

# CAUTI

## Catheter-Associated Urinary Track Infections

# WORKBOOK

MAY 2015



**Quality Improvement  
Organizations**  
Sharing Knowledge, Improving Health Care.  
CENTERS FOR MEDICARE & MEDICAID SERVICES



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**HANYS** Quality Institute

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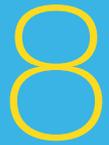
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This CAUTI binder contains a “portfolio” of example best practices. The purpose of this binder is to provide you with a starting tool, organized by ten modules of CAUTI Interventions, where you can collect and store hard copy articles, tools, and resources for your CAUTI prevention work.

This binder enables you to bring the material to committees, teams, and work groups for just-in-time references or ideas; as well as to share with staff as you spread the work across your organization.

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**Resource Sites:**

Organization	URL
IPRO	<a href="http://qio.ipro.org/hospitals-hai/about-this-project/prevention-tools-and-resources-for-healthcare-professionals">http://qio.ipro.org/hospitals-hai/about-this-project/prevention-tools-and-resources-for-healthcare-professionals</a>
Atlantic Quality Innovation Network	<a href="http://qio.ipro.org/">http://qio.ipro.org/</a>
HANYS	<a href="http://www.hanys.org/quality/clinical_operational_initiatives/ipro_cauti_cusp_vae/">www.hanys.org/quality/clinical_operational_initiatives/ipro_cauti_cusp_vae/</a>
NYSFPF	<a href="https://www.nysfpf.org/Members/Initiatives/InfectionPrevention/CAUTI/Overview.aspx">https://www.nysfpf.org/Members/Initiatives/InfectionPrevention/CAUTI/Overview.aspx</a>
APIC	<a href="http://www.apic.org/">http://www.apic.org/</a>
SHEA	<a href="http://www.shea-online.org/">http://www.shea-online.org/</a>
CDC	<a href="http://www.cdc.gov/HAI/cauti/uti.html">http://www.cdc.gov/HAI/cauti/uti.html</a>
NHSN	<a href="http://www.cdc.gov/nhsn/acute-care-hospital/CAUTI/index.html">http://www.cdc.gov/nhsn/acute-care-hospital/CAUTI/index.html</a>
On the CUSP-STOP CAUTI	<a href="http://www.onthecuspstophai.org/on-the-cuspstop-cauti/">http://www.onthecuspstophai.org/on-the-cuspstop-cauti/</a>
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## Insertion Bundle

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## Insertion Bundle

This section includes strategies, tools, and resources for the Urinary Catheter Insertion Bundle.

A “bundle” is defined as a small set of evidence-based interventions for a defined patient segment/population and care setting that, when implemented together, will result in significantly better outcomes than when implemented individually.<sup>1</sup> Overall, bundle compliance focuses attention on the importance of delivering all elements of the bundle to the patient, unless medically contraindicated.<sup>2</sup>

Measuring and monitoring elements of the bundle help provide hospitals and clinicians with information about gaps in steps or key process variables that may be challenging for ongoing quality improvement. Sharing feedback with staff about adherence to bundle elements provides information that can be used to help sustain the accomplishments.

The urinary catheter insertion bundle includes:

- Insert catheters only for appropriate indications.<sup>3,4,5</sup>
  - a. See Section III: Hospital-wide criteria for indwelling urinary catheter use.
- Ensure that only properly trained individuals insert and maintain catheters.<sup>3,4,5</sup>
- Unless otherwise clinically indicated, consider using the smallest bore catheter possible, consistent with good drainage, to minimize bladder neck and urethral trauma.<sup>5</sup>
- Insert catheters using aseptic technique and sterile equipment (acute care setting).<sup>3,4,5</sup>
  - a. perform hand hygiene before and after insertion;
  - b. use sterile gloves, drape, sponges, antiseptic or sterile solution for periurethral cleaning, single-use packet of lubricant jelly; and
  - c. properly secure catheters.
- Following aseptic insertion, maintain a closed drainage system.<sup>3,4,5</sup>
- Maintain unobstructed urine flow.<sup>3,4,5</sup>
- Maintain the drainage bag below the level of the bladder and off the floor.<sup>4</sup>
- Provide individual labeled collection container at the bedside.<sup>4</sup>
- Hand hygiene and standard (or appropriate isolation) precautions.<sup>3,5</sup>
- Leave catheters in place only as long as clinically necessary.<sup>3,4,5</sup>

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<sup>1</sup> Resar, R., Griffin F.A., Haraden, C., Nolan T.W., Using Care Bundles to Improve Health Care Quality, IHI Innovation Series white paper, Cambridge, Massachusetts; Institute for Healthcare Improvement (2012); [www.ihl.org](http://www.ihl.org).

<sup>2</sup> Nolan T., Berwick, D.M., All-or-none measurement raises the bar on performance, *Journal of the American Medical Association* (2006); 295 (10):1169-1170.

<sup>3</sup> CDC CAUTI Toolkit [http://www.cdc.gov/hicpac/cauti/001\\_cauti.html](http://www.cdc.gov/hicpac/cauti/001_cauti.html).

<sup>4</sup> Hanchett, Marilyn, and Ma Rn., Preventing CAUTI: A patient-centered approach, *Prevention* (2012): 43.

<sup>5</sup> Gould, C.V., Umscheid, C.A., Agarwal, R.K., Kuntz, G., and Pegues, D.A., Healthcare Infection Control Practices Advisory Committee, Guideline for prevention of catheter-associated urinary tract infections 2009, *Infect Control Hosp Epidemiol* (2010), Apr 31(4):319-26. doi: 10.1086/651091.

## Maintenance Bundle

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3. Society for Healthcare Epidemiologist of America
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4. [UroToday CAUTI Challenge](#)
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## Maintenance Bundle

This section includes strategies, tools, and resources for the Urinary Catheter Maintenance Bundle.

A “bundle” is defined as a small set of evidence-based interventions for a defined patient segment/population and care setting that, when implemented together, will result in significantly better outcomes than when implemented individually.<sup>1</sup> The literature rarely indicates the weight of any one bundle element over another or the impact of the outcome, or harm reduction. The bundle elements are meant to be implemented together to achieve the best results.

A bundled approach to maintaining an indwelling urinary catheter must include an organization-wide program that prioritizes the identification and removal of catheters that are no longer necessary and a program to ensure adherence to the bundle elements.<sup>2,3</sup>

The Indwelling Urinary Catheter Maintenance Bundle should include:

1. Policy to assure appropriate utilization of catheters (see Section III, Hospital-Wide Criteria for Indwelling Urinary Catheter).
2. Identify and remove catheters that are no longer needed (e.g., at minimum, daily review of their medical necessity).<sup>2,3</sup>
3. Following aseptic insertion of the urinary catheter, maintain a sterile closed drainage system.<sup>2,3</sup>
  - a. If breaks in aseptic technique, disconnection, or leakage occur, replace the catheter and collecting system using aseptic technique and sterile equipment.
  - b. Consider using urinary catheter systems with pre-connected, sealed catheter tubing junctions.
4. Maintain unobstructed urine flow.<sup>2,3</sup>
  - a. Keep the catheter and collecting tube free from kinking.
  - b. Keep the collecting bag below the level of the bladder at all times.
  - c. Do not rest the bag on the floor or the bed.
  - d. Empty the collecting bag regularly using a separate, clean collecting container for each patient; avoid splashing; and prevent contact of the drainage spigot with the non-sterile collecting container.

