Towards automated blood culture reading in low-resource settings: the Turbidimeter

Pilot testing of the "Turbidimeter", a simple, universal reader intended to complement and enhance bacterial growth detection in manual blood culture systems in low-resource settings.

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Bloodstream infections and antimicrobial resistance are an increasing problem in low-income countries. There is a clear need for adapted diagnostic tools. To address this need, researchers from the Institute of Tropical Medicine (ITM) in Antwerp and Ghent University developed and tested a simple, universal reader prototype that detects bacterial growth in blood culture bottles.

The results of the pilot study with the BactInsight turbidimeter were published in a special issue on "adapted diagnostics for low-resource settings" of the journal Diagnostics. In this pilot study, the research team demonstrated that the turbidimeter performed well using a small set of species, both in ideal laboratory conditions and with continuous measurement. Furthermore they identified improvements to be made.

The next turbidimeter prototype will include refined and additional features. This new prototype will be tested more exhaustively in the SIMBLE study both in the laboratory at the Institute of Tropical Medicine in Antwerp and afterwards during field-testing in Western Africa.