



## 5th International Workshop on Process-oriented Information Systems in Healthcare

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## 4th International Workshop on Knowledge Representation for Health Care

(ProHealth 2012 / KR4HC 2012)

Tallinn, Estonia – September 3rd, 2012

### Introduction

Healthcare (HC) organizations are facing the challenge of delivering high quality services to patients at affordable costs. These challenges become more prominent with the growth in the aging population with chronic diseases and the rise of HC costs. High degree of specialization of medical disciplines, huge amounts of medical knowledge and patient data to be consulted in order to provide evidence-based recommendations, and the need for personalized HC are prevalent trends in this information-intensive domain. The emerging situation requires computer based support of HC process, knowledge management, and clinical decision-making.

This workshop brings together researchers from two communities who have been addressing these challenges from two different perspectives. The knowledge representation for HC community, which is part of the larger medical informatics community, has been focusing on knowledge representation and reasoning to support knowledge management and clinical decision-making. This community has been developing efficient representations, technologies, and tools for integrating all the important elements that HC providers work with: Electronic Medical Records (EMRs) and HC information systems, clinical practice guidelines, and standardized medical vocabularies. The process-oriented information systems in HC community, which is part of the larger business process management (BPM) community, has been studying ways to adopt BPM technology in order to provide effective solutions for HC process management. BPM technology has been successfully used in other sectors for establishing process aware enterprise information systems (vs. collections of stand-alone systems for different departments in the organization). Adopting BPM technology in the HC sector is starting to address some of the unique characteristics of HC processes, including their high degree of flexibility, the integration with EMRs and shared semantics of HC domain concepts, and the need for tight cooperation and communication among medical care teams.

This joint workshop brings together two approaches: HC process support (*ProHealth*), and HC knowledge representation (*KR4HC*). The joint workshop shall elaborate both the potential and the limitations of the two approaches for supporting HC process & HC knowledge management as well as clinical decision-making. It shall further provide a forum wherein challenges, paradigms, and tools for optimized knowledge-based clinical process support can be debated. We want to bring together researchers and practitioners from these different, yet similar fields to improve the understanding of domain specific requirements, methods and theories, tools & techniques, and the gaps between IT support and HC processes yet to be closed.

### Topics

- Process modeling in healthcare
- Computer-interpretable clinical guidelines / protocols and decision support
- Workflow management in healthcare
- Semantic integration of healthcare processes with electronic medical records
- Knowledge representation and ontologies for healthcare processes
- Temporal knowledge representations and exploitation
- Facilitating knowledge-acquisition of healthcare processes
- Visualization, monitoring and mining healthcare processes
- Knowledge extraction from healthcare databases and EPRs
- Knowledge combination, personalization and adaptation of healthcare processes
- Compliance of healthcare processes
- Evaluation of quality and safety of careflow systems
- Managing flexibility and exceptions in healthcare processes
- Process optimization and simulation in healthcare organizations & networks
- Experiences in deploying knowledge-based tools in healthcare
- Patient empowerment in healthcare
- Linking clinical care and clinical research
- Lifecycle management for healthcare processes
- Context-aware healthcare processes
- Ambient intelligence & smart processes in healthcare
- Mobile process support in healthcare
- Process interoperability & standards in healthcare
- Process-oriented system architectures in healthcare

### Submission and Publication

Three types of submissions are possible: (1) full papers (12 pages long) reporting mature research results, (2) position papers reporting research in preliminary stage not yet been evaluated, and (3) tool reports. Position papers and tool reports should be no longer than 6 pages. Only papers in English are accepted. They must present original research contributions not concurrently submitted elsewhere, in the LNCS format, and the title page must contain a short abstract, a classification of the topics covered, preferably using the list of topics above, and an indication of the submission category (regular paper, position paper, or tool report).

**Submit PDF at:** <https://www.easychair.org/conferences/?conf=prohealth12kr4hc12>

All accepted contributions will appear in the Workshop Proceedings. A selection of the best full papers is expected to be published as **Springer Lecture Notes in Artificial Intelligence**.

### Workshop Chairs

**Richard Lenz**, FAU, Germany  
**Silvia Miksch**, TUWien, Austria  
**Mor Peleg**, University of Haifa, Israel  
**Manfred Reichert**, UULM, Germany  
**David Riaño**, URV, Spain  
**Annette ten Teije**, VUA, The Netherlands

### Program Committee

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 Samson Tu, Stanford University, USA  
 Dongwen Wang, University of Rochester, USA  
 Barbara Weber, University of Innsbruck, AT

### Important Dates

**Submission:** 1 June 2012  
**Notification:** 2 July 2012  
**Camera-ready:** 30 July 2012  
**Workshop:** 3 September 2012

### Workshop Webpage

[http://mis.hevra.haifa.ac.il/~morpeleg/events/prohealth\\_KR4HC\\_2012/](http://mis.hevra.haifa.ac.il/~morpeleg/events/prohealth_KR4HC_2012/)

### Contact Information

**Mor Peleg**  
 Department of Information Systems  
 Rabin Bldg., room 7049  
 Faculty of Social Sciences  
 University of Haifa, Haifa, Israel, 31905  
 E-Mail: morpeleg@is.haifa.ac.il  
 Tel: +972-4-824-9641

### Keynote Talk

**Prof. Yuval Shahar**, Ben-Gurion University, IL