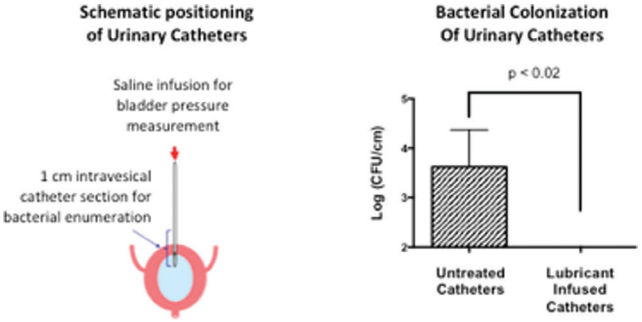
in 1 mL of Amies medium (eSawb, Copan), vortexed and sonicated. Ten microliters of the suspension were plated on URIselect4 medium (Bio-Rad, Hercules, Ca) for bacterial enumeration.

Results. A significant reduction in bacterial colonization with *Enterobacteriaceae* and *Enterococci* was observed in the LICs group ($N = 6$, below 100 CFU threshold) compared with the native catheter group ($N = 5$, average 8200 CFU) ($P < 0.02$).

Conclusion. Lubricant-infused catheters effectively prevent bacterial colonization *in vivo* and provide an attractive and nonselective option for HAUTI prevention.



Disclosures. **All authors:** No reported disclosures.

2109. Reducing Catheter-associated Urinary Infections (CAUTI) in the Intensive Care Unit (ICU): Changing the Culture of Culturing

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Background. CAUTIs are one of the most common preventable adverse events in hospitalized patients. Prior to the start of this intervention, CAUTI rates in our ICU's throughout our multicenter acute care system were significantly above the national average. Our hypothesis was that we could decrease CAUTI's by daily review of the urine culture orders for patients with a Foley catheter.

Methods. We implemented guidelines for appropriate ordering of urine culture for patients with Foley catheters in 2014. The culture was deemed appropriate if the patient had a fever >100.4°F within 48 hours or leukocytosis with no other identifiable source of infection and has one or more of the following: costovertebral angle/flank pain, suprapubic pain, increase in urinary frequency; urgency, frequency or dysuria after catheter removal, acute mental status change, worsening of clinical status. The ordering prescriber was called to cancel the order that did not meet the urine culture ordering guideline. If the ordering prescriber questioned the guidelines, Epidemiologists intervened to explain the rationale. This was a prospective, observational study. Chi-squared analysis was used to compare the reduction of CAUTIs.

Results. The data showed sustained improvement. Compared with the 2012 baseline rate of 4.28 cases per 1,000 device days, the 2013 rate was 2.70 ($P = 0.085$), the 2014 rate was 1.38 ($P = 0.00046$), the 2015 rate was 0.73 ($P < 0.0001$), and the 2016 rate was 0.63 ($P < 0.0001$).

Conclusion. We found that using guidelines combined with an Infection Preventionist review to determine the appropriateness of urine cultures was associated with a significant reduction in the rate of ICU CAUTI's. Real-time culture order review is a sustainable process that has continued the success of our CAUTI reduction program.

Disclosures. **All authors:** No reported disclosures.

2110. Taurolidine-Citrate Lock Solution for the Prevention of Central-Line-associated Bloodstream Infection (CLABSI) in Pediatric Hematology-Oncology and Gastrointestinal Failure Patients with High Baseline CLABSI Rates

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Background. Catheter- line-associated bloodstream infection (CLABSI) is a serious complication of patients on long-term central venous catheters (CVC). Taurolidine-citrate solution (TCS) is a catheter-lock solution with broad- spectrum antimicrobial action that prevents biofilm formation. The aim of this study was to evaluate the efficacy of TCS in reducing CLABSI rate in pediatric patients with long-term CVC at a tertiary children's hospital.

