

Contents

Preface	3
Chapter I: IMIA Working Conference on Statistical Methodology in Bioinformatics and Clinical Trials.....	13
Biomedical Informatics: Challenges and Opportunities across Disciplines on the Road to Genomic Medicine:	
<i>Kulikowski C. A.</i>	14
Updating the BIOINFOMED Study: Recent Outstanding Developments in Biomedical Informatics:	
<i>Martin-Sanchez F., Hermosilla I., Vicente F. J.</i>	15
On Genetic Information, Diversity and Distance:	
<i>Zvárová J., Vajda I.</i>	16
Bioinformation System and Statistical Methodologies for Gene Primary Structure Analysis:	
<i>Pinheiro M., Afreixo V., Moura G., Dias G., Pereira A. S., Valente A., Santos M., Oliveira J. L.</i>	17
Is the Use of Data from Hospital Information Systems in Clinical Trials Possible and Effective?	
<i>Victor N.</i>	18
Interim Analysis of the Medical Database MITRYT Concentrated on Arrhythmia after Mitral Valve Operations:	
<i>Lindner J., Pavlíková M., Zvárová J., Grus T., Peleška J.</i>	19
Lifestyle Differences between Czech Rural and City Population with Health Consequences:	
<i>Holcátová I., Slámová A., Valenta Z.</i>	20
Designing New Methodologies for Integrating Biomedical Information in Clinical Trials:	
<i>García-Remesal M., Maojo V., Billhardt H., Crespo J., Alonso-Calvo R., Pérez D., Martín-Sánchez F., López V., Sanchez J. P., Vicente F. J., García-Rojo M., Gómez de la Cámara A., Sousa A., Oliveira J. L., Castro-Oliveira I., Santos M., Babic A.</i>	21
Challenges of Microarray-based Diagnostics:	
<i>Dugas M., Weninger F., Merk S., Haferlach T.</i>	22
Experimental Design and Principles of Clinical Epidemiology in Gene Expression Classification Studies:	
<i>Mansmann U.</i>	23
Analysis and Management of HIV Peptide Microarray Experiments:	
<i>López-Campos G., García-Albert L., Martín-Sánchez F., García-Sáiz A.</i>	24
Estimating the Number of Clusters in DNA Microarray Data:	
<i>Bolshakova N., Azuaje F.</i>	25
Generic versus Disease-Specific Instruments in Quality of Life Assessment:	
<i>Malý M.</i>	26
Geriatric Pharmacoepidemiology – Statistical Analysis of Inappropriate Drug Prescribing:	
<i>Fialová D., Topinková E., Carpenter G. I., Frijters D., Soerbye L. W., Jonsson P., Scroll M., Wagner C., Bernabei R., Reissigová J., Zvárová J.</i>	27
Clinical Trials and Statistics in Cardiology Atherosclerotic Cardiovascular Diseases:	
<i>Tomečková M.</i>	28
External Validation of the Framingham Risk Function in Men with Coronary Heart Disease from the Czech Republic:	
<i>Reissigová J., Tomečková M., Zvárová J.</i>	29

Containing Acute Disease Outbreak: <i>Lun K. C., Prince A., Chen X.</i>	30
Multiple Imputation in Clinical Trials: <i>Postelnicu T.</i>	31
Assessment of the Secondary Prevention Trial of CVD in Czech Male Population with MI History: Gaining Insight from Flexible Models: <i>Valenta Z., Piřha J., Podrapská I., Poledne R.</i>	32
The Measurement of Enzymes in Tear Fluid and Aqueous Humor and Calibration Curves for the Evaluation of Enzyme Concentrations: <i>Čejková J., Čejka Č., Zvárová J.</i>	33
Induction of Similarity Measures and Medical Diagnosis Support Rules through Separable, Linear Data Transformations: <i>Bobrowski L.</i>	34
On Temporal Validity Analysis of Association Rules: <i>Arnrich B., Walter J., Albert A., Ennker J.</i>	35
Data Mining in Medical Databases: <i>Štochl J., Rauch J., Mrázek V.</i>	36
