GATE KEEPER

Call for Twinnings

List of Best Practices from the Gatekeeper Project

Version 1.0

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GATEKEEPER

How to use this document

This document contains a list of best practices that have been developed as part of the Gatekeeper project. These are the best practices that can be scaled up to other regions in Europe through the Gatekeeper Twinning programme.

Now, you can:

1. Read through the different best practices
2. Identify which best practice/s best correspond to the work you are doing in your region.
3. Contact the coordinators of the best practice to see if they are interested in creating a twinning partnership with you. If they are already in a twinning partnership, they may invite you to join the existing initiative.

If you have any questions, please do not hesitate to reach out to the Twinning Coordination team:

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Title of Best Practice	Description	Contact
Best practices from the Gatekeeper Large-Scale Pilots		
Working with people with dementia and their experience of using a specific technological device. Context: **Cyprus Pilot Site**	This best practice will present the design opportunities, pitfalls, and recommendations for the planning and deployment of technologies relevant to people with dementia. It will highlight the experiences of people with dementia who reside within a locked setting or in their own spaces. It will also present the cyclic process of prototyping, testing, analysing, and refining a system in real-world clinical settings specifically designed for people with dementia.	Maria Matsangidou matsangidou.m@gmail.com Organisation: **Stegi Evgirias Archaggelos Michael Kaimaklioy (AMEN)**
Design and execution of pilot studies based on the use of devices to measure daily activities amongst older adults with Chronic conditions. Context: **Puglia Pilot Site (Italia)**	This best practice will present the experience of recruiting low-literate older adults with Type 2 Diabetes (T2D) for an observational, prospective cohort pilot study with the aim to develop a predictive model for glycaemic control of T2D. It will provide the following insights: • use of smartwatch for older adults affected by T2D; • technological issues and possible solutions during recruitment and deployment; • strategies to overcome low digital literacy; • strategies for recruitment and retention of a specific target of population within the hospital environment. • data protection issues	Francesco Giuliani sg.pastore@operapadrepio.it Organisation: **Fondazione Casa Sollievo della Sofferenza Hospital**
Citizen inclusion - Mobile Apps and IoT deployment in the community. Context: **Singapore Pilot**	This best practice will present the experience in the Singapore pilot including: • deployment of more than 100 Fitbit and Mobile Apps within the community • experience on how to carry out and manage the deployment process.	Mounir Mokhtari mounir.mokhtari@imt.fr Organisation: **IMT**

Message-based e-coaching intervention for health promotion in elderly subjects. Context: **Puglia Pilot (Italy)**	This best practice will present the e-coaching programme that is being piloted in the Puglia Region. The system is based on establishing a consistent stream of communication messages (that can be dispatched across different channels) aimed at educating, informing and training elderly citizens towards healthy behaviours. The programme is underpinned by: • a "resource base" containing references to educational material, health facts and factoids and opportunities for adopting healthy behaviours. • a planning system allows to efficiently generate relevant "mini-plans", by filling in generic, ready-made templates with specific resource instances and by establishing suitable time schedules, everything personalized on the basis of the specific needs of groups of subjects. The mini-plans are then sent to a dispatcher that assembles and delivers the messages. Coaching resources can be derived in collaboration with local actors that share an interest in the well-being and quality of life of the elderly population. By doing this, the e-coaching intervention is morphed into a "community-wide" prevention programme where multiple stakeholders collaborate in caring for elderlies and minimising their health risks.	Franco Mercalli f.mercalli@multimedengineers.com
Integrated Care in Aragon Context: **Aragon Pilot (Spain)**	This best practice will present the personalised integrated care plans that are defined per patient in the region for patients who are 65+ years old, with chronic conditions as heart Failure, COPD or polymedicated. Different agents of care providers collaborate to define and agree a care plan and elaborate an agenda of activities to be provided. This includes the ubiquitous monitoring of vital signs without the need of the user interaction, supported by ICT and a follow-up by the health	Rosana Angeles Innovation.hbrb@salud.aragon.es Organisation: **Servicio Aronges de Salud (Aragon Health Sevice)**