Methods. This was an open-label trial of hematology-oncology (H/O) and gastrointestinal (GI) inpatients with the following inclusion criteria: Pediatric patients < 17 years of age, at least 1 previous CLABSI, required long-term CVC, e.g., long-term parenteral nutrition or undergoing chemotherapy for malignancy and have a minimum dwell time of at least 8 hours for TCS. The period of surveillance was from each patient's first CVC insertion till December 14, 2017 or discontinuation of TCS. CLABSI was calculated based on the number of CVC-associated BSI per 1,000 catheter-days. Statistics were derived using SPSS 19.0 and the student *T*-test for paired samples and nonparametric Wilcoxon analysis for two-related-samples test with a *P* value of < 0.05. OpenEpi v3.01 was used to compare 2 person-time rates and rate ratios with 95% confidence intervals.

Results. Thirty-four patients were recruited with a median age of 3.4 years (IQR 1.5–10.1 years). H/O patients constituted 58.8% ($n = 20$) and GI patients 41.2% ($n = 14$). The majority of CVC were Hickman line ($n = 16$, 47.1%) followed by Port-a-Cath ($n = 8$, 23.5%) and PICC ($n = 10$, 29.4%). The median duration of TCS usage was 138 days (IQR 62.50–307.25 days). The longest duration of TCS was 1737 days (4.8 years). Median pre- and post-TCS CLABSI rates for the whole cohort, H/O and GI patients were 14.92 ± 13.50 and 2.65 ± 4.31 ($P < 0.001$); 16.55 ± 12.96 and 2.81 ± 4.66 ($P < 0.001$); 12.59 ± 14.39 and 2.42 ± 3.91 ($P = 0.011$) per 1000 catheter days respectively. For the whole cohort, pre and post-TCS rate ratio was 0.20 (95% CI 0.12–0.33, $P < 0.001$). TCS reduced markedly the risk of CLABSI for the whole cohort by 80%; for H/O patients by 79% and GI patients by 88%.

Conclusion. Taurolidine-citrate solution was highly successful in reducing CLABSI rates by 80% in patients on long-term CVC with high baseline CLABSI rates.

Disclosures. **All authors:** No reported disclosures.

2111. Changing the Culture: A Quasi-Experimental Study Assessing the Burden of Urine Cultures and the Impact of Stewardship of Testing in an Urban Community Hospital

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Background. Indwelling urinary catheters (IUC) may cause inflammation and colonization, decreasing the diagnostic yield of urinalysis and urine cultures (UC). Indiscriminate testing can lead to misinterpretation of positive results as a catheter associated urinary tract infection (CAUTI), increasing antibiotic use and CAUTI rates. We studied the burden of UC and implemented a UC stewardship initiative (UCSI) as part of a comprehensive CAUTI reduction program.

Methods. A retrospective review of cases with IUC and positive UC in 2014 was performed. UCSI was implemented in March 2017 (Figure 1). Nursing staff were instructed to contact the infectious diseases physician when UC from IUC were ordered. Cases were reviewed and, if no UC indication based on IDSA guidelines was met, cultures were discontinued after conferring with ordering physician. Twelve months pre- and post-intervention data were collected; including case description, catheter days, UC ordered, alternative cause of fever, and recommendations.

Results. The pre-USCI cohort had 23 UC in 19 cases. One UC (4%) met indication (Figure 2). Three (16%) met NHSN criteria for CAUTI and did not meet UC indication. The USCI cohort had 21 UC orders in 13 cases. Most UC did not meet indication and were cancelled (90%, 19/21). Alternative causes for fever were found in all cases with cancelled UC orders (19/19), including pneumonitis, pneumonia, pancreatitis and tuberculosis. Antimicrobials were used in 53% (7/13). UC orders per hospitalization ranged 1–4 (average 1.7). IUC days ranged from 3 to 18 days (average 8). In both cohorts, UC with indication (3) did not meet NHSN criteria for CAUTI and did not receive antimicrobials.

Figure 1. UCSI Implementation.

