Advances in Medical informatics

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A LITERATURE OVERVIEW AND COMPARISON
OF DRIVING IMPAIRING CONDITION
ASSESSMENT APPROACHES BY
HEALTH
ENABLENING TECHNOLOGIES.

Reichwaldt N, Maslak S, Wolf KH, Haux R.
Peter L. Reichertz Institute for Medical Informatics University of Braunschweig—Institute of Technology and Hannover Medical School, Germany.

ABSTRACT
Due to demographic change, more elderly people have the need to preserve and support mobility by car despite age-related functional limitations. Since accidents by the elderly are primarily caused by age related limitations, and not by careless or irresponsible behavior, it may be beneficial to detect driving impairing conditions. The presented review gives an overview of technologies to detect driving impairing conditions like drowsiness and stress or excessive demand. A comparison of the approaches to detect these conditions suggests that a combination of approaches is the most feasible method. However, there are still few systems that focus on the elderly.

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EFMI INITIATIVES FOR INTER-REGIONAL
COOPERATION: THE TREHRT PROJECT.

Mihalas G, Detmer D, Li YC, Haux R, Blobel B.
EFMI–European Federation for Medical Informatics. mihalas@gmail.com

ABSTRACT
The paper refers to EFMI’s initiatives to develop an international cooperation with different regional groups of IMIA. More details are presented about the successful project “TREHRT–Traveler’s Electronic Health Record Template”. Its potential applicability, compact structure and functional simplicity turned this product into a template capable to become an international standard, using mobile phones.

PMID: 22491101 [PubMed–indexed for MEDLINE]
This paper presents the development of an expert system for the diagnosis of child autism and discusses potential benefits of its implementation in a clinical environment. The development of the expert system was based on a diagnostic algorithm supported by a developmental scale (PEDS) and a diagnostic tool of autism (CARS). Twelve nurses who work in pediatric hospital were asked to use the system for a session of 30 minutes and were asked to assess its usefulness, usability and diagnostic value. The majority of nurses agree that it is a useful and promising diagnostic tool for the clinical practice and for the identification of potential child autism cases.

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Electronic patient records are important for quality health services. Aim of this study is to support the trauma patient care with the development of an electronic system. A survey was conducted in the Emergency Department (ED) of a University hospital to study the effectiveness of an electronic monitoring system in a group of trauma patients, as well as the acceptance of this electronic system by the health professionals of the ED. A questionnaire collected information about the perceptions of 30 health professionals working in the ED on various aspects of patient care. The 86% (N=43) replied that there is lack of staff working in their department, 44% (N=22) is satisfied with the co-operation with other departments and 48% (N=24) believe that they spend precious time in administrative work during the care. For the purpose of a more efficient patient monitoring there was developed an electronic trauma patient monitoring system which was evaluated by the above mentioned professionals. The severity, length of care and the health outcomes of 200 trauma patients, were investigated. Half of the patients (N=100) have been monitored by the electronic system and the other 100 were monitored without the use of the system. The time between the admission and completion of the planned care was significantly lower in the electronic monitoring patient group (100±92 minutes) compared to the control group (149±29 minutes).

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The publication of the International Medical Informatics Association revised version of the existing international recommendations in health informatics / medical informatics education was welcome positively by the educational community. The recommendations help to establish courses and complete programs in the field of Biomedical and Health Informatics (BMHI), to further develop existing educational activities in the various nations and to support international initiatives. The paper focuses on the Master’s courses, which are the most widely established programs following the recommendations. The number of citations of the recommendations shows the worldwide acceptance. However, an in-depth review is recommended.

PMID: 22491111 [PubMed–indexed for MEDLINE]

Academic biomedical informatics has achieved great successes through research contributions over several decades, now reflected in a thriving commercial marketplace for electronic health records and other informatics tools. That very success, coupled with changes in the ability of governments to support research at past levels, is forcing a reconsideration of the directions and emphases for faculty members in informatics academic units. This paper discusses those forces and proposes areas of emphasis that will strengthen the academic discipline as it evolves in the years ahead. The focus is on the role of academic informaticians as practitioners of informatics, as researchers, and as educators.

PMID: 22874444 [PubMed–in process]

The AMIA biomedical informatics (BMI) core competencies have been designed to support and guide graduate education in BMI, the core scientific discipline underlying the breadth of the field’s research, practice, and education. The core definition of BMI adopted by AMIA specifies that BMI is ‘the inter-
disciplines that studies and pursues the effective uses of biomedical data, information, and knowledge for scientific inquiry, problem solving and decision making, motivated by efforts to improve human health. Application areas range from bioinformatics to clinical and public health informatics and span the spectrum from the molecular to population levels of health and biomedicine. The shared core informatics competencies of BMI draw on the practical experience of many specific informatics sub-disciplines. The AMIA BMI analysis highlights the central shared set of competencies that should guide curriculum design and that graduate students should be expected to master.

