

Preventing Catheter-Associated Infections

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Full academic paper. Proposals and illustrative examples are presented as coursework.

Situation (S)

A1. Healthcare-Related Situation

On an adult inpatient telemetry unit, the continued clinical necessity of indwelling urinary catheters is not consistently reassessed and documented during every shift. Without a standardized unit process, catheters may remain in place after the original indication has resolved, resulting in avoidable catheter exposure and increasing patients' risk of developing catheter-associated urinary tract infections (CAUTIs). Because this process gap can occur across shifts and affect any catheterized patient, it represents a systems-level safety concern rather than an isolated staff error. It has the potential to cause preventable harm to multiple patients.

Background (B)

Background Information

The background analysis examines national CAUTI surveillance data and applicable hospital infection prevention standards. Together, these sources demonstrate why a consistent unit process is needed to reassess the necessity of urinary catheters and promptly discontinue those that are no longer clinically indicated.

A2a. Data

According to the Centers for Disease Control and Prevention (CDC, n.d.), 3,782 general acute-care hospitals reported 15,347 CAUTIs in 2024. The national standardized infection ratio was 0.56, indicating that the number of reported infections was 44% lower than the number predicted using the 2015 baseline. Although this finding demonstrates national improvement, the continued occurrence of 15,347 CAUTIs shows that additional prevention efforts remain necessary.

Unit-level outcome data that would support the proposed change include the total number of CAUTIs and the CAUTI rate per 1,000 catheter-days. Related utilization and process data would include the catheter utilization rate, average catheter duration, and the percentage of catheterized patients whose continued need for a catheter is reassessed and documented each shift. A CAUTI or catheter utilization rate above an applicable benchmark, an upward trend in either rate, prolonged catheter duration, or low reassessment compliance would demonstrate a gap in the current process and support the need for change.

A2b. Patient Safety Standards

The Joint Commission's (2025) 2026 Hospital National Performance Goal 5 applies directly to this patient safety concern. Under NPG.05.01.01, hospitals are expected to implement infection prevention and control activities through surveillance, prevention, and control measures. On the telemetry unit, prolonged or unnecessary use of indwelling urinary catheters represents a device-related infection risk that must be identified and controlled. Monitoring CAUTI rates, catheter utilization, and compliance with documenting catheter necessity would support surveillance by revealing gaps in current catheter practices. Establishing a consistent process for reassessing catheter necessity each shift and promptly discontinuing catheters that are no longer clinically indicated would support infection prevention and control by reducing avoidable catheter exposure. Because the current process does not consistently identify and eliminate unnecessary catheter use, the unit lacks a reliable mechanism for controlling this infection risk. It requires improvement to align with the national performance goal.

Assess (A)

A3. Impact

For patients on the adult telemetry unit, unnecessary catheter exposure increases the risk of developing a CAUTI. If an infection develops, patients may experience discomfort and fatigue, require additional diagnostic testing and treatment, and face delayed recovery and an extended hospital stay. These effects may also reduce patients' ability or willingness to participate in mobility and other aspects of their care plans, potentially delaying recovery further and increasing the likelihood of additional complications (Cherry & Jacob, 2019).

For staff, the development of a CAUTI creates additional clinical and administrative responsibilities, including assessing new symptoms, collecting specimens, communicating with providers, administering treatment, revising the care plan, and documenting and reporting the infection. Inconsistent catheter management may also create uncertainty about who is responsible for reassessing its continued need and initiating removal. This process variation increases workload, can delay catheter discontinuation, and makes it more difficult for nurses and providers to deliver coordinated and consistent care.

For the organization, preventable CAUTIs increase healthcare-associated infection rates and may extend patients' lengths of stay, interfere with patient flow, and limit bed availability. Each infection also requires additional surveillance, case review, and quality improvement follow-up. Continued CAUTIs may negatively affect organizational quality outcomes and indicate that existing catheter management practices do not consistently meet national expectations for infection prevention and control (Joint Commission, 2025).

A3a. Value

The systems-level concern reduces value for patients because an indwelling urinary catheter that is no longer clinically necessary provides no continued clinical benefit while exposing the patient to avoidable risk. If a CAUTI develops, the patient may experience additional discomfort and treatment, delayed recovery, and a delayed discharge, resulting in a poorer outcome than would otherwise be expected from the hospitalization. Because patients evaluate care based on both outcomes and experiences, a potentially preventable complication may also lead them to view the quality of the entire hospital stay negatively (Cherry & Jacob, 2019).

