## Contents

**Preface**  v  
*Anne Moen, Stig Kjær Andersen, Jos Aarts and Petter Hurler*

**Reviewers for MIE2011**  vii

### Citizen-Centred e-Health

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Unified Approach for Social-Medical Discovery</td>
<td>3</td>
</tr>
<tr>
<td><em>Haggai Roitman, Yossi Mesika, Yevgenia Tsimerman and Sivan Yoge</em></td>
<td></td>
</tr>
<tr>
<td>Information Provision for Adolescents with Cancer</td>
<td>8</td>
</tr>
<tr>
<td><em>Anna Shillabeer</em></td>
<td></td>
</tr>
<tr>
<td>Electronic Symptom Reporting by Patients: A Literature Review</td>
<td>13</td>
</tr>
<tr>
<td><em>Monika A. Johansen, Eva Henriksen, Gro Berntsen and Alexander Horsch</em></td>
<td></td>
</tr>
<tr>
<td>Increasing Physical Activity Through Health-Enabling Technologies: The Project “Being Strong Without Violence”</td>
<td>18</td>
</tr>
<tr>
<td><em>Corinna Scharmweber, Wolfram Ludwig, Michael Marschollek, Wolfgang Pein, Peter Schack, Reiner Schubert and Reinhold Haux</em></td>
<td></td>
</tr>
<tr>
<td>Review of Mobile Terminal-Based Tools for Diabetes Diet Management</td>
<td>23</td>
</tr>
<tr>
<td><em>Eunji Lee, Naoe Tatara, Eirik Årsand and Gunnar Hartvigsen</em></td>
<td></td>
</tr>
<tr>
<td>Interaction Between COPD Patients and Healthcare Professionals in a Cross-Sector Tele-Rehabilitation Programme</td>
<td>28</td>
</tr>
<tr>
<td><em>Birthe Dinesen, Stig Kjaer Andersen, Ole Hejlesen and Egon Toft</em></td>
<td></td>
</tr>
<tr>
<td>Enhancing Self-Efficacy for Self-Management in People with Cystic Fibrosis</td>
<td>33</td>
</tr>
<tr>
<td><em>Elizabeth Cummings, Jenny Hauser, Helen Cameron-Tucker, Petya Fitzpatrick, Melanie Jessup, E. Haydn Walters, David Reid and Paul Turner</em></td>
<td></td>
</tr>
<tr>
<td>Evaluation of a Hyperlinked Consumer Health Dictionary for Reading EHR Notes</td>
<td>38</td>
</tr>
<tr>
<td><em>Laura Slaughter, Karl Øyri and Erik Fosse</em></td>
<td></td>
</tr>
<tr>
<td>A Pilot Assessment of Why Patients Choose Not to Participate in Self-Monitoring Oral Anticoagulant Therapy</td>
<td>43</td>
</tr>
<tr>
<td><em>Morten Algy Bonderup, Stine Veje Hangaard, Pernille Heyckendorff Lilholt, Mette Dencker Johansen and Ole K. Hejlesen</em></td>
<td></td>
</tr>
<tr>
<td>Mobile Peer Support in Diabetes</td>
<td>48</td>
</tr>
<tr>
<td><em>Taridzo Chomutare, Eirik Årsand and Gunnar Hartvigsen</em></td>
<td></td>
</tr>
<tr>
<td>Evolution of Health Web Certification Through the HONcode Experience</td>
<td>53</td>
</tr>
<tr>
<td><em>Célia Boyer, Vincent Boujard and Antoine Geissbuhler</em></td>
<td></td>
</tr>
<tr>
<td>Personal Health Data: Patient Consent in Information Age</td>
<td>58</td>
</tr>
<tr>
<td><em>Dragana Martinovic, Victor Ralevich and Milan Petkovic</em></td>
<td></td>
</tr>
<tr>
<td>Emotions and Personal Health Information Management: Some Implications for Design</td>
<td>63</td>
</tr>
<tr>
<td><em>Enrico Maria Piras and Alberto Zamutto</em></td>
<td></td>
</tr>
<tr>
<td>Socio-Technical Challenges in Designing a Web-Based Communication Platform</td>
<td>68</td>
</tr>
<tr>
<td><em>Miria Grisot, Maja van der Velden and Polyxeni Vassilakopoulou</em></td>
<td></td>
</tr>
</tbody>
</table>
Results of the 10th HON Survey on Health and Medical Internet Use
Natalia Pletneva, Sarah Cruchet, Maria-Ana Simonet, Maki Kajiwara and Célia Boyer
73

Social Connectedness Through ICT and the Influence on Wellbeing: The Case of the CareRabbit
Sanne R. Blom, Magda M. Boere-Boonekamp and Robert A. Stegwee
78