A Web-Based Decision Support Software for Selecting Hypothesis Test: <i>Tosun O., Bilge U., Saka O.</i>	37
Non-Melanoma Skin and Lung Cancer Risk Analysis in Relation to Arsenic Exposure – 20 Years of Observation: <i>Bencko V., Fabiánová E., Franěk P., Götzl M., Rameš J.</i>	38
Average Arch Widths and Associated Changes between Initial, Post-treatment, and Post-retention Measurements: <i>Dostálová T., Havlová Z., Racek J., Tauferová E., Smutný V.</i>	39
Post-Marketing Studies: <i>Pohl M.</i>	40
The Effort-Reward Imbalance: the HAPIEE Study: <i>Pikhart H., Bobak M., Marmot M.</i>	41
An Application of Genetic Algorithms for Estimating Oncology Patients' Chance of Survival: <i>Bilge U., Bezcuk H. S., Saka O., Gulkesen K. H., Koyuncu E.</i>	42
Comparison of Angiographic Carotid Per Cent Stenosis and Histological Specimen Measurement: <i>Beneš V., Netuka D., Mandys V., Mohapl M., Kramář F.</i>	43
System MUDIM and Its Applications: <i>Šimeček P.</i>	44
Experiences with Molecular Genetic Investigation of Osteogenesis Imperfecta in the Czech Republic: <i>Maříková O., Zemková D., Mařík I., Mazura I., Kuklík M., Viktorová T., Leznarová D.</i>	45
Chapter II: EFMI Symposium on Electronic Health Record, Healthcare Registers and Telemedicine	47
Requirements for EHR: <i>Kaihara S.</i>	48
Several Principles of Establishing a Clinical Database/National Register of Chosen Inflammatory Rheumatic Diseases in the Czech Republic: <i>Dostál C., Pavelka K., Zvárová J., Hanzlíček P.</i>	49
Health Record Management in a Distributed Database System for Glaucoma Monitoring: <i>Mocanu M., Dorobanțu M., Mocanu C., Burdescu D.</i>	50

EHR Advanced and Secure Architectural Approaches:	
<i>Blobel B.</i>	51
Using On-Line Knowledge to Support Evidence Based Medical Practice:	
<i>Moody L. D.</i>	52
Medical Guidelines Presentation and Comparing with Electronic Health Record:	
<i>Veselý A., Zvárová J., Peleška J., Buchtela D., Anger Z.</i>	53
EHR Standards and Projects:	
<i>Andersen S. K.</i>	54
Tools for IP-Based Interactive Telemedicine:	
<i>Graschew G., Roelofs T. A., Rakowsky S., Schlag P. M.</i>	55
International Standards implementation in MUDR Electronic Health Record:	
<i>Hanzlíček P.</i>	56
Interoperability in Health Information Systems – The Need for Standards and Consensus:	
<i>Engelbrecht R.</i>	57
Flexible Information Storage in MUDR ¹ EHR:	
<i>Špidlen J., Hanzlíček P., Říha A., Zvárová J.</i>	58
Portable Electronic Health Care Record:	
<i>Naszlady A., Naszlady J.</i>	59
Natural Language Processing, Linguistics and Terminology:	
<i>Schulz S., Hahn U.</i>	60
The Ontological Nexus between Speech Acts and Medical Records:	
<i>Vizenor L., Smith B.</i>	61
Reference Ontologies for Biomedical Ontology Integration and Natural Language Processing:	
<i>Simon J., Fielding J., Santos M., Smith B.</i>	62
Towards Shared Patient Records: An Architecture for Using Routine Data for Nationwide Research:	
<i>Knaup P., Garde S., Merzweiler A., Graf N., Weber R., Haux R.</i>	63
Intelligent Natural Spoken Dialog Systems for Home Monitoring of Chronically Ill Patients:	
<i>Bertoncini M., Falavigna D., Stefanelli M., Beveridge M., Ceusters W.</i>	64
Telemedicine in Diabetes Care: Linking Quality and Reliable Data from Patients' Home Glucose Monitoring to the Record and Decision Support Components:	
<i>Rahman Y., Hederman L., Berry D., Nolan J., Grimson J.</i>	65
