Do SOA medical decision-support systems pose unique requirements?
Experience from the MobiGuide project (and predecessors)

Abstract

MobiGuide was a large-scale European project, with over 60 researchers, clinicians and engineers, from 13 different organizations in five countries, in the area of guideline-based personalized medicine, which I have led. MobiGuide is a scalable, secure, ubiquitously accessible, and user-friendly mobile solution for designing, deploying, and maintaining a DSS for patients and their care providers. The novelty of the approach is in patient-centrality, personalization, and distribution of decision-support for patients who use a mobile CDSS that includes a Smartphone and wearable biosensors that interacts with the main web-based CDSS of the physicians. The CDSS is based on clinical guidelines and personal health records, provides personalized evidence-based clinical recommendations, and has demonstrated in our proof of concept implementation (gestational diabetes patients in a hospital in Spain and atrial fibrillation patients in Italy) an increase in patients' satisfaction and in their compliance to evidence-based clinical guidelines as well as an impact on clinician's decisions.

In this talk I will present a brief overview of the system, followed by a discussion of the special challenges that mobile clinical decision support systems pose and the innovative ways in which they were handled in MobiGuide. The talk will also present the main results of our 9-month long evaluation study with patient and clinicians. I will conclude with the main lessons that I have learned from this project.

Professor Mor Peleg, PhD

Dept. of Information Systems, University of Haifa, Israel

URL: http://mis.hevra.haifa.ac.il/~morpeleg/

Short bio:

Mor Peleg is Full Professor at the Dept. of Information Systems, University of Haifa, Israel, and has been Department Chair in 2009-2012. She is currently the Chair of the university's new Data Science Program. Her BSc and MSc in Biology and PhD in Information Systems are from the Technion, Israel. She spent 7 years at Stanford BioMedical Research during her post-doctoral studies and 2 Sabbaticals. She was awarded the New Investigator Award by the American Medical Informatics Association (AMIA) for her work on modeling and execution of the knowledge encoded in clinical guidelines and is International Fellow of the American College of Medical Informatics since 2013. She is Associate Editor of Journal of BioMedical Informatics and a member of the editorial board of Methods of Information in Medicine. Her research concerns knowledge representation, decision support systems, and process-aware information systems in healthcare, and appeared in journals such as JAMIA, International Journal of Medical Informatics, Journal of Biomedical Informatics, IEEE Transactions on Software Eng, TKDE, Bioinformatics. She was the coordinator of the FP7-ICT large-scale project MobiGuide (*http://www.mobiguide-project.eu/*) *in* 2011-2015. This project received an excellent review from the European

Commission. Her paper that summarizes the evaluation of the MobiGuide project was selected as paper of the year 2017 by the journal User Modeling and User-adapted Interaction. She has edited a number of special issues related to process support in healthcare and artificial intelligence in medicine. Mor has served in program committees of numerous conferences, including, among others, AI in Medicine (Where she chaired the scientific PC in 2011), Medinfo, ER. She has been co-chair of the BPM ProHealth Workshop eight times and an organizing committee member of Knowledge Representation for Healthcare Workshop six times.
http://mis.hevra.haifa.ac.il/~morpeleg/