Background. Catheter-associated urinary tract infections (CAUTI) are the most common type of healthcare-associated infection. In an effort to decrease CAUTI rates through proactive prevention, we sought to develop a weighted model of CAUTI risk factors in our patient population.

Methods. A retrospective case–control study was conducted to identify potential CAUTI risk factors in a 401-bed acute care, tertiary academic facility. Data were collected through chart review of CAUTI cases between January 2014 and June 2018. Controls were catheterized patients who did not develop a CAUTI, and were selected based on the corresponding case event date (±7 days) and location. The case to control ratio was 1:2. A multivariable logistic regression was used to identify CAUTI risk factors by stepwise selection. All tests were 2-sided at a 0.05 significance level. All statistical analyses were performed using SAS 9.4.

Results. We reviewed 501 patients. The mean age was 62.7 years and 51% were female. The most common organisms in CAUTI cases (n = 167) were *Escherichia coli* (28.7%) and *Pseudomonas aeruginosa* (18.6%). Median catheterization duration for cases and controls was 8 and 5 days, respectively. Univariate logistic regression analyses revealed the following statistically significant risk factors: female, catheterization duration ≥ 5 days, ADL-dependent, CV A, catheter replacement within 7 days (OR 1.69), CVA, nonoperative room procedure, ADL-dependent, cerebrovascular disease (CVA), nonoperative room procedure, catheter placement in operating room and history of malignancy. The final set of risk factors jointly predicting CAUTI included ADL-dependent (OR 1.69), CVA (OR 7.3), catheter replacement within 7 days (OR 1.85), and catheterization duration ≥ 5 (OR 2.1). The final model’s AUC was 0.72. Risk factors were scored using β coefficients from the final model. The highest score attainable was 20 with CVA receiving the maximum weight. The risk score’s ability to classify infection was measured by AUC of 0.60.

Conclusion. In our study, we have defined contemporary weighted risk factors associated with CAUTI. We intend to utilize these findings to deploy a tiered approach where patients with risk factors will receive ‘advanced’ in addition to ‘basic’ preventive efforts. Additionally, our risk score model will allow for prioritizing efforts.

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1161. Frequency of Urine Cultures, their Positivity, and CAUTI: Analysis of a Large Health System

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Background. Hospitalized patients with bacteriuria are often identified based on positive urine cultures during the workup of urinary tract infection (UTI). However, the frequency of obtaining urine cultures varies between hospitals and may affect the detection of asymptomatic bacteriuria and symptomatic UTI.

Methods. We evaluated the frequency of urine cultures, their positivity and any association to CAUTI in the inpatient setting (excluding emergency department) of 53 hospitals during 2017 and 2018. Total inpatient urine cultures, positive urine cultures and positive urine cultures identified >2 days post-admission were normalized to patient-days. In addition, the rates of positive urine cultures >2 days post-admission were compared per institution to the corresponding CAUTI SIR. We compared small (75,000 patient-days per year). Median size hospitals had significantly higher number of cultures per 10,000 compared with large hospitals (mean difference = 191; P = 0.006), while % positives were significantly lower (mean difference = 8.4; P = 0.02). There was no significant association between the rate of positive urine cultures >2 days after admission and CAUTI SIR (figure).

Conclusion. Our findings underscore the importance of addressing appropriate urine culturing as part of the infection workup in the hospital setting. A lower detection of bacteriuria after 2 days of admission did not necessarily result in a reduction of CAUTI, reflecting the importance of working on a better identification of patients likely to have a urinary tract infection.

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1162. An Evaluation of Metrics for Catheter-Associated Urinary Tract Infections (CAUTIs): A Statewide Comparison

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Background. The Standardized Infection Ratio (SIR) is a metric used to gauge catheter-associated urinary tract infection (CAUTI) prevention, both locally and nationally. The device utilization ratio (DUR) is a process metric that captures catheter harm. More recently, the cumulative attributable difference (CAD) was introduced, which identifies the number of excess infections that need to be prevented to reach the desired goal. Our objective was to evaluate these metrics across all acute care hospitals in Connecticut (CT) by facility size.

Methods. A CAUTI Targeted Assessment for Prevention (TAP) Report for acute care hospitals across CT was generated from 1/1/2018 to December 31/2018, using the National Healthcare Safety Network (NHSN) database. CAUTI events, SIR, DUR, and CAD were compared across all hospitals. The SIR goal of 0.75 was used to calculate the CAD. Hospitals were stratified into large (>425 beds), medium (250 to 424 beds), and small (<249 beds) based on the Healthcare Cost and Utilization Project NIS Description of Data Elements, Agency for Healthcare Research and Quality for urban hospitals in the northeast region.

Results. A comparison of CAUTI metrics for 29 acute care hospitals across CT is shown in Table 1. Median SIR and DUR were 0.97, 1.02, 0.77, and 22%, 14%, 14.5% for large, medium, and small hospitals, respectively. Of the 20 small hospitals, SIR could not be calculated for 5 hospitals, while 2 hospitals had an SIR = 0, as they had no reported infections. Median CAD for large, medium, and small hospitals was 6.17, 1.3 and 0.25, respectively. Note, 40% of small hospitals (1 – CC; as in Table 1) had a negative CAD. Interpreting whether these 8 hospitals with a negative CAD had a DUR higher than 16%.

