

Technologies for the digital transformation of the Unified Health System

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THIS ISSUE OF THE JOURNAL 'SAÚDE EM DEBATE' ON 'DIGITAL TECHNOLOGIES in public health' is another result of the commitment of the FIOCRUZ Antônio Ivo de Carvalho Center for Strategic Studies (CEE-FIOCRUZ), in partnership with the Brazilian Center for Health Studies (CEBES), to disseminate scientific knowledge on the dilemmas and institutional challenges of the health sector in contemporary times. This Special Thematic Issue (STI) offers a comprehensive and diverse panel of articles, essays, reviews, and experience reports on the digital transformation of the Unified Health System (SUS).

This research is especially relevant given the high level of investment in health technologies, which does not always translate into improved services, especially in a complex scenario such as the SUS. The effective benefits of a technology depend directly on its adoption by users. The fourth industrial revolution, or Industry 4.0, proposes the fusion of technologies – physical, digital, or biological – in favor of innovation to improve society's living conditions, thereby impacting the development of products and services, including healthcare, which are now connected and personalized^{1,2}. Among the most promising technologies in the field of health are remote patient monitoring, electronic medical records, data security and protection using Big Data, Artificial Intelligence (AI), Blockchain, and applications aimed at training professionals, such as Immersive Virtual Reality and serious games.

Published in 2018, the Brazilian Strategy for Digital Transformation (E-Digital) offers a set of strategic actions aimed at the challenges to be faced by the SUS in the short, medium and long term, aligned with the Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda³ and with the Global Digital Health Strategy of the World Health Organization (WHO), which, in addition to emphasizing the pursuit of universal health coverage and access for the well-being of all, also presents a specific goal related to the introduction and democratization of access to Information and Communication Technologies (ICT).

At the same time, the approval of the National Health Information and Informatics Policy (PNIIS), through Ordinance No. 1,768 of July 30, 2021, materializes Brazil's commitment to digital health, a milestone that represents the importance of ICT as a strategy towards universal access. These initiatives aim to promote the necessary changes that will enable the country to achieve independence in the new global landscape, thereby strengthening national production chains and enhancing the quality of life.

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The SUS can reap significant benefits from the sustainable adoption of new digital technologies, improving adherence, resolution, and responsiveness of services. This challenging environment offers opportunities for the development of the health sector in Brazil, whose vastness and regional differences demand solutions that are both comprehensive and customizable⁴.

The studies featured in the STI address various digital health initiatives, illustrating the incorporation and development of technological solutions in Primary Health Care (PHC) and health surveillance in different regions of Brazil. The articles on the e-SUS Território application and on the distribution and retention of physicians highlight the states in the South and Southeast regions with the highest retention of health professionals and significant growth in the use of technologies. In the Northeast, studies on the usability of systems and data integration stand out, as in the case of the article on the Brazilian Hospital Services Company (EBSERH network) in Recife, Pernambuco, the article on Geotechnologies

in BCG vaccination coverage in Paraíba, and the article on an application for managing syphilis during pregnancy in Piauí. In the Center-West region, the state of Mato Grosso was the subject of a study on co-infection by tuberculosis and HIV.

The technologies studied in the articles in this STI range from interoperable clinical data platforms, mobile applications aimed at caring for specific diseases, to AI and serious games aimed at health education. The application of these tools highlights the potential of ICT to enhance healthcare, despite the challenges of comprehensive care and equitable access persisting.

Collaborators

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