

A Collective Intelligent Platform to Support Cancer Champions



Welcome to the first issue of the LifeChamps Newsletter!

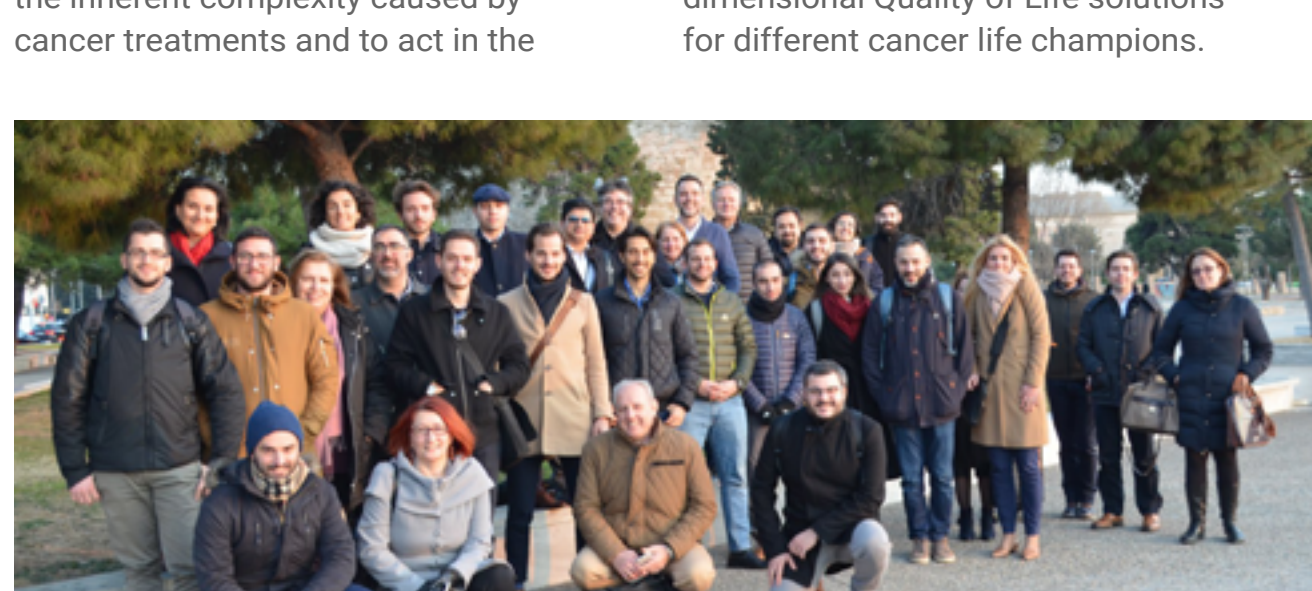
We are pleased to announce the publication of the first issue of the LifeChamps newsletter.

LifeChamps is a 3-year Research and Innovation Action (RIA) from 2019 to 2022 funded under Horizon 2020 focusing on delivering a smart, personalized and secure platform that will monitor health outcomes and address co-morbidities of cancer champions by preventing long-term effects and improving Quality of Life (QoL). LifeChamps kicked-off in Thessaloniki, Greece on 21 January 2020.

The vision of LifeChamps is to address the inherent complexity caused by cancer treatments and to act in the

monitoring of health status and improvement of quality of life in a significant manner by using emerging developments in the fields of Big Data, Data Analytics and Artificial Intelligence.

The LifeChamps project aims to disrupt techniques for Big Data modelling, analysis, and aggregation under a novel context-aware Data intensive and large-scale analytics framework towards delivering multi-dimensional Quality of Life solutions for different cancer life champions.



→ [Contents](#)

Challenge

As people get older they have to face an accumulating life and disease burden. Epidemiological data show that this burden increases especially after getting 50 for all genders, as the cancer incidence and mortality increases. Furthermore, we have an increase of multi-morbidity, frailty and other discounting factors for the Health Related Quality of Life (HRQoL) of these people.

For all these reasons, and because LifeChamps will focus on the cancer care provided to people above 50 years

old, we refer to them as Champions. We use this term in order to honour their effort to face cancer, despite the accumulated burden in their lives.

LifeChamps complements the patient movement to support those at risk of developing cancer or recently diagnosed with the disease. It does so with the introduction of novel technologies and clinical methodologies to support them for their HRQoL and care provided during and after their treatment as well.

