**National Quality Forum—Evidence (subcriterion 1a)**

**Measure Number** (*if previously endorsed*)**:** NQF 0138

**Measure Title**: National Healthcare Safety Network Catheter-associated Urinary Tract Infection (CAUTI)

**IF the measure is a component in a composite performance measure, provide the title of the Composite Measure here:** Click here to enter composite measure #/ title

**Date of Submission**: Click here to enter a date

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| **Instructions**  *Complete 1a.1 and 1a.2 for all measures. If instrument-based measure, complete 1a.3.*  *Complete* ***EITHER 1a.2, 1a.3 or 1a.4*** *as applicable for the type of measure and evidence.*  *For composite performance measures:*  *A separate evidence form is required for each component measure unless several components were studied together.*  *If a component measure is submitted as an individual performance measure, attach the evidence form to the individual measure submission.*   * All information needed to demonstrate meeting the evidence subcriterion (1a) must be in this form. An appendix of *supplemental* materials may be submitted, but there is no guarantee it will be reviewed. * If you are unable to check a box, please highlight or shade the box for your response. * Contact NQF staff regarding questions. Check for resources at [Submitting Standards webpage](http://www.qualityforum.org/Measuring_Performance/Submitting_Standards.aspx). |

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| **Note: The information provided in this form is intended to aid the Standing Committee and other stakeholders in understanding to what degree the evidence for this measure meets NQF’s evaluation criteria.**   1a. Evidence to Support the Measure Focus The measure focus is evidence-based, demonstrated as follows:   * Outcome: [**3**](#Note3) Empirical data demonstrate a relationship between the outcome and at least one healthcare structure, process, intervention, or service. If not available, wide variation in performance can be used as evidence, assuming the data are from a robust number of providers and results are not subject to systematic bias. * Intermediate clinical outcome: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [**4**](#Note4)that the measured intermediate clinical outcome leads to a desired health outcome. * Process: [**5**](#Note5) a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [**4**](#Note4) that the measured process leads to a desired health outcome. * Structure: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [**4**](#Note4) that the measured structure leads to a desired health outcome. * Efficiency: [**6**](#Note6) evidence not required for the resource use component. * For measures derived from patient reports, evidence should demonstrate that the target population values the measured outcome, process, or structure and finds it meaningful. * Process measures incorporating Appropriate Use Criteria: See NQF’s guidance for evidence for measures, in general; guidance for measures specifically based on clinical practice guidelines apply as well.   **Notes**  **3.** Generally, rare event outcomes do not provide adequate information for improvement or discrimination; however, serious reportable events that are compared to zero are appropriate outcomes for public reporting and quality improvement.  **4.** The preferred systems for grading the evidence are the Grading of Recommendations, Assessment, Development and Evaluation [(GRADE) guidelines](http://www.gradeworkinggroup.org) and/or modified GRADE.  **5.** Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multistep process, the step with the strongest evidence for the link to the desired outcome should be selected as the focus of measurement. Note: A measure focused only on collecting PROM data is not a PRO-PM.  **6.** Measures of efficiency combine the concepts of resource use and quality (see NQF’s [Measurement Framework: Evaluating Efficiency Across Episodes of Care](http://www.qualityforum.org/Publications/2010/01/Measurement_Framework__Evaluating_Efficiency_Across_Patient-Focused_Episodes_of_Care.aspx); [AQA Principles of Efficiency Measures](http://www.aqaalliance.org/files/PrinciplesofEfficiencyMeasurementApril2006.doc)). |

**1a.1.This is a measure of**: (*should be consistent with type of measure entered in De.1*)

Outcome

Outcome: National Healthcare Safety Network Catheter-associated Urinary Tract Infection (CAUTI)

Patient-reported outcome (PRO): Click here to name the PRO

*PROs include HRQoL/functional status, symptom/symptom burden, experience with care, health-related behaviors.* (*A PRO-based performance measure is not a survey instrument. Data may be collected using a survey instrument to construct a PRO measure.)*

Intermediate clinical outcome (*e.g., lab value*): Click here to name the intermediate outcome

Process: Click here to name what is being measured

Appropriate use measure: Click here to name what is being measured

Structure: Click here to name the structure

Composite: Click here to name what is being measured

**1a.2** **LOGIC MODEL** Diagram or briefly describe the steps between the healthcare structures and processes (e.g., interventions, or services) and the patient’s health outcome(s). The relationships in the diagram should be easily understood by general, non-technical audiences. Indicate the structure, process or outcome being measured.