5. Use standard precautions, including the use of gloves and gown as appropriate, during any manipulation of the catheter or collecting system.<sup>2,3</sup>
6. Complex urinary drainage systems (utilizing mechanisms for reducing bacterial entry such as antiseptic-release cartridges in the drain port) are not necessary for routine use. Hospitals must assess the unique needs of their organization.<sup>2,3</sup>
7. Changing indwelling catheters or drainage bags at routine, fixed intervals is not recommended. Rather, it is suggested to change catheters and drainage bags based on clinical indications such as infection, obstruction, or when the closed system is compromised.<sup>2,3</sup>
8. Unless clinical indications exist (e.g., in patients with bacteriuria upon catheter removal post-urologic surgery), do not use systemic antimicrobials routinely to prevent CAUTI in patients requiring either short- or long-term catheterization.<sup>2</sup>
9. Do not clean the periurethral area with antiseptics to prevent CAUTI while the catheter is in place. Routine hygiene (e.g., cleansing of the meatus surface during daily bathing or showering, and as needed) is appropriate.<sup>2</sup>
10. Unless obstruction is anticipated (e.g., as might occur with bleeding after prostatic or bladder surgery), bladder irrigation is not recommended.<sup>2</sup>
  - a. If obstruction is anticipated, closed continuous irrigation is suggested to prevent obstruction.
11. Routine irrigation of the bladder with antimicrobials is not recommended.<sup>2</sup>
12. Routine instillation of antiseptic or antimicrobial solutions into urinary drainage bags is not recommended.<sup>2</sup>
13. Clamping indwelling catheters prior to removal is not necessary.<sup>2</sup>
14. Educate staff, patient, and family indwelling on urinary catheter maintenance:<sup>2,3</sup>
  - a. Engage the patient and family to perform maintenance whenever possible.<sup>3</sup>

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<sup>1</sup> Resar, R., Griffin, F.A., Haraden, C., and Nolan, T.W., Using Care Bundles to Improve Health Care Quality, IHI Innovation Series white paper, Cambridge, Massachusetts; Institute for Healthcare Improvement (2012), [www.ihl.org](http://www.ihl.org).

<sup>2</sup> Gould, C.V., Umscheid, C.A., Agarwal, R.K., Kuntz, G., and Pegues, D.A.; Healthcare Infection Control Practices Advisory Committee. Infect Control, Guideline for prevention of catheter-associated urinary tract infections (2009). *Hospital Epidemiology*, 2010 Apr;31(4):319-26. doi: 10.1086/651091.

<sup>3</sup> Loa, Evelyn., Nicolle, Lindsay E., Coffin, Susan E., Gould, Carolyn, Maragakis, Lisa L., Medding, Jennifer, Peguesa, David A., Pettisa, Ann Marie, Saint, Sanjay, and Yokoe, Deborah S. Strategies to Prevent Catheter-Associated Urinary Tract Infections in Acute Care Hospitals: (2014) Update, *Infection Control*/Volume 35/Issue 05/(May 2014), pp 464-479 The Society for Healthcare Epidemiology of America (2014) DOI; <http://dx.doi.org/10.1086/675718>, Published online January 2, 2015.

Hospital wide criteria for indwelling catheter use

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5. [Urology Today CAUTI Challenge](#)
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7. [Using a Criteria Based Reminder to reduce use of Indwelling urinary catheters and decrease Urinary Tract Infections](#)

## Hospital-Wide Criteria for Indwelling Catheter Use

This section provides the rationale for and examples of criteria for the insertion and ongoing use of an indwelling urinary catheter.

See Section IV: Alternatives to the use of indwelling urinary catheter should be considered prior to insertion and when considering appropriateness of removal of the indwelling urinary catheter.

Indwelling urinary catheters should be placed only when medically necessary and recognized as an invasive procedure that can result in adverse consequences. Explicit criteria for appropriate catheter insertion should be in place at all organizations, and verification that the criteria are met should be required prior to insertion of an indwelling urinary catheter. The criteria need to be developed and approved by the medical staff; in addition to the hospital and nursing policies and procedures. At times, there can be additional criteria for certain populations of patients or in certain protocols (example: a list of surgical procedures that require or do not require urinary catheterization). This helps reduce overutilization of indwelling urinary catheters and any associated complications.<sup>1</sup>

If the criteria are not met, alternatives should be evaluated.<sup>1,2</sup> For example, indwelling urinary catheters should not be used for management of urinary incontinence unless the patient's condition meets the criteria for an exception.

Institutions should develop a list of appropriate indications for inserting indwelling urinary catheters, educate staff about such indications, and routinely assess adherence to the institution-specific guidelines. A physician order should be present prior to the placement of an indwelling urinary catheter.<sup>2</sup> The hospital may want to establish protocols for patients who are admitted with a chronic indwelling catheter or other specific patient needs.

Alternatives to an indwelling urinary catheter should be considered based on a patient's individual care needs. In general, alternative devices and procedures provide a much lower risk of infectious complications, such as urinary tract infection.<sup>3</sup>

Lastly, consider optimizing use of the criteria by including them in the facility electronic medical record, such as in physician order sets and mandatory prompts.

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<sup>1</sup> How to Guide: Prevent Catheter-Associated Urinary Tract Infections, Cambridge, MA: Institute for Healthcare Improvement (2011), [www.ihl.org](http://www.ihl.org).

<sup>2</sup> Hooton, Thomas M., Bradley, Suzanne F., Cardenas, Diana D., Colgan, Richard, Geerlings, Suzanne E., Rice, James C., Saint, Sanjay, Schaeffer, Anthony J., Tambayh, Paul A., Tenke, Peter, and Nicolle, Lindsay E., *Clinical Infectious Diseases* (2010), 50:625–663, Infectious Diseases Society of America.

<sup>3</sup> Sparks, A., Boyer, D., Gambrel, A., Lovett, M., Johnson, J., Richards, T., Johnson, J., Grimm, E., Daniels, C., Tylka, S., Mattingly, H., Harper, M., and Palermo, D. The clinical benefits of the bladder scanner: a research synthesis. West Virginia University Hospitals, Morgantown, USA; [nursesparks@aol.com](mailto:nursesparks@aol.com); PMID: 15326987 [*PubMed - indexed for MEDLINE*].

## Alternatives to Indwelling Urinary Catheter

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5. Pennsylvania Patient Safety Authority
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6. [South Carolina Hospital Association Stop CAUTI Resources](#)
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## Alternatives to Indwelling Urinary Catheter Insertion

This section includes strategies, tools, and resources on alternatives to indwelling urinary catheterization. These alternatives should be evaluated prior to deciding to insert an indwelling urinary catheter, in consideration for discontinuation, and when a reinsertion is being considered.

