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Inter-laboratory proficiency on antimicrobial susceptibility testing across six Sub-Saharan African countries

Inhalt

Surveillance of antimicrobial resistance (AMR) in humans, livestock, and the environment is important for early detection and understanding AMR spread across sectors. Although surveillance is mostly carried out in the human health sector, an effective AMR surveillance requires a One Health approach, supported by standardized methods for antimicrobial susceptibility testing (AST) and ring trials for quality assurance.

Seven laboratories across six Sub-Saharan African countries participated in an AST ring trial using disc diffusion, focusing on the detection of ESBL and carbapenem-resistance. The BfR provided the laboratories with ten *E. coli* strains with different resistance profiles. A panel of 14 cephalosporin and carbapenem antibiotics and antibiotic-inhibitor combinations were recommended and data interpretation according to CLSI and EUCAST guidelines were accepted.

Five laboratories performed AST according to CLSI, while two laboratories followed EUCAST guidelines. 3/7 laboratories reported at least 90% of the zone diameter and corresponding interpretation category correctly, when compared to reference values. 3/7 laboratories reported at least 80% correctly, while one laboratory reported 75% correctly.

The majority of laboratories performed properly in the ring trial. Nevertheless, the ring trial highlighted the importance of continuous inter-laboratory quality assessment and identified specific challenges that affect AST results e.g., material quality and availability.

Keywords

Inter-laboratory proficiency, AST, disc diffusion, sub-Saharan Africa, AMR, ESBL, cabapenem resistance

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87

Professional Status of the Speaker

Postdoc

Junior Scientist Status

No, I am not a Junior Scientist.

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