

Publishable Summary

This Deliverable is an all-encompassing data-informed technology transfer strategy for healthcare practice in the context of integration of artificial intelligence and high-level analytics in medical innovation. It explains in detail how new-generation AI technologies—machine learning, generative models, and edge computing—revolutionize clinical decision-making, diagnosis cycles, and overall operations efficiency. The report illustrates how essential it is to bridge theory-based innovation and practice implementation using evidence-based strategies supporting regulation adherence, ethical imperatives, and fiscal sustainability.

One of the salient features of the deliverable is an in-depth description of the DARE Technology Transfer Platform. It is intended to convert high-dimensional organizational data in healthcare institutions into actionable knowledge through an expansive multilevel system. It unifies cutting-edge methodology, for instance, an FVFC prototype using fuzzy k-nearest neighbors for better classification, Kernel Principal Component Analysis (Kernel PCA) for visualization of three-dimensional data, and natural language explanations grounded in large language models (LLMs) for better explainability. These advances in technology increase predictive fidelity while yielding transparent outputs for strategic decision use and for use in engaging stakeholders.

The report also touches upon regulation, such as implications for the EU Artificial Intelligence Act, and outlines compliance requirements to enable safe and responsible AI deployment. Also discussed is data quality, bias in algorithms, and inter-operability and offers various financial and operational measures to overcome such barriers. Later chapters summarize conclusions and offer strategic policy recommendations aimed at fostering inter-sectoral cooperation, maximizing public health outcomes and assuring long-term financial sustainability of healthcare AI innovation. In brief, the output is an interdisciplinary solid roadmap for translating innovative AI solutions into a regulated healthcare environment and, in consequence, for improving patient care, operational resilience, and strategic technology uptake.