

OTHER PERSPECTIVES IN CAUTI PREVENTION

Karen Jones, RN, BSN



Objectives

- Review how nurse-driven urinary catheter removal protocols can help your efforts in catheter-associated urinary tract infection (CAUTI) reduction
- Understand elements of a successful urinary catheter reduction program in an Emergency Department (ED) setting
- Learn about the pitfalls of inappropriate urine culturing

exercise

Scenario 1

Mrs. Smith is an 86 year old widow who lives alone, admitted with a diagnosis of leg cellulitis. She is awaiting a med-surg bed assignment in the Emergency Department.

You are her nurse in the ED. After five hours of waiting for an inpatient bed, she requests a urinary catheter “because I’ve been so weak and would like to rest in bed”.

exercise

Scenario 2

Mr. Williams is a 62 year old man admitted to a medical floor for COPD exacerbation. He asks you, the nurse caring for him, for a urinary catheter because sometimes he feels he can't make it to the bathroom quickly enough. At the same time, his daughter is worried he might fall getting up and echoes her father's request.

exercise

Scenario 3

Dr. J is a trauma surgeon at your hospital. As part of the Infection Prevention & Control Team, you have had several interactions with him during your CAUTI prevention initiatives.

During a multidisciplinary discussion on reducing utilization in your surgical intensive care, he states “Look, it’s not like we don’t talk about this every day during our rounds. These people need have accurate I’s and O’s in the SICU and even after they move to the step-down unit. If they don’t have a Foley, you can forget about ever getting any accurate measurements. I’d say about 95% of my patients need catheters.”

exercise

Scenario 4

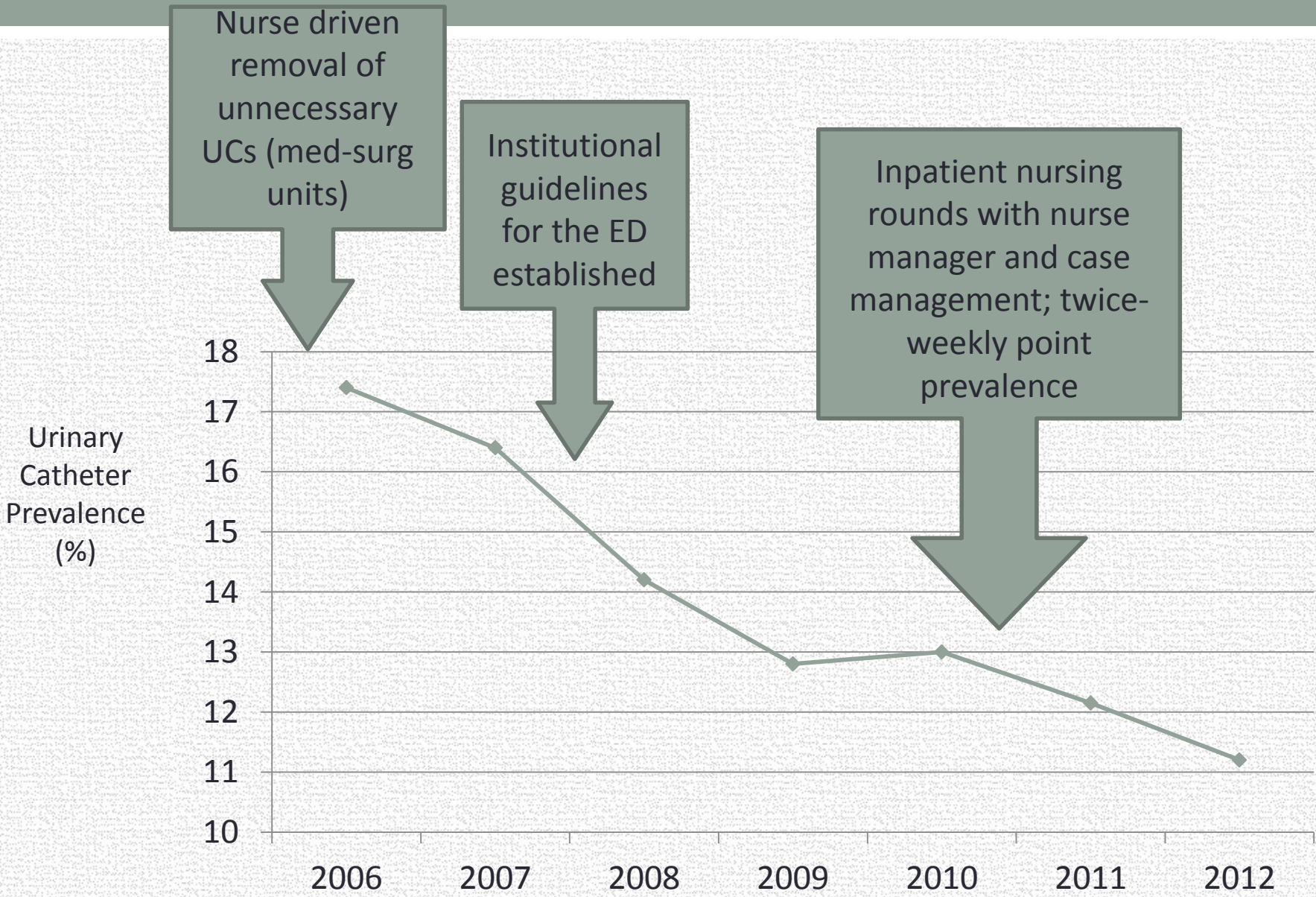
You are the nurse manager on a medical floor. A nurse assistant approaches you and tells you she's seen the monthly data results on the hospital's CAUTI rates posted in the staff breakroom.

