

MICROBIOLOGY SUSCEPTIBILITY UPDATE CASCADE REPORTING

Background: Best practices dictate that de-escalation of antibiotics occur as soon as an organism is identified, and susceptibility results are available. Broad-spectrum antibiotic use in hospitals is inevitable in the era of multidrug resistance. Preferential use of narrow-spectrum agents may reduce the emergence of multidrug-resistant organisms, prevent toxicities associated with broad-spectrum agents, prevent superinfections such as *Clostridioides difficile*, and reduce health-care expenditure.

Cascade reporting (CR) is a less resource intensive tool that hospitals can utilize to encourage de-escalation. The Clinical and Laboratory Standards Institute (CLSI) describes cascade reporting (CR) as a strategy of reporting antimicrobial susceptibility test results in which secondary (i.e., broader-spectrum or costlier) agents may only be reported if an organism is resistant to primary agents within a particular drug class. There are some exceptions such as if a patient has an allergy or adverse reactions to primarily reported antimicrobial.

Each antibiotic/organism combination will follow an agreed upon cascade that is reviewed by the antimicrobial stewardship committee and approved by the pharmacy and therapeutics committee. Results that are suppressed on the antibiotic susceptibility panel are available in the microbiology lab and may be released upon request by provider (i.e., an allergy, adverse reaction, prohibited by renal or hepatic function to a released antibiotic).

The Antimicrobial Stewardship Committee and approved by pharmacy and therapeutics committee has agreed to initiate this practice with a single source and organism combination before rolling out to all sources and organisms.

The initial cascade will be a urinary source growing E. coli. See below for an example.

26	F	M	A	D	MDR	Status	M	A	D	MINT	Status
Nitro					1	Verified				S	S
Amp					4	Verified				R	R
Amp/Sul					1	Verified				S	S
Amox/Cla					1	Verified				S	S
Aut					1	Verified				S	S
Cefaz					1	Verified				S	S
SXT					1	Verified				S	S
Gent					1	Verified				S	S
Tobra	f				4	Verified				R	R
Amik					1	Verified				S	S
Cefur					1	Verified				S	S
Cefox					1	Verified				S	S
Cefti					1	Verified				S	S
Pip/Taz	f				1	Verified				S	S
Cefep	f				1	Verified				S	S
Cipro	f				1	Verified				S	S
Levo	f				1	Verified				S	S
Ceftaz	f				1	Verified				S	S
Tetra	f				1	Verified				S	S

1st Only first line antibiotics will be shown unless one is resistant (R) or intermediate (I)

2nd Second line options will be released if any of the first line antibiotics are resistant (R) or intermediate (I)

3rd Third line options will be released if any of the second line antibiotics are resistant (R) or intermediate (I)

Results that are suppressed on the antibiotic susceptibility panel are available in the microbiology lab and may be released upon request by provider (i.e., an allergy, adverse reaction, prohibited by renal or hepatic function to a released antibiotic).