**CAUTI Module:**

Indwelling Urinary Catheter Indications

| **Facilitator Guide** | **Slide Number and Image** |
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| This module, titled “Indwelling Urinary Catheter Indications” is part of the Agency for Healthcare Research and Quality’s Safety Program for Intensive Care Units (ICUs) and addresses catheter-associated urinary tract infections, also known as CAUTIs.  This module will review when indwelling urinary catheters are appropriate in the ICU setting by reviewing existing guidelines on general indications. Using ICU-specific scenarios, you will then use this information and other tools to help guide decision making. | Slide 1 |
| Since all these infections begin with a catheter, decreasing unnecessary catheter use is the primary goal—and unfortunately, also not an easy goal to achieve.  There is a predictable pattern of use of urinary catheters. This “life-cycle” of a urinary catheter organizes targets for intervention, similar to how pharmacologists design antibiotics based upon a bacteria’s lifecycle.  The “life" of the catheter begins with catheter placement, continues when the catheter is kept in place, and may end when the catheter is removed. | Slide 2 |

| **Facilitator Guide** | **Slide Number and Image** |
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| Interventions to prevent CAUTI focus on disrupting the lifecycle of the urinary catheter. When discussing and prioritizing ways to prevent CAUTI, the most important step occurs before step 1, which is step 0—avoiding placement of the indwelling urinary catheter. This is the most important type of intervention, because if you avoid the indwelling urinary catheter, you cannot develop a catheter-associated UTI along with other catheter-associated complications.  This module will focus on step 0, avoiding placement of the indwelling urinary catheter whenever possible. | Slide 3 |
| In step 0, these criteria guide healthcare professionals to place indwelling urinary catheters only when appropriate, and to optimize use of alternatives to indwelling urinary catheters.  In step 2, appropriateness criteria are used as part of the daily review of continued need for the urinary catheter, and in step 3, reminders and stop orders use appropriateness criteria to promptly remove catheters.  The key points are to only use an indwelling urinary catheter when appropriate, which is the focus of this presentation, and to optimize the use of alternative urinary collection methods. | Slide 4 |

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| While this module focuses on the appropriate clinical indications for placing an indwelling urinary catheter, it is important to recognize that providing information to ICU staff alone will not solve the problem of inappropriate catheter use.  To engage your staff in the ICU in reducing inappropriate catheter use, here are a few strategies to consider:   * First, develop a “shared mental model” between nurses and physicians for when indwelling urinary catheters are appropriate for patients in your ICU. * Consider placing selection criteria in the electronic health record order for urinary catheter placement to allow the team to be aware of the indication. * Second, recruit—not assign—an ICU nurse and physician as bedside champions to lead the project for reducing urinary catheter use. The [Making it Work Tip Sheet on engaging physician champions](http://www.ahrq.gov/sites/default/files/wysiwyg/hai/tools/clabsi-cauti-icu/engaging-champions.pdf) is recommended. * Avoiding the indwelling catheter also means using steps prior to insertion to determine true need especially around acute urinary retention without a structural issue. Consider using your post-removal protocol prior to insertion with regular bladder scanning and straight catheterization for a select time period before making the decision is made to insert a catheter. * Since a number of the catheters are placed in the emergency room and the operating room areas, consider working with those teams using the latest research to identify opportunities for reducing insertion of the indwelling catheter. | Slide 5 |
| There are resources available for hospitals to assist with the complex decision-making process about when it is appropriate to use an indwelling urinary catheter.  In 2009, the CDC and the Healthcare Infection Control Practices Advisory Committee (HICPAC) published one of the first guidelines on uses of urinary catheters based on expert opinion. While it provided important guidance and highlighted examples of appropriate and inappropriate indications, certain indications, such as use of an indwelling urinary catheter to measure urinary output in critically ill patients, was ambiguous and had varying interpretations. Many clinicians interpreted this to mean that ALL patients in an ICU should have a urinary catheter, which is not appropriate. This indication is also used inappropriately outside of the ICU.  