not attributable to an alternate source.
- There is no minimum period of time that the catheter must be in place for the UTI to be considered catheter-associated.
- Bacteriuria is a nonspecific term that refers to UTI and asymptomatic bacteriuria combined, and in the CAUTI literature, CA-bacteriuria is most commonly asymptomatic.

CAUTI

# Significance of CAUTI

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- Risk of CAUTI is 3% to 10%, with higher rates in women and older adults.
- Majority of HAI UTIs are due to CAUTI
- CAUTI accounts for over 30% of HAI in acute care hospitals
- 40% in all healthcare settings.
- CAUTI is associated with increased morbidity and mortality
- CAUTI mortality rate is 14% to 19% and accounts for over 13,000 deaths annually.
- Patients with UTIs are three times more likely to die than without infections.



# Modifiable Risk Factors for CAUTI

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- Meatal contamination.
  - Limited professional training of the individual inserting the catheter.
  - Duration of the catheterization.
- 
- Increased number of hospital days before detecting bacteriuria.
  - Fecal incontinence.
  - Disconnection of the system.

# Non-Modifiable Risk Factors for CAUTI

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- Female gender; older age
- Impaired immunity: immunosuppressant therapy within 2 weeks; corticosteroids within 7 days
- Antibiotics within 3 days
- Smoking within the past 5 years
- History of malignancy
- Diabetes mellitus
- Renal disease
- Neutropenia





# CAUTI pathogenesis

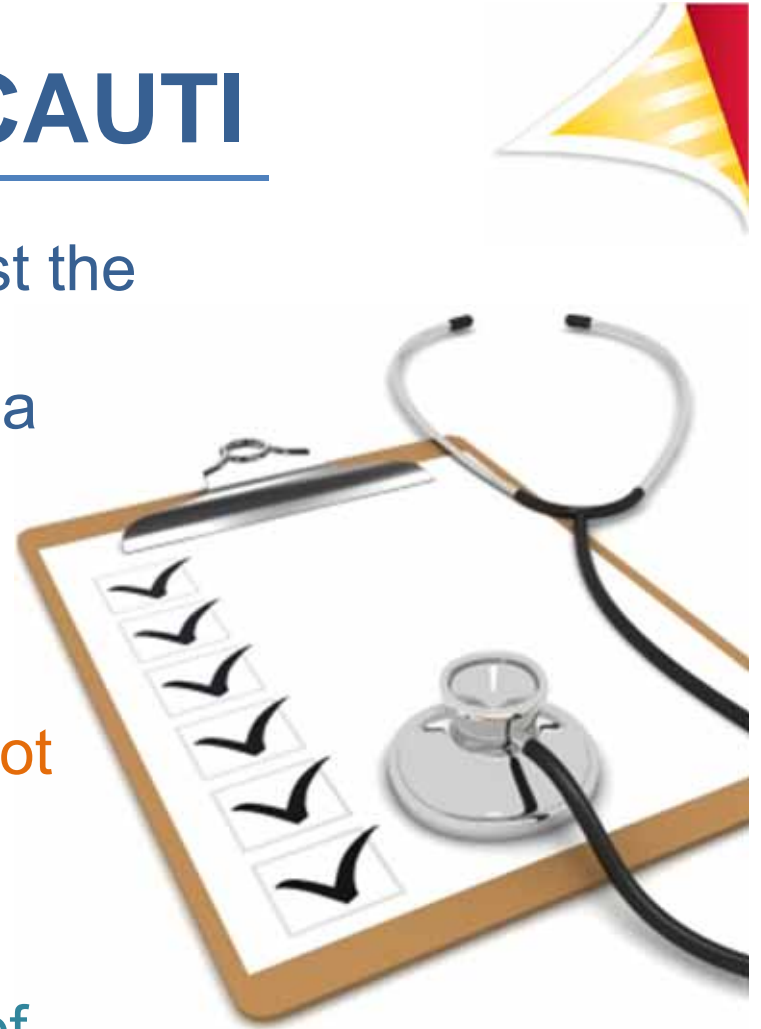


- Microorganisms can enter the bladder via the catheter in two ways: intraluminal due to contamination of the catheter tip during insertion, or extraluminal where organisms ascend into the bladder from the meatus, rectum, and/or vagina.
- Up to 20% of patients will be colonized immediately after catheter insertion as a result of poor insertion technique, with women at higher risk for extraluminal colonization.

