Healing Bytes:
Navigating the rewards and risks of smart worlds for health

EUROPEAN POLICY CENTRE

Vodafone Institute for Society and Communications

Smart Worlds for Health

“An amalgamation between the physical and digital dimensions, which is aided by numerous systems and devices, called Internet of Things (IoTs) devices. Smart health specially leverages advanced technologies, the internet of medical things (IoMT), sophisticated machine learning algorithms and wireless communication systems.”

Digitalising Health in the EU

The COVID-19 Pandemic

Even though harnessing the potential of technology for health (eHealth) has been an EU priority since 2015, it was with the COVID-19 pandemic that the pace of digitalisation for health increased significantly and the healthcare sector started to change.

The Common European Data Spaces

Pushes to achieve a digitally empowered Europe by 2030. Under the DGA, the EU has created the Common European Data Spaces (CEDS), which are digital spaces spanning fourteen highly specific sectors, to help unleash the potential of data-driven innovation by facilitating data access and sharing data.

The Health Data Space

The European Health Data Space (EHDS) is the first data space to be rolled out and a pillar of the European Health Union (EHU). It will facilitate cross-border data-sharing among stakeholders across the EU by providing guidelines, sharing standards, infrastructures, and a governance framework.

Opportunities for Heath

Smart health for better diagnosis

1. Enhanced pattern recognition for improved diagnostics.
2. Supporting clinical decision-making.

Opportunities for treatment and care

1. Enhancing access to and effectiveness of treatments.
2. Enabling personalised medicine and preventive care.
3. Optimising healthcare resource utilisation.
4. Reducing care fragmentation.

Prevent and promotion

1. Benefitting both diagnosed patients and preventive health efforts.
2. Shift from broad to targeted health strategies.

Promoting healthy longevity

1. Personalised health approaches.
2. Extending care beyond clinical settings to home environments and supporting self-management.

Smart worlds for mental health

1. Enhancing prevention, early intervention, and treatment accessibility through risk identification.
2. Improved understanding of complex disorders.

Smart healthcare workforce

1. Improving system efficiency and enhancing patient care quality.

Advancing research and innovation

1. Improving data sharing, care development, and innovative solutions to healthcare challenges.

Overcoming the obstacles

Challenges

Cybersecurity

Ensuring robust cybersecurity in smart health systems to protect sensitive data and build public trust.

Privacy and data protection

Data privacy and security are crucial for public trust and the successful implementation of smart health technologies.

Policy and regulation

Balancing data privacy with innovation in health data sharing frameworks like EHDS, while addressing citizen trust issues and potential inequalities.

Adoption of digital health innovations within healthcare system

Overcoming healthcare systems' slow adoption of digital innovations and addressing fragmented data infrastructure to enable smart health solutions.

Tackling the skills gap

The digital skills gap among healthcare professionals hinders the effective implementation of AI and digital tools, potentially increasing rather than easing their workload.

Ensuring access and availability

Unequal access to digital infrastructure could exacerbate health disparities in smart health implementation across the EU and widen the digital divide.

Exacerbation of existing bias and inequalities

Inadequate and biased data in AI development risks perpetuating and exacerbating healthcare inequalities, particularly for underrepresented populations.

Recommendations

Prioritise the implementation of the EHDS

- Member States need to place emphasis on the implementation of the EHDS.
- The EU needs to support Member States in rolling out with increased funds, knowledge building, and sharing best practices.
- There is a need to ensure that EHDS legislation is aligned with other digital legislation, such as GDPR and the AI Act.

Invest in digital literacy

- Meeting the Digital Decade target of equipping 80% of the population with basic digital skills by 2030 is non-negotiable. Leveraging EU-level initiatives can help.
- Member States should guarantee adequate and accessible opportunities to everyone to avoid widening the digital divide.

Invest in digital education for healthcare professionals

- National entry-level training should strongly focus on digital technologies to ensure the healthcare workforce has the skills and knowledge required to future-proof health systems.
- Adopt skills programmes at the EU level as part of the European Health Union to facilitate cross-border training for professionals across the health ecosystem. These programmes should also bolster the exchange of expertise and best practices and contribute to diminishing healthcare disparities across the EU.

Recommendations

Invest in digital and health infrastructure

- Member states must prioritise health spending, avoiding cost cuts in budget reviews.
- At the EU level, efforts must be made to streamline healthcare spending across EU initiatives such as the RRF and the European Semester. Initiatives targeting prevention and health promotion should be recognised as investments across Member States, fostering sustainable and inclusive economic growth through investment and reform.

Ensure diverse high-quality data

- Establish a common EU framework to define data quality standards for research and innovation across member states using the FAIR data principles as a basis.
- Prioritise collaboration between the EHDS and other health data spaces to promote the collection and use of diverse data.

Prioritise data protection and cybersecurity measures

- Thoroughly check devices applied in the medical sector and vet their manufacturers.
- IoT devices should follow the principle of privacy by design and by default to minimise vulnerabilities in the technology.
- Ensure that adequate consent mechanisms are in place when it comes to data health sharing and re-use (granular rights v. blanket consent).

THANK YOU

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