Proceedings of the
IADIS International Conference
e-Health 2012

EDITED BY
Mário Macedo
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOREWORD</td>
<td>ix</td>
</tr>
<tr>
<td>PROGRAM COMMITTEE</td>
<td>xiii</td>
</tr>
<tr>
<td>KEYNOTE LECTURE</td>
<td>xvii</td>
</tr>
<tr>
<td>FULL PAPERS</td>
<td></td>
</tr>
<tr>
<td>SECURE DATA COMMUNICATION OVER MOBILE DEVICES IN HEALTHCARE NETWORKS</td>
<td>3</td>
</tr>
<tr>
<td>Ashish Sachdeva and Waqar Haque</td>
<td></td>
</tr>
<tr>
<td>APPLYING SOA AND VIRTUAL ORGANIZATION CONCEPTS IN AN INTERACTIVE</td>
<td>13</td>
</tr>
<tr>
<td>TELEMEDICAL CONSULTATION SYSTEM</td>
<td></td>
</tr>
<tr>
<td>Łukasz Czekierda, Tomasz Masternak, Kornel Skalkowski and Przemysław</td>
<td></td>
</tr>
<tr>
<td>Wyszkowski</td>
<td></td>
</tr>
<tr>
<td>TECHNICAL EVALUATION OF AN E-HEALTH PLATFORM</td>
<td>21</td>
</tr>
<tr>
<td>Owen Lo, Lu Fan, William Buchanan and Christoph Thuemmler</td>
<td></td>
</tr>
<tr>
<td>THE COMPREHENSIVE HEALTH INFORMATION SYSTEM: A PLATFORM FOR PRIVACY-</td>
<td>29</td>
</tr>
<tr>
<td>AWARE AND SOCIAL HEALTH MONITORING</td>
<td></td>
</tr>
<tr>
<td>Juri Luca De Coi, Gwendal Delaunay, Adrien Martins Albino, Fabrice</td>
<td></td>
</tr>
<tr>
<td>Muhlenbach, Pierre Maret, Guillaume Lopez and Ichiro Yamada</td>
<td></td>
</tr>
<tr>
<td>ELDERLY PEOPLE’S PERSPECTIVES OF A WSN BASED SYSTEM FOR HEALTHCARE</td>
<td>38</td>
</tr>
<tr>
<td>AND SOCIAL INTERACTIONS</td>
<td></td>
</tr>
<tr>
<td>Xiao Yu and P.R. Weller</td>
<td></td>
</tr>
<tr>
<td>PROVIDING PATIENTS ONLINE ACCESS TO THEIR LIVE TEST RESULTS: AN</td>
<td>45</td>
</tr>
<tr>
<td>EVALUATION OF USAGE AND USEFULNESS</td>
<td></td>
</tr>
<tr>
<td>Felix Mukoro, Grace Sweeney and Beverley Mathews</td>
<td></td>
</tr>
<tr>
<td>DEVELOPMENT APPLICATION FOR ENVIRONMENTAL T-HEALTH DIGITAL TV</td>
<td>53</td>
</tr>
<tr>
<td>Flávia P. Monteiro, Arthur T. A. Gusmão, Felipe F. Soares, Carlos N.</td>
<td></td>
</tr>
<tr>
<td>Silva, Marcos C. R. Seruffo and Carlos R. L. Francês</td>
<td></td>
</tr>
<tr>
<td>A COMPARATIVE ANALYSIS FOR CREATING TEST-DATA IN E-HEALTH INTEGRATED</td>
<td>61</td>
</tr>
<tr>
<td>INFORMATION SYSTEMS</td>
<td></td>
</tr>
<tr>
<td>Ali Raza and Stephen Clyde</td>
<td></td>
</tr>
<tr>
<td>THE CHANGE CHALLENGE: RESULTS FROM THE USE OF EHR (ELECTRONIC HEALTH</td>
<td>69</td>
</tr>
<tr>
<td>RECORDS) IN TWO CLINICAL UNITS OF A GREEK PUBLIC HOSPITAL</td>
<td></td>
</tr>
<tr>
<td>Maria Emmanouilidou</td>
<td></td>
</tr>
</tbody>
</table>

V
FIRST RESULTS IN MODELLING STRESS SITUATIONS BY ANALYSING PHYSIOLOGICAL HUMAN SIGNALS
R. Martínez, E. Irigoyen, N. Asla, I. Escobes and A. Arruti

