one of the crucial competencies, the novice needed to consult reference material about the infectious disease each time due to lack of knowledge. Although the competent CNICs understood the frequent occurrence of infectious disease, they needed the specialist's advice. However, the proficient and expert CNICs could interpret information independently, and importantly, expert CNICs could distinguish between what they know and do not know. **Conclusions:** Using an explanatory sequential mixed-methods approach, we developed a competency model for CNICs that may encourage CNICs to develop their expertise and that is useful in assessing the qualities or abilities of CNICs. In the future, this model can be used to develop systematic educational programs for CNICs.

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Disclosures: None

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Presentation Type:
Poster Presentation

Development of a Risk Prediction Model for Central-Line–Associated Bloodstream Infection (CLABSI) in Patients With Continuous Renal Replacement Therapy

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Background: The number of patients with end-stage renal disease and acute kidney injury in China is large and increasing year by year. Continuous renal replacement therapy (CRRT) is one of the important treatment methods. However, long-time CRRT would inevitably lead to CLABSI, which would seriously affect the treatment and prognosis of the patient. Although CLABSIs can be prevented and controlled, the rate of CLABSI in China is still higher than in other countries. Therefore, it is urgent to find new intervention methods on the basis of existing methods. Surveillance is the prerequisite of infection prevention and control. We sought to develop a risk prediction model for CLABSI in patients with CRRT according to uncontrollable risk factors, which could be used for early assessment and screening of high-risk infection groups. Such a tool would bring the supervision and infection control to the forefront in addressing these issues. **Methods:** We selected 3,103 CRRT patients in the West China Hospital of Sichuan University from January 2013 to December 2018 using the hospital infection and infectious disease monitoring module of electronic medical records (EMR) system with the integration and elimination criteria. Data mining and feature selection were performed using Weka software. Separately, prediction models developed by Weka software and SPSS software were compared with each other using the area under the curve (AUC) method to assess the performance of the forecasting models. **Result:** The incidence of CLABSI in CRRT patients was 8.01 per 1,000 catheter days (238 of 29,711). According to the multifactor regression analysis by SPSS software, the retaining time of dialysis catheter, C-reactive protein levels, total bilirubin, acute pancreatitis, and systemic inflammation reaction syndrome were the risk factors. According to the Youden's index, the cutoff point of the retaining time of dialysis catheter was 5.5 days; the cutoff point of CRP was 112.5mg/L; and the cutoff point of total bilirubin was 14.15 μmol/L. The prediction models of CLABSI for CRRT patients were developed: The AUC of the prediction model developed by SPSS software was 0.763 (95% CI, 0.717–0.809). The receiver operating characteristic (ROC) curve analysis showed that the AUCs of the prediction models developed separately by Weka software using Bayes, logistic regression analysis, multiple layer Perceptron and J48, and SPSS software through logistic regression analysis were between 0.6 and 0.8. Using the down-sampling technique, the AUC ranged between 0.7 and 0.9, and the sensitivity, precision, and κ value increased. Thus, these models had definite clinical significance. **Conclusion:** The prediction models of CLABSI for CRRT patients, developed based on the big healthcare data, not only had good judgment ability, but also had good application value for individual evaluations and the target population.

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Disclosures: None

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Presentation Type:
Poster Presentation

Effectiveness of Stewardship Intervention for Urinary Tract Infections in Primary Care: A Difference in Differences Study

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Adherence to 2011 Infectious Diseases Society of America (IDSA) guidelines for urinary tract infections (UTIs) remains low in primary care. Fluoroquinolones are commonly prescribed to treat uncomplicated cystitis, and most antibiotic prescriptions have durations that exceed current recommendations. We performed a difference-in-differences study to assess the effectiveness of a stewardship intervention in a family medicine clinic at an academic outpatient center from August 2016 to March 2019. During our intervention period, the FDA released 2 additional warnings about the side effects of fluoroquinolones. **Methods:** The study had 2 sites (intervention and comparison) and 3 periods: baseline, before the intervention, and the intervention. During the first 2 years, we obtained baseline data and performed interviews (preintervention period) exploring provider prescribing decisions for cystitis at both sites. During the intervention period at the intervention site only, we presented an educational lecture including an overview of the IDSA guidelines, definitions for various UTI syndromes and actual clinical examples, and instruction on use of a decision aid. During the audit and feedback phase, providers were contacted once per month in person or by phone to provide follow-up on whether their treatment decision adhered to the IDSA guidelines. We performed a log-binomial regression analysis of the primary outcome, adherence to the IDSA guidelines for management of uncomplicated cystitis, both to antibiotic choice and duration of therapy. **Results:** We performed 156 audit-and-feedback sessions with 13 providers during the intervention period (March 2018–2019). Patients in both sites were similar in terms of age and Charlson comorbidity index. Adherence to the guidelines for antibiotic choice and duration increased in the intervention period at both sites (Fig. 1). The treatment of cystitis in the intervention period of the intervention site was 11.5 times (95% CI, 6.1–21.6) as likely to be guideline-adherent as the treatment in the baseline period of the comparison site (Fig. 2). **Conclusions:** Adherence to IDSA guidelines for the choice of antibiotic and duration increased in both intervention and comparison sites. Even though the intervention site started with higher compliance, improvement was also greater in the

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intervention site. FDA warnings about the side effects of fluoroquinolones released during the intervention period may have contributed to the avoidance of fluoroquinolones at both sites. Our intervention was effective at improving antibiotic choice and duration, so our future plans include incorporating our decision-support algorithm into the electronic medical record.

