U
Urological Solution

Proper techniques and best practice guidance

Does your patient need an indwelling urinary catheter (IUC)?

MEDLINE Infection Prevention

Stop! Is there a clinical reason?

Before inserting an IUC, confirm at least one of the following conditions exists:

- Select surgical procedures
- Prolonged immobilization
- End-of-life care
- Acute urinary retention or obstruction
- Precise measurement of urinary output
- Open wounds in incontinence patient

YES
Insert IUC according to your facility's protocols

NO
Consider using an alternative means to managing the bladder

For urinary incontinence

- Develop a **toileting plan**
- Consider a **male external catheter or urinal** when the patient:
  - Is cooperative
  - Does not have urinary retention or bladder outlet obstruction
  - Has no problem with post-void residual (PVR)
  - Requires precise urine output measurement
  - Prefers not to use a brief

For inability to adequately void bladder

- Assess bladder volume by performing a bladder scan. **Bladder scanner is located:**

  _____

  - If PVR is **<300-500 ml, prompt to urinate**
  - If PVR is **≥300-500 ml, perform straight catheterization** per facility protocol (usually every 4-6 hours)
- Perform straight catheterization if physician requires a urine specimen and patient cannot provide it on their own

⚠ PRACTICE ALERT

Once an IUC has been placed, the clinical reason for use should be re-evaluated every 24 hours. Duration of catheterization is the highest risk factor for acquiring a CAUTI.[1]

1. Meddings J, Kreiin SL, Fakih MG, et al. Reducing Unnecessary Urinary Catheter Use and Other Strategies to Prevent Catheter-Associated Urinary Tract Infections: Brief Update Review. In: Making Health Care Safer II: An Updated Critical Analysis of the Evidence for Patient Safety Practices. Rockville (MD): Agency for Healthcare Research and Quality (US); 2013 Mar. (Evidence Reports/Technology Assessments, No. 211.) Chapter 9. Available from: http://www.ncbi.nlm.nih.gov/books/NBK133354/ Accessed December 2, 2015.

U
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Proper techniques and best practice guidance

Indwelling Urinary Catheter (IUC) Bundle

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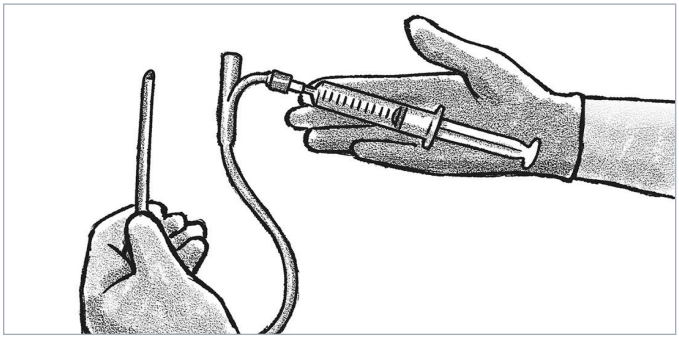
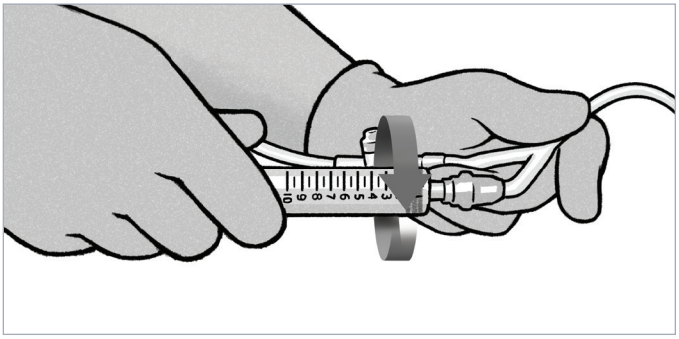


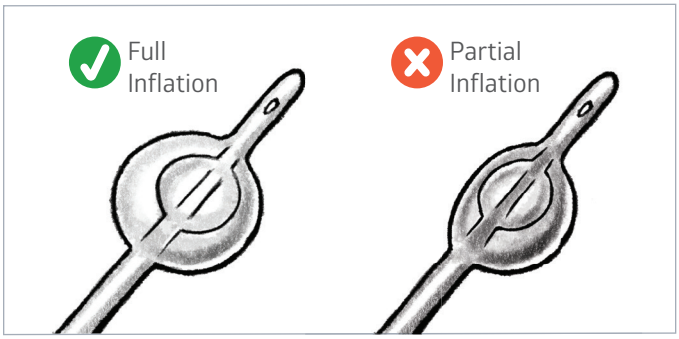
⚠ PRACTICE ALERT
No pretesting of balloon