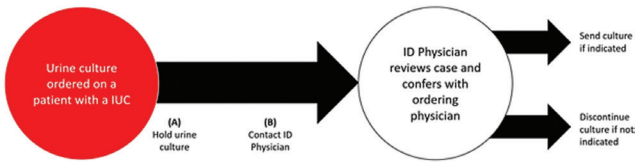
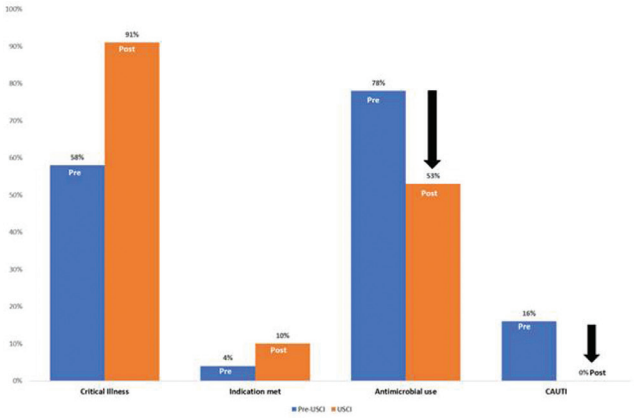


Figure 2. Characteristics of cohorts pre and post-USCI.



Conclusion. Patients with IUC frequently underwent UC without evidence-based indications. This may lead clinicians down the wrong diagnostic path and contribute to antimicrobial use. Critically ill patients with inflammatory conditions are at high risk of UC testing. USCI is a cost-effective intervention that reduced indiscriminate testing, antibiotic use and CAUTIs. USCI can play an important role in CAUTI prevention strategies and antibiotic stewardship programs.

Disclosures. **All authors:** No reported disclosures.

2112. Assessing the Accuracy of Catheter-Associated Urinary Tract Infections (CAUTI) Identification Using Urinalysis Results

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Background. Catheter-associated urinary tract infections (CAUTI) negatively impact patient morbidity, mortality and insurance reimbursement rates in acute care hospitals. Since CAUTIs are solely defined by the National Health and Safety Network (NHSN), not by clinical definition or urinalysis (UA) result, eliminating unnecessary urine cultures will improve the accuracy of reportable CAUTI rates. Negative UA can accurately detect false-positive (FP) CAUTIs in patients with 100% negative predictive value.

Methods. We conducted a retrospective analysis of 2017 CAUTIs reported from two acute care hospitals (A and B) to determine the effectiveness of a UA screening protocol and the distribution of FPs. Hospital B implemented a UA screening protocol requiring a UA prior to urine culture. Hospital A relied solely on microbiology cultures. FPs were identified by a negative UA result, the absence of bacteria, performed on the same or prior day to the urine culture that resulted in a CAUTI.

Results. Our analysis showed that 13 (34%) of the 38 reported CAUTIs with an associated UA result at hospital A were FPs. Patients with a UC line duration >7 days had a CAUTI FP rate of 62% compared with 27% of those with a line duration between 3 and 7 days (Figure 1) (OR 4.6, CI: 0.9, 23.7, $P = 0.09$). Hospital A (no screening protocol) was 37.4 times more likely to have a FP CAUTI compared with hospital B (UA screening protocol) (CI: 2.1, 660.6; $P < 0.0004$).

Conclusion. A positive culture with a negative UA is indicative of asymptomatic colonization, not true infection. Preventing FP CAUTIs would result in a 34% reduction in CAUTI rates at hospital A, placing the hospital in a better reimbursement benchmark (Figure 2). Interventions include: (1) A best practice alert in the patient's electronic medical record that can be used to notify the providers to re-evaluate patients with UCs in place ≥ 5 days, (2) A screening protocol that requires a UA order prior to/during specimen collection and prevents processing of urine cultures with a negative UA. In patients with UCs, a protocol should be implemented to reduce FP CAUTIs to better understand the true epidemiology of CAUTIs in hospitals and increase reporting accuracy.

