Aminoglycosides
Categorical agreement Major error rate Very major error rate Minor error rate
Amikacin 62.5% 0.8% 5.8% 30.8%
Tobramycin 67.5% 0.5% 9.2% 22.5%
Gentamicin 58.3% 4.2% 25.8% 11.7%

Conclusion. Automated susceptibility system over predicts the true susceptibility of CRE against all 3 aminoglycosides. This could be a major impact on the potential utility of the aminoglycosides especially amikacin for CRE infections.

Disclosures. All authors: No reported disclosures.

2025. Impact of Automation Process on Microbiological Laboratory Efficiency Suhaiireine Suady Barake, MD,1 Alana Emrick, MLS (ASCP)2 Ying Tabak, PhD3; Andrew Jasen, MPH5; Letha Vankeerupam, MS6; David Sellers, RN2; Fatma Levent, MD7; Department of Internal Medicine, Division of Infectious Diseases, Texas Tech University Health Science Center, Lubbock, Texas; Clinical Laboratory, University Medical Center, Lubbock, Texas; Becton, Dickinson and Company, Franklin Lakes, New Jersey; Becton Dickinson, Franklin Lakes, New Jersey; Clinical Development, Becton Dickinson, Franklin Lakes, New Jersey; Becton Dickinson, Texas Health Science Center, Lubbock, Texas
Session: 234. Diagnostics - Bacterial Identification and Resistance Saturday, October 7, 2017: 12:30 PM

Background. University Medical Center (UMC) Lubbock made a significant investment to improve the quality and efficiency of the microbiology laboratory by implementing the Becton Dickinson (BD) Kiestra Total Laboratory Automation (TLA) system which automates sample setup, incubation and reading. Automation minimizes hands-on steps, increasing efficiency, productivity and quality; impacting the rapid identification of pathogens. This system went live in May, 2015.

Methods. After approval from the Quality Improvement Review Board, a retrospective analysis of electronically captured microbiological data from a BD research database was used to compare pre-installation (January-December 2013) vs. post-installation period (January-October 2016). Twelve common and clinically imical organisms were assessed. The following reporting times were compared: First gram stain, Organism Identification (ID), First antimicrobial susceptibility (AST), and final AST. Reporting time was examined in a 24-hour spectrum divided into day (06:00-17:59) and night (18:00-05:59) shifts. Statistical analysis was performed with SAS software version 9.2. Data was analyzed using Chi-squared test. A p value of <0.05 was considered statistically significant.

Results. Overall 14,179 positive results were reported during the study period. Specimens were collected utilizing time-saving techniques, emergency rooms, critical care units and outpatient locations (35%, 32%, 23%, and 10%, respectively). The most common sources were urine, wound/skin, blood, and respiratory (40%, 25%, 14%, and 10%, respectively). Compared with pre-installation vs. post-installation period, a significant improvement was noted: Time to first gram stain (30% vs. 56%), First organism identification (14% vs. 58%), first AST (8% vs. 62%) and final AST (7% vs. 58%) (P < 0.01) and/or categorical agreement (CA), major (ME) and very major errors (VME) for AST. Positive predictive value (PPV) for the Monomicrobial call in fresh samples was calculated.

Results. Three samples were excluded (1 technical and 2 ID failures) and a total of 51 PBC samples were evaluated and analyzed. Following adjudication of discrepant results, AXDX demonstrated 100% SN and SP, with 97.7% EA and 96.8% CA compared with current laboratory methods. The single VME and 2 of 3 ME were adjudicated to AXDX. The two off-panel organisms did not result in ID or AST from AXDX. The PPV for the Monomicrobial call was 100%. Overall times to ID and AST were reduced by 18.5 hours and 31.2 hours, respectively.

Conclusion. The Accelerate Phenome system demonstrated high performance for both ID and AST of PBC much faster than current laboratory methods. Implementing this system will allow laboratories to provide clinicians with actionable results much sooner, enabling them to optimize therapy earlier to improve patient outcomes.

Disclosures. A. J. Blaschke, BioFire Diagnostics LLC, Collaborator, Has intellectual property in BioFire Diagnostics through the University of Utah and Investigator, Licensing agreement or royalty and Research support

2027. Reproducibility of Cefdetolazona/Tazobactam MIC Results for Enterobacteriaceae and Pseudomonas aeruginosa Using MicroScan Dried Gram-negative MIC Panels

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Background. A multicenter study was performed to evaluate the reproducibility of Cefdetolazona/Tazobactam on a MicroScan Dried Gram Negative MIC (MSDGN) Panel.

Methods. MSDGN panels were evaluated for reproducibility at three sites. For each organism, a total of 17 on-panel organisms were tested on MSDGN panels at each site (14 Enterobacteriaceae and 3 Pseudomonas aeruginosa). Three replicates of each panel were tested each day for three days using the turbidity and PromptTM methods of inoculation. MSDGN panels were incubated at 35 ± 2°C and read on the WalkAway System, the autoSCAN-4 instrument, and read visually. Read times for the MSDGN panels were at 16-20 hours FDA breakpoints (µg/mL) used for interpretation of MIC results were: Enterobacteriaceae ≤ 2/4 S, 4/4 I and ≥ 8/4 R. P. aeruginosa ≤ 4/4 S, 8/4 I and ≥ 16/4 R.

Results. Reproducibility among the three sites was greater than 95% for all read methods for both the turbidity and Prompt inoculation methods.

Conclusion. This multicenter study showed that Cefdetolazona/Tazobactam MIC results for Enterobacteriaceae and P. aeruginosa obtained with the MSDGN panel are highly reproducible.