Technological Choices for Mobile Clinical Applications
Frederic Ehrler, David Issom and Christian Lovis
83

Modified Rand Method to Derive Quality Indicators: A Case Study in Cardiac Rehabilitation
Mariëtte van Engen-Verheul, Hareld Kemps, Roderik Kraaijenhagen, Nicolette de Keizer and Niels Peek
88

A Cloud-Based Semantic Wiki for User Training in Healthcare Process Management
D. Papakonstantinou, M. Poulymenopoulou, F. Malamateniou and G. Vassilacopoulos
93

Reference Architecture of Application Services for Personal Wellbeing
Mika Tuomainen and Juha Mykkänen
98

Development of a Web-Based Decision Support System for Insulin Self-Titration
A.C.R. Simon, F. Holleman, J.B. Hoekstra, P.A. de Clercq, B.A. Lenkes, J. Hermanides and N. Peek
103

TreC – A REST-Based Regional PHR
Claudio Eccher, Enrico Maria Piras and Marco Stenico
108

Decision Support, Knowledge Management, Guidelines

Next Generation Neonatal Health Informatics with Artemis
Carolyn McGregor, Christina Catley, Andrew James and James Padbury
115

Limitations in Physicians’ Knowledge when Assessing Dementia Diseases – An Evaluation Study of a Decision-Support System
Helena Lindgren
120

A Generic System for Critiquing Physicians’ Prescriptions: Usability, Satisfaction and Lessons Learnt
Jean-Baptiste Lamy, Vahid Ebrahiminia, Brigitte Seroussi, Jacques Bouaud, Christian Simon, Madeleine Favre, Hector Falcoff and Alain Venot
125

An OCL-Compliant GELLO Engine
Jing Mei, Haifeng Liu, Guotong Xie, Shengping Liu and Baoyao Zhou
130

Improvement of Inter-Services Communication Through a CDSS Dedicated to Myocardial Perfusion Scintigraphy
Julie Nies, Gersende Georg, Marc Faraggi, Isabelle Colombet and Pierre Durieux
135

Prognostic Data-Driven Clinical Decision Support – Formulation and Implications
Ruti Rinott, Boaz Carmeli, Carmel Kent, Daphna Landau, Yonatan Maman, Yoav Rubin and Noam Slonim
140
Knowledge-Based Surveillance for Preventing Postoperative Surgical Site Infection

Arash Shaban-Nejad, Gregory W. Rose, Anya Okhmatovskaya, Alexandre Riazanov, Christopher J.O. Baker, Robyn Tamblyn, Alan J. Forster and David L. Buckeridge

Factors Known to Influence Acceptance of Clinical Decision Support Systems

E. Kilsdonk, L.W.P. Peute, S.L. Knijnenburg and M.W.M. Jaspers

Cross-Frontier Information Provision in the ALIAS European Project

Frédérique Laforest, Atisha Garin-Michaud, Thierry Durand, Emmanuel Eyraud and Edouard Barthuet

Event-Driven Architecture for Health Event Detection from Multiple Sources

Kerstin Denecke, Göran Kirchner, Peter Dolog, Pavel Smrz, Jens Linge, Gerhard Backfried and Johannes Dreesman

Towards an Interoperable Information Infrastructure Providing Decision Support for Genomic Medicine

Matthias Samwald, Holger Stenzhorn, Michel Dumontier, M. Scott Marshall, Joanne Luciano and Klaus-Peter Adlassnig

Identifying Patients for Clinical Trials Using Fuzzy Ternary Logic Expressions on HL7 Messages

Raphael W. Majeed and Rainer Röhrig

Towards a Metadata Registry for Evaluating Augmented Medical Interventions

Anne-Sophie Silvent, Alexandre Moreau-Gaudry and Philippe Cinquin

A Comparison of Internal Versus External Risk-Adjustment for Monitoring Clinical Outcomes

Antonie Koetsier, Nicolette de Keizer and Niels Peek

Interoperability Driven Integration of Biomedical Data Sources

Douglas Teodoro, Remy Choquet, Daniel Scholer, Giovanni Mels, Emilie Pasche, Patrick Ruch and Christian Lovis

Creating Knowledge Archive in the Internet Medical Consultant for Decision Support at the Point of Care

Drasko Nakic and Suzana Loškovska

Architecture of a Decision Support System to Improve Clinicians’ Interpretation of Abnormal Liver Function Tests

Raphaël Chevrier, David Jaques and Christian Lovis

Education – Professional Development

Push and Pull Models to Manage Patient Consent and Licensing of Multimedia Resources in Digital Repositories for Case-Based Reasoning