Millions of Americans undergo urinary bladder catheterization annually in various healthcare settings.<sup>1</sup> Indwelling urinary catheters are the proximate cause of the vast majority of healthcare-associated urinary tract infections.<sup>2,3</sup> Use of indwelling urinary catheters should be avoided, whenever possible.<sup>4</sup> If there is a need to monitor urine output or to overcome obstructive uropathy, an indwelling (urethral or suprapubic) device is vital; otherwise, there are several other available options.<sup>5</sup>

Educate healthcare personnel involved in the insertion, care, and maintenance of urinary catheters about CAUTI prevention, particularly alternatives to indwelling catheters.<sup>6</sup>

Primary alternatives to indwelling urinary catheters include:

- a. Proactive toileting schedule.

Note: New York State Partnership for Patients has actively promoted the use of purposeful rounds using the four Ps: pain, potty, positioning, and possessions. This is an excellent system that aids in providing team-based care and improvements.

- b. External catheter.
- c. Intermittent straight catheter.
- d. Use of bladder-scanning technology to assess retention, as needed.
- e. Daily weights.
- f. Weighing of soaker pads, diapers, etc.

Facilities should have in place policies and protocols for evaluating urinary retention post-discontinuation of indwelling urinary catheter, and consider alternatives to re-insertion of the catheter. Use of a bladder scanner and consideration of use of intermittent straight catheterization should be incorporated in these protocols.

Bladder scanners have been found to be effective in diagnosing urinary retention without the use of indwelling urinary catheterization, therefore reducing the number of catheterizations.<sup>6</sup>

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<sup>1</sup> Warren, J. W., Catheter-associated urinary Infection, *Dis North Am*, (1997), 11:609-622.

<sup>2</sup> Saint, Sanjay and Chenoweth, C.E., Biofilms and catheter associated urinary tract infections, *Infect Dis Clin North Am* (2003), 17: 411-432.

<sup>3</sup> Krieger, J.N., Kaiser, D.L., and Wenzel R.P., Urinary tract etiology of bloodstream infections in hospitalized patients, *Infect Dis* (1983), 148: 57-62.

<sup>4</sup> David D. Cravens, M.D., M.S.P.J., and Steven Zweig, M. D., M.S.P.H., Urinary Catheter Management, University of Missouri–Columbia School of Medicine, Columbia, Missouri *Am Fam Physician* (January 2000), 15: 61 (2): 369-376.

<sup>5</sup> Saint, Sanjay, Kaufman, Samuel R., Rogers, Mary A. M., Baker, Paul D., Ossenkop, Kathleen, and Lipsky, Benjamin A., Condom Versus Indwelling Urinary Catheters; A Randomized Trial, *Journal of the American Geriatrics Society*, Vol 54, Is 7; Blackwell Publishing, Inc. 1532-5415; 1055-1061; <http://www.ncbi.nlm.nih.gov/pubmed/16866675>.

<sup>6</sup> Sparks, et al., The Clinical Benefits of the Bladder Scanner: A Research Synthesis, *Journal of Nursing Care Quality* (September 2004), Vol 19 #3, pg. 188-192.

## MD/RN Protocols for Discontinuation

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## MD/Nurse Protocols for Discontinuation

This section includes strategies and tools focused on standardized protocols for timely discontinuation of indwelling urinary catheters that no longer meet medical necessity criteria.

Catheter-associated urinary tract infection is common in hospitalized patients. Given its potential preventability and its tendency to predispose patients to more serious and long-term complications, hospitals continue to enhance their prevention strategies. Hospital-acquired CAUTI was among the first complications selected for nonpayment by the Centers for Medicare and Medicaid Services.<sup>1,2,3,4</sup> The greatest risk factor for CAUTI is prolonged catheterization.<sup>5,6</sup> Interventions that avoid catheter insertion or prompt timely removal of unnecessary catheters enhance patient safety and patient outcomes.<sup>1</sup>

Physician- or nurse-driven protocols have significant potential to eliminate several of these steps that are prone to human factor issues such as memory, timing, and communications. Use of standardized protocols and systems to assess and discontinue indwelling urinary catheters helps to increase the reliability of the system. Some of the most common approaches include:

- Physician protocols and order sets for:
  - standardized insertion medical necessity criteria;
  - indwelling urinary catheter discontinuation orders based on a prescribed number of hours/days included in catheter insertion orders;
  - standardized protocols with orders for nurse discontinuation of indwelling urinary catheters based on medical necessity criteria;
  - nurse protocols to assess (one or two nurse assessments) to remove catheter based on standardized protocol:
    - Soft Stop (nurse calls physician for confirmation); and
    - Hard Stop (based on nursing assessment and protocol—nurse discontinues catheterization).

Adjunct tools such as prompts, catheter reminders, signage over catheterization kits, and visual tools have the potential to further support limitations in catheter use, length of stay, and infection.

Refer to Section IV for information on alternatives to repeat catheterization.

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<sup>1</sup> Saint, S., Meddings, J.A., Calfee, D., Kowalski, C.P., and Krein, S.L., Catheter-associated urinary tract infection and the Medicare rule changes, *Ann Intern Med* (2009), 150, 12: 877-884.

<sup>2</sup> Centers for Medicare and Medicaid Services, Department of Health and Human Services. Hospital-acquired conditions, including infections. *Federal Register* (2007), 72, 162: 47200-47218.

<sup>3</sup> Centers for Medicare and Medicaid Services, Department of Health and Human Services. Medicare program; proposed changes to the hospital inpatient prospective payment systems and fiscal year 2009 rates. *Federal Register* (2008), 73, 84: 23547-23562.

<sup>4</sup> Centers for Medicare and Medicaid Services, Department of Health and Human Services. Medicare program; changes to the hospital inpatient prospective payment systems and fiscal year 2009 rates. *Federal Register* (2008), 73, 161: 48471-48491.

<sup>5</sup> Maki, D.G., and Tambyah, P.A., Engineering out the risk for infection with urinary catheters. *Emerg Infect Dis* (2001), 7, 2:342-347.

<sup>6</sup> Foxman, B., Epidemiology of urinary tract infections: incidence, morbidity, and economic costs. *American Journal of Medicine* (2002), 113, Suppl 1A:5-13.

## CAUTI Nurse Driven Protocols “Rapid-Cycle” Pilots

*In providing this tool, we appreciate the use of concepts and work from the ED CAUTI pilot program through the New York State Partnership for Patients, a partnership of HANYS and GNYHA.*

### Objectives:

- Implement and test “hard and soft stop” protocol practices
- Determine what works and continue to improve the process
- Develop a plan to spread to other units until the protocols are vetted hospital-wide

### Pilot

Steps	Suggested Pilot Tips
1.	Identify pilot unit(s) Potential criteria: <ul style="list-style-type: none"> <li>• High CAUTI rates</li> <li>• Willingness and enthusiasm</li> <li>• Physician engagement:               <ul style="list-style-type: none"> <li>○ Unit with a narrow clinical focus could help with physician education if that is an issue</li> <li>○ Utilize a select group of high volume physicians on the testing units</li> </ul> </li> <li>• Previous expertise on the unit</li> </ul>
2	Establish a team with some/all of the following key staff: <ul style="list-style-type: none"> <li>• Executive Sponsor</li> <li>• MD lead(s)</li> <li><i>Note: identify high volume physician admitters on the test unit(s) and consider the Epidemiologist to support.</i></li> <li>• Nurse Manager/Educator lead (s)</li> <li>•</li> <li>• Staff Nurse <i>Note: consider a unit champion(s) for the program and/or pilot</i></li> <li>• CNA/Tech (s)</li> <li>• Infection Control Preventionists</li> <li>• Clerk (s)</li> <li>• Data collection staff</li> </ul>