In 2015, the American Nurses Association developed a streamlined tool to help identify appropriate uses of indwelling urinary catheters. The tool provides an algorithm that is very helpful in deciding when to insert an indwelling urinary catheter based on the 2009 HICPAC Guidelines. The tool does suggest the use of indwelling urinary catheters for HOURLY monitoring of critically ill patients as a clarification but is still open to interpretation on many common clinical scenarios.  In 2015, the Ann Arbor Criteria were developed after a panel conducted an extensive review of clinical scenarios for appropriateness of indwelling urinary catheter use. The panel determined that indwelling urinary catheters are appropriate for measuring and collecting urine only when fluid status or urine cannot be assessed by other means. Patients in an ICU need a specific medical indication for catheter use. This guideline also provides and compares appropriate and inappropriate uses for three urinary catheter types: indwelling urinary catheters (commonly known as Foley catheters), external catheters (commonly known as condom catheters in males and external urinary devices in females), and intermittent straight catheters or abbreviated ISCs. These criteria also provide an ICU Daily Checklist for indwelling urinary catheter use, which you will review in more detail next, using case examples. | Slide 6 |
| So, let’s review a few case studies together. We will walk through a few questions and possible answers, and then explain why each answer is either correct or incorrect before we move on.  In this first clinical scenario, Ms. Johnson is a 45-year-old previously healthy woman who was admitted to the ICU with severe sepsis, requiring aggressive intravenous (IV) fluid resuscitation and vasopressor therapy. Does she need an indwelling urinary catheter (commonly known as a Foley catheter)?  Options include:  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  What do you think is the appropriate answer?  As stated earlier, being admitted to the ICU alone is not reason enough for using an indwelling urinary catheter. However, Ms. Johnson does have a medical indication for using a catheter. The answer is B, Yes, because hourly urine output is being used to guide fluid resuscitation and vasopressor dose. | Slide 7 |
| Here is another clinical scenario.  Mr. Grant is a 66-year-old man who was admitted from the emergency department to the ICU with a severe COPD exacerbation requiring BiPAP. Does he need an indwelling urinary catheter?  Options include:   * Yes, indwelling urinary catheter because admitted to the ICU * Yes, because hourly urine output is being used to guide fluid resuscitation and vasopressor dose * No, because has no history of incontinence * No, as long as is able to urinate by other means   Would you insert an indwelling urinary catheter for Mr. Grant?  The answer is D, No, as long as Mr. Grant is able to urinate by other means he would not need an indwelling urinary catheter. It is best to use alternatives to an indwelling urinary catheter whenever possible, such as a urinal, commode, bedpan, or external catheter. | Slide 8 |
| This table provides a summary of the new guidance about urinary catheter appropriateness for measuring urine volume.  The blue boxes indicate appropriate use, gray is inappropriate use, and yellow indicates caution because a catheter could be appropriate in some circumstances. Please note the animation function within this slide. In presentation mode, the yellow box will appear before the red box.  As a review—first, assess if the patient requires daily versus hourly urine measurements to guide treatment decisions. If the patient truly needs hourly urine output measurements, then the indwelling urinary catheter is the only appropriate option. Examples of patients needing hourly urine output include managing hemodynamic instability, hourly titration of IV fluids, or drips (vasopressors, inotropes, diuretics).  If the patient needs daily (not hourly) urine output volume to guide treatment, non-catheter options such as weight trends or collection by urinal or bedpan are ideal as lowest risk, but if urine volume absolutely cannot be assessed without a catheter, an indwelling or external catheter are appropriate. With that said, this needs to be reassessed daily because often patients require this very close monitoring in the first days early in hospitalization, but not after they are stabilized in 24 or 48 hours. Examples of patients needing daily urine output include acute renal failure workup, IV fluids or oral, or IV bolus diuretics, or fluid management in respiratory therapy.  It is inappropriate to use a urinary catheter simply because the patient is being cared for in the ICU. An ICU patient needs a definitive reason for why the urinary catheter provides more benefit than risk to the patient. | Slide 9 |