A SURVEY ON TASKS PERFORMED IN ELDERCARE
Henry Been and Mohammad Zarifi Eslami

PORTABLE COMMUNICANT SYSTEM TO ASSIST THE PERSON WITH LOSS OF AUTONOMY: “REMINDER” SOLUTIONS
Jessica Franc, Anabelle Cantet, Florent Pichard, Alexandre De Sousa, Laurent Billonnet and Jean-Michel Dumas

HOW A PATIENT MIGHT ADJUST HIS COCHLEAR IMPLANT BY USING A SMARTPHONE?
Anne-Marie Déry-Pinna, Claudia C. Gutiérrez Rodríguez and Audrey Ocelllo

ADOPTING ELECTRONIC HEALTH RECORDS IN HEALTH CARE PRACTICES: A MULTIPLE CASE STUDY OF THE PORTUGUESE HEALTHCARE SYSTEM
Miguel Oliveira, António Carvalho Brito and Lia Patricio

ADDRESSING OBESITY USING A MOBILE APPLICATION: AN EXPERIMENT DESIGN
Selma Limam Mansar, Angela Brunstein, Shashank Jariwala and Joerg Brunstein

MOBILE APPLICATION FOR PEOPLE WITH VERBAL COMMUNICATION DISORDERS
R. Kaminski, A. Debray, C. Renart, M. Vermeeren and M. Morelle

BALTIC HEART STUDY – AS INTERNATIONAL ACTIVITIES IN TELEMEDICINE AND TELEEDUCATION OF PATIENTS WITH CHRONIC HEART FAILURE
Giedrius Vanagas

ELDERLY AND HOME CARE TASKS: A LITERATURE REVIEW ON PROBLEMS
Ashiful Alam, Mohammad Zarifi Eslami and Klaas Sikkel

PATIENTS AND PHYSICIANS SATISFACTION USING TRANS-TELEPHONIC 24/7 ECG SERVICE
Giedrius Vanagas

THE OPPORTUNITY AND CHALLENGES FOR DELIVERING GROUP-BASED REHABILITATION SERVICES TO THE HOME VIA DIGITAL TELEVISION
Andrea Taylor

COLLABORATIVE LEARNING PLATFORM IN THE FIELD OF TELEMEDICINE
Carlos Alberto Pereira de Lucena, Claudia Renata Mont’Alvão and Leonardo Frajhof

PROFILING REMOTELY MONITORED PATIENTS WITH ADHERENCE PARAMETERS
Anna-Leena Orsama, Hannu Kaijanranta, Juha Leppänen, Jaakko Lähteenmäki, Leila Partanen and Tiina Heliö

ALTERNATIVE METHODS FOR SUSTAINABLE SURVIVORSHIP CARE
David Wiljer, Jacqueline L. Bender, Caterina Masino and James Brierley

A SCENARIO-BASED APPROACH FOR DESIGNING A STROKE CLINICAL DECISION SUPPORT SYSTEM
Hao-Yun Kao, Li-Min Lin, Yi-Cheng Jhu, Shu-Ching Wang and Jen-Her Wu
PHYSICAL ACTIVITY MONITORING FOR THE AGING POPULATION
Ilias Lamprinos and Daniel Steffen

REFLECTION PAPERS

DESIGN AND DEVELOPMENT OF A MULTILINGUAL MULTIMEDIA BASED
PRESURGICAL INFORMATION AND CLARIFICATION SYSTEM FOR TABLET
COMPUTERS
Peter Anzenberger, Oliver Jedinger and Kevin Zarhuber

MULTIFUNCTIONAL WEB BASED TELEMEDICINE SOLUTION FOR THE
PROVINCE OF BENGUELA - ANGOLA
João Alexandre L. Marques, Anibal Sahari Falão, Paulo C. Cortez, João Paulo do V. Madeiro
and Fernando S. Schlindwein

MICRO HEALTH CENTRE (µHC) CLOUD ENABLED HEALTHCARE
INFRASTRUCTURE
Jaijit Bhattacharya, Ritu Ghosh and Anjali Nanda

POSTERS

ORCON-BASED ELECTRONIC HEALTH RECORD ACCESS CONTROL
Tomasz Hyla

A HTML5-BASED SYSTEM FOR VISUALIZING AND FORECASTING THE
SPREAD OF INFECTIOUS DISEASE IN JAPAN
Masashi Inoue, Shinsaku Hasegawa, Akihiko Suyama and Masayuki Kakehashi

DETECTING DISSONANCE IN CLINICAL AND RESEARCH WORKFLOWS FOR
TRANSLATIONAL PSYCHIATRIC REGISTRIES
Luciana Cofiel, Debora Bassi, Ricardo Pietrobon and Helena Brentani

