Table of Contents

Preface ..................................................................................................................................................... xxiv

Volume I

Section 1
Fundamental Concepts and Theories

This section provides an in-depth overview of Information and Communication Technologies in Healthcare Administration. To effectively manage such a high risk, high stress environment as a modern hospital or emergency room, administrators must first understand the basics of the tools they use on a daily basis. Such tools include data management systems, electronic health records, and telemedicine technologies, among others. In the opening 13 chapters of this extensive reference source, readers will obtain a clear understanding of the fundamental concepts and theories integral to the field of Healthcare Administration.

Chapter 1
Health Information Technology: Anticipating, Recognizing, and Preventing Disruptions in Complex Adaptive Healthcare Systems ................................................................. 1

Patrick Albert Palmieri, A.T. Still University, USA & Association for the Accreditation of Ambulatory Health Care Services, USA & Universidad San Ignacio de Loyola, Peru
Lori T. Peterson, Cleveland State University, USA
Miguel Noe Ramirez Noeding, Clinica Santa Isabel, Peru & Association for the Accreditation of Ambulatory Health Care Services, USA

Chapter 2
Big Data in Healthcare.......................................................................................................................... 23

Yiannis Koumpouros, Technological Educational Institute of Athens, Greece

Chapter 3
Clinical Data Mining in Small Hospital PACS: Contributions for Radiology Department Improvement .............................................................................................................................. 47

Milton Santos, University of Aveiro, Portugal
Luís Bastiāo, University of Aveiro, Portugal
Carlos Costa, University of Aveiro, Portugal
Augusto Silva, University of Aveiro, Portugal
Nelson Rocha, University of Aveiro, Portugal
Chapter 4
Making a Case for Information Integrity in Healthcare
Reema Khurana, IMT Ghaziabad, India
Vijay V. Mandke, NIIT University – Neemrana, India

Chapter 5
ICT in Healthcare Management, Developments, and Applications in Turkish Health Sector
Asli Suder, Istanbul Technical University, Turkey
Murat Durucu, Istanbul Technical University, Turkey

Chapter 6
Implementation of Electronic Records in a Medical Practice Setting
Jami M. Clark, Seneca Medical Center, LLC, USA

Chapter 7
A Review of Notifications Systems in Elder Care Environments: Challenges and Opportunities
Sandra Nava-Muñoz, UABC, Mexico & UASLP, Mexico
Alberto L. Morán, UABC, México

Chapter 8
A Survey on Health Care Services Using Wireless Sensor Networks
Sunilkumar S. Manvi, Reva Institute of Technology and Management, India
Manjula R. B., Reva Institute of Technology and Management, India

Chapter 9
Telehealth Implementation: The Voice of Experience
Mary DeVany, University of Minnesota, USA
Karla Knobloch-Ludwig, Infectious Disease Specialists, USA
Marilyn Penticoft, University of Minnesota, USA
Aris Assimacopoulos, Infectious Disease Specialists, USA
Stuart Speedie, University of Minnesota, USA

Chapter 10
Policies on Telemedicine-Enhanced Hospital Services: Prioritization Criteria for the Interventions at Regional Level
Angelo Rossi Mori, Institute of Biomedical Technologies (CNR), Italy
Mariangela Contenti, Institute of Biomedical Technologies (CNR), Italy
Rita Verbicaro, Institute of Biomedical Technologies (CNR), Italy

Chapter 11
A Formal Investigation of Semantic Interoperability of HCLS Systems
Ratnesh Sahay, Digital Enterprise Research Institute (DERI), National University of Ireland (NUI) Galway, Ireland
Antoine Zimmermann, École Nationale Supérieure des Mines, France
Ronan Fox, Avaya, Ireland
Axel Polleres, Vienna University of Economics and Business, Austria
Manfred Hauswirth, Digital Enterprise Research Institute (DERI), National University of Ireland (NUI) Galway, Ireland
Chapter 12
Intensive Care ......................................................................................................................... 209

Eric Van Genderen, Institute of Management Technology (IMT), UAE

Chapter 13
A New Era for Safety Measurement .......................................................................................... 219

Sarahjane Jones, University of Warwick, UK
Mairi Macintyre, University of Warwick, UK

Section 2
Development and Design Methodologies

This section continues with the concepts of patient safety and hospital management as critical concerns in Healthcare Administration. Managing staff, patients, finances, and legal disputes on a daily basis, all under strict time and budget constraints, is a challenging proposition for any hospital administrator. Understanding how to best manage and mitigate risk, how to organize and evaluate staff, and how to facilitate communication between nurses and patients are necessary skills for all managers. The 12 chapters that make up this section explore the development and design methodologies that bridge the gap between fundamental concepts and real-world applications of Healthcare Administration.

