GUEST EDITORIAL PREFACE

Special Issue on Sociotechnology and Pervasive Health, Part 1

Barbara Rita Barricelli, Department of Computer Science, Università degli Studi di Milano, Milan, Italy

Priya Davda, The Bayswater Institute, London, United Kingdom

The landscape of healthcare has increasingly been defined by a rise in patients with chronic illnesses, changing patterns of service use, and by government cuts in health and social care budgets. Technologies for telehealth, telecare and telemedicine have existed for over forty years and have often been presented as heralding a new era of healthcare, in which access to services and personalised care are improved whilst the costs of care are minimised by enabling healthcare interventions to be delivered within the community; Patients would not need to travel to see specialists, people could be kept safe in their own homes and there would be less need for expensive in-hospital treatment. For people with chronic illnesses in particular, the use of mobile technology as pervasive tools for the remote monitoring of health status by patients, health practitioners and relatives may be especially important in enabling the improvement of patients' health outcomes, quality of life and experiences of healthcare. Direct involvement of patients and health and social care professionals in the co-design process of pervasive health technologies poses particular sociotechnical design challenges because of the integration of different expertise, systems and interests within the same domain of application.

Researchers and service providers working with these advancing technologies in healthcare were invited to contribute to this special double issue on *Sociotechnology and Pervasive Health* for the International Journal of Sociotechnology and Knowledge Development. Eight papers were accepted for publication, presenting research aimed at understanding the processes, factors and challenges of the design and implementation of pervasive healthcare projects through a sociotechnical approach. Four of these papers will be presented in each special issue.

The aim of this publication is to present a selection of high-quality papers that advance the quality and knowledge of pervasive health and sociotechnology. Authors were asked to submit discussions and reviews about: methodologies

and case studies of mHealth, telecare, telehealth and telemedicine, patients' self-care and care in the home, remote monitoring of health status and experiences in the co-design and implementation of technologies within healthcare. The four papers submitted for the first of this double special issue are outlined below.

The paper by Peggy Gregory, Paula Byrne and Mark Gabbay, entitled '*Patient Experiences of Diabetes eHealth*' investigates patients' experiences and perceptions of having the complex condition of diabetes and explores self-management of their condition using a diabetes eHealth system. Undertaken within the context of a primary care setting, the authors designed and evaluated a web-based system for use in patients' homes, enabling participants to read information about their condition, communicate with health practitioners and share their blood glucose readings. Using a grounded theory approach, the views and experiences of thirty-eight participants were explored over several stages of semi-structured interviews. Drawing on a range of theoretical perspectives, the authors utilise the concepts of 'boundary objects' and 'social worlds' to argue that eHealth systems cross the boundary between personal self-management and external support seeking behaviours. They advocate the development of iterative co-design and evaluation techniques to enable the variety of meanings and responses of patients to be incorporated into the system for it to be a success.

The next paper also reflects on the remote monitoring of chronic illnesses management, but with shift in focus from patients to the practitioners. In the paper entitled '*mHealth in Resource-Constrained Environments*', Barbara Rita Barricelli and Yanet Devis investigate the remote management of anti-coagulation therapy (to prevent thrombosis) in rural Venezuela. Through the MANTRA (Mobile ANticoagulant TheRApy) Project, the authors explore the feasibility and acceptability of mobile technology in this context with the aim of improving remote communication between doctors in rural settings and hospital doctors. With the co-participation of doctors in the design phases, the authors designed and developed two interactive mo-

bile health devices and evaluated the outcome using task-based cognitive walkthrough and questionnaires. The authors propose the use of their research and design models (i.e. personas, paper prototype and high fidelity prototypes) in the development of other mHealth applications aimed at supporting the remote management of chronic illnesses in resource constrained environments through improving the remote communication between healthcare practitioners.

In their paper '*Rehabilitation Therapists as Software Creators?' Introducing End User Development in a Healthcare Setting*', Daniel Tetteroo, Panos Markopoulos, Annick Timmermans and Henk Seelen present an interesting study about the introduction of EUD (End-User Development) in the domain of physical rehabilitation. This paper, like the previous one, considers a scenario in which healthcare professionals actively participate in designing interactive systems. The authors describe a three-week long field deployment of their system in order to evaluate feedback from therapists in creating, sharing, and using exercises for arm-hand training with a tangible interactive tabletop application. As outlined in the paper, the existing literature did not contain many examples of EUD solutions where professionals were posited as end-users, especially where the focus was on tangible interactive systems. Furthermore, the paucity of EUD research in healthcare and physical rehabilitation more generally were also highlighted. The presented TagTrainer system appears to be a very appealing solution for supporting active participation of therapists in creating new exercises or in using exercises created by colleagues. By using EUD techniques, the participants involved in the experimentation enabled researchers to identify and analyse the therapists' motivations.

The last paper in this issue provides insights into the introduction of technology into the daily activities of healthcare practitioners. The paper '*The Use of Information Systems in Professional Healthcare Work Practices*' by Ann Svensson discusses the empirical findings of healthcare research aimed at studying the use of information systems in professional medical practice. The goal was to identify the implications and

challenges that healthcare practitioners face while using information systems and to study how characteristics related to certain healthcare professions may have an impact on professionals' attitudes and use of information systems, both at an individual and collective level.

We would like to thank the journal editors in-chief Constance Kampf and José Abdelnour-Nocera for inviting us as guest editors for the double issue. We also want to thank the reviewers of the papers: Peter Aspinall, Ken Eason, Jacqueline Floch, Erik Grönvall, Constance Kampf, Claudia Müller, Stefano Valtolina, Patrick Waterson.

Barbara Rita Barricelli
Priya Davda
Guest Editors
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