National Healthcare Safety Network (NHSN) developed the risk adjusted, standardized urinary catheter device utilization ratio in 2015. This study aims to assess national trends of DU from the baseline year 2015 through 2019.

Methods. For our trend analysis, we analyzed DU data (catheter days per 100 inpatient-days) that acute care hospitals (ACHs), long-term acute care hospitals (LTACHs), inpatient rehabilitation facilities (IRFs), and critical access hospitals (CAHs) reported to NHSN from 2015Q1 through 2019Q4. The ward and intensive care unit patient care locations included in our analysis are those that ACHs, LTACHs, IRFs and CAHs are required to report to CMS to comply with CMS Inpatient Quality Reporting program requirements. We regressed DU by quarterly period using generalized estimating equation modeling with the negative-binomial distribution, after adjusting for factors associated with corresponding SUR models of 2015 baseline and accounting for autocorrelation of error terms within a location. For graphic display, we also computed marginal DU using marginal predictive models.

Results. The DU decreased over time (P < 0.05, average percent change per quarter, %change): −0.54 [95% CI: −0.54, −0.53]) among ACHs (Table 1, Figure 1), and −0.54 [95% CI: −0.58, −0.49] among LTACHs (Table 1, Figure 2). Among IRFs, quarterly DU in 2015Q2–2016Q3 were similar relative to 2015Q1, but decreased from 2016Q4 onward (P < 0.05, % change: −0.51 [95% CI: −0.61, −0.40]) (Table 1, Figure 3). Among CAHs, DU in 2015Q2–2016Q4 were similar relative to 2015Q1 but decreased from 2017Q2 onward (P < 0.05, % change: −0.22 [95% CI: −0.39, −0.04]) (Table 1, Figure 4). There was a statistically significant decrease in National DU of urinary catheter during 2015–2019 across NHSN, although the magnitude of change per quarter was not large. Further research is needed to explore causal factors associated with such reduction.

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1155. CAUTI Path to Zero: A Triple-Pronged Approach to Minding Our Pees and Cues
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Background. Catheter associated urinary tract infections (CAUTIs) account for nearly 30% of all hospital-acquired infections. From 2009 to 2013, the frequency of CAUTIs increased by 6% with associated increases in length of stay, antibiotic usage and mortality (2.3%); they are also a risk factor for secondary bloodstream infections. In 2017, the CAUTI SIR for the UT Southwestern University hospitals was 0.990 for Clements University Hospital (CUH) and 1.224 for Zale-Lipshy (ZL), placing UT Southwestern above the 50th percentile compared with similar academic medical centers. By the end of 2018, the aim of the quality improvement project was to reduce CAUTIs by 25% or improve the SIR to 0.78, which is at or below the 50th percentile.

Methods. Baseline data included identifying indications and duration of catheter placement as well as performing debriefings on all CAUTIs along with analysis of adherence to the CAUTI bundle. Using evidence-based guidelines, the three primary interventions were (1) streamlining indications for insertion, (2) ensuring prompt removal and (3) providing alternative care pathways after removal. We observed adherence to the CAUTI bundle and catheter care; nursing services were engaged to understand barriers to catheter removal and subsequently informed of other options such as in-and-out protocols, bladder scanners and female external catheters. Nursing leadership also performed daily necessity audits of all patients with indwelling catheters.

Results. Urine output monitoring in acute/critical illness and urinary obstruction/retenion were the top two indications for use. Catheter utilization rates have decreased since 2016. The average dwell time at CUH was 51 hours (excl. urology) and 40 hours at ZL. There was actually a 34% decrease in the total number of CAUTIs from 38 in 2017 to 25 in 2018, exceeding the goal of 25% reduction; the 2018 SIR for CUH was 0.818 and 0.496 for ZL. The prevention of 13 CAUTI events from 2017 to 2018 resulted in ~$180,000 savings.

