Incorporation of Leadership Rounds in CAUTI Prevention Efforts

Suzanne Purvis, DNP, RN, GCNS-BC; Gregory D. Kennedy, MD, PhD; Mary Jo Knobloch, MPH; Amy Marver, MSN, RN, CCRN; John Marx, MPH; Susan Rees, DNP, RN, CPHQ, CENP; Nasia Safdar, MD, PhD; Daniel Shirley, MD, MS

Leadership engagement is an important aspect of integrating best practices at the bedside. The catheter-associated urinary tract infection (CAUTI) prevention workgroup at our academic medical center implemented leadership rounding in partnership with clinical staff to increase participation in CAUTI prevention initiatives on inpatient units. There was an associated decrease in urinary catheter utilization and CAUTI rates. Implementation of leadership rounds should be considered as a part of comprehensive CAUTI prevention efforts in health care settings.

Key words: catheter-associated urinary tract infections, hospital-acquired infections, leadership rounds, rounds

Infection of the urinary tract caused by an indwelling urinary catheter, called a catheter-associated urinary tract infection (CAUTI), is a common cause of health care-associated infection (HAI) in the United States. The national focus on HAI reduction and how these infections negatively impact patient outcomes has resulted in hospital systems placing significant effort into CAUTI reduction programs. Leadership engagement in these programs is important in ensuring that guidelines and policies aimed at CAUTI reduction are implemented and sustained successfully with high fidelity.

CAUTI is the only HAI that is increasing in frequency in the United States. These infections are associated with increased morbidity, hospital length of stay, and health care costs. Preventing CAUTI, therefore, can have a positive impact on patient care and can improve patient safety. Health care systems also face substantial financial penalties from the Centers for Medicare & Medicaid Services if rates of HAIs such as CAUTI are higher than the nationwide benchmark. To support the goal of HAI reduction, multiple agencies such as The Joint Commission, with its National Patient Safety Goals, have highlighted the need to sustain momentum in reducing CAUTI.

To support efforts to improve patient safety by preventing these infections, the
Agency for Healthcare Research and Quality has developed the Comprehensive Unit-based Safety Program (CUSP). The CUSP combines techniques to improve safety culture, teamwork, and communications. Combined with a checklist of proven safety practices, the CUSP includes a CAUTI toolkit that contains resources for hospitals to consider in creating their CAUTI reduction programs. In addition, regional and national collaboratives such as the University HealthSystem Consortium (now Vizient) CAUTI Collaborative allow acute care facilities to share ideas and implementation tools, as well as to compare outcomes and progress toward CAUTI reduction. Finally, the Centers for Disease Control and Prevention and the Society for Healthcare Epidemiology of America have established best-practice interventions for CAUTI prevention based on clinical, technological, and organizational processes requiring interdisciplinary teamwork.

Despite the efforts this organization had made implementing many of the changes recommended by these agencies, there continued to be an unacceptably high rate of CAUTI. As processes were examined, it became evident that one element that is often cited in the literature as being critical to sustain success in patient safety initiatives, including HAI reduction, is a high level of leadership engagement: that element needed bolstering.

**LITERATURE REVIEW**

The literature on change management states that leaders who develop good communication strategies are more effective in diffusing evidence-based practices. Health care organizations that have been successful in reducing HAIs have leaders who manage change by having specific goals to improve communication such as removing process barriers and communicating directly with staff who may encounter barriers to change. In general, these leaders are excellent communicators who engage clinical staff, promoting discussions and data-driven quality improvement projects. Results and succinct summaries from these discussions and projects can then be relayed to all staff on a regular basis.

As a component of this staff engagement process, leadership walking rounds have been instituted in some organizations to provide this information and to discuss with clinical staff specific process issues that may be impeding progress on inpatient units. It is important that these conversations maintain the collaborative nature of the work by including the different disciplines that can impact CAUTI rates. This ensures sustainability as well as accountability. Given all the evidence for the benefit of leadership rounds for patient safety outcomes, we chose to add this critical component to our prevention efforts to further reduce CAUTI. This article is our report of the institutional experience, framework for implementation, and impact of leadership walking rounds on CAUTI reduction.

**SETTING**

Our institution is a 592-bed academic, tertiary care medical center, a level 1 adult and pediatric trauma center that serves the Midwest United States. It is part of an integrated health system that serves over 600,000 patients each year at 6 hospitals and over 80 outpatient centers.

