

EU FRILSAFE

DIGITAL HEALTH INNOVATION

FOR FRAILTY PREVENTION

SOCIETAL AND HEALTH CHALLENGE

According to the [2015 EU Ageing Report](#), demographic ageing in the European population will change dramatically over the coming decades. The percentage of citizens aged over 65 years is predicted to rise from 18% in 2013 to 28% by 2060, and the percentage of people aged 80+ will increase from 5% to 12% during the same time period.

Frailty is considered as one of the most complex and important issues associated with ageing. It is considered a condition of diminished physiological reserves, that puts the individual at a greater risk of a less efficient response and functional recuperation in case of exposure to stress and, thus, adverse health outcomes (e.g. hospitalisation, fall, disability). The syndrome has significant repercussions on the older person's quality of life and on the health care system. The relationship between frailty and a higher risk of falling, loss of functional independence, reduced quality of life, institutionalisation, and mortality has been well-documented.

Frailty is not an inevitable consequence of ageing. In many cases it can be pertinently managed and its evolution can be delayed or even postponed; thus, a stronger focus on early screening and detection of frailty is needed for [timely management](#) and prevention of loss of autonomy.

THE EU FRILSAFE SOLUTION FOR FRAILTY PREVENTION

EU FrailSafe offers an integrated assessment system, using cutting-edge technology. The solution estimates people's frailty levels and locates a person's weakness in order to provide personalised suggestions. It also provides a health monitoring tool and has the potential to generate real-time notifications in case of adverse events. The solution complements traditional clinical assessments in identifying those at higher risk of developing adverse health events, and thus facilitating comprehensive integrated care plans for older people.

HOW DOES IT WORK?

Frailty assessment and monitoring is done through traditional clinical assessments and a set of devices and technologies, such as a [smart garment](#), [indoor/outdoor](#) monitoring and localization, virtual augmented reality, and [serious games](#). The developed system collects and analyses data from different domains (physiological, cognitive, behavioural, psychological, social), enabling the system to estimate the frailty level of a person. It generates a [virtual patient model](#) (VPM) that reflects a person's current health status and suggests personalised frailty preventive [interventions](#).

Alongside this process, health care professionals can visualize their patients' health data through the EU FrailSafe Platform and take actions if deemed necessary. Not only health professionals but also older individuals themselves and their authorized family members can view their data through the Platform's dashboard and therefore monitor different parameters of their own health.

WHY SHOULD YOU USE THE EU FRILSAFE SOLUTION?



OLDER PEOPLE AND INFORMAL CARERS

Older people can visualize real-life collected data related to their current health status and act, where necessary, to strengthen the spotted weakness thanks to the personalised recommendations. This enables them to remain independent, active and maintain their quality of life as long as possible by adopting a preventive approach.

The system also enables **informal carers** to remotely monitor relevant variables (such as physiological measurements) and alert them of any deviations. It can empower prefrail individuals in their homes and communities, increasing their autonomies, and consequently also the informal carers' quality of life.



MEDICAL PROFESSIONALS

Frailty evaluation and management is a challenge in geriatrics. Nowadays, health professionals are limited in monitoring the evolution of frailty and above all, detecting frailty accurately, efficiently and early enough.

Considering the abovementioned challenges, the EU FrailSafe solution supports **medical professionals** in detecting frailty earlier, using a more accurate and comprehensive approach, allowing for preventive measures to be applied in time, and delaying the onset of frailty among their older patients.

Finally, by having access to their patients' real-life daily data and their medical histories, medical professionals are able to better adapt their treatments in a personalised approach.



RESEARCHERS & POLICY MAKERS

Due to the vast amount of available real-life measurements, vital signals and medical data collected via the devices and other clinical assessments, substantial research can be conducted based on this anonymized data. This will aim at the advancement of science towards long-term detection, delay, prevention and treatment of frailty.

Data scientists, medical researchers and social workers might use the existing available data to uncover and design high-level theories which structurally correlate the data and propose relevant policies to prevent the consequences of frailty.

Based on the research results, regional or national **policy-makers** can implement initiatives to be tried in communities or regions and later be implemented as a general policy in the public domain.



HEALTHCARE ORGANISATIONS

Healthcare institutions are looking for ways to reduce treatment costs.

The EU FrailSafe solution can be applied to their patients on a regular basis for screening and evaluation purposes. The system will give healthcare organisations the opportunity to reduce monitoring and treatment costs for older people's frailty-related diseases, increase the availability of their resources and expand their services to existing or new patients by providing high quality services.



INSURANCE COMPANIES

The costs of in-hospital treatment and rehabilitation for older patients are covered by their insurance company, be it public or private. **insurance companies** can recommend the use of the EU FrailSafe solution for prevention purposes to their clients. A large percentage of preventable incidents are related to frailty-related diseases, therefore it is in the insurance company's interest to reduce these costs by using a system that detects frailty early and provides personalised prevention measures.



PHARMACEUTICAL COMPANIES

Pharmaceutical companies can use the EU FrailSafe solution to accompany research for frailty-related drugs or treatments from the stage of sample selection, up to the final results validation. The system can help **pharmaceutical companies** assess their products using an innovative and reliable method.