Chapter 14

June Wei, College of Business, University of West Florida, USA
Binshan Lin, College of Business Administration, Louisiana State University in Shreveport, USA
Meiga Loho-Noya, College of Business, University of West Florida, USA

Chapter 15
Knowledge Acquisition Process for Intelligent Decision Support in Critical Health Care ................. 270

Filipe Portela, University of Minho, Portugal
Alexandra Cabral, SPMS, Portugal
António Abelha, University of Minho, Portugal
Maria Salazar, Centro Hospitalar do Porto – HSA, Portugal
César Quintas, Centro Hospitalar do Porto – HSA, Portugal
José Machado, University of Minho, Portugal
José Neves, University of Minho, Portugal
Manuel Filipe Santos, University of Minho, Portugal

Chapter 16
Workarounds: Risk or Benevolence for Patient Safety? ................................................................ 285

Nada Nadhrah, University of Reading, UK
Vaughan Michell, University of Reading, UK

Chapter 17
Implementation of Evidence-Based Practice and the PARIHS Framework ....................................... 323

Shahram Zaheer, York University, Canada
Chapter 18
Hierarchies and Holdings: Implications of SME Entrepreneurship for Enhanced HRM in Hospital Management

Teresa Carla Oliveira, University of Coimbra, Portugal
Stuart Holland, University of Coimbra, Portugal
João Fontes da Costa, Instituto Politécnico de Coimbra, Portugal
Francisco Edinaldo Lira de Carvalho, University of Coimbra, Portugal

341

Chapter 19
Modelling the Growing Process of Integrated Healthcare Supply Networks

Daria Battini, University of Padova, Italy
Maurizio Faccio, University of Padova, Italy
Alessandro Persona, University of Padova, Italy
Fabio Sgarbossa, University of Padova, Italy

377

Chapter 20
Applying Discrete Event Simulation (DES) in Healthcare: The Case for Outpatient Facility Capacity Planning

Stavros T. Ponis, School of Mechanical Engineering, National Technical University of Athens, Greece
Angelos Delis, University of Southampton, UK
Sotiris P. Gayialis, School of Mechanical Engineering, National Technical University of Athens, Greece
Panagiotis Kasimatis, SunGard Financial Systems, UK
Joseph Tan, DeGroote School of Business, McMaster University, Canada

390

Chapter 21
Modeling Uncertain and Dynamic Casualty Health in Optimization-Based Decision Support for Mass Casualty Incident Response

Duncan T. Wilson, School of Engineering and Computing Sciences, Durham University, UK
Glenn I. Hawe, School of Engineering and Computing Sciences, Durham University, UK
Graham Coates, School of Engineering and Computing Sciences, Durham University, UK
Roger S. Crouch, School of Engineering and Computing Sciences, Durham University, UK

411

Chapter 22
Healthcare Information System Modelling

Jean-Luc Hainaut, University of Namur, Belgium
Anne-France Brogneaux, University of Namur, Belgium
Anthony Cleve, University of Namur, Belgium

424

Chapter 23
Modeling a Chilean Hospital Using Specification and Description Language

Jorge Leiva Olmos, Universitat Politècnica de Catalunya - Barcelona Tech, Spain
Pau Fonseca i Casas, Universitat Politècnica de Catalunya - Barcelona Tech, Spain
Jordi Ocaña Rebull, University of Barcelona, Spain

445
Chapter 24
Modeling and Automated Examination of Communication Processes in Integrated Health Information Systems: A Systematic Approach ................................................................. 466
  Samrend Saboor, University for Health Sciences, Medical Informatics and Technology, Austria
  Alexander Hörbst, University for Health Sciences, Medical Informatics and Technology, Austria
  Elske Ammenwerth, University for Health Sciences, Medical Informatics and Technology, Austria

