

ICAREWOUNDS

Intelligence and integration of care for smarter chronic wounds management

KEYWORDS

Chronic Wounds, Integrated Care, Co-creation, Artificial Intelligence, Deep Learning, Clinical Decision Support

DURATION

36 months

ABSTRACT

ICAREWOUNDS will develop an integrated care (IC) model for chronic wound (CW) management. CW is a major concern for the healthcare system as their financial burden is estimated at 5% of total expenditure. Moreover, the management of CW is very complex. The presence of different tissues, healing levels and factors such as the patient's skin type determine the clinical strategy and wound dressings to use. Despite there being great experts on CW, these are often followed-up by non-expert professionals at primary care. The ability of those professionals to make the most appropriate clinical decisions is limited, which leads to a great variability in the management of CW, and makes recovery harder, longer and remarkably more costly. The main aim of the project is to design, deploy, implement and validate an IC model that facilitates the sustainability and efficiency of CW management. ICAREWOUNDS will (1) put the patient at the centre, facilitating the personalisation of care. (2) empower non-expert physicians with tools to optimise the care provided and the use of resources. (3) enable the communication/collaboration between care levels and the seamless care delivery and (4) prevent the occurrence of adverse events. ICAREWOUNDS model will be based on a CW management platform that will integrate new and existing eHealth and Trustworthy Artificial Intelligence technologies, enabling (1) the capture of data, including wound pictures (2) the interoperability of data using healthcare standards (FHIR), (3) automatic CW feature extraction by means of deep learning algorithms (4) the prediction of adverse events, based on CW historical evolution and its treatments and (5) the support to non-experts decision for a personalised patient care. The project will also evaluate the clinical and economic impact in an interventional clinical study. Further, the project will demonstrate the transferability of the IC model, deploying the intervention in four clinical sites (Ireland, Poland, Portugal and Spain), which will lead to the identification of the barriers and facilitators for CW integrated care. The ambition of this project requires research activities at multiple levels. First, the consortium needs to understand the scope of the IC model and how to influence the decision of policy makers and healthcare authorities to adopt it. Thus, health policies and healthcare systems research will be carried out by means of qualitative and quantitative methods. Second, the project will implement Health Technology Research. Technology will be designed, developed and validated in the interventional study where relevant stakeholders will be engaged in a co-creation process to enhance its acceptability and user experience. Furthermore, the ethics, security and privacy dimensions of technology, and the regulation regarding medical devices will be researched. Finally, social and economic analysis will be carried out to understand the determinants of the care model and to raise awareness on its potential impact. The project expects to produce valuable impact for the health community and the society. It will analyse the barriers and facilitators for the integration of CW care, generating guidelines for the deployment of similar solutions in other

countries. Moreover, it will assess the socioeconomic impact of the intervention, bringing light on the sustainability of the model and raising awareness on the need for new policies and strategies at the European level. In addition, the smart CW management has the potential to improve the clinical outcomes, and the quality of life of millions of patients (by reducing their time of recovery and suffering), their relatives and caregivers. Finally, the project will demonstrate the impact of an intervention with technologies that may become products and services, creating opportunities for innovation and technology transfer, which could have a positive impact on the European economy and competitiveness.

PARTNERS

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