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Part of the Advances in Healthcare Information Systems and Administration Series

Christo El Morr

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Research Perspectives on the Role of Informatics in Health Policy and Management

Christo El Morr
York University, Canada

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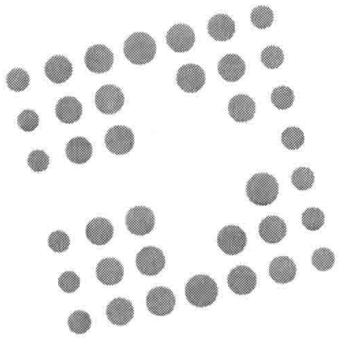

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Foreword

Research Perspectives on the Role of Informatics in Health Policy and Management is an important new piece of work in the field that will be of interest and very useful for researchers, decision makers, and graduate students interested in the application of health informatics to a broad array of health system issues. The book's uniqueness and importance is evident in three respects.

First, this volume, which is divided into three sections, integrates work from a broad range of other disciplines. Research in health informatics, health policy, and healthcare organization and management is often discipline specific – an approach that is important for the deeper understanding of theory and practice it encourages in each of these areas. However, the current book, *Research Perspectives on the Role of Informatics in Health Policy and Management*, fills a gap that persists in the application of knowledge from other disciplines to existing and emerging health management and policy problems. As a field, healthcare practitioners and researchers would benefit tremendously from taking greater advantage of and integrating well-developed bodies of work that exist in the social sciences and other relevant fields such as engineering. *Research Perspectives on the Role of Informatics in Health Policy and Management* does an excellent job of integrating knowledge from a wide number of these disciplines and applying that knowledge to the study of pressing health care challenges. In doing so, the current work recognizes that the application of health informatics solutions is not a straightforward rational process in which new and superior technology is seamlessly applied to improve information and quality of care. Instead, many of the chapters recognize and make efforts to address the kind of non-rational barriers to the use of information technology that remain pervasive (e.g. competing stakeholder interests).

Second, there is a very broad micro to macro application approach that is evident when these 14 chapters are considered together. *Research Perspectives on the Role of Informatics in Health Policy and Management* brings a cross-disciplinary approach to applying health informatics to health management and health policy challenges. Inherent in this work is an underlying recognition that health informatics, as a field, provides more than technological solutions to small-scale practical problems. Instead, knowledge and applications from the field of health informatics can be applied to a broad range of significant health care, management, and policy issues that plague health systems at the most macro as well as the most micro levels.

Finally, the compilation of chapters found in this volume move beyond traditional settings and sectors. *Research Perspectives on the Role of Informatics in Health Policy and Management* is a must read for those interested in thinking about how health informatics can be applied beyond in-patient and out-patient settings to other sectors such as public health and health policy decision making.

Liane Ginsburg
York University, Canada

Liane Ginsburg *trained in healthcare organization and management at the University of Toronto where she received her PhD. She is an Associate Professor in the School of Health Policy and Management at York University and an Ontario Ministry of Health Career Scientist. Liane teaches Applied Research Methods in Health to 4th year undergraduate students in the Honors Bachelor of Health Studies Program at York. Her research interests focus on patient safety culture and learning from patient safety events. She has published several recent peer reviewed papers in these areas, most recently in Health Services Research, Social Science and Medicine, Quality and Safety in Health Care and Implementation Science. Liane is also interested in knowledge translation, specifically with respect to the utilization of research, data, and other information by health system managers, and she is the scientific officer of the Canadian Institutes for Health Research (CIHR) Knowledge Translation peer review committee. Liane is currently principal investigator on CIHR and CPSI funded studies.*

Preface

The discipline of health informatics is growing in importance and is attracting attention in both fields of health and information technology. Disciplines as varied as health management, health policy, psychology, kinesiology, nursing, information technology, computer science, software engineering, computer engineering, and telecommunication are taking advantage of health informatics and contributing to the evolution of the discipline.

The application area of health informatics is wide; it varies from Extra-Hospital applications (i.e., tele-medicine, tele-care, tele-monitoring), to Intra-Hospital application (e.g., Picture Archiving and Communication Systems, Hospital Information Systems, Radiologic Information System), as well as other more recent applications such as Health Virtual communities and Decision Support Systems. The aim of health informatics stays the same: offering support for health care delivery by providing the right information at the right time to the right people in the right cost.

While Health Informatics, Health Management, and Health Policy are well-established fields of research and teaching, rare are the books that intertwine these fields in order to explore innovative cross-disciplinary approaches to health management as well as to health policy, using health informatics.

This book is here to partially fill this gap; we hope it as a first step of a series of books investigating new innovative interdisciplinary approaches in healthcare. There is a lack of investigation of the potential advantages of health informatics, especially in the public policy sector; this book will provide an overview of important ways in which health informatics can contribute to finding solutions in health policy and management.

The unique perspective of this book is the integration of Health Informatics into health Management and health policy perspectives. The book includes analyses that show how Health Informatics can be used by Health Management and Health policy researchers in order to provide solutions to pending problems in the health sector. It sketches a vision for the coming and supplies it with practical research examples in both health management and health policy.

Many stakeholders can take advantage of this book. Masters and PhD students can use this book to widen their perspective in health management, health policy, and health informatics. The book can provide a textbook-like source for advanced health informatics, management, and policy courses. Researchers in the fields of management, policy, and informatics will profit from this book's holistic and integrative perspective. It will provide them with a rich pool of ideas in how to use informatics in their respective field of research. Managers in non-governmental organizations as well as governmental bodies can use the book to understand the new solutions that informatics can provide in their strategic planning.

