1994. Impact of Pharmacist-initiated MRSA Nasal PCR Protocol on Pneumonia Therapy in a Community Teaching Hospital
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Session: 235. Antibiotic Stewardship: Diagnostics and Diagnostic Stewardship Saturday, October 5, 2019: 12:15 PM

Background. Procalcitonin (PCT) monitoring has been shown to result in reduced antibiotic use without an impact on patient outcomes. However, the real-world impact of this biomarker has yet to be determined, particularly when efforts to optimize antibiotic use are already in place. We evaluated the feasibility and impact of PCT-guided antibiotic duration combined with an established antibiotic stewardship program (ASP) in a community hospital intensive care unit (ICU) in Toronto, Canada.

Methods. We conducted a quality improvement initiative in our ICU from November 2017 to October 2018 measuring daily PCT levels for immunocompromised patients receiving antibiotic therapy for suspected or proven bacterial infection with an expected duration between 48 hours and 21 days. Our protocol recommended stopping antibiotic therapy if PCT fell below 0.5 μg/L (absolute threshold) or if it dropped more than 88% from its peak value (relative threshold). ASP rounds took place twice weekly from 2017 to 2018.

Results. A total of 297 antibiotic courses were monitored with PCT in 217 patients. Respiratory (62%), unknown infection (11%), and intra-abdominal infection (7%) were the most common reasons for antibiotic use. Protocol adherence was 34% (absolute threshold: 39%, relative threshold: 12%). Adherence by ICU physician varied (7%) were the most common reasons for antibiotics. Protocol adherence was 34% (absolute threshold: 39%, relative threshold: 12%).

Conclusion. A pharmacist-led MRSA nasal PCR protocol significantly decreased the duration of anti-MRSA therapy and IV antibiotic duration in patients with pneumonia.

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1995. Serial Procalcitonin Measurement in a Community Intensive Care Unit: Is There Value in the Setting of an Established Antibiotic Stewardship Program? Jenny Seah, BScPhm, PharmD, CRE; Daniel Beriault, MSc, PhD, FCAACP; Bradley Langford, BScPhm, ACPR, PharmD, BCPS; Kevin L. Schwartz, MD MSc FRCP(C); Robert Girone, MD, FCP(C); Maria Pasic, PhD; April Chan, BSc(Pharm), ACPR, PharmD, BCPS; Mark Downing, MD, FRCP(C); St Joseph’s Health Centre, Toronto, ON, Canada; St Michael’s Hospital, Toronto, ON, Canada; St Joseph Health Centre, Toronto, ON, Canada; University of Toronto, ON, Canada; Unity Health Toronto - St. Joseph’s Health Centre, Toronto, ON, Canada; St. Joseph’s Health Centre, Toronto, ON, Canada
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1996. Enteric Multiplex PCR Testing: Antimicrobial Stewardship Friend or Foe Mary Ellen Acree, MD1; Erin McElvaney, PhD, DABMM; Angela Charron-Katsikas, MD2; Kathleen Beavis, MD2; Scott Matushek, MS, M(ASC)1; Natasha N. Pettit, PharmD1; North shore University HealthSystem, Evanston, Illinois; The University of Chicago Medicine, Chicago, Illinois; University of Illinois at Chicago, Illinois; University of Chicago Medicine, Chicago, Illinois
Session: 235. Antibiotic Stewardship: Diagnostics and Diagnostic Stewardship Saturday, October 5, 2019: 12:15 PM

Background. There are advantages and challenges associated with enteric multiplex PCR testing. Fast turnaround time can lead to prompt pathogen identification and antibiotic initiation, decreased length of stay and decreased time in isolation. Challenges include identification of multiple organisms, carrier state detection, and detection of organisms with uncertain pathogenic potential, which can lead to unnecessary antibiotic use.

