
Dear colleague,

Important changes in the interpretation of susceptibility testing have been introduced by EUCAST in 2019. These changes mostly result from the introduction of a new **"I"** result category which now stands for **"susceptible at increased exposure**". This new definition emphasizes the relationship between the concentration of the antimicrobial agent at the site of infection and the breakpoints for categorization (S, I and R).

With the NAC, we are witnessing variable levels of implementation of this recommendation. While we acknowledge the pressure that you have been under during the pandemic and accept a flexible timing, we have decided to set a deadline for **nationwide implementation by July 1st, 2022**, and this to:

- Ensure (inter)national harmonization of interpretation of antibiogram results
- Avoid clinical misinterpretation of results between labs, *e.g.,* in the case of patient transfer
- Enable continuous participation in (inter)national surveillance programs
- Succeed in (inter)national quality control programs and retain accreditation/certification

**Why this switch?**

This new definition of "I" is associated with a high likelihood of treatment success, if the exposure to the agent is increased by adjusting to the dosing regimen (or because of its high concentration at the site of infection). **There are now two categories of "susceptibility" which now refers to the isolates categorized as S (susceptible at standard dosage) or I (susceptible at high dose).** The latter highlights the importance of increasing the individual dose, the frequency of dosing, the route of administration and trusting the pharmacokinetics of agents at infected site, which may all significantly increase the exposure. The old definition of "I" (Intermediate) which included the uncertainty of the result no longer exists and should not be used anymore. To address this technical issue, EUCAST has introduced a new notion of "Area of Technical Uncertainty" (ATU, which is not to be considered as a new category of result) and provided general guidelines to manage these results internally by the laboratory.

To achieve proper use of the new EUCAST definitions, we must ensure that the daily posology of antibiotics used locally matches with the dosage levels recommended by EUCAST. For the vast

majority of antibiotics and indications, the guidelines in the infection guide (IGGI) endorsed by the Belgian Society of Infectiology and Clinical Microbiology (SBIMC-BVIKM) match (or exceed) the dose or daily posology on which EUCAST has set the novel SIR breakpoints values. From the NAC, we strongly advise the antimicrobial stewardship groups (GGA/ABG) to **review locally their guidelines for antibiotic dosing and compare these with the EUCAST dosing tables.** In case of use of lower posology, the dosage or number of administrations should be modified locally to conform to the EUCAST breakpoints.

In a broader sense, the creation of the new "I" category intends to **promote adjusting to the correct high posology, rather than switching to broader spectrum antibiotics prescribed at standard dosage** (S category).

Finally, we emphasize the importance to **continue to use the "I" letter in the lab reports**, and not to substitute this by using other letters. All main susceptibility testing devices (automates or readers) and laboratory information systems providers should have their software ready for the implementation of the new EUCAST breakpoints and the electronic transmission of results interpreted accordingly. However, we encourage laboratories to include additional comments (on the change of definitions) to the antibiogram in the lab reports that would be helpful especially during the transition period following the switch.

To help understand, implement and use the new S, I and R definitions in the clinical laboratory, the NAC and EUCAST provides the following material:

- EUCAST **explanatory video** (22 minutes) on the new definitions of S, I and R and on the use of the Area of Technical Uncertainty (ATU).
- In late 2020, there were EUCAST online seminars on how to **implement and use the new susceptibility categories** and on **the use of the ATU** in clinical laboratories.
- In 2021, the NAC organized a webinar of which the **presentations** are available.
- How to handle the ATU in clinical laboratories is described in a **EUCAST guidance document**

We hope to have informed you appropriately, and wish you a swift implementation of these guidelines.

Sincerely yours,

Daniel Te-Din Huang,

President of the National Antibiogram Committee