Foreword

Over the last few years, the immense need to develop and organize new ways for providing accessible, responsive, timely, effective, safe, qualitative and efficient health care, has fortunately been accompanied by significant advances in the field of information and communication technology. The application of these advances in most areas of health care delivery had truly dramatic and revolutionary effects. In fact there are major progresses in the health care sector over the past years, but the realm of health information technology is unique.

Specifically, health care information and communication technology is indispensable for overcoming fragmented systems and services and for achieving cost savings, as well as productivity and efficiency gains in the organization and funding of health care. In addition, it ensures the timely and accurate collection, exchange and availability of data, which are critical for the provision of safe, qualitative and effective care. Furthermore, it facilitates online access to clinical guidelines and drug databases, provides health care practitioners with evidence-based clinical information at the point of care and facilitates their interaction with patients and other stakeholders. On the other hand, it also gives patients the ability to obtain information to better manage their condition and to communicate with the health system, a fact that could also improve the efficiency and quality of care.

Technology has recently made it possible to exchange health data over the internet or thought web and wireless systems and applications, a technical evolution which raises significant challenges with regards to the credibility, accountability, safety, confidentiality, integrity, availability and privacy of services, information and resources. In this light, a main challenge relates to the fact that the sector struggles with inconsistent medical terminology, clinical records and data storage, as well as a multiplicity of schemes introduced to facilitate interconnection and communication between specific information systems. This fragmentation and the rapidly evolving nature of technological solutions, in the absence of agreed industry-wide standards, expose providers investing in technological infrastructure to high risks of failure and poor returns. The interoperability of the systems is dependent upon adopting common standards and achieving compliance with them.

Moreover, another significant challenge relates to enabling robust and reliable privacy and security frameworks. Specifically, because of the sensitivity of health information and the generalized uncertainty on how existing legal frameworks apply to health information technology systems, privacy concerns constitute one of the most difficult barriers in the wider implementation of information technology. Health information can be extremely sensitive, while professional ethics in health care demands a strict adherence to strict confidentiality and legal rules. Hence, there appears to be a generalized need for clear and enforceable systems and rules on these sensitive issues.
In light of the above mentioned, the present book represents a significant contribution in the field, which provides relevant and newest theoretical frameworks and references to the most recent empirical research findings in this area. In particular, it deals with the issue of access control and secure exchange of health information over the internet through web healthcare and related information systems. It attempts to deal with issues relating to certification and security procedures, to identify open threats and emerging needs and to provide solutions to the various challenges. Indeed, it constitutes a valuable tool for every professional intending to develop or support a health related application over the internet or participate in such an application. As such a tool, this book will increase the interaction between health care, health administration and health information technology professionals and all other interested parties.

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