# Clinical presentation of CAUTI

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- Patients with CAUTI may not manifest the classic signs and symptoms of UTI; therefore, signs and symptoms have a low predictive value.
- Many catheterized patients with bacteriuria are asymptomatic. Foul smelling urine and cloudy urine are not diagnostic for CAUTI.
- Catheterized patients should be thoroughly evaluated for the source of signs and symptoms before attributing them to the urinary tract.



# Atypical presentation of CAUTI in older adults



- Nonspecific clinical manifestations may include cognitive changes, lethargy, anorexia, weakness, tachycardia, hypotension, and increased respiratory rate.
- Older adults may present with a delayed, muted or absent fever response, or hypothermia.
- Afebrile response may be indicated by various alterations in temperature.
  - 100 °F (37.8 °C);
  - 2 °F increase (1.1 °C) over baseline
  - 99 °F (37.2 °C) =/+ oral temperature
  - 99.5 °F (37.5 °C) =/+ rectal temperature



# CAUTI prevention strategies



**17% to 69% of CAUTIs (380,000 infections) and 9,000 deaths due to CAUTI could be prevented.**

**The most important strategies to prevent CAUTI are avoiding unnecessary use of urinary catheters and removing them as soon as indicated.**

- Proper maintenance
- Consider using plain bathing wipes instead of bath basins
- Condom or intermittent catheterization in appropriate patients
- Do not use the indwelling catheter unless you must
- Early removal of the catheter using reminders or stop orders as warranted



# Obstruction



## Description:

Partial or complete blockage of the catheter that prevents urine from flowing through the catheter.

- Causes/contributive factor
- External interference
- Kinked tubing
- Collection bag above the level of the bladder
- Constipation and fecal impaction
- Enlarged prostate, epididymitis, prostatitis, and scrotal abscess

# Internal obstruction

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- Blood clots
- Stones
- Encrustation and blockage
- More than 50% of patients with urinary catheters develop catheter encrustation and blockage. Patients requiring frequent re-catheterization due to encrustation and blockage are identified as “blockers”
- Biofilm

# Prevention

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- Ensure an unobstructed flow of urine
- Ensure adequate fluid intake
- Ensure a consistent fluid intake
- Avoid long intervals without intake of fluids
- Lower urine pH



# Bypass Leakage



## Description:

Leakage of urine around the catheter from bladder contractions expelling urine.

## Causes/contributive factors:

- Obstructed urine flow due to kinking or twisting of the catheter or drainage tubing.
- Blockage of the catheter lumen from encrustation or stones.
- Urethral damage from traumatic insertion or removal of the catheter, balloon inflation in the urethra, frequent insertions, or long-term use.
- Bladder spasms and pain.



# Prevention and treatment

- Secure the catheter and drainage tubing to maintain unobstructed flow.
- Downsize to a smaller sized catheter (< 18 Fr).
- Fill the balloon appropriately according to the manufacturer's instructions to avoid under or over-filling.
- Consider treatment with anticholinergic medications.
- Establish a bowel program to prevent constipation.

# Catheter-Related Bladder Discomfort (CRBD)



## Description:


Symptoms include sensations of suprapubic, urethral, and bladder burning and pain, the urge to void, and bladder spasms.

## Causes/contributive factors:

- Intra-urethral pressure from the catheter
- Catheter material or size
- Large balloon or partially filled balloon
- Manipulation and traction of catheter
- Technique/procedure for catheter change
- Concentrated urine
- Local bladder irritation
- Bladder stones
- Constipation and fecal impaction

# CRBD Prevention and Treatment



- Change to a smaller sized catheter such as a 16 Fr or 12 Fr, and/or use a catheter with a different type of material
  - Secure the catheter and tubing to prevent traction.
  - Fill the balloon according to the manufacturer's instructions
  - Establish a bowel program to prevent constipation.
  - Maintain adequate fluid intake to achieve dilution of the urine
  - Consider medications to prevent/reduce spasms/pain
- 

# Skin Breakdown

## Description:

Irritation or breakdown may occur in the periurethral/perineal area and/or in areas where the catheter and drainage tubing are placed or secured.


