

Chapter 5

The Added Value of Real-World Data in the Digital Health Ecosystem: Challenges in the Greek Context

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ABSTRACT

Healthcare is undergoing a profound digital transformation globally. The integration of digital technologies across healthcare is reshaping patient care and administrative processes. This digital transformation refers to the adoption of Electronic Health Records (EHRs), telehealth and telemedicine services, artificial intelligence (AI), Internet of Things (IoT), Real-World Data (RWD) and other emerging technologies to streamline operations, improve decision-making, and enhance patient management and outcomes. RWD refers to the information collected from sources other than traditional clinical trials, providing insights of patient habits, routines and outcomes. In this chapter, the authors explain the added value of incorporating RWD in decision-making, patient care, resource allocation, research and development of new treatments and medications, public health and personalized medicine and examine the specific challenges associated with its implementation in the Greek healthcare system.

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INTRODUCTION

The digital transformation of healthcare can improve patient outcomes and streamline administrative processes through the utilization of innovative technologies (Stoumpos et al., 2023). The adoption of electronic health records (EHRs) to collect patient information, the implementation of telehealth and telemedicine services to facilitate remote consultations, diagnoses and education, the use of artificial intelligence (AI) for data analysis and predictive modelling, the Internet of Things (IoT) for real-time patient monitoring and advanced data analytics for the processing of vast health datasets constitute main components of the digital transformation (Gopal et al., 2019). These components can create an interconnected, interoperable and patient-centered ecosystem in healthcare, which can accelerate medical advancements and set the foundation for more personalized and accessible healthcare services.

Real-World Data (RWD) has a key role in the digital transformation of health services, providing real-time information of patient outcomes and timely data about healthcare system performance. The integration of digital technologies alongside RWD has the potential to drive informed decision-making and reform health services into a data-driven ecosystem (Lipworth, 2019). Healthcare providers can leverage information delivered from various digital sources to provide personalized care based on Real-World Evidence (RWE) instead of relying solely on data from traditional clinical trials (Kalra, 2019). Moreover, pharmaceutical and medical industry can leverage RWD to understand and improve the real-world impact of medications and medical devices and accelerate research and development in these fields (Dagenais et al., 2022).

The Greek healthcare system faces many significant challenges, including limited resources, staff shortages and an aging population. The integration of RWD in the processes of healthcare providers can enhance the quality of healthcare delivery by providing valuable insights into the real-world effectiveness of treatments and enabling informed clinical decision-making (Fylatos et al., 2022). In addition, RWD can facilitate the continuous monitoring of population health, contributing to the development of personalized and targeted interventions (Alowais et al., 2023). The use of RWD can provide evidence for the optimization of healthcare practices, enhancement of patient outcomes and improvement of the overall efficiency of the Greek healthcare system. However, addressing challenges such as digital infrastructures and systems, staff shortages and training, patient's empowerment and engagement, data standardization, interoperability, and privacy concerns is essential to harness the potential of RWD in shaping the future of healthcare in Greece (Zisis et al., 2024). In this chapter the authors explain the added value of incorporating RWD in the digital health ecosystem and enumerate the specific challenges associated with

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