A collection of prevention efforts have been identified to reduce the incidence of CAUTI. These interventions include (i) Appropriate catheter use: reducing the number of unnecessary indwelling catheters inserted, removing indwelling catheters at their earliest, clinically-appropriate time; (ii) Implementing catheter insertion using best practice using aseptic insertion techniques;(iii) Implementing best catheter maintenance practice : keeping urinary collection bags below the level of the bladder, and securing the catheter to the leg to avoid bladder or urethral trauma (iv) Establishing quality improvement programs to achieve appropriate placement, care, and removal of catheters (v) Providing required administrative infrastructure (vi) Implementing surveillance strategies

**1a.3** **Value and Meaningfulness:**  **IF** this measure is derived from patient report, provide evidence that the target population values the measured ***outcome, process, or structure*** and finds it meaningful. (Describe how and from whom their input was obtained.)

**\*\*RESPOND TO ONLY ONE SECTION BELOW -EITHER 1a.2, 1a.3 or 1a.4) \*\***

**1a.2** **FOR OUTCOME MEASURES including PATIENT REPORTED OUTCOMES - Provide empirical data demonstrating the relationship between the outcome (or PRO) to at least one healthcare structure, process, intervention, or service.**

Source: Carolyn V. Gould, MD, MSCR, Craig A. Umscheid, MD, MSCE, Rajender K. Agarwal, MD, MPH, Gretchen Kuntz, MSW, MSLIS, David A. Pegues, MD, and the Healthcare Infection Control Practices Advisory Committee (HICPAC). **Guideline for Prevention of Catheter-Associated Urinary Tract Infections (2009) revised February 15, 2017**

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| **Table 1. Modified HICPAC Categorization Scheme\* for Recommendations** | |
| Category IA | A strong recommendation supported by high to moderate quality evidence suggesting net clinical benefits or harms |
| Category IB | A strong recommendation supported by low quality evidence suggesting net clinical benefits or harms or an accepted practice (e.g., aseptic technique) supported by low to very low quality evidence |
| Category IC | A strong recommendation required by state or federal regulation. |
| Category II | A weak recommendation supported by any quality evidence suggesting a tradeoff between clinical benefits and harms |
| No recommendation/  unresolved issue | Unresolved issue for which there is low to very low quality evidence with uncertain tradeoffs between benefits and harms |

These specific interventions include practices to reduce catheter related infections:

Healthcare intervention #1

Ensuring **appropriate catheter use** includes inserting catheters only for appropriate indications and leaving in place as long as needed.

The recommendation was based on a targeted systematic review of the best available evidence, with explicit links between the evidence and recommendations. The literature review include 1 systematic review study, 9 randomized controlled trials and 12 observational studies.

1. Minimize urinary catheter use and duration of use in all patients, particularly those at higher risk for CAUTI or mortality from catheterization such as women, the elderly, and patients with impaired immunity (Category IB)

2. Avoid use of urinary catheters in patients and nursing home residents for management of incontinence (Category IB).

3. Use urinary catheters in operative patients only as necessary, rather than routinely (Category IB).

4. For operative patients who have an indication for an indwelling catheter, remove the catheter as soon as possible postoperatively, preferably within 24 hours, unless there are appropriate indications for continued use (Category IB).

Healthcare intervention #2

Implement **proper techniques for urinary catheter insertion**

The recommendation was based on a targeted systematic review of the best available evidence, with explicit links between the evidence and recommendations. The literature review include 6 systematic review study, 16 randomized controlled trials and 18 observational studies.