Andrzej A. Kononowicz, Nabil Zary, David Davies, Jörn Heid, Luke Woodham and Inga Hege

Next Steps in Evaluation and Evidence – from Generic to Context-Related

Michael Rigby, Jytte Brender, Marie-Catherine Beuscqart-Zephir, Hannele Hyppönen, Pirkko Nykänen, Jan Talmon, Nicolette de Keizer and Elske Ammenwerth

Virtual Ward Round

Michael Storck and Frank Uckert
Professional Development of Health Informatics in Northern Ireland
Paul McCullagh, Gerry McAllister, Paul Hanna, Dewar Finlay and Paul Comac

How Important is Theory in Health Informatics? A Survey of UK Academics
Philip Scott, James Briggs, Jeremy Wyatt and Andrew Georgiou

Better Quality in Healthcare Through Gamified Simulation Based Skill Training Application
Weronika Tancredi, Mikael Wintell and Lars Lindsköld

Implementation of a Web-Based Interactive Virtual Patient Case Stimulation as a Training and Assessment Tool for Medical Students
A. Oliven, R. Nave, D. Gilad and A. Barch

Online CME Usage Patterns
M. Cristina Mazzoleni, Carla Rognoni, Enrico Finozzi, Ines Giorgi, Marco Pagani and Marcello Imbriani

How Do Nursing Students Perceive the Notion of EHR? An Empirical Investigation
Parisis Galios, Stelios Daskalakis, Maria Katharaki, Joseph Liaskos and John Mantas

Recording and Podcasting of Lectures for Students of Medical School
Pierre Brunet, Marc Cuggia and Pierre Le Beux

Electronic Health Record, Workflow, Intra- and Interorganizational Collaboration

Developing an Electronic Health Record for Intractable Diseases in Japan
Eizen Kimura, Shinji Kobayashi, Yasuhiro Kanatani, Ken Ishihara, Tsuneo Mimori, Ryousuke Takahashi, Tsutomu Chiba and Hiroyuki Yoshihara

Three Key Concerns for a Successful EPR Deployment and Usage
Rebecka Janols, Bengt Göransson and Bengt Sandblad

Implementation of an Open Source Provider and Organization Registry Service
Markus Birkle, Benjamin Schneider, Tobias Beck, Thomas Deuster, Markus Fischer, Florian Flatow, Robert Heinrich, Christian Kapp, Jasmin Riemer, Michael Simon and Björn Bergh

Implementation and Experimentation of TEDIS: An Information System Dedicated to Patients with Pervasive Developmental Disorders
Mohamed Ben Said, Laurence Robel, Erwan Vion, Antoine El Ghazali, Bernard Golse, Jean Philippe Jais and Paul Landais

Traceability of Patient Records Usage: Barriers and Opportunities for Improving User Interface Design and Data Management
Ricardo Cruz-Correia, Luis Lapão and Pedro Pereira Rodrigues

Important Ingredients for Health Adaptive Information Systems
Yalini Senathirajah and Suzanne Bakken

Everyday Ethical Dilemmas Arising With Electronic Record Use in Primary Care
Ellen Balka and Marianne Tolar

The Shift in Workarounds Upon Implementation of Computerized Physician Order Entry
Heleen van der Sijs, Irene Rootjes and Jos Aarts
Task Analysis and Interoperable Application Services for Service Event Management
Juha Mykkänen, Hannu Virkanen, Pirkko Kortekangas, Saara Savolainen and Timo Itäälä
Organs Transplantation – How to Improve the Process?
Viriato Ferraz, Gerardo Oliveira, Pedro Vieira-Marques and Ricardo Cruz-Correia
A Reference Architecture for Integrated EHR in Colombia
Edgar de la Cruz, Diego M. Lopez, Gustavo Uribe, Carolina Gonzalez and Bernd Blobel
Integration Services to Enable Regional Shared Electronic Health Records
Ilidio C. Oliveira and João P.S. Cunha
Towards Smart Environments Using Smart Objects
Martin Sedlmayr, Hans-Ulrich Prokosch and Ulli Münch
Interoperability in Hospital Information Systems: A Return-On-Investment Study Comparing CPOE with and Without Laboratory Integration
Rodolphe Meyer and Christian Lovis
Building the Technical Infrastructure to Support a Study on Drug Safety in a General Hospital
Melanie Kirchner, Thomas Bürkle, Andrius Patapovas, Anja Mathews, Reinhold Sojer, Fabian Müller, Harald Dormann, Renke Maas and Hans-Ulrich Prokosch
Implementing Change in a Diverse and Politicized Landscape
Espen Skorve
Characteristics of German Hospitals Adopting Health IT Systems – Results from an Empirical Study
Jan-David Liebe, Nicole Egbert, Andreas Frey and Ursula Hühner
Nursing Information System: A Relevant Substitute of the Paper Nursing Record
Margreet B. Michel-Verkerke
GP Connector: A Tool to Enable Access for General Practitioners to a Standards-Based Personal and Electronic Health Record in the Rhine-Neckar Region
Oliver Heinze, Holger Schmuhl and Björn Bergh
Proposal of an End-To-End Emergency Medical System
Samir El-Masri and Basema Saddik
The General Practitioner in the Giant’s Web
Vigdis Heimby
When Information Sharing is not Enough
Berit Brattheim, Arild Faxvaag and Pieter Toussaint
Information and Communication Needs of Healthcare Workers in the Perioperative Domain
Borge Lillebo, Andreas Seim and Arild Faxvaag
Clinical Situations and Information Needs of Physicians During Treatment of Diabetes Mellitus Patients: A Triangulation Study
Gudrun Hübner-Bloder, Georg Dufschmid, Michael Kohler, Christoph Rinner, Samrend Saboor and Elske Ammenwerth
A Constructivist Approach? Using Formative Evaluation to Inform the Electronic Prescription Service Implementation in Primary Care, England
Jasmine Harvey, Anthony Avery, Justin Waring, Ralph Hibberd and Nicholas Barber