Chapter 25
Medical Practical Knowledge Circulation Based on Purpose-Oriented Service Modeling ............. 484
  Taisuke Ogawa, Japan Advanced Institute of Science and Technology, Japan
  Mitsuru Ikeda, Japan Advanced Institute of Science and Technology, Japan
  Muneou Suzuki, University of Miyazaki Hospital, Japan
  Kenji Araki, University of Miyazaki Hospital, Japan

Section 3
Tools and Technologies
This section explores the devices, instruments, software, and infrastructure used in modern-day Healthcare Administration. As information technologies continue to advance and develop through the digital age, the constant evolution of tools at the disposal of hospital staff can be staggering. Technologies such as wearable computing, mobile health monitoring, electronic health records, and more are an important part of effective hospital management, but only if those tools are properly understood and used. With 16 chapters, this section offers a broad treatment of some of the many tools and technologies within Healthcare Administration.

Chapter 26
Sensorized Garments Developed for Remote Postural and Motor Rehabilitation.......................... 511
  Giovanni Saggio, University of Rome “Tor Vergata”, Italy
  Valentina Sabato, University of Rome “Tor Vergata”, Italy
  Roberto Mugavero, University of Rome “Tor Vergata”, Italy

Volume II

Chapter 27
Real-Time Biomedical Telemetry System for Ambulances .......................................................... 537
  Nuria Novas, University of Almeria, Spain
  José Antonio Gázquez, University of Almeria, Spain
  Marina Noguerol, Hospital of La Paz, Spain

Chapter 28
Agent-Based Wellness Indicator .................................................................................................... 559
  Chitsutha Soomlek, University of Regina, Canada
  Luigi Benedicenti, University of Regina, Canada
Chapter 29
Cloud Service Platform: Hospital Information eXchange (HIX) .......................................................... 591
Fang Zhiyuan, Business School, Sun Yat-sen University, China
Wei Li, Business School, Sun Yat-sen University, China

Chapter 30
Leveraging Cloud Technology for Rural Healthcare in India................................................................. 600
Girish Suryanarayana, Siemens Corporate Research and Technologies, India
Roshan Joseph, Siemens Corporate Research and Technologies, India
Sabishaw Bhaskaran, Siemens Corporate Research and Technologies, India
Amarnath Basu, Siemens Corporate Research and Technologies, India

Chapter 31
Home Healthcare in Cloud Computing.................................................................................................. 619
Mina Deng, Philips Research Europe, The Netherlands
Milan Petkovic, Philips Research Europe, The Netherlands
Marco Nalin, Scientific Institute Hospital San Raffaele, Italy
Ilaria Baroni, Scientific Institute Hospital San Raffaele, Italy

Chapter 32
Mobile Device Application in Healthcare .............................................................................................. 640
Sandeep Lakkaraju, Dakota State University, USA
Santhosh Lakkaraju, Dakota State University, USA

Chapter 33
PINATA: Taking E-Health a Step Forward ............................................................................................. 664
Alexiei Dingli, University of Malta, Malta
Charlie Abela, University of Malta, Malta
Ilenia D’Ambrogio, University of Malta, Malta

Chapter 34
Mobile Communication in Hospitals: What is the Problem? ............................................................... 688
Terje Solvoll, University hospital of North Norway & University of Tromsø, Norway

Chapter 35
Use of Mobile Applications for Hospital Discharge Letters: Improving Handover at Point of Practice.................................................................................................................. 703
Bridget Maher, University College Cork, Ireland
Hendrik Drachslor, Open University of the Netherlands, The Netherlands
Marco Kalz, Open University of the Netherlands, The Netherlands
Cathal Hoare, University College Cork, Ireland
Humphrey Sorensen, University College Cork, Ireland
Leonardo Lezcano, Open University of the Netherlands, The Netherlands
Pat Henn, University College Cork, Ireland
Marcus Specht, Open University of the Netherlands, The Netherlands
Chapter 36
Computer Physician Order Entry (CPOE): Benefits and Concerns - A Status Report

Alberto Coustasse, Graduate School of Management, College of Business, Marshall University, USA
Joseph Shaffer, Graduate School of Management, College of Business, Marshall University, USA
David Conley, Graduate School of Management, College of Business, Marshall University, USA
Julia Coliflower, Graduate School of Management, College of Business, Marshall University, USA
Stacie Deslich, Graduate School of Management, College of Business, Marshall University, USA
Andrew Sikula Sr., Graduate School of Management, College of Business, Marshall University, USA

