

Clinical Knowledge Management: Opportunities and Challenges

Table of Contents

Foreword viii
Swamy Laxminarayan, Idaho State University, USA

Preface xi
Rajeev K. Bali, Coventry University, UK

Section I: Key Opportunities and Challenges in Clinical Knowledge Management

Chapter I

Issues in Clinical Knowledge Management: Revisiting Healthcare Management 1
Rajeev K. Bali, Coventry University, UK
Ashish Dwivedi, University of Hull, UK
Raouf Naguib, Coventry University, UK

Chapter II

It's High Time for Application Frameworks for Healthcare 11
Efstathios Marinos, National Technical University of Athens, Greece
George Marinos, National Technical University of Athens, Greece
Antonios Kordatzakis, National Technical University of Athens, Greece
Maria Pragmatefteli, National Technical University of Athens, Greece
Aggelos Georgoulas, National Technical University of Athens, Greece
Dimitris Koutsouris, National Technical University of Athens, Greece

Chapter III

**Management and Analysis of Time-Related Data in Internet-Based Healthcare
Delivery** 33
Chris D. Nugent, University of Ulster at Jordanstown, Northern Ireland
Juan C. Augusto, University of Ulster at Jordanstown, Northern Ireland

Chapter IV	
Interactive Information Retrieval as a Step Towards Effective Knowledge Management in Healthcare	52
<i>Jörg Ontrup, Bielefeld University, Germany</i>	
<i>Helge Ritter, Bielefeld University, Germany</i>	

Chapter V	
The Challenge of Privacy and Security and the Implementation of Health Knowledge Management Systems	72
<i>Martin Orr, Waitemata District Health Board, New Zealand</i>	

Section II: Organisational, Cultural and Regulatory Aspects of Clinical Knowledge Management

Chapter VI	
Knowledge Cycles and Sharing: Considerations for Healthcare Management	96
<i>Maurice Yolles, Liverpool John Moores University, UK</i>	

Chapter VII	
Key Performance Indicators and Information Flow: The Cornerstones of Effective Knowledge Management for Managed Care	116
<i>Alexander Berler, National Technical University of Athens, Greece</i>	
<i>Sotiris Pavlopoulos, National Technical University of Athens, Greece</i>	
<i>Dimitris Koutsouris, National Technical University of Athens, Greece</i>	

Chapter VIII	
Multimedia Capture, Collaboration and Knowledge Management	139
<i>Subramanyam Vdaygiri, Siemens Corporate Research Inc., USA</i>	
<i>Stuart Goose, Siemens Corporate Research Inc., USA</i>	

Chapter IX	
Biomedical Image Registration for Diagnostic Decision Making and Treatment Monitoring	159
<i>Xiu Ying Wang, The University of Sydney, Australia and Heilongjiang University, China</i>	
<i>David Dagan Feng, The University of Sydney, Australia and Hong Kong Polytechnic University, Hong Kong, China</i>	

Chapter X	
Clinical Knowledge Management: The Role of an Integrated Drug Delivery System	182
<i>Sheila Price, Loughborough University, UK</i>	
<i>Ron Summers, Loughborough University, UK</i>	

Chapter XI	
Medical Decision Support Systems and Knowledge Sharing Standards	196
<i>Srinivasa Raghavan, Krea Corporation, USA</i>	

**Section III: Knowledge Management in Action:
Clinical Cases and Application**

Chapter XII

**Feasibility of Joint Working in the Exchange and Sharing of Caller Information
Between Ambulance, Fire and Police Services of Barfordshire 219**

*Steve Clarke, The University of Hull, UK
Brian Lehaney, Coventry University, UK
Huw Evans, University of Hull, UK*

Chapter XIII

**Organizing for Knowledge Management: The Cancer Information Service as
an Exemplar 234**

J. David Johnson, University of Kentucky, USA

Chapter XIV

**Clinical Decision Support Systems: Basic Principles and Applications in
Diagnosis and Therapy 251**

*Spyretta Golemati, National Technical University of Athens, Greece
Stavroula G. Mougiakakou, National Technical University of Athens,
Greece
John Stoitsis, National Technical University of Athens, Greece
Ioannis Valavanis, National Technical University of Athens, Greece
Konstantina S. Nikita, National Technical University of Athens, Greece*

Chapter XV

Towards Knowledge Intensive Inter-Organizational Systems in Healthcare 271

*Teemu Paavola, LifeIT Plc, Finland and Helsinki University of Technology,
Finland
Pekka Turunen, University of Kuopio, Finland
Jari Vuori, University of Kuopio, Finland*

Chapter XVI

An Overview of Efforts to Bring Clinical Knowledge to the Point of Care 285

*Dean F. Sittig, Medical Informatics Department, Kaiser Permanente
Northwest, USA, Care Management Institute, Kaiser Permanente, USA
and Oregon Health & Sciences University, USA*

Chapter XVII

**Social Capital, An Important Ingredient to Effective Knowledge Sharing:
Meditate, A Case Study 297**

*Jay Whittaker, University of Ballarat, Australia
John Van Beveren, University of Ballarat, Australia*

Glossary	315
About the Authors	322
Index	332