![jpiamr - Joint Programming Initiative on Antimicrobial Resistance]

Call: 9th Call – JPIAMR Joint Call on Diagnostics and Surveillance 2019

Title: Establishing a Monitoring Baseline for Antibiotic Resistance in Key environments

Acronym: EMBARK

Project composition

Type	Name	Institute	Country
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Abstract
There is a growing recognition that interventions within the healthcare sector are not enough to curb antibiotic resistance development. Instead, a one-health perspective incorporating animal husbandry and external environments is needed. This calls for monitoring antibiotic resistance outside of the healthcare setting. Unfortunately, antimicrobial resistance monitoring lacks comprehensive reference data for the vast majority of environments. Therefore, there is little knowledge on the range of background abundance and prevalence of antibiotic resistance genes (ARGs) occurring naturally. Furthermore, the few milieus where reference data exist are biased towards a small number of environments and there is no standardized methodology or any well-defined set of relevant ARGs that routinely are tested for monitoring purposes. This project will solve or alleviate these problems by integrating several approaches under one umbrella framework. We will 1) establish baseline ranges for background ARG abundances and diversity in different environments, 2) standardize different methods for monitoring ARGs and provide a means for making them comparable, 3) identify sets of priority target ARGs for monitoring, 4) develop methods to detect emerging resistance threats and thereby provide an early-warning system for resistance, and 5) suggest a monitoring scheme that can be used in a modular fashion depending on the available resources. Establishing a coherent monitoring scheme is imperative for efficient monitoring, which in turn is essential for limiting future resistance development.