The concern also reduces value for the healthcare setting because staff time, diagnostic services, treatment, surveillance activities, and inpatient bed capacity are used to manage a potentially preventable infection. These resources are directed toward addressing an avoidable complication rather than advancing treatment of the patient's original health condition (Cherry & Jacob, 2019). CAUTIs also worsen patient safety outcomes and reduce the efficiency and consistency of care delivery. Therefore, unnecessary catheter exposure produces lower-value care by contributing to poorer patient outcomes while requiring greater use of organizational resources.

Recommend (R)

A4. Evidence-Based Practice Change

The recommended evidence-based practice change is to implement a standardized, nurse-led CAUTI prevention bundle on the adult telemetry unit. The bundle would require nurses to assess and document the continued clinical indication for every indwelling urinary catheter during each shift and communicate catheter status during handoff and interdisciplinary rounds. Under an organization-approved nurse-driven removal protocol, nurses would be authorized to remove a catheter without obtaining an additional provider order when the patient no longer meets established criteria for catheterization. The bundle would also standardize evidence-based catheter insertion and maintenance practices across the unit.

Evidence supports this recommendation. In a systematic review and meta-analysis, Su (2025) found that nurse-driven protocols were associated with a 29.48% reduction in catheter utilization and a 55.91% reduction in CAUTI risk. In a four-year longitudinal quasi-experimental study conducted in an acute-care hospital, Riley et al. (2025) reported that a nurse-led CAUTI prevention bundle reduced CAUTI risk by 38% and catheter utilization by 11%. Together, these findings demonstrate that standardized nurse-led processes can reduce unnecessary catheter exposure and the risk of CAUTI. Applying this evidence to the telemetry unit would directly address delayed catheter removal by giving nurses a consistent reassessment process and clearly defined authority to discontinue catheters that are no longer clinically indicated.

A4a. High Reliability Organization

The recommended nurse-led CAUTI prevention bundle aligns with the five principles of a high-reliability organization. It reflects a preoccupation with failure by treating unnecessary catheter days and missed reassessments as early warning signs that require action rather than waiting for a CAUTI to occur. Reassessing the necessity each shift and communicating catheter status during handoffs and interdisciplinary rounds demonstrates sensitivity to operations by maintaining real-time awareness of catheter use and infection risk. The bundle demonstrates reluctance to simplify by addressing the interrelated processes of catheter insertion, maintenance, reassessment, communication, and removal rather than attributing CAUTIs to a single nurse or provider. It supports deference to expertise by recognizing bedside nurses as the clinicians most familiar with daily catheter care and authorizing them to remove catheters according to established criteria while collaborating with providers and infection prevention specialists. Finally, standardized procedures and ongoing monitoring of catheter use, protocol compliance, and CAUTI outcomes demonstrate a commitment to resilience by enabling the team to quickly identify process failures, respond before harm occurs, and adapt the bundle when gaps are detected. Together, these elements create a proactive system that anticipates failure, responds rapidly to emerging risks, and continuously improves patient safety.

A4b. Barriers

The first potential barrier is staff resistance or uncertainty regarding the nurse-driven removal protocol. Nurses may be uncomfortable removing a catheter without receiving a separate patient-specific order, even when the patient meets the organization-approved removal criteria. Providers may also be concerned about premature removal, urinary retention, or the need for catheter reinsertion. These concerns may cause nurses and providers to continue to rely on provider-directed removal practices, limiting the adoption of the protocol and delaying the removal of catheters that are no longer clinically indicated.

The second potential barrier is difficulty integrating the bundle into the telemetry unit's existing workflow. Nurses manage multiple competing responsibilities, and the required reassessment of catheter necessity may be missed unless it is clearly incorporated into routine documentation, handoffs, and interdisciplinary rounds. If catheter indications and reassessment findings are documented inconsistently, nurses may be unable to determine why a catheter remains in place or whether the patient meets the criteria for removal. This workflow barrier could reduce compliance with the bundle and result in inconsistent implementation across shifts.

A4c. Interventions

The first intervention would be an interprofessional education and competency validation program for nurses and providers. Education would review the organization-approved indications for catheter use, the criteria for removal, and the steps to follow if urinary retention occurs after removal, and the nurse's authority under the protocol. Nurses would complete case-based practice and competency validation to demonstrate that they can apply the removal criteria correctly. Visible endorsement from nursing and medical leadership would reinforce the protocol's legitimacy, reduce uncertainty, address concerns about premature removal, and improve staff acceptance of the change.