Can Cloud Computing Benefit Health Services? – A SWOT Analysis
Mu-Hsing Kuo, Andre Kushniruk and Elizabeth Borycki

Evaluation

Medical Providers’ Dental Information Needs: A Baseline Survey
Amit Acharya, Andrea Mahnke, Po-Huang Chyou, Carla Rottscheit and Justin B. Starren

What Makes an Information System More Preferable for Clinicians?
A Qualitative Comparison of Two Systems
Habilolah Pirnejad, Zahra Niazhkani, Jos Aarts and Roland Bal

Does PACS Facilitate Work Practice Innovation in the Intensive Care Unit?
Isla M. Hains, Nerida Creswick and Johanna I. Westbrook

Innovation in Intensive Care Nursing Work Practices with PACS
Nerida Creswick, Isla M. Hains and Johanna I. Westbrook

Evaluation of Telephone Triage and Advice Services: A Systematic Review on Methods, Metrics and Results
Sara Carrasqueiro, Mónica Oliveira and Pedro Encarnação

Human Factors Based Recommendations for the Design of Medication Related Clinical Decision Support Systems (CDSS)
Sylvia Pelayo, Romaric Marcilly, Stéphanie Bernonville, Nicolas Leroy and Marie-Catherine Beuscant-Zephir

Making a Web Based Ulcer Record Work by Aligning Architecture, Legislation and Users – A Formative Evaluation Study
Anne G. Ekeland, Eva Skipenes, Beate Nyheim and Ellen K. Christiansen

Assessing the Role of a Site Visit in Adopting Activity Driven Methods
Irmeli Luukkonen, Kajia Saranto and Mikko Korpela

A Multi-Method Study of Factors Associated with Hospital Information System Success in South Africa
Lyn A. Hanmer, Sedick Isaacs and J. Dewald Roode

Assessing Biocomputational Modelling in Transforming Clinical Guidelines for Osteoporosis Management
Rainer Thiel, Marco Viceconti and Karl Stroetmann

Technical Data Evaluation of a Palliative Care Web-Based Documentation System
Tobias Hartz, René Brüntrup and Frank Ückert

Imaging and Biosignals

Extracting Gait Parameters from Raw Electronic Walkway Data
André Dias, Lukas Gorzelniak, Angela Döring, Gunnar Hartvigsen and Alexander Horsch

Safe Storage and Multi-Modal Search for Medical Images
Jukka Kommeri, Marko Niinimäki and Henning Müller
Respiration Tracking Using the Wii Remote Game-Controller
  J. Guirao Aguilar, J.G. Bellika, L. Fernandez Luque and V. Traver Salcedo
A Nomenclature for the Analysis of Continuous Sensor and Other Data in the
Context of Health-Enabling Technologies
  Matthias Gietzelt, Klaus-Hendrik Wolf and Reinhold Haux
Image-Based Classification of Parkinsonian Syndromes Using T2’-Atlases
  Nils Daniel Forkert, Alexander Schmidt-Richberg, Brigitte Holst, Alexander Münchau, Heinz Handels and Kai Boelmans
Cell Edge Detection in JPEG2000 Wavelet Domain – Analysis on Sigmoid
Function Edge Model
  Vytenis Punys and Ramunas Maknickas

