FAITH
intelligent patient support

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www.h2020-faith.eu
H2020.FAITH
@H2020_Faith
FAITH project

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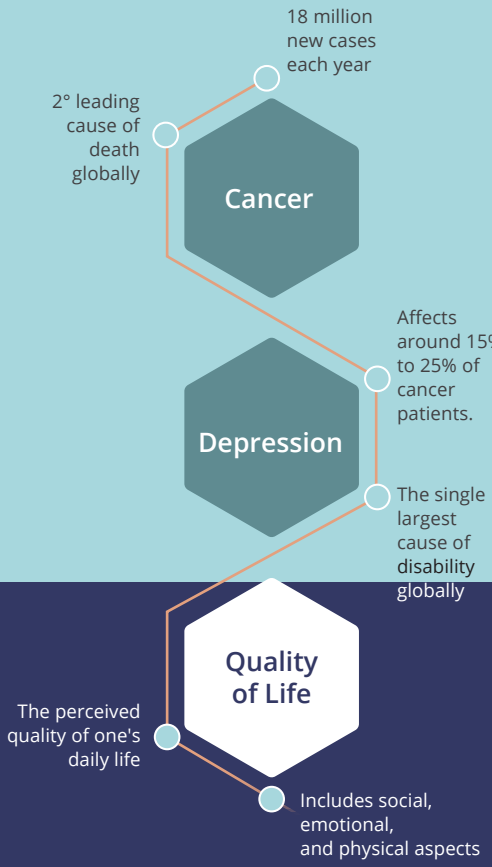
FAITH: a federated artificial Intelligence solution for monitoring mental health status after cancer treatment

FAITH is an EU-funded research project aiming to provide an Artificial Intelligence application that remotely identifies depression markers in people that have undergone cancer treatment.

Cancer patients face several challenges, which may jeopardize their mental health and potentially lead to **anxiety** and **depression.** Signs of depression can be identified by healthcare providers during patients' consultation period, but once the person has less frequent medical appointments and hospital contact, those signs may pass unnoticed. FAITH aims to provide an Artificial Intelligence application **that identifies depression markers** in people that have undergone cancer treatment, providing **intelligent post-cancer support.** FAITH is collecting and monitoring a range of health indicators, allowing data gathering and analysis of patients' mental status in a **non-intrusive way.**

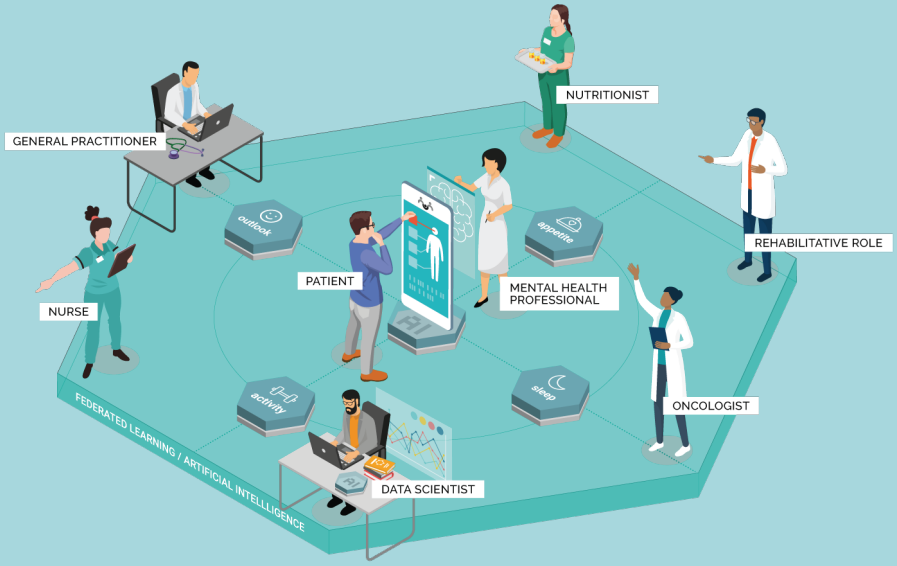


Sources:
World Health Organisation
U.S. Department of Health and Human Services

Supporting patients' quality of life

FAITH will provide a **better model for mental health monitoring** for cancer patients. By using federated learning to predict negative trends in mental health, FAITH will present healthcare providers with advanced warnings for timely intervention, allowing patients to receive attention from their healthcare services as early as possible and thus fostering a **better quality of life** for them.

The FAITH ecosystem



Components
Mobile Application | Sleep Monitor | NLP Component | Advanced Analytics | Federated Learning

The FAITH app, supported by Artificial Intelligence (AI) and Natural Language Processing (NLP), collects and monitors data relating to a patient's activity, voice patterns, nutrition and sleep.

Local AI elaborates on the data collected, related to the patient's trends, and sends the resulting AI models to the FAITH central system. Patient's data never leaves their devices, to preserve privacy.

