

Contents

Preface	v
<i>Bernd Blobel, Arie Hasman and Jana Zvárová</i>	
EFMI STC 2013 Program Committee and Reviewers	vii
Information on EFMI Working Groups	ix
Invited Papers	
Knowledge Representation and Management Enabling Intelligent Interoperability – Principles and Standards	3
<i>Bernd Blobel</i>	
Handling Intra-Cluster Correlation when Analyzing the Effects of Decision Support on Health Care Process Measures	22
<i>Niels Peek, Rick Goud and Nicolette de Keizer</i>	
Basics and Requirements for Medical Decision Support Systems	
How Turing and Wolf Influenced My Decision Support Systems	31
<i>Bernard Richards</i>	
Designing Prognostic Models by Reinforcing Linear Separation	36
<i>Leon Bobrowski</i>	
Personalized Medicine and the Need for Decision Support Systems	41
<i>Kerstin Denecke and Cord Spreckelsen</i>	
Analyzing the “CareGap”: Assessing Gaps in Adherence to Clinical Guidelines in Adult Soft Tissue Sarcoma	46
<i>Zeev Waks, Esther Goldbraich, Ariel Farkash, Michele Torresani, Rossella Bertulli, Nicola Restifo, Paolo Locatelli, Paolo Casali and Boaz Carmeli</i>	
A Novel Way of Integrating Rule-Based Knowledge into a Web Ontology Language Framework	51
<i>Dragan Gamberger, Goran Krstačić and Alan Jović</i>	
Attitudes and Experience of Dutch General Practitioners Regarding Computerized Clinical Decision Support	56
<i>Stephanie Medlock, Saeid Eslami, Marjan Askari, Henk J. Brouwer, Henk C. van Weert, Sophia E. de Rooij and Ameen Abu-Hanna</i>	
A Comparison of English and French Approaches to Providing Patients Access to Summary Care Records: Scope, Consent, Cost	61
<i>Simon De Lusignan and Brigitte Seroussi</i>	

Global Quality Indicators for Primary Care Electronic Patient Records	66
<i>Etienne De Clercq, Sarah Moreels, Viviane Van Casteren, Nathalie Bossuyt and Geert Goderis</i>	

Knowledge Representation and Management

Structured Knowledge Acquisition for Defining Guideline-Compliant Pathways	73
<i>Katja Heiden and Britta Böckmann</i>	
Tempolenses with Variable Magnification for Sonic Representation of Medical Data. Application for Cardiac Signals	78
<i>George Mihalas, Sorin Paralescu, Minodora Andor, Dan Lighezan, Nicoleta Mirica, Danina Muntean, Mircea Hancu, Adrian Neagu, Monica Neagu, Anca Tudor and Ovidiu Fira-Mladinescu</i>	
System for Selecting Relevant Information for Decision Support	83
<i>Jan Kalina, Libor Seidl, Karel Zvára, Hana Grünfeldová, Dalibor Slovák and Jana Zvárová</i>	
Computational Cognitive Modeling for the Diagnosis of Specific Language Impairment	88
<i>Jesus Oliva, J. Ignacio Serrano, M. Dolores Del Castillo and Ángel Iglesias</i>	
Entropy-Driven Decision Tree Building for Decision Support in Gastroenterology	93
<i>Simona Bertolini, Andrea Maoli, Giuseppe Rauch and Mauro Giacomini</i>	
Sharing and Reusing Multimedia Multilingual Educational Resources in Medicine	98
<i>Zdenek Zdrahal, Petr Knoth, Paul Mulholland and Trevor Collins</i>	
An Ontological Treatment of Clinical Prediction Rules Implementing the Alvarado Score	103
<i>Derek Corrigan, Adel Taweel, Tom Fahey, Theodoras Arvanitis and Brendan Delaney</i>	
Simultaneously Authoring and Modeling Clinical Practice Guidelines: A Case Study in the Therapeutic Management of Type 2 Diabetes in France	108
<i>Jacques Bouaud, Hector Falcoff and Brigitte Séroussi</i>	