From a Paper-based Transmission of Discharge Summaries to Electronic Communication in Health Care Regions:	
<i>Schabetsberger T., Gross E., Haux R., Lechleitner G., Pellizzari T., Schindelwig K., Stark Ch., Vogl R., Wilhelmy I.</i>	66
Innovations in Telemedicine:	
<i>Richards B.</i>	67
A New Web Solution for Regional Environment Monitoring and Management of Asthma:	
<i>Kolovou L., Stalidis G., Chassomeris C., Kotis T., Chatzitheologou S.</i>	68
libRASCH – A Programming Framework for Processing Physiological Signals:	
<i>Schneider R., Bauer A., Barthel P., Schmidt G.</i>	69
Quality of Service Provision Assessment in the Healthcare Information and Telecommunications Infrastructures:	
<i>Babulak E.</i>	70
NLP and Medical/Health Research of Information on the Web:	
<i>Boyer C., Gaudinat A.</i>	71

Chapter III: Symposium on Computerized Guidelines and Protocols.....	73
Bridging the Gap between the Medical Guideline- and Computer Science Worlds: Will Future Guidelines be Living Guidelines?	
<i>Ollenschläger G., Rosenbrand C. J. G. M.</i>	74
Communicating the Logic of a Treatment Plan Formulated in Asbru to Domain Experts:	
<i>Aigner W., Miksch S.</i>	75
A Generic Interface to XML Documents for Guidance Information:	
<i>Lewis B.</i>	76
Non-Compliance with Guidelines: Motivations and Consequences in a Case Study:	
<i>Quaglini S., Ciccarese P., Micieli G., Cavallini A.</i>	77
Reminder-based or On-demand Decision Support Systems: A Preliminary Study in Primary Care with the Management of Hypertension:	
<i>Séroussi B., Bouaud J.</i>	78
Analysis of Guideline Compliance – A Data Mining Approach:	
<i>Svátek V., Říha A., Peleška J., Rauch J.</i>	79
Decision Support and Knowledge Management in Oncology Using Hierarchical Classification:	
<i>d'Aquin M., Brachais S., Lieber J., Napoli A.</i>	80
Protocure: Supporting the Development of Medical Protocols through Formal Methods:	
<i>Balser M., Coltell O., Croonenborg J., Duelli Ch., Harmelen F., Jovell A., Lucas P., Marcos M., Miksch S., Reif W., Rosenbrand K., Seyfang A., Ten Teije A.</i>	81
A Description Logics Approach to CGPs:	
<i>Schulz S., Hahn U.</i>	82
Adaptive Guideline-based Treatment Workflows with AdaptFlow:	
<i>Greiner U., Ramsch J., Heller B., Löffler M., Müller R., Rahm E.</i>	83
Tracing the Formalization of Textual Guidelines:	
<i>Votruba P., Miksch S., Seyfang A., Kosara R.</i>	84
The Digital Electronic Guideline Library (DeGeL): A Hybrid Framework for Representation and Use of Clinical Guidelines:	
<i>Shahar Y., Young O., Shalom E., Mayaffit A., Moskovitch R., Hessing A., Galperin M.</i>	85
A Multiple-Ontology Customizable Search Interface for Retrieval of Clinical Guidelines:	
<i>Moskovitch R., Shahar Y.</i>	86
Transforming Written Guidelines into Electronic Formats – International Perspectives:	
<i>Marshall C., Rosenbrand K., Ollenschläger G.</i>	87
Motivations and Effects of Different Guideline Conceptualizations on the Example of the HL7 Reference Information Model:	
<i>Schadow G.</i>	88
Modelling Clinical Goals: A Corpus of Examples and a Tentative Ontology:	
<i>Fox J., Alabassi A., Black E., Hurt C., Rose T.</i>	89
Standardized Terminology for Clinical Trial Protocols Based on Ontological Top-Level Categories:	
<i>Heller B., Herre H., Lippoldt K., Löffler M.</i>	90
Towards a Flexible Integration of Clinical Guideline Systems with Medical Ontologies and Medical Information Systems:	
