## Contents

### Part I Key Concepts, Tools and Techniques

1. **Lean Principles for Healthcare** ................................................................. 3  
   Nilmini Wickramasinghe

2. **Artificial Neural Network Excellence to Facilitate Lean Thinking Adoption in Healthcare Contexts** .......................................................... 13  
   Fatemeh Hoda Moghimi and Nilmini Wickramasinghe

3. **The Suitability of Artificial Neural Networks in Service Quality Control and Forecasting** ......................................................... 29  
   Mohammad Rezazadeh Niavarani and Nilmini Wickramasinghe

4. **The Application of Lean in the Healthcare Sector: Theory and Practical Examples** ............................................................. 43  
   Nathan Houchens and Christopher S. Kim

5. **Business Value of IT in Healthcare** ........................................................ 55  
   Peter Haddad, Mark Gregory, and Nilmini Wickramasinghe

6. **Initiatives of Service-Oriented Architecture Towards Performance Improvement in Healthcare** .................................................. 83  
   Fatemeh Hoda Moghimi and Nilmini Wickramasinghe

7. **Adapted Lean Thinking for Emergency Departments: Information Quality Perspective** ........................................................... 97  
   Latif Al-Hakim

### Part II Applications of Lean Thinking Around the Healthcare World

8. **Adapted Lean Thinking for Healthcare Services: An Empirical Study in the Traditional Chinese Hospital** ......................... 115  
   Ying Su, Jeffrey Soar, Ningqiao Shen, and Latif Al-Hakim
9 Lean Thinking in Dementia Care Through Smart Assistive Technology: An Evaluation ........................................ 143
Trudy Yuginovich and Jeffrey Soar

10 A Delphi Study on Developing a Conceptual Framework to Understand the Perception of Iranian Physicians Towards Electronic Health Records ........................................ 169
Seyed Mohammad Seyedi Alavi and Khin Than Win

11 Trying to Streamline Healthcare Delivery in Australia via the Personally Controlled Electronic Health Record (PCEHR) .......... 187
Imran Muhammad, Say Yen Teoh, and Nilmini Wickramasinghe

12 Identifying Critical Issues for Developing Successful e-Health Solutions ......................................................... 207
Manuel Zwicker, Juergen Seitz, and Nilmini Wickramasinghe

13 Applying the Principles of KM to Effect Streamlined Healthcare Operations: A Malaysian Case Study ...................... 225
Sou Wei Wong and Nilmini Wickramasinghe

14 Remaking Rosa Medical Center: A 5-Step Approach to Transitioning with Lean ............................................... 239
Mohamed Abouzahra and Joseph Tan

15 Lean Thinking and Customer Focus: Patient Centered Perspectives on Hospital Quality ................................. 265
Anke Simon and Nilmini Wickramasinghe

Part III  Macro Issues

16 Applying a System of Systems Approach to Healthcare .............. 287
Suresh Chalasani and Nilmini Wickramasinghe

17 The Role for a Healthcare System of Systems Approach Coupled with Collaborative Technologies to Provide Superior Healthcare Delivery ......................................................... 299
Nilmini Wickramasinghe, Suresh Chalasani, and Sridevi Koritala

18 The Role of a Disruptive Pervasive Technology Solution to Facilitate Better Healthcare Delivery to Native American Patients ............. 315
Suresh Chalasni, Steve Goldberg, and Nilmini Wickramasinghe

19 Designing Enabling Regulatory Frameworks to Facilitate the Diffusion of Wireless Technology Solutions in Healthcare ........ 331
Indrit Troshani, Steve Goldberg, and Nilmini Wickramasinghe
Improving Healthcare Service Quality and Patients’ Life Quality Through Mobile Technologies: The Case of Diabetes Self-management
Sally Rao Hill, Indrit Troshani, Steve Goldberg, and Nilmini Wickramasinghe

The Role of Online Social Networks in Consumer Health Informatics: An Example of the Implicit Incorporation of Lean Principles
Carolin Durst, Janine Viol, and Nilmini Wickramasinghe

Supporting Preventive Healthcare with Persuasive Services
Andreas Hamper and Tino Müller

Using Technology Solutions to Streamline Healthcare Processes for Nursing: The Case of an Intelligent Operational Planning Support Tool (IOPST) Solution
Nilmini Wickramasinghe, Bridie Kent, Fatemeh Hoda Moghimi, Malte Stien, Lemai Nguyen, Bernice Redley, Nyree Taylor, and Mari Botti

Using an e-Health Strategy to Facilitate the Design and Development of Effective Healthcare Processes
Raphael Di Francesco and Nilmini Wickramasinghe

Value Stream Mapping in Lean Healthcare: A Brief Introduction and Application
Michael S. Dohan, Ted Xenodemetropoulos, and Joseph Tan

Using Value Stream Mapping to Improve Processes in a Urology Department
Chris Gonzalez, Kwok Hung Lau, and Nilmini Wickramasinghe

A Technology-Mediated Solution to Reduce Healthcare Disparities
Nilmini Wickramasinghe, Ray Arias, and Chris Gonzalez

Process Models, Its Inefficiencies and Recommendations of the Emergency Department of the Marienhospital
Lara Henzler, Daniel Mengele, Tahnee Platz, Kristina Riemann, and Janine Steffen
Contents

29 Simulation Study: Clinical Center Esslingen—Process Analysis in the Emergency Department ............................................................... 529
Corinna Klink, Daniel Denkert, Mario Vargheamidis, Nils Kern, and Tobias Lörch

30 Emergency Department Katharinenhospital Stuttgart ....................... 551
Melanie Bathelt, Sabrina Hamm, Ayse Cakmak, Stefanie Guder, and Steffen Ebach

31 Business Process Modeling and Measuring Waiting Times in a German ED: An Approach for Identifying Improvements ........ 603
Mirjam Bathelt, Emanuel Grabler, Jan Lipka, and Tobias Reutemann

Epilogue ........................................................................................................... 631

Index ................................................................................................................. 633
Lean Thinking for Healthcare
Wickramasinghe, N.; Al-Hakim, L.; Gonzalez, C.; Tan, J.
(Eds.)
2014, XXII, 645 p. 178 illus., Hardcover
ISBN: 978-1-4614-8035-8