The second intervention would be to integrate catheter-necessity reassessment into the telemetry unit's established electronic workflow. The electronic health record would include a required field in routine nursing documentation for recording the current catheter indication. If the nurse documents that an approved indication is no longer present, a decision-support prompt would direct the nurse to apply the removal protocol. Catheter status and continued necessity would also be incorporated into shift handoffs and interdisciplinary rounds. Making reassessment a visible and expected component of routine care would reduce missed reviews, improve communication, and promote consistent implementation across shifts.

A4d. Shared Decision - Making

Shared decision-making among relevant stakeholders is significant because successful implementation of the nurse-led CAUTI prevention bundle requires the expertise, cooperation, and commitment of those who will use, support, and be affected by the change. Bedside nurses can identify workflow needs and practical concerns related to catheter assessment and removal. Providers can help establish appropriate indications, removal criteria, and procedures for managing urinary retention or catheter reinsertion. Infection prevention and quality improvement staff can guide surveillance and outcome measurement, while nursing leadership and informatics staff can incorporate the protocol into organizational policy, staff education, and electronic documentation. Involving these stakeholders in planning and implementation promotes role clarity, addresses safety and workflow concerns, creates shared ownership of the change, and increases the likelihood of consistent and sustained use of the protocol.

Patients and families are also important participants in decisions about catheter management. Nurses and providers should invite their participation, explain the benefits and risks of continued catheter use and removal, discuss clinically appropriate alternatives, and assess the patient's goals and concerns. The healthcare team and patient can then select a plan that meets clinical criteria while reflecting the patient's needs and preferences. When a catheter is no longer clinically indicated, the team should explain why removal is the safest option and involve the patient in determining how urinary elimination needs will be supported after removal. The team should then evaluate the patient's response and revise the plan if urinary problems occur. This collaborative approach promotes patient-centered care, strengthens trust, reduces resistance to removal, and supports sustained implementation of the practice change.

A4e. Outcome Measure

The primary outcome measure would be the telemetry unit's CAUTI rate per 1,000 catheter-days. The rate would be calculated by dividing the number of CAUTIs during the measurement period by the total number of catheter-days and multiplying the result by 1,000. Infection prevention staff would calculate a baseline rate using the six months of data preceding implementation and compare it with monthly rates and the overall rate during the six months following implementation of the nurse-led CAUTI prevention bundle. The same surveillance criteria would be applied during both periods to ensure a valid comparison. A sustained decrease in monthly rates and a lower overall post-implementation rate would suggest that the bundle improved patient safety by reducing CAUTIs. If the rate does not decrease, the implementation team would review compliance with each bundle component, identify process gaps, and revise the implementation approach as needed.

A4f. Care Delivery Model

The adult inpatient telemetry unit uses a team nursing care delivery model. Under this model, an RN functions as the team leader for an assigned group of patients and coordinates care provided by nursing assistants and other nursing team members. The RN assesses each patient, develops and updates individualized care plans, administers medications, performs telemetry-related care, communicates with providers, provides patient education, delegates appropriate activities, and evaluates patient outcomes. Nursing assistants perform delegated activities such as obtaining vital signs, assisting with hygiene and mobility, measuring intake and output, and promptly reporting changes in the patient to the RN. The charge nurse coordinates unit-wide assignments and provides support as patient needs and unit conditions change. Clear role assignments and ongoing communication allow each team member to contribute within their scope of practice while the RN maintains responsibility for clinical decisions, supervision, and oversight of the patients' nursing care (Cherry & Jacob, 2019).

A4fi. Impact on the Care Delivery Model

The recommended practice change would not replace the team nursing model; rather, it would strengthen and standardize the assignment and communication of responsibilities for urinary catheter management. Under the nurse-driven protocol, the RN team leader would assume clearly defined responsibility for assessing and documenting the continued need for the catheter during each shift and for removing it when the approved criteria are met. The RN would delegate routine activities, such as catheter hygiene and urine output measurement, while retaining responsibility for clinical assessment and removal decisions. Nursing assistants would perform these delegated activities and report leakage, discomfort, changes in urine characteristics, or other concerns to the RN. The charge nurse would support consistent implementation by reinforcing the protocol and helping staff address questions, exceptions, or situations requiring provider consultation.

The change would also require catheter indication and removal readiness to be communicated during shift handoffs and interdisciplinary rounds. Education and additional documentation could initially increase the team's workload. Once incorporated into routine care, however, the standardized process would clarify responsibilities, reduce practice variation and removal

delays, and improve coordination among nurses, nursing assistants, and providers. The practice change would therefore strengthen the team nursing model by promoting clear communication, appropriate delegation, RN oversight, and timely action to prevent CAUTIs.

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