

# **The Covid-19 Pandemic And Its Impact On The Quality Of Public Health Services In Brazil**

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## **Abstract:**

*The aim of this research was to analyze the impacts of the Covid-19 pandemic on the quality of public health services in Brazil. To this end, a bibliographic research was carried out by surveying academic articles on platforms such as SciELO, Web of Science, PubMed and Google Scholar. During the search, specific keywords were used in association with AND and OR search descriptors. The articles were analyzed qualitatively through floating readings. The research revealed that the Covid-19 pandemic, originated by SARS-CoV-2, has exposed the fragility of health systems globally, including Brazil. The virus, which spread rapidly from Wuhan in late 2019, has challenged countries' ability to manage an unprecedented health crisis. In Brazil, the pandemic has overwhelmed hospitals and health facilities, revealing shortages of beds, equipment and professionals, and exacerbating inequalities in access to care. The crisis has also highlighted social and regional disparities, disproportionately affecting vulnerable populations and highlighting the need for a more equitable distribution of health resources. The impact on the mental health of professionals and the emergency adaptations in hospitals highlight the importance of strengthening health systems and improving preparedness for future crises. The lessons learned should guide public policies for a more efficient and equitable response to public health challenges.*

**Keywords:** *Pandemic; Covid-19; Public health.*

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## **I. Introduction**

The Covid-19 pandemic, which emerged globally at the end of 2019 and intensified in 2020, has brought to light a series of challenges for health systems around the world. In Brazil, the health crisis has revealed vulnerabilities in the provision of public health services, exposing pre-existing gaps and introducing new complexities. The pandemic has not only overburdened the health system, but has also highlighted the need to improve the quality and efficiency of the services offered to the population (Belasco; Fonseca, 2020).

During the pandemic, Brazil has experienced unprecedented pressure on its hospitals and healthcare facilities. The rapid spread of the virus caused an increase in demand for medical care, from testing to intensive treatment. This demand, combined with limited resources and an already overburdened infrastructure, has resulted in a series of problems related to the quality of services. The shortage of ICU beds, the lack of personal protective equipment and the difficulty in maintaining adequate stocks of essential medicines were just some of the challenges faced. In addition, uncertainties and constant changes in health guidelines have contributed to confusion and a lack of coordination between the different levels of government and between health institutions (Costa et al., 2020).

The response to the pandemic has required a rapid and effective mobilization of resources, which has brought to light both the resilience and limitations of public health systems. In many cases, the quality of services has been impacted by a combination of work overload, stress on health professionals and logistical difficulties. The increase in the number of critical cases and the need to care for a growing population has resulted in a scenario where the quality of the services provided has been compromised, with delays in care and a difficulty in maintaining adequate standards of care (Lima et al., 2020).

In addition, the pandemic has had an uneven impact on different regions of Brazil, exacerbating existing disparities between urban and rural areas and between different states. Regions with higher poverty rates and less

health infrastructure were particularly affected, revealing a lack of equity in the distribution of resources and in the capacity to respond to the outbreak. This highlighted the need for a more equitable and integrated approach to the management of health services, which takes into account regional variations and the specific needs of different populations (Moreira, 2021).

In this scenario, the quality of public health service provision has become a focal point for discussion and analysis. The pandemic has exposed the structural and operational deficiencies of the health system, as well as revealing the limitations in the capacity to respond to large-scale emergencies. The pressure on health institutions has led to a series of challenges that have compromised the effectiveness of services, such as the lack of preparation for a prolonged crisis and the difficulty in maintaining standards of care amid a shortage of resources and the need to adapt quickly (Almeida; Luchmann; Martelli, 2020).

In view of the above, the aim of this research was to analyze the impacts of the Covid-19 pandemic on the quality of public health service provision in Brazil. The justification for carrying out this research lies in the importance of understanding how the Covid-19 pandemic has affected quality in the provision of public health services in Brazil, a topic of relevance for the formulation of future policies and practices.

## **II. Methodology**

As for the method, we opted for a methodological approach of bibliographical research, which proved to be appropriate for the investigation due to the need to review and synthesize existing knowledge on the subject of this study. The choice of bibliographic research was based on its ability to provide an understanding of the current state of knowledge on the impact of the pandemic on the health system. By gathering and analyzing relevant literature, it was possible to identify patterns, gaps and trends, as well as offering an insight into how the pandemic has affected the quality of public health services.

The research was conducted by surveying academic articles and sources on digital platforms. The main sources used included SciELO, Web of Science, PubMed and Google Scholar. During the search, specific keywords were used, such as "pandemic", "Covid-19", "public health service", "SUS", among others. In order to refine the search, AND and OR search descriptors were used.

