CONGRESSO NACIONAL
VIH, DOENÇAS INFECIOSAS
E MICROBIOLOGIA CLÍNICA

COIMBRA
HOTEL VILA GALÉ
30 DE NOVEMBRO
1 E 2 DE DEZEMBRO 2016

ORGANIZAÇÃO
APECS
SPDIMC

## The Role of Microbiology Laboratory on Antibiotic Stewardship Programs: How Integrated Information Systems Can Leverage it

Alexandra S. Simões[1*], Isabel Couto[1], Melanie R. Maia[1], João Gregório[1], Pedro Póvoa[2,3], Miguel Viveiros[1], Luís Velez Lapão[1]

[1]Global Health and Tropical Medicine, Instituto de Higiene e Medicina Tropical, Universidade Nova de Lisboa
[2]CEDOC, NOVA Medical School/Faculdade de Ciências Médicas, Universidade Nova de Lisboa
[3]Unidade de Cuidados Intensivos Polivalente, Hospital de São Francisco Xavier, Centro Hospitalar de Lisboa Ocidental

Antibiotic resistance is associated with high levels of morbidity and mortality. Strategies to prevent and control antibiotic resistance should be based on antibiotic stewardship programs that promotes enhanced antibiotic prescription. However, control and prevention of infections caused by antibiotic resistant bacteria, also requires a prompt and efficient identification of the etiological agent and a rapid communication with the clinician. In spite of being often unrecognized, good clinical outcomes and a successful Antibiotic Stewardship Program largely depends on the active involvement of the Microbiology Laboratory. In fact, the Microbiology Laboratory is a key element of any Antibiotic Stewardship Program.

The role of the Microbiology Laboratory in an Antibiotic Stewardship Program, covers microbial isolation and identification, determination of antimicrobial susceptibility patterns, epidemiological surveillance and outbreak detection, education, and report of quality assured results. Despite being a hard, time and human resources consuming work, it can be leveraged when combined with integrated information systems.

The use of Information systems can enhance at least three of the functions on the Microbiology Laboratory: surveillance, report of results and timely communication. Information systems that aggregate all the information related with patient, disease, infectious agent and antimicrobial susceptibility, helps outbreaks detection, monitoring antibiotic resistant bacteria, and enhances the exchange of clinical and microbiological relevant data between clinicians and the laboratory.

HAITool is an integrated information system, designed in collaboration with healthcare workers, and in line with the organizational processes, which aggregates clinical, microbiology and pharmacy data. HAITool can be a useful tool for microbiology laboratory staff, since enables report of antimicrobial susceptibility patterns, monitoring antibiotic resistant bacteria, facilitates epidemiological surveillance and improves healthcare workers' communication.

In addition, HAITool is also an evidence based tool for antibiotic stewardship implementation which, through integrated smart algorithms, improves antibiotic prescription and can be used by medical doctors, infection control team, and pharmacy.