
CONTENTS

Tables, Figures, and Exhibits xi

Preface xv

Acknowledgments xix

The Editor xxi

The Contributors xxiii

PART ONE: E-HEALTH OVERVIEW 1

1 E-Health: The Next Health Care Frontier 3

Joseph Tan

The Telebaby® Case 27

Ronald Spanjers, Anne F. Rutkowski

2 E-Health Vision: Drivers of and Barriers to E-Health Care 37

Joseph Tan

Cyber-Angel: The E-Robin Hood Case 52

Joseph Tan, Joshia Tan

PART TWO: E-HEALTH FOUNDATIONS 57

- 3 E-Health Perspectives: General Systems Concepts, Chaos and String Theories, and Social Science Thinking 59
Joseph Tan
Multicommunity E-Health Promotion Programming Case 82
Joseph Tan
- 4 E-Health Records: The Lifeblood of E-Health Care 91
Joseph Tan
E-Primary Health Care and E-Health Records Cases 116
Penny Grubb
- 5 E-Public Health Information Systems: E-Technologies for Public Health Preparedness and Surveillance 127
Joseph Tan, Francisco G. Soto Mas, C. Ed Hsu
E-Profiling of Community Health Performance Indicators Case 155
Lee Kallenbach, Joseph Tan
- 6 E-Networking: The Backbone of E-Health Care 163
Joseph Tan, Winnie Cheng
Mobile Health Networks Case: Unconfined Mobile Bluetooth Technology for E-Medical Services 190
Qiang Cheng, Huyu Qu, Yingge Wang, Joseph Tan

PART THREE: E-HEALTH DOMAINS AND APPLICATIONS 201

- 7 E-Health Domains: Surveying the E-Health Landscape: Cases and Applications 203
Pam Forducey, Kawaljeet Kaur, Cynthia Scheideman-Miller, Joseph Tan
E-Speech Therapy for Children in a Rural Oklahoma School Case 224
Cynthia Scheideman-Miller, Pam Forducey, Sharon S. Smeltzer, Avery Clouds, Bob Hodge, David Prouty

- 8 Diffusion of E-Medicine: E-Medicine in Developed and Developing Countries 231
Joseph Tan, Mengistu Kifle, Victor Mbarika, Chitu Okoli
E-Medicine Development in Taiwan Case 260
Paul Jen-Hwa Hu, Chih-Ping Wei, Tsang-Hsiang Cheng, Joseph Tan
- 9 E-Home Care: Rejuvenating Home Health Care and Tele-Home Care 267
George Demiris, Joseph Tan
The OliverHome Case 290
Joseph Tan, George Demiris, Joshia Tan
- 10 E-Diagnosis Support Systems: An E-DSS for Lower Back Pain 295
Lin Lin, Paul Jen-Hwa Hu, Olivia R. Liu Sheng, Joseph Tan
Teleradiology Case: Present and Future 321
Yao Y. Shieh, Mason Shieh
- 11 E-Health Intelligence: A Multiple-Level Clustering Approach for E-Health Data Mining 330
Chih-Ping Wei, Paul Jen-Hwa Hu, Liang-Ming Kung, Joseph Tan
E-Patient Image Retrieval Case: Incremental Neural Net Learning 352
Lin Lin, Olivia R. Liu Sheng, Chih-Ping Wei, Paul Jen-Hwa Hu, Joseph Tan

PART FOUR: E-HEALTH STRATEGIES AND IMPACTS 363

- 12 E-Health Strategies: Reshaping the Traditional Health Care System 365
H. Joseph Wen, Joseph Tan
E-Health Technology Strategies and Impacts Case 396
Jung P. Shim, William E. Sorrells
- 13 E-Health Care Technology Management: A Multifactorial Model for Harnessing E-Technologies 406
George Eisler, Sam Sheps, Joseph Tan

Evidence-Based Medicine Case 439

Barry P. Markovitz

14 E-Security: Frameworks for Privacy and Security in E-Health Data
Integration and Aggregation 450

Joseph Tan, Patrick Hung

Integrated Selective Encryption and Data Embedding for Medical
Images Case 479

Qiang Cheng, Yingge Wang, Joseph Tan

15 E-Health Impacts on the Health Care and Health Services Industry:
Surfing the Powerful Waves of E-Technologies 489

Joseph Tan, David C. Yen, Sharline Martin, Binshan Lin

E-Communities Case: Scalability Challenges in Information
Management 515

Harris Wu, Joseph Tan, Weiguo Fan

PART FIVE: E-HEALTH PROSPECTS 521

16 E-Health Prospects: Mobile Health, Virtual Reality, and Consumer-
Driven E-Health Systems 523

Joseph Tan

Virtual Reality Case 547

Joseph Tan, Pency Tsai

Name Index 554

Subject Index 562