Indwelling Urinary Catheter Indications

Avoiding Placement and Determining Appropriateness

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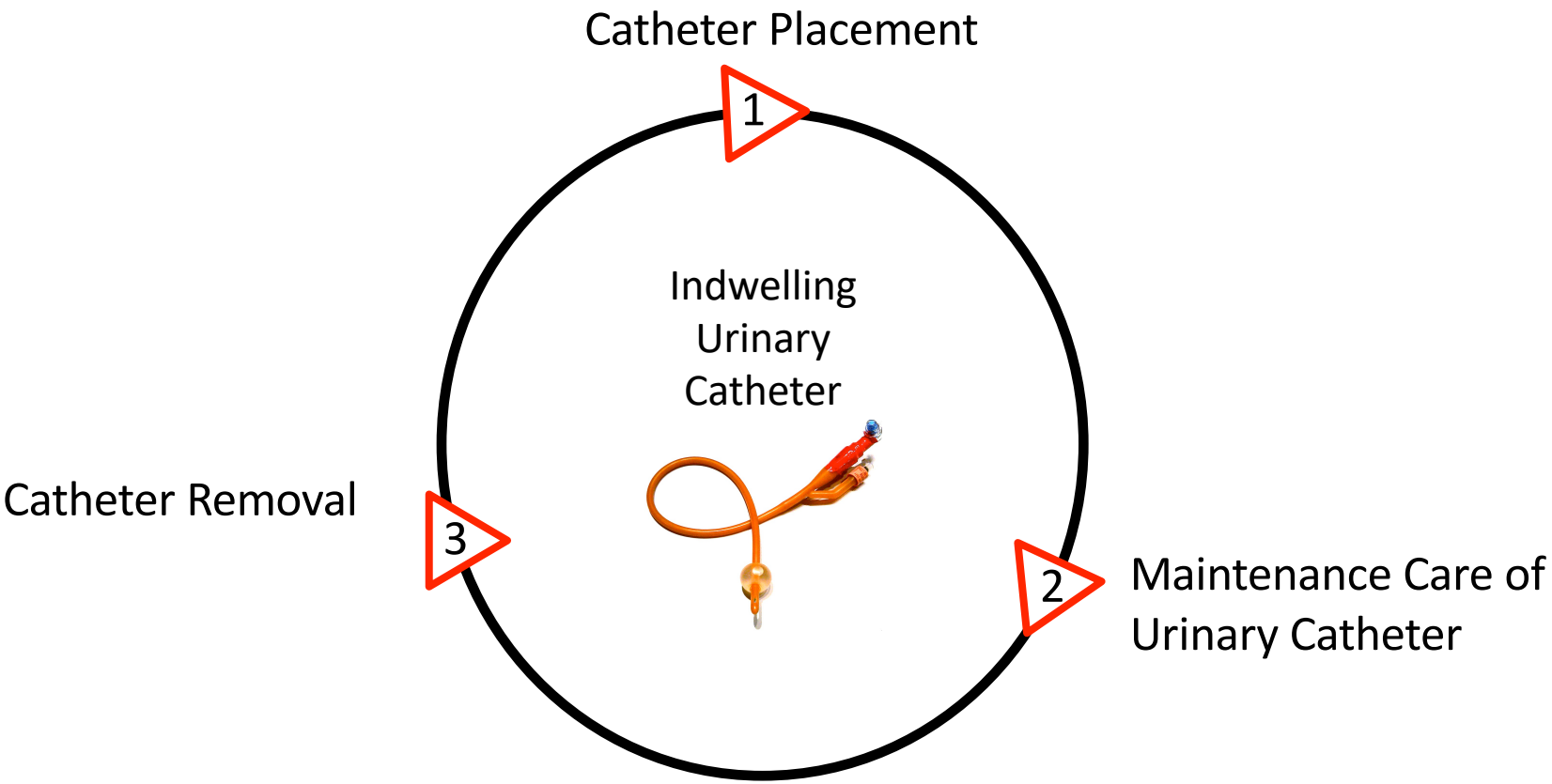
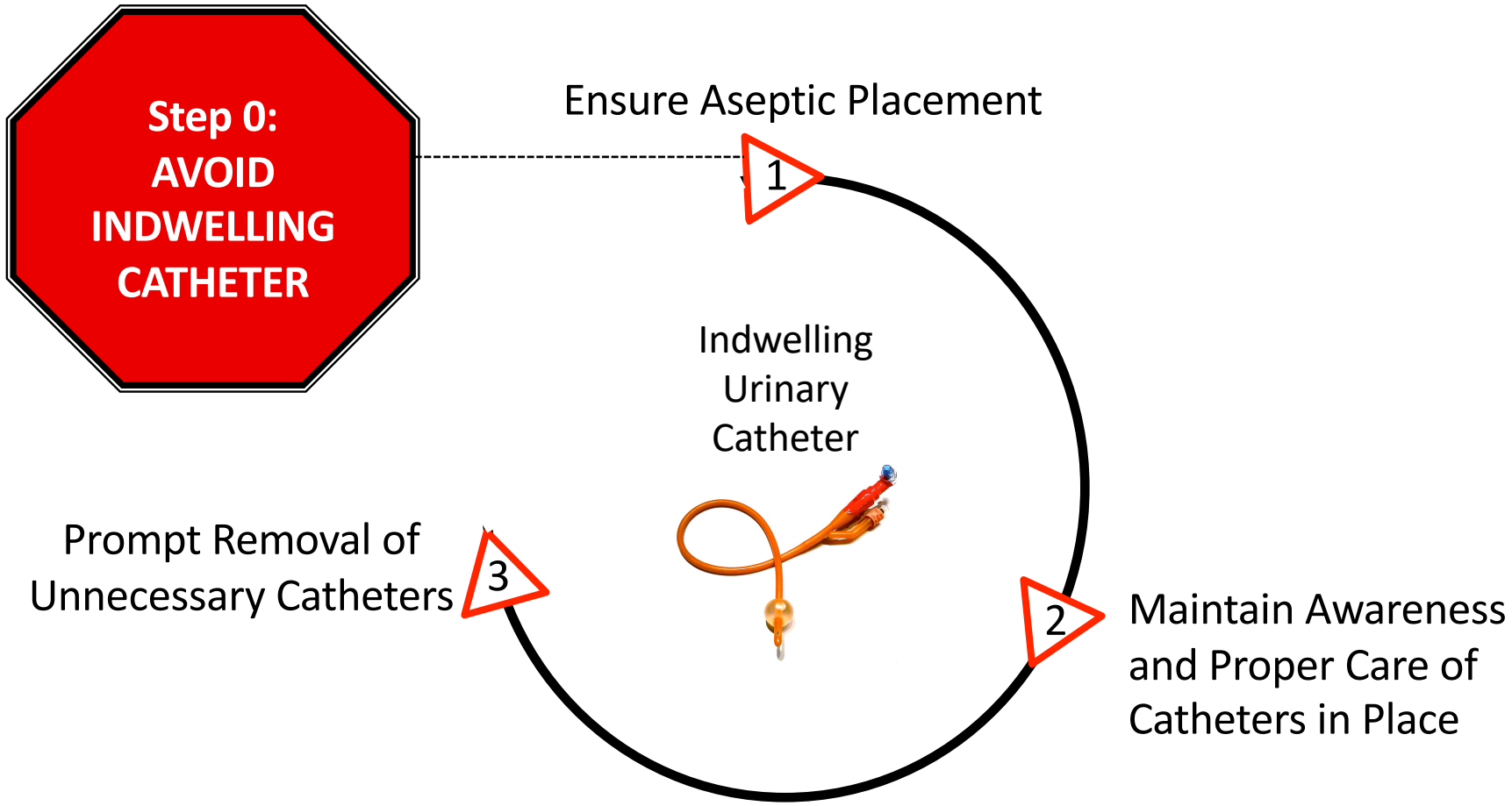
Lifecycle of a Urinary Catheter[1]