| Having a table of appropriate and inappropriate urinary catheter indications is an important first step, but in order for this information to change practice, a very important step in reducing urinary catheter use is developing the “shared mental model” mentioned earlier. ICU nurses and physicians need to agree on when indwelling urinary catheters are appropriate for measuring urine output for patients in your ICU. If there is no agreement between the physicians and nurses on when measuring urine output is needed, it will be very hard to improve urinary catheter use in your unit.  A first step in starting the conversation about reducing urinary catheter use is to first try to determine which types of patients nurses and physicians agree do not require an indwelling catheter while in your ICU.  Examples to consider include:   * Patients admitted to your ICU for a technology or nursing service not available on another unit, who do not have an illness that requires hourly urine output to guide care, such as frequent neurologic checks, insulin drips, chronic tracheostomy/ventilator needs, or BiPAP like Mr. Grant had in the second scenario. * Patients who have stabilized and no longer have a tenuous status. For example, a patient with sepsis who no longer requires aggressive fluids or pressors. * “Floor status” patients who are located in your ICU but awaiting availability of a non-ICU bed. * Patients with very little urine output for days—there’s simply nothing to measure. | Slide 10 |
| Now let’s review the ICU Daily Checklist for Indwelling Urinary Catheter Appropriateness to help answer the question: Is the indwelling urinary catheter still appropriate for your ICU patient?  If the patient does not have one of the following five criteria detailed in upcoming slides, remove the indwelling urinary catheter.  Please note that these criteria can be found on the [ICU Daily Checklist for Indwelling Urinary Catheter Use](http://unmhospitalist.pbworks.com/w/file/fetch/96118820/0000605-201505051-00001.pdf) located in Figure 4 of the link. Each question on the checklist will be reviewed in detail on the following slides. | Slide 11 |
| To determine if an indwelling urinary catheter is appropriate for a patient, first determine the need for urine volume measurement.   * Is HOURLY urine volume measurement being used to inform and provide treatment? OR * Is DAILY/shift urine volume measurement being used to provide treatment and volume status cannot be assessed adequately by other methods?   If the answer is yes to either of these questions, then an indwelling urinary catheter would be appropriate. | Slide 12 |
| The next question to ask is, does the patient have a urologic problem that is being treated by an indwelling urinary catheter?  If the answer is yes, then an indwelling urinary catheter would be appropriate.  Some examples of these types of urologic problems include:   * Urinary retention that cannot be monitored or addressed by bladder scanner or intermittent straight catheter (ISC) * Anticipated urinary retention due to paralytic medications * A recent urologic or gynecologic diagnosis or procedure for which catheter removal is not yet recommended | Slide 13 |
| Question 3: If you need a urine sample, what type do you need and how can it be collected?  This table provides guidance on whether an indwelling urinary catheter, ISC, or external catheter is appropriate for collecting urine samples when the sample cannot be collected by other methods.  For example, external catheters and ISCs are often appropriate for collecting urine samples.  Indwelling urinary catheters are appropriate for 24-hour samples only if they cannot be collected by other means. No catheter is appropriate for assessing a post-void residual volume if it can be assessed by a bladder scanner. | Slide 14 |
| The next question, number 4, is, does the patient have urinary incontinence that cannot be addressed by non-catheter methods, such as barrier creams, incontinence-absorbent products, or nurses not being able to turn and provide skin care with available resources, such as lift teams, lift machines, or a transition to external catheter for cooperative patients?  If yes, then an indwelling urinary catheter would be appropriate.  Examples of conditions that would meet this criterion are hemodynamic and respiratory instability, strict immobility post-procedure, and urinary incontinence contaminating open (stage 3 or stage 4) pressure ulcers. | Slide 15 |
| The final question, number 5, is, does the indwelling urinary catheter providing comfort from severe distress related to urinary management that cannot be addressed by non-catheter options, ISC, or external catheter?  If yes, then an indwelling urinary catheter would be appropriate.  Examples that would meet this criterion include:   * Difficulty voiding due to severe dyspnea with position changes needed to manage urine without an indwelling catheter * To address patient/family goals in a dying patient * Acute and/or severe pain upon movement with demonstrated difficulties using other urinary management strategies | Slide 16 |
