



WATCHING THE RISK FACTORS

WARIFA

ARTIFICIAL INTELLIGENCE AND THE PERSONALIZED
PREVENTION AND MANAGEMENT OF CHRONIC CONDITIONS



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SECOND YEAR PROJECT RESULTS

WHAT'S NEW WITH WARIFA?

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In this issue interesting updates towards the development of a prototype of a combined early risk assessment tool that will provide individual citizens with personalized recommendations for the management of chronic conditions – such as cancer, cardiovascular diseases, diabetes and chronic respiratory diseases, is approaching its third year of implementation.

Remember to [subscribe to the WARIFA newsletter](#) and follow the main updates visiting the [project website](#) and on [LinkedIn](#), [Twitter](#) and [Facebook](#)!

The **National Research Council of Italy (CNR)** is developing a personalized dynamic Bayesian hierarchical network of factors-variables, defined through local probabilities modelling causal effect between pairs of variables. The first step of the work has been the identification of the relevant variables and factors, including patients' behaviors. This issue and the following have been investigated acting in solid collaboration with doctor specialists involved in the WARIFA project. This collection has been used to design the related directed acyclic graph (DAG) describing the possible relationship among the variables. The DAG will then be used to build the probabilistic model describing the causal connection in quantitative terms.

The **Rey Juan Carlos University (URJC)**, in collaboration with other partners involved, and especially with University of Las Palmas de Gran Canaria, have collaborated together with the aim of applying the proposed feature selection methods in three out of four of the main chronic conditions considered within the project (cardiovascular diseases, diabetes, and skin cancer). Experimental results showed a great performance of feature selection and machine learning techniques for assessing cardiovascular risk in type 1 diabetic patients. Furthermore, a multimodality dataset including images of the lesion and clinical data has been analyzed to improve melanoma detection using deep learning algorithms. The results obtained so far pave the way for identifying risk factors and paving the way for clinical decision-making.



The **University of Las Palmas de Gran Canaria** has led the work carried out in WP7, especially related to the co-creation process. Several focus group meetings are being performed, to establish the appropriate design of the WARIFA app, from the users' and relevant stakeholders' point of view. A conference paper has been presented at the International Diabetes Federation (IDF) 2022 Congress in Lisbon and a journal paper is currently under review at the Journal of Medical Internet Research (JMIR) describing the current scenario and challenges of mHealth applications and the involvement of artificial intelligence in this area.

In the picture, Alejandro Déniz (ULPGC researcher) [presenting at the IDF 2022 Congress](#) in Lisbon.

CiaoTech – PNO Group performed the stakeholder analysis focused on the Primary care providers, User Advocates, Health Professionals, other EU-funded projects, by assessing their position towards the adoption of Apps and use of AI-based solutions to set up targeted engagement strategies. Selected stakeholders were invited to participate in an online survey designed to measure their characteristics, e.g., their interest, attitude, influence and knowledge relevant for the project. The surveys were published in English, Spanish, Italian, Norwegian and Romanian to reach the maximum audience in targeted countries and circulated through different communication means: the partners corporate communication channels (including partners newsletters and intranet) and by direct emails to identified stakeholders. Based on the outcomes of the replies, more targeted dissemination and exploitation actions were and will be implemented.

CiaoTech has also joined the [Meet in Italy for Life Sciences event](#), where the WARIFA project and all of its impacts were highlighted in front of experts and stakeholder of the Italian Health care system.

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CONTACT US

PROJECT COORDINATOR



Conceição Granja Bartnæs



Conceicao.Granja@ehealthresearch.no

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