The selected articles were analyzed qualitatively, using floating readings to identify the main themes related to the impact of the pandemic on the quality of health services. The literature review covered various aspects related to the quality of health services during the pandemic, including operational challenges, regional disparities, the impact on infrastructure and resource management, as well as the institutional and political responses adopted.

## **III. Results And Data Analysis**

### **Health services: historical perspectives in pre-pandemic Brazil**

The historical context of health services in Brazil dates back to before the arrival of the European colonizers. The indigenous populations who inhabited what is now Brazil already had their own healing systems and medicinal practices, based on a profound knowledge of nature and traditions passed down orally over generations. This knowledge included the use of medicinal herbs, healing rituals and the development of rudimentary surgical techniques. The shamans and healers played a fundamental role in the community, acting as intermediaries between the spiritual and earthly worlds, treating not only physical ailments, but also the spiritual and emotional aspects of individuals (Ferreira, 2023).

Indigenous healing systems were adapted to the environment and needs of each community, reflecting a connection with the land and a holistic understanding of health and illness. In addition, the indigenous people developed farming techniques that contributed to maintaining a healthy and balanced diet, which also had a positive influence on the health of the communities. With the arrival of European colonizers from the 16th century onwards, these indigenous health systems were gradually supplanted by the Western medicine brought by the colonizers. However, many elements of indigenous medicinal practices were incorporated into traditional Brazilian medicine, enriching the country's therapeutic repertoire (Apolinário, 2020).

With Portuguese colonization in the 16th century, the first health institutions appeared in Brazil, such as the *Santas Casas de Misericórdia* (Holy Houses of Mercy), initially focused on caring for the poor and sick. The *Santas Casas de Misericórdia* represent a significant part of the history of health services in Brazil. These institutions emerged as institutions of assistance and charity during Portuguese colonization in the 16th century. Initially founded with the purpose of offering care to the poor, sick and destitute, these institutions played a crucial role in providing health services in colonial cities and towns (Miranda, 2017).

The *Santas Casas* were run by religious brotherhoods, often linked to the Catholic Church, and had the support of local benefactors, including members of the aristocracy and the ruling class. These institutions functioned as social welfare centers, offering not only medical care, but also shelter, food and spiritual support to those in need. Over time, the *Santas Casas* expanded their activities to include the education of health professionals, such as doctors, nurses and midwives. They were also responsible for introducing modern medical

practices and developing hospitals and outpatient clinics in various regions of the country (Oliveira; Neto; Donadone, 2022).

For centuries, the *Santas Casas* have played a fundamental role in the Brazilian health system, especially in areas where government health services were scarce or non-existent. The *Santas Casas* were responsible for serving a large part of the needy population, as well as contributing to the advancement of medicine and nursing in Brazil. However, these institutions were often linked to the Catholic Church and operated on a charitable basis, without a systematized organization of public health services (Oliveira; Neto; Donadone, 2022).

During Brazil's colonial and imperial periods, health services were characterized by profound inequality in access, with most of the resources and care concentrated in the most privileged classes of society. The medical care available was limited and often inaccessible to the majority of the population, especially the poor, slaves and indigenous people. The *Santas Casas de Misericórdia* played a fundamental role in the provision of health services during this period, but their capacity to provide care was limited and directed mainly at the most needy (Ferreira, 2023).

In Brazil's colonial and imperial periods, the upper classes had access to private doctors and better treatment conditions, while the lower classes often resorted to healers, midwives and home remedies due to a lack of resources and health care options. In addition, the medicine practiced during the colonial and imperial periods often reflected the interests of the ruling classes and the beliefs of the time. Medical knowledge was often based on outdated theories, superstition and unscientific practices, which could result in ineffective and even harmful treatments (Primavera; Lacerda; Vasconcelos, 2019).

Inequality in access to health care was also exacerbated by the social structure of the time, where slavery prevailed and slaves had little or no right to adequate medical care. Living conditions in cities and sugar mills were often unhealthy, contributing to the spread of diseases and epidemics among the most vulnerable population. Thus, during the colonial and imperial periods, health services in Brazil were characterized by a clear division between the privileged and the underprivileged, reflecting the social and economic inequalities of the time. Access to medical care was limited, unequal and often inadequate to meet the needs of the general population (Apolinário, 2020).

In the late 19th and early 20th centuries, Brazil underwent significant social, economic and urban transformations, driven by the process of industrialization and urbanization. These changes brought with them growing challenges and demands in the field of public health, leading to the creation of initiatives aimed at controlling diseases and promoting the well-being of the population. One of the main concerns during this period was the control of endemic diseases that plagued Brazilian cities, such as yellow fever and smallpox, which posed serious threats to public health. In response to these challenges, the first health surveillance services were set up to monitor and control the spread of these diseases. These services focused their efforts on identifying and eliminating outbreaks of infection, improving sanitary conditions and large-scale vaccination of the population (Ferreira, 2023).

