

# Digital Health in the Brazilian National Health System (SUS)

Saúde Digital no Sistema Único de Saúde (SUS)

Salud Digital en el Sistema Brasileño de Salud (SUS)

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The World Health Organization's Global Strategy on Digital Health<sup>1</sup> underlines the organization's support for the efforts of health systems around the world to achieve universal health coverage. In the context of this global strategy, digital health is defined as "*the field of knowledge and practice associated with the development and use of digital technologies to improve health*"<sup>1</sup> (p. 11). The notion of digital health is therefore broader than that of eHealth, expanding beyond medical informatics and telehealth to encompass new concepts and recent sociotechnical advances, such as social media apps, Internet of Things (IoT) and artificial intelligence (AI). The concept and scope of what we currently denominate digital health has been transformed and will continue to be redefined at a rapid pace as emerging disruptive technologies challenge conventional understanding, putting forward new ways of promoting health, while at the same time posing potential risks and dangers that we never imagined existed.

Published by the Pan American Health Organization, the Plan of Action for Strengthening Information Systems for Health 2019-2023<sup>2</sup> is structured around four strategic lines of action:

- Information system management and governance.
- Data management and information technologies.
- Information and knowledge management.
- Innovation, integration, and convergence.

In Brazil, the digital transformation underway in the SUS is advancing by leaps and bounds. In primary health care, the digitalization of patient medical history is expanding, improving service effectiveness and strengthening affiliation and continuity of care. At the same time, the concept of telehealth has been updated to mean health care mediated by “metapresence”, instead of distance clinical medicine guided by tediagnosis and teleconsulting, as outlined by one of the articles published in this edition of the journal *Interface – Comunicação, Health, Educação*<sup>3</sup>. In specialist care, the integration of telehealth into electronic patient health records, databases and appointment scheduling systems is in the planning phase, supporting the promotion of comprehensive health care in the SUS. Across all levels of care in the SUS, we are facing the challenge of transforming the sea of data into information and indicators that can inform decision-making and the participatory management of the health system. Health databases are gradually becoming interoperable with the creation of the National Health Data Network (RNDS). The integration of health data and data from other sectors is essential to obtain a broader view of health that includes local and regional-level social determinants and bioclimatic factors.

The Covid-19 pandemic greatly intensified the *online* movement of sensitive data, including health information, leaving the digital health sector vulnerable to cyber-attacks and placing the health and life of patients at risk. Health data are interoperable, can be highly harmful and discriminatory, and are extremely valuable on the “*dark web*” and public relations market. With digital transformation, the movement of health data – through apps, cookies, *taggings*, platforms like *Google Analytics and other* media that make up the intricate “data architecture” of the labyrinthine digital health ecosystem – is increasingly constant and synchronous.

AI in health systems is ever-expanding, especially in health surveillance, tediagnosis and telecare, with the use of evidence that is translated into clinical, pharmacological and epidemiological algorithms. The automation of decision-making and processes in health systems may be a reflection of the tendency to exclude and discriminate. Algorithms built on existing data reflect social inequalities and can perpetuate systemic injustice unless they incorporate compensatory measures. Thus, alternatively, AI can serve as a tool that facilitates access to quality and equitable care among vulnerable populations.



One of the features of big data systems and AI is the superhuman power they have to classify personal data, which can have dangerous consequences, as they are essentially profiling and stereotyping tools. Relatively invisible to the public, digital profiling faces few barriers to expansion and is difficult to erase. It is therefore necessary to develop sensitive data storage and management systems that are capable of protecting data that is justifiably not necessary for future records, as provided by the General Personal Data Protection Law (LGPD, Law 13709, 14 August 2018)<sup>4</sup>. The EU's General Data Protection Regulation, for example, provides for the "right to be forgotten".

Although several advances have been made, the LGPD is still insufficient to guarantee the effective protection of basic human rights, especially personality rights (the right to life, privacy, intimacy, physical and moral integrity, etc.) and the right to health. The law created a new legal framework for the treatment of personal data in Brazil, which should be more rigorous when it comes to genetic and biometric data, as well as information relating to an individual's health or sex life. The LGPD has a number of gaps that need to be addressed, including the following: research involving human beings; criteria obtaining financial benefit from health (today health data is being traded); the proper application of the legal basis for waiving informed consent for treatment (there is a trivialization of the legal basis for "medical guardianship" when waiving informed consent); and the work of unqualified data processing agents who treat data for economic benefit.

The regulatory functions of the government cover aspects ranging from safety of digital health equipment and access to technological innovations incorporated into the health system to the environment where AI algorithms are developed and tested. In short, digital health and its various ramifications, including AI applied to health, provide huge potential benefits to society while at the same time posing enormous risks for individual and collective health and a wide range of basic human rights.

To coordinate this new and complex dimension of health policy, the Strategy on Digital Health for Brazil 2020-2028 (ESD)<sup>5</sup> is based on the National Health Information and Informatics Policy (PIIS)<sup>6</sup> and includes the Plan of Action, Monitoring and Evaluation of the Strategy on Digital Health for Brazil (PAM&A 2019-2023)<sup>7</sup>. The following core components of this strategic planning framework are particularly relevant: Core component 2 – construct an organizational, legal, regulatory and governance framework to promote effective collaboration in digital health; and Core component 3 - implement a conceptual, normative, educational and technological environment that facilitates effective collaboration.

How can we move forward with the digital transformation of health care along a path of digital inclusion, solidarity, connectivity and quality health data as a public good, while at the same time combatting disinformation and strengthening democracy? How can we consolidate a safe and humanized digital health ecosystem guided by the underlying principles of the Unified Health System, a service that seeks to promote comprehensive care and universal health coverage? These are the main challenges facing the Ministry of Health and recently-created Department of Information and Digital Health, opening up new opportunities for the people and groups participating in the construction of the SUS, the greatest public policy in the history of this nation.



### Authors' contribution

Both authors actively participated in all stages of preparing the manuscript.

### Conflict of interest

Both authors have no conflict of interest to declare.

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