

F. MICHAUD, S. GIROUX. **Active long-life trajectories: A vision for personalized healthcare and public health intervention through innovative information and communication technology.** *Gerontechnology* 2016;15(suppl):20s; doi:10.4017/gt.2016.15.s.630.00

Purpose Personalized medicine and interventions require the development and use of health ICT to empower people, gaining access and providing them with the appropriate information and support at the right time about their health or to assist them in preserving their quality of life as they grow old. The rapid market penetration of smart and mobile technologies in the last decade is intrinsically linked to the fundamental need for people to communicate and to have access to information, and the next challenge is to do the same with pervasive health technologies in ecological settings. **Method** We aim to develop systems that can interface the whole range of devices, from interfacing smart home sensors to activity and vital sign monitoring, robots for telepresence and assistance in activities of daily living, etc., linked to a cloud-based infrastructure allowing to share information between doctors, nurses, caregivers, electronic health record, research databases and patients, in secure a confidential fashion. What is currently lacking is the design of integrated and standardized frameworks for remote sensing, logging and interaction system in real life settings¹. **Results & Discussion** We are currently developing a framework that integrates remote patient monitoring, assisted living², videoconferencing and robot telepresence. It is designed from the ground-up to be a flexible, cloud-based, real-time and versatile framework, to provide simplicity, robustness, efficiency, usability, adaptability and optimality to clinical and practical needs and requirements³. The system is designed to be modular, to facilitate maintenance, improvements and expansion. Concurrently to technological development, need and usability assessments are being conducted with patients, clinicians and caregivers. Adoption barriers are also being identified, ranging from data validity, equipment certification, market evaluation, usability/efficiency/quality evaluations, purchase and maintenance plan, etc. All stakeholders must be involved in all stages to be able to un-risk health-ICT, in order to successfully deploy them in real life settings.

References

1. Deen J. Information and communications technologies for elderly ubiquitous healthcare in a smart home, *Personal and Ubiquitous Computing* 2015;19(3):573-599; doi:10.1007/s00779-015-0856-x
2. Gouin-Vallerand C, Abdulrazak B, Giroux S, Dey AK. A context-aware service provision system for smart environments based on the user interaction modalities. *Journal of Ambient Intelligence and Smart Environments* 2013;5(1):47-64; doi:10.3233/AIS-120190
3. Lepage P, Létourneau D, Hamel M, Brière S, Tousignant M, Michaud F. From teletraining to tele-homecare – Design of mobile and multi-stream telehealth systems. *Global Information Infrastructure and Network*, IEEE; 2014; doi:10.1109/GIIS.2014.6934274

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