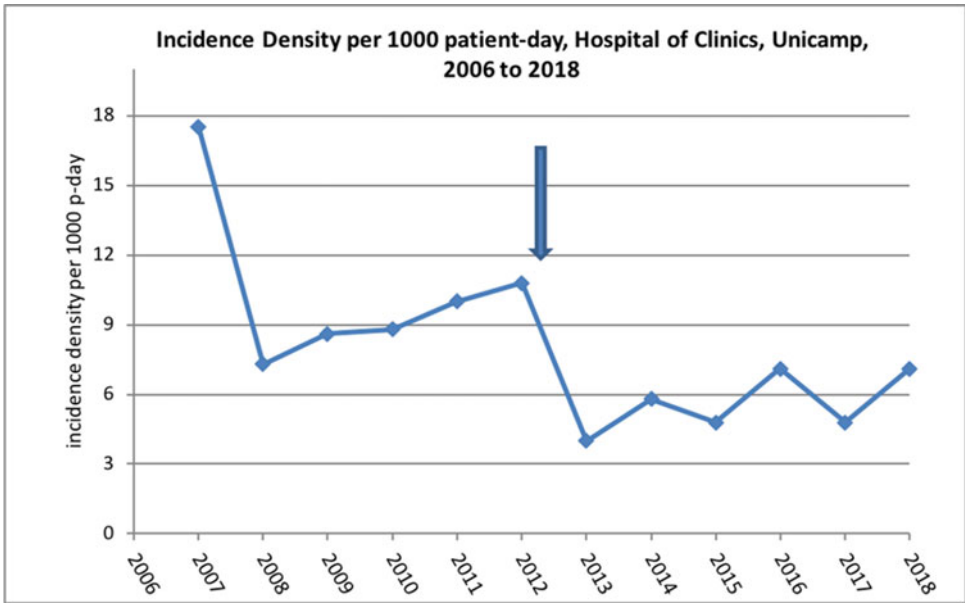

Fig. 1.

Presentation Type:
Poster Presentation

Impact of Positive Vancomycin-Resistant *Enterococcus* (VRE) Screen Result on Appropriateness of Definitive Antibiotic Therapy

Jenna Reynolds, Mayo Clinic Arizona; Lynn Chan, Mayo Clinic Arizona; Raelene Trudeau, Mayo Clinic Arizona; Maria Teresa Seville, Mayo Clinic Arizona

Background: Vancomycin-resistant *Enterococcus* (VRE) screening has been utilized to identify colonized patients to prevent transmission. However, little is known about the utility of screening to guide antibiotic therapy. We assessed the appropriateness of definitive therapy in patients with a VRE screen and evaluate the predictive value of screening for the development of a VRE infection. **Methods**: In this retrospective study, we evaluated VRE screening of patients aged ≥18 years admitted between June 1, 2015, and May 31, 2018, to a 280-bed, academic, tertiary-care hospital. Rectal swabs were tested using Cepheid Xpert. Screening was performed routinely on admission for hematologic malignancy and liver transplantation patients. Only the first screen result was included for patients who had multiple VRE screens. The patient was classified as having a VRE infection if any *Enterococcus* isolates were vancomycin resistant. The primary outcome was appropriateness of antibiotic therapy in patients who had a VRE screen. Appropriateness of VRE-directed therapy was defined as therapy with linezolid or daptomycin for patients who had a positive VRE culture and an identifiable source of infection, or who had no clinical improvement on alternative therapy, or who had a documented β-lactam allergy. If appropriateness was unclear, 2 infectious diseases specialists determined appropriateness. **Results:** In total, 1,374 patients who had a rectal VRE screen met inclusion criteria. Of these, 1,053 (88%) had a negative screen. We detected no difference in the appropriateness of VRE-directed therapy between patients with a positive screen and those with a negative screen (59.3% vs 61.0%; $P = .8657$). The VRE screen had a sensitivity of 60% (95% CI, 43%–74%), specificity of 90% (95% CI, 88%–92%), positive predictive value of 18% (95% CI, 12%–25%), and negative predictive value of 98% (95% CI, 97%–99%) for VRE infection. **Conclusions:** Although VRE screening may have utility to detect colonization in high-risk patients, a positive VRE screen is of limited value in determining the need for VRE-directed therapy. Patients with a negative VRE screen have a low likelihood of developing a VRE infection, and a negative screen could be used to identify patients who may not require empiric coverage for VRE. Further research is needed to determine optimal utilization of VRE screening for prediction and treatment of VRE infections.

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Poster Presentation

Impact of Rapid PCR Influenza Testing on the Rate of Inpatient Admissions During Influenza Season at a Tertiary-Care Center

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Background: Influenza causes a high burden of disease in the United States, with an estimate of 960,000 hospitalizations in the 2017–2018 flu season. Traditional flu diagnostic polymerase chain reaction (PCR) tests have a longer (24 hours or more) turnaround time that may lead to an increase in unnecessary inpatient admissions during peak influenza season. A new point-of-care rapid PCR assays, Xpert Flu, is an FDA-approved PCR test that has a significant decrease in turnaround time (2 hours). The present study sought to understand the impact of implementing a new Xpert Flu test on the rate of inpatient admissions.

