SMART LIVING HOMES - WHOLE INTERVENTIONS DEMONSTRATOR FOR PEOPLE AT HEALTH AND SOCIAL RISKS

Reporting

Project Information

GATEKEEPER

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SOCIETAL CHALLENGES - Health, demographic change and well-being

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Coordinated by

MEDTRONIC IBERICA SA

Spain

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31 December 2023

Periodic Reporting for period 2 - GATEKEEPER (SMART LIVING HOMES - WHOLE INTERVENTIONS DEMONSTRATOR FOR PEOPLE AT HEALTH AND SOCIAL RISKS)

Reporting period: 2021-04-01 to 2022-09-30
Summary of the context and overall objectives of the project

Over the past decades, mortality rates and birth rates have fallen significantly in Europe and around the world, leading to considerable changes in the age distribution of societies. The increase in life expectancy, however, is dominated by rapid declines in physical and mental capacity for ageing populations. As a result, the European Healthcare Systems are struggling to tackle the significant cost burden of chronic diseases related to the ageing population. We need to offer innovations that will bring support to health professionals and people to achieve better diagnosis, treatment and self-management across the continuum of care and prevention. The GATEKEEPER project aims to create an open, trust-based arena for matching ideas, technologies, user needs and processes, aimed at ensuring healthier independent lives for the ageing population in Europe. GATEKEEPER’s main ambition is to involve more than 40,000 participants in innovative healthcare services and treatments based on Artificial Intelligence, Digital Health and Smart Homes solutions.

To achieve this goal, a value based healthcare approach will allow to define a mechanism enabled by our digital platform that will allow patients to proactively integrate their solutions and data with their healthcare systems and treating professionals allowing for earlier interventions and better clinical, healthcare and business outcomes. Likewise, healthcare professionals will access, through our platform, to a reliable, accurate and meaningful repository of Real-World Data coming from patients and their living environments. Features such data quality checks, conformity mechanisms to make sure that ethics, privacy and security risks are properly avoided, and a certification of the provided solutions, are being included in our platform through the GATEKEEPER Trust Authority. Finally, the usage of existing standards, like HL7-FHIR, Web of Things, among others, will allow our platform to be deployed in real environments and scenarios from 12 healthcare systems across Europe and Asia. The GATEKEEPER project aims to build a platform that will harness the full potential of new technologies to improve healthcare services for some of the most prevalent chronic pathologies. Elderly patients suffering from chronic conditions are the most vulnerable group of population suffering from the Covid-19 pandemic.

Work performed from the beginning of the project to the end of the period covered by the report and main results achieved so far

The main results after 36 months are:

The Platform: an instrument for health care providers to create standardized health data sets from real world data, enabling public-private collaboration with medtech SME and industries, to create AI solutions.

The GK AI Solutions: AI algorithms and models for health and wellbeing monitoring, early risk detection, assessment and intervention, and Integrated Plug&Play services.

The GK Data Cloud: a secure-open-source infrastructure for data federation and advanced big data services, models, and analytics.

The GK Impact: Through the open innovation approach, composed of open calls, twinning and ecosystem co-creation mechanisms, GATEKEEPER has created a Community of Interest (CoI) composed of 240 entities validating the GATEKEEPER business cases, organized in Platform business, AI services business and Data business, all of them under the new forthcoming regulation of the European Health Data Space (EHDS): GATEKEEPER is providing a secure and protected...
environment for primary and secondary use of health data, to be tested with the CoI through living lab approach for regulatory training.

As of month 36 the platform is now fully deployed and executed in all 11 regional healthcare systems and has been validated by the winners of the first open call. The platform is now being adopted by the 7 winners of the second open call. The platform, will be further tested in the remaining period, from a business perspective, by the CoI early adopters.

The execution of the pilot is successful as well because all of them are running, the ethical committees have approved all the studies, the recruitments are now increasing in all the sites and in some cases finalized. All the agreements in relation to the sharing, controlling, processing of the data are in place, constituting an important innovation of the project also in view of the forthcoming regulation on the EHDS. However, the structural delays that the COVID19 pandemic has brought to the healthcare systems in the pilot sites (shortage of personnel, impossibility of involving healthcare personnel in pilot studies, priority from ethical committees in approving other activities in their institutions, impossibility of organizing physical meetings and interviews with patients) prevented them to produce the originally planned amount of data and number of patients. For this reason, an extension of 12 months has been agreed by the consortium, discussed several times with the project officer in 2022 and included in the forthcoming amendment. There is clear commitment and believe from the consortium in reaching all the expected objectives from a qualitative and quantitative standpoint. Interestingly, the problem of getting the due date on time for the generation of the AI services. GATEKEEPER has now put in place a complete pipeline for the generation of AI service, compliant with the EHDS and integrated with the GATEKEEPER platform and with the federated data spaces from each pilot. Also, the AI task force has produced a synthetic data generators to start working with the synthetic data and progressively integrate the data provided by pilots when they are available. The work done by the AI taskforce has also fuelled with ideas, challenges, and requirements the activities done by the business cluster, turning GATEKEEPER in a potential reference implementation of the EHDS for the management of chronic diseases. In a nutshell, GATEKEEPER has produced the following outcomes and inputs:

- Reference Use Cases defined around 9 medical conditions, 83 recommendations, 65 risks & mitigation strategies, involving more than 6000 subjects already
- Mappings of Measures Interventions, Big Data & Key Enabling Technologies (KET): 67 KETs identified and 33 User Stories
- GATEKEEPER AI/ML Strategy defined, through 8 Pilots’ AI/ML Modelling Requirements and a catalogue of 24 AI services with clinical and technical details
- 24 Clinical studies approved by Ethical Committees and Ethical Assessments
- An additional Reference Use Case on COVID-19: the project has developed a COVID-19 survey integrated into the GK data federation, with about 1500 responders (data will be analysed)
- 8 ex-ante impact assessments to show cost-benefit of the GK digital services put in place in the 8 European regional healthcare systems

Progress beyond the state of the art and expected potential impact (including the socio-economic impact and the wider societal implications of the project so far)

We aim at positioning GATEKEEPER as a reference solution enabling open innovation and synergistic collaborations among top level healthcare institutions and research centers, MedTech,
electronics and consumer electronics big industries and SMEs and an ecosystem of startups and a community of developers that, through our open source approach, will ensure sustainability and scalability of our platform. Likewise, innovative business models fostering private-public collaborations through Value Based Care approach and innovative social contracts between healthcare professionals and the community where their patients live in, will pave the way for the spreading of new generation of healthcare services empowered by digital European-led platforms.

**GATEKEEPER Value Journey phases**

**GATEKEEPER Work Packages structure and relation**

**Last update:** 30 June 2023

**Permalink:** [https://cordis.europa.eu/project/id/857223/reporting](https://cordis.europa.eu/project/id/857223/reporting)

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