- Pretesting causes microscopic cuffing of the balloon
- Insertion of a pretested catheter with cuffing can cause pain and urethra trauma
- All balloons are tested prior to release from the factory



Proper seating of sterile water syringe

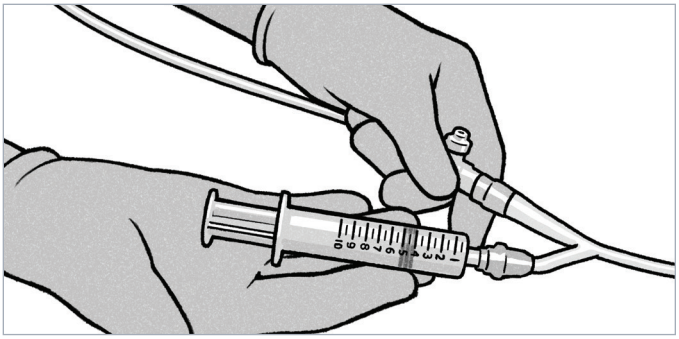
- Gently **press and twist** syringe into inflation valve
- Use sterile water provided. Do not use saline, which can crystalize and make removal difficult



Use appropriate balloon fill

An underinflated balloon is asymmetrical and can result in the tip of the catheter irritating the bladder wall

French size	Balloon size	Max fill volume
6 fr	1.5 ml	3 ml
8 & 10 fr	3 ml	5 ml
12-24 fr	5/10 ml	10 ml
16-24 fr	30 ml	35 ml



⚠ PRACTICE ALERT
Use passive deflation for balloon deflation:

- Attach empty syringe and allow water to dispel from balloon on its own
- Active deflation, pulling back on the plunger, can cause microscopic cuffing of the balloon
- If passive deflation is unsuccessful, use gentle active deflation and return 0.5 ml of fluid into the balloon prior to removal

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Deflating the balloon of an indwelling urinary catheter (IUC)

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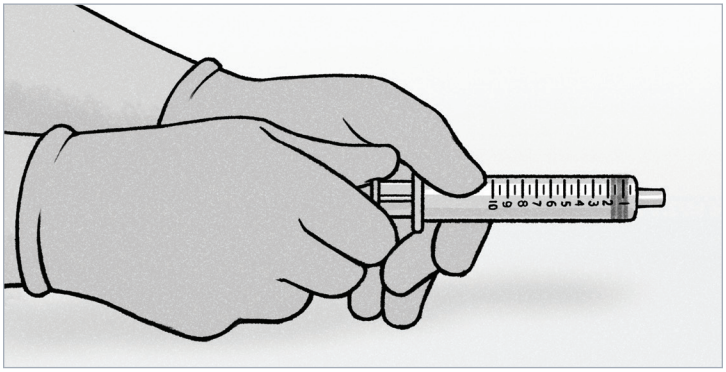
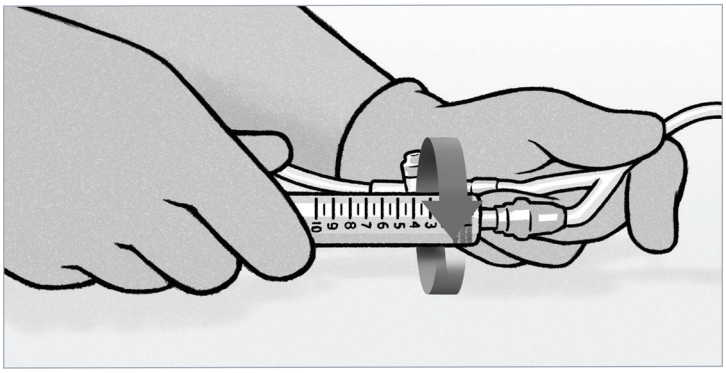
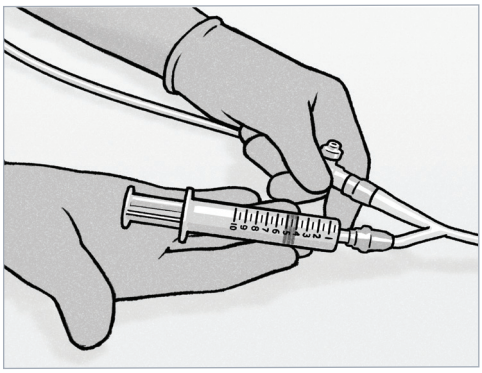
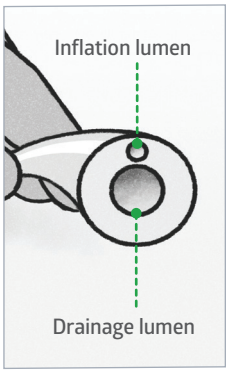


1. Position plunger between 0.5 and 1 ml to ensure the plunger isn't suctioned to the base of the syringe, allowing for passive deflation.