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Table 1. Comparison of Inpatient admission rates of each hospital to Flu PCR test (TF vs RF)

Hospital	Traditional Flu (TF) group n (%)	Rapid Flu (RF) group n (%)	Total	*p*
Hospital A	378 (53.9%)	2344 (23.9%)	2722	<0.001
Hospital B	627 (67.7%)	407 (44.1%)	1034	<0.001
Hospital C	483 (57.9%)	490(42%)	973	<0.001
Hospital D	1272 (40.9%)	843 (20.4%)	2115	<0.001
All Hospitals	2760(49.56%)	4084(26.6%)	6844	<0.001

Methods: A retrospective study was conducted to compare rates of inpatient admissions in patients tested with traditional flu PCR during the 2017–2018 flu season and the rapid flu PCR during the 2018–2019 flu season in a tertiary-care center in greater Detroit area. The center has 1 pediatric hospital (hospital A) and 3 adult hospitals (hospital B, C, D). Patients with influenza-like illness who presented to all 4 hospitals during 2 consecutive influenza seasons were analyzed. **Results:** In total, 20,923 patients were tested with either the rapid flu PCR or the traditional flu PCR. Among these, 14,124 patients (67.2%) were discharged from the emergency department and 6,844 (32.7%) were admitted. There was a significant decrease in inpatient admissions in the traditional flu PCR group compared to the rapid flu PCR group across all hospitals (49.56% vs 26.6% respectively; $P < .001$). As expected, a significant proportion of influenza testing was performed in the pediatric hospital, 10,513 (50.2%). A greater reduction (30% decrease in the rapid flu PCR group compared to the traditional flu PCR group) was observed in inpatient admissions in the pediatric hospital (Table 1) **Conclusions:** Rapid molecular influenza testing can significantly decrease inpatient admissions in a busy tertiary-care hospital, which can indirectly lead to improved patient quality with easy bed availability and less time spent in a private room with droplet precautions. Last but not the least, this testing method can certainly lead to lower healthcare costs.

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Poster Presentation

Impact of Removal of Automatic 7-Day Stop Orders for Inpatient Antimicrobials

Afia Adu-Gyamfi, Medical College of Wisconsin; Keith Hamilton, Hospital of the University of Pennsylvania; Leigh Cressman, University of Pennsylvania; Ebbing Lautenbach, Perelman School of Medicine, University of Pennsylvania; Lauren Dutcher, Division of Infectious Diseases, University of Pennsylvania

Background: Automatic discontinuation of antimicrobial orders after a prespecified duration of therapy has been adopted as a strategy for reducing excess days of therapy (DOT) as part of antimicrobial stewardship efforts. Automatic stop orders have been shown to decrease antimicrobial DOT. However, inadvertent treatment interruptions may occur as a result, potentially contributing to adverse patient outcomes. To evaluate the effects of this practice, we examined the impact of the removal of an electronic 7-day ASO program on hospitalized patients. **Methods:** We performed a quasi-experimental study on inpatients in 3 acute-care academic hospitals. In the preintervention period (automatic stop orders present; January 1, 2016, to February 28, 2017), we had an electronic dashboard to identify and intervene on unintentionally missed doses. In the postintervention period (April 1, 2017, to March 31, 2018), the automatic stop orders were removed. We compared the primary outcome, DOT per 1,000 patient days (PD) per month, for patients in the automatic stop orders present and absent periods. The Wilcoxon rank-sum test was used to compare median monthly DOT/1,000 PD. Interrupted time series analysis (Prais-Winsten model) was used to compared trends in antibiotic DOT/1,000 PD and the immediate impact of the automatic stop order removal. Manual chart review on a subset of 300 patients, equally divided between the 2 periods, was performed to assess for unintentionally missed doses. **Results:** In the automatic stop order period, a monthly median of 644.5 antibiotic DOT/1,000 PD were administered, compared to 686.2 DOT/1,000 PD in the period without automatic stop orders ($P < .001$) (Fig. 1). Using interrupted time series analysis, there was a nonsignificant increase by 46.7 DOT/1,000 PD (95% CI, −40.8 to 134.3) in the month immediately following removal of automatic stop orders ($P = .28$) (Fig. 2). Even though the slope representing monthly

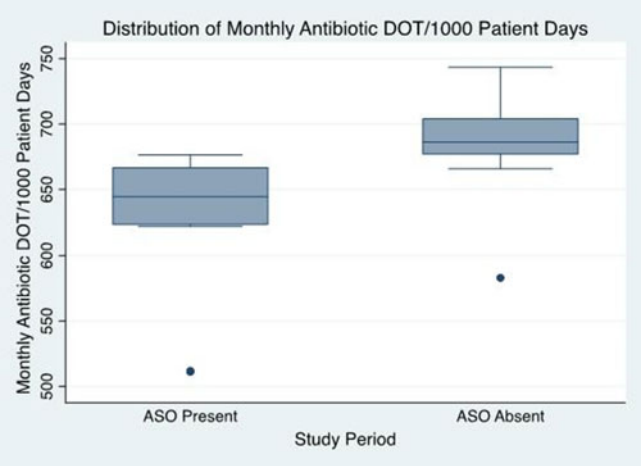

Fig. 1.

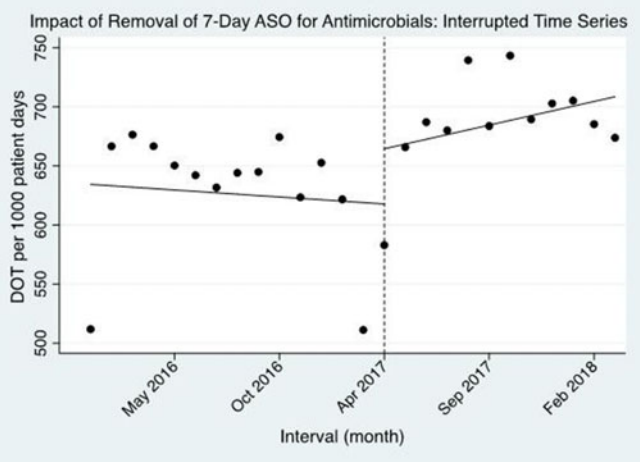

Fig. 2.