She goes on to share with you her concerns about insertion practices on the unit; "I know from nursing school you're not supposed to re-use the catheter after it's been contaminated but the nurses often do, or set it down on the bed or against the patient's skin. I see this happen all the time. That could give someone an infection, right?"

Common themes

- The nurse plays a vital role in
 - Providing education to patients and family (in this case, risks with urinary catheters)
 - Advocating for patients
 - Determining patient-specific options that will fit their needs (individualized care)
 - Promoting safer behaviors within the hospital

Nurse-driven UC protocols will further help the CAUTI reduction initiative



SJHMC, Detroit, MI

Example of multidisciplinary, multi-departmental efforts

St. John Hospital & Medical Center, Detroit

2006

- Pilot of nurse-driven removal of UC on med-surg units
 - Policies updated; nurses, physicians, mid-level providers educated
 - Spread to additional units and became part of daily assessment
 - Worked with nurse/case managers to collect data and encourage early removal

2008

- Institutional guidelines for the ED initiated; ED intervention implemented

2010

- Discussion on daily rounds for all units
- Twice-weekly point prevalence submitted by case managers on med-surg units to Infection Control

Example of multidisciplinary, multi-departmental efforts

St. John Hospital & Medical Center, Detroit

- Education of nurses on:
 1. Appropriate indications
 2. Ways to avoid urinary catheter placement
- Evaluation of urinary catheter utilization and compliance with appropriate indications
- Sustainability: nurses own the process of evaluating for catheter appropriateness of daily use

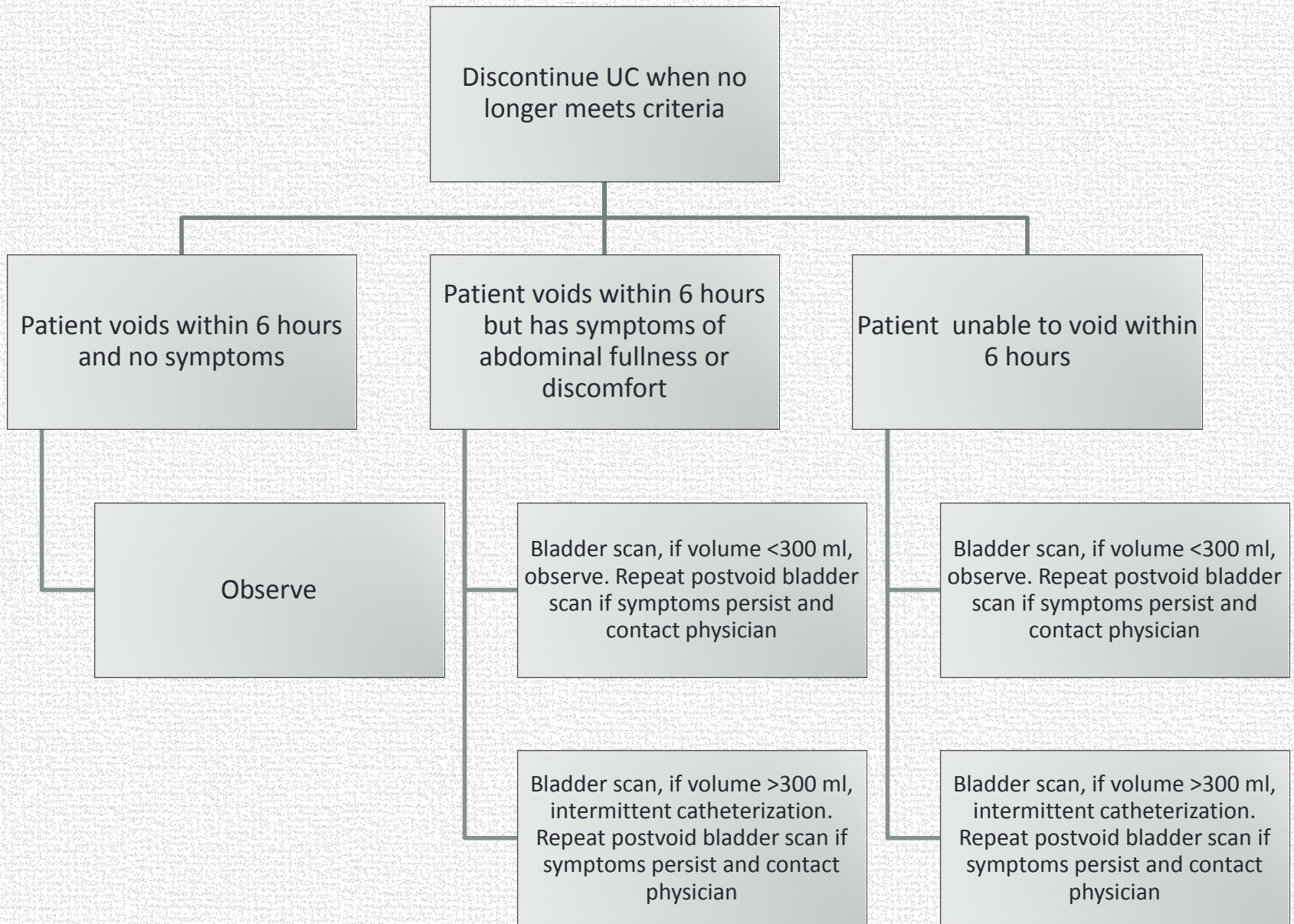
However, it will take a multidisciplinary approach to reduce CAUTI

Removing the Urinary Catheter...