Chapter 37
Making Quality Control Decisions in Radiology Department: A Decision Support System for Radiographers’ Performance Appraisal Using PACS

Valentina Al Hamouche, The Michener Institute for Applied Health Sciences, Canada

Chapter 38
Risk Management Information System Architecture for a Hospital Center: The Case of CHTMAD

Fábio Costa, Escola de Ciências e Tecnologias, Universidade de Trás-os-Montes e Alto Douro, Portugal
Patrícia Santos, Escola de Ciências e Tecnologias, Universidade de Trás-os-Montes e Alto Douro, Portugal
João Varajão, Universidade do Minho, Portugal
Luís Torres Pereira, Escola de Ciências e Tecnologias, Universidade de Trás-os-Montes e Alto Douro, Portugal
Vitor Costa, Centro Hospitalar de Trás-os-Montes e Alto Douro, Portugal

Chapter 39
Using RFID and Wi-Fi in Healthcare

Alexiei Dingli, University of Malta, Malta
Dylan Seychell, St Martin’s Institute of Higher Education, Malta

Chapter 40
Hospital Environment Scenarios using WLAN over OPNET Simulation Tool

Nurul I. Sarkar, School of Computer and Mathematical Sciences, Auckland University of Technology, New Zealand
Anita Xiao-min Kuan, School of Computer and Mathematical Sciences, Auckland University of Technology, New Zealand
Kashif Nisar, InterNetWorks Research Laboratory, School of Computing, Universiti Utara Malaysia, Malaysia
Angela Amphawan, InterNetWorks Research Laboratory, School of Computing, Universiti Utara Malaysia, Malaysia
Chapter 41
Implementation of Case Costing with Ontario Case Costing Initiative (OCCI) ................................. 805
Thuy Thi Thanh Hoang, York University, Canada

Section 4
Managerial Impact

This section focuses the discussion on how hospital staff and managers in particular, can most effectively utilize the principles of Healthcare Administration in their daily tasks. Hospitals do not function under a standard corporate management strategy, but must be dynamic in handling both patients and staff on a daily basis. Administrators can successfully manage their organizations by studying team building strategies, ongoing professional development opportunities, and information systems for decision support. This section’s 14 chapters examine the managerial impact of key topics in the field of Healthcare Administration.

Chapter 42
Personnel Rostering Management by ICT Techniques ............................................................................ 816
Federico Della Croce, D.A.I. Polytechnic Institute of Torino, Italy
Fabio Salassa, D.A.I. Polytechnic Institute of Torino, Italy

Chapter 43
Application Portfolio Management in Hospitals: Empirical Insights ................................................... 833
Joey van Angeren, Eindhoven University of Technology, The Netherlands
Vincent Blijleven, Nyenrode Business Universiteit, The Netherlands
Ronald Batenburg, Utrecht University, The Netherlands

Chapter 44
Operating Room Management in Health Care: Operations Research and Artificial Intelligence Approaches .......................................................................................................................................... 847
Irem Ozkarahan, Troy University – Montgomery, USA
Emrah B. Edis, Celal Bayar University, Turkey
Pinar Mizrak Ozfirat, Celal Bayar University, Turkey

Chapter 45
An Operating Theater Planning Decision Support System ...................................................................... 868
Carlos Gomes, Universidade do Porto, Portugal
Fabrício Sperandio, Universidade do Porto, Portugal
Arnon Peles, Ben-Gurion University of the Negev, Israel
José Borges, Universidade do Porto, Portugal
António Carvalho Brito, Universidade do Porto, Portugal
Bernardo Almada-Lobo, Universidade do Porto, Portugal

Chapter 46
ICT Use and Multidisciplinary Healthcare Teams ................................................................................. 886
Juliann C. Scholl, Texas Tech, USA
Bolanle A. Olaniran, Texas Tech, USA
Chapter 47
Teamwork in Medical Organizational Cultures ................................................................. 905
Simona Vasilache, Bucharest University of Economic Studies, Romania

Chapter 48
Resuscitating Team Roles within Wayburn Health System.................................................. 921
Jill E. Stefaniak, Oakland University William Beaumont School of Medicine, USA

