



HEALTH PROFESSIONAL GUIDELINE

ANTIMICROBIAL SUSCEPTIBILITY CHANGES

July 2020

INTRODUCTION

Medlab Central follows the European Committee on Antimicrobial Susceptibility Testing (EUCAST) guidelines for antibiotic testing. We plan to introduce the latest EUCAST changes in mid-August 2020. The main changes are detailed below:

REPORTING OF SOME ORGANISMS AS “Susceptible, increased exposure” OR “Resistant” ONLY

Breakpoint changes will lead to some organisms being reported as “Susceptible, increased exposure” or “Resistant” only, never as “Susceptible”. This is the case for bacteria that require a high exposure of a specific antibiotic even if they have, for that bacterium, a “normal” susceptibility to the antibiotic.

Examples of such combinations are:

<i>Enterobacterales</i>	cefuroxime iv
<i>Pseudomonas aeruginosa</i>	piperacillin-tazobactam, ceftazidime, cefepime, ciprofloxacin
<i>Haemophilus influenzae</i>	amoxicillin oral, amoxicillin-clavulanic acid
<i>Stenotrophomonas maltophilia</i>	cotrimoxazole

AMINOGLYCOSIDE REPORTING

General

Aminoglycosides are routinely reported only on *Enterobacterales*, *Pseudomonas* and *Acinetobacter* spp. The aminoglycoside breakpoints now refer only to infections originating from the urinary tract.

When used for treatment of systemic infections, aminoglycosides are generally used in combination with antimicrobial agents in other classes. EUCAST no longer provide true aminoglycoside breakpoints for systemic infections, but, instead, cutoff values to exclude isolates with acquired resistance mechanisms to the respective agent. Non-urine isolates will still be reported as “Susceptible” or “Resistant”, but, when “Susceptible” the result will be joined by a comment saying; *If an aminoglycoside is used for a systemic infection it generally must be supported by other active therapy.*

Pseudomonas aeruginosa

The activity of gentamicin is significantly weaker for *Pseudomonas aeruginosa* than that of other aminoglycosides. On the basis of available information, EUCAST has decided that the use of gentamicin for *P. aeruginosa* infections should be discouraged and gentamicin will no longer be reported for *Pseudomonas aeruginosa*. Tobramycin will be reported instead.

ADDITIONAL ORAL ALTERNATIVES FOR UNCOMPLICATED UTI

Fosfomycin and mecillinam are oral treatment options for uncomplicated UTI caused by most of the organisms within *Enterobacterales*.

These antibiotics are not funded in the community and will generally only be reported on request. They may be treatment options for instance for ESBL-producing bacteria or other multiresistant *Enterobacterales*

S I R TESTING CATEGORY DEFINITIONS

As a reminder, the definitions of susceptibility testing categories were changed in 2019 to reflect the need for correct exposure of the microorganism being treated. The intermediate category is now reported as Susceptible, increased exposure. Medlab Central introduced these changes last year

S – Susceptible

A microorganism is categorized as "Susceptible, standard dosing regimen", when there is a high likelihood of therapeutic success using a standard dosing regimen of the agent.

I - Susceptible, increased exposure* - A microorganism is categorized as "Susceptible, Increased exposure*" when there is a high likelihood of therapeutic success because exposure to the agent is increased by adjusting the dosing regimen or by its concentration at the site of infection.

R - Resistant A microorganism is categorized as "Resistant" when there is a high likelihood of therapeutic failure even when there is increased exposure.

**Exposure is a function of how the mode of administration, dose, dosing interval, infusion time, distribution and excretion of an antimicrobial agent will influence the infecting organism at the site of infection.*

LINKS TO FURTHER INFORMATION

1. General information about SIR definitions <https://www.eucast.org/newsiandr/>
2. Dosage that the susceptibility results refer to:
https://www.eucast.org/fileadmin/src/media/PDFs/EUCAST_files/Breakpoint_tables/Dosages_v_10.0_Breakpoint_Tables.pdf
3. Revised aminoglycoside breakpoints 2020
https://www.eucast.org/fileadmin/src/media/PDFs/EUCAST_files/Guidance_documents/Aminoglycoside_guidance_document_20200424.pdf