Methods
This medical device will synchronously assess several physiological variables: heart rate, respiratory rate, blood pressure variation, arterial pulse oximetry and circulating glucose, as well as the physiological responses to hyperoxia and meal ingestion. The results obtained will be analyzed using Matlab, in order to develop an algorithm with predictive value for early diagnosis of metabolic diseases. We are also developing a standard test mixed-meal test to assess post-prandial glucose excursions with the CMeter. The work is currently in the prototype development phase.

Results
A preliminary pilot-test performed with the prototype revealed that all the proposed variables are assessed with the CMeter. The standardized test meal used in the pilot-test caused a glucose excursion curve that stabilized 30 minutes after ingestion, being suitable for metabolic evaluation with the CMeter. Interstitial glucose variation was 16.6mg/dl glucose with a latency time of 21min. Heart rate did not vary significantly after the meal ingestion.

Conclusions
The CMeter prototype is currently optimized to be used in a medical device clinical-trial with healthy volunteers. The mixed meal developed has proven to be suitable in healthy volunteers to determine variations in CS-related cardiorespiratory parameters.

Acknowledgements
Project funded by FCT/SFRH-POL/23278/2016

Keywords
Carotid body, Diabetes, Early diagnosis, Medical device.

S7
Help to care for users and caregivers: Help2care
Maria dos Anjos Coelho Rodrigues Dix e 1,2 (maria.dix@ipieira.pt)
1Center for Innovative Care and Health Technology, Polytechnic Institute of Leiria, 2411-901 Leiria, Portugal; 2School of Health Sciences, Polytechnic Institute of Leiria, 2411-901 Leiria, Portugal
BMC Health Services Research 2018, 18(Suppl 2):S7

There are several studies showing that the family members providing care to their relatives need to acquire abilities that enable them to be competent in their performance, having the health care professionals an indispensable role in their training [1]. Empowering caregivers can help in reducing health care costs, improve the quality of life of both user and caregiver [2], their mental health [3] and greater satisfaction with their care [4]. The continued support to caregivers can help them in decision making in less serious health situations and to use fewer health services [5].

The main aims are: to construct assessment instruments to evaluate the patient and caregivers needs and abilities concerning self-care; to develop a support manual accessible to all caregivers; to make videos that demonstrate technics and task procedures to support the caregiver in the caring process; to develop a digital platform where all the developed resources will be available (website and app) to support the care transition from the hospital to the residence integrating professionals from the hospital and from the primary healthcare services; to empower health professionals to use the caregivers’ and users’ self-care empowerment model.

This project will include participation of students, teachers, researchers and stakeholders throughout the project using an action research; where, as the materials are developed, the population target acceptance will be tested, justifying the corrections needed before moving to the next step, using a consistent methodology with an action and learning research process. Population: The population will be: dependent patients diagnosed with a chronic illness, total or partial dependency admitted to the Hospital and require caregiver after hospital discharge; Informal Caregivers whose dependent members of the family present the criteria laid up and Heath professional. To evaluate the patient and caregivers’ needs and capacity concerning self-care we will construct them (activity 1). During the pilot test period we will have, two kinds of metrics: Qualitative metrics available on (http://garrypetman.com.quest) and quantitative monitoring metrics for the use of the mobile app, including retention rate, churn rate, daily active users (DAU), daily sessions per DAU and stickiness, and also access statistics per module/feature on the app.

The main output will be: A training model of caregivers and users for self-care composed with: a caregiver’s support manual, a digital platform and a manual with the empowerment model to be used by health professionals.

Acknowledgements
The current abstract is being presented on behalf of a research group. It is also part of the Help2care - project: Help to care for users and caregivers, which is a Portuguese project with the support of COMPETE 2020 under the Scientific and Technological Research Support System, in the co-promotion phase. We acknowledge the Polytechnic of Leiria, the Polytechnic of Santarém, Polytechnic of Castelo Branco, Centro Hospitalar de Leiria and also to other members, institutions and students involved in the project.

References

Keywords
Transitions of care, Caregivers, Self-care, Users.

S8
TeenPower: e-Empowering teenagers to prevent obesity
Pedro Sousa 1,2 (pedro.sousa@ipieira.pt)
1Center for Innovative Care and Health Technology, Polytechnic Institute of Leiria, 2411-901 Leiria, Portugal; 2School of Health Sciences, Polytechnic Institute of Leiria, 2411-901 Leiria, Portugal
BMC Health Services Research 2018, 18(Suppl 2):S8

Background
Adolescent obesity has reached epidemic proportions, being urgent to find effective prevention strategies. The core components of classic prevention programs have been unable to obtain the desired adherence. The solution may involve a more extensive and frequent contact with the healthcare team and the use of alternative communication channels and interacting/dynamic technologies with adolescents. TeenPower is a transdisciplinary practice-based action research project that aims to develop innovative interventions to promote healthy behaviors. This project is promoted by the polytechnics of Leiria, Santarém and Castelo Branco, Municipio de Leiria (City Council), as well as local schools and primary healthcare stakeholders, key partners in the development phase and in the implementation of the intervention program.

Objective
The main goal is the development, implementation and evaluation of a program for the promotion of healthy behaviors and prevention of obesity in adolescence, based on e-therapy and sustained by the case management methodology. The project is directed to the cognitive-behavioral empowerment of adolescents, through increased and interactive contact between adolescents and a multidisciplinary healthcare team. The use of Information and Communication Technologies (ICT) in