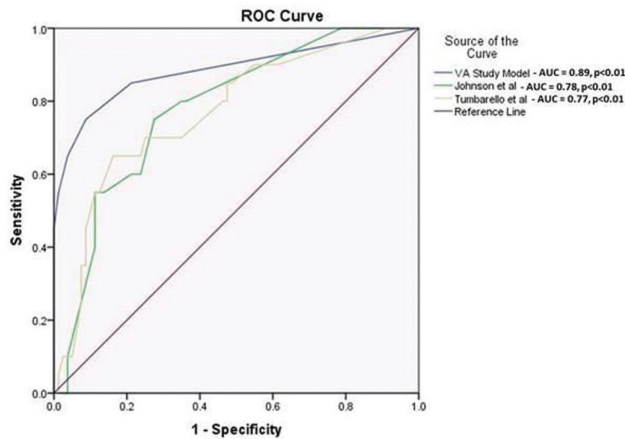


Figure 1. Receiver operator curves for predictive models



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1141. Contemporary Epidemiology of Catheter-Associated Urinary Tract Infections (CAUTIs) in a Tertiary Care Center: Is Foley Re-Insertion a Novel Risk Factor?

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Session: 143. Clinical: UTI
Friday, October 6, 2017: 12:30 PM

Background. CAUTIs are one of the most common causes of hospital-acquired infections. We report on a retrospective analysis performed on prospectively collected CAUTI surveillance data from 2014 to 2016 at a large tertiary care academic hospital

Methods. A total of 181 CAUTIs by NHSN definition were reviewed to describe contemporary demographics, risk factors, microbiology, and outcomes.

Results. The 181 CAUTIs involved 178 patients. 61% were female. Events mostly occurred in an ICU setting (65%), specifically our neurosurgical unit (23%), followed by floors (24%) and intermediate units (11%). Most episodes occurred within a week after the initial catheter insertion (60%). 40% of CAUTIs occurred within an average of 5.5 days (SD ± 5.12) after a Foley re-insertion. Of the 221 cultured micro-organisms, Gram-negatives accounted for 74% (predominately *K. pneumoniae* and *E. coli*), followed by Gram-positives and yeast at 18% and 8%, respectively. 8% of organisms showed multi-drug resistance, 8% of patients developed *C. difficile* co-infections, 23% had concomitant bacteremia, and the length of stay averaged 28 days (SD ± 26.74). 55% of patients were discharged to another facility. 12% of patients expired and 4% were discharged to hospice

Conclusion. We describe the contemporary demographics, microbiology and outcomes of CAUTIs in a large tertiary care center. We also found that 40% of our CAUTIs are associated with a Foley removal and re-insertion event. Reasons requiring catheter exchanges and reinsertions include leakage, bleeding, obstruction, failed voiding trial, and general malfunction. Although this observation needs to be confirmed case control studies and larger observational trials, this new insight may provide an opportunity to intervene and focus infection prevention interventions in this novel high-risk population.

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1142. Impact of Culturing All Uncomplicated Urinary Tract Infections on the Estimated Prevalence Of Resistance in the Primary Care Setting

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Friday, October 6, 2017: 12:30 PM

Background. Urine cultures to confirm a urinary tract infection (UTI) are not consistently collected in the primary care setting; thus estimates of the prevalence of resistance in uropathogens may be biased. As part of an ongoing study, microbiologic cultures were collected for all patients presenting with uncomplicated UTI at primary care clinics over a six-month period to assess the potential misclassification in frequency of resistance.

Methods. Data from an electronic health record repository were used to identify clinic encounters for women with a diagnosis code for unspecified UTI or cystitis from six primary care clinics between October 1, 2015 and February 28, 2017 in this cross-sectional study. Prior to August 22, 2016, urine microbiology cultures were collected at the discretion of the provider (usual care period), and from August 22, 2016 to February 28, 2017 urinary microbiology cultures were collected from all patients suspected of having uncomplicated UTI (full culturing period). Urinary microbiology culture and pharmacy data occurring within three days of the encounter were collected. Antibiotic susceptibility data was summarized for isolated Enterobacteriaceae. Frequency of susceptibility to trimethoprim-sulfamethoxazole (TMP-SMX), nitrofurantoin, and fluoroquinolones were compared between usual care vs. the full culturing periods using a chi-square test.

