Call for Papers
Special Issue of Pacific Asia Journal of the AIS

Theme: “Mobile Decision Support and Analytics for Healthcare: Citizen, Organization, Governmental and Technological Perspectives”

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Background
M-health (Mobile health) broadly refers to a mobile service or application for providing healthcare support to anyone, anytime, and anywhere (Dutta et al. 2017). Utilizing processing power of mobile phone, GPRS and Internet technologies, M-health provides health professionals, patients, clinicians and other relevant users with support services to manage, disseminate, collect, administer, control and monitor healthcare information and improve health service delivery and quality of care support. The service provided by various m-health information systems (IS) applications, eliminates geographical and temporal constraints while enhancing the coverage, quality, cost savings and other user provisions of healthcare (Varshney, 2014; Miah et al. 2017a; Miah et al. 2017b; Miah et al. 2017c). As a sub-class of IS, clinical decision support system (CDSS) is a type of specialized DSS application that directly aids in “clinical decision making in which characteristics of individuals are matched to a computerized knowledge base for the purpose of generating patient-specific recommendations (Hunt et al. 1998). Combining these, Mobile Decision Support Systems (MDSS) applications have been developed for supporting decision making and analytics in clinical and non-clinical settings. MDSS studies developed over the past decade have been viewed into three groups: A) mobile based CDSS for physicians and healthcare professionals (e.g. Martínez-Pérez et al. 2014; Anokwa et al. 2012; Karim & Bajwa, 2011); B) MDSS for outreach health workers (e.g. Parveen et al. 2014; Kuntagod & Mukherjee, 2011); C) and MDSS for public use or improving public healthcare (e.g. Ramesh et al. 2012; Fung et al. 2014).

Krause et al. (2004) introduced a MDSS for providing physicians with decision-relevant information on potential organ receivers, aiding assessment of forthcoming organ transplants and maintaining security of documentation. Michalowski et al. (2003) developed a mobile
CDSS for emergency support of different acute pain presentations, while other studies in mobile based CDSS for medical emergency management have identified solution design requirements for emergency triage decision support (Peng et al. 2011). For outreach health professionals, MDSS solutions have also been designed, e.g. to enable consistent and quality primary healthcare delivery to rural populations (Kuntagod & Mukherjee, 2011). A tablet-based CDSS for cardiovascular disease management was also designed by Praveen et al. (2014) for use by non-physician health care workers and physicians in a rural Indian context. Such system solutions primarily support healthcare professionals or clinicians in their own practices rather than enhancing patients’ self-management or monitoring of their medical conditions, through the exploration and utilization of various online and offline data sources.

Healthcare analytics has been an emerging application development area in the m-health research space. Typically, analytic solutions utilize computer-based analysis techniques for supporting both clinical and non-clinical decision making. M-healthcare applications can maximize service quality by producing insights from relevant datasets while minimizing cost, or optimizing operational health decision making outcomes. For this, various systematic solutions have already been extensively adopted. Big volume (or velocity, variety, variability) of internal and external data, diversified medical and healthcare data sources, and their reporting requirements have driven a great push to utilize robust analytics modelling and system solutions. These data can be directly related to electronic health records, clinical decision support, and personal or hospital data management (Aragues et al. 2011). Analytics systems provide support for managerial decision making both for clinical care and effective hospital operations, while supporting evidence-based creativity through data driven strategies in optimizing healthcare decisions within hospital or organizational contexts.

The aforementioned studies, however, open new opportunities to develop more MDSS by focusing on more general decision support issues e.g. for improving public healthcare (within a non-clinical decision support realism). The decision support demands are there in the public atmosphere, but limited number of studies revealed the requirements and associative solution strategies. Also, latest technological development in relation to end user computing, cloud computing, IoT, analytics tools, and RFID are a great push for designing more data-driven MDSS solutions for improving citizen’s (patients) independent living, monitoring and active living. To address these, we believe that healthcare organizations and government should change their decision-making approaches and policies for funding and support strategies for meeting the citizen’s growing demands in this data-intensive era. We have experienced that social media generated big data to process of decision support has led to new method (such as using Block Chain based approach (Prokofiev & Miah, 2019)) for exploring various alternatives (e.g. mental healthcare issues (Islam et al. 2018)) and that new big-data driven strategies (e.g. in tourism management (Miah et al. 2016)) can be developed.
through the process of generating various patient’s data, test results and images in any field of expertise for their healthcare aids. We suggest that this knowledge gap is very important and would universally applicable for data-driven MDSS and analytics solutions development for healthcare.

