



FOSTERING HEALTHY LIVES BY INTRODUCING BEHAVIOURAL CHANGE

From dealing with disease and disability to healthy lives – EIT Health will supply the tools and incentives to the European citizen to modify their way of life so as to prevent early onset of ageing, disease and disability and to profit from more years in health and wellbeing, developing inviting and practical information channels that provide individualised guardianship in every-day situations, allowing European citizens to live rewarding and productive lives. EIT Health will focus on the providing opportunities especially to children, vulnerable and marginalised groups in society.

Rationale

Life style behaviour (“the way of life”) is affected by the interplay of many determinants – not only physiological factors, physical condition and the physical environment, but also mental determinants (such as depression and dementia), medical determinants (such as drug use), and social determinants (such as loneliness)¹. Between them, these determinants may lead to unhealthy behaviours such as unbalanced diets that cause over-nutrition or under-nutrition, physical inactivity and sedentary behaviour, poor sleep and various addictions. In an ageing society unhealthy behaviours such as chronic physical inactivity may eventually lead to, and complicate, diseases such as sarcopenia and stroke and increase the risk of fall injuries, all of which are life changing consequences. In contrast, healthy behaviours based on well informed daily life decisions and individualized feed-back mechanisms bear the promise of more healthy life years, economic prosperity and wellbeing².

Knowledge of “natural life style behaviour” (choices people make in every day life, and factors that influence these choices) and its interaction with genetic determinants and disease specific parameters has accumulated over the last decades, but remains largely unused due to its fragmented nature and due to the lack of tools, financial- and societal incentives. In addition, the sense of urgency to translate (public health) knowledge into user-friendly, attractive and individualised tools and health care systems have proven to be resistant to the promise of primary prevention strategies. Yet, potential benefits of life style interventions to employers, policy makers, the health care sector and, first and foremost, citizens and patients are undisputed. The SHARE study (Survey of Health and Ageing in Europe) showed strong associations between perceived poor health and becoming disabled or unemployed, or deciding to retire early³, indicating macro-economic consequences of unhealthy behaviours.

Designing and implementing behavioural change is a multi-dimensional undertaking involving at least three reciprocally interacting levels: the end-user dimension; the technology level; and business and sustainability. Clearly, in the arena of “every-day way of life choices”, it can only be the individual who is in the driver seat, whether he/she happens to be in perfect health or not. In this context, the importance of stimulating health literacy throughout the EU and across generations cannot be overstated, as it provides the foundation of behavioural change. In addressing health literacy, we need to beware of cognitive, cultural and financial barriers that might hinder adoption of new opportunities, inadvertently increasing disparity across Europe.



The challenge is to motivate and incentivise citizens to adopt healthier behaviours through achievable, appealing, socially acceptable and individualised interventions, in which state-of-the-art mHealth technologies use real time data to provide short term feed-back while medium- and long term outcomes are part of a reward model towards the individual citizen and its environment⁴. Extracting valuable information from diverse data sources (including passively acquired input through wearables and environmental sensors) and developing algorithms that allow real time analysis, interpretation and generation of actionable output to the end-user, pinpoint the main elements of the technology challenge. The technology case does not seem to await a genuine breakthrough. Rather, taking care of integration of existing elements (and elements under development), dealing with regulatory-, safety- and ethical issues⁵ and perhaps most importantly putting together a scalable business model seems to constitute the real bottle neck. EIT Health is uniquely positioned to furnish such a solution, facilitate interaction with end-users throughout pilot phases and most particularly provide the organising power to bring key players, solutions and insights together.

The impact will be wide spread, including outcomes like increased wellbeing, positive outlook on life, which are difficult to monetise, but also reduced cost of health care (due to the shift from intervention to prevention), and improved productivity and employability. In addition, the European industry will profit from the lead role the European economy claims to serve the world market with new tools, services and (other) products aimed at citizen empowerment and conservation of perceived health.

According to Vytenis Andriukaitis (the European Commissioner for Health and Food Safety) in his April 11, 2018 address of the EC Steering group on Promotion and prevention⁶: “The time has come to focus efforts on promoting good health; so that people can live and work in good health, and continue contributing to society as they grow older. Healthy living for healthy ageing. Investing in good health pays off – in terms of fostering a productive workforce; preventing avoidable chronic diseases and their associated healthcare and social costs; reducing absenteeism and early retirement. (...) my motto is: promotion, prevention and protection –and also participation.”

InnoLife Business Plan Integration

In designing the activities to be executed in this Focus Area, we have drawn upon the relevant activities submitted in the original Innolife Business Plan, these are summarised as follows in truncated form;

- Develop and implement personalised health coaching etc. (BP1.1)
- Target health literacy etc. (BP1.1)
- Create and test new smart products etc. (BP1.2)
- Develop and deploy novel education etc. (BP1.2)
- Develop and apply/food and nutrition etc. (BP1.2)
- Establish innovative personalised health etc. (BP1.2)
- Support empowerment of community etc. (BP2.2)

Activities executed within EIT Health in the Focus Area

EIT health Partners will contribute with their knowledge, experience and resources to create, demonstrate and implement life style interventions to improve health wellbeing and participation in society and economy, developing economically viable solutions and products that can be scaled and implemented throughout Europe. We plan to:

1. Develop new educational and promotional approaches to address health literacy in Europe and conduct pilots to evaluate and improve their efficacy in various cultural backgrounds (e.g. mobilise marketing expertise of our Partners)
2. Organise workshops and courses to train decision makers, health care professionals, teachers, managers in dealing with (and managing) behavioural change in their own professional environment
3. Conduct pilot experiments in communities aimed at influencing consumer behaviour in the retail environment
4. Use co-creation strategies to develop scalable data infrastructures for medical and behavioural (mHealth-)data and methodologies to analyse these for cause and effect relationships in real time

5. Develop and pilot business models for the introduction of life style interventions in nutrition, and/or physical activity and/or sleep involving communities or regions and end-users from diverse cultural backgrounds, and resolving legal- ethical- and regulatory issues for local exploitation.
6. Develop mHealth tools and methodologies aiming at broad initial user acceptance and design and implement tools to incentivise long term compliance (e.g. combine self-management approaches with gaming, leisure, sports..).

Outcomes

Activities in this focus area need to demonstrate they achieve majority of the outcomes listed below. Any activity will establish the new standard in a specific application area. Only those solutions that are scalable and sustainable will be considered.

- a. Scalable methodologies (tool boxes) aimed at improving health literacy in the European cultural back grounds that can be deployed to cities, regions and countries;
- b. Pilot cohorts in various cultural backgrounds (both healthy citizens and specific target groups, including children) that participate in the development of life style interventions, motivational approaches and long term compliance strategies;
- c. mHealth tools for specific target groups (age groups, cultural minorities, mentally impaired individuals, people suffering from addictions..) that combine the "generic function" (e.g. obtaining physiological data) with a motivational tool (VR, game etc.)
- d. Pilot with behavioural monitoring systems that use sets of short term (substitute-) markers to score general health, behavioural parameters (sleep, stress, activity levels) and optionally disease evolution, during a life style intervention;
- e. Fully scalable, safe and easily approachable data platform that combines all relevant medical, socio-economical and behavioural information on individual citizens participating in it (with their full consent and opt in/opt out options), and provides value to individual users through analyses and actionable interpretations (using AI);
- f. Demonstrator of the business case for a life style intervention relating (e.g.) to healthy food intake, taking into account physiological parameters, genetic- and disease specific parameters, nutrient intake versus activity levels, and (self-perceived) health benefits. Business case demonstrated in different European contexts.

References

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