Foreword

Healthcare Informatics is, with no doubt, one of the most active emerging research areas within the Information Communications and Technologies (ICT) and Information Systems (IS) frameworks. This is due, in part, to the enormous delay regarding its adoption in healthcare contexts and health-related business processes, when compared to other business sectors such as insurance or banking. Due to its critical-task oriented nature, health organisations soon developed some resistance to change regarding the use of ICT and IS, even within the most elementary tasks, such as patient diagnosis register or nursing procedure logging and visualisation. Nevertheless, we've been witnessing some bulk advances over the last decade, regarding not only a generalised use of ICT for healthcare process improvement, but also on the establishment and adoption of medical coding, data archiving, processing and interchange standards such as the SNOMED, DICOM, or HL7. Additionally, there have been huge efforts within health organisations to provide paperless and ICT-supported electronic health records. In addition, important advances can be observed in accessing these records in a seamless, technology agnostic manner, in order to improve the quality of health services, even if provided in a geographically dispersed way. These include probing and monitoring medical data in a remote fashion, either through e-therapy, telemedicine, or mobile-health related technologies and software applications. Important and correlated to these advances are the development of information systems that support continued and social care procedures, either by reaching medical support in a faster and lighter way, or simply by alerting patients and caregivers to the occurrence of emergency scenarios.

This book provides a rich set of perspectives, analyses, and real-world examples on the application of ICT and IS within health and social care contexts. It embraces a wide spectrum of research and practical-oriented ICT applications, ranging from ambient assisted living, clinical imaging processing, decision support, e-therapy, electronic health records, and mobile health software applications. It presents a plethora of research findings that, together, shed light on a desirable future framework for health and social care information systems and technologies. These findings are easily understandable by both academia and health organisation professionals such as Chief Information Officers (CIO), healthcare informatics software developers, physicians, nursing staff, hospital managers, and general caregivers. CIOs can find a vast number of future trends and guidelines regarding the adoption of electronic health records and their socio-technical perspectives and ICT management, together with some quick-win apps to improve healthcare business processes. Software developers can adopt some of these insights to improve the design and performance of healthcare-related software products, benefiting results obtained from real-world application scenarios. Physicians are the preferred targets for some of the developments presented, which can greatly improve their daily practice, such as accessing complete patient data or providing clinical (and intelligently processed) information in a timely fashion. Nursing staff and other
auxiliary caregivers can see their practice enhanced by reading on case studies regarding nursing informatics and remote monitoring and caregiving. Hospital managers can learn, for instance, on the results published regarding the application of ICT in scheduling and (human) resources management, or on the advances in medical coding and data management. Academia can sure benefit from several future trends pointed out in the chapters, as a way to keep on track of this research area. The book has this overall dual perspective of real-world healthcare ICT applications and more abstract research findings that provides these professionals with a solid ground knowledge on the latest trends in healthcare informatics.

Rui Gomes  
Hospital Fernando Fonseca, Portugal

Rui Gomes is the Director of Technology and Information Systems of Hospital Fernando Fonseca (Lisbon/Sintra). He was graduated in Electronical Engineering by University of Coimbra. Owns a Master degree in Medical Informatics by University of Medicine of Porto. Main activities and responsibilities relates with project management, analysis and information systems planning, hi-tech infra-structures engineering, and studies and partnerships relating health informatics, business, objects, and applications. He recently played the role of managing and participating as a member of the Center’s Executive Electronic Health Record – SG4 of the Portuguese Ministry of Health and often participates in the management of national and European research and development projects.