Conclusion. Based on CT hospital data, metrics like CAD and SIR may be more suitable for larger hospitals or hospitals with higher CAUTI events, whereas CAD may be a more useful metric for smaller hospitals or hospitals with rare events. Hospitals with high SIR and low DUR may represent a population with high-risk catheter use, poor catheter care or higher rates of urine culturing. On the other hand, hospitals with high DUR and low SIR may represent low-risk populations, better catheter care practices or lower rates of urine culturing. Ultimately, we need a combination of metrics to measure preventable catheter harm.
Disclosures. Louise Dembry, MD, MS, MBA, ReadyDock: Consultant, Stock options.

1163. Minocycline EDTA Ethanol (MEDTA•EtOH) Lock Is Highly Efficacious in Rapidly Eradicating Candida auris Biofilm
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Background. Bloodstream infections due to Candida auris are an emerging public health concern due to high prevalence of antifungal resistance and significant rates of patient mortality. C. auris is typically azole-resistant; however, several strains have been identified with elevated MICs to all major classes of antifungals. Previously we reported that a synergistic combination of MEDTA•EtOH was highly effective in a clinical trial that evaluated salvage of catheters in patients with bacterial CLABSIs. We have also previously reported in vitro studies that demonstrated this combination was capable of eradicating ordinary yeast CLABSIs pathogens. In this study we evaluated the ability MEDTA•EtOH lock to rapidly eradicate C. auris biofilms.

Methods. Biofilm eradication of C. auris was evaluated in 10 strains. Candida auris biofilm was grown on silicone discs for 24 hours. Discs were then washed to remove any nonadherent organisms and exposed for 60 minutes to 1 mg/mL Minocycline + 30 mg/mL EDTA + 25% Ethanol (MEDTA•EtOH) lock solution. 1.35% Taurodine + 3.5% Citrate + 1000U Heparin (TCH) lock solution was used as a comparator. Discs were exposed to Muller-Hinton broth as a control. Subsequently discs were sonicated for 15 minutes in 5 mL of saline and quantitatively cultured onto sabouraud dextrose agar. Plates were incubated at 37°C for 48 hours and counted for growth. All testing was conducted with 6 replicates.

Results. Median and range of recovered viable colonies are presented below. MEDTA•EtOH was significantly more efficacious compared with control (P = 0.002) for all strains) in completely eradicating all replicates in all 10 strains of C. auris tested. MEDTA•EtOH was also superior compared with TCH lock solution (P = 0.002) for all strains.

Conclusion. MEDTA•EtOH is highly effective and was superior to TCH and positive control in the rapid in vitro eradication of all 10 strains of C. auris biofilms tested.

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1164. In vitro Antimicrobial Efficacy of Novel Antimicrobial Dacron Vascular Grafts in the Inhibition of Multidrug-Resistant Gram-Negative Biofilm
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Session: 142. HAI, Device-Associated: Vascular Devices
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Background. Vascular graft infections can be a devastating complication in vascular reconstructive surgery. Management of these infections is highly invasive and includes excision of the graft, debridement of infected material, and in situ reconstruction. There is a need for additional strategies for infection prevention in graft surgeries. The minocycline + rifampin + chlorhexidine (MRCH) triple combination had been previously demonstrated to be effective against biofilm formation in central venous catheters. In this study we evaluated in vitro effectiveness and durability of MRCH coated Dacron vascular grafts in inhibiting multidrug-resistant Gram-negative biofilm formation.

Methods. Dacron vascular grafts were coated with MRCH based on a proprietary method. Antimicrobial efficacy at baseline and 3-week durability was assessed using a well-established method. Antimicrobial efficacy at baseline and 3-week durability was assessed using a well-established method. Antimicrobial efficacy at baseline and 3-week durability was assessed using a well-established method. Antimicrobial efficacy at baseline and 3-week durability was assessed using a well-established method. Antimicrobial efficacy at baseline and 3-week durability was assessed using a well-established method. Antimicrobial efficacy at baseline and 3-week durability was assessed using a well-established method. Antimicrobial efficacy at baseline and 3-week durability was assessed using a well-established method. Antimicrobial efficacy at baseline and 3-week durability was assessed using a well-established method. Antimicrobial efficacy at baseline and 3-week durability was assessed using a well-established method.

Results. At baseline and 3 weeks MRCH vascular grafts completely inhibited biofilm formation resulting in an 8-log reduction in bacterial colonization compared with uncoated grafts.

Conclusion. MRCH coated Dacron vascular grafts demonstrated in vitro effectiveness for at least 3 weeks in preventing biofilm colonization by multidrug-resistant Gram-negative pathogens. Further in vitro testing is warranted.

Disclosures. All authors: No reported disclosures.