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## Editorial

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The term 'informatics research' emerged from evidence-based knowledge, management, and research with the purpose of providing users a competitive edge. Public affairs informatics research has been expanded to include healthcare informatics, crime and public safety informatics, public administration informatics, community service and welfare informatics, and public health informatics (Wan, 2006). A key component of evidence-based decision-making is knowledge management. Even though its definition may vary between organisations, knowledge management involves networks that connect people and information. Evidence-based knowledge management is concerned with crucial organisational issues of adaptation, survival, and competence, often times occurring in a highly competitive and rapidly changing environment. According to Wan (2002, pp.2-3), "Successful knowledge management occurs when knowledge can be stored, accessed, verified, edited, and used through an enterprise-based data system that interfaces with the multiple data sources in traditional legacy databases".

Evidence-based knowledge is important because it enables a manager to improve organisational performance. Data warehousing and multivariate mining techniques are emerging as valuable decision-making tools for organisations. Data warehouses organise information systems such as organisational context, design, performance, and outcome indicators. Analysts then extract the data, build a database, and analyse the data to produce meaningful information to users.<sup>1</sup> The potential benefits of data mining include the establishment of benchmarks for quality enhancement and performance improvement. Data mining can identify successful, unsuccessful, and inefficient interventions. Individuals or organisations that are at risk from adverse events can be identified. Additionally, marketers are able to develop and market new products and services. According to Breshnahan (1997) and Cranford (1998), this type of outcome management eliminates those practices that do not support the organisation's best interest.

The public sector can also benefit from the advantages of data mining that is guided by a systems framework. The application of data warehousing and data mining techniques to problem areas in the public sector involves compiling multiple databases and utilising computer software to determine models of best practice that will optimise the performance or output of service agencies in various countries and differing geographical regions. Public affairs informatics research plays a crucial role in utilising quantitative techniques and simulation modelling to optimise effectiveness and efficiency of public service delivery systems. The purpose of this unique issue is to compile research and scholarly works that enhance the theoretical and empirical knowledge base for recognising informatics and policy programmes that will enhance the performance of service organisations and improve the well-being of communities.

The 12 studies in this issue reiterate the importance of public affairs informatics research. These papers will be presented and discussed in four major groups – international health, health policy, IT-informatics, and services research – all in relation to public affairs informatics research. The specific goals of this issue are to emphasise an interdisciplinary focus in public affairs informatics and performance improvement research; create a partnership with the public service sector that will contribute to the development of innovative research; and finally, reposition knowledge developed from interdisciplinary research to evidence-based public service management and practice. This issue demonstrates the integration of principles and methodological approaches of diverse disciplines that may construct evidence-based knowledge for enhancing public services and improving the efficiency and effectiveness of service organisations.

Four papers in this issue address international health in public affairs informatics research. The first, by Chung *et al.*, provides an empirical study comparing timely hospice care between whites and minority elderly patients. Hospice is a valuable medical alternative for managing pain and discomfort without impairing a patient's consciousness. Hospice care can be administered in hospitals and nursing homes (formal care) but, most typically, is given in the home, with a family member assuming the role of caregiver (informal care). Unfortunately, a number of studies have documented problems in patients receiving timely hospice care. The key contribution of the Chung *et al.* study examines the potential racial effects of prolonged access to hospice care. Findings suggest that minority elderly hospice patients who are treated by formal caregivers die sooner than those who receive treatment from informal caregivers. Additionally, the rate of death in white elderly hospice patients was unaffected by the type of hospice caregiver. This study raises several public policy and public health concerns for informatics research. Outcome differences in hospice care given to white and minority elderly encourage the investigation of cultural factors and large family networks, organisational characteristics of institutions that provide formal hospice care, and policy implications of the nature of and access to hospice care.

The second paper, by Angeles *et al.*, investigates whether public health expenditure in Ecuador primarily benefits the more affluent members of society or the more disadvantaged members. Health expenditure has been shown to increase human capital, and in turn, promote the growth of developing countries. The implications of this study for public affairs informatics research offered improvements in decision-making practices and suggestions for efficient and equitable public resource distribution. The authors first provide descriptive analyses of the structure of healthcare in Ecuador, including a discussion of the most relevant budgetary concerns. Next, a conceptual framework is developed to approximate the incidence of health expenditure benefits. The analyses of

several databases were coordinated to produce results that indicated mixed findings, with the benefits of some programmes going towards the less privileged and the benefits of others directed towards the wealthier members of society. Nevertheless, this study provides a better-quality application of the Benefit Incidence Analysis methodology for public health expenditures.

The next international health focused paper in this issue examines the utilisation of alternative medicine in Kazakhstan women. Wan and Chukmaitov examined the effects of social and cultural factors on complementary medicine utilisation for several ethnic groups in Almaty, Kazakhstan. This study was one of the first conducted in Central Asia designed to understand the effect of herbal medicine on personal health in varying cultures. The results of this research allow for the design of ethnically sensitive health assessment, education, and promotion programmes aimed at women and their folk healers. This evidence-based management in public affairs presents a measurement model for promoting community health.

The final paper grouped in the international health domain analyses the government's position on tobacco leaf productions in China. Tobacco use represents a serious international health challenge. For decades, smoking has been recognised as the primary preventable cause of death in adults worldwide (Rosoff *et al.*, 2004). Hu *et al.* examine the role of government in tobacco control through national and local interventions, specifically the effect of additional tobacco taxes. Dr. Hu was the recipient of the prestigious Fogarty International Award to build research capacity in China. The purpose of this evidence-based informatics research is to evaluate the economics of tobacco control, including the impact of additional taxes, economic costs of smoking, and cost-effectiveness of tobacco-control interventions.