- Should not be looked at as an increase in the workload for either the nurse or nurse assistant
- Focus on importance of patient safety and prevention of associated risks
- Linked the work to safety efforts: SCIP, pressure ulcers, and immobility/ falls
- 30 studies of urinary catheter **prompts/reminders** were reviewed, showed a 53% overall reduction in CAUTI (Meddings et al, 2013)

Considerations for Physicians

- Make sure the main stakeholders are engaged and aware of your efforts!
 - No “sneaking it in”
 - Less surprises, less barriers
- Have agreed-upon, hospital-wide institutional guidelines
- Promote clear documentation on necessity



EXAMPLE OF A NURSE DRIVEN URINARY CATHETER REMOVAL PROTOCOL

Initial documentation of order in electronic medical record (EMR) = reason for placement or indication

Original order entered and electronically signed by Guiden , Darrius Patrick MD on 04/12/14 at 5:10 EDT.

Patient Care Department

Urinary Catheter Insert/Maintain

Additional Info

Comments

Details

History

Results

Compliance History

Details

Requested Start Date and Time

Urinary Catheter Type

Reason for Urinary Catheter

Comment

Suggest lidocaine 2% gel for topical anesthetic prior to insertion.

Diagnoses

Altered mental status

For the following days of hospitalization, nursing caring for patient receives electronic trigger to evaluate for discontinuation

Urinary Catheter is NOT to be Removed if One of the Following Criteria is Present:

- Accurate Urinary Output-Critical Patient
- Accurate Urinary Output-Surgical Patient
- Acute Urinary Retention or Obstruction
- Anticipated Surgery within 24 Hours
- Assist Healing of Perineal/Sacral Wounds
- Chronic Indwelling Urinary Catheter
- Gross Hematuria
- Hospice/Comfort Care/Palliative Care
- Per Physician, Do Not Remove for 2-3 Days
- Present on Arrival to Hospital
- Required Immobilization for Trauma/Surgery
- Urological Procedure/Surgery
- Other: See Special Instructions

Do Not Remove for:

- 2 days
- 3 days

Special Instructions:

Reminder: If Urinary Catheter was placed by Urology or during a Urology Procedure - contact Urology BEFORE discontinuing.

- Patient does not meet criteria to maintain urinary cath

Selecting this option will automatically generate a DC Urinary Catheter order.

Example of the Physician-Independent Nurse Driven Urinary Catheter Discontinuation

- IT and Quality Improvement worked on a process to evaluate UC need with the help of EHR triggers
- Protocol is established, reviewed and approved by medical executive committees
- Chiefs of departments notified, but information is not relayed to all urologists

Event: shortly after roll-out, a urinary catheter is removed (although it was placed by a urologist for an appropriate indication)