Information Modeling, Storage and Retrieval

Using Multimodal Mining to Drive Clinical Guidelines Development
  Emilie Pasche, Julien Gobeill, Douglas Teodoro, Dina Vishnyakova, Arnaud Gaudinat, Patrick Ruch and Christian Lovis
Defining and Reconstructing Clinical Processes Based on IHE and BPMN 2.0
  Melanie Strasser, Franz Pfeifer, Emmanuel Helm, Andreas Schuler and Josef Altmann
Facilitating Access to Laboratory Guidelines by Modeling Their Contents and
Designing a Computerized User Interface
  Mobin Yasini, Catherine Duclas, Jean-Baptiste Lamy and Alain Venot
Evaluation of Multi-Terminology Super-Concepts for Information Retrieval
  Nicolas Griffon, Lina F. Soualmia, Aurélie Névélô, Philippe Massari, Benoît Thirion, Badsse Dahamna and Stefan J. Darmoni
Framework Model and Principles for Trusted Information Sharing in Pervasive
Health
  Pekka Ruotsalainen, Bernd Blobel, Pirkko Nykänen, Antti Seppälä and Hannu Sorvari
Populating the i2b2 Database with Heterogeneous EMR Data: A Semantic
Network Approach
  Sebastian Mate, Thomas Bürkle, Felix Köpcke, Bernhard Breil, Bernd Wullich, Martin Dugas, Hans-Ulrich Prokosch and
  Thomas Ganslandt
A Novel Way of Standardized and Automized Retrieval of Timing Information
Along Clinical Pathways
  Eva Gattnar, Okan Ekinci, Vesselin Detschew
Computing the Compliance of Physician Drug Orders with Guidelines Using
an OWL2 Reasoner and Standard Drug Resources
  Joseph Noussa Yao, Brigitte Séroussi and Jacques Bouaud
Automatic Definition of the Oncologic EHR Data Elements from NCIT in OWL
  Marc Cuggia, Annabel Bourdé, Bruno Turlin, Sebastien Vincendeau, Valerie Bertaud, Catherine Bohec and Régis Duvaufierer
Developing a Model for the Adequate Description of Electronic Communication
in Hospitals
  Samrend Saboor and Elske Ammenwerth
Contextualization in Automatic Extraction of Drugs from Hospital Patient Records
Svetla Boytcheva, Dimitar Tcharaktchiev and Galia Angelova 527

Revisiting the Area Under the ROC
Berry de Bruijn 532

Service Delivery for e-Health Applications
Martin Stuemmler 537

A KPI Framework for Process-Based Benchmarking of Hospital Information Systems
Franziska Jahn and Alfred Winter 542

Natural Language Processing, Data Mining

Medical Knowledge Evolution Query Constraining Aspects
Ann-Marie Eklund 549

Optimal Asymmetrical SVM Using Pattern Search. A Health Care Application
Gilles Cohen and Rodolphe Meyer 554

Factuality Levels of Diagnoses in Swedish Clinical Text
Sumithra Velupillai, Hercules Dalianis and Maria Kvist 559

Network Analysis of Possible Anaphylaxis Cases Reported to the US Vaccine Adverse Event Reporting System after H1N1 Influenza Vaccine
Taxiarchis Botsis and Robert Ball 564

Using Pharmacogenetics Knowledge to Increase Accuracy of Alerts for Adverse Drug Events
Yossi Mesika, Byung Chul Lee, Yevgenia Tsimerman, Haggai Roitman and Heon Kyu Park 569

Schizophrenia Prediction with the Adaboost Algorithm
Jan Hrdlicka and Jiri Klema 574

Applying One-vs-One and One-vs-All Classifiers in k-Nearest Neighbour Method and Support Vector Machines to an Otoneurological Multi-Class Problem
Kirsi Varpa, Henry Joutsijoki, Kati IlIanen and Martti Juhola 579

Rooglo: An Information Retrieval Engine for Clinical Data Warehouse
Marc Cuggia, Nicolas Gareelon, Boris Campillo-Gimenez, Thomas Bernicot, Jean-Francois Laurent, Etienne Garin, Andre Happe and Regis Duvaufierrier 584

Truecasing Clinical Narratives
Markus Kreuzthaler and Stefan Schulz 589

Checking Coding Completeness by Mining Discharge Summaries
Stefan Schulz, Thorsten Seddig, Susanne Hanser, Albrecht Zaiß and Philipp Daumke 594