	provider. This service is implemented in several use cases for chronic patients aiming to prevent the appearance of new diseases or the destabilization of their current status. In addition, use cases have been implemented for acute patients, when a destabilization of their health status has already occurred and allows them to enjoy from a home hospitalization or an early dismissal from emergency rooms, or allows management of SARS-CoV-2 pandemic COVID-19 patients. In the latter case, a new technology, a cardiac vital sign monitoring patch, is being tested. The main best practices to be shared include: • §Processing of patient's data to predict automatically some events, such as an exacerbation or worsening that could lead to a hospital admission. • §Validation of new technological devices offering either an added value as compared to those already in use or proving to be of a same quality that could allow for their replacement, if required.	
Virtual Reality to accelerate the activation of the Stroke Code: Virtual immersion in real situations with 360° videos as an educational tool in the early identification of signs of a stroke episode Context: **Basque Country Pilot (Spain)**	Recent advances in technology are helping the elderly to provide a gateway to new systems of technological innovation applied to the health system. Among these new advances are immersive technologies such as virtual reality (VR). VR is something normally associated with gaming, but it is also being used to improve the lives of older people around the world by reducing loneliness, improving their mental health and transporting them to remote locations without leaving the comfort of their home. This best practice will present the work being carried out at the Cruces University Hospital. Patients who are survivors of stroke and/or with risk factors for suffering an episode are being recruited to carry out an orientation programme to improve lifestyles in terms of stroke prevention and the early identification of symptoms for rapid activation of the Stroke Code. The aim is to achieve a better	Jon Eneko Idoyaga Uribarrena joneneko.idoyagauribarrena@osakidetza.eus Organisation: **Osakidetza (Basque Health Service)**

	quality of life and longer life expectancy by: • educating in the early recognition of a stroke to reduce the time elapsed until health intervention. • increasing knowledge of this disease to improve adherence to pharmacological and non-pharmacological treatments. • improving self-management and disease empowerment in stroke survivors. The long-term purpose of this project is to increase knowledge about stroke events among patients and those with cardiovascular risk factors.	
Integration of a web application in Osakidetza Basque Health Service information system to optimise and adapt pharmacotherapeutic of multimorbid patients Context: **Basque Country Pilot (Spain)**	This best practice will present the experience of the Basque Pilot Site when integrating a web application (CheckTheMeds) in the health information systems for the management of patients with chronic diseases and polypharmacy. The application aims to optimise and adapt the pharmacological prescription and a mobile application (My Treatment) to improve patient treatment adherence of patients with chronic diseases and polypharmacy. This quasi-experimental study (non-randomised, concurrent, and controlled study) is deployed in 11 Integrated Health Organizations of Osakidetza (Basque Health Service). 275 healthcare professionals (doctors, nurses, and pharmacy staff) from Primary Care centres are participating in the intervention. Their goal is to recruit 1,000 elderly people (intervention and control group) who meet the inclusion criteria (65 age or older, with 2 or more chronic diseases and 9 or more chronic or on-demand medicines prescribed). This best practice will share the results of the integration which aims to demonstrate how a computerized polypharmacy management platform integrated and interoperable in the health information system can help healthcare professionals to revise and adapt the treatments of patients with polypharmacy. This tool will encourage a	Irati Erreguerena Redondo ierreguerena@kronikgune.org Organisation: **Kronikgune Institute**

	greater therapeutic adherence leads to more effective and safer treatments, avoid health complications, and boost a more efficient use of healthcare resources, and improving the coordination among all the key stakeholders. The new model of polypharmacy management can be included in Osakidetza's multimorbid patient pathway.	
Stakeholder-centred design for digital-enabling technologies Context: **UK Pilot (United Kingdom)**	Digital services concern the activities and relationships among multiple stakeholders, from caregivers and caretakers to legal departments, information security, private practitioners, and more. Failing to account for stakeholders' goals and competing needs is a major cause for barriers to adoption, blocks at an organizational level, and even active opposition. Common user-centred design practices can help in instantiating and perfecting a solution for a specific user base and setting in the advanced design stage. Differently, a stakeholder-centred design approach is suitable for an early pre-design stage when the concept, scope, and use cases are yet to be defined. This best practice had been developed in several innovative actions. This twinning will focus on the overall approach, goals, aims, and framing of the stakeholder-centred design within the broad design process of new digital services. Participants will be introduced to the key concepts and a range of examples consolidated via role-playing and hands-on sessions. Lastly, participants will have the opportunity to discuss the benefits of this approach with the stakeholders involved in the design of Gatekeeper services for the UK pilot.	Alessio Antonini alessio.antonini@open.ac.uk Organisation: **The Open University**
Scaling-up and management of community-based care Context: **UK Pilot (United Kingdom)**	Community-based care is a combination of structured social services, support services, and socialisation opportunities aimed to mitigate risks related to social isolation, deprivation, and overall strengthening community cohesion. Socio economical and health major events like economic crisis and a pandemic can stress and overwhelm even the most organised system. Indeed, these events	Alessio Antonini alessio.antonini@open.ac.uk Organisation: **The Open University**

