RESISTIR - Intelligent Decision Support Systems for personalized prevention and clinical management of infectious diseases

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The emergence of "smart hospitals" provides the opportunity for the implementation of novel systems for predictive, personalized, preventive, participatory (P4) medicine, namely in the field of infections diseases. Integration of the information available on the HIS (hospital information systems) enables the production of new knowledge in near real-time to support patient- and episode-oriented decision-making processes for clinical and epidemiological control of infectious diseases in real time.

RESISTIR is an innovative modular, intelligent and dynamic information system allowing analysis and adaptation to epidemiological changes in near real time. By linking different sources of health, social, geographical and climate information, RESISTIR creates adaptive models for detection of infection, treatment failure, forecasting antimicrobial resistance and epidemiological surveillance able to cope with the complex dynamics and epidemiological changes in near real-time, as well as the dynamic identification and control of epidemiological anomalies (hospital and community-borne outbreaks).

This project, intends to contribute for the development and strength of the P4 systems epidemiology by the development of novel analytical approaches for: 1) better understanding the epidemiology of antimicrobial resistance and infection; 2) clinical decision-making in the field of infectious diseases; 3) implementation of personalized antibiotherapy medicine, contributing to more efficient use of antibiotics and a better matching of therapeutics to each patient and clinical case.