SYSTEM DESIGN OF MEDICAL DECISION SUPPORT FOR INTENSIVE CARE
Kristof Steurbaut, Johan Decruyenaere and Filip De Turck

DOCTORAL CONSORTIUM

EHR AND HEALTH E–DATA: PRIVACY PROTECTION ISSUES IN ITALY
Maria Gabriella Virone

AUTHOR INDEX
FOREWORD

These proceedings contain the papers of the IADIS International Conference e-Health 2012, which was organised by the International Association for Development of the Information Society in Lisbon, Portugal, 17 – 19 July, 2012. This conference is part of the Multi Conference on Computer Science and Information Systems 2012, 17 - 23 July 2012, which had a total of 1036 submissions.

The use of ICTs (Information and Communication Technologies) in Healthcare Services is the main mechanism to improve efficiency and effectiveness.

The IADIS e-Health (EH) 2012 conference aims to draw together information systems, practitioners and management experts from all quadrants involved in developing computer technology to improve healthcare quality.

Submissions were accepted under the following topics:

A. Research Issues
   • Computers and Primary Care
   • Clinical Data Visualisation Standards
   • e-Health Architectures
   • Healthcare Data Architecture and Terminology Standards
   • Federated Electronic Health Records
   • Personalized Medicine
   • Health Informatics and Education
   • Human Computer Interaction
   • Infrastructure and Architecture
   • Internet and Medicine
   • Interoperability issues
   • IT and Patient Care
   • Nursing Informatics
   • RFID and localization techniques
   • Usability and Ubiquity in e-Health
   • e-Health Virtual Communities
   • Business Process Management Systems
   • Second Life for Healthcare Support and Education

B. Management Issues
   • Case Studies
   • Management Change
   • Confidentiality and Privacy
   • e-Health Collaborative Strategies and Techniques
   • e-Training
   • Healthcare Management Dashboards
   • Legal issues
• Balanced scorecards models to improve Hospital Performance and Productivity
• Business Intelligence in Healthcare
• e-Health to improve Healthcare Quality and Patient Safety.
• Healthcare Information Systems Regulatory issues
• Security in e-Health
• Service Models
• Social implications
• Stakeholders involvement

C. Applications
• Clinical Information Systems
• Data Mining and Clinical Studies
• Medical Guidelines
• e-Health Decision Support Systems
• e-Logistics and e-Pharmacy
• Intelligent Medical Systems
• Mobile Applications
• Patient Electronic Health Records
• Healthcare Portals to inform and connect Patients with Physicians
• Patients and Public Health
• Social Networks in Healthcare contexts
• e-Health Marketing
• e-Procurement and e-Commerce
• Telemedicine
• Automatic Identification and Data Collector Systems
• Unified data processing and communication Systems
• Web Based Applications
• e-Health 2.0

The IADIS e-Health 2012 conference received 112 submissions from more than 32 countries. Each submission has been anonymously reviewed by an average of four independent reviewers, to ensure that accepted submissions were of a high standard. Consequently only 18 full papers were approved which means an acceptance rate of 16%. A few more papers were accepted as short papers, reflection papers and posters. An extended version of the best papers will be published in the IADIS International Journal on Computer Science and Information Systems (ISSN: 1646-3692) and/or in the IADIS International Journal on WWW/Internet (ISSN: 1645-7641) and also in other selected journals including journals from Inderscience.

Besides the presentation of full papers, short papers, reflection papers, doctoral consortium and posters, the conference also included a keynote presentation from an internationally distinguished researcher. We would therefore like to express our gratitude to Prof. Frank Sullivan, FRSE FRCP FRCGP Director of the Health Informatics Centre, University of Dundee, Scotland.
This volume has taken shape as a result of the contributions from a number of individuals. We are grateful to all authors who have submitted their papers to enrich the conference proceedings. We wish to thank all members of the organizing committee, delegates, invitees and guests whose contribution and involvement are crucial for the success of the conference.

Last but not the least, we hope that everybody will have a good time in Lisbon, and we invite all participants for the next edition of the IADIS International Conference on e-Health 2013, that will be held in Prague, Czech Republic.

Mário Macedo,
Instituto Politécnico de Tomar, Portugal
e-Health 2012 Conference Program Chair

Piet Kommers, University of Twente, The Netherlands
Pedro Isaías, Universidade Aberta (Portuguese Open University), Portugal
MCCSIS 2012 General Conference Co-Chairs

Lisbon, Portugal
July 2012