# Table of Contents

## Foreword

xxix

## Preface

xxx

## Section 1

### Data and Decision Making

**Chapter 1**

Data Accuracy Considerations with mHealth

Zaid Zekiria Sako, Deakin University, Australia
Vass Karpathiou, RMIT, Australia
Sasan Adibi, Deakin University, Australia
Nilmini Wickramasinghe, Epworth HealthCare, Australia & Deakin University, Australia

Chapter 2

GIS, Spatial Analysis, and Modeling: The Case of Breast Cancer Incidence in the US

Khadijeh Rouzbehani, University of Tehran, Iran
Ghazaleh Sajjadi, Azad University, Iran
Mohamad Rahim Hatami, Iran Medical School of Science, Iran

Chapter 3

Data-Driven Approaches for Developing Clinical Practice Guidelines

Yiye Zhang, Weill Cornell Medicine of Cornell University, USA
Rema Padman, Carnegie Mellon University, USA

Chapter 4

Opportunities and Challenges of Big Data in Healthcare

Wafaa Faisal Mukhtar, Sudan University of Science and Technology, Sudan
Eltayeb Salih Abuelyaman, University of Dammam, Saudi Arabia

Chapter 5

Leveraging Key Aspects of Collaborative Techniques to Assist Clinical Decisions

Hoda Moghimi, RMIT University, Australia
Jonathan Schaffer, Cleveland Clinic, USA
Nilmini Wickramasinghe, Epworth HealthCare, Australia & Deakin University, Australia
Chapter 6
Data Mining Approach for Predicting the Likelihood of Infertility in Nigerian Women

Peter Adebayo Idowu, Obafemi Awolowo University, Nigeria
Jeremiah Ademola Balogun, Obafemi Awolowo University, Nigeria
Olumuyiwa Bamidele Alaba, Tai Solarin University of Education, Ijagun, Ijebu-Ode Ogun State, Nigeria

Section 2
Healthcare Process Aspects

Chapter 7
Operations Project and Management in Trauma Centers: The Case of Brazilian Units

Thais Spiegel, Rio de Janeiro State University, Brazil
Daniel Bouzon Nagem Assad, Rio de Janeiro State University, Brazil

Chapter 8
Lean Thinking in Global Health Care: Theory and Applications

Kijpokin Kasemsap, Suan Sunandha Rajabhat University, Thailand

Chapter 9
The First Step in Attainment Way Toward Excellence Quality and Productivity in Organization: Case Study on Hasheminejad Hospital

Mohammad Abdoshshah, Industrial Engineering Department, Islamic Azad University, Semnan Branch, Iran
Abdorreza Karimi, Islamic Azad University E-campus, Iran
Ali Ghasemi, Islamic Azad University E-campus, Iran
Mahdi Khorasanian, Islamic Azad University-E-campus, Iran
Seyed Mahdi Mirhashemi, Azad University-E-campus, Iran

Section 3
Information Communication Technology Issues

Chapter 10
The Importance of Telemedicine in Global Health Care

Kijpokin Kasemsap, Suan Sunandha Rajabhat University, Thailand

Chapter 11
What E-Mental Health Can Offer to Saudi Arabia Using an Example of Australian E-Mental Health

Yamam Abuzinadah, Ministry of Education, Saudi Arabia, & RMIT University, Australia
Bader Binidayan, Ministry of Education, Saudi Arabia, & RMIT University, Australia
Nilmini Wickramasinghe, Epworth HealthCare, Australia & Deakin University, Australia
Chapter 12
Smart Medication Management, Current Technologies, and Future Directions ........................................ 188

Seyed Ali Rokni, Washington State University, USA
Hassan Ghasemzadeh, Washington State University, USA
Niloofar Hezarjaribibi, Washington State University, USA

Chapter 13
Chaotic Function Based ECG Encryption System...................................................................................... 205

Butta Singh, Guru Nanak Dev University, India
Manjit Singh, Guru Nanak Dev University, India
Dixit Sharma, Guru Nanak Dev University, India

Chapter 14
Mastering Electronic Health Record in Global Health Care ........................................................................ 222

Kijpokin Kasemsap, Suan Sunandha Rajabhat University, Thailand

Chapter 15
The Development of a Secure Hospital Messaging and Communication Platform.............................. 243

Hoda Moghimi, RMIT University, Australia
Nilmini Wickramasinghe, Epworth HealthCare, Australia & Deakin University, Australia

Chapter 16
Emerging Technologies and ICT Solutions in Healthcare........................................................................ 268

Dipali Bansal, Manav Rachna International University, India

Chapter 17
Analyzing the Role of Health Information Technology in Global Health Care ........................................ 287

Kijpokin Kasemsap, Suan Sunandha Rajabhat University, Thailand

Chapter 18
Health Information System ......................................................................................................................... 308

Aman Tyagi, Dayalbagh Educational Institute, India
Preetvanti Singh, Dayalbagh Educational Institute, India

Chapter 19
Smart Technology for Non Invasive Biomedical Sensors to Measure Physiological Parameters ...... 318

K Rajasekaran, Karunya University, India
Anitha Mary Xavier, Karunya University, India
R Jegan, Karunya University, India
Section 4
Patient-Provider Interface

