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Project Profile

TREAT

Empowering patients with personalised self-care

To improve patient self-care for non-communicable diseases (NCDs) such as diabetes, cancer and heart attacks, the ITEA project TREAT (Transforming Healthcare Through Semantic Interoperability and Self-Efficacy) will produce a modular software platform with numerous interoperable components, including wearables and artificial intelligence (AI) recommendations.

Addressing the challenge

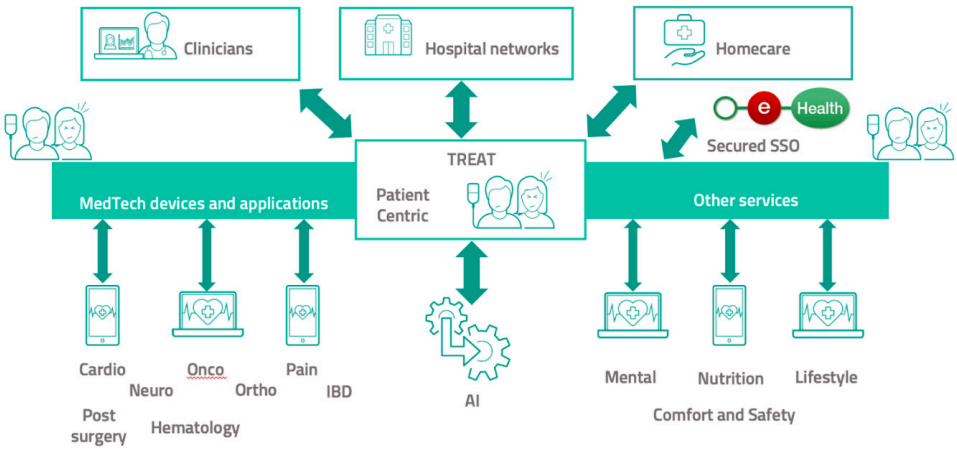
NCDs affect two billion people globally, a number estimated to rise by 17% by 2030. Underinvestment in their management is causes around 71% of deaths while costing USD 47 trillion in lost domestic product between 2011 and 2025. However, current healthcare systems are not designed for patients to prevent or manage NCDs effectively. Self-care is limited by disparate information sources that lack interoperability, as well as infrequent and non-personalised monitoring and treatment guidance due to a reliance on healthcare providers to interpret patient data. This makes it difficult for patients to adhere to recommendations.

Proposed solutions

TREAT will address these challenges by building a semantic interoperability platform for the integration of disparate data sources (medical records, wearables and journals) to provide health management recommendations for clinicians and patients using an AI engine. This will include the development of textile-integrated electrodes and algorithms to monitor wearables, electrocardiograms and activity. Novel interfaces, such as chatbots and augmented reality, will foster patient adherence. TREAT will also ensure that wearable data and health devices are clinical-grade and meet data privacy, security and transparency standards, providing patient ownership of data while ensuring interoperability at the physician/clinician and system level.

Finally, several use-cases will support patients with cardiometabolic syndrome (diabetes, obesity, heart disease, arthritis, depression and anxiety) and, once validated, many other health conditions can be targeted.

chain for NCD management by placing integrators and platform developers at the forefront. Each partner will leverage solutions by integrating vendors into the platform, developing new business models, and ensuring high-quality data to support diagnosis and improve processes for clinical trials. Given the growing prevalence of chronic diseases, an ageing population and the increasing demand for home healthcare services, the relevant markets are only expected to grow: the global wearable market, for



The TREAT architecture integrates clinicians, hospital networks, homecare services, and secure eHealth portals around a patient-centred core.

Projected results and impact

Above all, TREAT concerns quality of life. This begins with patient adherence to medical advice, which is expected to increase by 30-40% through the novel interfaces. The result should be better health outcomes, which TREAT will measure according to the standardised General Self-Efficacy Scale and for which a 50% improvement is anticipated. In the longer term, this will reduce the impact of NCDs, including mortality, costs, clinician workload and hospital visits. From a business perspective, TREAT will transform the market value

instance, hit USD 120.54 billion in 2023 and is estimated to soar to USD 931.31 billion by 2030. The combined value of the commercial opportunities for TREAT partners is therefore expected to exceed EUR 380 million. All in all, the project thus represents an empowering shift in healthcare access from the clinician to the patient.

Project partners

TREAT
22022

Project start
January 2024

Project end
April 2027

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https://itea4.org/project/treat.html

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