Meddings J, Saint S. Disrupting the life cycle of the urinary catheter. Clin Infect Dis. 2011;52(11):1291-3. PMID: 21596672. Adapted with permission.

Disrupting the Lifecycle of a Urinary Catheter[1,2]



Patel PK, Gupta A, Vaughn VM, et al. Review of strategies to reduce central line-associated bloodstream infection (CLABSI) and catheter-associated urinary tract infection (CAUTI) in adult ICUs. J Hosp Med. 2018 Feb 1;13(2):105-16. Epub 2017 Nov 8. Used with permission of Journal of Hospital Medicine.

Using Appropriateness Criteria To Reduce Catheter Use[1,2]

Step 0: AVOID INDWELLING CATHETER

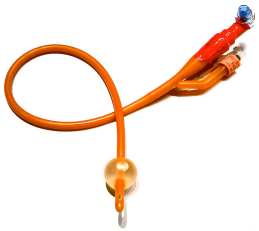
Place urinary catheter only when appropriate

Optimize use of alternatives

Ensure Aseptic Placement

1

Indwelling Urinary Catheter



2

Maintain Awareness and Proper Care of Catheters in Place

Daily review of continued need for urinary catheter

3

Prompt Removal of Unnecessary Catheters

Reminders/stop orders use appropriateness criteria to prompt catheter removal

Team Strategies Are Needed To Reduce Inappropriate Urinary Catheter Use

- Develop a “shared mental model” between nurses and physicians
- Recruit (not assign) an ICU nurse and physician as bedside champions to lead the project
- Consider your post removal protocol for use in preventing inappropriate catheters from being inserted
- Develop programs and education for the emergency department and operating room areas to reduce unnecessary insertions
- Develop a communication workflow for prompting catheter removal by default in your unit when no longer appropriate

Examples of Indications for Urinary Catheters[3-5]

	2009 HICPAC Guidelines	American Nurses Association's Streamlined Evidence-Based RN Tool: CAUTI Prevention	Ann Arbor Criteria for Appropriate Urinary Catheter Use in Hospitalized Medical Patients
Example Indications	• Acute urinary retention/obstruction • Perioperative use for selected surgeries • To assist with healing of open wounds in incontinent patients • End-of-life care • **Accurate measurement of urinary output in critically ill patients**	• Acute urinary retention/obstruction • Perioperative use for selected surgeries • To assist with healing of open wounds in incontinent patients • End-of-life care • **Critically ill and need for accurate measurements of I&O (e.g., hourly monitoring)**	• Indwelling catheters are appropriate for measuring and collecting urine **only when fluid status or urine CANNOT be assessed by other means**. • **Location in an ICU alone is NOT an appropriate indication.** • **Criteria for 3 catheter types: indwelling, external and intermittent use catheters**
Comments	• Appropriate use in critically ill patients has varied interpretations	• Helpful algorithm to make decisions • Based on 2009 Guidelines • Use in critically ill patients still ambiguous	• Provides clarification to the 2009 guidelines on use for specific clinical scenarios • Includes ICU Daily Checklist for indwelling catheter use

Clinical Case 1 for Discussion

Ms. Johnson is a 45-year-old previously healthy woman who was admitted to the ICU with severe sepsis, requiring aggressive intravenous fluid resuscitation and vasopressor therapy. Does she need an indwelling urinary catheter (commonly known as a Foley catheter)?

A. Yes, indwelling urinary catheter because admitted to the ICU

B. Yes, because hourly urine output is being used to guide fluid resuscitation and vasopressor dose

C. No, because has no history of incontinence

D. No, as long as is able to urinate by other means

Clinical Case 2 for Discussion

Mr. Grant is a 66-year-old man who was admitted from the ED to the ICU with a severe chronic obstructive pulmonary disease exacerbation requiring bilevel positive airway pressure. Does he need an indwelling urinary catheter?

A. Yes, indwelling urinary catheter because admitted to the ICU

B. Yes, because hourly urine output is being used to guide fluid resuscitation and vasopressor dose

C. No, because has no history of incontinence

D. No, as long as is able to urinate by other means

Disclaimer: All case studies are hypothetical and not based on any actual patient or hospital information. Any similarity between a case study and actual patient or hospital experience is purely coincidental.

Catheter Appropriateness for Measuring Urine Volume[5]

IS THIS METHOD OF URINE COLLECTION APPROPRIATE?

	Indwelling Urinary Catheter	Intermittent Straight Catheter (ISC)	External Catheter	Non-Catheter Options
Hourly urine volume is required to provide treatment.	**YES**	**NO**	**NO**	**NO**
Daily (not hourly) urine volume is required to guide treatment.	**It is INAPPROPRIATE to use a urinary catheter simply because a patient is being cared for in an ICU**			

Meddings J, Saint S, Fowler KE et al. The Ann Arbor Criteria for appropriate urinary catheter use in hospitalized medical patients: results obtained by using the RAND/UCLA appropriateness method. Ann Internal Med. 2015;162(9 Suppl):S1-34.