Methods. Two institutions transitioned from stool culture to stool PCR testing for identification of diarrheal pathogens. On February 1, 2016, Center 1 employed the BioFire FilmArray GI Panel, which detects 22 organisms and includes targets of uncertain clinical significance. Center 2 implemented the BD MAX Enteric Bacterial Panel on 3/6/2019, which reports 4 bacterial known pathogens. Fluoroquinolone (FQ) and third-generation cephalosporin (TGC) prescribing in response to positive PCR testing was assessed over a 1 month period. Antibiotics were counted when prescribed within 72 hours of the collection date.

Results. At Center 1, 332 GI PCR panels were ordered, 94 (28.3%) were positive and 15 (16%) were treated; 4 received an FQ (26%), and 11 (73%) received a TGC. Center 1 organisms included 44 Escherichia coli, 7 Sapovirus, 4 Campylobacter species, 2 Giardia lamblia, 2 Rotavirus, 1 Shigella/Enteroinvasive E. coli, and 1 Salmonella species. Of 642 PCR tests ordered at Center 2, 16 (2.5%) were positive and 11 (69%) were treated; 10 (91%) received a FQ, and 1 (9%) received a TGC. Center 2 organisms included 8 non-typhoidal Salmonella species, 5 Aeromonas species, 2 Shigella sonneli and 1 Salmonella typhi.

Conclusion. Implementation of an enteric multiplex PCR test with targets of uncertain clinical significance is more likely to yield an abnormal result than a PCR test with only known pathogens. However, careful interpretation of results will be necessary to determine the impact on antibiotic use. Large studies are needed to definitively assess the impact of the GI panel on antimicrobial prescribing within the context of patient comorbidities and institutional practices.

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1997. Real-World Impact of Accelerate Pheno Implementation with Antimicrobial Stewardship Intervention Patrick M. Kinn, PharmD, MPH; Kelly M. Percival, PharmD, BCPS-AQ ID; Bradley A. Ford, MD, PhD; Dilek Ince, MD; University of Iowa Hospitals and Clinics, Iowa City, Iowa
Session: 235. Antibiotic Stewardship: Diagnostics and Diagnostic Stewardship Saturday, October 5, 2019: 12:15 PM

Background. Accelerate Pheno® (AP) is a novel diagnostic system that provides rapid identification and antibiotic susceptibility results for most commonly isolated organisms within hours of blood culture (BC) positivity. There are little data on this technology's real-world implementation with antimicrobial stewardship intervention and effect on optimal targeted therapy.

Methods. AP was implemented at UHIE in September 2018 and paired with antimicrobial stewardship team (AST) review. AST recommendations were provided in real-time during weekday hours and through a retrospective review process.
for off-hours results. Microbiologic and clinical data were collected prospectively. Due to inconsistencies in instrument performance identified after the first month, two post-implementation periods (Group A = October 2018–January 2019; Group B = February 2019–mid-April 2019) were analyzed to assess quality improvement efforts during clinical roll-out.

**Results.** In the 6.5-month combined period, 690 unique BC samples were run on AP and reviewed by AST (417 in A; 273 in B). Performance of the technology improved, with 78.9% (329/417) of isolates in Grp A identified vs. 85.3% in Grp B (233/273). Percentage of runs with progression to antibiotic susceptibility improved from 76.1% to 92.3%. Over both time periods, AST intervened on 277 samples (Figure 1). Recommendations (bug-drug mismatch, de-escalation, dose optimization, and infectious disease consult) were accepted at a rate of 97.4%. Time from BC positivity to optimal therapy was 15.3 hours (Figure 2).

**Conclusion.** Implementation of AP with AST review resulted in rapid identification and antibiotic susceptibility results with early optimization of antimicrobial therapy. Highest impact was seen in the management of patients with resistant Gram-negative infections. Oversight of the implementation by a partnership of clinical microbiology and the antimicrobial stewardship team was critical in identifying real-time implementation issues and opportunities for quality improvement. Though real-world performance was slightly inferior to published trial data, the instrument’s exceedingly fast time to AS represents a significant advantage over other systems and enhances clinical care and patient safety particularly when paired with AST intervention.