Steps	Suggested Pilot Tips
3	<p>Establish the pilot plan</p> <ul style="list-style-type: none"> <li>• Primary object is to <i>test a hard and/or soft stop protocol</i> to refine and spread across the organization</li> <li>• Team should draft protocols, seeking input from the participating unit(s), physicians, and key expert staff</li> <li>• Key components should include: <ul style="list-style-type: none"> <li>○ Protocol for ongoing RN assessment of the need for the indwelling urinary catheter.</li> <li>○ Process that would ultimately hard-wired the assessment (i.e. Part of rounds, bedside report, care plan, etc.)</li> <li>○ Education on and competency will medically necessary criteria for indwelling urinary catheters <i>Note: consider a buddy or mentor system if needed for startup , 1<sup>st</sup> six months, or another reasonable period</i></li> <li>○ Hard or soft stop protocol; <i>Note: many organizations start with a soft stop protocol and within a reasonable period of time transition to a hard stop pilot and then spread initiative</i> <i>Note: Many organizations aim at a hard stop and test that while concurrently doing a soft stop as an interim check and balance.</i></li> </ul> </li> <li>• Post catheter discontinuation protocols</li> <li>• Determine data collection process, forms, and staff</li> </ul> <p>It is important to remember that a RN assessment is essential even on physician orders to automatically discontinue an indwelling urinary catheter within a certain time frame.</p> <p>Definitions:</p> <p><b>Hard Stop:</b> With a physician protocolized standard order set or individual order, the RN completes an assessment of the medical necessity of the indwelling foley catheter. If the catheter is no longer needed, the RN discontinues the catheter and institutes the follow up care protocol.</p> <ul style="list-style-type: none"> <li>• <i>Note: A two RN sign off, a buddy system, or an assigned mentor can be utilized to support the initial or ongoing nurse assessment determination.</i></li> </ul> <p><b>Soft Stop:</b> With or without a physician protocolized standard order set or individual order, the RN completes an assessment of the medical necessity of the indwelling foley catheter. If the catheter is no longer needed, the RN contacts the physician about an order to discontinue the catheter.</p> <ul style="list-style-type: none"> <li>• <i>Note: If a hospital unit is testing this option, please calculate time from the identification of the catheter being no longer needed and the time the catheter was discontinued. One of the disadvantaged of this approach is a possible delay in discontinuation.</i></li> </ul> <p><b>Post indwelling urinary catheter discontinuation:</b> Many organizations have protocols for post catheter discontinuation assessment and care including monitoring on urinary output and the use of bladder ultrasound and alternatives to catheterization.</p>
4	<p>Complete pilot test</p> <ul style="list-style-type: none"> <li>• Select a 2-4 week time frame depending on the volume of the population. It is likely that a full month will garner more information for decision-making.</li> <li>• Every patient with an indwelling urinary catheter within the target pilot unit or designation should be included in the study daily.</li> <li>• Educate the participating staff and physician who utilize testing unit</li> <li>• Hang signage, flyers, data, and other reminders of the pilot testing</li> <li>• Have pilot protocols, standard order sets, and other helpful tools readily available for</li> </ul>

Steps	Suggested Pilot Tips
	<p>review on the unit. <i>Note: Consider a colorful pilot test box with all information</i></p> <ul style="list-style-type: none"> <li>• Support data collection staff with feedback, ideas, and assistance and clarification</li> <li>• Ask CAUTI team members to do “just-in-time” education or huddles as needed <ul style="list-style-type: none"> <li>• Educate Unit staff on Hospital-wide Insertion Criteria</li> <li>• Alternatives to Indwelling Urinary Catheter</li> </ul> </li> </ul> <p>Data: Please see attached pilot test form which is also available electronically on HANYS website</p> <p>Track. Key elements:</p> <ul style="list-style-type: none"> <li>• Attending physician</li> <li>• RN owner</li> <li>• Was the criteria reviewed daily?</li> <li>• Did patient meet criteria? If so, <ul style="list-style-type: none"> <li>○ Was the catheter discontinued?</li> <li>○ If not, why not?</li> <li>○ What protocol was used?</li> </ul> </li> <li>• Track whether patient had a re-insertion of the catheter or straight catheterization within the 24 hours following the discontinuation.</li> </ul> <p>Keep track of thoughts, ideas, and observations of the staff during the pilot.</p>
5	<p>Analyze the Results</p> <ul style="list-style-type: none"> <li>• Have designated analysis (unit, quality, or infection control staff are all possibilities) aggregate the data from the study</li> <li>• Identify patterns or trends</li> <li>• Aggregate and theme comments/input collected during the pilot. Suggestions: <ul style="list-style-type: none"> <li>• % of indwelling catheter that met criteria and were discontinued</li> <li>• Soft stop: Time from met criteria for discontinuation until time discontinued</li> <li>• Top reasons for not discontinuing the catheter when criteria was met</li> <li>• % of discontinued catheter re-inserted within 24 hours</li> </ul> </li> <li>• Determine what worked and what needs further improvement</li> <li>• Share data and results</li> <li>• Complete additional tests or seek additional input/expertise if needed</li> <li>• Finalize protocols</li> </ul>
6	<p>Develop an improvement plan and/or Develop a plan to spread the protocols across the organization.</p> <ul style="list-style-type: none"> <li>• AIM: Target zero for % of indwelling catheters inserted that did not meet criteria or <ul style="list-style-type: none"> <li>▪ target 100% of indwelling catheter insertion met criteria</li> <li>▪ Target zero for % of indwelling catheters continued that did not meet criteria or</li> <li>▪ target 100% of indwelling catheters removed when not meeting necessity criteria</li> </ul> </li> <li>• How will you make this AIM happen? <ul style="list-style-type: none"> <li>○ Procedures</li> <li>○ Protocols</li> <li>○ Education</li> <li>○ Equipment/resources changes</li> <li>○ Mutual assistance between the entire team</li> </ul> </li> </ul>

Steps	Suggested Pilot Tips
	<ul style="list-style-type: none"> <li>○ Integration into the EHR</li> <li>○ Hard-wiring (signage, stocking equipment reminders, defaults, etc.)</li> <li>● Determine whether or not the unit needs to do a few small tests of changes (rapid-cycle PDSA) to make determination on the best approaches.</li> <li>● Get approval from key stakeholders on improvement plan <ul style="list-style-type: none"> <li>○ Physician leaders</li> <li>○ If needed,</li> <li>○ Hospital-wide Infection Control Department and/or Committee</li> <li>○ Hospital-wide Quality Department and/or Committee</li> <li>○ Unit Councils if available <ul style="list-style-type: none"> <li>a. Others</li> </ul> </li> <li>b. Assign ownership, timelines/deadlines, and system for coordinating all aspects of the improvement plan via quality improvement team.</li> </ul> </li> <li>● Have a plan to provide and share data and information at the frontline staff level.</li> <li>● Celebrate</li> </ul>

## Emergency Department Interventions and Pilot

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## Emergency Department Interventions and Pilot

This section is on the importance of catheter-associated urinary tract infection prevention starting in the Emergency Department (ED) with particular focus on getting started through the use of baseline pilot projects and ongoing quality improvement to achieve reliable protocols and practices with excellent outcomes.