The next major grouping of public affairs informatics research papers deals with health policy. Two pieces by Hurley and Lin *et al.* examine health insurance programmes and provide valuable health policy implications. Hurley provides a research driven analysis of Medicaid reform. In the past, reforming Medicaid typically has not been guided by policy research. Hurley emphasises the importance of evidence-based research to guide the decision-making of policymakers and researchers. Specifically, Hurley's examination of managed care models provides research driven Medicaid reform.

Lin *et al.* examine the influence of Taiwan's Health Insurance Program on the career perceptions of hospital physicians. Five health policy and payment reforms were analysed to assess the effects of hospital physicians' quality of life, value conflicts, satisfaction, increased stress, and behavioural changes. Unfortunately, hospital physicians reported dissatisfaction with all five-health policy and payment reforms. More importantly, 40% of respondents indicated dissatisfaction with their careers. Lin *et al.* raise important public policy concerns based on the finding that career satisfaction is positively related to hospital physicians' willingness to be doctors again. The authors suggest more effort to be directed towards the younger generations' inclination for future professions in the medical field.

The third grouping of public affairs informatics research is IT-informatics. Two papers, by Shen and Ghost, address the significance of IT-informatics and evidence-based public affairs research. Shen examines the ability of health information technology to deliver efficient and quality healthcare. Health information technology or healthcare informatics was evaluated with quality of care and economic implications

among three evidence-based national quality indicator systems models. Healthcare informatics has become a key component in reducing costs and improving the efficiency and quality in healthcare systems. This informatics research offers major implications for the determinants and consequences of healthcare services. Ghost also explores the ability of a health information technology infrastructure to improve quality of care and health outcomes. Ghost outlines a conceptual model for the development of Regional Health Information Organisations (RHIOs) within the National Health Information Infrastructure. RHIOs facilitate knowledge sharing and collaboration. Collaboration of evidence-based medical and clinical practices allows for the improvement of performance of health and public service concerns.

The fourth and final group of public affairs informatics research papers involves a focus on services research. Roh and Lee both address services research from a Medicaid perspective. Roh identifies elements influencing hospital choice among rural Medicaid beneficiaries. This study utilised an exploratory model of rural Medicaid beneficiaries' hospital preference that analysed the influence of hospital and patient characteristics on Medicaid patient's choice of hospitals. The results of this study present policy implications for rural healthcare management from several perspectives. The outcome of this public affairs informatics research provides policy implications and suggestions for the healthcare providers, the rural community, and the government.

Based on Medicaid discharges in California, Lee analysed the effects of a payer-specific case mix on hospital inpatient operating expenses and net revenues. According to his findings, Lee contributes several policy and methodological implications in order to address Californian hospitals' concerns of competition and managed care. The rates of hospital costs and revenues are compared and meticulous consideration regarding access to and quality of care, and overall community health is suggested. Health policymakers are encouraged to utilise this informatics research to improve performance and reduce or eliminate any unforeseen crises.

Zhang *et al.* perform four advanced methods of estimation for the uninsured in the state of Florida. The uninsured represent an important public policy issue, raising both political and social concerns. The implications of this study are two-fold – first, to improve comprehension of the quantity and characteristics of the uninsured, and second, to guide public agencies in programme design and development to broaden health insurance coverage. Zhang *et al.* confirm many of the previously reported characteristics of the uninsured. Additionally, the authors suggest the expansion of health insurance coverage as an element of Medicaid reform. More accurate estimation of the uninsured and understanding of the reasons for the uninsured facilitate the improvement of efficient public health services.

And finally, Harrison and Coppola conduct a Data Envelopment Analysis (DEA) to evaluate the efficiency and quality of federal healthcare services. This unique study combines both efficiency and quality of care into a single informatics research model. DEA allows for the identification of benchmarks as well as best practices at which maximum efficiency and quality are achieved in federal hospitals. The information obtained from this study may provide insight into a national health system for hospital executives, healthcare policymakers, taxpayers, and other stakeholders. Harrison and Coppola provide critical information to guide policy change that maximises services and efficiency while maintaining high levels of quality care.

The 12 papers presented in this issue utilise public affairs informatics research to address important public policy issues. Theoretical, methodological, and policy implications are provided for numerous shareholders in the areas of international health, health policy, IT-informatics, and services research. The role of timely research to guide decision-making and improve performance was demonstrated with hospice care, public health expenditure in Ecuador, alternative medicine in Kazakhstan, tobacco leaf productions in China, Medicaid reform, health insurance programmes in Taiwan, health information technology, regional health information organisations, rural healthcare management, Medicaid discharges in California, the uninsured in Florida, and federal healthcare services. This compilation of research and scholarly works have contributed to both theoretical and empirical knowledge foundations for identifying informatics and policy programmes that improve service organisation performance and enhance community well-being. This journal issue reiterates the importance of public affairs informatics research by presenting evidence-based knowledge for public service improvement and organisational efficiency and effectiveness enhancement. In conclusion, it behooves us to further develop the role that informatics plays in public affairs research.

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### **Note**

- 1 [www.dwinfocenter.org](http://www.dwinfocenter.org). The case for data warehousing (www document) URL:<http://www.dwinfocenter.org/casefor.htm>.