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Editorial

Development, assessment, and implementation of telemedicine and health informatics solutions

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Introduction: The European Telemedicine Conference 2015 (ETC15) serves as an interdisciplinary forum for healthcare professionals, directors, managers, and researchers and brings together governmental leaders, healthcare delivery organizations, and academic researchers. The research track of ETC15 focuses on research and operational evidence from innovative healthcare solutions to address challenges and findings from new product development, effectiveness studies, and operational experiences. The research track of ETC15 includes studies and other activities related to development, assessment and implementation of telemedicine and health informatics solutions in general.

This special issue includes 27 carefully selected abstracts submitted to the research track of ETC15 (October 21-22, 2015, Odense, Denmark) in response to a call for papers. The abstracts have gone through peer-review by an international program committee. Each abstract presents state-of-the-art research related to one or more of the following areas: Participatory design, implementation studies, assessment of the effectiveness of telemedicine, economic evaluation of telemedicine, clinical telemedicine practice, medical connectivity, enabling technologies, health policy and regulation, monitoring, health informatics, clinical decision support systems, knowledge management, evidence-based practice, assistive technology, and design and development of methodologies for healthcare IT.

The international program committee consists of: Stuart Anderson, The University of Edinburgh, Scotland; Heleen Riper, VU University Amsterdam, The Netherlands; Giovanni Vizzini, UPMC ITALY – ISMETT; Niilo Saranummi, VTT, Finland; Pilar Saura Agel, Badalona Serveis Assistencials, Spain; Terje Solvoll, Tromsø Telemedicine Laboratory; Norwegian Centre for Telemedicine, University Hospital of North Norway; Josep Roca, Clinic Barcelona, Spain; Birgit Graf, Fraunhofer, Germany. Uffe Kock Wiil and Kristian Kidholm serve as program chairs.

The research track of ETC15 is sponsored by Patient@home (www.patientathome.dk), University of Southern Denmark and Centre for Innovative Medical Technology (www.cimt.dk), Odense University Hospital.

The following has been selected as best paper of ETC15:

The abstract by Jørgensen, Rasmussen, and Yderstræde (*3D imaging for telemedical use*) describes results from a telemedicine study (using a 3D camera) aimed at monitoring the size of diabetic foot ulcers. By improving the outcome measure used in many studies of treatment of foot ulcers, this new use of 3D imaging may improve the future possibilities for identifying effective treatments for a large patient group.

The sessions at the conference focuses on the following topics:

New telemedicine studies: The abstract by Pedersen describes a newly started study aimed at developing a patient-centered approach to combat heart failure. Tanderup et al. describes the Hospital at Home project that aims at reducing the length of hospital stays by hospitalizing and treating elderly acutely ill patients in their own home. Jakobsen et al. describes a new study that aims at developing mobile health technology to empower postmenopausal women diagnosed with osteoporosis.

Assessment of effectiveness and cost-effectiveness: The abstract by Ruihuan et al. investigates whether telerehabilitation can meet the challenges posed in China. FASTERHOLDT et al. describes the development of a tool for early assessment of medical technology. Kidholm et al. describes a study of cost-effectiveness in the Teledi@log project for patients with heart disease. Birkemose and Ellingsen describe lessons learned from evaluation of a telemedicine project in Denmark.

New possibilities for technology use in clinical practice: The abstract by Østergaard and Dinesen describe a study of how a telemedicine solution for mental illness was received by the users. Haque et al. describes a new camera-based contactless solution for measurement of heart rate. Thorup et al. describes a study of the use of pedometers to motivate cardiac patients to more physical activity. Sannino et al. describe the development of a new model to monitor blood pressure. Cantio et al. describes an e-health solution to improve multiple skills of persons suffering from ASD. Fuglsang and Nielsen describe the use of an intelligent headset to monitor home training of neck patients. Nikolajsen and Dinesen describe a study of the use of self-tracking technologies for cardiac patients. Yamaguchi et al. describes experience of using telepresence robots to attend university courses. Petersen et al. describes a feasibility study of the use of an intelligent bed for heart failure patients. Byrgesen et al. describes the use of technology to alert back patients when making potentially harmful lower back movements and exercises. Irani et al. describes the use of new camera-based technology to detect pain from facial expressions.

Patient and clinician perspectives on technology: The abstract by Muruges-Warren et al. describes a study of how age influences user acceptance of mobile health technology. Nielsen et al. describes an evaluation of the user perceptions of telepsychiatry to guide future implementations. Sorknæs et al. describes user experiences from teleconsultations between COPD patients and nurses.

Health informatics and clinical practice: The abstract by Schmidt et al. describes a study of the use of patient monitoring systems at an Emergency Department. Perrier et al. describes a study of the effect of using health information systems in surgical departments in France. Jensen et al. describes the development of a clinical decision support system that can also make use of unstructured data (free text) from electronic health records (besides the structured data). Jørgensen and Hallenborg describe a study of ICT infrastructures and resulting recommendations for the future. Nielsen and Wanscher investigate how national and regional guidelines affect the possibility of patients getting treatment and care at home.