Privacy and Security

Healthcare Professionals’ Experiences with EHR-System Access Control Mechanisms
Arild Faxvaag, Trond S. Johansen, Vigdis Heimly, Line Melby and Anders Grimsmo 601
Personal Health Information on Display: Balancing Needs, Usability and Legislative Requirements
Erlend Andreas Gjære, Inger Anne Tøndel, Maria B. Line, Herbjørn Andrensen and Pieter Toussaint
Watermarking – A New Way to Bring Evidence in Case of Telemedicine Litigation
Gouenou Coatrieux, Catherine Quantin, François-André Allaert, Bertrand Auverlot and Christian Roux
Sharing Sensitive Personal Health Information Through Facebook:
The Unintended Consequences
Mowafa Househ
End-to-End Security for Personal Telehealth
Paul Koster, Muhammad Asim and Milan Petkovic

Public Health, Catastrophes, Outbreaks
The Epidemiologic Surveillance of Dengue-Fever in French Guiana: When Achievements Trigger Higher Goals
Claude Flamand, Philippe Quenel, Vanessa Ardillon, Luisiane Carvalho, Sandra Bringay and Maguelonne Teisseire
Prescribing History to Identify Candidates for Chronic Condition Medication Adherence Promotion
Jim Warren, Debra Warren, Hong Yul Yang, Thusitha Mabotuwana, John Kennedy, Tim Kenealy and Jeff Harrison
Challenges for Signal Generation from Medical Social Media Data
Johannes Dreesman and Kerstin Denecke
Providing Trust and Interoperability to Federate Distributed Biobanks
Martin Lablans, Sebastian Bartholomäus and Frank Uckert
Web 2.0 in Healthcare: State-of-the-Art in the German Health Insurance Landscape
Mirko Kuehne, Nadine Blinn, Christoph Rosenkranz and Markus Nuettgens
Improving the Transparency of Health Information Found on the Internet Through the Honcode: A Comparative Study
Sabine Laversin, Vincent Baujard, Arnaud Gaudinat, Maria-Ana Simonet and Célia Boyer

Telemedicine and Mobile Health
Data Privacy Preservation in Telemedicine: The PAIRSE Project
Ebrahim Nageba, Bruno Defude, Franck Morvan, Chirine Ghedira and Jocelyne Fayn
Relevance and Usability of a Computerized Patient Simulator for Continuous Medical Education of Isolated Care Professionals in Sub-Saharan Africa
Georges Bediang, Cheick Oumar Bagayoko, Marc-André Raetzo and Antoine Geissbühler
Applications of Medical Intelligence in Remote Monitoring
István Vassányi, György Kozmann, András Bánhalmi, Balázs Végső, István Kösa, Tibor Dulai, Zsolt Tarjányi, Gergely Tuboly, Péter Cserti and Balázs Pintér
Virtual TeleRehab: A Case Study

Lena Pareto, Britt Johansson, Sally Zeller, Katharina S. Sunnerhagen, Martin Rydmark and Jurgen Broeren

Patient Empowerment by Increasing Information Accessibility in a Telecare System

Vasile Topac and Vasile Stoicu-Tivadar

Terminology, Ontologies and Standardization

A Standard Based Approach for Biomedical Knowledge Representation

Ariel Farkash, Hani Neuvirth, Yaara Goldschmidt, Costanza Conti, Federica Rizzi, Stefano Bianchi, Erika Salvi, Daniele Cusi and Amnon Shabo

Ontology-Based Framework for Electronic Health Records Interoperability

Carolina González, Bernd G.M.E. Blobel and Diego M. López

Ontology-Based Knowledge Management for Personalized Adverse Drug Events Detection

Feng Cao, Xingzhi Sun, Xiaoyuan Wang, Bo Li, Jing Li and Yue Pan

A Formal Analysis of HL7 Version 2.x

Frank Oemig and Bernd Blobel

Simplifying HL7 Version 3 Messages

Robert Worden and Philip Scott

Creating an Ontology Driven Rules Base for an Expert System for Medical Diagnosis

Valérie Bertaud Gounot, Valéry Donfack, Jérémy Lasbleiz, Annabel Bourde and Régis Duvauferrier

A Methodology and Supply Chain Management Inspired Reference Ontology for Modeling Healthcare Teams

Craig E. Kuziemsky and Sara Yazdi

Supporting openEHR Java Desktop Application Developers

Hajar Kashfi and Olof Torgersson

Large Scale Healthcare Data Integration and Analysis Using the Semantic Web

John Timm, Sondra Renly and Ariel Farkash

ACGT: Advancing Clinico-Genomic Trials on Cancer – Four Years of Experience

Luis Martin, Alberto Anguita, Norbert Graf, Manolis Tsiknakis, Mathias Brochhausen, Stefan Rüping, Anca Bucur, Stelios Sfakianakis, Thierry Sengstag, Francesca Buffa and Holger Stenzhorn

Architectural Approach for Providing Relations in Biomedical Terminologies and Ontologies