Develop a Shared Mental Model

Which types of patients do nurses and physicians in your ICU agree do NOT require an indwelling urinary catheter?

- Patients admitted to ICU, but without an illness for which hourly urine output guides care
- Patients who have stabilized—no longer tenuous status
- "Floor status" patients—located in ICU but awaiting availability of non-ICU bed
- Patients with very little urine output for days—none to measure

ICU Daily Checklist for Indwelling Urinary Catheter Appropriateness[5]

Is the indwelling urinary catheter still appropriate for your ICU patient?

- If the patient does NOT have one of the following five criteria, **remove the indwelling urinary catheter**.
- These criteria can be found on the ICU Daily Checklist for Indwelling Urinary Catheter Use (Figure 4 in link)

Checklist Question 1[5]

1. What is the urine volume measurement need?

A. Is HOURLY urine volume measurement being used to inform and provide treatment?

B. Is DAILY /Shift urine volume measurement being used to provide treatment AND volume status CANNOT be adequately assessed by daily weight or urine collection by urinal, commode, bedpan, or external catheter?

Checklist Question 2[5]

2. Does the patient have a urologic problem that is being treated by an indwelling urinary catheter?

Examples:

- Urinary retention that cannot be monitored or addressed by bladder scanner/intermittent straight catheter (ISC) or that has failed the pre-insertion protocol
- Anticipated urinary retention due to paralytic meds
- Recent urologic or gynecologic diagnosis or procedure for which catheter removal is not yet recommended

Checklist Question 3[5]

3. Urine sample that CANNOT be collected by other method such as urinal, external catheter, or ISC

Sample Type?	Use Indwelling Urinary Catheter?	Use ISC?	Use External Catheter?
Sterile sample for urine culture	**No**	**Yes**	**Yes**, if staff trained for sterile application
Nonsterile urine sample	**No**	**Yes**	**Yes**
24-hour sample	**Yes**	**Yes**, if all urine can be collected by ISC	**Yes**, preferred option in cooperative men
Post-void residual measurement	**No**	**No**, unless cannot be assessed by bladder scanner	**No**

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Checklist Question 4[5]

4. **Does the patient have urinary incontinence that cannot be addressed by non-catheter methods** (e.g., barrier creams, incontinence absorbent products) **because nurses CANNOT turn and provide skin care with available resources** (e.g., lift teams, lift machines) **or transition to external catheter for cooperative patients?**

Checklist Question 5[5]

5. **Is the indwelling urinary catheter providing comfort from severe distress related to urinary management that cannot be addressed by non-catheter option, ISC, or external catheter?**

   Examples:

   - Difficulty voiding due to severe dyspnea with position changes needed to manage urine without catheter
   - Address patient/family goals in dying patient
   - Acute/severe pain upon movement with demonstrated difficulties using other urinary management strategies

Clinical Case 3 for Discussion

Mr. Knight is a 25-year-old man who was admitted with acute urinary retention, due to spinal injury. **Which urinary catheter strategies are appropriate?**

A. Indwelling urinary catheter

B. ISC, “In and Out”

C. External catheter

D. Urinal or incontinence garments

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Acute Urinary Retention[5]

IS THIS METHOD OF URINE COLLECTION APPROPRIATE?

	Indwelling Urinary Catheter	Intermittent Straight Catheter (ISC)	External Catheter	Non-Catheter Options
Acute retention WITHOUT bladder outlet obstruction	**YES**	**YES**, if bladder can be emptied by 4–6 hour ISC	**NO**†	Bladder scanner‡
Acute retention WITH bladder outlet obstruction	Appropriateness varies by reason for obstruction§	Appropriateness varies by reason for obstruction§	**NO**†	Bladder scanner‡

† External catheters collect urine released by the bladder, and cannot address urinary retention

‡ Use a bladder scanner to reduce number of catheterizations when no or little urine is seen in bladder

§ Consider urology consultation for prostatitis and urethral trauma, because may be better managed with suprapubic, or expert placement of catheter.

