*The European Commission is funding a project that will develop a platform for the creation and optimization of health policies*

# CrowdHEALTH: Can the dream of integrating health-related data from multiple sources to support policy making come true?

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Today's rich digital information environment is characterized by the multitude of data sources. The last years have seen the proliferation of new available ICT services applied to the field of ehealth, as well as sensors and applications which support personalized care. Devices and associated services allow collecting extremely large amounts of medical data, such as blood pressure, heart rate, blood sugar levels, etc. But currently collected data are heterogeneous, spread across different health care providers and systems that operate independently. Due to this inadequate integration of the existing technology, as well as the large amount of data, it is quite common that important events related to health are missed.

CrowdHEALTH is a multidisciplinary international project partially funded by the Horizon 2020 programme of the European Commission that will deal with this complex challenge. Its aim is to provide valuable information to support public health authorities in the creation of health policies. The project will deliver a secure ICT platform that seamlessly integrates Big Data technologies across the complete data path, providing Data as a Service (DaaS) and a Data Analysis Toolkit to the health stakeholders' ecosystem. This platform intends to incorporate the collective knowledge that emerges from multiple information sources.

Additionally, CrowdHEALTH proposes the evolution of patient health records (PHR) towards the so-called Holistic Health Records (HHRs) to include additional health determinant data, such as sensors collected data, lifestyle, nutrition, etc. HHRs will be further enriched to become Social HHRs, capturing the clinical, social and human context of the population segmentation and as a result the collective knowledge relating to different factors (e.g. demographics, diseases, lifestyle choices, nutrition, etc.).

CrowdHEALTH will collect and aggregate high volumes data from different regions and institutions in Europe. Data governance mechanisms will ensure cross-sector and multi-actor information exchange, paying attention not only to the quality, trustworthiness and reliability of the information, but also to privacy and regulatory aspects. Innovative visualization and simulation techniques will be implemented to present data in a comprehensive and meaningful way, so as to allow interpretation and analysis for the creation of health policies.

The CrowdHEALTH system will be deployed in five large-scale pilots providing different use case domains where health policies apply. In CrowdHEALTH use cases, data value will emerge from medical centers, social networks, public environments (e.g. schools), living labs, and specific diseases monitoring. The pilots, taking place in Germany, Greece, Slovenia, Spain, Sweden and the United Kingdom, will engage more than 200,000 users, as well as different actors involved in the definition and application of health policies, who will benefit from the added value of CrowdHEALTH collective wisdom and act as propagators of the project results.

CrowdHEALTH started in March 2017 and will last for 3 years. The project is coordinated by Atos (Spain) in collaboration with the University of Piraeus Research Center (Greece) as technical coordinator, and the partnership involves BioAssist (Greece), Care Across (UK), Deutsches Forschungszentrum für Künstlische Intelligenz (Germany), Engineering (Italy), European Federation for Medical Informatics (Switzerland), Fundación para la Investigación del Hospital Universitario La Fe (Spain), Information Catalyst (UK), Jožef Stefan Institute (Slovenia), Karolinska Institutet (Sweden), LeanXscale (Spain), National Institute of Public Health (Slovenia), National Organization for Health Care Services Provision (Greece), Siemens (Romania), Singular Logic (Cyprus), University of Ljubjiana (Slovenia), Universidad Politécnica de Madrid (Spain), University of Southampton IT-Innovation Center (UK).