

PREFACE

This book explores how healthcare organizations can utilize advanced information technology (IT) to achieve high levels of operational performance and strengthen their market position. It considers health information systems from an organizational perspective, integrating the science of IT, medicine, and nursing practice within the context of complex adaptive systems. The book provides a conceptual framework for considering how IT can be used to fundamentally transform clinical work processes and integrate the clinical and business functions to achieve a coherent organizational strategy. The framework draws on a body of organizational and systems theory and incorporates evidence from information and clinical sciences. The book is applied, drawing on current operational and policy issues and supported with a rapidly growing body of evidence on how IT can be used to transform health systems function and improve clinical and business performance.

Due to its grounding in theory and research evidence, the book is well designed for use in graduate courses in health management, medical informatics, medicine, nursing and the health professions. Practicing health professionals can use the book effectively as well, either as a general reference or by focusing on the conceptual and applied material as a framework for problem solving and strategy development. Each chapter starts with a case study drawing on actual situations to introduce and apply the concepts. Readers are encouraged to return to the case for additional insight as read through the chapter. Each chapter also includes a problem solving scenario that draws on the case and applies and integrates material from the chapter.

The book is divided into three parts. Part 1 focuses on both business and clinical strategies and then considers them as an integrated organizational strategy. These chapters describe the structure of IT and how information can be used to structure and manage the clinical and business functions. This discussion includes how these functions can and must be integrated to achieve high levels of performance. The book focuses initially on clinical and business operations because the transformation must start with a redefinition of the traditional role of organizations in managing clinical processes and being accountable for clinical outcomes. IT can enable this, but there is no evidence to suggest that IT alone will produce it.

Part 2 focuses on information strategy related to enterprise strategy, or how an organization uses information to position itself in a competitive market and respond to environmental change. The issues examined include the use of information as a strategic asset, and a number of applications are discussed. Specific strategies are selected and discussed in some detail, including knowledge management as an organizational strategy, consumer informatics, the role of e-health and web-based technologies, and the impact of genomic medicine on health behaviors and services delivery.

Part 3 focuses on managing information resources. The editors feel it necessary to provide a detailed discussion of IT from the perspectives of operations management in Part 1 and strategic management in Part 2 before addressing the specifics of managing information resources. The earlier chapters provide the essential context for considering the investment in and management of information resources. This section includes chapters on the effective management of

information resources, investing in IT, IT structure and staffing, and information security and ethics.

The final chapter provides a broader context for thinking about how IT might affect the health system in the future. It is policy oriented and includes a comparative analysis drawing on how information has been applied in other service industries and health systems in other countries. It considers how IT in health might spawn fundamentally new ways of thinking about the industry. Discussions include increasing entrepreneurial behavior in start-up companies and considering health information from a global perspective. Included in the discussion is an assessment of current U.S. policy initiatives to develop a national health information infrastructure.

Information is recognized as an important technology and one of the latest technologies to be brought to the health system. This has given rise to many clinical and business applications and is reported in the literature. Information, however, is more than just the latest technology to impact the health system. It is one of the few resources that increase in volume and value as it is used. Its value is in its use, as with any resource, but in its use adds resource. Consequently, traditional models to explain the economics and strategy of investing in a technology do not fit information technology. This book explores information technology within a new paradigm applied to health organizations and systems.

The application of information technology has been considered historically in health institutions primarily from a technical perspective. The technology has been applied to existing decisions, work processes, and system structures. The complexities of clinical and business processes have

posed major technical challenges that have taken time to resolve. Part of the challenge has also been the difficulty of changing clinical processes due to the conflict with traditional professional roles. The technical focus of early application has included primarily information technologists and nursing and medical professionals.

This book builds on the foundation work in medical informatics to explore how information technology can be used to transform work processes and systems. The science and the complexity of the task are expanded to include how information can be used to facilitate change in complex systems and individual behaviors. Information enables organizations to restructure their work processes and systems. It enables organizations to develop new strategic initiatives, some of which are based on information as an enterprise strategy. Such profound change draws on the fields of medicine and nursing, informatics, systems theory, organizational psychology, organizational strategy and structure, economics and finance, law, and ethics. These are the disciplines on which this book draws in understanding the potential of this new technology.