

# DARE

# DIGITAL LIFELONG PREVENTION

## SCHEDA INIZIATIVA



## Dati di sintesi Iniziativa

**Denominazione dell'Iniziativa:** DARE - Digital Lifelong Prevention

**Main Topic:** Data Mining

**Data avvio Iniziativa:** 15/12/2022

**Durata Iniziativa** (espressa in mesi): 48

**Costo totale (€):** 130.456.001,02

**Agevolazione MUR (€):** 124.000.000,00

## Abstract

DARE (DigitAl lifelong pRevEntion) is a wide-ranging initiative aimed at creating and developing a connected and distributed knowledge community for digital preventive healthcare through research, innovation, and participation of multiple stakeholders. The initiative will produce, collect, and systematize multidisciplinary knowledge and solutions (technical, ethical-legal, and organizational) necessary to affirm Italy as a leading country in digital prevention. By digital prevention, we mean here preventive actions enabled by digital technologies with a significant potential to improve the speed and accuracy of key public health tasks such as forecasting, surveillance, early detection and response for acute and chronic/complex diseases and, more generally, for health-related conditions through the lifespan.

DARE is prompted by two main motivations, an urgent requirement, and an opportunity. On the one hand, there is a perceived urgency to reform the healthcare culture, with a paradigm shift from disease-focus to lifelong prevention and community approach. Both the Covid-19 healthcare emergency crisis and the epidemiological characteristics of a population with an increased incidence of chronic diseases and ageing-related conditions make this change more than timely. On the other hand, we have the unparalleled opportunity of being in the midst of massive digital transformations, with an unprecedented quantity of health and health-related data and digital technologies (e.g., AI, HPC, Big Data analytics, wearable sensors) that can exploit their full potential to personalise pathways of care and improve the quality, appropriateness and effectiveness

of preventive services while preserving the sustainability of the public healthcare system.

In order to meet the requirement with the opportunity, however, we need to integrate data collections (including unstructured data) and reinforce data governance capabilities; develop and validate advanced analysis tools of complex phenomena and scenario prediction; support the development of HPC tools for healthcare planning and prevention scenarios; promote interoperability; reinforce knowledge-sharing and Evidence-based prevention; support the National Health System in the evaluation and implementation of recommendations, guidelines and good practices, dealing with all the levels of prevention. These are the specific needs that DARE is meant to fulfil.

The initiative will be implemented through the hub-and-spoke model: Spoke 1-Enabling Factors and Technologies for a Lifelong Digital Prevention focuses on methods and acts as a Solution Provider for other Spokes; Spoke 2-Community-based Digital Primary Prevention focuses on Digital Health applications for the primary prevention on the general population, selected communities and target groups; Spoke 3-Digitally-enabled Secondary and Tertiary Prevention focuses on Digital Health applications for early diagnosis and targeting patients' health needs. The Spokes include 40 pilot studies impacting 5 regional reference communities from North (Emilia-Romagna, Veneto), Center (Lazio), and South (Apulia, Sicily) of Italy with different characteristics in terms of life stages (childhood, adolescence, working life, older age), sizes (samples representing the general population or groups at risk, specific targets of patients with rare conditions or prevalent diseases), and settings (dwellings, primary healthcare and community settings, hospitals).

To establish a stable network for preventive digital health, DARE involves a wide range of partners and stakeholders, including universities, research centres, research hospitals, local health authorities, foundations, and private companies.

The expected impacts are far-reaching. Scientific impacts include the establishment of data- and knowledgesharing research environments focused on preventive digital health. By delivering evidence-based recommendations, guidelines and good practices, as well as multidimensional and multiprofessional assessments, DARE will directly impact public policies for public health and healthcare management.

Impacts on citizens' health and society include optimization of the healthcare service organization, augmented risk awareness and adoption of healthier lifestyles for individuals, improved well-being and quality of life for diverse populations, and reduced hospitalization. As for economic impacts, DARE will produce savings in health care expenditure, more investments in the sector, and in the long term, a vast economic

benefit due to the augmented quantity of disease-free years. Finally, the DARE impact at the broad cultural level includes a paradigm shift from disease-focus to lifelong prevention and a community approach for healthcare professionals and, for the public, a change in organizational practices towards integration, standardization and networking, and a general reorientation of values toward trust in technological solutions for preventive health.

## Partner

### Soggetto Proponente

ALMA MATER STUDIORUM - Università di Bologna

### Soggetto attuatore (Hub)

Fondazione DARE – Digital Lifelong Prevention

### Spoke

#### *Spoke 1 - Enabling Factors and Technologies for a Lifelong Digital Prevention*

##### Leader

Alma Mater Studiorum - Università di Bologna

##### Affiliati

Azienda Sanitaria Locale di Bari  
Azienda USL della Romagna  
BI-REX - Big Data Innovation & Research Excellence  
Engineering Ingegneria Informatica S.p.A.  
Exprivia S.p.A.  
Fondazione GIMBE  
Istituto Nazionale di Fisica Nucleare  
Istituto Ortopedico Rizzoli IRCCS  
Leithà S.r.l.  
Università Cattolica del Sacro Cuore  
Università degli Studi di Bari Aldo Moro  
Università degli Studi di Palermo  
Università degli Studi di Parma  
Università degli Studi di Roma "Tor Vergata"

#### *Spoke 2 - Community-based Digital Primary Prevention*

##### Leader

Università degli Studi di Palermo

##### Affiliati

Agenzia Regionale per la Protezione dell'Ambiente - Sicilia  
ALMA MATER STUDIORUM - Università di Bologna  
Azienda Ospedaliero Universitaria Policlinico “G. Rodolico – San Marco”  
Azienda Sanitaria Locale Roma 1  
Azienda USL della Romagna

BI-REX - Big Data Innovation & Research Excellence  
Engineering Ingegneria Informatica S.p.A.  
Fondazione GIMBE  
Fondazione Policlinico Universitario Agostino Gemelli IRCCS  
IRCCS Azienda Ospedaliero-Universitaria di Bologna Policlinico Sant'Orsola  
Istituto Ortopedico Rizzoli IRCCS  
Leithà S.r.l.  
Libera Università degli Studi di Enna "Kore"  
Maria Cecilia Hospital S.p.A.  
Università Cattolica del Sacro Cuore  
Università degli Studi di Padova  
University of Pittsburgh Medical Center Italy SRL

### ***Spoke 3 - Digitally-enabled Secondary and Tertiary Prevention***

#### **Leader**

Università degli Studi di Roma "Tor Vergata"

#### **Affiliati**

Azienda Ospedale-Università Padova  
Azienda Sanitaria Locale di Bari  
Azienda USL di Bologna – IRCCS Istituto delle Scienze Neurologiche  
BI-REX - Big Data Innovation & Research Excellence  
Exprivia S.p.A.  
Fondazione Policlinico Universitario Agostino Gemelli IRCCS  
IRCCS Azienda Ospedaliero-Universitaria di Bologna Policlinico Sant'Orsola  
Istituto Ortopedico Rizzoli IRCCS  
Istituto Tumori "Giovanni Paolo II" IRCCS  
Maria Cecilia Hospital S.p.A.  
Policlinico Tor Vergata  
Università degli Studi di Bari Aldo Moro  
Università degli Studi di Padova  
Università degli Studi di Parma