<i>Correndo G., Terenziani P.</i>	91
The SAGE Guideline Modeling: Motivation and Methodology:	
<i>Tu S. W., Campbell J., Musen M. A.</i>	92

Using a Guideline-Centered Approach for the Design of a Clinical Decision Support System for Smoking Cessation: <i>Shiffman R. N., Michel G., Essaihi A., Marcy T. W.</i>	93
Advanced Temporal Data Abstraction for Guideline Execution: <i>Seyfang A., Miksh S.</i>	94
TimeWrap – A Method for Automatic Transformation of Structured Guideline Components into Formal Process-Representations: <i>Kaiser K., Miksch S.</i>	95
The GLARE Approach to Clinical Guidelines: Main Features Template: <i>Terenziani P., Montani S., Bottrighi A., Torchio M., Molino G., Correndo G.</i>	96
Translating Arden MLMs into GLIF Guidelines – A Case Study of Hyperkalemia Patient Screening: <i>Wang D.</i>	97
Mark-up Based Analysis of Narrative Guidelines with the Stepper Tool: <i>Růžička M., Svátek V.</i>	98
Chapter IV: Symposium on Biomedical Informatics and Biomedical Statistics Education	99
Modeling Digital Libraries: <i>McCray A. T.</i>	100
Bridging the Gap: Training Librarians in Biomedical Informatics and Genomic Medicine: <i>Martin-Sanchez F., Pelayo I., Hermosilla I., Vaquer T. C., Toro A. Y.</i>	101
Developing a NLP and IR-Based Algorithm for Analyzing Gene-Disease Relationship: <i>Yen Y. T., Hsu C. Y., Chiu H. W., Lee Y. C., Chen B. L., Li Y. C.</i>	102
EGOOZ: Specifying the Components of EPR Related Education: <i>Hasman A.</i>	103
Comparative Analysis of Typologies of Modeling Strategies: <i>Vinarova J., Pencheva P.</i>	104
Continuing Education in e-Age: <i>Štěpánková O., Engová D.</i>	105
Relevance of Western Electronic Health Information in the Developing World: Results of the Internet-Based Health Information Survey (IBHIS): <i>Burton K., Beveridge M.</i>	106
On New Features of the ExaMe System: <i>Zvára K., Zvárová J.</i>	107
Reliability of Fixed Tests in the ExaMe Evaluation System: <i>Rexová P., Zvára K.</i>	108
Taiwan Experience of Publishing a Health Electronic Magazine: <i>Jen W., Hsu C. Y.</i>	109
Changing Academic Roles: New Approaches to Teaching and Learning: <i>Hovenga E. J. S.</i>	110
Biomedical Informatics Ph.D. Studies at Charles University in Prague: <i>Svačina Š., Zvárová J.</i>	111
Whereto in the Next 10 Years of Health Informatics Education? <i>Moehr J. R.</i>	112
Supporting Knowledge Capture and Learning: <i>Zdráhal Z.</i>	113
Formalization of Medical Guidelines: <i>Peleška J., Anger Z., Aschermann M., Buchtela D., Tomečková M., Veselý A., Zvárová J.</i>	114

Medical Informatics Education Needs Information System Practicums in Health Care Settings Experiences and Lessons Learned from 32 Practicals at 4 Universities in 2 Countries:	
<i>Haux R., Ammenwerth E., Häber A., Hübner-Bloder G., Knaup-Gregori P., Lechleitner G., Leiner F., Weber R., Winter A., Wolff A.C.</i>	115
Medical Informatics Education at Medical Faculty in Sarajevo, Bosnia and Herzegovina:	
<i>Masic I., Novo A., Kudumovic M., Sabanovic Z.</i>	116
An Experimental Medical Operations Broadcast System for Education in Medicine:	
<i>Yuce Y. K., Bilge U., Saka O.</i>	117
Administration and Planning in Health Care in the Medical Curriculum:	
<i>Rosa R. S., Bordin R., Kluck M. M., Fisher P. D.</i>	118
Do We Choose Proper Students for Studying Medicine?	