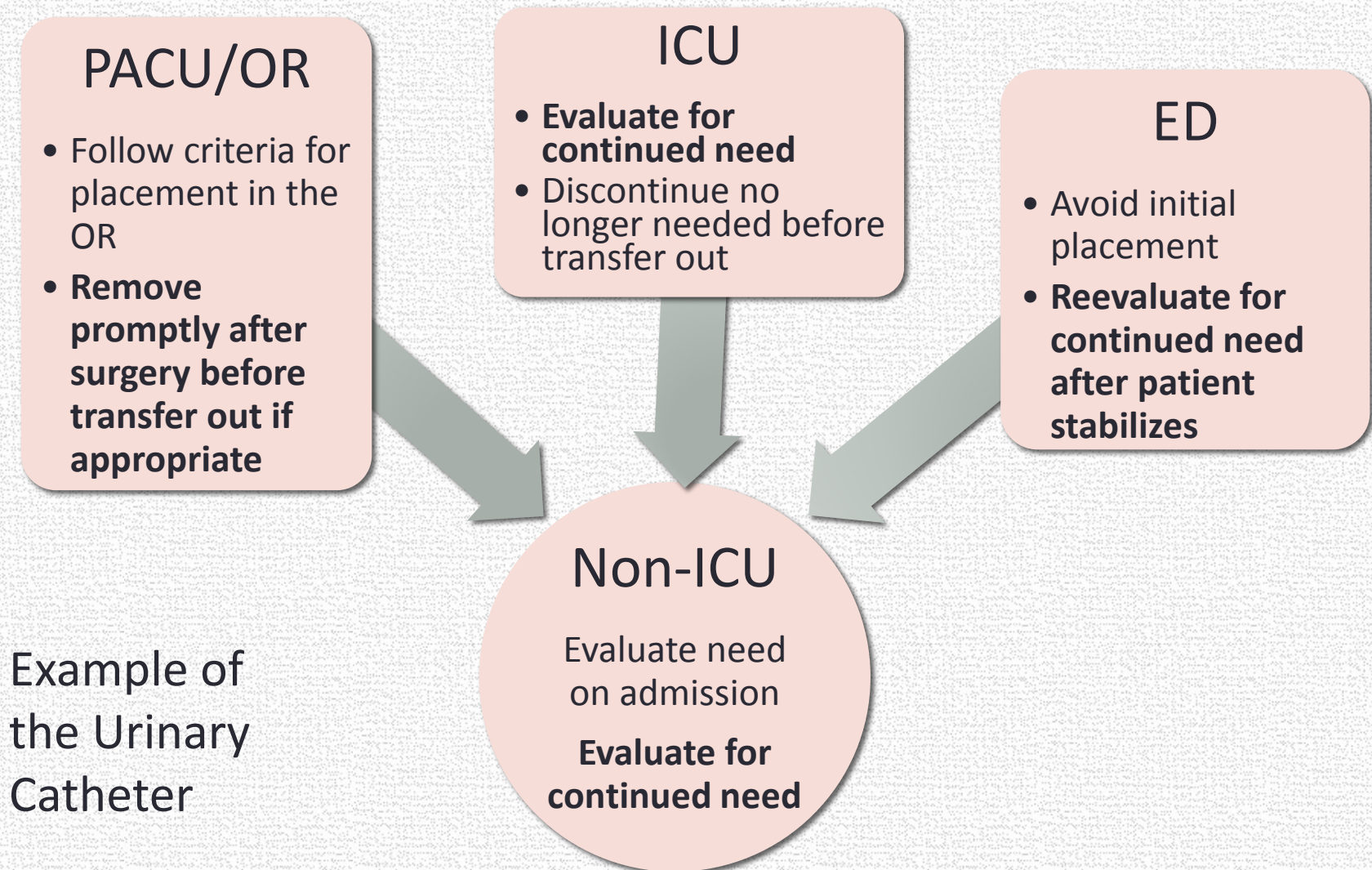


The Example of the Physician-Independent Nurse Driven Urinary Catheter Discontinuation

- Damage control: the process is halted till more refinements
- Make sure **key stakeholders are involved** to provide guidance/support, and improve the chances to have successful results
- Make sure that adaptation for some does not result in a loss of accuracy to the program

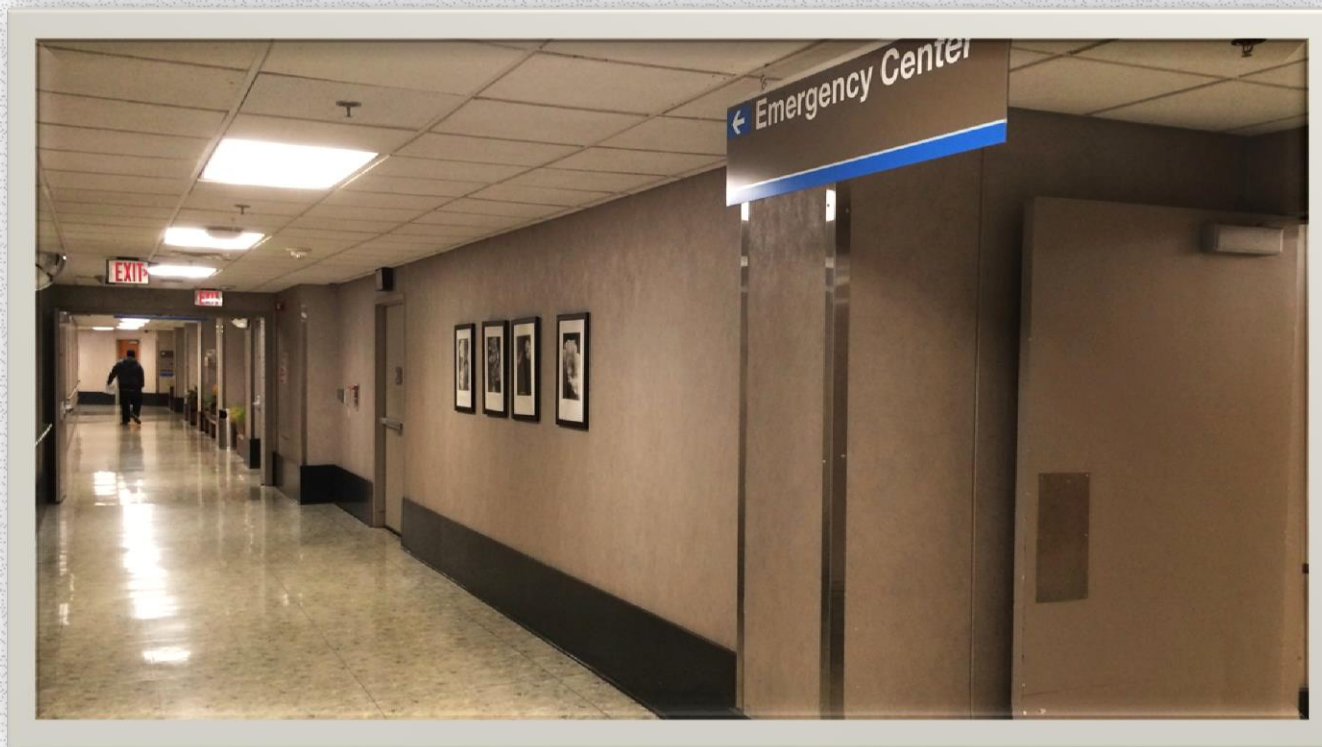


Opportunities for Improvement: Multidisciplinary and Multi-departmental Efforts



Example of the Urinary Catheter

ED Intervention



Objectives

Establish clear guidelines for ED urinary catheter (UC) placement:

- Collaborative effort between Infectious Disease (ID) and the Emergency Department (ED)
- Indications based on CDC HICPAC guidelines

Physician and Nurse engagement and buy-in:

- Identify ED physician champion
- Educate ED attending and resident physicians, nurses

Goal is to have less UCs placed in the ED, contributing to a lower utilization rate throughout inpatient units

Appropriate Indications

- Urinary retention including obstruction and neurogenic bladder
- Short perioperative use in selected surgeries (less than 24 hours) and for urologic studies or surgery on contiguous structures
- Output measurements in the Intensive Care Units
- Assist healing of perineal and sacral wounds in incontinent patients to avoid further deterioration of wound and skin
- Required immobilization for trauma or surgery
- Hospice/comfort care or palliative care, if requested by patient or patient advocate
- Chronic indwelling urinary catheter on admission (may clarify reason of use from physician)

ED Physician Role

- ED physician champion identified
- ID and ED physician champions collaborate to establish guidelines: both invested in improving UC placement in ED
- Agree on a list of acceptable indications for UC
- Any other reasons (beyond CDC HICPAC appropriate indications) for UC placement in the ED are added to the hospital-specific guidelines
- Collaboration with nursing staff

Physician Engagement

- The ED champion educates attending staff on the importance of appropriate ED UC use
- Collaborative UC guidelines are presented and discussed
- A successful intervention relies on the ED attending staffs' adherence to the guidelines
- Include residents (we identified a resident champion!)

