

COVID-19 and the role of information systems and technologies at the first level of care

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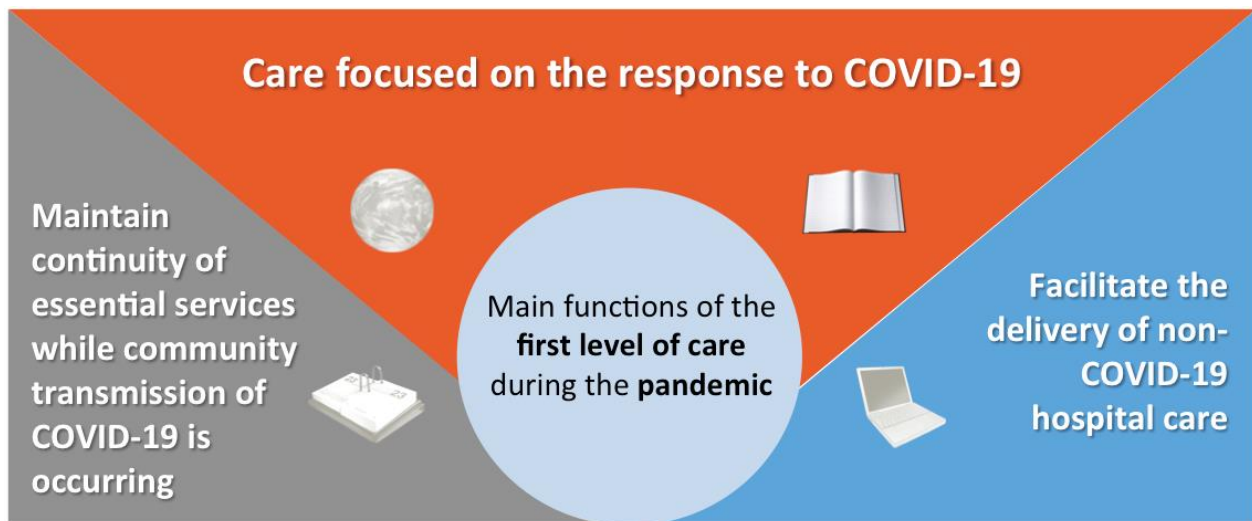
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COVID-19 and the role of information systems and technologies at the first level of care

IMPORTANT NOTE: *Keep abreast of the latest information on coronavirus disease (COVID-19) through the PAHO and WHO websites and through your national and local public health authorities.*

What is the primary role of information systems in supporting the functions of the first level of care?

To enable the first level of care to effectively carry out its three main functions during the pandemic, it is essential to have solid health information systems:



Care centered on the response to COVID-19: Identify, report, contain, manage, and refer. Information systems for health—through timely access to correctly disaggregated data, proper integration of national and local systems, digital health, and the application of widely used information and communication technologies (ICTs)—facilitate the effective identification, reporting, and analysis of cases and contacts; early search for and detection of cases; and identification and monitoring of at-risk populations, cases, and contacts. Containment is strengthened through platforms for follow-up and monitoring of cases, contacts, quarantine, and social isolation. These systems, in turn, enable mass dissemination of information on preventive measures to all of society.

Platforms for telemedicine visits, remote monitoring of patients, and remote communication enable health workers at the first level of care to manage medical care and facilitate home monitoring of people with COVID-19. These same mechanisms, together with electronic health records and local and national information systems, facilitate hospital referrals of patients with severe signs and symptoms or risk factors.

Maintain the continuity of essential services while community transmission of COVID-19 is occurring: Telemedicine visits, electronic records, and electronic prescriptions make it possible to deliver health services remotely to persons with disabilities, patients with chronic diseases, older adults, and newborns and children under 1 year of age. They also facilitate antenatal and perinatal health care, sexual and reproductive health care, mental health care, and surveillance and prevention of other health risks in the areas of mental health, food safety, infections, and vector-borne diseases.

Facilitate the delivery of non-COVID hospital care: Such care includes remote monitoring, case management, and support for community-based rehabilitation, using telemedicine services and widely used technologies to maintain treatment strategies and communicate with patients.

What is the primary role of information technologies in supporting the functions of the first level of care?

In the face of a pandemic, health services—particularly at the first level of care—run the risk of collapsing from an overload of patients seeking care that could be provided virtually by using information technologies.

By facilitating access to health services, ICTs foster greater equity in access to timely medical care, which facilitates the assessment, diagnosis, and management of suspected and positive cases in a safe and effective manner, minimizing the risk of transmission.

Correctly automated health records can be made accessible safely and privately, improving the quality of care.

In terms of the management of health services, ICTs can help improve the cost-effectiveness of treatments and enable the regular, uninterrupted operation of key clinical services, both in the preparatory stages and in the course of a pandemic.

What information and communication technologies can help strengthen the first level of care?

ICTs, especially mobile devices, have become the main way that individuals, governments, and health institutions work, interact, share information, exchange and generate knowledge, and communicate.¹ These technologies include: the Web; chatbots; dashboards; mobile applications (apps); social media; call centers; virtual campuses; Web-based messaging, video, and voice services; text messaging (SMS); wikis; and forums. The most important technologies for strengthening the first level of care during the pandemic are:

ICTs are a key tool for improving access to high-quality primary health care for all citizens, regardless of how far they are from the main urban centers.

- Computerized disease registries
- Apps for provider data recording
- Apps for interaction with patients
- Electronic health records ([see PAHO factsheet](#)) ([see IDB publication](#))
- Patient portals
- Electronic prescription systems
- Telehealth tools ([see PAHO factsheet](#))
- Second medical opinion tools

What considerations should be borne in mind?

Although more and more individuals and health workers are in contact and familiar with information and communications technologies, there are some considerations for ensuring that these technologies are used correctly, including:

- Change management among health professionals to facilitate rapid uptake of various technology-intensive tools and working methods

¹ Pan American Health Organization/World Health Organization. COVID-19 Factsheet: Why are information technologies the main means of social interaction during the pandemic? <https://iris.paho.org/handle/10665.2/52021>

- Patient education to reduce cultural and knowledge gaps that prevent people from using technologies to their fullest potential ([see Inter-American Development Bank publication](#))
- Sufficient stable connectivity and technological infrastructure to allow the transfer of high-resolution images and the use of real-time education and communication platforms
- Applications that provide technological support to meet users' needs (e.g., care-related and administrative aspects)
- Reviewing processes before automating them or replacing them with technological platforms
- Organizing a pandemic response that takes into account access barriers to connectivity or infrastructure problems in certain segments of the population

Where can I find more information on this subject?

- [PAHO Technical Documents – Coronavirus Disease \(COVID-19\)](#)
- [Electronic Health Record Systems: Definitions, Evidence, and Practical Recommendations for Latin America and the Caribbean](#)
- [eHealth Conversations. Using Information Management, Dialogue, and Knowledge Exchange to Move Toward Universal Access to Health](#)
- [Interoperability for Beginners: The Basis of Digital Health](#)
- [Irresistible: How to manage change in digital health](#)

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