Conclusion. Successful reduction of CAUTIs is an interdisciplinary effort requiring consistent attention and support from infection prevention, nursing, education, quality improvement, IT and hospital administration. Empowering nursing staff, providing clear protocols post-removal and options for alternative external urinary devices is key.
1156. Running on Empty: Enlisting Transportation Services in Quality Improvement Initiatives as a Safeguard Against Catheter-Associated Urinary Tract Infections
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Background. Patient transportation for off unit procedures is associated with transfers from bed to chair to examination tables, frequent elevation of the urine collection bag (UCB) above the bladder and urinary reflux (UR) of bacteria-laden urine into the bladder, significantly increasing risks of catheter-associated urinary tract infection (CAUTIs). If UCBs were systematically emptied prior to transportation the likelihood of UR would be greatly diminished, potentially reducing CAUTIs.

Methods. During a 5-week period transportation services (TS) collected baseline data on UCB status of all ICU patients, classifying them as empty/good to go vs. full/not good to go (Phase 1). Then, TS were educated on the importance of reducing UR as part of CAUTI reduction and were empowered to request UCBs be emptied. In parallel, unit-based staff were instructed to drain CBs prior to patient transport off unit and to expect the TS would refuse transport if CB was not emptied (Figure 1). Wireless voice-activated communications devices were used to improve coordination between TS and unit staff. During a 3-month (Phase 2) period, TS again collected data on the UCB status of ICU patients while reinforcing the need to empty UCBs.

Results. At baseline it was a coin toss as to whether a patient’s UCB would be empty or full at the time of transportation, while over 90% of UCB were emptied in Phase 2 (47.1% and 52.9%, vs. 90.6% and 9.4%, empty and unemptied in Phase 1 and Phase 2, respectively, P < 0.001) (Figure 2). Figure 3 shows the detailed UCB status (empty at TS arrival, emptied upon TS request, transported full, transport refused) during Phase 2, with significant month upon month improvements (P = 0.014).

Conclusion. Despite longstanding existing hospital policies promoting best practices, including the need to empty UCBs prior to transport, we found this was commonly ignored in usual practice. Recruiting the TS to enforce UCBs are empty at the time of transportation proved a very effective way to markedly improve best practices. If representative of general practices elsewhere, this suggests leveraging TS can help improve coordination between TS and unit staff.

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1157. GET IT OUT! Nurses and Clinical Quality Improvement Specialists Drive Initiative to Reduce Standardized Utilization Ratios for Indwelling Catheters in Hospitalized Patients
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Background. Urinary tract infections (UTIs) account for 34% of all healthcare-associated infections (HAI). Catheter-associated UTIs (CAUTI) are associated with >75% of HAI UTIs among hospitalized patients and >50% of HAI UTIs are UR-related. Bacteria introduced via UC can colonize the bladder within 3 days. So, the greatest risk factor for acquiring a catheter-associated urinary tract infection (CAUTI) is prolonged use of indwelling UC. Nursing (RN) staff noted inconsistency with appropriate use of UC and commonly UC remained in place well after their original indication had expired.

Methods. As part of a multi-faceted approach for quality improvement and patient safety, we rolled out an Agency for Healthcare Research and Quality (AHRQ)-based initiative to reduce UC days/Standardized Utilization Ratios (SUR). Daily critical reviews of the indication for UC were conducted by two groups. First, frontline night shift RN staff identified patients who no longer had a valid indication for continued UC. They handed-off the information to day-shift RN staff who identified patients who no longer had a valid indication for continued UC. They handed-off the information to day-shift RNs, who recommended removal of UC during daily rounds with the physician teams. A second review was performed by Clinical Quality Improvement Specialists (CQIS) based on defined criteria from our nursing decatheterization protocol. Their discontinue UC recommendations were also sent to the care teams. The critical reviews of UC for CAUTI reduction started with 4 ICUs in August 2018, with additional ICUs added in December, January and March. Monthly UC SURs were tracked.

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