PMID: 22683918 [PubMed–in process]

ABSTRACT

IMIA ACCREDITATION OF HEALTH INFORMATICS PROGRAMS.

Hasman A.

Department of Medical Informatics, Academic Medical Center, University of Amsterdam, Amsterdam, The Netherlands. E-Mail: a.hasman@amc.uva.nl.

OBJECTIVE: To develop a procedure for accrediting health informatics programs.

METHODS: Development of a procedure for accreditation. Test of the accreditation procedure via a trial including four or five health informatics programs. A site visit committee consisting of three members evaluates the program based on a self-assessment report written by the program and the experiences and observations of the site visit committee during the site visit.

RESULTS: A procedure for accreditation has been developed. The instructions for health informatics programs have been written and a checklist for the site visit committee members is available. In total six subjects are considered, each one consisting of one or more facets. Each facet is judged using its corresponding criterion. Five health informatics programs volunteered. One health informatics program in Finland has already been visited and a report has been produced by the site visit committee. The next site visits are in June and July 2012. The site visit in Finland showed that English summaries of master theses are not enough to get a first impression of the depth of the research. A table of contents is also needed. This information then can be used to select theses written in a language other than English for discussion.

CONCLUSIONS: The accreditation procedure document with instructions about writing the self-assessment report was very well structured and the instructions were clear according to the Finnish program. The site visit team could work well with the checklist. Self-assessment report model was very well structured and the instructions were clear.

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Best Peer Reviewers and the Quality of Peer Review in Biomedical Journals.

Gasparyan AY, Kitas GD.

Department of Rheumatology, Dudley Group NHS Foundation Trust, Clinical Research Unit, Russell’s Hall Hospital, Dudley, United Kingdom. a.gasparyan@gmail.com

ABSTRACT

Current scholarly publications heavily rely on high quality peer review. Peer review, albeit imperfect, is aimed at improving science writing and editing. Evidence supporting peer review as a guarantor of the quality of biomedical publications is currently lacking. Its outcomes are largely dependent on the credentials of the reviewers. Several lines of evidence suggest that predictors of the best contributors to the process include affiliation to a good University and proper research training. Though the options to further improve peer review are currently limited, experts are in favor of formal education and courses on peer review for all contributors to this process. Long-term studies are warranted to assess the strengths and weaknesses of this approach.

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The Birth and Evolution of a Discipline Devoted to Information in Biomedicine and Health Care. As Reflected in Its Longest Running Journal.

McCray AT, Gefeller O, Aronsky D, Leong TY, Sarkar IN, Bergemann D, Lindberg DA, van Bemmel JH, Haux R.

Center for Biomedical Informatics, Harvard Medical School, 10 Shattuck Street, Countway, Boston, MA 02115, USA. alexa.mccray@hms.harvard.edu

Abstract

BACKGROUND: The journal Methods of Information in Medicine, founded in 1962, has now completed its 50th volume. Its publications during the last five decades reflect the formation of a discipline that deals with information in biomedicine and health care.

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Authorship Problems in Scholarly Journals: Considerations for Authors, Peer Reviewers and Editors.

Gasparyan AY, Ayvazyan L, Kitas GD.
OBJECTIVES: To report about 1) the journal’s origin, 2) the individuals who have significantly contributed to it, 3) trends in the journal’s aims and scope, 4) influential papers and 5) major topics published in Methods over the years.

METHODS: Methods included analysing the correspondence and journal issues in the archives of the editorial office and of the publisher, citation analysis using the ISI and Scopus databases, and analysing the articles' Medical Subject Headings (MeSH) in MEDLINE.

RESULTS: In the journal’s first 50 years 208 editorial board members and/or editors contributed to the journal’s development, with most individuals coming from Europe and North America. The median time of service was 11 years. At the time of analysis 2,456 articles had been indexed with MeSH. Topics included computerized systems of various types, informatics methodologies, and topics related to a specific medical domain. Some MeSH topic entries were heavily and regularly represented in each of the journal’s five decades (e.g. informatics systems and medical records), while others were important in a particular decade, but not in other decades (e.g. punched-card systems and systems integration). Seven papers were cited more than 100 times and these also covered a broad range of themes such as knowledge representation, analysis of biomedical data and knowledge, clinical decision support and electronic patient records.

CONCLUSIONS: Methods of Information in Medicine is the oldest international journal in biomedical informatics. The journal’s development over the last 50 years correlates with the formation of this new discipline. It has and continues to stress the basic methodology and scientific fundamentals of organizing, representing and analysing data, information and knowledge in biomedicine and health care. It has and continues to stimulate multidisciplinary communication on research that is devoted to high-quality, efficient health care, to quality of life and to the progress of biomedicine and the health sciences.

PMID: 22146913 [PubMed-indexed for MEDLINE]