

# Use of MALDI-TOF and Rapid Antimicrobial Susceptibility Testing to manage bloodstream infections



## GEORGIA



**Project sector**  
Humans



**Project partners**  
Ministry of Health

National Centre for  
Disease Control

Avers Clinic

Tbilisi Central  
Hospital



**Timescale**  
1 April 2022 -  
31 December 2022



**ICARS funding**  
73,855 USD



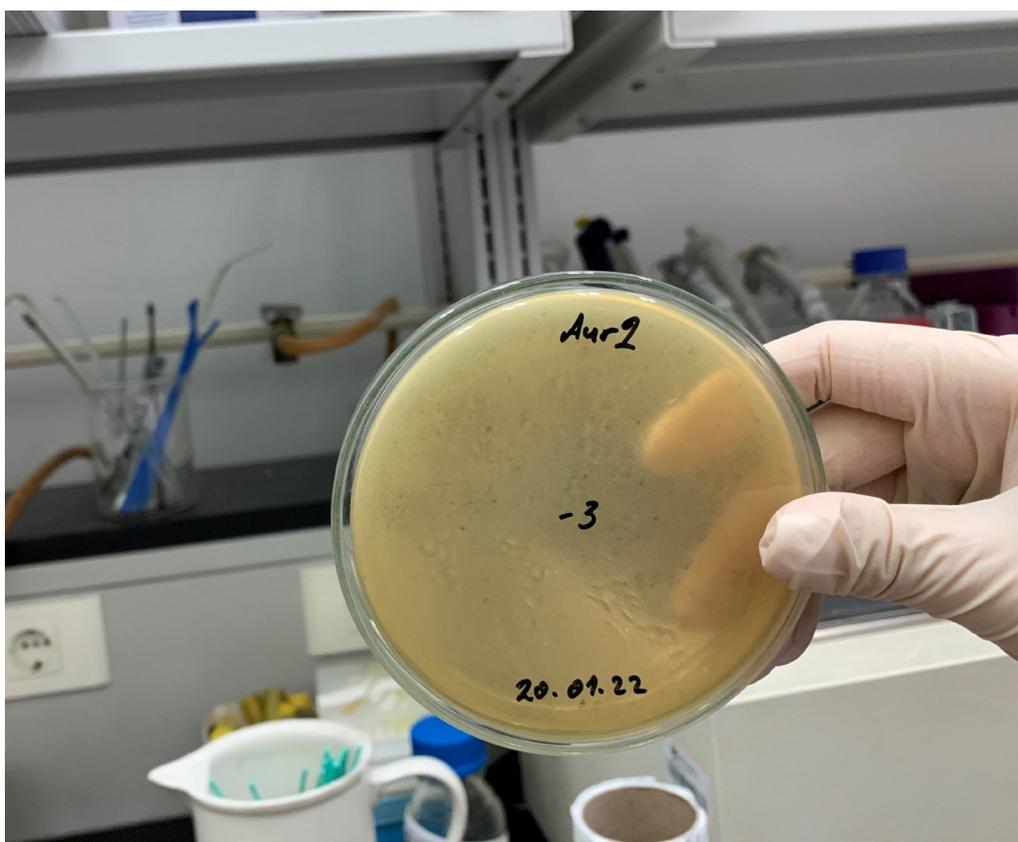
INTERNATIONAL  
CENTRE FOR  
**ANTIMICROBIAL  
RESISTANCE  
SOLUTIONS**

## Context

In the 2000s, hospital acquired infection (HAI) surveillance programmes were initiated in Georgia. These projects aimed at establishing an active surveillance for HAIs including blood stream infections (BSIs). However, achieving sustainability has been a major issue. The results of a comprehensive review of the epidemiology of microbial organisms that were causing HAIs in Georgia have shown that the burden of these infections in the Georgian healthcare system is extremely high. Furthermore, according to WHO's Central Asian and Eastern European Surveillance of Antimicrobial Resistance (CAESAR) Annual Report 2020, the utilization of routine blood culture diagnostics in Georgia is low, due to lack of laboratory capacity and perception of clinical utility.

## Problem

Bloodstream infections (BSIs) are severe infections associated with high morbidity and mortality, thus empirical antibiotic treatment (i.e., therapy initiated without microbiological identification and susceptibility) on suspicion of BSIs is the standard procedure. Nonetheless, there is evidence that empirical antibiotic treatment is associated to a high rate of inappropriate use of antibiotics not only fueling AMR, but also increasing the risk of negative clinical outcomes (i.e., higher morbidity and mortality).



## Project overview

Feasibility study on the use of MALDI-TOF and Rapid Antimicrobial Susceptibility Testing (RAST) as part of an antimicrobial stewardship program for the management of bloodstream infections in all departments in two hospitals located in the capital city, Tbilisi.

The study encompasses two levels of the target population. The first level includes adult patients with suspected BSI. The second level are the health care professionals constituting the Antimicrobial Stewardship team (i.e., clinicians, epidemiologists, microbiologists and pharmacists). A mixed-methods approach includes the implementation of a feasibility trial and a qualitative study.

The feasibility trial will assess the turnaround time from a positive blood culture to report of identification of the bacterial strain, recruitment rate of suspected BSIs within a 3 month period, the need to modify inclusion criteria, data collection procedures and outcomes measures.

The qualitative study will identify whether the study procedures are acceptable for the clinicians during every day practice.

## Outcomes

This project aims to assess the feasibility of using MALDI-TOF and RAST performed at NCDC (Lugar Center) as part of an antimicrobial stewardship program for the diagnosis and management of BSI at all departments in two hospitals in Georgia. The main outcomes include:

1. Knowledge on the cost, and feasibility of the procedures for a larger trial
2. Development of context-specific BSI surveillance protocols and data collection tools.

