Chapter  3

Digital Transformation Challenges for the Implementation of Quality Electronic Medical Records

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ABSTRACT

The purpose of this work is to analyze the digital transformation challenges related to the implementation of quality electronic medical record systems in Greece, within the wider frame of the European digital single market. The authors explore characteristics of quality, interoperable and secure electronic medical records, and provide an overview of the challenges and factors affecting their adoption, implementation, and operation. Key challenges relate to linking electronic medical records with the workflow, building trust and acceptance by making the best use of champions and key stakeholders, and financing the digital transformation transition and sustainability. The foreseen benefits include better support of medical decisions across all stages of the patient pathway, patients empowered to carry with them clinically significant information, fostering research, and unlocking the full potential of vendors to implement innovative tools to support continuity of care.

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Healthcare systems worldwide face significant challenges that relate to increasing costs, increasing demand for the provision of quality services in an aging society and improvement of outcomes (Herrmann et al., 2018). It has been shown that despite the fact that medicine becomes increasingly high-tech, the standards of care often remain low compared to cost (Porter et al., 2006). Digital transformation in healthcare can modify operations, reduce costs and improve the quality of patient services and care.

Data is a key enabler to achieve digital transformation and drive health systems towards seamless information flows. Currently, health data is not available in the same formats nor managed in the same way across European Union (EU) member states or even within national health systems. Citizens, public authorities, medical professionals and researchers do not usually have access to all the data that would help them manage their health, deliver better diagnosis, treatment or personalized care. When health data exist in digital form, they often depend on technologies that are not interoperable, thus hindering wider use.

Lack of key information results in limited health systems optimization and difficulty to implement digital health and care solutions to support cross-border use of health services in the EU. In addition, the uptake of digital solutions for health and care remains slow and varies greatly across EU member states. The Digital Single Market in this area cannot achieve the envisioned results for citizens and health professionals. Market fragmentation and lack of interoperability across health systems hinder an integrated approach to disease prevention, care and cure. Appropriate regulatory frameworks and high quality data are necessary to realize and safeguard the rights of individuals and society. Secure access to a comprehensive electronic health record (EHR) anywhere in the EU will enable citizens to share their health data for medical treatment, preventive services, and research, irrespective of where the data is located and in line with data protection legislation (Katehakis et al., 2017b).

The national health system (NHS) is responsible for the provision of healthcare services in Greece. The execution of the operational program for implementing the information society strategy for Greece (2000-2010) resulted in the introduction of modern information technology (IT) systems for the vast majority of hospitals in the country (Katehakis et al., 2011). Foreseen benefits included an upgraded quality of services to citizens through business process re-engineering and reduction of medical errors, secure exchange of medical information, and efficient access to the EHR.

Following the introduction of integrated IT systems at the hospitals, a multitude of eHealth services has been introduced, in line with EU priorities, to control costs and improve services in a secure manner. These include: ePrescription; electronic...
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