In addition, during this period, public health campaigns were carried out to educate the population about personal and collective hygiene practices, basic sanitation and disease prevention. These campaigns aimed not only to combat specific diseases, but also to promote healthy habits and improve living conditions in the growing cities. It is important to note that these initiatives were influenced by international public health models, especially the advances seen in Europe and the United States. In Brazil, these health policies were implemented at both federal and local level, with the active participation of doctors, scientists, politicians and community leaders (Miranda, 2017).

Despite the efforts made, public health services in this period still faced many challenges, such as a lack of adequate resources, precarious infrastructure and socioeconomic inequalities that limited the population's access to health services. Even so, the end of the 19th century and the beginning of the 20th century represented an important milestone in the history of public health in Brazil, marked by the emergence of policies and institutions aimed at health promotion and disease control, which left a lasting legacy on the country's health system (Oliveira; Neto; Donadone, 2022).

In the 1920s, Brazil witnessed significant advances in the field of public health with the creation of the National Department of Public Health (DNSP), the forerunner of what would become the Ministry of Health. This milestone represented a fundamental change in the role of the state in relation to the population's health, taking a more active stance in promoting collective well-being. Under the leadership of Carlos Chagas, a renowned Brazilian scientist, the National Department of Public Health launched initiatives to combat endemic diseases, improve sanitary conditions and promote public health throughout the country (Stopa et al., 2017).

One of the DNSP's main objectives was to combat endemic diseases that plagued the country at the time, such as malaria, yellow fever, Chagas disease and bubonic plague. To this end, the department launched vector eradication campaigns, large-scale vaccination programs and basic sanitation initiatives aimed at reducing the incidence of these diseases and improving the living conditions of affected communities. In addition, the DNSP was responsible for establishing guidelines for the control of epidemics and pandemics, as well as promoting the

training of health professionals and scientific research in the field of public health. Through its actions, the department contributed significantly to the development of health policies aimed at protecting and promoting the health of the Brazilian population (Neto; Chioro, 2021).

However, it was during the government of Getúlio Vargas, in the 1930s, that profound changes took place in the Brazilian health system. During this period, comprehensive policies were implemented to expand access to medical care, especially for urban workers. One of the main measures was the creation of the National Institute of Medical Assistance for Social Security (INAMPS) in 1933, a body responsible for providing medical assistance to workers linked to social security (Silva, 2019).

INAMPS represented an important milestone in the history of Brazilian public health, establishing a health system aimed at the urban working class. Through this institute, workers had access to a wide range of medical services, including consultations, exams, hospitalizations and specialized treatments. This initiative contributed significantly to improving the health conditions and quality of life of the urban population, reducing disparities in access to healthcare (Pedroso; Dias, 2016).

The Vargas government also promoted the creation of specific health services for certain professional categories, such as the retirement and pension institutes (IAPs), which offered medical assistance to civil servants and workers in specific sectors of the economy. These measures reflected the state's commitment to guaranteeing universal access to health care and consolidated the idea that health is a fundamental right for all Brazilian citizens (Santos; Gabriel; Mello, 2020).

The 1960s marked a period of significant transformation in the Brazilian health system with the creation of the National Health System (SNS) and the enactment of the Organic Health Law. These milestones represented a fundamental change in the way public health was organized and administered in the country, laying the foundations for what would become the current Unified Health System (SUS). The National Health System (SNS) was conceived as an integrated and universal health system, with the aim of guaranteeing equal access to quality health services for the entire Brazilian population. The SNS established fundamental principles, such as integrality, universality and equity, which served as guidelines for the organization and operation of the health system (Santos; Gabriel; Mello, 2020).

The promulgation of the Organic Health Law in 1966 further consolidated these principles and laid the legal foundations for the creation of the SUS. The law defined the powers of the federal, state and municipal spheres in health management, established guidelines for financing the health system and outlined the responsibilities of the different bodies and entities involved in providing health services. These advances were fundamental to the consolidation of a fairer, more inclusive and efficient health system in Brazil (Santos; Carvalho, 2018).

However, it was only in 1988, with the promulgation of the Federal Constitution, that the SUS was officially established as Brazil's public health system, with the aim of guaranteeing universal, comprehensive and equal access to health services. The inclusion of the SUS in the Constitution reflected the recognition of health as a fundamental right of all citizens and the responsibility of the state to guarantee universal, comprehensive and equal access to health services. This decision meant a radical change in the approach to public health in the country, replacing the previous fragmented and exclusionary model with an integrated and inclusive system (Santos; Carvalho, 2018).

