Preface

ABOUT THE SUBJECT

According to the World Health Organization (WHO, 2016), e-Health is “the transfer of health resources and health care by electronic means”. It encompasses three main areas: 1) the delivery of health information, for health professionals and health consumers, through the Internet and telecommunications; 2) using the power of Information and Communication Technology (ICT) and e-commerce to improve public health services, e.g. through the education and training of health workers; and 3) the use of e-commerce and e-business practices in health systems management. It is broader in definition than Telemedicine, as it includes computer-assisted telecommunications to support management, surveillance, literature and access to medical knowledge. Telemedicine is “the use of telecommunications to diagnose and treat disease and ill-health” (WHO, 2010). These definitions are not consensual. Oh, Rizo, Enkin, and Jadad (2005) found 51 unique definitions with 2 universal themes (health and technology) and 6 less general (commerce, activities, stakeholders, outcomes, place, and perspectives). E-Health itself foresees a range of services, systems and technologies, including Electronic Health Records (EHRs), Computerized Physician Order Entry (CPOE), e-Prescribing, Clinical Decision Support Systems (CDSS), Telemedicine, m-Health, Medical Imaging Processing, and Healthcare Information Systems, among others.

Health informatics began in financial systems in the 60s, helping the billing, payroll and accounting. Clinical departmental solutions arrived in the 70s supporting activities as radiology, laboratory and pharmacy. In the 80s there was a focus on the accounting, material and management systems. The idea of a complete medical EHR arrived in the 90s and the term e-Health appeared with the advent of the Internet.

This evolution and the impact of ICT in health care services and patients suggests the relevance of the study of e-Health and Telemedicine. Therefore, it is important the understanding of its concepts, challenges, technologies, solutions and how to apply them effectively in practice.

One main challenge identified in this Encyclopedia is the need of studying the impact of the use of technology in the patient-doctor relation. Interoperability is also a key concern, due to the heterogeneity of healthcare systems and their supporting devices. In this area, the search for standards for Electronic Health Records is considered an issue requiring combined efforts between the academic and industry communities.

Smart devices, sensors, Patient Area Networks (PAN), augmented reality and serious games are conquering the healthcare area with a huge profusion of intelligent systems for monitoring, diagnosing, supporting the therapy, and education. Also increasing is the apprehensions with the legal framework that regulate these systems, the security, the safety and the privacy of the patients, healthcare professionals and institutions.
New approaches, frameworks and techniques are proposed to deal with the complexity of the circumstances, namely new architectures and software tools. The demographic and epidemiologic transition resulting from ageing and the increase of life expectation means an increment related to chronic conditions. The solution is to restore the consistence between the triple burden of diseases on the health situation and the current system of healthcare practice, with the implantation of healthcare networks. The later is a major concern demanding new policy models and new solutions. In this “network reality”, simulation and e-learning take also an important role supporting the spreading of medical procedures and good management practices. The use of Business Process Management (BPM), Enterprise Architectures (EA) and specific Project Management (PM) processes seem to improve the flow of information and the cohesion of these networks.

The intelligent processing and visualization of the huge amount of existing health data are exploited in the works regarding data, text mining and big data, as we can observe regarding pharmacovigilance.

THE MISSION

The mission of the Encyclopedia of e-Health and Telemedicine is then to provide a global vision of these areas, offering a comprehensive context and an insight from where the e-Health and Telemedicine come from, the key areas of emerging works and providing useful outlooks of the future. In this way, the book aims to contribute for the theories, practices and policies behind the use of IT and Information Systems for health and social care. Theoretical contributions ground in the solid background work done by the authors, along with the quality of the scientific research expanding the existing knowledge. Practitioners can also take advantage of the innovative developments and solutions presented. These intersect emerging technologies and challenges regarding e-Health and Telemedicine. Finally, numerous case studies and socio-technical experiences will surely help policy makers on an effective adoption of ICT throughout the main health and social challenges in societies.

EXPECTATIONS

Bearing in mind the diversity of the issues and the depth of the content, we believe that this Encyclopedia can be an excellent resource for those who wish to learn more on the challenges and adoption of e-Health and Telemedicine either from the perspective of service providers, academics or researchers. The target audience for this Encyclopedia includes healthcare service providers, policy makers, academics, researchers, Information Systems students and IT managers.

All these works express the desire for a positive contribution to the research area of Information Systems in general and e-Health and Telemedicine in particular. We would like to welcome feedback and comments about this Encyclopedia from readers. Comments and constructive suggestions can be sent to the Editors of IGI Global at the addresses provided at the beginning of this Encyclopedia.

We express our gratitude to IGI Global for the opportunity to edit this book, and for the excellent support of their team of professionals. We would like to thank all the members of the Scientific Committee, for their commitment and for sharing their knowledge and experience in the support of the decision-making processes. Finally, we would like to show our appreciation and gratitude to all the
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authors for their excellent contributions: this encyclopedia encloses the result of their relevant work and deep knowledge on the e-Health and Telemedicine domain.

We hope you find it useful. Enjoy your reading!

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REFERENCES