**Disclosures.** All authors: No reported disclosures.

1998. Impact of Rapid Blood Culture Identification with Real-Time Antimicrobial Stewardship (ASP) in Patients with Staphylococcus aureus and Enterococcus spp. Bacteremia at a Large Academic Medical Center

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**Session:** 235. Antibiotic Stewardship: Diagnostics and Diagnostic Stewardship Saturday, October 5, 2019: 12:15 PM

**Background.** Vancomycin and linezolid are antibiotics used in cases where methicillin-resistant Staphylococcus aureus (MRSA) is suspected, including in cases where MRSA is suspected to be the cause of pneumonia. MRSA nasal PCR has been shown to have a high negative predictive value when used to rule out MRSA pneumonia. The purpose of the current study was to determine whether a pharmacist-driven MRSA PCR nasal screening protocol would decrease the time to de-escalation or discontinuation of anti-MRSA therapy when utilized for pneumonia.

**Methods.** Patients were analyzed in two cohorts, those who received vancomycin or linezolid therapy from October 2012 to February 2013 (before pharmacist-driven MRSA nasal PCR protocol; n = 88) and those who received vancomycin from October 2016 to February 2017 (pharmacist-driven MRSA nasal PCR protocol; n = 105). During the study period, physicians were given the authority, via protocol to order an MRSA nasal PCR when vancomycin or linezolid was ordered for the indication of pneumonia. Subsequently, after a negative MRSA nasal PCR, physicians would contact the prescriber, and let the prescriber know that the MRSA PCR was negative, and then discontinue anti-MRSA therapy. The primary outcome was duration in hours of active anti-MRSA therapy; Secondary outcomes evaluated were the number of anti-MRSA antibiotic doses ordered, and the number of vancomycin trough orders.

**Results.** In the pre-pharmacist driven cohort receiving vancomycin or linezolid for a median of 44.19 hours, whereas in patients in the pharmacist-driven MRSA PCR protocol period received anti-MRSA therapy for a median of 19.1 hours (P < 0.0001). Additionally, prior to the initiation of the pharmacist-driven MRSA nasal PCR protocol, patients received 349 doses of anti-MRSA therapy, compared with 283 doses in the pharmacist MRSA nasal swab protocol group (P < 0.0001). There were also fewer vancomycin troughs ordered in the pharmacist MRSA nasal PCR protocol group (76 vs. 48, P < 0.0001).

**Conclusion.** A pharmacist-driven protocol for ordering MRSA nasal PCR led to a statistically significant decrease in the time to discontinuation of vancomycin or linezolid for suspected MRSA pneumonia when the MRSA nasal PCR was negative.

**Disclosures.** All authors: No reported disclosures.

2000. Utilization of a ‘Never Event’ Framework to Classify Antimicrobial Appropriateness

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**Session:** 235. Antibiotic Stewardship: Diagnostics and Diagnostic Stewardship Saturday, October 5, 2019: 12:15 PM

**Background.** Contemporary strategies can be leveraged to predict antimicrobial overuse, yet little information is gained on the appropriateness of antibiotics prescribed. Classifying appropriateness is complicated by the lack of a standard definition for appropriateness. Thus, we created and implemented a novel ‘antibiotic never event’ (NE) framework to systematically classify the most inappropriate usages of vancomycin and correlated these NE to abnormal consumption trends (i.e., antibiotic outbreaks).

**Methods.** Vancomycin use was categorized by an algorithm using data query from electronic medical records. Extracted data included vancomycin use, relevant patient demographics, and microbiological data. Electronic classifications placed each vancomycin therapy into type 1 (use for non-susceptible organism after susceptibility finalization) or type 2 (use exceeding 48h after susceptibility report when a safe de-escalation is possible) NE. Patients were categorized as cases or controls (no NE) at Northwestern Memorial Hospital (NIM) and Henry Ford Hospital (HF)