Chapter 20
Investigating Acceptance of Nursing Information Systems through UTAUT Lens ....................... 349
  Lemai Nguyen, Deakin University, Australia
  Nilmini Wickramasinghe, Epworth HealthCare, Australia & Deakin University, Australia
  Mary Botti, Deakin/Epworth Clinical Nursing Research Centre, Australia
  Bernice Redley, Deakin University, Australia & Monash Health Partner, Australia
  Peter Haddad, Epworth HealthCare, Australia
  Imran Muhammad, Epworth HealthCare, Australia

Chapter 21
Social Forces that Influence Health IT Use Behavior of the Elderly........................................ 369
  Karoly Bozan, Idaho State University, USA
  Bill Davey, RMIT University, Australia
  Kevin R Parker, Idaho State University, USA

Chapter 22
Active and Healthy Aging: Satisfaction with Health Services by Elderly Patients in Turkey........ 384
  Emine Özmete, Ankara University, Turkey

Chapter 23
Effecting Superior Pain Management Strategies by Combining Technology with Tradition........ 407
  CK Foo, Honorary Health Informatics, Australia

Chapter 24
The Potential of Crowdsourcing in the Health Care Industry........................................... 418
  Kaushik Ghosh, Lamar University, USA
  Kabir C. Sen, Lamar University, USA

Chapter 25
Trends of Social Media Applications in Healthcare: A Managerial Perspective...................... 428
  Mohamed Gamal Aboelmaged, University of Sharjah, UAE
  Suja Sarah Thomas, Al Ghurair University, UAE
  Samia Elsheikh, Al Ghurair University, UAE

Chapter 26
Preventing Occupational Stress in Railway Engine Pilots: Issues at a Glance....................... 448
  Devesh Kumar, Diesel Locomotive Works, Indian Railways, India
  Poonam Singh Kharwar, Banaras Hindu University, India

Chapter 27
Hospital Social Media Strategies: Patient or Organization Centric?.................................. 458
  Fay Cobb Payton, North Carolina State University, USA
  Natasha Pinto, North Carolina State University, USA
Section 5
Policy Implications

Chapter 28
A Factor Analytical Study of Safety and Health Issues in Select Small and Medium Manufacturing Concerns

Meha Joshi, Delhi Technological University, India
Ritu Bajaj, JIM’S, India

Chapter 29
Promoting Health Literacy in Global Health Care

Kijpokin Kasemsap, Suan Sunandha Rajabhat University, Thailand

Chapter 30
The Fundamentals of Health Literacy

Kijpokin Kasemsap, Suan Sunandha Rajabhat University, Thailand

Chapter 31
The Applicability of Currently Available Adults ADHD Treatment Tools

Bader Binhadyan, Ministry of Education, Saudi Arabia, & RMIT University, Australia
Nilmini Wickramasinghe, Epworth HealthCare, Australia & Deakin University, Australia

Chapter 32
Health Policy Implementation: Moving Beyond Its Barriers in United States

Khadijeh Rouzbehani, University of Tehran, Iran

Chapter 33
Patient Privacy and Security in E-Health

Güney Gürsel, Gülhane Military Medical Academy (GATA), Turkey

Chapter 34
Accountable Care and Evidence-Based Decision Making

Nilmini Wickramasinghe, Epworth HealthCare, Australia & Deakin University, Australia
Steve L Goldberg, INET Intl. Inc., Canada

Section 6
Theoretical Considerations

Chapter 35
Readiness as a Novel Construct of Readiness Acceptance Model (RAM) for the Wireless Handheld Technology

Abdul Hafeez-Baig, University of Southern Queensland, Australia
Raj Gururajan, University of Southern Queensland, Australia
Nilmini Wickramasinghe, Epworth HealthCare, Australia & Deakin University, Australia
Chapter 36
A Taxonomy for mHealth ................................................................. 596
  Ruwini Edirisinghe, RMIT University, Australia
  Andrew Stranieri, Federation University, Australia
  Nilmini Wickramasinghe, Epworth HealthCare, Australia & Deakin University, Australia

Chapter 37
A Guideline to Use Activity Theory for Collaborative Healthcare Information Systems Design...... 616
  Carolin Durst, University of Bremen, Germany
  Nilmini Wickramasinghe, Epworth HealthCare, Australia & Deakin University, Australia
  Jana Riechert, University of Erlangen-Nuremberg, Germany

Chapter 38
Mathematical Programming and Heuristics for Patient Scheduling in Hospitals: A Survey ............ 627
  Daniel Gartner, Cardiff University, UK
  Rema Padman, Carnegie Mellon University, USA

Chapter 39
  Keith KT Toh, RMIT University, Australia
  Margaret E. Heffernan, RMIT University, Australia
  Vass Karpathiou, Deakin University & RMIT University, Australia
  Arkalgud Ramaprasad, UIC, USA
  Nilmini Wickramasinghe, Epworth HealthCare, Australia & Deakin University, Australia

Chapter 40
Adoption of Mobile Devices in the Australian Healthcare: A Conceptual Framework Approach..... 662
  Vasundhara Rani Sood, University of Southern Queensland, Australia
  Raj Gururajan, University of Southern Queensland, Australia
  Abdul Hafeez-Baig, University of Southern Queensland, Australia
  Nilmini Wickramasinghe, Epworth HealthCare, Australia & Deakin University, Australia

Compilation of References .................................................................................................................. 686

About the Contributors ...................................................................................................................... 809

Index.................................................................................................................................................. 821