Research Perspectives on the Role of Informatics in Health Policy and Management is divided into three sections.

Section 1 takes a look at innovative ways in using health informatics in health management to provide solutions for many of the field's challenges.

Chapter 1 identifies the elements affecting the nature of support that is required. These elements are demonstrated to be three: discipline, objective, and setting. The authors attempt to provide metrics that can be used to compare and evaluate the decision support systems.

In chapter 2, we encounter a detailed discussion the advantages the PARIHS framework for implementing change in the decision making process, in comparison to traditional models. The chapter also summaries a knowledge translation attempt based on PARIHS framework, emphasizing the considerable need for a health informatics in its context.

Chapter 3 elucidates the use of a rehabilitation model to improve the decision-making processes in Long-Term Care (LTC) facilities in order to enhance the outcomes of seniors across the Ontario LTC continuum. It explains the effects of the model on quality of care and cost savings for the LTC industry and the health system. Finally, the chapter highlights the need to identify strategies for harnessing health informatics innovations to enable health system transformation.

Chapter 4 discusses the need to provide radiographers' performance appraisal in a continuous way, in order to enhance total quality in the radiology department. It provides the results of an empirical study that provided objective performance indicators derived from data stored in the PACS and RIS. The study indicates the ability to use informatics to enable PACS-RIS to act as a Decision Support System (DSS). Finally, the chapter outlines a model of a DSS that allows radiographers' continuous performance appraisal.

Chapter 5 discusses the shift in Ontario hospitals from global to activity-based funding and its impact on operational budget and cost management; it describes how case costing data and case mix information are collected and used for funding. It proposes a framework that connects input variables for determining resource utilization and long stays trim point. The author describes a clinical decision-making tool that supports hospital administrators in defining admission criteria, and predicts length of stay. The chapter highlights the importance of informatics and data quality and concludes with 10 key success factors for better funding and benchmarking.

In chapter 6, we find a description about the implementation of case costing using Ontario Case Costing Initiative (OCCI) as a hospital guideline. The chapter addresses the implementation process and discusses ways for planning, implementing, transitioning, and evaluation of case costing. The chapter discusses the use of informatics to allow health care professionals to analyze integrated health information and enable evidence-based decision-making.

Chapter 7 focuses on the use of personal electronic health records as a key factor to improve health care for patients, empower them by increasing their ability to self-manage their care, and share decision-making. It discusses utilizing information technology to moderate the cost of health care services, improve clinical research, and determining best practices. Moreover, it reveals the many challenges to implementation that must be addressed before these potential improvements in order to fully realize the perceived benefits.

Section 2 investigates innovative health informatics applications in the health policy.

Chapter 8 analyzes the process for administrative health service policy development with respect to information sharing and decision-making as well as the relationship of policy to decision making. It identifies the challenges experienced by health service managers and gives an example from a health policy experience in Nova Scotia. By exploring the importance and nature of administrative policy as a foundation for quality improvement in healthcare delivery, a case is made for greater use of health informatics tools and processes.

Chapter 9 makes the case for incorporating food systems analysis into public health practices. It addresses the challenges regarding food security, and investigates the ways health informatics can help in establishing a decision making for food security taking into account production, processing, distribution, access, consumption, and waste management. It demonstrates how public health informatics can offer potential answers to handling and using the large amount of information and geospatial data in a food systems analysis approach. The author provides a scenario that envisions using a type of spatial analytic tool, called Spatial On-Line Analytic Processing (spatial OLAP or SOLAP), for public health decision-making.

Chapter 10 makes the case for the adoption of various healthcare technologies in order for the public sector to manage scarce resources and healthcare dollars to improve the health of seniors and the care available closer to home in Ontario, Canada. The Computerized Physician Order Entry (CPOE) Systems and Telehomecare are given as examples of health informatics solution working for attaining the policy concerns goal of caring for aging population in a manageable cost-effective manner.

Section 3 explores the information technology challenges and opportunities related to the use of health informatics in the health sector and particularly in health policy and management.

In chapter 11, we find an analysis of the technological offerings and result of the epSOS (European Patient Smart Open Services) framework and how it has impacted strategic decisions in electronic prescription in Greece. The chapter explores a new e-health national application and demonstrates that by rethinking healthcare, reusing established standards, it is conceivable to suggest new innovative systems.

Chapter 12 analyzes the reasons behind the little improvements witnessed in health despite investments in health information technology. It examines the diverse priorities of stakeholders in the health system, particularly four stakeholder groups: patients, providers, pharmaceuticals, and payers. The chapter maps these priorities against the priorities of government and public health within the United States healthcare system. The authors find that these priorities are incongruent and in conflict, and suggest that policy makers and public health officials must understand these dichotomous priorities and work to bring them in line.

Moreover, chapter 13 explores the use of home telecare as an alternative medical approach to managing the increase in acute and long-term care admissions. The authors propose the use of a cardiac implant in conjunction with a mobile device to assist managing chronic heart failure. They discuss how this proposal helps in overcoming emergent limitations related to home telecare such as usability, self-management, and confinement to the home. Mobile wireless technology is suggested as an innovation that will drastically improve clinical decision-making and management of health services in the future.

Finally, chapter 14 discusses how Web 2.0 has allowed knowledge sharing and construction between patients, in particular chronic patients. It also demonstrates that it is still unclear how patients use Web 2.0 for knowledge processes: what kind of knowledge processes happen in Web 2.0 between patients? How does Web 2.0 sustain or impede these processes? The authors develop a systematic exploration of the Web and analyze diabetes sites in Italy. According to a psychosocial perspective, their findings highlight the main features of online knowledge processes among patients.

Christo El Morr
York University, Canada

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