ARGOS

Antibiotic resistance global surveillance: helping to develop AMR surveillance systems

Challenges addressed by the project
In many African countries there is insufficient laboratory capacity to diagnose bacterial pathogens and their potential antimicrobial resistance patterns. This is both due to a lack of infrastructure and often inadequate training of laboratory staff.

In addition, only a few countries in sub-Saharan Africa are equipped with surveillance systems for antimicrobial resistance (AMR), resulting in data gaps on bacteria that are of public health relevance.

These weaknesses ultimately result in inappropriate antibiotic treatment for patients, which in turn promotes the development of AMR.

Objectives
The ARGOS project aims to strengthen bacteriological diagnostics, including resistance testing, in selected partner countries to gain a better overview of the AMR situation and thereby introduce sustainable antibiotic resistance surveillance. This is achieved in close cooperation with GHPP-TRICE (Training on Investigation and Control of Epidemics).

In detail
» Support the African partner countries Côte d’Ivoire (CIV) and Burkina Faso (BF) in establishing or improving existing laboratory infrastructure to support bacteriological laboratory diagnostics and AMR testing. This involves implementing validated standard procedures such as blood culture diagnostics and EUCAST (European Committee on Antimicrobial Susceptibility Testing).

» Train laboratory and hospital staff, including on sampling, analysis, and communication of results.

» Connect selected sentinel hospitals and their laboratories in Côte d’Ivoire and Burkina Faso to national AMR surveillance systems.

Overview of activities
The main activities of the project include the construction and expansion of laboratory infrastructures, as well as regular staff training on-site.

For example, the existing laboratory facilities at the Centre Hôpitalier Régional (CHR) Guiglo were converted and expanded and fully equipped with the necessary laboratory materials and equipment.
This was a first essential step in establishing microbiological diagnostics in the west of the Côte d’Ivoire (Image 1).

Following this, a workshop focusing on blood culture diagnostics and resistance testing took place in June 2017 in the Côte d’Ivoire (Image 2). A new blood culture machine was introduced at the CHU Bouaké and local laboratory staff was trained in handling and use of the machine for diagnostics and the documentation of data. In addition, clinicians from various wards were trained in sterile blood culture collection before antibiotic treatment is initiated.

An experienced bacteriology consultant from Mali trained the laboratory teams in microbiological procedures at CHU Bouaké and the Brobo, Tai and Guiglo sites during a two-month stay (Image 3).

In addition, a plan for internal and external quality control in microbiological diagnostics is being drafted. As well as focusing on the continuous monitoring of work processes, maintenance and process controls in the laboratory, it will also include the establishment or improvement of the laboratory consumables supply chain, thereby aiming to create sustainable systems that can survive beyond the duration of the project.

Partner institutions

» Côte d’Ivoire: University Teaching Hospital (CHU Bouaké), University of Bouaké Alassane Ouattara
» Burkina Faso: Centre Muraz (CM) und Center Hospital University Sourou Sano (CHUSS)

Contact/supporting institution in Germany

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