Avoiding unnecessary urinary catheter use is an essential component in prevention of CAUTI. Two strategies that have been associated with a marked reduction in utilization include: establishing guidelines for urinary catheter placement and physician education in the ED.<sup>1</sup>

Several studies have demonstrated that between 21% and 55.7% of urinary catheters are placed in patients without appropriate indication.<sup>2,3,4,5,6,7</sup> Although educational interventions are an important step to decrease inappropriate catheter use, a potentially sustainable intervention is to institute restrictions on catheter placement.<sup>8</sup> Monitoring and providing feedback on indwelling urinary catheter use and CAUTI rates is important in the implementation and continued use of prevention strategies.<sup>8</sup>

This document includes tools to evaluate the current status of the ED's management of foley catheter insertion and potential opportunities for improvement. The overall aim is: only after thoughtful assessment of alternatives to catheter placement are orders placed for insertion of catheters that comply with the organization's medical necessity criteria.

The ED pilot strategy will be conducted in two phases. The first phase is to carefully assess the current status of indwelling catheter decisions and management—the practices and approaches routinely used in the ED prior to any intervention. The second phase is on the development of new protocols or further enhancements of existing protocols to achieve a reliable system of evidence-based practices.

The first phase will utilize the NYS Partnership for Patients tools, and the second phase will focus more on the Comprehensive Unit-Based Safety Program (CUSP) team and tool approach. Please see next page for the ED phase I pilot tips.

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- <sup>1</sup> Fakh, M.G., Pena, M.E., Shemes, S., et al., Effect of establishing guidelines on appropriate urinary catheter placement, *Acad Emerg Med* (2010), 17:337-40.
- <sup>2</sup> Gokula, R.R., Hickner, J.A., Smith, M.A., Inappropriate use of urinary catheters in elderly patients at a Midwestern community teaching hospital. *Am J Infect Control* (2004), 32:196-9.
- <sup>3</sup> Jain, P., Parada, J.P., David, A., et al., Overuse of indwelling urinary tract catheter in hospitalized medical patients. *Arch Intern Med* (1995), 155:1425-9.
- <sup>4</sup> Fakh, M.F., Watson, S.R., Greene, M.T., et al., Reducing urinary catheter use: a statewide effort. *Arch Intern Med* (2012), 172:255-60.
- <sup>5</sup> Knoll, B.M., Wright, D., Ellingson, L., et al., Reduction of inappropriate urinary catheter use at a Veterans Affairs hospital through a multifaceted quality improvement program, *Clin Infect Dis* 2011;52:1283-90.
- <sup>6</sup> Gardam, M.A., Amihod, B., Orenstein, P., et al., Overutilization of indwelling urinary catheters and the development of nosocomial urinary tract infections, *Clin Perform Qual Health Care* (1998), 6:99-102.
- <sup>7</sup> Gokula, R.M., Smith, M.A., Hickner, J., Emergency room staff education and use of urinary catheter indication sheet improves appropriate use of foley catheters, [Am J Infect Control](#) (2007 Nov), 35(9):589-93.
- <sup>8</sup> Meddings, R., Jennifer, Rogers, Mary, A.M., Krein, Sarah L., Fakh, Mohamad G., Olmsted, Russell N., and Saint, Sanjay, Reducing unnecessary urinary catheter use and other strategies to prevent catheter-associated urinary tract infection: an integrative review, *BMJ Qual Saf* (2014 Apr), 23(4): 277-289. Published online September 27, 2013; doi: [10.1136/bmjqs-2012-001774](https://doi.org/10.1136/bmjqs-2012-001774), PMID: PMC3960353, NIHMSID: NIHMS518961.

## Emergency Department CAUTI Prevention “Rapid-Cycle” Pilots

*In providing this tool, we appreciate the use of concepts and work from the ED CAUTI pilot program through the New York State Partnership for Patients, a partnership of HANYS and GNYHA.*

### Objectives:

#### Pilot – Phase I

- Determine current practices in urinary catheter usage and management
- Identify opportunities for improvement

#### Pilot – Phase II

- Implement or enhance ED protocols
- Hard-wire effective urinary catheter management system

### Pilot - Phase I

Steps	Suggested Pilot Tips
1	<p>Establish a multidisciplinary team with consideration of the following key staff:</p> <ul style="list-style-type: none"> <li>a. Executive Sponsor</li> <li>b. MD lead(s)</li> <li>c. Nurse Manager/Educator lead (s)</li> <li>d. Clinical Expert/ RN (s)</li> <li>e. ED Tech(s)</li> <li>f. Clerk(s)</li> <li>g. Infection Control Preventionists</li> <li>h. Data collection staff</li> <li>i. External Stakeholders</li> </ul>
2	<p>Review objectives of Phase I</p> <ul style="list-style-type: none"> <li>a. Primary objective is to <u>establish a baseline of current practices</u> in the Emergency Department</li> <li>b. No “fixing the problem” at this stage - collecting data and information only</li> <li>c. Provide general information to the entire ED Staff <ul style="list-style-type: none"> <li>• Provide basic pilot information to ED staff (rationale, timeline, etc.)</li> <li>• Utilize posters and/or informational flyers; or other forms of signage</li> </ul> </li> <li>d. Establish provisions for the CAUTI team members to do “just-in-time” education or</li> </ul>

Steps	Suggested Pilot Tips
	huddles as needed.
3	<p>Develop and finalize the pilot study plan</p> <ol style="list-style-type: none"> <li>a. Utilize the hospital’s approved medical necessity criteria for indwelling urinary catheter use.</li> <li>b. Define the roles of the team members relative to the study. Determine who will do the data collection? RN? Tech? Clerk or a combination: as well as who will do the final data analysis and report preparation.</li> <li>c. Establish data collection system <ol style="list-style-type: none"> <li>a. Tools</li> <li>b. Timeline</li> <li>c. Analysis</li> </ol> </li> </ol>
4	<p>Implement Study (Suggested pilot)</p> <ol style="list-style-type: none"> <li>a. Select a two week time frame to complete the study. (1-4 weeks is the range depending on the size of your ED patient population admitted to the hospital)</li> <li>b. Educate data collection staff (RN, tech, or clerk) relative to the hospital criteria for indwelling catheter use, tools, and data collection processes.</li> <li>c. Prepare the ED staff to assist the data collection team as needed.</li> <li>d. For every patient admitted to the hospital with an indwelling catheter during the study period, collect the following information. (Note: Data collection tool example attached and electronic copy is available the HANYS website) <ul style="list-style-type: none"> <li>• Medical record #</li> <li>• Was there a written order for the urinary catheterization Yes or No</li> <li>• Who was the ordering provider? Name</li> <li>• Did the patient meet the medically necessary criteria for the indwelling catheter insertion? If the clerk/tech is doing the study, the clinical staff may need to assist with this determination at times.</li> <li>• List what criterion was met? Name or number</li> <li>• Who was the clinician that inserted the catheter? Name</li> <li>• Was the catheterization documented in the medical record? Yes or No</li> </ul> </li> <li>e. HANYS would recommend downloading the excel tool directly on designated ED computer(s) for ease in collection and analysis.</li> <li>f. Individual hospitals may want to add additional data collection elements.</li> <li>g. Record relevant staff (MD, RN, Tech, etc.) feedback, ideas, and observations throughout the pilot.</li> </ol> <p>NOTE: It would be ideal for the hospital’s infection control department to provide the ED with some sense of attribution on the hospital’s CAUTI rate. There is no surveillance mechanism to attribute CAUTI infections to the emergency room; however a feedback loop and some perspective is important for the ED staff. Consider, at minimum, a focused study to assign potential attribution to the ED based on Infection Control Committee or Advisor recommendations.</p>
5	<p>Analyze the Results</p> <ol style="list-style-type: none"> <li>a. Aggregate the data from the study period <ul style="list-style-type: none"> <li>• % of patients who had an indwelling catheter inserted without an order? <ol style="list-style-type: none"> <li>i. By day of the week</li> <li>ii. By shift</li> <li>iii. By physician provider</li> <li>iv. By clinician inserting the indwelling catheter</li> </ol> </li> <li>• % of indwelling catheter inserted that did not meet criteria <ol style="list-style-type: none"> <li>i. List which criterion met or unmet (histogram/bar chart is helpful)</li> </ol> </li> </ul> </li> </ol>