Chapter 49
Educational Paradigm Change and Fostering Sustainable Success of Healthcare Organization
with the Aid of Web-Based Interactive Training ................................................................ 932
Kristina Zgodavová, Technical University of Košice, Slovakia
Aleš Bourek, Masaryk University, Czech Republic

Chapter 50
Nursing Information Systems: From Documentation as Evidence to Documentation as a Support
to the Clinical Decision Making ....................................................................................... 959
Ana Paula Macedo, Universidade do Minho, Portugal
Fernando Petronilho, Universidade do Minho, Portugal
João Cainé, Universidade do Minho, Portugal

Chapter 51
Clinical Pathway Enhanced by Knowledge Management Technology: A Critical Step towards
Medical Quality Improvement .............................................................................................. 978
Weizi Li, University of Reading, UK

Chapter 52
Design of an ICT Tool for Decision Making in Social and Health Policies .......................... 997
Francisco Grimaldo, Universidad de Valencia, Spain
Francisco Ródenas, Universidad de Valencia, Spain
Miguel Lozano, Universidad de Valencia, Spain
Stephanie Carretero, Universidad de Valencia, Spain
Juan M. Orduña, Universidad de Valencia, Spain
Jorge Garcés, Universidad de Valencia, Spain
José Duato, Universidad Politécnica de Valencia, Spain
Enrique Fatas, Universidad de Valencia, Spain

Chapter 53
Information Systems for Management Decision Support in Portuguese Public Hospital: The
Urgency of a Supra-Financial Perspective ............................................................................ 1015
Francisco Madeira Esteves, Polytechnic Institute of Setúbal, Portugal
Luís Manuel de Macedo Gomes Lagartinho, Centro Hospitalar de Setúbal, Portugal
Pedro Fernandes da Anunciação, Polytechnic Institute of Setúbal, Portugal
Chapter 54
Big Information Technology Bet of a Small Community Hospital ............................................. 1034
Sergey P. Motorny, Dakota State University, USA

Chapter 55
One System of Care, One Electronic Chart ............................................................................... 1052
Jennifer Gholson, Regional Health, USA
Heidi Tennyson, Regional Health, USA

Volume III
Section 5
Organizational and Social Implications

This section emphasizes the real intent of Healthcare Administration: the care and treatment of patients. The primary concern of all hospital administrators and staff is ensuring the proper treatment of, and a positive experience for, their patients. Concerns over patient-centered care, telemedicine, the role of ICTs in healthcare, and how a hospital’s organizational culture can best serve its stakeholders are critical to the success of any healthcare facility. In these 17 chapters, readers will find an in-depth discussion of some of the most pressing organizational and social implications of Healthcare Administration.

Chapter 56
Patient Centered Design: Challenges and Lessons Learned from Working with Health Professionals and Schizophrenic Patients in e-Therapy Contexts ............................................. 1065
Catarina I. Reis, Polytechnic Institute of Leiria, Portugal
Carla S. Freire, Polytechnic Institute of Leiria, Portugal
Joaquin Fernández, Polytechnical University of Catalonia, Spain
Josep M. Monguet, Polytechnical University of Catalonia, Spain

Chapter 57
Patients’ Medication Errors: How Patients’ Inadequate Information about their Prosthetic Heart Valve Diseases Affects their Healthcare ............................................................... 1081
Vahideh Zarea Gavgani, Tabriz University of Medical Sciences, Iran
Mina Mahami Oskouei, Tabriz University of Medical Sciences, Iran
Rezvanyieh Salehi, Shahid Madani Heart Hospital, Iran & Tabriz University of Medical Sciences, Iran

Chapter 58
Physician Interaction with EHR: The Importance of Stakeholder Identification and Change Management .................................................................................................................. 1088
Cherie Noteboom, Dakota State University, USA

Chapter 59
User and Data Classification for a Secure and Practical Approach for Patient-Doctor Profiling Using an RFID Framework in Hospital ................................................................. 1101
Masoud Mohammadian, University of Canberra, Australia
Ric Jentzsch, University of Canberra, Australia
Chapter 60
The Need for a Socio-Technical Analysis in E-Health: The Case of the PCEHR ......................... 1123
  Imran Muhammad, Epworth Research Institute, School of Business IT and Logistics, RMIT
  University, Australia
  Say Yen Teoh, Health Innovations Research Institute, School of Business IT and Logistics,
  RMIT University, Australia
  Nilmini Wickramasinghe, Health Innovations Research Institute, School of Business IT and
  Logistics, RMIT University, Australia