	come with an urgent need of scaling up and managing a larger pool of people in need, while inventing and developing new support targeting emerging needs. In Milton Keynes, we developed a web and App based solution to support the scaling up and management of community-based care tailored on the existing best practices of the Woughton Community Council, 2019 UK best local council for community services. This twinning will focus on the organisation of community support and, specifically, on the criticalities and opportunities of extending and opening to volunteering work during periods of high demands. The twinning will introduce the use of MK: Communities App and how communication technology supports this model of community care.	
Detection of Advanced Parkinson's Disease (APD) using a STAT-ON Holter device synchronized with the GATEKEEPER platform Context: **Basque Country Pilot (Spain)**	This best practice will present the study that aims to identify the status of patients with Parkinson's disease, its evolution and early detection of signs of disease progression. With the early detection of patients with Advanced Parkinson's Disease (APD), the implementation of effective therapies in this phase of the disease (second-line therapies) will be favoured, avoiding complications derived from the delay in diagnosis. It will also allow public health services to monitor the main complications of the disease with quantitative parameters, such as the presence of fluctuations, dyskinesias, falls, freezing of gait, cognitive impairment and neurogenic orthostatic hypotension. To do this, a specific sensor for patients with Parkinson's disease, STAT-ON™ Holter, will be integrated into the GATEKEEPER platform. The STAT-ON™ Holter is an easy-to-manage device. Each device is individualized at the time of its use, and once used, it can be used with another patient. It allows multiple devices to be managed through a single app and only 3 steps are needed to use STAT-ON™ in clinical practice or in a clinical trial.	Jon Eneko Idoyagauribarrena joneneko.idoyagauribarrena@osakidetza.eus Organisation: **Osakidetza (Basque Health Service)**

Design for collective use Context: **UK Pilot (United Kingdom)**	Digital and internet divides are major barriers to innovation, specifically targeting the most deprived parts of society. From our experience, access to devices is the least of the problem, dominated by a wild-spread scepticism toward digital technologies rooted in a lack of basic education, interest, and poor/terrible experiences with scams and various forms of digital-enabled predatory practices. As such, we explored an alternative approach challenging the assumption that digital technologies are for personal individual use, i.e., one person equals one user. This twinning initiative aims to share this journey and the design approaches we developed within the UK pilot about collective use and assisted use of digital technologies. The participants will be challenged to revise the solutions their organization use in light of these divides to rethink how to accommodate family and social support in their use, with the need for privacy and accountability.	Alessio Antonini alessio.antonini@open.ac.uk Organisation: **The Open University**
Challenges and opportunities of robotic intervention in domestic environment Context: **UK Pilot (United Kingdom)**	The development of robotic applications is ramping up, from autonomous navigation, and monitoring to object and activity recognition, remote telepresence, and physical and digital manipulation of smart environments. We see real-life applications in warehouses or parcels and food delivery, however, little work had been done to address healthcare needs in domestic environments like private homes and retirement compounds. This twinning will introduce the results of three years of work on investigating, developing, and testing the application of robots in such environments. The twinning will showcase the state of the art and open challenges of robotic innovation through real-life testing and in-depth discussions of technical and adoption aspects of robot intervention.	Alessio Antonini alessio.antonini@open.ac.uk Organisation: **The Open University**
Digital devices in palliative care for	This best practice will present the use of technological devices in the palliative and supportive healthcare service to improve	Maria Krini

cancer patients Context: **Cyprus Pilot**	symptom management, ameliorate symptoms of depression and anxiety and enhance quality of life in patients with cancer. Key points top be shared in the twinning: • Recruitment strategies. • Retention. • Use of Smartwatch. • Education and technological support. • Involvement of health care professionals.	mariakr@pasykaf.org Organisation: **Paskykaf**
Innovative management of patient adherence with coaching application Context: **Lodz Pilot (Poland)**	Despite negative consequences for the effectiveness of evidence-based therapies, medication adherence remains far from perfect, with many patients not taking their drugs as prescribed. The magnitude of this problem is even rising, due to rapid aging of European societies. Aging leads to multimorbidity and complex therapeutic regimens that create a fertile ground for non-adherence. This best practice will present a solution that at least partly would be able to solve this complex problem that was designed by an experienced team of researchers from Medical University of Lodz. A coaching application called 'My health everyday' provides the patients with functionalities that many other tools are missing. Namely, unlike reminder applications, that try to force the patient to execute drug schedule, not taking into account their preferences, this innovative application is educating patients on the benefits of continuous treatment of long-term conditions. However, even more interesting functionality of this app is the coaching provided according to the patient's needs, being problem solving-oriented. Bidirectional exchange of information between the user and the coaching app allows to tailor advises provided, and assess their effectiveness, in order to build an individual support plan. This app, being currently used within clinical trial condition, is ready for scaling up within the other healthcare systems, and could be flexibly adopted to the needs of e.g. specific condition, or patient group.	Przemyslaw Kardas przemyslaw.kardas@umed.lodz.pl Organisation: **Medical University of Lodz**

