

Contents IMIA Yearbook of Medical Informatics 2007

From the sponsor	E.R. Reinhardt <i>Workflow Solutions with Healthcare IT</i>	XI
<hr/>		
President's Statement	N. Lorenzi <i>Towards IMIA 2015—the IMIA Strategic Plan</i>	1
Editorial	A. Geissbuhler, R. Haux, C. A. Kulikowski <i>Biomedical Informatics for Sustainable Health Systems</i>	6
Keynote	J.-C. Healy <i>Biomedical Informatics for Sustainable Health Systems</i>	9
<hr/>		
Special Section: Biomedical Informatics for Sustainable Health Systems		
Survey	E. Coiera, E. J. S. Hovenga <i>Building a Sustainable Health System</i>	11
Synopsis	C. Lovis <i>Sustainable Health Care Systems</i>	19
Best paper selection	Content summaries of*: Anderson GF, Frogner BK, Johns RA, Reinhardt UE. <i>Health care spending and use of information technology in OECD countries.</i> Health Aff 2006 May-Jun;25(3):819-31 Bagayoko CO, Muller H, Geissbuhler A. <i>Assessment of Internet-based tele-medicine in Africa (the RAFT project).</i> Comput Med Imaging Graph 2006 Sep-Oct;30(6-7):407-16 Croll PR, Croll J. <i>Investigating risk exposure in e-health systems.</i> Int J Med Inform 2006 Nov 22 Shabo A. <i>A global socio-economic-medico-legal model for the sustainability of longitudinal electronic health records. Part 1.</i> Methods Inf Med 2006;45(3):240-5 Shabo A. <i>A global socio-economic-medico-legal model for the sustainability of longitudinal electronic health records. Part 2.</i> Methods Inf Med 2006;45(5):498-505	21
<hr/>		
Section 1: Health and Clinical Management		
Survey	J. S. Einbinder, D. W. Bates <i>Leveraging Information Technology to Improve Quality and Safety</i>	22
Synopsis	J. Bergmann <i>Health and Clinical Management - Impact on Clinical Outcome</i>	30
Best paper selection	Content summaries of*: Feldman PH, Murtaugh CM, Pezzin LE, McDonald MV, Peng TR. <i>Just-in-time evidence-based e-mail „reminders“ in home health care: impact on patient outcomes.</i> Health Serv Res 2005 Jun;40(3):865-85. Han YY, Carcillo JA, Venkataraman ST, Clark RS, Watson RS, Nguyen TC, Bayir H, Orr RA. <i>Unexpected increased mortality after implementation of a commercially sold computerized physician order entry system.</i> Pediatrics 2005 Dec;116(6):1506-12 Pizziferri L, Kittler AF, Volk LA, Honour MM, Gupta S, Wang S, Wang T, Lippincott M, Li Q, Bates DW. <i>Primary care physician time utilization before and after implementation of an electronic health record: a time-motion study.</i> J Biomed Inform 2005 Jun;38(3):176-88	31 32

* The complete papers can be accessed in the Yearbook's full electronic version, provided that permission has been granted by the copyright holder(s)

Poissant L, Pereira J, Tamblyn R, Kawasumi Y. *The impact of electronic health records on time efficiency of physicians and nurses: a systematic review.* J Am Med Inform Assoc. 2005 Sep-Oct;12(5): 505-16.

Shea S, Weinstock RS, Starren J, Teresi J, Palmas W, Field L, et al. *A randomized trial comparing telemedicine case management with usual care in older, ethnically diverse, medically underserved patients with diabetes mellitus.* J Am Med Inform Assoc 2006 Jan-Feb;13(1):40-51 33

Section 2: Patient Records

- | | | |
|----------------------|---|----|
| Survey | <p>P. Knaup, O. Bott, C. Kohl, C. Lovis, S. Garde
 <i>Electronic Patient Records: Moving from Islands and Bridges towards Electronic Health Records for Continuity of Care</i></p> | 34 |
| Synopsis | <p>S. Meystre
 <i>Electronic Patient Records: Some Answers to the Data Representation and Reuse Challenges</i></p> | 47 |
| Best paper selection | <p>Content summaries of*:</p> <p>Ferranti JM, Musser RC, Kawamoto K, Hammond WE. <i>The clinical document architecture and the continuity of care record: a critical analysis.</i> J Am Med Inform Assoc 2006 May-Jun;13(3):245-52 49</p> <p>Los RK, van Ginneken AM, van der Lei J. <i>OpenSDE: a strategy for expressive and flexible structured data entry.</i> Int J Med Inform 2005 Jul;74(6):481-90</p> <p>Melton GB, Hripcsak G. <i>Automated detection of adverse events using natural language processing of discharge summaries.</i> J Am Med Inform Assoc 2005 Jul-Aug;12(4):448-57</p> <p>Pakhomov SV, Coden A, Chute CG. <i>Developing a corpus of clinical notes manually annotated for part-of-speech.</i> Int J Med Inform 2006 Jun;75(6):418-29</p> | |

