



Policy Brief: Implementation of the Health Research and Innovation Cloud services

Origins of the Health Research and Innovation Cloud (HRIC): The HRIC concept emerged from a 2018 European Commission that brought together key actors involved in health research to discuss challenges and needs.¹ Following up the workshop recommendations the HealthyCloud project² tasked to develop the HRIC Strategic Agenda in consultation with different stakeholder groups.

HRIC Vision and Structure: The HealthyCloud project developed the core vision and values for the HRIC, emphasising the need for lightweight coordination and orchestration rather than creating a new infrastructure. It promotes a federated organisation based on existing pan-European structures, networks and other stakeholders to offer specific services to the research community, policy-makers and innovators.

Health-related data for research, innovation and policy-making: The HRIC aims to enable the use of health-related data for research, innovation and policy-making purposes independently of the data origins: generated within research projects, e.g., clinical trials or translational research, or obtained for its secondary use from healthcare settings, e.g., Electronic Health Records, laboratory test or clinical imaging.

Evolving Landscape and Challenges: The HRIC Strategic Agenda proposes five services to respond to the rapidly evolving landscape of health data research in Europe. It highlights the challenges related to the use and re-use of health data for research, innovation and policy-making purposes and also the alignment with key initiatives such as the European Open Science Cloud (EOSC) and the European Health Data Space (EHDS).

Health Research and Innovation Cloud Services Proposal

Service 1 “A monitoring service for health-related research”: A collaborative effort to periodically survey the landscape of data-driven health research activities in Europe, capturing developments and gathering feedback from research communities. Its goal is to ensure research communities and other relevant stakeholders have an overview of developments and can address identified needs and gaps, also benefiting policy-makers and national funders.

Service 2 “A legal/regulatory guidance service”: Provision of guidance, compliance support, and advocacy for collective interests in policy-making to address legal challenges while considering potential ethical and societal issues for the use and re-use of health-related data for research, innovation and policy-making purposes.

Service 3 “A metadata standards and data interoperability guidance service”: Provision of information, training, and guidance for consistently using data and metadata standards, aiming to improve the findability and interoperability for data use and re-use, ultimately contributing to more efficient and reproducible health research.

Service 4 “A health research community interface service, with the EOSC”: Set a reference point to foster the interaction between EOSC service providers and health researchers. This service aims to facilitate researchers leveraging tools and expertise in the frame of the EOSC and provide a technological substrate to the health-related research

¹ Aarestrup FM, Albeyatti A, Armitage WJ et al. Towards a European health research and innovation cloud (HRIC). *Genome Med* 12, 18 (2020). <https://doi.org/10.1186/s13073-020-0713-z>

² <https://healthycloud.eu>



community, including the provision of guidance, training materials and other assets related to research data management as well as computational capabilities to process datasets transnationally.

Service 5 “A health research community interface service, with EHDS”: Establish a direct communication channel, providing monitoring, guidance, and user support to facilitate the integration and adoption of European Health Data Space (EHDS) capabilities into health-related research communities.



Figure 1. Interaction of the proposed five services with different stakeholders and European efforts for the use of health-related data for research, innovation and policy-making purposes.

The services can be subdivided into two main groups based on their organization. Services 1, 2 and 3 promote a more effective, efficient and FAIR-oriented use and reuse of health-related data targeting mainly the research communities, but also policy makers and funders. Services 4 and 5 aim to interface with major European initiatives and infrastructures and enhance their impact.

A road to the implementation of Health Research and Innovation Cloud services.

To maximise the use and re-use of health data for research across Europe, it is vital to recognise: i) the role of the development of the technical services in the context of the EOSC; and, ii) the development of the EHDS regulation for enabling access to health-related data for research, policy-making and innovation purposes. To facilitate the alignment between EOSC and EHDS as well research infrastructures, networks and communities, we recommend implementing the services of the HRIC as discussed in its Strategic Agenda³.

We promote an incremental approach to facilitate the progressive adoption and build towards the long-term sustainability of the HRIC services. An initial implementation phase will serve to determine the actual requirements for the sustainability of each service, considering its specific scope and piloting with relevant stakeholders. A second phase will consist of the sustainable delivery of the HRIC Services with a fit-for-purpose vision and a long-term operational plan and resourcing.

Overall, the objective of the HRIC is to position the foreseen services in the fast-evolving European health-related data sharing landscape to facilitate research, innovation and policy-making.

³ <https://doi.org/10.5281/zenodo.10231556>