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POSTER ABSTRACT

Patient empowerment in connecare

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Background: In a context of growing incidence of chronic diseases and aging populations, there is the need to research and find new solutions to shift resources into the community in an effort to deal more effectively with chronic conditions. In that direction, patient empowerment plays an important role. Approaches to increase patient empowerment vary from patient self-management programs to promoting patient involvement in treatment shared decision-making, to facilitating the clinician-patient cooperation.

Methods: In the CONNECARE project ID: 689802, we focus on patient's monitoring with the final goal of providing self-management features to people in needs, such as chronic patients. To be modular and scalable and to allow us to have a disease-independent system, the proposed solution is based on the software-engineering concept of microservices. They are modularization concepts that may be developed independently of each other, possess their own data storage, and can bring their own support service. In CONNECARE, each microservice is in charge of performing a simple task; whereas a complex task is achieved by the collaboration, interaction, and coordination of one or more simple microservices. In so doing, the proposed solution allows a better maintenance and bugs fixing. Seemly, scalability is obtained by dividing each task into less complex ones. Thus, when changes are needed in a microservice, they do not affect the rest of the system. Moreover, when a new functionality is required, a new microservice or set of microservices collaborating together may be defined and simply added to the system. In so doing, the proposed solution is robust to changes and improvements. Right now, 9 microservices have been defined and developed, each one aimed at providing a functionality to provide self-management to the patients. Patient's monitoring is performed through the following microservices: physical activity, self-checked questionnaires, sleeping, and health status. Also 5 further functionalities are provided, each one by a specific microservice: notifications, alerts, recommendations, third-party integration, and messaging.

Results: According to a co-design approach with clinicians of the 4 sites in the project i.e., Barcelona, Lleida, Israel, and Groningen, clinical studies have been designed for field-testing the self-management system in real clinical practice. Those studies will be carried out during 18 months starting in March 2018 and will focus on 3 use cases: community-based management of chronic complex patients, integrated management of patients undergoing surgical procedures, and pre-habilitation of high-risk candidates for complex abdominal surgical

procedures the latter only in Barcelona. Currently, a feasibility test with selected clinicians and patients is running in the 4 sites.

Conclusions: The first release of the presented system is under testing to be ready to be evaluated and refined in 4 sites throughout clinical studies next March. CONNECARE will consequently help to improve real practice deployment of integrated care in those sites and will be able to bring practical insight to the potential of transferability of new methods and technologies to other regions in Europe and beyond.

Keywords: patient empowerment; self management; software architecture