Mathias Brochhausen and Bernd Blobel

Integration of Classifications and Terminologies in Metadata Registries Based on ISO/IEC 11179

Sylvie Mn Ngouongo and Jürgen Staubsberg

Development of a New International Classification of Health Interventions Based on an Ontology Framework

Béatrice Trombert Paviot, Richard Madden, Lori Moskal, Albrecht Zaiss, Cédric Bousquet, Anand Kumar, Pierre Lewalle and Jean Marie Rodrigues
The Revision of the Korean Classifications of Health Interventions Based on the Proposed ICHI Semantic Model and Lessons Learned
Boyoung Jung, Chaeyoung Jung, Jean Marie Rodrigues, Cédric Bousquet, Anand Kumar, Pierre Lewalle, Béatrice Trombert Paviot, Hoonshik Yang and Sukil Kim

Web-Based Collaboration for Terminology Application: ICNP C-Space
Claudia C. Bartz and Derek Hoy

Mapping Medical Records of Gastrectomy Patients to SNOMED CT
Eun-Young So and Hyeoum-Ae Park

Terminology for the Description of the Diagnostic Studies in the Field of EBM
Natalia Grabar, Ludovic Trinquart and Isabelle Colombet

Representing Knowledge, Data and Concepts for EHRs Using DCM
William Goossen

Ontology-Based Automatic Generation of Computerized Cognitive Exercises
Giorgio Leonardi, Silvia Panzarasa and Silvana Quaglini

Creating a Magnetic Resonance Imaging Ontology
Jérémie Lasbleiz, Hervé Saint-Jalmes, Régis Duvaufier and Anita Burgun

Validation of the openEHR Archetype Library by Using OWL Reasoning
Marcos Menárguez-Tortosa and Jesús Tomás Fernández-Breis

Grouping Pharmacovigilance Terms with Semantic Distance
Marie Dupuch, Magnus Lerch, Anne Jamet, Marie-Christine Jantlent, Reinhard Fescheruk and Natalia Grabar

The Archetype-Enabled EHR System ZK-ARCHE – Integrating the ISO/EN 13606 Standard and IHE XDS Profile
Michael Kohler, Christoph Rinner, Gudrun Hübner-Bloder, Samrend Saboor, Elske Ammenwerth and Georg Duftschmid

Using a Logical Information Model-Driven Design Process in Healthcare
Yu Chye Cheong, Linda Bird, Nwe Ni Tun and Colleen Brooks

SNOMED CT Implementation: Implications of Choosing Clinical Findings or Observable Entities
Anne Randorff Rasmussen and Kirstine Rosenbeck

What is the Coverage of SNOMED CT® on Scientific Medical Corpora?
Dimitrios Kokkinakis

Assisting the Translation of the CORE Subset of SNOMED CT into French
Hocine Abdoune, Tayeb Merabi, Stéfan J. Darmoni and Michel Joubert

Recording Associated Disorders Using SNOMED CT
Ronald Cornet and Nicolette F. de Keizer

SNOMED CT’s RF2: Is the Future Bright?
Werner Ceusters

Serious Adverse Event Reporting in a Medical Device Information System
Fabrizio Pecoraro and Daniela Luzi

Metadata – An International Standard for Clinical Knowledge Resources
Gunnar O. Klein

Comparing Existing National and International Classification Systems of Surgical Procedures with the CEN/ISO 1828 Ontology Framework Standard
Jean M. Rodrigues, Ann Casey, Cédric Bousquet, Anand Kumar, Pierre Lewalle and Béatrice Trombert Paviot
Model Driven Development of Clinical Information Systems Using openEHR
Koray Atalag, Hong Yul Yang, Ewan Tempero and Jim Warren

Translational Research

A Metadata-Based Patient Register for Cooperative Clinical Research: A Case Study in Acute Myeloid Leukemia
Anja S. Fischer and Ulrich Mansmann

De-Identifying an EHR Database – Anonymity, Correctness and Readability of the Medical Record
Kostas Pantazos, Soren Lauesen and Soren Lippert

Service Oriented Data Integration for a Biomedical Research Network
Matthias Ganzinger, Tino Noack, Sven Diederichs, Thomas Longerich and Petra Knaup

Single Source Information Systems Can Improve Data Completeness in Clinical Studies: An Example from Nuclear Medicine
Susanne Herzberg and Martin Dugas

Reporting Qualitative Research in Health Informatics: REQ-HI Recommendations
Zahra Niazkhani, Habibollah Pirnejad, Jos Aarts, Samantha Adams and Roland Bal

Cell Seeding of Tissue Engineering Scaffolds Studied by Monte Carlo Simulations
Andreea Robu, Adrian Neagu and Lacramioara Stoiciu-Tivadar