2. Attach the tip of the syringe to the inflation valve on the catheter by gently pushing and then slightly twisting to engage the valve.





3. Allow the catheter balloon to passively dispel the water. The plunger will move on its own as the syringe fills with water. Do not pull back on the plunger. The inflation lumen on an IUC is small, so it is important not to pull back on the syringe as it may cause the lumen to collapse.

Wait 30 seconds for the full volume of the balloon to fill the syringe and deflate the catheter balloon.

⚠ PRACTICE ALERT

100% Silicone Foley Catheters: Minimize balloon creasing by re-instilling 0.5 ml of sterile water into the completely deflated balloon prior to removal. The addition of sterile water will smooth the balloon without adding size to the catheter.

Troubleshooting

When an IUC does not deflate:

1. Remove the syringe and try re-seating it into the inflation valve. Be sure to gently push the syringe and then slightly twist to engage the valve.
2. Reposition the patient as the balloon may be engaged in the bladder wall.
3. If the balloon still fails to deflate, apply a slow and gentle aspiration on the syringe.
4. Fill a syringe with 1-2 ml of sterile water. Push the water into the inflation/deflation valve, then perform passive deflation technique.
5. Cut the inflation/deflation valve port.
6. Cut the catheter above the "Y" connection valve.
7. If problems persist after all of these steps have been followed, refer to your hospital protocol and contact a trained urologist for assistance.

Deflation issues may be caused by:

1. Active deflation can result in collapse of the inflation/deflation channel or a vacuum within that channel.
2. Inflating the balloon with normal saline can cause crystallization of the channel and/or balloon.
3. Underinflated balloons can cause deflation issues. Know the appropriate balloon fill.
4. Pre-clamping or clamping during a procedure can cause failure in the inflation/deflation channel if the catheter is clamped above the "Y" port. **Always clamp the catheter below the "Y" junction.**

U
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Infection Prevention

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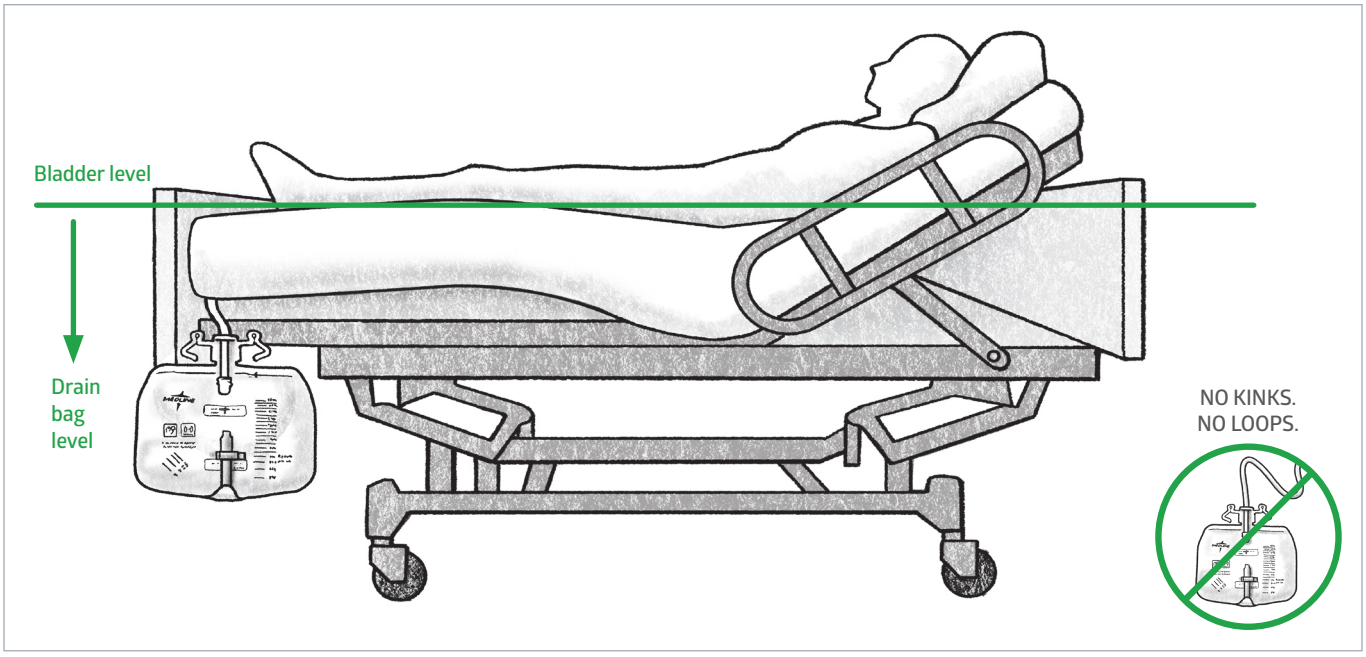
Drain bag placement