Figure 1. CAUTI true and false positive rates in patients with urinary catheters during 2017

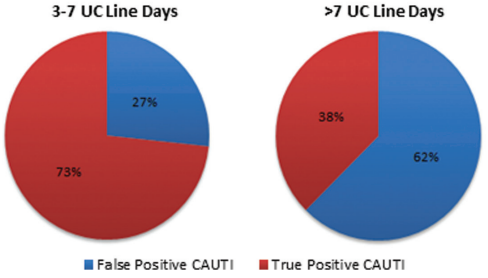
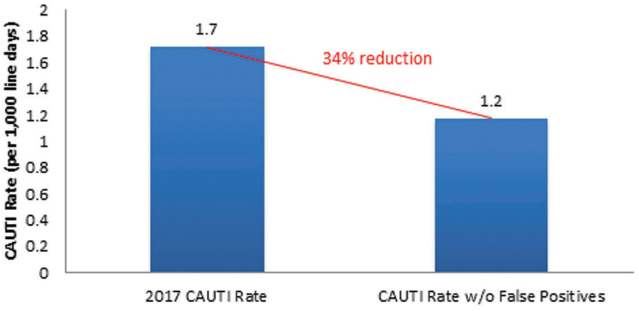


Figure 2. Hospital A CAUTI rates with and without false positives during 2017



Disclosures. **All authors:** No reported disclosures.

2113. Process Change Implementation to Decrease Catheter-Associated Urinary Tract Infections

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Background. More than 50% of catheter-associated urinary tract infections (CAUTI) occur within 5 days of urinary catheter (UC) insertion suggesting poor insertion technique. Breaks in sterile technique and inappropriate UC kit use were observed resulting in increased insertion-associated CAUTI (iCAUTI, CAUTI occurring ≤5 days post-UC insertion). Specific challenges with UC insertion were identified in the emergency department (ED, high patient flow) and critical care units (CCU, high acuity). The objective of the study was to change the UC insertion process in the ED and CCU to reduce iCAUTI.

Methods. The study included pre-intervention (August 2016–May 2017), implementation (June–December 2017) and post-intervention (January–March 2018) periods. The interventions were use of a buddy system for UC insertions and the reduction of UC insertions in the ED. The buddy system involved critical care nurses inserting UC catheters with another healthcare worker present to ensure correct process and identify breaches in sterile technique. The ED was notified of the patients who (1) received a UC within 24 hours of admission and (2) received the UC in the ED resulting in raised awareness and joint effort between ED and CCU. An iCAUTI rate was calculated for each of the three periods. The proportion of UCs inserted using the buddy system and the proportion of admitted patients with UCs inserted in the ED were calculated.

Results. The iCAUTI rate decreased by 75.8% between pre-intervention (0.33 iCAUTI/100 UCs inserted) and implementation period (0.08) and increased slightly in post-intervention period (0.16). The ED demonstrated the largest decrease in iCAUTI rate between pre-intervention (0.40) and post-intervention (0.0). Buddy system adherence was 47.3% for the implementation and 58.2% for the post-implementation period. Patients who had UCs inserted in the ED decreased from 59.8% in pre-intervention, to 42.4% in implementation to 35.1% in the post-intervention period.

Conclusion. A decrease in iCAUTI was observed with the implementation of a buddy system and reduction of UC insertions in the ED. Sustainability of the iCAUTI reduction program will be successful with the use of tools such as electronic medical records as well as culture change and staff buy in. Future directions will include expanding the program to acute care floors.

Disclosures. **All authors:** No reported disclosures.

2114. How to Predict Multi-Drug Resistance in Community-Acquired Urinary Tract Infection? Performance of an Easy and Simple New Scoring Model

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Background. Antibiotic resistance is a growing problem in community-acquired urinary tract infections (CAUTI) leading to significant challenges and costs in the healthcare system. We aimed to propose a reliable and an easy-to-use clinical prediction model to identify patients with multidrug-resistant (MDR) uro-pathogens.

Methods. We conducted a retrospective study including 824 patients with documented CAUTI diagnosed at an infectious diseases department during 2010–2017. Logistic-regression-based prediction scores were calculated based on variables independently associated with MDR. Sensitivities and specificities at various point cutoffs were studied and the determination of area under the receiver operating characteristic curve (AUROC) was performed.