

Health Information Systems

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1. Overview

Welcome to the special issue of eJHI devoted to topics in health information systems. This special issue has two themes. The first set of three papers look specifically at understanding ways that health information systems are utilised and the significant factors surrounding that. Interestingly, two of the three papers consider issues relevant to the developing world (Pakistan & Malawi) by applying accepted techniques to the developing world context. The second set of two papers look much more specifically at the issues of collecting information needs in the complex health environment and modelling techniques that can be applied specifically to health to provide software architecture.

All five papers have been selected from papers accepted for the Health Information Systems track at the 18th Australasian Conference on Information Systems in Toowoomba, Queensland, Australia, 5-7 December 2007. All papers have undergone a second round of blind peer review and all authors have worked conscientiously to enhance their work and meet the journal standards. It has been a pleasure to work with all of the authors.

2. Understanding Health Information Systems

The first paper on the Understanding Health Information Systems by

Gro Alice Hamre and Jens Kaasboell of the University of Oslo explores "Motivation and Demotivation in a Case Study of the Malawian Health Management Information System". They address the problems of utilisation of health management information systems (HMIS) in developing countries due to the critical shortage of qualified and motivated human resources. They report on a case study carried out in two districts in Malawi. Their analysis is based on motivational theory and six categories of good and bad critical motivational incidents. They found that motivational items identified by Machungwa and Schmitt are chiefly relevant to the Malawian context, but should be adjusted to the specific case of the Malawian health sector. The different types of HMIS work are suggested to have implications for motivation.

John Knight from the University of South Australia tackles "Understanding GP Attitudes Towards A Data Amalgamating Health Informatics System". John reports on the attitudes of 20 practitioners in South Australian General Practice towards adopting an unspecified data amalgamating Health Informatics (HI) system. He finds that HI adoption is primarily influenced by the perceived potential for change in the professional's value and role. While GPs were generally reluctant to consider technological innovation that was not perceived to demonstrate potential for improvement in patient health outcomes, increased exposure to HI systems

positively influenced perceptions of both the importance and the certainty of potential implementation outcomes. He concludes that GP attitudes are characterised by four different perspectives of HI systems use in general practice medicine delivery: resist unless certain and demonstrating individual advantage; use to support existing individual and organisational processes; use to integrate existing individual and organisational processes; and use to transform healthcare system.

The final paper in the Understanding Health Information Systems section is prepared by Raj Gururajan et al. of the University of Southern Queensland. These authors consider the "Reactions and Perceptions of Healthcare Professional Towards Wireless Devices In Healthcare Environment In The Developing World reporting on a Case Study Of Pakistan". They report on a survey of 300 professionals and the results of their regression analysis indicates that clinical performance and better quality of services would be the determinants in using wireless technology in Pakistani healthcare. The authors found that medical professionals felt that in order to continuously use the technology, training and technical supports were essential. They also found that the medical professionals felt that the introduction of wireless technology would result in the attraction of more practitioners, save time, save effort and provide high quality information. It is suggested that these factors will

reduce inaccuracies in health information system data.

3. Information Needs and Modeling Techniques

The first paper in the second section by Christian Flender and Michael Rosemann of QUT, Australia, explore “Model-driven Service Engineering in Home Telecare”. They argue that a multitude of stakeholders such as patients, nurses, general practitioners or social carers can be integrated by modelling complex interactions necessary for managing the provision and consumption of health care services. The authors explore a Service-oriented Architecture (SOA) that supports those integration efforts by enabling the flexible and reusable composition of autonomous, loosely-coupled and web-enabled software components. They identify a gap between SOA and predominantly business-oriented perspectives (e.g. business process models). Therefore, Flender & Rosemann combine Semantic Object Model (SOM) and the Business Process Modelling Notation (BPMN) towards a model-driven approach to service engineering. In doing so, they propose that by deriving a business process model for Home Telecare, which can eventually be controlled and executed by machines; in particular by composed web services, the full potential of a process-centric SOA is exploited.

Our final paper by Basil Alzougool, Shanton Chang and Kathleen Gray of the University of Melbourne, Australia attempts to “Conceptualise information needs within the context of informal carers”. The authors argue that developing effective Health

Information Systems requires the identification of potential information needs for end-users of these systems. They observe that a comprehensive systematic understanding of the information needs in general is not currently available. However, they find that the information needs of informal carers are not exceptional. Therefore, they propose a conceptual framework that can be used to identify, organise and abstract potential information needs in general and those of informal carers in particular. Alzougool et al. propose a conceptual framework that illustrates four initial categories of information needs of informal carers that fall subsequently into four abstract groups of information needs namely: recognised demanded, unrecognised demanded, recognised undemanded, and unrecognised undemanded.

4. Concluding Remarks

One thing that the editors noted whilst preparing this special issue was the diverse skill set needed for working in the Health Information Systems field. Researchers in this field require a thorough understanding of information systems theory as well as an extensive knowledge of the health industry. Just having empathy for the users is not enough. The researchers must have a thorough working understanding of the health informatics discipline in general. On top of that they need to understand the work environment and values of the different groups within the health sector. For example, John Knight in his paper in this special edition investigates General Practitioners and their use and perception and use of health information systems to store patient information. In contrast, Alzougool et

al. explore the health information needs of informal carers. The environment, education level, needs and background of both of these groups is quite distinct. They both however belong to the very rich and diverse field of Health Informatics. Health informatics opens up many opportunities for cross discipline research and for diverse teams of researchers to work together. Researchers also have the opportunity to really make a profound difference in the health sector providing benefits to carers, patients, their families, society and to the national economy. This special issue just scratches the surface with many other exciting areas to work in including measurement of health services performance, health supply chain analysis, hospital tracking, pharmacy and clinical treatment monitoring, data collection in surgery, injury management processes in sport, just to name a few.

5. Acknowledgements

We thank the ACIS07 organising committee for their support and encouragement to complete this special issue & eJHI managing editor, Sebastian Garde for his patience, enthusiasm and guidance in preparing this special issue.

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