Medical Decision Support Solutions

A Conceptual Framework for Automating the Operational and Strategic Decision-Making Process in the Health Care Delivery System	115
<i>Toni Ruohonen and Mohammed Ennejmy</i>	
Supporting Drug Prescription Through Autocompletion	120
<i>Frederic Ehrler and Christian Lovis</i>	
Physicians Perceptions of an Educational Support System Integrated into an Electronic Health Record	125
<i>Damian Borbolla, Paul Gorman, Guilherme Del Fiol, Vishnu Mohan, William Hersh, Carlos Otero, Daniel Luna and Fernan Gonzalez Bernaldo De Quiros</i>	

Project I-COP – Architecture of Software Tool for Decision Support in Oncology	130
<i>Milan Blaha, Dalibor Janča, Petr Klika, Jan Mužík and Ladislav Dušek</i>	
Design and Implementation of the Standards-Based Personal Intelligent Self-Management System (PICS)	135
<i>Tobias von Bargaen, Matthias Gietzelt, Matthias Britten, Bianying Song, Klaus-Hendrik Wolf, Martin Kohlmann, Michael Marschollek and Reinhold Haux</i>	
Prognostic Decision Support Using Symbolic Dynamics in CTG Monitoring	140
<i>Mario Cesarelli, Maria Romano, Paolo Bifulco, Giovanni Improta and Giovanni D'Addio</i>	
Rule-Based Healthcare-Associated Bloodstream Infection Classification and Surveillance System	145
<i>Yi-Ju Tseng, Jung-Hsuan Wu, Hui-Chi Lin, Hsiang-Ju Chiu, Bo-Chiang Huang, Rung-Ji Shang, Ming-Yuan Chen, Wei-Hsin Chen, Huai-Te Chen, Feipei Lai and Yee-Chun Chen</i>	
Diagnostic Decision Support of Heart Rate Turbulence in Sleep Apnea Syndrome	150
<i>Giovanni D'Addio, Alberto De Felice, Giovanni Balzano, Rita Zotti, Pellegrino Iannotti, Paolo Bifulco and Mario Cesarelli</i>	
Utilization of Ontology Look-Up Services in Information Retrieval for Biomedical Literature	155
<i>Dina Vishnyakova, Emilie Pasche, Christian Lovis and Patrick Ruch</i>	
A Proposed Novel Method for CHD Screening by Fetal Heart Murmur Detection Using Phonocardiography	160
<i>Ferenc Kovács, Gábor Fodor and Gábor Hosszú</i>	
DIOS – Database of Formalized Chemotherapeutic Regimens	165
<i>Daniel Klimes, Roman Smid, Miroslav Kubasek, Rostislav Vyzula and Ladislav Dušek</i>	
Adverse Drug Event Prevention in Neonatal Care: A Rule-Based Approach	170
<i>Katerina Lazou, Maria Farini, Vassilis Koutkias, Vassiliki Drossou, Nicos Maglaveras and Nick Bassiliades</i>	
Evaluation	
Interoperability Evaluation Case Study: An Obstetrics-Gynecology Department and Related Information Systems	177
<i>Mihaela Vida, Lăcrămioara Stoicu-Tivadar, Bernd Blobel and Elena Bernad</i>	
Interest Propagation for Knowledge Extraction and Representation	182
<i>Francesca Mulas, Elisa Del Fabbro, Blaz Zupan and Riccardo Bellazzi</i>	
Automatic System Testing of a Decision Support System for Insulin Dosing Using Google Android	187
<i>Stephan Spat, Bernhard Höll, Georg Petritsch, Lukas Schaupp, Peter Beck and Thomas R. Pieber</i>	

Standardization Issues

Implementing Healthcare Information Security: Standards Can Help <i>Andrej Orel and Igor Bernik</i>	195
Comparing the Use of SNOMED CT and ICD10 for Coding Clinical Conditions to Implement Laboratory Guidelines <i>Mobin Yasini, Vahid Ebrahimi, Catherine Duclos, Alain Venot and Jean-Baptiste Lamy</i>	200
Subject Index	205
Author Index	207