

Editorial

Comprehensive eHealth

J. Zvárová¹, B. Blobel²

¹Center of Biomedical Informatics, Institute of Computer Science AS CR, Prague, Czech Republic

²University Hospital Regensburg, eHealth Competence Center, Regensburg, Germany

Current demographic, economic and social conditions in developed countries require a paradigm change for delivering high quality and efficient health services. In that context healthcare systems have to turn from organization-centered to process-oriented and finally towards life-long, individualized, shared patient's care, based on eHealth platform services. This has been broadly considered, e.g. by Haux [1]. Interoperability requirements for ubiquitous personalized health services reach beyond current concepts of health information integration among professional providers of health care. Future personalized health platforms have to maintain particularly semantic interoperability among systems using different modalities and technologies, different knowledge representation and domain experts' languages as well as different coding schemes and terminologies to include home care as well as personalized and mobile systems. This development is not restricted to regions or countries, but appears globally, requiring a comprehensive multidisciplinary and international collaboration. The new translational characteristics of medicine and the consequences for health informatics have been extendedly discussed by Kuhn et al. [2] as well as Kulikowski [3].

This special issue summarizes a nowadays view on selected eHealth topics presented during the International Conference on eHealth in Regensburg, 2-5 December 2007. Within the International Experts Summit, the conference offered invited speeches from internationally leading experts representing all domains involved in eHealth. Although generally demonstrating and facilitating collaboration, the last day of the event offered specific seminars, workshops and symposia addressing the

collaborative potential between Europe and Latin America (ELAN), analyzing the cross-border activities among Germany, Austria, the Czech Republic, and Switzerland. The results of this conference comprehensively covering eHealth were published in [4], [5]. Several contributions to either the Experts Summit or the open conference have been selected by the Scientific Program Committee to be extended and updated for an English publication in a Special Issue of *Methods of Information in Medicine* (Methods) and in parallel for a national language publication in the *European Journal for Biomedical Informatics* (EJBI), both in cooperation with Schattauer Verlagsgesellschaft mbH.

The series is introduced by a paper covering the basic constituents and architectural challenges of eHealth interoperability solutions, also tackling the ontological aspects of the multidisciplinary approach to eHealth (Blobel [6]). This ontology challenge is discussed deeper in the paper from Smith and Brochhausen [7], focusing on formal ontology representation, while Daumke and co-authors [8] discuss semantic interoperability of nonformal concept representation in medicine. The ontology aspect has been practically highlighted by Oemig et al. [9] at the Score Systems example. Spyropoulos and co-authors [10] demonstrate the continuity of care in pHealth by the inclusion of home care for cardio-respiratory diseases, putting the biomedical engineering dimension on the table. Several papers focus on the multimodal challenge of pHealth, such as Krisciukaitis et al. [11], who tackle the algorithmic challenge of signal analysis, or Hippmann and co-authors [12] considering the application of voice communication in documentation. Tanaka [13] includes the new domain of omics-based medicine and systems pathology for opening new

perspectives for personalized and predictive care. The loop is finally closed by Nagy et al. [14], discussing the complex interoperability challenge impacted by international nomenclatures, communication standards and enterprise programming techniques as well as by Lopez' paper [15] on the automated implementation of interoperable eHealth solutions, based on an architecture-centric and formal development process.

The editors of the 2009 volume (J. Zvárová and B. Blobel) would like to thank all authors for their extraordinary efforts to provide papers of a high scientific level far beyond the original scope of the conference. Furthermore, we are indebted to thank the Methods Editorial Board and Schattauer Printing House for enabling the preparation of this joint publication with EJBI.

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Contact

Jana Zvárová, PhD, DSc.

Full Professor

Center of Biomedical Informatics,
Institute of Computer Science AS CR,
Pod Vodarenskou vezi 2,
182 07 Prague
Czech Republic
E-mail: zvarova@euromise.cz