

Preface

M-health can be defined as the ‘emerging mobile communications and network technologies for healthcare systems’. This definition can also infer that m-health is the result of evolution of the e-health systems and the ‘addition’ of emerging information and computing technologies in biomedicine to the modern advances in wireless and nomadic communication systems. The recent years have witnessed a major revolution in the technological advances of the next generation of wireless and network technologies paving the way towards the 4G wireless systems. It is clear from these advances and in particular from the anticipated convergence between the future data rates of nomadic and wireless systems within the next decade or so, that such developments will have a challenging and profound impact on future e-health systems.

The recent research relevant to m-health such as advances in nano-technologies, compact biosensors, wearable, pervasive and ubiquitous computing systems will all lead the successful launch of next generation m-health systems within the next decade. They will encompass all these technologies for future healthcare delivery services with the vision of ‘empowered healthcare on the move’.

This book paves the path toward understanding the future of m-health technologies and services and also introducing the impact of mobility on existing e-health and commercial telemedical systems.

The book also presents a new and forward looking source of information that explores the present and future trends in the applications of current and emerging wireless communication and network technologies for different healthcare situation. It also provides a discovery path on the synergies between the 2.5G and 3G systems and other relevant computing and information technologies and how they prescribe the way for the next generation of m-health services.

The book contains 47 chapters, arranged in five thematic sections: Introduction to Mobile M-Health Systems, Smart Mobile Applications for Health Professionals, Signal,

Image, and Video Compression for M-Health Applications, Emergency Health Care Systems and Services, Echography Systems and Services, and Remote and Home Monitoring. Each section begins with a section overview, and ends with a chapter on future challenges and recommendations.

This book is intended for all those working in the field of information technologies in biomedicine, as well as for people working in future applications of wireless communications and wireless telemedical systems. It provides different levels of material to researchers, computing engineers, and medical practitioners interested in emerging e-health systems.

The book serves as the basis for understanding the future of m-health technologies and services, exemplifying the impact of mobility on existing m-health and commercial telemedical systems.

We wish to thank all the section editors for their valuable time and efforts in putting together the section chapters, the authors for their hard work and for sharing their experiences so readily, and the numerous reviewers for their valuable comments in enhancing the content of this book. Furthermore we would like to express our sincere thanks to Elena Polycarpou for her excellent secretarial work in communicating with the section editors, authors, and reviewers and for putting together this book. We thank also Dr Henry Wang from the MINT center, and the EU for their funding of most of the work in the MINT centre. Last but not least, we would like to thank, Aaron Johnson, Krista Zimmer and the rest of the staff at Springer for their understanding, patience and support in materializing this project.

We hope that this book will be a useful reference for all the readers in this important and growing field of research and to contribute to the roadmap of future m-health systems and improved and effective healthcare delivery systems.

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<http://www.springer.com/978-0-387-26558-2>

M-Health

Emerging Mobile Health Systems

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2006, XXX, 623 p., Hardcover

ISBN: 978-0-387-26558-2