

The strength and resilience of Italy's health data system

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We read with extreme interest your editorial, “*The Italian Health Data System is Broken*”,¹ and commend your efforts to shed light on the challenges facing Italy's health data infrastructure. However, we believe the analysis underestimates the progress made so far and overlooks key regional successes that highlight the potential of Italy's electronic health records (EHR) systems. While regional fragmentation poses challenges, the editorial fails to recognize the significant efforts made in the development of the Fascicolo Sanitario Elettronico (FSE), being currently competitive at European level too.² Supported by the National Infrastructure for Interoperability (INI), this system has been designed to facilitate secure data sharing among regions.² The use of big data in health has further advanced through initiatives such as the National Recovery and Resilience Plan (PNRR), which allocated €15.63 billion to healthcare including digitalization.¹ These developments highlight Italy's commitment to leveraging EHRs for integrated and equitable healthcare delivery. Particularly, following the pandemic and subsequent investments from the PNRR, we have witnessed a significant acceleration in the digitalization process across multiple regions, with healthcare emerging as one of the most impacted sectors. A prime example is Campania's SINFonia platform (<https://sinfonia.soresa.it/sinfonia/>), which showcases, since COVID19 pandemic, how a regional system can enhance healthcare outcomes through large-scale, integrated data management and predictive modeling successfully connecting hospitals, general practitioners, and outpatient facilities, streamlining patient care.³

Beyond Campania, Lombardy has also developed an advanced health information exchange system, optimizing resource allocation.⁴ Similarly, Emilia-Romagna has made notable progress in digital health by implementing data-sharing mechanisms that enable real-time decision-making (<https://digitale.regione.emilia-romagna.it>). The Veneto Region has demonstrated effective inter-organizational data sharing for emergency response and public health planning through Azienda Zero Veneto

(<https://www.azero.veneto.it/en/home>), particularly during the COVID-19 crisis. Indeed, the current critical step toward a nationwide integration involves adopting standardized interoperability frameworks to rule them all. Health Level Seven (HL7) standards, particularly the Fast Healthcare Interoperability Resources (FHIR), serve as effective bridges for unifying disparate data systems. HL7 provides a set of international standards for the exchange, integration, sharing, and retrieval of electronic health information, facilitating seamless communication between diverse healthcare systems. Additionally, the Clinical Document Architecture (CDA) plays a crucial role in standardizing health document exchange.⁵ These approaches will be crucial to ensuring the success of a truly interoperable and effective national health data infrastructure, in alignment with AGENAS procedures (<https://www.agenas.gov.it/>). In this perspective, while *autonomia differenziata* aims to grant regions greater legislative autonomy, it risks exacerbating disparities in healthcare access and data integration rather than fostering a cohesive national system. Certainly, Italy should now focus on harmonizing existing systems under centralized policies with appropriate policy coordination and technological adaptation.⁵ In fact while challenges persist, solutions are already being implemented at regional level as the success of SINFonia, Azienda zero and the other regional initiatives demonstrates.^{3,4} The key challenge remains ensuring a robust governance structures that enforce interoperability and equitable access. Italy's digital health progress should not be overlooked. Leveraging regional successes, standardizing interoperability, and adopting best practices will position Italy as a leader in health data integration, enhancing care and equity nationwide.

Contributors

Alessandro Perrella has been involved in conceptualization, writing, editing, revision, scientific references evaluation. Massimo Bisogno has been involved in editing, revision, scientific data.

Declaration of interests

No conflict of interest to declare, we disclose all relationships/activities/interests listed in the ICMJE disclosure form that are related to the content of manuscript.



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