

2021 BIDMC Gram-Positive Antibigram

How to Use:

Click on the desired organism to highlight the antibiotic sensitivities below.

To select for multiple organisms, hold ctrl

Gram-Positive Organisms	Occurrence
BETA STREPTOCOCCUS GROUP B	30
ENTEROCOCCUS SPP (including E. faecalis & E. faecium)	821
ENTEROCOCCUS FAECALIS	312
ENTEROCOCCUS FAECIUM	202
ENTEROCOCCUS SPP	307
STAPHYLOCOCCUS AUREUS (all)	716
STAPHYLOCOCCUS AUREUS-MRSA	242
STAPHYLOCOCCUS AUREUS-MSSA	475
STAPHYLOCOCCUS, COAGULASE NEGATIVE	383
STREPTOCOCCUS ANGINOSUS (MILLER) GROUP	85

Methodology: Only the first isolate per patient per year is included for the antibiogram year in accordance with CLSI m39-A4E recommendations. Only cultures for diagnostic purposes are included. The BIDMC Antibigram includes isolates from all inpatient units & emergency department.

Antibiotic name Gram-Positive Organisms	AMPCILLIN n %	CLINDAMYCIN n %	DAPTOMYCIN ^A n %	GENTAMICIN n %	LEVOFLOXACIN n %	LINEZOLID n %	NITROFURANTOIN* n %	OXACILLIN n %	PENICILLIN G n %	TETRACYCLINE n %	TRIM/SULFA n %	VANCOMYCIN n %
BETA STREPTOCOCCUS GROUP B		30 40%							30 100%			30 100%
ENTEROCOCCUS SPP (including E. faecalis & E. faecium)	819 67%		173 95%			297 99%	504 75%		316 61%	515 20%		821 67%
ENTEROCOCCUS FAECALIS	312 100%		80 96%			54 100%	170 99%		143 100%	175 18%		312 88%
ENTEROCOCCUS FAECALIS-VRE	36 100%					36 100%						36 0%
ENTEROCOCCUS FAECALIS-VSE	276 100%		68 97%				151 99%		126 100%	154 19%		276 100%
ENTEROCOCCUS FAECIUM	202 8%		92 93%			159 99%	84 24%		118 9%	90 19%		202 24%
ENTEROCOCCUS FAECIUM-VRE	153 1%		73 95%			152 99%	65 25%			70 17%		154 0%
ENTEROCOCCUS FAECIUM-VSE	50 30%								31 35%			49 100%
ENTEROCOCCUS SPP	305 73%					84 98%	250 76%		55 71%	250 23%		307 73%
STAPHYLOCOCCUS AUREUS (all)		666 68%	73 100%	716 99%	704 75%	46 100%	50 98%	716 66%		569 91%	716 97%	252 100%
STAPHYLOCOCCUS AUREUS-MRSA		223 56%	61 100%	241 98%	232 38%	38 100%		242 0%		186 85%	241 94%	241 100%
STAPHYLOCOCCUS AUREUS-MSSA		443 75%		475 99%	472 94%		31 97%	475 100%		383 94%	475 99%	
STAPHYLOCOCCUS, COAGULASE NEGATIVE		305 57%	48 100%	383 81%	375 60%	32 100%	72 99%	383 40%		217 85%		383 100%
STREPTOCOCCUS ANGINOSUS (MILLER) GROUP		85 69%							84 86%			85 100%

Nitrofurantoin* for urine isolates only

^A % susceptible for E. faecium includes susceptible dose dependent for daptomycin

Streptococcus pneumoniae isolates over the past 2 years									
Antibiotic	Ceftriaxone			Penicillin			Penicillin (oral)		
Type	n	MIC	%	n	MIC	%	n	MIC	%
meningitis	48	<=0.5	90.0%	48	<=0.6	60.0%			
non-meningitis	48	<=0.5	90.0%	48	<=2	96.0%	48	<=0.6	60.0%

Presentation Type:

Poster Presentation - Poster Presentation

Subject Category: Antibiotic Stewardship

Creating an electronic antibiogram using visualization software: Easily updatable and removes the need for yearly manual review

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Background: Previously, our hospital manually built a static antibiogram from a surveillance system (VigiLanz) culture report. In 2019, a collaboration between the antimicrobial stewardship team (AST) and the infection control (IC) team set out to leverage data automation to create a dynamic antibiogram. The goal for the antibiogram was the ability to easily distribute and update for hospital staff, with the added ability to perform advanced tracking and surveillance of organism and drug susceptibilities for AST and IC. By having a readily available, accurate, and Clinical and Laboratory Standards Institute (CLSI)-compliant antibiogram, clinicians have the best available data on which to base their empiric antibiotic decisions. **Methods:** First, assessment of required access to hospital databases and selection of a visualization software (MS Power BI) was performed. Connecting SQL database feeds to Power BI enabled creation of a data model using DAX and M code to comply with the CLSI, generating the first isolate per patient per year. Once a visual antibiogram was created, it was validated against compiled antibiograms using data from the microbiology laboratory middleware (bioMerieux, Observa Integrated Data Management Software). This validation process uncovered some discrepancies between the 2 reference reports due to cascade reporting of susceptibilities. The Observa-derived data were used as the source of truth. The antibiogram prototype was presented to AST/IC members, microbiology laboratory leadership, and other stakeholders to assess functionality. **Results:** Following feedback and revisions by stakeholders, the new antibiogram was published on a hospital-wide digital platform (Fig. 1). Clinicians may view the antibiogram at any time on desktops from a firewall (or password)-protected intranet. The antibiogram view defaults to the current calendar year and users may interact with the antibiogram rows and columns without disrupting the integrity of the background databases or codes. Each year, simple refreshing of the Power BI antibiogram and

changing of the calendar year allows us to easily and accurately update the antibiogram on the hospital-wide digital platform. **Conclusions:** This interdisciplinary collaboration resulted in a new dynamic, CLSI-compliant antibiogram with improved usability, increased visibility, and straightforward updating. In the future, a mobile version of the antibiogram may further enhance accessibility, bring more useful information to providers, and optimize AST/IC guidelines and education.

Disclosures: None

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Identifying the relationship between hospital rurality and antibiotic overuse

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Background: Antibiotic overuse and the resulting patient outcomes span all hospitals. However, although antibiotic stewardship can improve antibiotic use, effective stewardship programs require expertise and an infrastructure that are not present in all hospitals. Rural hospitals have less access to resources, infectious disease expertise, and participation in academic research. Thus, we compared antibiotic overuse at discharge between rural and nonrural hospitals for patients diagnosed with community-associated pneumonia (CAP) or urinary tract infection (UTI)—the 2 most common hospital infections. **Methods:** To determine whether antibiotic overuse at discharge was higher among rural versus nonrural hospitals, we analyzed data from a 41-hospital prospective cohort of patients treated for CAP or UTI between July 1, 2017, and July 30, 2019, in Michigan. Antibiotic overuse was defined as treatment that was unnecessary (ie, patient did not have an infection), excessive (ie, duration >4 days for CAP), or included suboptimal fluoroquinolone use (ie, safer alternative available). Overuse was determined based on patient risk