

Preface

The economic crisis, the increase of poverty and unemployment, and the disorganization of primary health care have increased the demand of health services from public hospitals. Moreover, the economic recession has enforced the development of numerous tools and techniques for the efficiency improvement of health care resources. In studying the relevant literature, it can be easily observed that several scholars have developed modern approaches in order to redesign the health care services, find the optimal number of staff, evaluate the quality of health care services, etc. The main aim of this edited book is to present recent methods, case studies, and literature reviews for the effective evaluation of health care services. The book provides a helpful tool for health policy makers, researchers, and the academic community in general interested in the recent advances in the effective and efficient design of health care services.

The edited book is divided in four sections covering subjects like health care management and decision-making, operational research in medicine and health systems, information technology in health care, as well as strategy and policy in the health care sector.

The first three chapters cover the area of health care management and decision-making. More specifically, the first chapter by Xesfigi and Vozikis presents a comprehensive literature review of health services quality and patient satisfaction. The authors pinpoint that patients' perspective about the quality of health care may provide useful insights into the different European health care systems, nevertheless the methodological limitations that should take into consideration.

In the second chapter, Gkoretzis and Theodorou emphasize the increase in both research and practice on high performance work practices, during the last decades. The scope of the chapter is to delineate human resource management policies and their core high-performance work practices, and also highlight their key role in ameliorating health care organizational performance. By doing so, they provide some useful insights from health care literature regarding the underlying mechanisms that account this relationship.

Pate and Swofford, in the third chapter, describe how decision analytic methods can provide competitive advantages to healthcare organizations if organizational structures and processes are effectively aligned. Furthermore, they outline several key considerations in analytic integration, while they also underscore the idea that the best organizational solution will ultimately be unique to the organization that has chosen to embark on the journey of deliberately considering the integration of analytics throughout the organization. Consequently, this chapter may help readers to define the concept of analytics, identify essential theoretical concepts related to the integration of analytics, and understand the importance of analytic integration in health care settings.

The second section of the book is devoted to operational research in medicine and health systems and presents real world application in the aforementioned area. More specifically, Zimeras and Matsinos, in chapter 4, introduce and analyze methodologies for scaling data under uncertainty, where incomplete data can be explained by spatial modelling at different scales. Through the analysis, they demonstrate that data quality and quantity is very crucial and affect uncertainty in a number of ways. Also, they propose that Kriging via semi-variogram models could be used in order to tackle uncertainty across scales.

In the next chapter Chetouane and Ibraheem elucidate the recent studies on modelling and scheduling of surgery procedures, focusing on the mathematical description of the constraints involved in the surgery planning and scheduling problem. The proposed nonlinear model is then simplified to a linear mathematical program, and a heuristic procedure is presented to solve this simplified model. The proposed approach is tested on an illustrative example, and based on the obtained results the authors show that the scheduling approach can improve the utilization of the resources.

Chapters 6 and 7 refer to the scientific area of information technology in health care. In this context, in Chapter 6 Chen explores the current framework of Information Technology (IT) in the U.S. health care industry and discussed the IT's influence on the Affordable Care Act, the emergence of the Electronic Health Record (EHR), also known as the Electronic Medical Record (EMR), and the integration of databases across health care organizations through advanced systems like Epic.

The following chapter by Yasobant, Vora, and Upadhyay shows how the usage of the Geographic Information Systems (GIS) may be useful in various research purposes, including epidemiological surveys/investigation, implementation research, program/policy decision making, and dissemination of information. Through an extensive literature review, the authors present the history of GIS, the historical pathways of GIS in public health, the different types of GIS, and most importantly, the usage of GIS in public health research and practice.

The last three chapters of the book refer to strategy and policy in the health care sector. More specifically, in Chapter 8, Marcus Vinícius Dias-Souza focuses on strategies for expanding access and improving the quality of pharmaceutical services, considering pharmacists as specialized health care providers.

In Chapter 9, Stamatopoulou, Stamatopoulou, and Yannacopoulos analyze the positive and negative results from the fusion of hospitals. The authors demonstrate that fusions may lead to savings of resources, improvement of management systems, but in the same time, they may result conflicts in the labor place between individuals and teams of hospital organizations.

The last chapter of the book emphasizes the importance of European public health policies. Androutsou and Androutsou demonstrate the important role of national governments and regional authorities in public health services and show that it is necessary for all stakeholders to be actively involved. This chapter may be a useful tool for health leaders, to enrich their knowledge in the public health spectrum from a European perspective, in order to support, promote, and improve health care access.

The edited volume may be used as a text book for courses covering topics like management and strategy, information management and technology, decision making, and operational research in health care services. Health policy makers, researchers, and academics will find this text useful in order to enrich their knowledge in the scientific area of health care services research. We hope that this book will provide a useful resource of ideas, techniques, and methods for additional research on this topic.

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