Steps	Suggested Pilot Tips
	<ul style="list-style-type: none"> <li>• For catheterization that did not meet criteria?               <ul style="list-style-type: none"> <li>i. By day of the week</li> <li>ii. By shift</li> <li>iii. By ordering provider</li> <li>iv. By clinician inserting the indwelling catheter</li> </ul> </li> <li>b. Identify patterns or trends. (Take a no blame approach, as the information is for learning, inquiry, and process improvement opportunities)</li> <li>c. Aggregate and theme comments/input collected as a result of staff feedback, ideas, and observations during the pilot.</li> </ul>
6	<p>Complete gap analysis between current practice and desired state</p> <ul style="list-style-type: none"> <li>a. Are policies and procedures up to date?</li> <li>b. Are the policies and procedures known?           <ul style="list-style-type: none"> <li>• If not, where are the educational opportunities?</li> </ul> </li> <li>c. Are medical necessity criteria readily available and known?           <ul style="list-style-type: none"> <li>• If not, where are the educational opportunities?</li> </ul> </li> <li>d. Is indwelling catheterization a more automatic intervention (look at patterns of no orders written or did not meet criteria)?           <ul style="list-style-type: none"> <li>• If so, share the data and provide education.</li> <li>• If so, where can you build in a mindfulness, “decision step(s)” based on the evidence-based criteria, and/or “stop the line” unit culture?</li> </ul> </li> <li>e. Does the ED staff readily use alternatives to indwelling catheterization?           <ul style="list-style-type: none"> <li>• If not, why? Equipment, philosophy, always had been done this way . . .</li> </ul> </li> <li>f. Are there particular days of the week or time of the day that have special needs?           <ul style="list-style-type: none"> <li>• If so, how can that be addressed?</li> </ul> </li> <li>g. Reasons for catheter insertion that don’t meet criteria?           <ul style="list-style-type: none"> <li>• Is education needed here?</li> <li>• Would sharing information and discussion with other units be helpful?</li> </ul> </li> </ul> <p>Consider establishing an indwelling catheterization rate for inpatient admissions (include critical care and OR patients as well). Continue with a once a month (24 hour period) prevalence study to track and trend rate over time.</p> <p>There will likely be a whole series of questions that can be addressed from the quantitative pilot data; as well as the qualitative feedback from the staff.</p> <p>Hospital Emergency Departments have found it helpful to get a perspective from other areas of the organization. It is not infrequent that the ED believes the units want a patient catheterized and the units keep questioning why the patients are catheterized.</p>
7	<p>Develop an improvement plan</p> <ul style="list-style-type: none"> <li>a. AIM: Target zero for % of indwelling catheters inserted that did not meet criteria or target 100% of indwelling catheter insertion met criteria.</li> <li>b. How will you make this AIM happen?           <ul style="list-style-type: none"> <li>a. Procedures</li> <li>b. Protocols</li> <li>c. Education</li> <li>d. Equipment/resources changes</li> <li>e. Mutual assistance between the entire team               <ul style="list-style-type: none"> <li>i. Stop the line protocols</li> <li>ii. Time-out huddles to discuss alternatives to catheterization.</li> </ul> </li> <li>f. Hard-wiring (signage, stocking equipment reminders, defaults, etc.)</li> </ul> </li> <li>c. Determine whether or not the ED needs to do a few small tests of changes</li> </ul>

Steps	Suggested Pilot Tips
	<p>(rapid-cycle PDSA) to make determination on the best approaches.</p> <ul style="list-style-type: none"> <li>d. Obtain approval from key stakeholders on improvement plan per hospital procedures <ul style="list-style-type: none"> <li>a. ED leadership</li> <li>b. Hospital-wide Infection Control Department and/or Committee</li> <li>c. Hospital-wide Quality Department and/or Committee</li> <li>d. Others</li> </ul> </li>   <li>e. Assign ownership, timelines/deadlines, and system for coordinating all aspects of the improvement plan <ul style="list-style-type: none"> <li>a. Utilize the same CAUTI team to complete the implementation quality improvement work.</li> <li>b. Expand the team to include other members.</li> <li>c. Refer to the ED Quality Improvement team(s).</li> </ul> </li> </ul> <p>Note: Ultimately the physician and nurse manager of the ED are responsible in partnership with the designated infection control and quality improvement staff. However, we would encourage you to utilize any staff member interested and willing to be a champion.</p>

## Pilot - Phase II

Steps	Suggested Pilot Tips
1	<p>Implement Plan</p> <ul style="list-style-type: none"> <li>a. Utilize PDSA cycles if needed - the plan may not likely accomplish all of the objectives on the first try; updates and modifications are a normal part of the improvement cycle.</li> <li>b. Evaluate progress while implementing - little tests .</li> <li>c. Consider peer to peer, mentors, and other types of education.</li> <li>d. Consider some “fun” aspect for the work (i.e. prizes, coffee).</li> </ul> <p>When improvements, education, and change have been established then move forward to study the current status.</p>
2	Repeat study from Pilot – Phase I: Steps 4 through 7
3	<p>Determine your progress</p> <ul style="list-style-type: none"> <li>a. Analyze data</li> <li>b. Aggregate and theme comments collected during study</li> <li>c. Trend information</li> <li>d. Celebrate improvements!!</li> <li>e. Determine if additional work (action plans) needs to be completed</li> </ul> <p>There may be certain aspects of the implementation plan that still need additional work. That could be addressed with further study (PDSA cycle), education, root cause analysis, or other quality improvement interventions.</p>
4	<p>Getting to Goal</p> <ul style="list-style-type: none"> <li>a. Continue these improvement cycles (total program or subtasks) until the outcome has been achieved.</li> <li>b. Once achieved, consider a one day a month prevalence study to determine the ED catheterization rate for admissions. This data point will enable you to determine if there has</li> </ul>

Steps	Suggested Pilot Tips
	<p>been a change that needs to be addressed and/or if there is further ongoing improvement.</p> <ul style="list-style-type: none"> <li>c. Shared data and findings with staff continuously.</li> <li>d. Continue to recognize staff's work and celebrate as appropriate.</li> <li>e. Hard-wire changes to ensure sustainability.</li> </ul> <p>Infection Control should consider an approach for providing feedback to the ED on the overall hospital CAUTI rate and catheter utilization ratios.</p>

The Emergency Department may want to address other aspects of CAUTI prevention including the insertion bundle, helpful hints from the maintenance bundles, and alternatives to indwelling urinary catheterization.