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Clinical Case 4 for Discussion[5]

Mrs. Davies is an 80-year-old woman, admitted with syncope and awaiting pacemaker placement, who is admitted to ICU for a higher level of monitoring and nursing care than available outside the ICU. She has chronic urinary incontinence and is a high fall risk.

True or **False**

The ICU nurse should insert an indwelling urinary catheter for Mrs. Davies because it will prevent skin breakdown and reduce her risk of falling.

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Managing Incontinence: No Skin Issue, No Difficulty Turning[5-6]

IS THIS METHOD OF URINE COLLECTION APPROPRIATE?

	Indwelling Urinary Catheter	Intermittent Straight Catheter (ISC)	External Catheter	Non-Catheter Options
Incontinence (no skin issue), nurses can turn/provide skin care	**No**	**No,** unless has chronic ISC needs	Yes if the patient in unable to toilet using other means, bedpan, bedside commode, bathroom	Barrier creams, prompted toileting, incontinence pads/garments, etc.
Incontinence, **can be turned**, patient **requests** catheter	**No**	**No,** unless has chronic ISC needs	Limited evidence on use of external catheter in this situation, benefit/risk varies by patient characteristics	Barrier creams, prompted toileting, incontinence pads/garments etc.

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Managing Incontinence: No Skin Issue, With Difficulty Turning[5-6]

IS THIS METHOD OF URINE COLLECTION APPROPRIATE?

	Indwelling Urinary Catheter	Intermittent Straight Catheter (ISC)	External Catheter	Non-Catheter Options
Excess weight (>300 pounds) from obesity or edema	**YES**	**No,** unless has chronic ISC needs	**YES**	Barrier creams, prompted toileting, etc.
Turning causes hemodynamic or respiratory instability	**YES**	**No,** unless has chronic ISC needs	**YES**	Barrier creams, prompted toileting, etc.
Strict temporary immobility post-op from vascular procedure	**YES**	**YES**	**YES**	Barrier creams, prompted toileting, etc.

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Managing Incontinence: When Patient has Skin Issues[5,6]

Is this method of urine collection appropriate?

	Indwelling Urinary Catheter	Intermittent Straight Catheter (ISC)	External Catheter	Non-Catheter Options
Incontinence-associated dermatitis	**No**	**No,** unless has chronic ISC needs	**Yes, if severe, otherwise uncertain**	Barrier creams, prompted toileting, etc.
Closed pressure ulcers: stage I, deep tissue injury	**No**	**No,** unless has chronic ISC needs	Yes, if the patient is unable to toilet using other means, bedpan, bedside commode, bathroom	Barrier creams, prompted toileting, etc.
Open pressure ulcers: stage II	**Uncertain**	**Yes**	Yes, if the patient is unable to toilet using other means, bedpan, bedside commode, bathroom	All†
Open pressure ulcers: stages III-IV, unstageable	**Yes**	**Yes,** if ISC adequate to manage the incontinence	**Yes**	All†

Note: All non-catheter options are appropriate if they would not worsen the ulcer due to location.

Take-Home Points

- ICU bed assignment alone is not sufficient indication for an indwelling urinary catheter – patient must have a medical indication for the catheter
- Urology consultation may be needed for certain types of acute urinary retention with obstruction
- Not all open sacral/hip wounds require an indwelling urinary catheter if the wound can be kept clean by other methods
- Use alternatives to indwelling urinary catheters whenever appropriate

References

1. Meddings J, Saint S. Disrupting the life cycle of the urinary catheter. Clin Infect Dis. 2011;52(11):1291-3. PMID: 21596672.
2. Patel PK, Gupta A, Vaughn VM, et al. Review of strategies to reduce central line-associated bloodstream infection (CLABSI) and catheter-associated urinary tract infection (CAUTI) in adult ICUs. J Hosp Med. 2018;13(2):105-16. Epub 2017 Nov 8. PMID: 29154382.
3. Gould CV, Umscheid CA, Agarwal RK, et al. Guideline for Prevention of Catheter-Associated Urinary Tract Infections 2009. Infect Control Hosp Epidemiol 2010; 31(4):319-326. PMID: 20156062.
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6. Gray M, Beeson T, Kent D, et al. Interventions Post Catheter Removal (iPCaRe) in the acute care setting. J Wound Ostomy Continence Nurs. 2020;47(6):601-18. PMID: 33201147.