Bridging the gap between exposure to AMR in the environment and impact to human health

Exposure to antibiotic resistant bacteria in the environment (water, soil, air) will impact human health involving complex interactions between bacteria and humans. Our network of experts, and advisors, will explore and summarize available tools and study protocols to systematically quantify environmental exposures to antibiotic resistant bacteria. Guidance will be given to standardise surveillance protocols and exposure assessments in order to increase current quantitative knowledge across borders. Detection methods and modelling approaches will be outlined on how to link exposure data and epidemiological data to health impacts from antibiotic resistant bacteria. This involves quantitative exposure assessments from environmental emissions, as well as model development for carriage, excretion, colonization, horizontal gene transfer and dose-response. This will provide guidance to funding agencies and researchers on how to integrate exposure assessments and human health impact assessment into surveillance programs, funding schemes and research proposals/ projects. Environmental transmission routes will be prioritised for future human health impact assessment studies. White papers to define a toolbox of existing approaches, best practices for study setups, and to identify research gaps will be produced by the two working groups responsible for developing guidelines and protocols for exposure assessments and human health impact assessment, respectively.