Results. We identified 131 urine microbiology cultures in the usual care period and 104 in the full culturing period with 61.1% and 55.8%, respectively, being positive cultures. Enterobacteriaceae were isolated from 85.0% of positive cultures in the usual care period and 86.2% in the full culturing period. Between the usual and full culturing periods, antibiotic susceptibility in the Enterobacteriaceae did not differ statistically for TMP-SMX (85.1% vs. 88.0%; *P* = 0.65), nitrofurantoin (98.5% vs. 94.0%; *P* = 0.19), and fluoroquinolones (89.6% vs. 90.0%; *P* = 0.94).

Conclusion. Full culturing did not significantly change estimates of the prevalence of antibiotic resistance among Enterobacteriaceae isolated from urine samples. Current urine culturing practices provide adequate susceptibility information to inform empiric prescribing for women with uncomplicated UTIs.

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1143. Percutaneous Nephrostomy Tube-related Infections

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Friday, October 6, 2017: 12:30 PM

Background. Percutaneous nephrostomy tubes (PCN) are indicated for relief of urinary tract obstruction. These devices are prone to mechanical and infectious complications. The infection rate at 90 days is ±20%. Our objective was to determine whether discordant antimicrobial coverage provided prior to PCN exchange was associated with a higher rate of recurrent infection compared with those who received concordant therapy.

Methods. We retrospectively reviewed 780 patients that had undergone initial PCN placement at our institution between July 2014 and February 2017. We only included patients that had developed a definite PCN infection, subsequent PCN exchange, with a minimum 30 day post-PCN exchange follow up. We defined PCN infection as the presence of a positive urine culture (≥10⁴ cfu/mL) plus symptoms consistent with a urinary tract infection. Recurrence was defined as a new PCN infection with the isolation of the same organism to the initial episode. Antibiotics were defined as concordant if they had activity against all organisms isolated based on antimicrobial susceptibilities.

Results. A total of 47 patients met our inclusion criteria. The median age of patients was 59, with 49% being male. The most common underlying tumors were urothelial (45%), cervical (17%) and prostate cancer (15%). Clinical characteristics included ureteral stents (17%), diabetes (19%), history of GU surgery (38%), and active chemotherapy at the time of PCN insertion (70%). The median time to onset of infection was 42 days. Infections were polymicrobial in 50% of the cases. The most common organisms encountered were *Pseudomonas* spp. (36%), *Enterococcus* spp. (23%) and *Escherichia coli* (18%). The median length of follow up of PCN tubes after exchange was 55 days. There were 12 (26%) recurrences occurring at a median time of 27 days. The provision of discordant antibiotics preceding PCN exchange was significantly associated with recurrence of infection (66.7% vs. 12.8%; *P* < 0.002).

Conclusion. Discordant antimicrobial therapy provided during PCN exchange, in the setting of a PCN infection is associated with a higher rate of relapse. Therefore, to decrease the high rate for PCN reinfection, we propose that prior to PCN exchange secondary to infection, patients should be receiving concordant antimicrobial therapy.

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1144. Characterizing Clinical Demographics, Susceptibility Patterns, and Development of Resistance in *Raoultella ornitholytica* Infections in Southern Virginia

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Background. *Raoultella ornitholytica* (*R. ornitholytica*) is a waterborne Gram-negative bacilli increasingly found in hospitals. Multi-drug resistance has been reported, including to carbapenems. Our objective was to identify demographics of *R. ornitholytica* at Danville Regional Medical Center (DRMC) to determine predisposing factors to infection and potential antibiotic resistance.