Best practices from other areas of the Gatekeeper project		
Good practices for coordinating open calls under the H2020 Financial Support to Third Parties scheme Context: **Management of the Open Calls within the Gatekeeper projects**	According to EU commission, when running the open calls to recruit third parties, it is up to the project consortium to comply with the rules and standards set out in the work programme and with applicable rules on ethics. The Commission has no specific duty to oversee the individual procedures for selecting proposals for funding. Nevertheless, aiming to assist the beneficiaries in the definition of those rules, the Commission provides some good practices and templates. However, the consortium remains responsible for defining the rules and principles that they will apply for selecting third parties EU Commission. While considering the Commission's guidelines, this best practise identifies and discusses lessons learnt from past and existing EU projects, which may be useful to run new open calls for recruiting third parties to extend and exploit its own ecosystem. The Open Call best practice facilities guidelines on proposal submission, evaluation, selection and approval procedure that will ensure a simple, transparent and competitive proposal evaluation and selection process, reflecting the bottom-up, open and inclusive principles. The promotion strategy is part of this best practice, providing a guideline about the communications channels and tools used to reach a critical mass of stakeholder interested on being part of the community. Several tangible materials such as documentation, templates, website information, promotional materials are available to share it through this	Marta Perez Alba marta.perezalba@medtronic.com Organisation: **Medtronic**
Standardization guidelines and templates Context: **Standardisation work carried out in the**	Benefiting both consumers and the industry, information and communication technologies (ICT), standards play a crucial role in achieving interoperability of new technologies. Standards are essential for ensuring competitiveness and they are brought forth by international and national bodies, as well as alliances. During the project, we have identified several challenges related to	Renata Radocz rradocz@mandint.org Organisation: **Mandat International**

Gatekeeper project	standardization, including the (1) lack of understanding on how standardization works, (2) the lack of understanding of the SDO landscape, (3) the lack of understanding from WP8 towards the technicalities of the project, as well as (4) the lack of partners' awareness on what can be standardized. This best practice will present the set of guidelines and templates to make contributions to Standardisation Organisations. They aim to consortium members with standards development processes specific to the various standardisation organisations. They will provide synthetic yet detailed guidance on the contribution submission process specific to SDOs and will include a repository of reference templates to be used for preparing such contributions. The current version of the guidelines includes the ITU, HL7, ETSI, CEN/CENELEC, Standards Norway, AIOTI.	
The Gatekeeper Artificial Intelligence/Machine Learning Strategy: **Setting out to define new mechanisms towards building high-quality AI/ML services upon the European Health Data Space (EHDS).**	Setting as the reference context the Gatekeeper Reference Use Cases, which define the Project's Large-Scale Pilot (LSP) study, we specified in collaboration with medical professionals a set of AI/ML-based Services that would benefit the primary and secondary prevention of the examined chronic conditions, all together constituting the GATEKEEPER AI/ML Reasoning Framework. To ensure the responsible and correct implementation of the AI/ML Reasoning Framework, we defined the GATEKEEPER AI/ML Strategy, a methodical approach tapping into: • methods, techniques, and best practices to the AI/ML models design, development, evaluation, deployment, and monitoring, • guidelines for assessing and reporting AI/ML model.	Eleni Georga egeorga@uoi.gr egewrga@gmail.com **University of Ioannina**

	• the EU Ethics Guidelines for Trustworthy AI, and. • the EU AI Act and EU Guidance on Clinical Evaluation of Medical Device Software. This Strategy binds together 4 stages of the AI/ML lifecycle: 1. Requirements: AI/ML Problem Definition and Formulation 2. Design, Develop, Validate: Data Selection and Management & Model Optimisation. 3. Clinical Evaluation: Verification and Validation, and. 4. Real-World Monitoring: AI/ML Model Monitoring and Continuous Evaluation. Through this Twinning Programme, we aim at sharing the Gatekeeper approach towards the realisation of health promotion & medical AI/ML models and services which are built upon prospective real-world health data and feature verifiable quality properties, as shall be required by the EHDS.	