



## IMPORTANT INFORMATION FOR ALL CLINICIANS

# New High Dose Antibiotic Susceptibility Category

## Susceptible – increased exposure replaces Intermediate result

All clinicians are advised that from 1st June 2021, the new Antimicrobial Susceptibility Result definitions recommended by EUCAST (the European Committee on Antimicrobial Susceptibility) will apply to all results issued by HSL.

Please note: all UK laboratories are required to implement these changes.

The most significant change, when compared to current reporting, is the re-definition of the 'I' category as highlighted below.

S

### Susceptible, standard dosing regime

A microorganism is categorised 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 categorised as 'Susceptible, increased exposure' when there is a high likelihood of therapeutic success if exposure to the agent is increased **by increasing the dosing regimen or by its concentration at the site of infection**

R

### Resistant

A microorganism is categorised as 'Resistant' when there is a high likelihood of therapeutic failure even when there is increased exposure

## Why are these changes required?

The changes are necessary for two main reasons:

- increasing levels of antibiotic resistance to standard dosing regimens
- recognition that, for some organisms, low-level resistance can be overcome by increasing the dosage of some antibiotics.

You will notice an increased number of susceptible results being reported in the **I – Susceptible, increased exposure category** – providing more options for successful treatment.

In fact for some organisms (e.g. most *Pseudomonas* species) the majority of susceptible results will be reported in the **I – Susceptible, increased exposure** category.

## How should an I – Susceptible, increased exposure result be interpreted and managed?

If an antibiotic susceptibility result was previously reported as I – Intermediate, the clinical tendency was to avoid using this antibiotic agent.

However, a result now reported as **I – Susceptible, increased exposure** indicates a high likelihood of success if the antibiotic is given at a higher dose, increased frequency or at a higher concentration at the site of infection.

Any antibiotic reported as I – **Susceptible, increased exposure** can be used to treat an infection as long as the recommended higher dosing regimen is followed.

**Please refer to the table accompanying this update for details on recommended standard and high dose regimens for antimicrobial agents.**

## Are there separate dosing regimens for oral and IV antibiotics?

Oral and IV antibiotics exhibit different bioavailability characteristics. This means some bacteria may be effectively treated with a standard dose of IV antibiotics but require a high-dose regimen of the oral equivalent.

For some combinations of bacteria and antibiotics, reports will list separate results for IV and oral preparations.

A common example is *Haemophilus influenzae* where the antimicrobial agents amoxicillin and co-amoxiclav will have separate results reported for IV and oral dosing.



## How do I access the high dose regimen advice?

A list of standard and high dose antibiotic regimens for adults is available:

- as a separate document accompanying this communication
- on our website <https://www.hslpathology.com/microbiology/>
- on the EUCAST website using the link [https://eucast.org/clinical\\_breakpoints](https://eucast.org/clinical_breakpoints)

Many hospitals have updated, or are in the process of updating, their antibiotic policies to include the high dosing regimens. If you need advice, please contact your hospital pharmacist or clinical microbiologist.

## Will some results take longer now?

Some samples on initial testing show a result in a zone categorised as an 'Area of Technical Uncertainty' or ATU.

This can occur if there is a large overlap between known susceptible and known resistant populations of a bacterium making it difficult to reliably assign the result to a defined category.

Updated EUCAST guidance recommends additional testing on these samples to identify alternate antibiotics and dosage combinations likely to result in successful treatment. You may receive an interim result of W – Waiting while these tests are performed.

In most cases these additional tests are able to identify alternative antibiotic and dosage combinations to successfully treat the infection.

If additional testing cannot resolve the uncertainty and suitable alternative antibiotics cannot be identified a report of U – Uncertain will be issued and an interpretive comment will be added to aid patient management.

**Thank you for your attention to these important clinical changes and for supporting our microbiology service in providing best practice diagnostic testing to you and your patients.**

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