

Advancing Global Digital Healthcare Innovation through One Digital Health and Multilingual Ontologies

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Abstract

The digital transformation of healthcare offers significant opportunities alongside complex challenges. One Digital Health (ODH) provides a unified framework integrating artificial intelligence, data science, and healthcare informatics to enhance decision-making, interoperability, and sustainability within health ecosystems. By connecting human, animal, and environmental health, ODH addresses the critical need for cross-sector collaboration, breaking down traditional silos to improve health outcomes. This presentation delves into the benefits of digitalization in healthcare, such as enhanced data accessibility, personalized medicine, and real-time epidemiological monitoring. It examines the role of AI-driven analytics, process mining, and digital epidemiology in optimizing personalized patient care, public health strategies, and emergency response systems. Moreover, the presentation emphasizes key challenges like international communication and multilingual issues through the Medical Informatics and Digital Health Multilingual Ontology (MIMO), which facilitates interactions within a global community. By adhering to the FAIR (Findable, Accessible, Interoperable, Reusable) principles, both ODH and MIMO promote responsible digital health practices that encourage transparency and citizen and professional engagement while also supporting the sustainability of medical technology. Ultimately, ODH presents a roadmap for a more integrated, ethical, and sustainable future in digital health. It balances technological innovation with responsible governance to maximize benefits and mitigate risks. The presentation concludes with strategic recommendations for fostering a global, interdisciplinary approach to digital healthcare innovation.

Keywords: One Health; Digital Health; One Digital Health; Biomedical Ontologies; Intersectoral Collaboration.