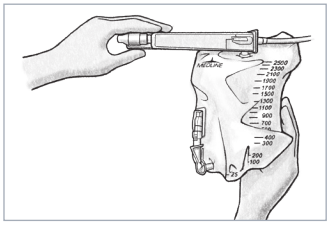


Urinary drain bag placement

- Always position drain bag below the level of the bladder
- Position urinary drain bag upright
- Secure at the foot of the bed
- Never place the drain bag on the floor

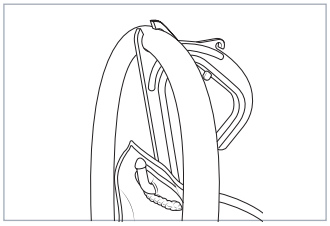
Drain bag tubing arrangement

- Avoid kinks or dependent loop
- Create a straight and continuous downward slope towards the bag
- Place over the patient's leg – especially with obese patients
- Secure to the sheet with clip



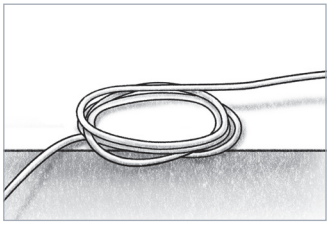
⚠ PRACTICE ALERT

When emptying a urine meter, hold the spine and lift the meter.



⚠ PRACTICE ALERT

Engaging the patented kickstand facilitates tubing at a 90 degree angle to improve drainage.



⚠ PRACTICE ALERT

Excess tubing can be coiled as long as it doesn't fall below the level of the bag or form dependent loops or kinks.

U
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Infection Prevention

Proper techniques and best practice guidance

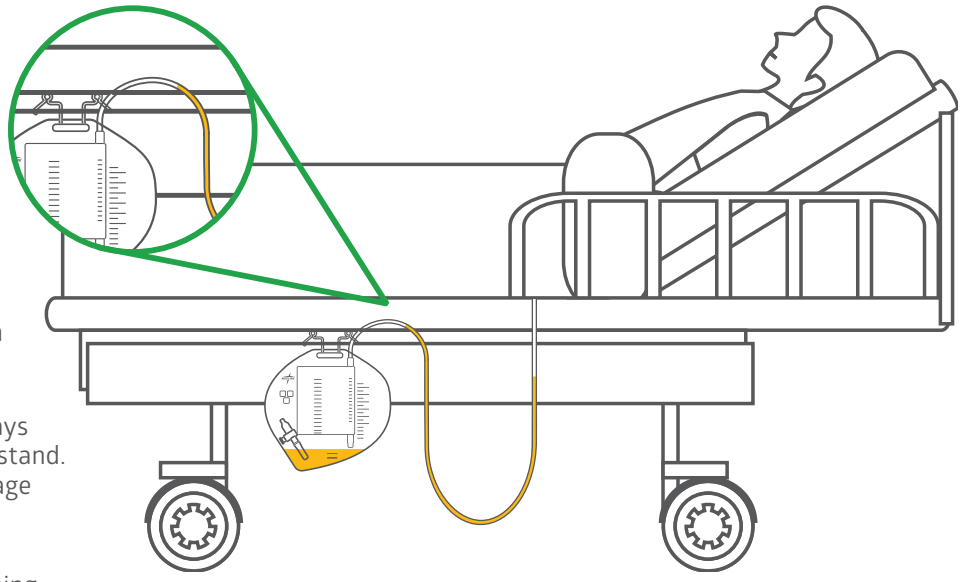
What is a dependent loop?

A dependent loop is formed by poorly positioned drainage tubing falling below the level of the collection device. Within this tubing, urine or liquid can accumulate. The best way to avoid dependent loops is to use the sheet clamp to position the tubing in a straight line to the collection device—optimizing urine flow. If there is one CAUTI prevention measure you can take, is to make sure NO catheter and drain bag are hung with a dependent loop.