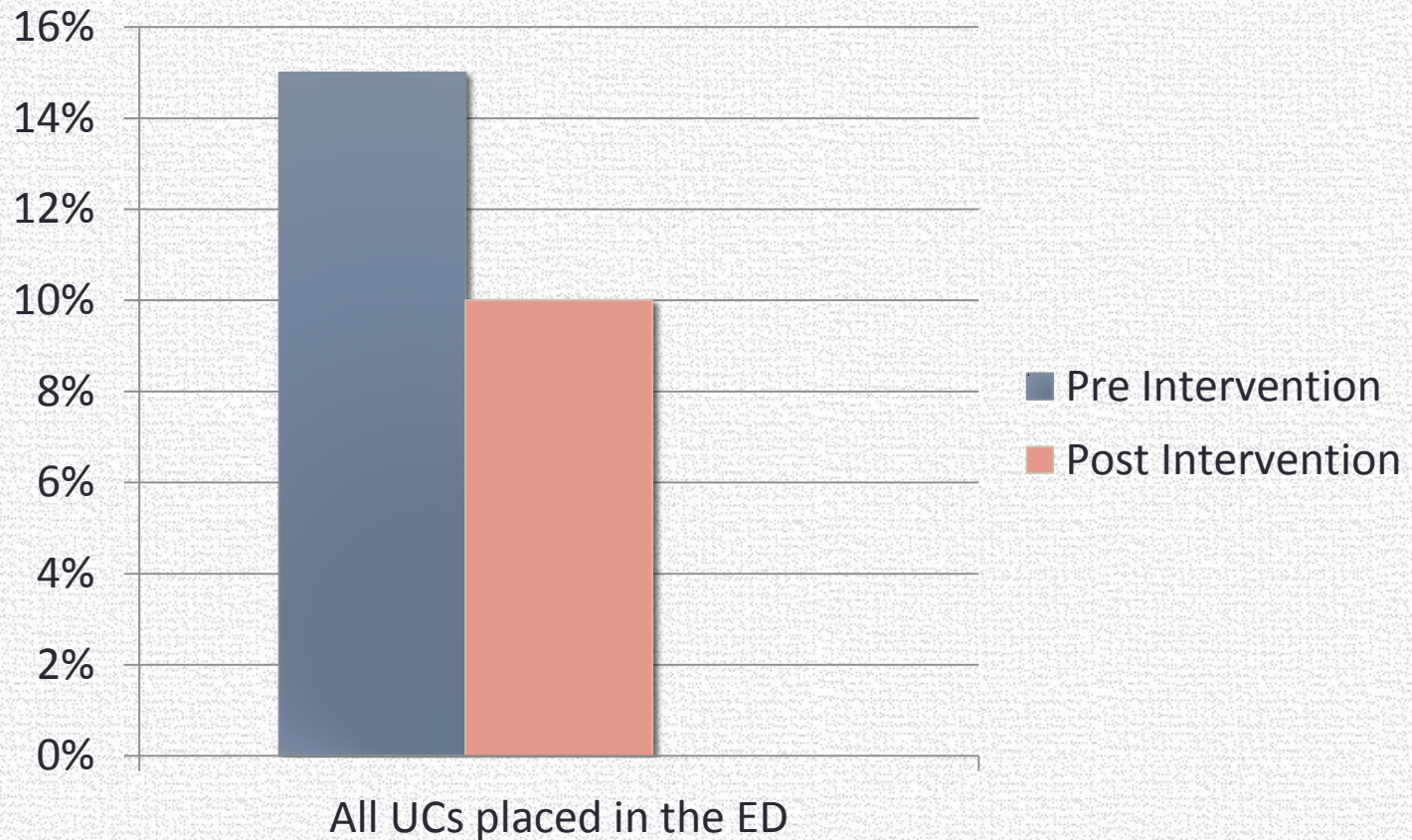
ED Nursing Role

- Obtain support from ED nurse director, nurse manager, and nurse educator
- ED nurse champion identified
 - Responsible for peer-to-peer coaching and education
 - Should be an approachable person who is well-versed in ED functions and is available as a resource
- Educated nursing staff
 - Appropriate indications, alternatives to UC
- Focused on working with physicians to determine UC necessity (patient-specific, patient-focused)
- Stressed importance of a corresponding, written physician order