Chapter 61
Customer Strategy Definition in Elderly Care: Understanding Customer-Focused Care
Expectation and Managing Resource Allocation........................................................................ 1139
  Basel Khashab, University of Reading, UK
  Uday Joshi, University of Reading, UK
  Stephen R. Gulliver, University of Reading, UK

Chapter 62
Utilization of Primary Health Services in Hong Kong: Inequality, Risk, and Public-Private
Interaction .................................................................................................................................. 1159
  Raymond K. H. Chan, City University of Hong Kong, Hong Kong
  Kang Hu, Southwestern University of Finance and Economics, China

Chapter 63
The Sociotechnical Challenge of Integrating Telehealth and Telecare into Health and Social Care
for the Elderly ................................................................................................................................. 1177
  Ken Eason, The Bayswater Institute, London, UK
  Patrick Waterson, Loughborough Design School, Loughborough University, UK
  Priya Davda, The Bayswater Institute, London, UK

Chapter 64
Users’ Perception towards the “Safe Medication through Pharmacovigilance and Compliance
Monitoring (Pharmacov)” Service ................................................................................................. 1190
  George E. Karagiannis, Royal Brompton Hospital, UK
  Lida Tzachani, Royal Brompton Hospital, UK
  Vasileios G. Stamatopoulos, Foundation for Research and Technology-Hellas, Greece
  Athina Lazakidou, National Technical University of Athens, Greece
  Dimitra Iliopoulou, National Technical University of Athens, Greece
  Maria Petridou, University of Nottingham, UK
  Michael A. Gatzoulis, Royal Brompton Hospital, UK

Chapter 65
The Effects of Telehealth on Patients with Long-Term Conditions in Routine Healthcare Use and
Lessons from Practical Application ............................................................................................... 1197
  Victor Vuni Joseph, Leeds Institute of Health Sciences (LIHS), University of Leeds, UK &
  Doncaster Primary Care Trust (PCT), UK
Chapter 66
Telemedicine in Emergency: A First Aid Hospital Network Experience ........................................ 1217
Vincenzo Gullà, Aditech S.R.L, Italy
Corrado Cancellotti, Hospital “High Chiascio” of Gubbio, Italy

Chapter 67
The Role of ICTs in the Management of Rare Chronic Diseases: The Case of Hemophilia.......... 1227
Leonor Teixeira, University of Aveiro/IEETA, Portugal
Vasco Saavedra, University of Aveiro, Portugal
Carlos Ferreira, University of Aveiro/CIO, Portugal
Beatriz Sousa Santos, University of Aveiro/IEETA, Portugal

Chapter 68
Using Case Costing Data and Case Mix for Funding and Benchmarking in Rehabilitation Hospitals ......................................................................................................................... 1242
Grace Liu, York University, Canada

Chapter 69
A Preliminary Study of Key Factors Affecting Management and Evaluation of IT Outsourcing Contracts in Hospitals ......................................................................................................................... 1258
Chad Lin, Curtin University, Australia
Yu-An Huang, National Chi Nan University, Taiwan
Chien-Fa Li, Puli Veterans Hospital, Taiwan
Geoffrey Jalleh, Curtin University, Australia
Ying-Chieh Liu, Chaoyang University of Technology, Taiwan

Chapter 70
Concept and Types of Organizational Cultures of Hospitals......................................................... 1279
Łukasz Sulkowski, Jagiellonian University, Poland
Joanna Sulkowska, University of Social Sciences, Poland

Chapter 71
A Serious Game for On-the-Ward Infection Control Awareness Training: Ward Off Infection...... 1306
Ian Dunwell, Serious Games Institute, UK
Steve Jarvis, SELEX Systems Integration Ltd., UK

Chapter 72
Dimensions of Culture in Hospital Teamwork ............................................................................. 1320
Anna Rosiek, Ross Medica, Poland
Krzysztof Leksowski, Military Clinical Hospital, Poland & Collegium Medicum Nicolas Copernicus University Chair of Public Health, Poland
Section 6
Emerging Trends

This section investigates the latest technologies, policies, and methodologies to improve Healthcare Administration and patient care. Medical technologies are constantly evolving, as are the information, communication, and computing tools often employed in hospital settings. Some of the latest advances in healthcare technologies include organizational management systems, telemedicine tools, data management and warehousing technologies, and many more. The final 12 chapters of this extensive three-volume reference conclude with a detailed look at emerging trends in the field of Healthcare Administration.