## Review for Urinary Catheter Necessity at Time of Insertion in the Emergency Department

Date	Medical Record Number	Is there a written order to insert urinary catheter?	Ordering Physician/Provider	Did patient meet criteria for catheter insertion?	Indicate which criteria from the list below was met, or, if criteria was not met, reason catheter was <u>inserted</u> (below contains criteria for insertion)	Name of person who inserted catheter	Was catheter insertion documented in medical record?
		Yes    No		Yes    No			
		Yes    No		Yes    No			
		Yes    No		Yes    No			
		Yes    No		Yes    No			
		Yes    No		Yes    No			
		Yes    No		Yes    No			
		Yes    No		Yes    No			
		Yes    No		Yes    No			

**CRITERIA FOR INSERTING AN INDWELLING URINARY CATHETER:**

1. Perioperative use for selected surgical procedures
2. Urine output monitoring in critically ill patients
3. Management of acute urinary retention and urinary obstruction
5. As an exception, at patient request to improve comfort

*Modified from IPRO's "Review Daily With Physician for Foley Catheter Necessity" Tracking Tool.*

## OR Protocols for Surgical Patients/Post-Operative Urinary Catheterization

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## Protocols for Surgical Patients/ Post-Operative Urinary Catheterization

This section includes tools and resources for the use of indwelling urinary catheters in the perioperative period.

Avoiding or shortening the duration of use of an invasive medical device is among the most powerful strategies for preventing infections.<sup>1</sup> Indwelling urinary catheters are the standard in perioperative care. Ongoing evaluation of the indications for use and duration of catheterization (with earliest possible removal) must be incorporated into the daily work flow of staff in the perioperative area and post-surgical nursing units.

Perioperative urinary catheterization is nearly universal for Medicare beneficiaries undergoing major operations and suggests that patients with post-operative catheterization longer than two days are more likely to experience adverse outcomes.<sup>1</sup> External colonization by direct inoculation of organisms of the periurethral area at the time of catheter insertion, or later, by ascending in the mucus film between the catheter and the urethra, is the most frequent mechanism of infection.<sup>2</sup> Once organisms gain access to the catheterized urinary tract, the level of bacteruria usually increases steadily within 24 to 48 hours.<sup>3</sup> Removal of the urinary catheter on day one or day two post-operation (24-48 hours) can reduce CAUTI events.

Post-operative urinary catheterization for longer than two days is associated with mortality and decreased discharge to one's home.<sup>1,4,5</sup> The complications in short-term catheterized patients include fever, acute pyelonephritis, bacteremia, and death; patients with long-term catheters in place are at risk for these complications and catheter obstruction, urinary tract stones, local peri-urinary infections, chronic renal inflammation, chronic pyelonephritis, and, over years, bladder cancer.<sup>6</sup> Among patients with urinary tract infections, an estimated 3.6% will develop bacteremia, a condition that adds significantly to hospital length of stay.

Strategies to assure prompt removal of an indwelling urinary catheter include:

1. Physician Order Sets that include discontinuation of indwelling urinary catheter at determined timeframe (i.e., 24 hours, 48 hours, post-operatively, removal in post-anesthesia care unit, etc.)

2. Nurse-driven protocols for evaluation of continued medical necessity of catheter, which either prompt nursing staff to call physician for discontinuation order, or include nurse discontinuation based upon physician-approved and patient-specific orders.

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<sup>1</sup> Burke, J.P., Infection control: a problem for patient safety, *New England Journal of Medicine* (2003), 348: 651.

<sup>2</sup> Tambyah, P., Halvorson, K., and Maki, D., A prospective study of pathogenesis of catheter-associated urinary tract infections, *Mayo Clinic Proc* (1999), 74: 131-6.

<sup>3</sup> Stark, R., and Maki, D., Bacteriuria in the catheterized patient, *New England Journal of Medicine* (1984), 311: 560-4.

<sup>4</sup> Schaeffer, A. J., Catheter-associated bacteriuria, *Urol Clin North Am* (1986), 13940:735.

<sup>5</sup> Stamm, W.E., Guidelines for prevention of catheter-associated urinary tract infections, *Ann Intern Med* (1975), 82 (3):386.

<sup>6</sup> Warren, J.W., Catheter-associated urinary tract infections, *Infect Dis Clin North Am* (1997), 11:609-22. [PubMed].

## Data Analysis, Frontline Feedback, and Data Management

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5. [NYSPFP](#)
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  - e. [NYSPFP CAUTI Poster](#)
6. Robert Wood Foundation
  - a. [How to display Comparative Information That People Can Understand and Use](#)
7. Wisconsin Hospital Association  
[WHA.org](#)
  - a. Using Run Charts (Can no longer find this on the web )
8. Institute for Healthcare Improvement
  - a. [On Demand Course: Building Skills in Data Collection and Understanding Variation](#)

## Data Analysis, Frontline Feedback, and Data Management

This section includes strategies, tools, and resources for data collection and management, data analysis, and the sharing of data with stakeholders, including frontline staff.

Measuring performance is central to improving the quality of healthcare.<sup>1</sup> Quality improvement involves collecting, tracking, analyzing, interpreting, and acting on data for specific measures, such as clinical quality measures.<sup>2</sup>

It is important to have structures and processes in place to cascade data through the organization down to the bedside. This enables staff to incorporate data into their daily work life and unit-based improvements. Learning to engage in evaluating outcomes and collecting meaningful data helps them to become more active participants in quality improvement.<sup>3</sup>

Teams should be encouraged to conduct rapid cycle pilots that include “live” data collection on the nursing units, and all staff should have basic education on the hospital’s common analysis formats for quantitative and qualitative data. Where possible, data collection should be automated to lessen the burden on hospital staff.

Several sources of data can be used to measure performance:<sup>2</sup>

- administrative data (known as billing or claims data);
- medical record information;
- hospital software systems (i.e., pharmacy, lab, admission-discharge-transfer, etc.);
- patient-derived data (i.e., surveys);
- reports from external entities;
- pilot tests and studies; and
- results from observational studies.

All categories of data have strengths and weaknesses and each data source should be evaluated for comprehensiveness or the completeness of data elements.<sup>1</sup> It needs to measure exactly what you need to assess.

For a CAUTI prevention team and others, it is essential to provide ongoing, visible, and useful feedback to engage staff effectively.<sup>4</sup> Feedback both to and from staff members should be routinely shared and is best when it is:

1. timely—data should be shared routinely and frequently;
2. non-punitive in nature;
3. part of a discussion on successes and opportunities for future improvement:
  - a. schedule routine meetings to review data analysis findings during the quality improvement initiative;
  - b. consider targeted interventions based on data analysis findings; and
  - c. encourage open communication from team members, with particular attention to identified issues or barriers to success.

