Results. The median age of 824 patients with documented CAUTI was 54 years (IQR = [33–72 years]) and 542 cases (65.8%) were females. MDR germs were found in 372 cases (45.1%). Multivariate analysis showed that aged ≥70 years (Adjusted OR = 2.5; 95% CI = [1.85–3.5]), diabetes (adjusted OR = 1.65; 95% CI = [1.19–2.3]), history of urinary tract surgery in the last 12 months (adjusted OR = 1.23; 95% CI = [1.03–1.5]) and previous antimicrobial therapy in the last 3 months (adjusted OR = 4.6; 95% CI = [3.7]) were the independent risk factors of MDR in CAUTI. The results of Hosmer-Lemeshow chi-squared testing (χ2 = 3.4; P = 0.49) were indicative of good calibration of the model. At a cut-off of 22, the score had an AUROC of 0.71, a good sensitivity (70.5%) but a lower specificity (60%), a PPV of 60%, an NPV of 70% and an overall diagnostic accuracy of 65%. When the cutoff was raised to 6, the sensitivity dropped to 43% and the specificity increased to 85%.

Conclusion. Our study provided an insight into the clinical predictors of MDR in CAUTI. We developed a novel scoring system that can reliably identify patients likely to be harboring MDR uro-pathogens on hospital admission.

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2115. A Successful Bundled Approach to Decrease Catheter-Associated Urinary Tract Infections in a Community Hospital

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Background. Hospital acquired catheter-associated urinary tract infection (CAUTI) is a frequent occurrence in the healthcare setting. There is a known association between catheter duration and incidence of CAUTI.

Methods. We implemented a bundled and step-wise approach to attempt decrease of urinary catheter usage in our institution, a large community hospital with a robust infection prevention department. We hypothesized that decreasing the catheter usage will decrease the incidence of CAUTI. Starting first quarter of 2014 we implemented order sets that prioritized non-invasive urinary management methods such as condom catheters over the use of indwelling urinary catheters; these also included orders to aid in bladder retraining after catheter removal, with very clear and limited indications for catheter re-insertion. The order sets were followed by a best practice alert (BPA) for physicians in the electronic medical record (EMR) signaling the presence of a urinary catheter for longer than 24 hours, implementation of daily safety call, introduction of adult incontinence brief scales and PureWick. There was consistent nursing and physician education accompanying any and all changes. The last intervention was in the first quarter of 2017. The urinary catheter utilization rate was calculated as urinary catheter days divided by patient days. We also calculated CAUTI rates per one thousand catheter days.

Results. Data were obtained from all hospital units between 2013 and 2017. We considered the 2013 data to be baseline as it was consistent over the preceding 2 years. The average urinary catheter utilization rate decreased consistently from 23.7% in 2013 to 22.5% in 2014, 19.4% in 2015, 16.6% in 2016 and 14.5% in 2017. The average CAUTI rate per one thousand catheter days decreased from 1.99 in 2013 to 1.92 in 2014, 1.38 in 2015, 1.37 in 2016 and 0.8 in 2017. The absolute number of CAUTI decreased from 52 in 2013 and 2014 to 30 in 2015, 27 in 2016 and 23 in 2017. The absolute number of non-infectious complications decreased slightly from 39.4 to 35.4 events per 1,000 catheter-days (before) and 37.2 (after) [aOR 0.92 (0.82–1.04); P = 0.02]. The proportion of catheters with a documented proper indication went from 74.5% to 90.0% [aOR 4.1 (3.35–4.95); P < 0.001]. Reevaluations increased from 167 to 623 per 1,000 catheter-days [aOR 3.12 (2.92–3.36); P < 0.001].

Conclusion. In this before/after intervention study, a simple bundle of 3 evidence-based measures reduced catheter utilization and led to increases in indicated usage of catheters and daily evaluations. The intervention had a small impact on non-infectious complications, whereas the CAUTI rate remained on a low level. The next step is planning the national rollout of both the surveillance module and the intervention bundle.

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2117. Catheter-related Bacteremia in Hemodialysis Patients on Antibiotic Lock Therapy: Are Antibiotic Locks Ineffective?

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Background. Antibiotic lock therapy (ALT) is used to prevent catheter-related bacteremia (CRB) associated with tunneled or non-tunneled hemodialysis (HD) catheters. ALT exerts its action by preventing intraluminal biofilm formation, a common source of infection with long-term catheters. However, catheters that are in place for ≤2 weeks are most often infected extraluminally. ALT is unlikely to have any impact on extraluminal infection. Our study aims to define the characteristics of CRB in HD patients receiving prophylactic ALT (HD-ALT patients) and investigate for possible lack of efficacy of ALT.

Methods. ALT project was implemented in all HD patients with tunneled/non-tunneled catheters in 3 tertiary care hospitals in Detroit from June 2016 to October 2017. ALT containing Gentamicin (5 mg/mL) was used in 4% normal saline into each catheter lumen after HD. National Healthcare Safety Network (NHSN) criteria were used to define CRB. Retrospective chart review was done in HD-CRB patients.

Results. Out of 3,384 ALT,13 CRB were recorded (eight tunneled and five nontunneled). Nine of 13 patients received all ALT doses. Median duration from catheter insertion to CRB occurrence in these nine patients was 7 days (range 2–380 days) with six (67%) patients having catheter duration of ≤8 days. Three of our 2 CRB patients had catheter duration greater than 8 days (154, 194 and 380 days, respectively). The mean time to development of CRB after beginning ALT were 3.22 (SD ± 1.85). The three patients with prolonged duration of catheterization had catheters inserted long before the ALT project was implemented. Additional details of the HD-ALT patients are as follows: Mean age 61 years (± 10.7), 54% were male, 77% had catheters removed or replaced, one patient died. Most predominant organisms isolated were Staphylococcus aureus 6 (4/6 methicillin-resistant) and Pseudomonas aeruginosa 3. Two of 14 isolated organisms had gentamicin resistance.

Conclusion. A large proportion of ALT patients had catheters for short duration before CRB episode, therefore an intraluminal source of bacteremia due to biofilm formation is unlikely to have occurred. In those HD-ALT patients with long periods of catheterization, ALT duration might not have been sufficient to eradicate biofilm. Therefore, CRB occurrence in our population is probably not due to ALT failure.

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2118. Healthcare-Associated Infection in Intensive Care Patients Infected and Non-infected by Human Immunodeficiency Virus

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