Section 3: Health Information Systems

- | | | |
|----------------------|--|----|
| Survey | <p>S. Sfakianakis, C. E. Chronaki, F. Chiarugi, F. Confort, D. G. Katehakis
 <i>Reflections on the Role of Open Source in Health Information System Interoperability</i></p> | 50 |
| Synopsis | <p>O. J. Bott
 <i>Health Information Systems - Technology and Acceptance</i></p> | 61 |
| Best paper selection | <p>Content summaries of*:</p> <p>Despont-Gros C, Landau R, Rutschmann O, Simon J, Lovis C. <i>The digital pen and paper. Evaluation and acceptance of a new data acquisition device in clinical settings.</i> Methods Inf Med 2005;44(3):359-68 63</p> <p>Ghinea G, Asgari S, Moradi A, Serif T. <i>A Jini-based solution for electronic prescriptions.</i> IEEE Trans Inf Technol Biomed 2006 Oct;10(4):794-802 64</p> <p>Liu CT, Yang PT, Yeh YT, Wang BL. <i>The impacts of smart cards on hospital information systems—an investigation of the first phase of the national health insurance smart card project in Taiwan.</i> Int J Med Inform. 2006 Feb;75(2):173-81</p> <p>Maglaveras N, Chouvarda I, Koutkias VG, Gogou G, Lekka I, Goulis D, et al. <i>The Citizen Health System (CHS): a modular medical contact center providing quality telemedicine services.</i> IEEE Trans Inf Technol Biomed 2005 Sep;9(3):353-62</p> <p>de Toledo P, Jimenez S, del Pozo F, Roca J, Alonso A, Hernandez C. <i>Telemedicine experience for chronic care in COPD.</i> IEEE Trans Inf Technol Biomed 2006 Jul;10(3):567-73 65</p> | |

* The complete papers can be accessed in the Yearbook's full electronic version, provided that permission has been granted by the copyright holder(s)

Section 4: Sensor, Signal and Imaging Informatics

Survey	D. Konstantas <i>An Overview of Wearable and Implantable Medical Sensors</i>	66
Synopsis	R. Westphal <i>Sensors, Medical Image and Signal Processing</i>	70
Best paper selection	Content summaries of*:	
	DiMaio SP, Salcudean SE. <i>Needle steering and motion planning in soft tissues.</i> IEEE Trans Biomed Eng 2005 Jun;52(6):965-74	72
	Istrate D, Castelli E, Vacher M, Besacier L, Serignat JF. <i>Information extraction from sound for medical telemonitoring.</i> IEEE Trans Inf Technol Biomed 2006 Apr;10(2):264-74	
	Kim HK, Biggs SJ, Schloerb DW, Carmena JM, Lebedev MA, Nicoletis MA, et al. <i>Continuous shared control for stabilizing reaching and grasping with brain-machine interfaces.</i> IEEE Trans Biomed Eng 2006 Jun;53(6):1164-73	
	Moore Jackson MM, Mason SG, Birch GE. <i>Analyzing trends in brain interface technology: a method to compare studies.</i> Ann Biomed Eng 2006 May;34(5):859-78	
	Parkka J, Ermes M, Korpipaa P, Mantyjarvi J, Peltola J, Korhonen I. <i>Activity classification using realistic data from wearable sensors.</i> IEEE Trans Inf Technol Biomed 2006 Jan;10(1):119-28	

Section 5: Decision Support, Knowledge Representation and Management

Survey	T. Y. Leong, K. Kaiser, S. Miksch <i>Free and Open Source Enabling Technologies for Patient-Centric, Guideline-Based Clinical Decision Support: A Survey</i>	74
Synopsis	B. Brigl <i>Decision Support, Knowledge Representation and Management: A Balancing Act between Clinical Use and Implementation of Sophisticated Reasoning Techniques?</i>	87
Best paper selection	Content summaries of*:	
	Bellazzi R, Larizza C, Magni P, Bellazzi R. <i>Temporal data mining for the quality assessment of hemodialysis services.</i> Artif Intell Med 2005 May;34(1):25-39	89
	Maviglia SM, Yoon CS, Bates DW, Kuperman G. <i>KnowledgeLink: impact of context-sensitive information retrieval on clinicians' information needs.</i> J Am Med Inform Assoc 2006 Jan-Feb;13(1):67-73	
	McGregor JC, Weekes E, Forrest GN, Standiford HC, Perencevich EN, Furuno JP, et al. <i>Impact of a computerized clinical decision support system on reducing inappropriate antimicrobial use: a randomized controlled trial.</i> J Am Med Inform Assoc 2006 Jul-Aug;13(4):378-84	
	Rubin DL, Dameron O, Bashir Y, Grossman D, Dev P, Musen MA. <i>Using ontologies linked with geometric models to reason about penetrating injuries.</i> Artif Intell Med 2006 Jul;37(3):167-76	

* The complete papers can be accessed in the Yearbook's full electronic version, provided that permission has been granted by the copyright holder(s)