Chapter 73
Conceptualizing Emergency Department Scenarios: A DSE-Based Methodology .................. 1351
  Maya Kaner, ORT Braude College, Israel
  Tamar Gadrich, ORT Braude College, Israel
  Shuki Dror, ORT Braude College, Israel
  Yariv N. Marmor, Mayo Clinic, USA

Chapter 74
Low Cost and Human-Centered Innovations in Healthcare Services: A Case of Excellence in Italy .................................................................................................................................................... 1369
  Emanuele Padovani, University of Bologna, Italy
  Rebecca L. Orelli, University of Bologna, Italy
  Vanni Agnoletti, Morgagni-Pierantoni Hospital Forlì, Italy
  Matteo Buccioli, Morgagni-Pierantoni Hospital Forlì, Italy

Chapter 75
Recent Evidence on the Changing Mix of Providers of Healthcare in England ....................... 1383
  Greenwell Matchaya, International Water Management Institute, South Africa
  Pauline Allen, London School of Hygiene and Tropical Medicine, UK
  Simon Turner, University College London, UK
  Will Bartlett, European Institute, London School of Economics and Political Science, UK
  Virginie Perotin, Leeds University Business School, UK
  Bernarda Zamora, School for Policy Studies, University of Bristol, UK

Chapter 76
Performance Studies of Integrated Network Scenarios in a Hospital Environment ................ 1398
  Nurul I. Sarkar, School of Computer and Mathematical Sciences, Auckland University of Technology, New Zealand
  Anita Xiao-min Kuang, School of Computer and Mathematical Sciences, Auckland University of Technology, New Zealand
  Kashif Nisar, InterNetWorks Research Laboratory, School of Computing, University Utara Malaysia, Malaysia
  Angela Amphawan, InterNetWorks Research Laboratory, School of Computing, University Utara Malaysia, Malaysia
Chapter 77
Modernization of Healthcare and Medical Diagnosis System Using Multi Agent System (MAS): A Comparative Study ........................................................................................................................................1426
Shibakali Gupta, University Institute of Technology, Burdwan University, India
Sripati Mukherjee, Burdwan University, India
Sesa Singha Roy, Tata Consultancy Service, India

Chapter 78
Ubiquitous Multimedia Data Access in Electronic Health Care Systems .............................................1456
Muhammad H. Aboelfotoh, Queen’s University of Kingston, Canada
Patrick Martin, Queen’s University of Kingston, Canada
Hossam Hassanein, Queen’s University of Kingston, Canada

Chapter 79
Use of Barcodes to Improve Safety in Healthcare .....................................................................................1493
Hing-Yu So, Prince of Wales Hospital, Hong Kong

Chapter 80
A Wireless System for Secure Electronic Healthcare Records Management ........................................1509
Petros Belsis, Technological Education Institute, Greece
Christos Skourlas, Technological Education Institute, Greece
Stefanos Gritzalis, University of the Aegean, Greece

Chapter 81
Not Just Meaningful Data but Coordinated Data! Can Cloud Computing Promote Down-to-Earth E-Valuation of Disease and Healthcare? ...............................................................................1526
Vahé A. Kazandjian, Johns Hopkins University, USA

Chapter 82
Grid Technology for Archive Solutions in Health Care Organizations ..................................................1542
Pietro Previtali, University of Pavia, Italy

Chapter 83
Leading the Technological Innovation in Healthcare Systems: The Telematic Medicine Approach ........................................................................................................................................1549
Vincenzo Gullà, Aditech SRL, Italy

Chapter 84
Global Telemedicine and eHealth: Advances for Future Healthcare – Using a Systems Approach to Integrate Healthcare Functions ..................................................................................1570
S. A. Davis, University of California Merced, USA

Index............................................................................................................................................................................ xxvii