Nurse Engagement

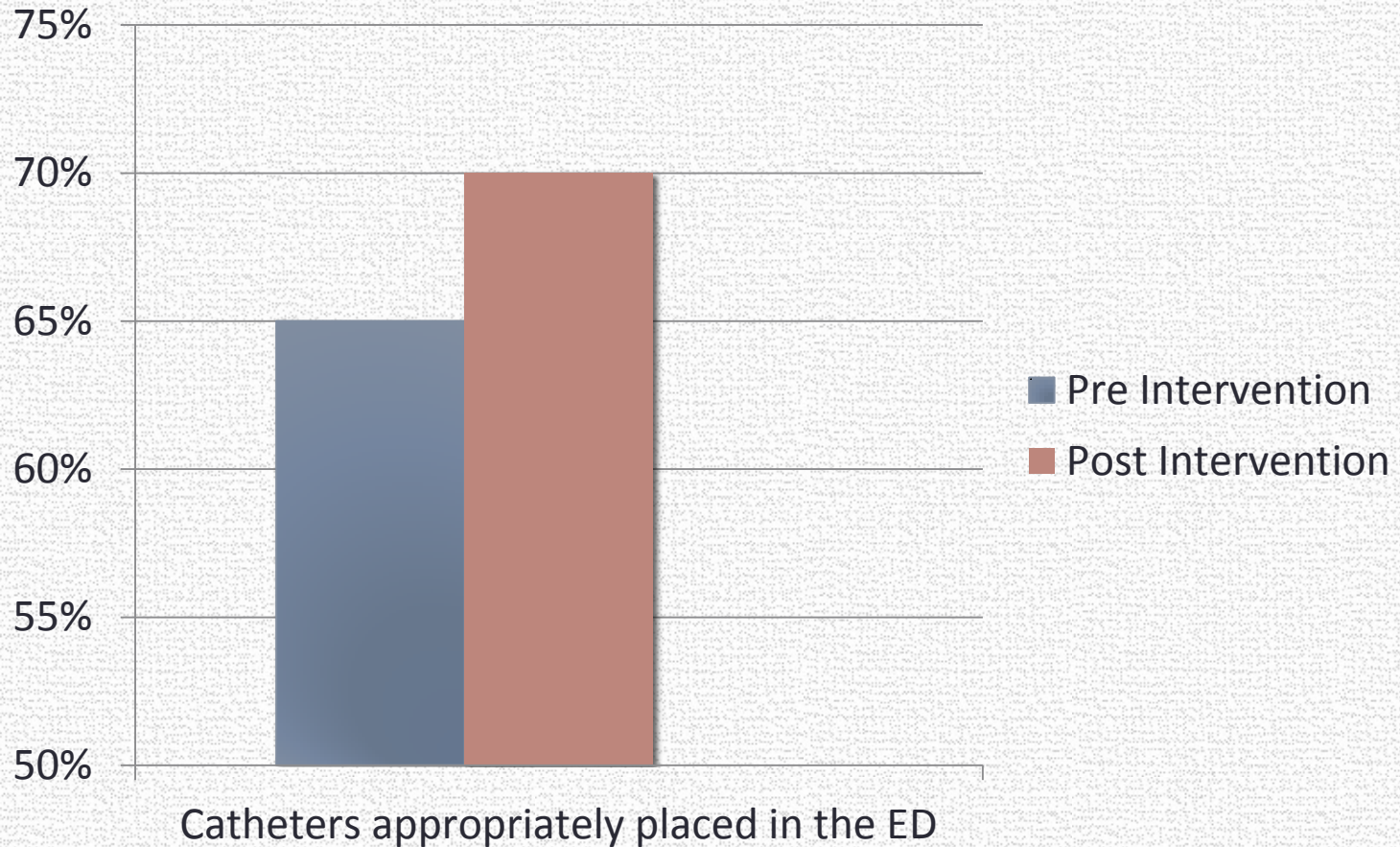
- Nursing Staff discussions
 - Reinforced that avoiding UC use should not be seen as “more work” for the nursing staff
 - Highlighted risks associated with UCs (especially after leaving the ED)
 - Encouraged collaboration among physicians and nursing staff
 - Empowered each patient care nurse to be a “champion” for his/her patient

UC Placement in the ED Pre/Post-Intervention: Insertions of urinary catheters



Compliance with UC Indications

Pre/Post-Intervention: Appropriate indication



Emergency Department Guidelines for Urinary Catheter Placement



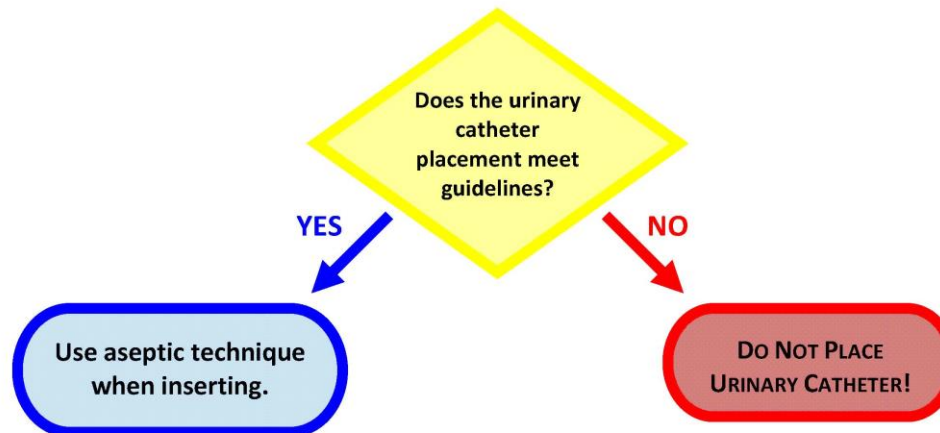
Appropriate Urinary Catheter Indications:

- Acute urinary retention or obstruction
- Perioperative use in selected surgeries
- Assist healing of perineal and sacral wounds in incontinent patients
- Hospice/comfort/palliative care
- Required immobilization for trauma or surgery
- Accurate measurement of urinary output in the critically ill patients



