

Unlocking the potential of electronic health records for research purposes

D.K. Ryan, A.D. Shah.

Institute of Health Informatics, University College London, Gower St., London, England,
United Kingdom.

Dear Editor,

The Government's recent decision to commence planning for a national electronic health record (EHR) system marks an important step in modernising the Irish health service. Beyond operational benefits for patients and clinicians, the One Health Record initiative presents a significant opportunity for healthcare research in Ireland.

For many years, Ireland has faced limited access to linked, routinely collected EHR data. In 2022, the Health Information and Quality Authority described Ireland's healthcare information systems as immature and underdeveloped.¹ The absence of comprehensive Irish EHR data creates a research blind spot, restricting the generation of local real-world evidence and limiting Ireland's ability to contribute to international research collaborations.

While the programme's vision focuses primarily on improving patient access and care coordination, it also presents an opportunity for the research community. A national EHR could support the development of a learning healthcare system, one that systematically uses data generated through routine care to improve health outcomes.² As EHR volumes increase and analytical tools, including artificial intelligence, advance, an Irish national EHR system could provide foundational infrastructure for improving healthcare locally while advancing medical knowledge globally.

Encouragingly, the objectives of the One Health Record initiative acknowledge this broader potential. Objective 6 aims to use the One Health Record to enhance health intelligence and population health planning and to support participation in clinical research. Objective 8 refers to fostering a digital health ecosystem and a learning health system. These ambitions align with the Health Service Executive's digital health strategic roadmap, which identifies digital ecosystems, innovation and data-driven services as key pillars of transformation.

However, large-scale national health IT programmes are not without challenges, and international experience offers important lessons. The United Kingdom's National Programme for IT, launched in 2002, failed to deliver partly due to a top-down approach to design and procurement and insufficient clinical engagement.³

Conversely, the UK Clinical Practice Research Datalink (CPRD) demonstrates the value of well-structured health data infrastructure. CPRD contains primary care data from about 20% of the UK population linked with other health datasets and has enabled extensive research, with more than 2,300 publications to date.⁴ This success has been supported by collaboration between clinicians, informatics experts, and policymakers, alongside a government mandate for standardised clinical terminology.

Ireland now has an opportunity to build EHR capabilities from the ground up while learning from international best practice. Interoperability will be essential for any Irish EHR system as European regulations now require that EHRs in each member state facilitate cross-border data exchange. Other considerations include open platform architecture with robust data standards; meaningful clinical engagement and development of a strong clinical informatics community; secure and transparent data linkage across other healthcare settings; and proportionate governance frameworks that protect privacy. The system should also support emerging analytical approaches, including machine learning.

If designed with research, learning, and public benefit in mind from the outset, Ireland's national EHR system could become a cornerstone of evidence-based healthcare—improving patient outcomes while strengthening Ireland's role in healthcare research.

Declarations of Conflicts of Interest:

None declared.

Corresponding Author:

David K. Ryan,
Institute of Health Informatics,
University College London,
Gower St.,
London,
England,
United Kingdom.

E-Mail: smgxdry@ucl.ac.uk

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