**Background: CAUTI prevention workgroup initiatives**

At this institution, hospital-wide CAUTI surveillance was initiated in 2011, and data revealed that CAUTI rates were higher than goal. In response, a multidisciplinary CAUTI prevention workgroup was formed, including a general surgeon, an administrator, clinical nurse specialists (CNSs), a quality analyst, and an infection preventionist. The initial goal set by the CAUTI prevention workgroup was to reduce the number of urinary catheter days to ultimately reduce CAUTI rates. Two early interventions included implementation of nurse-driven urinary catheter removal and bladder management protocols and a pilot of daily rounding assessing the need for a catheter. In 2012, daily rounding was
expanded to all inpatient units. Enhancements to the electronic medical record were made, which included incorporating icons to delineate patients with a urinary catheter and those using the nurse-driven protocols. Overall duration of urinary catheters (hours) decreased by 50% by the end of 2012. Monthly scorecards with CAUTI rates and urinary catheter duration were available to units by the end of 2012.

In 2013, a nursing practice guideline on CAUTI prevention was developed and placed on the organizational-wide intranet, available to all staff. A monthly audit of catheter use was implemented that described maintenance of the urinary catheters including securement, seal intact (closed system), bag hanging below the level of the bladder, tubing free of kinks and dependent loops, and bag remaining off the floor.

Moving into 2014, there was still a need to further improve CAUTI metrics. The organizational-wide CAUTI workgroup then intensified its efforts to include implementation of unit event review analysis of all CAUTIs, utilization of unit-based CAUTI champions promoting CAUTI reduction, standardization of equipment, and the implementation of a urinary catheter insertion checklist required for all insertions.

In 2015, the CAUTI workgroup developed a quick prevention intervention that was rolled out to all units over the course of 2 months. This included 1-on-1 discussion with unit leadership and distribution of a 1-page unit-specific data sheet. The sheet included monthly data related to average urinary catheter duration, compliance with completion of the urinary catheter insertion checklist, catheter utilization, urinary catheter maintenance data, and number of urine cultures ordered from an indwelling urinary catheter. Unit staff were then charged with development of an action plan that addressed areas of improvement related to the clinical and process issues identified for their specific unit. This action plan was required to be completed by June 2015. Discussions at the CAUTI workgroup meetings from unit feedback pointed to challenges in engaging all staff in these additional CAUTI reduction efforts. We therefore instituted hospital leadership walking rounds to improve all staff engagement in CAUTI prevention and further reduce CAUTI rates.

**LEADERSHIP ROUNDS**

The executive sponsors for this project, the Associate Chief Medical Officer and Associate Chief Nursing Officer, determined that leadership walking rounds would be conducted to discuss CAUTI prevention with front-line workers, analyze what the next steps should be, and determine whether the interventions previously put in place had become embedded in practice. It was determined that rounding would be conducted on each of the inpatient units, including intensive care units (ICUs), and would be called CAUTI rounds. The rounds were planned for 30 minutes on each unit. They were scheduled at various times of the day at the preference of the unit nurse manager. Included in the invitation to attend were the executive sponsors, nurse manager, and CNS. The manager and CNS were asked to invite front-line nursing staff and other members of the interdisciplinary team. It took about 2 months to get to all units. Once rounds to all units were completed, the next cycle of rounds were started.

Each unit rounding session had different characteristics to fit into the workflow. If the medical team was rounding on the unit at the time the leaders arrived on the unit, the rounds would either be conducted as a discussion in the hallway or the leaders would participate in rounds with the team, assessing the need for the urinary catheter if present and how the team handled each situation. If the conversation occurred in the hallway, there was an attempt to ensure that both medical and nursing staff were present. Discussion was focused on what was going well and issues related to CAUTI reduction that needed further work on this unit. Another method
used was gathering the interdisciplinary team in a conference room and having a discussion together for 30 minutes. Whichever method was used, the rounds started with the sharing of data. These data included current performance as well as the recent 12-month trend. The lack of a predeveloped agenda for the rounds was perceived as a strength by staff who could tailor the rounds to their workflow, thereby minimizing workday disruption. Scheduling rounds at different times of day also allowed for more staff to participate.

A major function of these rounds became evident in identifying groups or individuals with whom to follow up to ensure that expected practice changes were occurring. The information gained from the rounds informed the group as to additional steps that needed to occur to standardize best practices. For example, it became evident it was necessary for the chairs of each medical department to be aware of and supportive of the new CAUTI protocols and to ensure compliance with the rest of the medical providers in their departments. Notes for the rounds were kept informally by the Associate Chief Medical Officer and/or Associate Chief Nursing Officer and appropriate follow-up was done. In some cases this included conversations with attending physicians on specific patient orders. In other cases it included ensuring that the unit had the necessary equipment, for example, bladder scanners. In many cases rounding notes helped to determine the education needs of the staff.