Section 6: Education and Consumer Informatics

Survey	J. Mantas <i>Education and Consumer Health Informatics</i>	90
Synopsis	M. Marschollek <i>Advances in Education and Consumer Health Informatics</i>	95
Best paper selection	Content summaries of*:	
	Baker L, Rideout J, Gertler P, Raube K. <i>Effect of an Internet-based system for doctor-patient communication on health care spending.</i> J Am Med Inform Assoc 2005 Sep-Oct;12(5):530-6	96
	Gaudinat A, Ruch P, Joubert M, Uziel P, Strauss A, Thonnet M, et al. <i>Health search engine with e-document analysis for reliable search results.</i> Int J Med Inform 2006 Jan;75(1):73-85	97
	van den Brink JL, Moorman PW, de Boer MF, Pruyn JF, Verwoerd CD, van Bommel JH. <i>Involving the patient: a prospective study on use, appreciation and effectiveness of an information system in head and neck cancer care.</i> Int J Med Inform 2005 Oct;74(10):839-49	
	Woo CW, Evens MW, Freedman R, Glass M, Shim LS, Zhang Y, et al. <i>An intelligent tutoring system that generates a natural language dialogue using dynamic multi-level planning.</i> Artif Intell Med 2006 Sep;38(1):25-46	

Section 7: Bioinformatics

Survey	L. J. Frey, V. Maojo, J. Mitchell <i>Bioinformatics Linkage of Heterogeneous Clinical and Genomic Information in Support of Personalized Medicine</i>	98
Synopsis	E. Lang <i>Integrating Bioinformatics into Clinical Practice: Progress and Evaluation</i>	106
Best paper selection	Content summaries of*:	
	Cai Z, Mao X, Li S, Wei L. <i>Genome comparison using Gene Ontology (GO) with statistical testing.</i> BMC Bioinformatics 2006 Aug 11;7:374	108
	Choi JK, Yu U, Yoo OJ, Kim S. <i>Differential coexpression analysis using microarray data and its application to human cancer.</i> Bioinformatics 2005 Dec 15;21(24):4348-55	
	Goh CS, Gianoulis TA, Liu Y, Li J, Paccanaro A, Lussier YA, et al. <i>Integration of curated databases to identify genotype-phenotype associations.</i> BMC Genomics 2006 Oct 12;7:257	
	Mansmann U. <i>Genomic profiling. Interplay between clinical epidemiology, bioinformatics and biostatistics.</i> Methods Inf Med. 2005;44(3):454-60	

Reviews

M.-C. Beuscart-Zéphir, P. Elkin, S. Pelayo, R. Beuscart <i>The Human Factors Engineering Approach to Biomedical Informatics Projects: State of the Art, Results, Benefits and Challenges</i>	109
A. Ozdas, R. Miller, L.R. Waitman <i>Care Provider Order Entry (CPOE): A perspective on factors leading to success or to failure</i>	128

* The complete papers can be accessed in the Yearbook's full electronic version, provided that permission has been granted by the copyright holder(s)

Research & Education

M. Bennani Othmani, S. Diouny, K. Balar <i>Medical Informatics in Morocco: Casablanca Medical Informatics Laboratory</i>	138
E. Coiera, F. Magrabi, V. Sintchenko, T. Zrimec, G. McDonnell, G. Chung, G. Tsafnat <i>The Centre for Health Informatics at the University of New South Wales - a clinical informatics research centre</i>	141
D. J. Severtson, L. Pape, P. Flatley Brennan, G. N. Phillips, Jr. <i>Biomedical Informatics Training at the University of Wisconsin-Madison</i>	149
H. Tanaka, J. Nakaya <i>Research and education for Biomedical Informatics at Tokyo Medical and Dental University</i>	157

History of Medical Informatics**Editorial**

N. Lorenzi <i>40 Years of IMIA: Shaping Medical Informatics Worldwide</i>	163
S. Kaihara <i>International Medical Informatics Association (IMIA): 1986–1989</i>	165
M. Ball <i>Moving Forward, Looking Back ... Reminiscences</i>	168
J. van Bommel <i>Tempus Fugit</i>	172
C. Kulikowski <i>IMIA: Coalescing Medical Informatics Worldwide for 40 Years</i>	176
S. Huesing <i>IMIA – A 40 year Organizational overview</i>	186
H. Peterson, M. Hutter <i>IMIA's Publication History</i>	192

Information on IMIA

<i>Information on IMIA</i>	197
<i>Honorary Fellows</i>	199
<i>National and Corresponding Members</i>	200
<i>Institutional Members</i>	201
<i>Addresses of IMIA Member Societies</i>	203
<i>Information on IMIA Working Groups and Special Interest Groups</i>	215

Information on IMIA Regions

<i>Information on APAMI (Asia Pacific Association for Medical Informatics)</i>	230
<i>Information on Helina (African Region)</i>	231
<i>Information on IMIA-LAC (Federation of Health Societies in Latin America)</i>	232
<i>Information on North-American Medical Informatics (NAMI)</i>	233
<i>Information on EFMI (European Federation For Medical Informatics)</i>	236
<i>Information on EFMI Working Groups</i>	238

Impressum

<i>The New IMIA Yearbook of Medical Informatics: Objectives, Content, Formats</i>	247
<i>Contributors</i>	249