When a negative forecast on the patient's mental health is detected, an alert is sent to their healthcare provider.

The healthcare team analyses the nature of the alert and offers proper support to the patient.

Which major challenges does FAITH tackle?

Identifying the right indicators
FAITH monitors activity, voice patterns, sleep, and nutrition as **depression markers** to predict negative trends in patients' mental health.

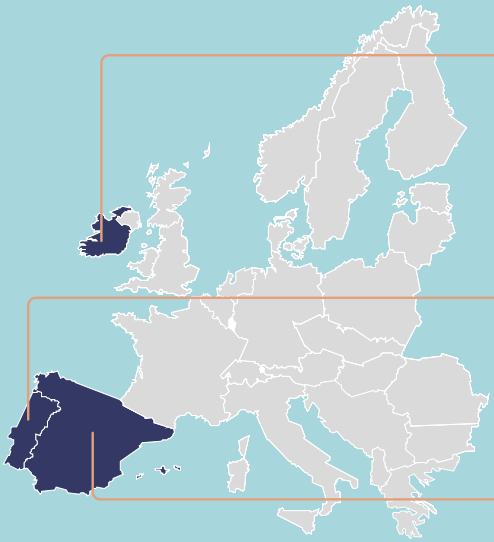
Tackling privacy issues
To safeguard user's privacy, FAITH records and processes data **on the user's mobile phone** only, and nowhere else.

Supporting clinicians
FAITH does not make automatic diagnoses of depression. FAITH works to support clinicians, rather than to replace them.

AI trust
Explainable AI provides the healthcare team with **a reason for its output,** allowing results' interpretation and informed clinical decisions.

Engaging users
The FAITH App is designed with user experience in mind, to foster proactive and regular users' engagement.

How do we ensure that FAITH has an impact in real life?



UPMC Whitfield
Waterford, Ireland

Champalimaud Foundation
Lisbon, Portugal

Hospital G.U. Gregorio Marañón
Madrid, Spain

FAITH has trial sites in three hospitals. These hospitals carry out pilots involving **real end users** (both clinicians and patients) to collect the data necessary to train the AI algorithms behind the FAITH solution.

The concept is prototyped to be used in a **real-life situation** at the hospital pilot sites. The trials, specifically related to each use case, allow **testing by healthcare professionals and patients**. Results and findings provide feedback for further requirements gathering and concept refinement.

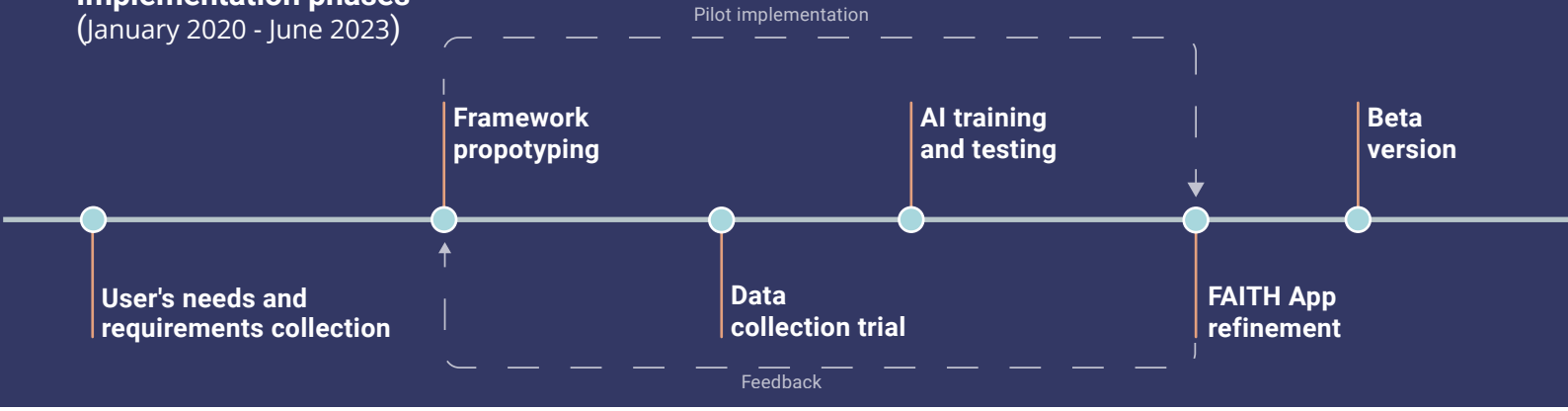
Which results do we expect to achieve?

Developing an AI app that identifies and analyses depression markers

Testing the AI app with end users to ensure its usefulness.

Fostering awareness of cancer patients' mental health status.

Implementation phases
(January 2020 - June 2023)



Coordinator
Waterford Institute of Technology (IE)

Consortium
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