1. Perform hand hygiene immediately before and after insertion or any manipulation of the catheter device or site. (Category IB)

2. Ensure that only properly trained persons (e.g., hospital personnel, family members, or patients themselves) who know the correct technique of aseptic catheter insertion and maintenance are given this responsibility. (Category IB)

3. In the acute care hospital setting, insert urinary catheters using aseptic technique and sterile equipment. (Category IB)

4. In the non-acute care setting, clean (i.e., non-sterile) technique for intermittent catheterization is an acceptable and more practical alternative to sterile technique for patients requiring chronic intermittent catheterization. (Category IA)

5**.** Properly secure indwelling catheters after insertion to prevent movement and urethral traction. (Category IB)

6. Unless otherwise clinically indicated, consider using the smallest bore catheter possible, consistent with good drainage, to minimize bladder neck and urethral trauma. (Category II)

7. If intermittent catheterization is used, perform it at regular intervals to prevent bladder over distension. (Category IB)

8. Consider using a portable ultrasound device to assess urine volume in patients undergoing intermittent catheterization to assess urine volume and reduce unnecessary catheter insertions. (Category II)

Healthcare intervention #3

Implement **proper techniques for urinary catheter maintenance.**

The recommendation was based on a targeted systematic review of the best available evidence, with explicit links between the evidence and recommendations. The literature review include 6 systematic review study, 56 randomized controlled trials, 34 observational studies and 1 economic analysis.

1. Following aseptic insertion of the urinary catheter, maintain a closed drainage system (Category IB)

2. Maintain unobstructed urine flow. (Category IB)

3. Use Standard Precautions, including the use of gloves and gown as appropriate, during any manipulation of the catheter or collecting system. (Category IB)

4. 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. (Category II)

5. 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. (Category II)

6. 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. (Category IB)

7. Do not clean the periurethral area with antiseptics to prevent CAUTI while the catheter is in place. Routine hygiene (e.g., cleansing of the meatal surface during daily bathing or showering) is appropriate. (Category IB)

8. Unless obstruction is anticipated (e.g., as might occur with bleeding after prostatic or bladder surgery) bladder irrigation is not recommended. (Category II)

9. Routine irrigation of the bladder with antimicrobials is not recommended. (Category II)

10. Routine instillation of antiseptic or antimicrobial solutions into urinary drainage bags is not recommended. (Category II)

11. Clamping indwelling catheters prior to removal is not necessary. (Category II)

**1a.3.****SYSTEMATIC REVIEW(SR) OF THE EVIDENCE (for intermediate outcome, PROCESS, or STRUCTURE PERFORMANCE measures, including those that are instrument-based) If the evidence is not based on a systematic review go to section 1a.4) If you wish to include more than one systematic review, add additional tables.**

**What is the source of the systematic review of the body of evidence that supports the performance measure? A systematic review is a scientific investigation that focuses on a specific question and uses explicit, prespecified scientific methods to identify, select, assess, and summarize the findings of similar but separate studies. It may include a quantitative synthesis (meta-analysis), depending on the available data. (IOM)**

Clinical Practice Guideline recommendation (with evidence review)

☐ US Preventive Services Task Force Recommendation

☐ Other systematic review and grading of the body of evidence (*e.g., Cochrane Collaboration, AHRQ Evidence Practice Center*)

☐ Other

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| **Source of Systematic Review:**   * **Title** * **Author** * **Date** * **Citation, including page number** * **URL** |  |
| Quote the guideline or recommendation verbatim about the process, structure or intermediate outcome being measured. If not a guideline, summarize the conclusions from the SR. |  |
| Grade assigned to the **evidence** associated with the recommendation with the definition of the grade |  |
| Provide all other grades and definitions from the evidence grading system |  |
| Grade assigned to the **recommendation** with definition of the grade |  |
| Provide all other grades and definitions from the recommendation grading system |  |
| Body of evidence:   * Quantity – how many studies? * Quality – what type of studies? |  |
| Estimates of benefit and consistency across studies |  |
| What harms were identified? |  |
| Identify any new studies conducted since the SR. Do the new studies change the conclusions from the SR? |  |

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**1a.4 OTHER SOURCE OF EVIDENCE**

*If source of evidence is NOT from a clinical practice guideline, USPSTF, or systematic review, please describe the evidence on which you are basing the performance measure.*

**1a.4.1** **Briefly SYNTHESIZE the evidence that supports the measure.** A list of references without a summary is not acceptable.

**1a.4.2 What process was used to identify the evidence?**

**1a.4.3.** **Provide the citation(s) for the evidence.**