**Topics of Interest, but are not limited to:**

It is important to explore the issues of data-driven strategies, their relevant approaches, methods, and constructs as well as new theories to support, promote, generate, and innovate new studies within the domain of MDSS design for healthcare. The data-driven MDSS can be an interesting solution artefact to outline, develop and implement for supporting various general decision supports, which may provide information dissemination, insight into patients’ details and decision options to target citizens (e.g. patients, kids, young and elderly communities) both for their independent society development and improvement at the primary stage of healthcare generally.

At the same time, healthcare is beginning to embrace social media, which by its nature is egalitarian and available to all with Internet access in mobile phones or other hand-held devices. As a platform for dissemination and interaction, information sharing among healthcare practitioners and patients have been accelerated, but it also contains the potential for misleading information to be promulgated. Social media and relevant technologies can help patients engage in their own healthcare. In addition, healthcare practitioners can be more involved with their patients. Also, organizations can see approaches for maximizing profits while cutting costs of physical interactions—through to an appropriate data-driven MDSS design that ensures effective use of internal and external data exploration. This can be further facilitated through the use of data generated from wearable, RFID and other tracking devices that link directly with cloud apps, ERPs or any small, large or extra-large scale systems. In this case, individual data (in forms of text, photos, videos and blogs) collected can be combined to give an overall picture of community health and allow individuals to compare their activity (e.g. through analytics) or general health against population averages (e.g. through predictive techniques). In addition, health parameters such as heart rate, glucose levels, activity etc. can be directly interpreted by the MDSS, thus allowing interpretation of a patient’s data by their physician.

The aim of this special issue is to bring together leading research in data-driven mobile based systems for healthcare decision support. The objective is to collect, process, examine and circulate diverse issues of social, economic, cultural and technological context related to decision support in public healthcare, healthcare management, and other healthcare informatics (excluding the clinical or hospital management DSS aspects). Within developing nations or developed nations the focus of this special issue is on different methods, models, constructs, solution applications or specific architectures and theories related to MDSS.
research and practice. The topics broadly cover decision-making, analytics solutions, strategic improvement, operational management, user access and other behavioral, organizational and governmental administration issues, as well as technological issues around mobile infrastructure, organizational information systems and app designs. Manuscripts that emphasize these from theoretical, empirical, and solution design approaches, using appropriate research methods will be welcome.

Topics of interest include, but are not limited to, the following:

- Data driven MDSS approaches for connecting patient, doctor and support service authorities (including wearable devices such as fitness bracelets and glucose monitors etc.)
- Block chain driven analytics, healthcare analytics, BI or decision support platforms for enterprises
- Locational technologies, predictive analytics and other forms of analytics techniques used in MDSS for the healthcare decision support – for citizen, professionals and organizations
- MDSS design approaches for decision making
- Big-data capturing, processing and specific architectures for M-health DSS
- Context-Sensitive approaches growing on social media data for targeted populations
- Constructs, issues, barriers and gaps in designing M-health DSS applications
- Longitudinal MDSS projects involving large-scale implementation and evaluation activities
- Applications of MDSS from developed countries can be applicable for developing nations
- Any studies e.g. user studies on design research for M-health DSS to process big data

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Important Dates (Tentative schedule)

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<td>From Nov 20, 2019 to Feb 29, 2020</td>
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Original, interesting, and high-quality unpublished contributions not currently under review by any other conferences or journals are sought. Articles from a wide range of disciplines and research based in traditions such as design science research, quantitative, qualitative or mixed approaches. Research that extends existing theories to amplify implications for contemporary theory and practice is particularly welcome.

Accepted manuscripts will go through a rigorous two cycles review process. The initial screening will assess the correctness, originality, significance, quality of presentation, and relevance of the submitted manuscripts. Manuscripts requiring major revisions will be re-assessed strictly according to the publication deadlines.

Authors are kindly instructed to follow the Guide for Authors and submission guidelines for the journal at the journal’s website and submissions must be go through the online submission system: https://mc.manuscriptcentral.com/pajais

All papers will be peer reviewed and must follow the standard guidelines for manuscript preparation and submission posted on the PAJAIS website (https://aisel.aisnet.org/pajais/). Further enquiries about the special issue can be directed to Assoc Professor Shah Miah (Guest Editor) email: shah.miah@vu.edu.au; and Phone: +61 03 99199835 or Jacob Chia-An Tsai (PAJAIS Managing editor) email: manager.pajais@gmail.com
References


