GMDS 2012 – Medical Informatics, Medicine and Neighboring Disciplines

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In his recent editorial regarding a selection of papers from Medical Informatics Europe (MIE) 2011, György Surján discussed their “thematic diversity” with respect to the “problem of the self definition of medical informatics” [1]. The same can be said about the annual conference of the German scientific association of medical informatics. The German association covers medical informatics and its neighboring disciplines of biometry (statistics in human and veterinary medicine) and epidemiology. It was founded in 1955 as the German Association for Medical Documentation and Statistics (GMDS). In 1991, it received its current, rather long name, the German Association for Medical Informatics, Biometry and Epidemiology, while preserving the acronym GMDS. In the years since then, despite the continuing links between the three fields encompassed by the GMDS, the ties have loosened. Thus, the biometrical branch is closely affiliated with the German Region of the International Biometric Society (IBS-DR). In 2005, epidemiologists established a national scientific association dedicated solely to their field, the German Association of Epidemiology (DGEpi). These groups have paved the way for an umbrella organization in Germany whose aim is to bind otherwise independent associations focusing on medical informatics, biometry, and epidemiology, accepting their differences while preserving their similarities. In the move to create this structure, only the medical informatics section is missing.

In his editorial [1], György Surján considered the larger issue as “the problem of finding the relevant information in a large amount of data”. To some extent this is the case for the five papers selected from the 57th Annual Conference of the GMDS for publication in Methods of Information in Medicine. The conference, which took place in September 2012 in Braunschweig, Germany, was hosted by the Peter L. Reichert Institute for Medical Informatics and organized jointly with the 42nd Annual Conference of the National Informatics Association (GI). Informatics, medical informatics, biometry, and epidemiology: these four distinct scientific fields provide methods for information analysis and information management in medicine. There couldn’t be a better place than a journal devoted to those methods as Methods of Information in Medicine, to present the results of research in these scientific fields. However, at this conference medical informatics is traditionally the predominant specialty in terms of participants and papers.

The selection of papers from the 57th Annual Conference of the GMDS was supported by many people. The conference reviewers were asked to recommend submissions for this focus theme. After the conference, the program chairs for medical informatics, biometry, epidemiology, and medical documentation further tailored the candidates to a set of abstracts that were invited to submit a full paper. Those papers were regularly evaluated by reviewers from Methods of Information in Medicine.
The five published papers are as different as might be expected and include current hot topics in medical informatics, such as ambient assisted living [2], public health informatics [3], and informatics support of clinical research [4]. Molecular biology is addressed from a statistical perspective [5], and clinical informatics by a qualitative study of IT-benchmarking in hospitals [6]. This selection ably covers the many applications of biomedical informatics as presented in the white paper of the American Medical Informatics Association (AMIA) [7]. The unit of observation extends from molecules [5] to individuals [2], patients [4], organizations [6], and society [3]. Informatics in translational medicine [4] is represented and so is what the AMIA calls health informatics [2, 3, 6]. Both basic [5] and applied [2 – 4, 6] research are covered. Together, these topics offer a window on what medical informatics is today, with patients as the observational unit, health informatics as the area of application, and applied research as the predominant pattern.

The demographic changes in developed countries and the increasing prevalence of dementia are the driving force for ambient assisted living. Gietzelt et al. used several gait measures from a waist-mounted accelerometer to distinguish with high accuracy between patients with dementia and active older individuals [2]. Their results underpin the reliability and validity of accelerometer measures in activity control. Social media are changing not only our daily lives but also the healthcare system. Denecke et al. offer a systematic approach to the use of social media, and especially data from Twitter, for public health monitoring [3]. Interestingly, Twitter messages posted by news agencies seem to be more relevant than personal messages. However, the method currently suffers from “over-alerting”, similar to other automatic alerting strategies.

Schwanke et al. likewise start with a generic approach, analyzing the appropriateness of customer relationship management (CRM) systems for clinical research [4]. Commercial CRM systems have been proposed in order to professionalize the management of study participants, improve data quality, and reduce work load and costs. However, in the opinion of several experts, those systems do not yet sufficiently cover the specific requirements of clinical research. In their work on statistical methods in molecular biology (in particular on bioinformatics) Scheinhard and Ziegler present clear recommendations for the appropriate use of statistical tests [5]. Presumably, these recommendations are also valid in domains other than molecular biology.

Today, the management of information and communication solutions in healthcare organizations is still more eminence-based than evidence-based. Liebe and Hübner propose an IT-benchmarking method that draws on 61 performance indicators. Their approach received encouraging feedback by chief information officers responsible for hospital IT [6]. The author of this editorial – interested in the quality management of medical services – is struck by the many similarities between the quality management of IT services and that of medical services. Thus, it becomes clear that medicine itself contributes to the methodological foundation of medical informatics and should accordingly be added to the AMIA white paper [7].

What moves us in/toward the future? This question was the motto of the joint 57th Annual Conference of the GMDS and the 42nd Annual Conference of the GI. The selected papers demonstrate that medical informatics, biometry, and epidemiology can be expected to contribute valuable concepts, methods, and solutions to the anticipated challenges in medicine and healthcare. However, it remains unclear whether our scientific fields can also act as the driver towards the future. It could be an innovative option to step up and take the lead!

References