Economic and Societal Benefits of Advanced Digital Technologies in Medicine

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Advanced digital technologies, including digital medical devices, medical robots, wearable sensors, and artificial intelligence, are transforming medicine by improving decision-making, personalizing care. These innovations, primarily leveraging improved infocommunication, compete for healthcare resources alongside traditional interventions with a biological or physical mechanism of action, such as medicines, medical devices, and surgical procedures.

While digital technologies can contribute to health production in many new ways or expand access to previously unreachable healthcare services, they also introduce new risks. Healthcare professionals must adapt to new workflows, research methodologies, and develop technical skills to incorporate these technologies into clinical practice. Consequently, assessing the economic and societal benefits of digital technologies presents unique challenges to healthcare decision-makers. Beyond traditional determinants like efficacy, safety, or cost-effectiveness, the evaluation of digital technologies requires consideration of user experience, cybersecurity, and technical stability. This lecture offers an overview of recent methodological developments in assessing the economic and societal value of advanced digital health technologies. The insights are drawn from various original research projects conducted by members of the Health Economics Research Center at the University Research and Innovation Center, Óbuda University.

Short Bio

Dr. Zsombor Zrubka is an associate professor and head of HECON – Health Economics Research Center at Óbuda University, Budapest, Hungary. By profession, he is a medical doctor, with and MBA from Oxford Brookes University, UK, and PhD in health economics from Corvinus University of Budapest.

Prior his academic career commencing at the Department of Health Economics at Corvinus University of Budapest, he had gained 17 years of experience in the pharmaceutical industry in various national and international management roles.

The research of Zsombor involves the health economic evaluation of innovative health technologies, the measurement of health outcomes, and the synthesis of scientific evidence. He is especially interested in the impact of digital health technologies and artificial intelligence in health care. He is a contributor in several international and national research grant projects, he is a founding member of the Innovation Management Doctoral School at Óbuda University, he is the secretary of the Health Economic Section, and founding member of the Innovation Section of the Hungarian Economic Association. Also, he is the co-chair of the key scientific project at the Digital Health Special Interest Group at ISPOR, the leading professional society for health economics and outcomes research globally.

As of December 2023, Zsombor has been the author / co-author of 49 scientific articles in peer-reviewed journals. Out of those, 19 articles were published in Scimago D1, 12 in Q1 and 7 in Q2 journals. The number of his total citations is 578 out of which he has 452 independent citations. His Hirsch-index is 11.