Vision statement:

We believe in a society where ageist stereotypes and discrimination against older adults will be eliminated from the clinical practice



LifeChamps Platform

Lifechamps aims to address the inherent complexity caused by cancer treatments and to act in the monitoring of health status and improvement of quality of life in a significant manner by using emerging technologies in the fields of Big Data, Data Analytics and Artificial Intelligence. In essence, LifeChamps delivers a novel, context-aware and large-scale analytics framework capable of delivering multi-dimensional QoL support to all the different cancer life champions during and after their treatments. Using an AI-based data analytics engine, this project will address key frailty conditions in older adult's post cancer treatment. At its core, the LifeChamps platform will integrate ground-breaking technologies in the areas of Big Data and Artificial Intelligence towards delivering a smart,

personalized and secure platform that will monitor health outcomes and address co-morbidities of cancer champions by preventing long-term effects and improving QoL. Overall, LifeChamps platform is envisaged to enable:

- fast and effective collection of heterogeneous types of data from multiple sources (close to person treated or to stakeholders' data) and domains (different cancer types, caregivers scope etc.) tasked with creating a comprehensive network of knowledge derived from multiple data correlations and analysis;
- correlation between cancer subtype classifications and progression, based on systems medicine analytics, to offer insightful personalised

adaptive recommendations;

- patient-centric tools and applications for the needs of translational research and clinical practice in oncology;
- correlation between PROMs (patients' health status/QoL perception) and PREMs (satisfaction with healthcare provision) and QoL/frailty incidence in older adults;
- a frailty care model for delivering coordinated long-term post-cancer care to older adults and caregivers, where a multi-dimensional QoL index will be a key input;
- the use of digital biomarkers as a valuable driver for monitoring and prevention of QoL decline, and during and after cancer treatment.

Use Cases

1. Predicting and understanding treatment tolerance based on real-world digital biomarkers and ePROMs

Treatment-related toxicity is a common and significant concern related to anti-cancer therapeutics. In some instances, treatment itself causes substantial physiological perturbation, putting even fit individuals at increased risk of morbidity. Ageing determines physiological changes in organ functions and pharmacokinetics. Therefore, a comprehensive geriatric assessment to older patients could support the prognosis of the patient and the risks associated with specific treatments.

2. Multiple assessment of psychological and lifestyle factors for a person-centred care in aging cancer survivors

Skin cancer is one increasing cancer form due to both environmental and socio-economic changes globally. Recently, teledermatology (TD) - a digitized collaboration between family physicians (GPs) and dermatologists has been deployed and subsequently implemented in Stockholm county area. This means that digital dermatoscope photographs of suspicious melanomas are sent electronically together with a standardized medical history to leading melanoma specialists. The mortality rate in malignant melanoma (MM) is twice as high among men compared with women. Men are less likely to seek care, especially elderly and lonely men, and they are diagnosed later in the process than women. Women also have better prognosis than men, even though they are in the same tumor stage.

3. New AI to reduce mental burden and improve QoL for patients during/after cancer treatment

One-third of cancer survivors suffer from post-cancer pain syndrome, which can have a negative and sustained impact on both physical and psychosocial functioning. Post-cancer pain syndromes lead to a cluster of symptoms, including fatigue, anxiety, depression and sleep disturbance. One approach to providing cost-effective psychosocial care is the use of eHealth tools. Information technology has been cited as a key requirement for building a high-quality cancer care delivery system by the Institute of Medicine and also as the foundation for a learning health care system.

4. Predicting the effects of the interaction between late/persisting treatment-related symptoms and multimorbidity/polypharmacy on the frailty and independent living status of older people post-cancer treatment

The concurrent presence of late cancer treatment effects and multimorbidity and/or polypharmacy can adversely and considerably affect independent living of older people post-cancer treatment. To date, the effects of the interaction between late/persisting treatment-related symptoms and multimorbidity/polypharmacy on the independent living of older people post-cancer treatment are poorly understood. This significantly hampers the development and implementation of personalised and sustainable care plans and supported self-management plans for the ongoing coordination of care in this population of care recipients with complex health needs.



Get in Touch

→ Project Coordinator

Professor Panagiotis Bamidis — AUTH, Greece
bamidis@med.auth.gr

→ Technical Manager

Pedro Louro — Altran Portugal SA
pedro.louro@altran.com

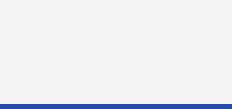
 @LifeChampsH2020

 LifeChamps-H2020

 LifeChamps Project



www.lifechamps.eu



This project has been funded by the European Union's Horizon 2020 research and Innovation Program under grant agreement N° 875329.