RESULTS

To evaluate the impact of leadership rounds on CAUTI risk, we examined the number of CAUTI events, the CAUTI rate (per 1000 indwelling urinary catheter-days), and device utilization (indwelling urinary catheter-days/patient-days). We noted a 65% decline in the number of CAUTI (2014 = 86, 2015 = 30) and a decline in CAUTI rate per 1000 indwelling catheter-days (2014 = 3.1, 2015 = 1.4) (Figure). Current National Healthcare Safety Network (NHSN) definitions of CAUTI were used.\(^{15}\) In addition, urinary catheter utilization (catheter-days/patient-days) likewise declined (2014 = 0.18, 2015 = 0.13) (Figure).

The SIR, a measure reflecting performance against other institutions using the identical surveillance definitions, declined significantly from 1.62 in 2014 to 0.53 in 2015 (\(P = .0074\)). An SIR below 1.0 indicates better than expected performance in relation to other institutions submitting data to the NHSN database.

Declines in CAUTI incidence were not limited to general and intermediate care locations, but also extended to ICUs, a setting in which we have historically struggled to reduce CAUTI. For the first time since implementation of the formal hospital-wide surveillance, CAUTI rates in 2015 were commensurate in both ICU and non-ICU settings.

DISCUSSION

The challenge of eliminating CAUTI in health care systems requires a close collaboration between multidisciplinary teams and institutional leadership to establish evidence-based protocols and guidelines that can be effective in the care of different populations. The implementation of leadership rounds correlated at this institution with a further reduction of CAUTI rates. This demonstrates the potential role administrative leadership has in partnering with clinical leaders to ensure that best practices are prioritized on the units and within clinical teams. Department-specific issues and barriers that affect use and sustainability of best practices can then be more effectively addressed when leadership meets with the clinical teams on units and face to face. Leadership rounding was found to be successful and continues at the institution with the goal of sustainability of CAUTI reductions. It has been subsequently expanded to include discussions of initiatives involving other hospital-acquired infections, such as central line-associated bloodstream infections and prevention of \textit{Clostridium difficile} infection.

It was noted that other changes in the CAUTI program may have affected the CAUTI
Incorporation of Leadership Rounds in CAUTI Prevention Efforts

results, most significantly, a change in the NHSN CAUTI definition in 2015. It is estimated that nearly half of the decline in CAUTI incidence from calendar year 2014 to 2015 was derived from the changes in the microbiological parameters of the definition (estimate derived from retrospective analysis of 2014 CAUTI events utilizing the 2015 definition). Although we recognize that some of the improvement is secondary to the change in surveillance definition, this only accounts for about half of the decline. Moreover, our urinary catheter utilization rate also continue to decline, which would not be expected to be associated with the change in CAUTI definition. We also recognize that given the multiple interventions introduced by a bundled care project, it is not possible to determine a causal relationship between walking rounds and CAUTI reductions. However, our data suggest that walking leadership rounds, when added to a program of best practices, can complement existing efforts, serve as a vehicle for sharing of those best practices, and aid in the identification of barriers. In addition, we believe that leadership rounding keeps front-line workers informed and engaged in sustainable CAUTI reduction efforts.

**FUTURE DIRECTIONS**

Use of executive leaders to facilitate the implementation of best practices at the unit-level needs further exploration. For example, specifics need to be identified such as the timing and location of rounds, optimal length of rounds, number of visits per inpatient unit, focus of the rounds (broad or narrow), executive leaders chosen, and details of what kind of leader preparation is needed for rounds to be effective. At this institution, infection rate information is sent out prior to the rounds. It may be beneficial to identify all variables related to rounds and then compare effectiveness of well-designed and well-executed

![Leadership Rounding Initiated](image)

**Figure.** Catheter-associated urinary tract infection rate (solid line, scale on left axis) and indwelling urinary device utilization (dashed line, scale on right axis), calculated quarterly, 2011 to 2015.
rounds with other strategies to reduce HAIs. Outcomes such as the number of HAIs could then be determined and compared for the different strategies. Another area of study is a cost-benefit analysis to examine executive leader time and subsequent benefits to the hospital and to patient safety efforts. To quantify outcomes, an interrupted time series analysis could be done to gain a perspective on overall institutional infection rates, benchmarking key initiatives and timing of rounds.

CONCLUSIONS

Leadership rounds with front-line staff were initiated to enhance initial efforts at CAUTI reduction at this institution. Leadership was then able to use the rounds to meet with clinical staff on the units and determine how to reduce barriers to best practice. Indwelling urinary catheter days and CAUTI rates significantly decreased with implementation of leadership rounds.

REFERENCES