Consider the following ways to share data analysis and results:

1. during team rounds or huddles;
2. CAUTI team meetings;
3. unit staff meetings;
4. visual displays on unit:
  - a. poster boards;
  - b. electronic screen savers; and
5. electronic data display/feedback.

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<sup>1</sup> Huges, R.G., editor; *Patient Safety and Quality: An Evidence-Based Handbook for Nurses*, Rockville (MD): Agency for Healthcare Research and Quality (US); 2008 Apr.

<sup>2</sup> *Managing Data for Performance Improvement*, U.S. Department of Health and Human Services, Health Resources and Services Administration (2011).

<sup>3</sup> Albanese, M.P., Evans, D.A., Schantz, C.A., Bowen, M., Disbot, M., Moffa, J.S., and Polomano, R.C. (2010) Engaging clinical nurses in quality and performance improvement activities, *Nursing Administration Quarterly* 34(3), 226-245.

<sup>4</sup> Draper, D.A., Fellan, L. E., Liebhaber, A., and Melichar, L., The role of nurses in hospital quality improvement, *Res Brief* (2008), 3:1-8.

## Safety Culture, Teamwork and Patient and Family Engagement

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3. [NYSPFP Patient and Family Engagement Guide](#)
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## Safety Culture, Teamwork, and Patient and Family Engagement

This section discusses the pivotal roles of teamwork, along with patient and family engagement, in the reduction and prevention of CAUTI. The nature of healthcare delivery requires many interacting parts, and teams have been shown to be integral to enhancing the use of evidence-based protocols and procedures by creating multidisciplinary approaches, shared accountability, and mutual support.

Leaders in the field of hospital-associated infection reduction reinforce that the presence of a strong culture of safety and teamwork serves not only as the foundation for the delivery of consistent, evidence-based care, but enables staff to communicate and continuously improve outcomes. Incorporating patients and families on teams and at the bedside is an emerging practice.

Multidisciplinary teams are at the heart of success in CAUTI prevention. First, a system-wide team focuses on strategies to ensure leadership support, emphasizes the need for collaboration, and identifies champions to lead and accept accountability for outcomes.<sup>1</sup> In addition, these staff engage in assessment and gap analysis, literature review, pilot tests, and action planning.

In daily work, all members of the team provide support on effective maintenance bundle compliance. In some of the more challenging situations, such as alternatives to indwelling catheterization, working together is vital to achieving the needed support for the best outcomes.

Research supports that team training in general, and specifically for healthcare teams, results in positive team outcomes. TeamSTEPPS™ is one of the best-known evidence-based teamwork systems to improve communication and teamwork skills, including team performance, processes, and improved patient safety culture.<sup>2</sup> Specific tools taught in the TeamSTEPPS curriculum that can facilitate CAUTI reduction include:

- SBAR (Situation-Background-Assessment-Recommendation) or handoff/“I PASS the BATON”;
- debrief and huddles; and
- situational awareness and mutual assistance.

Finally, use of tools including checklists and daily rounding promotes monitoring and building of safety culture.

In the Agency for Healthcare Research and Quality's 2013 *On the CUSP: Stop CAUTI* project, the "Team Checkup Tool" helped teams identify:

- what facilitates patient safety culture change (socio-adaptive changes);
- what facilitates changes in clinical care patients receive (technical changes);
- improving trends over time;
- behaviors driving performance: assessment of teamwork skills demonstrated; and
- barriers to teamwork and communication: what is impeding progress.

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<sup>1</sup> Jain, M., Miller, L., Belt, D., King, D., and Berwick, D. M., Decline in ICU adverse events, nosocomial infections, and cost through a quality improvement initiative focusing on teamwork and culture, *Qual Saf Health Care* (2006), 15:235-239. doi: 10.1136/qshc. (2005), 016576 p.238.

<sup>2</sup> <http://www.ahrq.gov/professionals/education/curriculum-tools/teamstepps/instructor/fundamentals/module3/ebcommunication.html>

## Staff Competency, Orientation, and Insertion Preceptor

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## Staff Competency, Orientation, and Insertion Preceptor

This section highlights the need for various approaches to staff education and competency to ensure the proper insertion, maintenance, and discontinuation of indwelling urinary catheters.

The development of nursing and medical competency models relies on a knowledge, attitude, and skills approach to serve as a basis for consistent performance expectations.<sup>1,2</sup> The Joint Commission requires that clinical competency of all staff be assessed, maintained, demonstrated, and continually improved.<sup>3</sup>

Competency assessment is outcome-oriented; the goal is to evaluate performance for the effective application of knowledge and skill in the practice setting; the techniques address psychomotor, cognitive, and affective domains.<sup>4</sup>

Policies and procedures should be in place to ensure that the competency of all healthcare professionals is assessed to provide safe care.

Nursing staff are predominantly responsible for placing and maintaining the urinary catheter system, including cleaning, handling, and other related tasks.<sup>5</sup> Standardizing the education, training, and orientation of new nursing staff on proper urinary catheter placement and maintenance of the catheter is essential.<sup>2</sup> Routine care is often delegated to non-licensed staff who also require education and evaluation.

Recommendations for an indwelling urinary catheter competency program include:

1. Orientation of new employees:
  - a. Educational program on catheter insertion and maintenance, and complications associated with indwelling urinary catheters (i.e., CAUTI).
  - b. Advanced registered nurse (RN) practices around assessments (i.e., bladder ultrasound), bladder irrigation, protocols, and practices is equally important.
  - c. Alternatives to insertion of indwelling urinary catheters.
  - d. Demonstration of an insertion.

2. Ongoing education:
  - a. Just-in-time educational programs relative to changes/updates in aforementioned areas.
3. Annual programming:
  - a. Review of key points relative to insertion, care, and maintenance of indwelling urinary catheters.
4. Intermittent observation of a catheter insertion based on hospital's guidelines.
5. Consider simulation for both staff training and psychomotor skill competency assessment.
6. Include direct observations as a component of the competency assessment.
7. Educate physicians and nurses on medications that can cause urinary retention.
8. Develop/use a competency assessment of bladder scan usage.
9. Consider the "buddy system" or mentor for both insertion and medical necessity reviews, or other advanced practices.

If competency standards are not met, provide staff with additional support and education.

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<sup>1</sup> Institute of Medicine; Health professions education: A bridge to quality, National Academies Press (2003), Washington, D.C.

<sup>2</sup> Sroczyński, M., Gravlin, G., Seymour Route, P., Hoffart, N., and Creelman, P. (2011) Creativity and connections: The future of nursing education and practice: The Massachusetts initiative. *Journal of Professional Nursing* (online), 27(6) e64-70.

<sup>3</sup> Joint Commission on Accreditation of Healthcare Organizations; Comprehensive Accreditation Manual for Hospitals: The Official Handbook (1999), Oak Park, IL: author.

<sup>4</sup> Benner, P. Issues in competency-based testing; *Nursing Outlook* (1982), 30 (5), 303-309.

<sup>5</sup> Ribby, Kevin J., M.S.N., A.P.R.N., B.C., G.C.N.S., L.C.D.R., N.C., U.S.N.R., Decreasing Urinary Tract Infections through Staff Development, Outcomes and Nursing Process, *J Nurse Care Qual*, Vol. 21, No 2, pp. 194-198, (2006) Lippincott Williams & Wilkins, Inc.