<i>Štuka Č., Smutek D.</i>	119
Chapter V.: Session on Medical Guidelines and Decision Support	121
An Ontological Framework for the Implementation of Clinical Guidelines in Health Care Organizations:	
<i>Kumar A., Smith B., Pisanelli D., Gangemi A., Stefanelli M.</i>	122
Clinical Guidelines and Their Relation to Clinical Workflow in Diabetes Mellitus:	
<i>Smutek D., Knape T., Hederman L., Wade V.</i>	123
Medical Guidelines Implementation in Decision Support System:	
<i>Buchtela D., Kiml J., Wunsch P., Peleška J., Tomečková M., Veselý A., Zvárová J.</i> ... 124	
DESSA – A New Decision Support System for the Pre-surgical Assessment and Postoperative Long-term Monitoring in Epilepsy:	
<i>Dimopoulos K. G., Baltogiannis C. S., Kimonides V. G., Sakas D., Lympelopoulou D. K.</i>	125
Chapter VI: Poster Session of the IMIA Conference and EFMI Symposium	127
Building Electronic Healthcare Records by Example:	
<i>Bisbal J.</i>	128
An Experience of Microbiological Data Sharing:	
<i>Giacomini M., Nappo A.</i>	129
CARDIOWEBScreen - Survey on the Coronary Risk among Polish Web Users:	
<i>Grabowski M., Filipiak K. J., Kozinski T., Karpiński G., Rdzanek A., Grabowski K., Rudowski R., Opolski G.</i>	130
New Universal Laboratory Research Management System:	
<i>Kail J., Holubec L., Hess Z., Topolčan O., Mayer O.</i>	131
Implementing Electronic Medical History Integrated with Media Server – Example of Colon and Rectal Surgery Division:	
<i>Chang W. P., Ming L. D.</i>	132
Security Options for Hospital Information Systems:	
<i>Moisil I., Cretulescu R., Cioca G.</i>	133
Integrated Electronic Health Record – Functional Characteristics:	
<i>Tzacheva N., Vinarova J.</i>	134
The Usefulness of Telemedical Consultation and Technical Possibilities in Surgical Wards of Małopolska Region – Poland:	
<i>Grzesik S., Milanowski W., Legutko J., Woźniakiewicz E., Kulig J.</i>	135
Hypertrophic Cardiomyopathy: Molecular Genetic Analysis of Exon9 and D 11 of TNNT2 Gene in Czech Patients:	
<i>Čapek P., Škvor J.</i>	136

Why do Evolutionary Anthropologists Need Statisticians? <i>Ehler E., Mazura I., Vančata V.</i>	137
Integrating Feedback from a Clinical Datawarehouse into Practice Organisation: <i>Grant A., Moshyk A., Diab H., Caron P., de Lorenzi F., Desautels M.</i>	138
Chapter VII: Ceremonial Session on European Vision of the Information Society in Biomedicine and Health Care	139
Databases for Knowledge Discovery – Examples from Biomedicine and Health Care: <i>van Bemmel J. H., van Mulligen E. M., Mons B., van Wijk M., Kors J. A.</i>	140
Health Information Systems – Past, Present, Future: <i>Haux R.</i>	141
Building a European eHealth Area: <i>Healy J. C.</i>	142
Chapter VIII: Satellite Workshop on RTD Potential in Central and Eastern Europe for Building Information Society in Healthcare	143
PRO-ACCESS – Improving Access of Associated States To Advanced Concepts in Medical Telematics – Situation a Day before the EU Accession: <i>Duplaga M., Leszczuk M., Zieliński K.</i>	144
The Role of the Technology Centre as the National Contact Point for the Sixth Framework Programme of the EU: <i>Albrecht V.</i>	145