Urine in a dependent loop is a high pressure gradient

The bladder cannot empty to a high pressure resulting in:

- Leakage around the catheter (also known as catheter bypassing)
- The patient having a sense of a full bladder



Best practice tips:

- Use the sheet clamp to position the tubing in a straight line along bed
- When using a urine meter, always engage the tubing into the kickstand. This will promote proper drainage
- Position the urine drain bag below the bladder
- Manual manipulation of the tubing will clear urine from the dependent loop and aid in emptying the residual urine in the bladder

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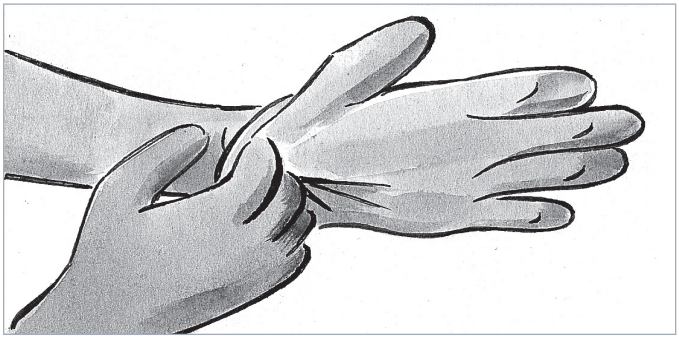
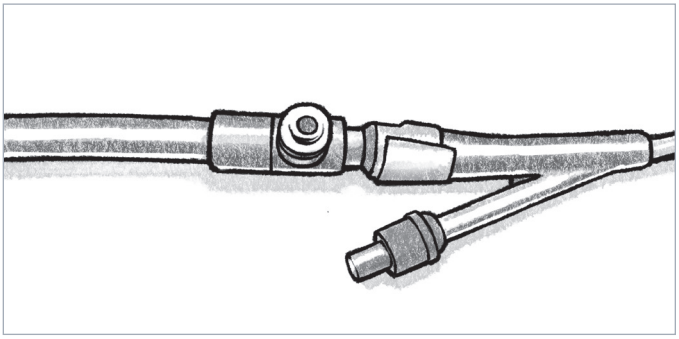
Proper techniques and best practice guidance

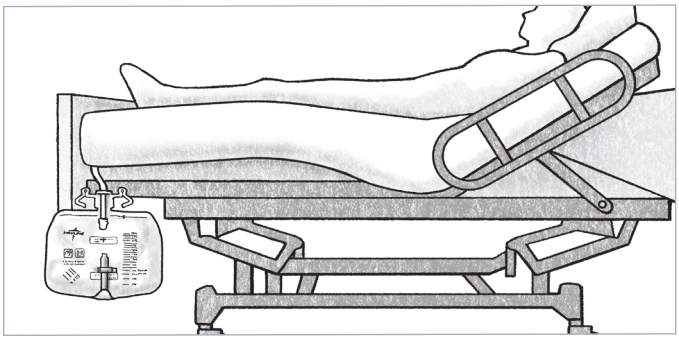
Urinary catheter maintenance best practices



1. Use standard precautions, including gloves, when manipulating catheter or collection system

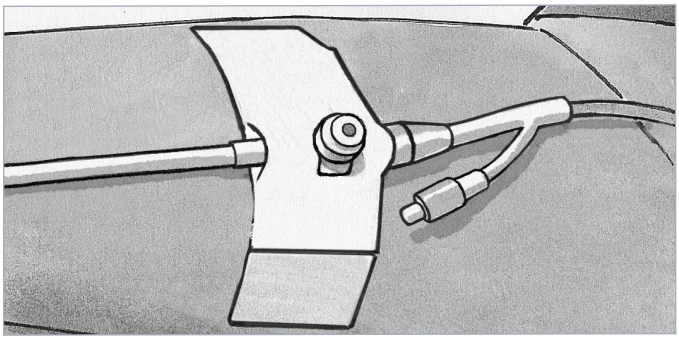


2. Maintain a closed drainage system



3. Faciliate proper urinary drainage
- Position bag below bladder
- Minimize loops and kinking in tubing

4. Perform routine perineal and catheter cleansing per facility protocol



5. Maintain indwelling urinary catheter securement with proper site rotation

⚠ PRACTICE ALERT

Facilitating urine drainage: To facilitate proper drainage, allow air flow in the closed system. Introduce air by opening the drain on the bag (when empty) and separating the sides of the bag. If using a urine meter, open the blue drainage spout and tilt urine meter back so that it is perpendicular to the bag.