Inappropriate Urinary Catheter Indications:

- Incontinence
- Morbid obesity
- Dementia/ Confusion
- Patient's request
- Nursing convenience
- Urine specimen collection (*may straight catheterize if unable to obtain specimen*)



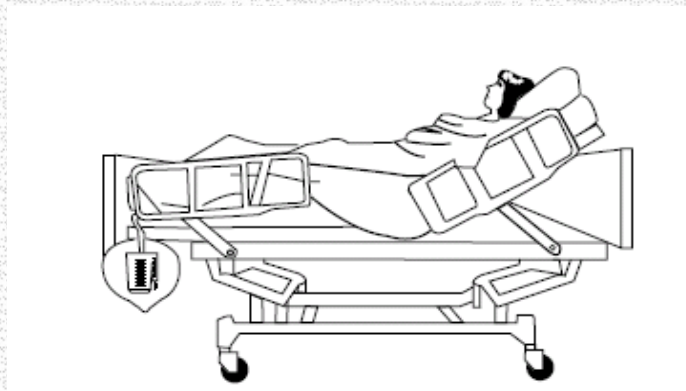
Questions? [Enter contact information here.]

Opportunities identified

- Vulnerable populations
- Periodic staff refreshers
- Physician orders
- Multidisciplinary collaboration between physicians and nurses (consider simultaneous education)
- Address questions from other units (or, resistance)

Ongoing Process Evaluation

- Have all necessary items available (kit)
- Documentation
 - Indicate if UC is present upon admission
 - Presence of physician order, documented date/time/HCW inserting and discontinuing UC
- Keep the system closed!
 - Use pre-connected urine meter device if appropriate (going to OR, ICU?)

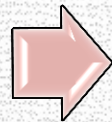


Nursing opportunities

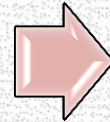
- Consider alternative to UCs
 - Promote straight-catheter for sample collection
 - Bring in the bladder scanner
- Include others involved in direct-patient care (nurse assistants)



Physician and
nurse evaluate
the patient



Decision to
place a urinary
catheter based
on appropriate
indication



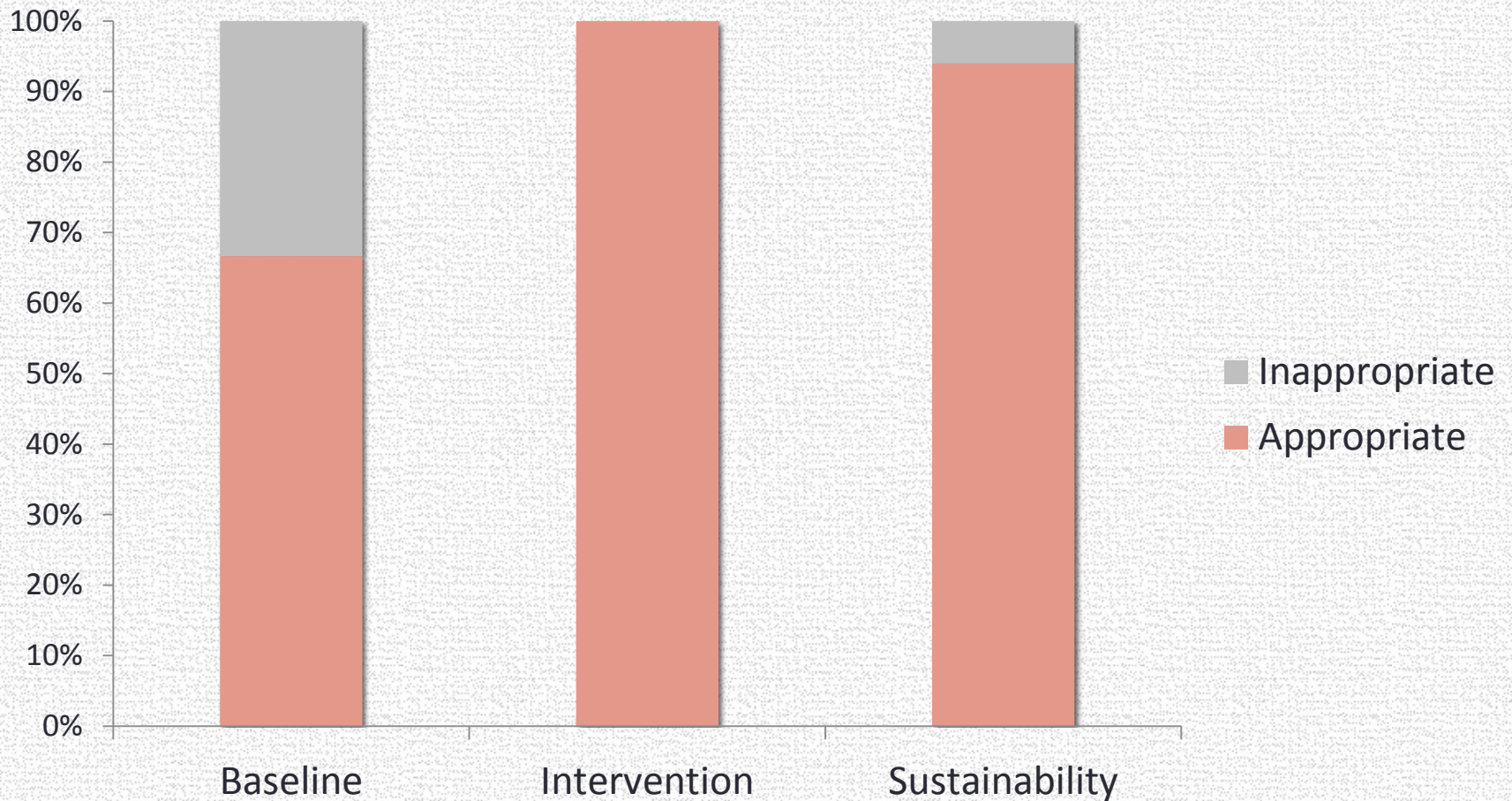
ED nurse
reevaluates
continued
need for
urinary
catheter
before transfer
to inpatient
unit

Collaboration between both physicians and nurses!