## Causes and contributive factors:

- Sensitivity to the catheter's material
- Urine leakage
- Wetness/moisture from the catheter
- Positioning of the drainage tubing or catheter straps on the skin
- Yeast/fungal infection



# Prevention and treatment



- Use hypoallergenic catheter materials
  - Cleanse and protect the skin (e.g., barrier ointments)
  - Treat yeast or fungus
  - Consider alternate methods for securing the catheter and drainage tubing
  - Secure the catheter and drainage tubing in areas that will not cause pressure or tension when changing position
- 

# External Catheters



- Can be an effective alternative for some men
- Available in several styles and sizes
- Less well known, even though not new
- Can be challenging for some



# Benefits of External Catheters

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- Avoids IUC risks
- Daily changes
- Less involved than IC
- Can be combined with other options



# External Catheters

## Sizing Matters



- Fit is the most important
- Length and diameter
- Too tight - Constricts
- Too loose - Falls off

Visit [shieldhealthcare.com/urological](https://shieldhealthcare.com/urological)  
for additional resources and tips.



## External Catheters

# Style is also important

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- Adhesive strip
- Foam strip
- Self-adhesive
- Extra thin



# External Catheters **Application**

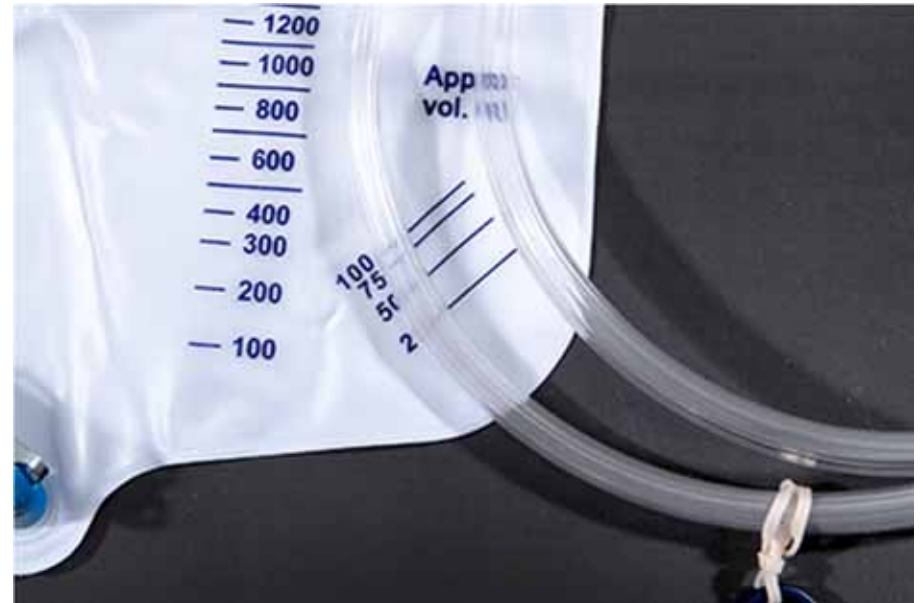


- Clean and dry
- Hair trimmed
- Good contact with adhesive
- Skin barrier can help
- Leave small gap at end



# Drainage Bags

- Leg bags
- Night bags
- Secure tube
- Secure bag so it doesn't pull catheter off
- Check for twisting



# Taking off an external catheter



- Do not pull off
- Roll off gently
- Shower removal
- Remove left-over adhesive
- Trimming hair helps



# Skin damage

- Good skin care is crucial
- Mild soap and warm water, dry thoroughly
- Inspect regularly
- Compression damage can occur if the external catheter is too tight
- Watch for swelling
- UTIs can occur

Visit **[shieldhealthcare.com/skinpreservation](http://shieldhealthcare.com/skinpreservation)**  
for additional resources and tips.

# Problems/Solutions



- Retraction
  - Shorter length, wider adhesive bands
  - External catheter attaches to the end of the penis
- Decreased sensation, i.e. spinal cord injury
- Confused or considered psychologically vulnerable
- Remember to check that the fit is correct
- Remember to empty the bag when full



# SPECIAL THANKS

Our thanks to the WOCN Society for their work in creating and publishing the **Guide to Catheter Care**, and for their gracious permission to use this valuable resource in this presentation.



Wound  
Ostomy and  
Continence  
Nurses  
Society®

Wound, Ostomy and Continence Nurses Society. (2016). *Care and management of patients with urinary catheters: A clinical resource guide*. Mt. Laurel: NJ. Author

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