The ONCO-I2b2 Project: Integrating Biobank Information and Clinical Data to Support Translational Research in Oncology
Daniele Segagni, Valentino Tibollo, Arianna Dagliati, Leonardo Perinati, Alberto Zambelli, Silvia Priori and Riccardo Bellazzi

IT Infrastructure Components to Support Clinical Care and Translational Research Projects in a Comprehensive Cancer Center
Hans-Ulrich Prokosch, Markus Ries, Alexander Beyer, Martin Schwenk, Christof Seggewies, Felix Köpcke, Sebastian Mate, Marcus Martin, Barbara Bärthlein, Matthias W. Beckmann, Michael Stürzle, Roland Croner, Bernd Wullich, Thomas Ganslandt and Thomas Bürkle

Using a Robotic Arm to Assess the Variability of Motion Sensors
Lukas Gorzelniak, André Dias, Hubert Soyer, Alois Knoll and Alexander Horsch

The Single Source Architecture x4T to Connect Medical Documentation and Clinical Research
Philipp Dziuballe, Christian Forster, Bernhard Breil, Volker Thiemann, Fleur Fritz, Jens Lechtenbörger, Gottfried Vossen and Martin Dugas

Information Technology Solutions to Support Translational Research on Inherited Cardiomyopathies
Riccardo Bellazzi, Cristiana Larizza, Matteo Gabetta, Giuseppe Milani, Mauro Bucalo, Francesca Mulas, Angelo Nuzzo, Valentina Favalli and Eloisa Arbustini
Usability, HCI, Cognitive Issues

Emerging Approaches to Usability Evaluation of Health Information Systems: Towards In-Situ Analysis of Complex Healthcare Systems and Environments
Andre W. Kushniruk, Elizabeth M. Borycki, Shigeki Kuwata and Joseph Kannry

Contextualization of Automatic Alerts During Electronic Prescription: Researchers’ and Users’ Opinions on Useful Context Factors
Elske Ammenwerth, Werner O. Hackl, Daniel Riedmann and Martin Jung

Reducing Clinicians’ Cognitive Workload by System Redesign; A Pre-Post Think Aloud Usability Study
L.W.P. Peute, N.F. de Keizer, E.P.A. van der Zwan and M.W.M. Jaspers

Impact of Alert Specifications on Clinicians’ Adherence
M.M. Langemeijer, L.W. Peute and M.W.M. Jaspers

Medication Decision-Making on Hospital Ward-Rounds
Melissa Baysari, Johanna Westbrook and Richard Day

A Qualitative Analysis of Prescription Activity and Alert Usage in a Computerized Physician Order Entry System
Rolf Wipfli, Mireille Betrancourt, Alberto Guardia and Christian Lovis

Combining Usability Testing with Eye-Tracking Technology: Evaluation of a Visualization Support for Antibiotic Use in Intensive Care
Aboozar Eghdam, Johanna Forsman, Magnus Falkenhav, Mats Lind and Sabine Koch

Design of a Mobile, Safety-Critical In-Patient Glucose Management System
Bernhard Höll, Stephan Spat, Johannes Plank, Lukas Schaupp, Katharina Neubauer, Peter Beck, Franco Chiarugi, Vasilis Kontogiannis, Thomas R. Pieber and Andreas Holzinger

Facilitating the Iterative Design of Informatics Tools to Advance the Science of Autism
David R. Kaufman, Patrick Cronin, Leon Rozenblit, David Voccola, Amanda Horton, Alisabeth Shine and Stephen B. Johnson

Evaluation of Computer Usage in Healthcare Among Private Practitioners of NCT Delhi
P. Ganeshkumar, Arun Kumar Sharma and O.P. Rajoura

Contextual Inquiry Method for User-Centred Clinical IT System Design
Johanna Viitanen

A Method to Measure the Reduction of CO₂ Emissions in E-Health Applications
Paola Di Giacomo and Peter Håkansson

EFMI Invited Session: Health Informatics Research Management

Medical Informatic Research Management in Academia – The Danish Setting
Stig Kjær Andersen

Research Management in Healthcare Informatics – Experiences from Norway
Arild Faxvaag, Pieter Toussaint and Trond S. Johansen

Research Management: The case of RN4CAST
Dimitrios Zikos and John Mantas
eMeasures: A Standard Format for Health Quality Measures 989
   Catherine Chronaki, Charles Jaffe and Bob Dolin
Clinical Information Systems: Cornerstone for an Efficient Hospital Management 992
   Christian Lovis
Patient Centered Integrated Clinical Resource Management 996
   Jacob Hofdijk
Subject Index 1001
Author Index 1009