Sustainability of Program

- Ascension Health
 - In 2012, 18 Ascension Health EDs across the US were part of a UC-reduction project (including SJHMC)
 - Engaged hospital leadership, unit managers
 - The 18 EDs saw a 30% reduction for newly-placed catheters which was sustained over a 6-month period
 - Of the UCs placed, there was an increase in placement for **appropriate reasons**

UC placed based for appropriate indication



Concerns with Urine Culturing



Positive urine cultures are a main component of CAUTI diagnosis



Device-associated Module
CAUTI

Table 1. *Urinary Tract Infection Criteria*

Criterion	Urinary Tract Infection (UTI)
	Symptomatic UTI (SUTI) Must meet at least 1 of the following criteria:
1a	Patient had an indwelling urinary catheter in place for >2 calendar days, with day of device placement being Day 1, and catheter was in place on the date of event <i>and</i> at least 1 of the following signs or symptoms: fever (>38°C); suprapubic tenderness [‡] ; costovertebral angle pain or tenderness [‡] <i>and</i> a positive urine culture of $\geq 10^5$ colony-forming units (CFU)/ml and with no more than 2 species of microorganisms. Elements of the criterion must occur within a timeframe that does not exceed a gap of 1 calendar day between two adjacent elements.



Collection of unnecessary cultures may affect

- Clinicians – inappropriate prescribing of antibiotics
- Patients – Complication of inappropriate antibiotics, complications
- Infection Preventionists – Rely on this information when performing surveillance on National Healthcare Safety Network (NHSN) data
- Hospital – Reimbursement, value-based purchasing

NHSN definition does not distinguish between colonization and infection so obtaining *unnecessary urine cultures* could lead to a falsely increased rate.

Culturing urine in catheterized patients

- Urine cultures should be performed *only when necessary*
 - If patient is symptomatic
 - In early pregnancy
 - Prior to certain surgical procedures
- Certain patient populations have higher rate of asymptomatic bacteriuria

When should a urine culture be performed for a catheterized patient?



Upon routine catheter insertion?

- No; routine screening and treatment for asymptomatic bacteruria is not recommended for the majority of patients.

Hooton, T. et al. Diagnosis, prevention , and treatment of catheter-associated urinary tract infection in adults: 2009. *Clin Prac Dis, 2010. Guidelines from the Infectious Diseases Society of America.*

Upon admission for a patient with a chronic urinary catheter?

- No; patients with chronic UCs will likely be colonized at time of admission and routine/asymptomatic culturing is not recommended. May be appropriate if a CAUTI is suspected.

Hooton, T. et al. Diagnosis, prevention , and treatment of catheter-associated urinary tract infection in adults: 2009. *Clin Prac Dis, 2010. Guidelines from the Infectious Diseases Society of America.*

On a patient with fever and known pneumonia?

- No; for patients with known infection (i.e., pneumonia) do not “pan”-culture *unless suspecting a new source*.

Hooton, T. et al. Diagnosis, prevention , and treatment of catheter-associated urinary tract infection in adults: 2009. *Clin Prac Dis, 2010. Guidelines from the Infectious Diseases Society of America.*

On an elderly patient with new-onset acute mental status changes?

- Yes; new-onset altered mental status changes in the elderly with no other identifiable cause is a reason to perform a urine culture.

Hooton, T. et al. Diagnosis, prevention , and treatment of catheter-associated urinary tract infection in adults: 2009. *Clin Prac Dis, 2010. Guidelines from the Infectious Diseases Society of America.*

Triggers for cultures in catheterized patients: resident physicians & nurses

Trigger for Urine Culture	Resident Physicians (Answered Yes)	Nurses (Answered Yes)
Foul smelling urine	75 (70.8%)	146 (94.8%)
Cloudy urine	84 (79.2%)	146 (94.8%)
Sediments in urine	57 (53.8%)	129 (84.3%)
Darker urine	39 (36.8%)	72 (47.7%)
Chronic UC on admission	46 (43.4%)	115 (74.2%)

When to obtain or not obtain a urine culture in a patient with an indwelling urinary catheter

Discourage Urine Culture Use	Appropriate Urine Culture Use
Urine quality: color, smell, sediments, turbidity (do not constitute signs of infection)	Part of an evaluation of sepsis without a clear source (CAUTI is often a diagnosis by exclusion)
Screening urine cultures (whether on admission or before non-urologic surgeries)	Based on local findings suggestive of CAUTI (example, pelvic discomfort or flank pain)
Standing orders for urinalysis or urine cultures without an appropriate indication	Prior to urologic surgeries where mucosal bleeding anticipated or transurethral resection of prostate
“PAN” culturing (mindfulness in evaluating source is key)	Early pregnancy (avoid urinary catheters if possible)
Obtaining urine cultures based on pyuria in an asymptomatic patient	
Asymptomatic elderly and diabetics (high prevalence of asymptomatic bacteriuria)	
Repeat urine culture to document clearing of bacteriuria (no clinical benefit to patients)	

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