| Let’s review another clinical scenario.  Mr. Knight is a 25-year-old man who was admitted with acute urinary retention due to a spinal cord injury.  Which urinary management strategies are appropriate?   * Indwelling urinary catheter * ISC, also known as “In and Out” catheterization * External catheter * Urinal or incontinence garments   More than one option may be appropriate. What do you think is the right answer?  The answer is either A or B. An indwelling urinary catheter or ISC would be appropriate to address this type of acute urinary retention. External catheters will not ease urinary retention, and a suprapubic catheter could be considered in cases with bladder outlet obstruction. | Slide 17 |
| However, not all acute urinary retention is the same. The case just discussed (spinal cord injury) is a type of acute retention without bladder obstruction.  As a reminder, the blue boxes indicate appropriate use, gray is inappropriate use, and yellow indicates caution because a catheter could be appropriate in some circumstances. Please note the animation function within this slide.  It should be mentioned that with spinal cord injury patients, intermittent but scheduled in and out catheterizations are the normal every 6 hours or more frequently as needed.  If the case had involved bladder outlet obstruction (described in the last row on this table), urology consultation should be considered for prostatitis and urethral trauma, because the patient may be better managed with an indwelling suprapubic catheter or expert placement of transurethral catheter. | Slide 18 |
| Let’s review one more clinical case.  Mrs. Davies is an 80-year-old woman 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.  The answer is False, because the catheter actually does not decrease fall risk. In fact, it could increase it as a tripping hazard—the catheter acts as a “one-point restraint” that increases complications associated with immobility such as pressure ulcers and weakness from less walking. And the catheter increases infection risk, which could be very hazardous in a patient getting an implanted device such as a pacemaker. | Slide 19 |
| The case we just discussed is one where a catheter was being considered to manage incontinence, but there was no skin issue and no report of difficulty turning the patient to provide incontinence care. Guidance about catheter selection for this type of scenario is provided in row 1.  In this case, non-catheter options are best because skin issues from urinary incontinence can often be prevented or managed without catheters, such as use of external catheters and or using barrier creams, prompted toileting, and incontinence pads and garments.  Even when a patient requests a urinary catheter for incontinence, non-catheter options are most appropriate. | Slide 20 |
| If a patient is reported as being difficult to turn by nurses using their available resources such as lift teams and lift devices, urinary catheters may be an appropriate option. Examples include if the patient is very heavy from obesity or edema (and nurses do not have the resources to turn the patient as needed), if turning causes medical instability, or if there is a very strict temporary medical need for immobility and urine cannot be managed otherwise.  External catheters are an important option to consider for all these patients prior to choosing placement of an indwelling catheter | Slide 21 |
| This table summarizes the recommendations if the patient has skin issues, such as incontinence-associated dermatitis and pressure ulcers.  Of note, catheters are appropriate in the case of urinary incontinence with open wounds if the urine cannot be kept from contaminating the wounds using other strategies.  External catheters are an important option to consider for patients with severe dermatitis and stage 3 or stage 4 pressure ulcers. | Slide 22 |
| A few take-home points for indwelling urinary catheters:   * ICU bed assignment is not a sufficient appropriate indication for an indwelling urinary catheter. The ICU patient still needs a specific medical indication to justify the risk of placing an indwelling urinary catheter. * Urology consultation may be needed to assess the most appropriate catheter (Foley vs. suprapubic) for certain types of acute urinary retention with obstruction, for example in cases of prostatitis or urethral injury. * Not all open sacral/hip wounds require an indwelling catheter if the wound can be kept clean by other methods. * Finally, use alternatives to indwelling urinary catheters whenever appropriate. | Slide 23 |
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