New RTD perspectives in the 6 th FP of the EU Commission: <i>Iakovidis I.</i>	146
Information Society in Healthcare & National Program of Oriented Research: <i>Mařík V.</i>	147
Evaluation of Teleconsultation Activities: <i>Kern J.</i>	148
Infrastructure Projects Towards Tele/E-Applications: <i>Kyprianou A., Agrotis C., Hoppas L.</i>	149
E-health Progresses in Romania: <i>Moisil I., Jitaru E.</i>	150
Education in Biomedical Statistics and Informatics in the International Center of Biocybernetics In Warsaw: <i>Nalecz M., Doroszewski J., Bobrowski L.</i>	151
Human-Computer Interaction in Healthcare – A View from a Country in Transition: <i>Stoicu-Tivadar L., Stoicu-Tivadar V.</i>	152
Establishing and Developing of the Medical Informatics Resource Center (MIRC) Project: <i>David R., Engelbrecht R.</i>	153
Knowledge Management Prerequisites for Building an Information Society in Healthcare: <i>Kisilowska M.</i>	154
Distance Learning in Medical Curriculum at Medical Faculty, University of Sarajevo: <i>Masic I., Novo A., Kudumovic M., Sabanovic Z.</i>	155
Integrated Electronic Health Record: <i>Vinarova J., Tzacheva N.</i>	156
Scanview – Programme for Neurological Applications: <i>Krásenský J., Obenberger J.</i>	157

Application of Smart Cards in Health Care and Health Insurance: <i>Trpišovský T., Ochozka J., Struk P.</i>	158
European Health and Social Cards – Planning and Recent Activities in Europe: <i>Schug S. H.</i>	159
Electronic Identification and Registration of European Health Professionals: <i>Brenner G.</i>	160
Practical Aspect and Experience from Running Hospital Information System and Use of Smart Card in Health Service, Health Insurance and Social Welfare in the Municipal Hospital in Litoměřice: <i>Burger I.</i>	161
E2E, P2P, WiMax, the Internet Commons and Smart Healthcare: <i>Risk A.</i>	162
Medical Imaging and Electronic Patient Records: <i>Raibr L.</i>	163
Experience of a Commercial Company in IST Programme in Healthcare: <i>Hrbáčková M., Novotná Z., Vochozka J.</i>	164
Primary Healthcare Information System – the Cornerstone for the Next Generation Healthcare Sector in Republic of Croatia: <i>Končar M., Gvozdanović D.</i>	165
Chapter IX: HL7 Roadshow	167
HL7 Version 3 Methodology: <i>Shafarman M.</i>	168
HL7 Models for Advanced Health Information Systems Architecture: <i>Blobel B.</i>	169
Clinical Guidelines and Decision Support: <i>Dudeck J.</i>	170
IHE – Solution-oriented Use of Healthcare and IT Standards: <i>Loef C.</i>	171
Medication Information Registry in the Netherlands: <i>de Jong T.</i>	172
The GP to GP Communication Project and the future use of HL7 Version 3 in England: <i>Markwell D.</i>	173
HL7 Clinical Document Architecture and its SCIPHOX Implementation in Germany: <i>Heitmann K. U.</i>	174
Health Informatics Standardization Activities in the Czech Republic and Possible Role of HL7: <i>Hanzlíček P.</i>	175
Implementing HL7v3 in the Croatian Primary Healthcare Domain: <i>Končar M.</i>	176
Interoperability Issues in a Regional Healthcare Information System: The Case of Greece and the Use of HL7: <i>Berler A., Angelidis P., Koutsouris D.</i>	177
Author Index	179