Highlights of Medinfo 2010

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In 2008 it was decided that Methods of Information in Medicine will continue the tradition of publishing selected papers from Medinfo and MIE conferences, which have been significantly revised and extended, as Special Topics [1].

This Special Topic contains a number of the highest ranked contributions to Medinfo 2010. Also Applied Clinical Informatics (ACI) published a number of the highest ranked papers of Medinfo.

As guest editor of both Methods and ACI I selected the manuscripts that best suited each journal.

For Methods 12 manuscripts, belonging to the papers that were ranked highest and dealt with different topics, were selected. These revised and extended manuscripts were again reviewed and finally five papers were included in this Special Topic. The papers cover a broad range of subjects.

The paper of Magrabi et al. [2] reviews the effects of interruptions on task performance in a clinical environment. Interruptions appear to be complex phenomena where multiple variables including characteristics of primary tasks, different dimensions of the interruptions and the environment may influence outcomes. Interruptions have been shown to be associated with patient safety events. The authors discuss the problems of designing controlled experiments to study the effects of interruptions. They suggest that computational models, agent-based, can be used to examine the overall impact of interruptions on patient safety and task efficiency. Another area where computer models could help is in studying the effects of public health policy interventions. Available models vary widely in quality and are often not validated. Ainsworth et al. [3] present a tool – IMPACT – that enables groups of experts with different backgrounds to model and simulate the effects of public health policy interventions. They present the system and provide an example where the system is used to implement and validate the model for congenital heart disease.

Task analysis is a valuable research method for better understanding the activities of health professionals – for example anaesthetists in the operating room – providing evidence for designing and evaluating improvements to systems and processes. It may also assist in identifying potential error paths to adverse events, ultimately improving patient safety. Human observers are the current ‘gold standard’ for capturing task data but they are expensive and have cognitive limitations. The paper by Houliston et al. [4] is about the automatic detection of the activities of anaesthetists in the operating room. As a first step to activity detection they used RFID technology to capture the anaesthetist’s location, orientation and stance (LOS). The authors conclude that active RFID tags can provide potentially useful information on LOS at a low cost and with minimal impact on the work environment. However, accurate location sensing remains a challenge in the face of a complex interaction of factors affecting RFID’s radio signals.

Many applications use different terminologies which hampers semantic interoperability. One solution is to map these different terminologies to a broader healthcare terminology before storing the data in a database. The paper by Park et al. [5] investigates whether SNOMED CT, being such a broader terminology, is able to represent the concepts of ICNP version 1. The authors conclude that about 80% of the concepts of ICNP could be mapped but that improvements in the ICNP version 1 in terms of concept naming and definitions
are necessary. Also SNOMED CT should be extended with the missing concepts.

Real-time reporting of symptom data by patients might benefit medical communication and treatment processes on an individual level and symptom based surveillance and management on a population level. However, the patient’s attitudes towards providing symptom information electronically before consultation have hardly been investigated in primary care. Johansen et al. [6] studied patient attitudes towards symptom reporting in primary care with the help of a questionnaire. From the survey it could be concluded that the patients were predominantly positive with regard to providing symptom information electronically to their GP.

I hope that this introduction to the special topic will wet your appetite!

References