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Disclosures: None

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Presentation Type:
Poster Presentation

Effectiveness of Dry Hydrogen Peroxide on Reducing Environmental Microbial Bioburden Risk in a Pediatric Intensive Care Unit

Mario Melgar, Unidad Nacional Oncologia Pediatrica; Marylin Ramirez, Unidad Nacional de Oncologia Pediatrica; Laura Matheu, UNOP; Miguel Gomez, UNOP; Jose Amadeo Ferrolino, St. Jude Children's Research Hospital

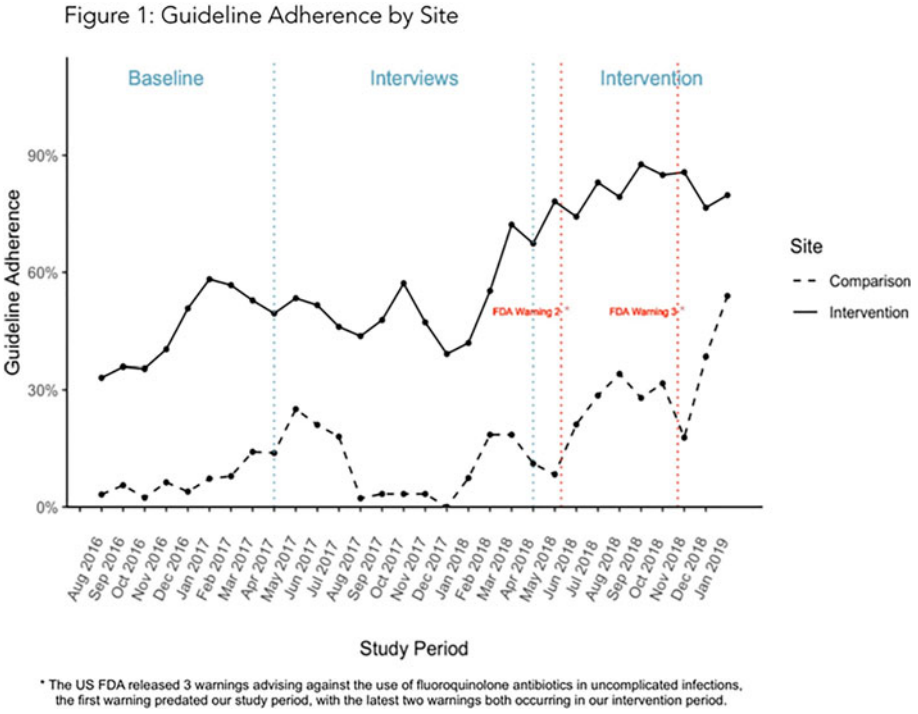

Fig. 1

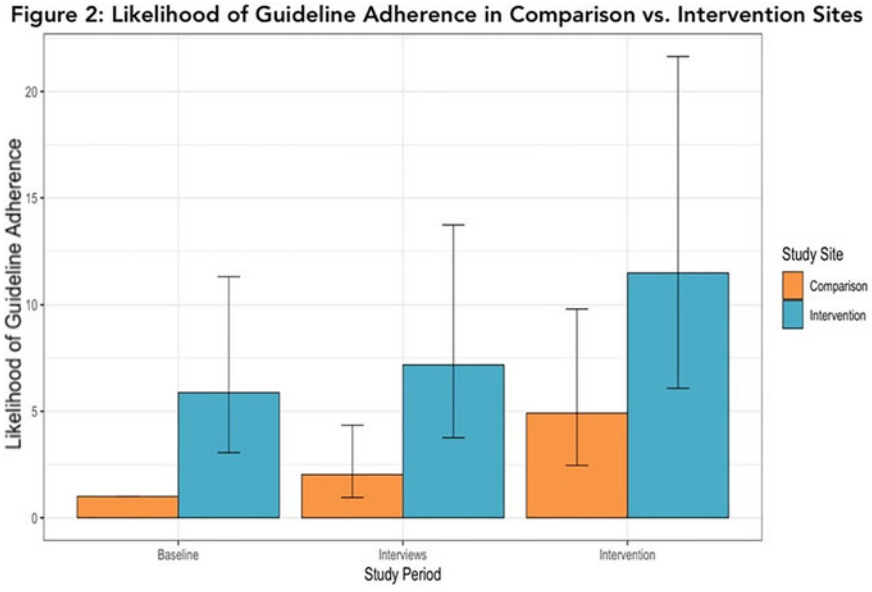

Fig. 2.

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