The creation of the SUS brought with it a series of fundamental principles that guide its actions, including universality, integrality, equity and social participation. Universality guarantees that all citizens, regardless of their socio-economic status, have the right to access health services. Comprehensiveness seeks to provide comprehensive and integrated care for people's health needs, considering not only the treatment of illnesses, but also health promotion and disease prevention. Equity ensures that health policies are distributed fairly and that resources are allocated according to the needs of each individual and region. And social participation involves the active participation of the community in the formulation, implementation and evaluation of health policies (Silva et al., 2019).

After 1988, there was a significant increase in investment in public health, with the expansion of coverage of health services and programs throughout the country. This resulted in important advances, such as increased access to primary care, improved health indicators and a reduction in infant and maternal mortality. In addition, the SUS has unleashed a series of health policies aimed at promoting health, preventing disease and improving the population's quality of life (Silva et al., 2019).

The establishment of the SUS in the Federal Constitution represented a significant step forward in democratizing access to healthcare in Brazil, helping to reduce inequalities and improve the population's quality of life. Since then, the SUS has been the main instrument of the Brazilian state in promoting health and meeting the health needs of the population, facing constant challenges, but also achieving important achievements in improving the country's health system (Campos, 2018).

### **Covid-19 pandemic**

The emergence of the new coronavirus, also known as SARS-CoV-2, marked a crucial point in the recent history of global public health. The virus was first identified in the city of Wuhan, in Hubei province, China, at the end of 2019. Its origin is associated with a seafood and live animal market in the city, where zoonotic transmission of the virus to humans is believed to have occurred, possibly from bats (Lima et al., 2020).

According to Duarte (2020, p. 3585):

Studies suggest that SARS-CoV-2 is a chimeric virus between a bat coronavirus and a coronavirus of unknown origin. One of the possibilities points to the bat being a reservoir of SARS-CoV-2, transmitting it to humans via pangolin. Pangolin-CoV is 91.02% and 90.55% identical to SARS-CoV-2 and *BatCoV RaTG13*. Therefore, it is unlikely that the origin of SARS-CoV-2 is artificial, by laboratory manipulation.

SARS-CoV-2 belongs to the coronavirus family, which includes other viruses known to cause respiratory diseases in humans, such as SARS-CoV, responsible for Severe Acute Respiratory Syndrome (SARS), and MERS-CoV, which causes Middle East Respiratory Syndrome (MERS). The new coronavirus has a much greater capacity to spread, leading to a global pandemic (Lana et al., 2020).

The coronavirus is a type of enveloped virus, which means that it has an outer layer composed mainly of lipids (fats) and proteins. This layer, known as the viral envelope, plays a crucial role in the virus's interaction with host cells and its ability to spread throughout the body. Underneath the envelope is a protein structure known as a *spike*, which gives the virus its characteristic crown-like appearance when viewed under an electron microscope. These spikes are responsible for binding the virus to the host cells, facilitating its entry and infection (Lima, 2020).

Inside the envelope is the virus's genetic material, which consists of a molecule of RNA (ribonucleic acid). RNA contains all the genetic information necessary for the virus to replicate and for the production of viral proteins (Lima, 2020).

In addition to the envelope and genetic material, the coronavirus contains structural proteins that help maintain its shape and stability, as well as non-structural proteins that perform various functions during the viral life cycle, such as replication and modulation of the host's immune response. The relatively simple structure of the novel but highly specialized coronavirus allows it to infect human cells and replicate within them, triggering an immune response that can lead to varying symptoms, from mild to severe, depending on the individual and the specific conditions of the infection (Belasco; Fonseca, 2020).

The first reported cases of COVID-19, the disease caused by SARS-CoV-2, occurred in December 2019 and quickly spread to China and other countries around the world. In January 2020, the World Health Organization (WHO) declared the COVID-19 outbreak a Public Health Emergency of International Concern and later, in March 2020, classified it as a pandemic (Carvalho et al., 2020).

The spread of the novel coronavirus has been facilitated by its high transmissibility rate, with the virus being transmitted mainly by respiratory droplets expelled by infected people when coughing, sneezing or talking. In addition, the capacity for asymptomatic transmission, i.e. by people who do not show symptoms, has contributed to the rapid spread of the virus in communities around the world (Bittencourt, 2020).

COVID-19 has a wide range of symptoms, ranging from mild to severe, and can affect different systems of the body, with an emphasis on respiratory symptoms such as coughing, fever and difficulty breathing. In severe cases, the disease can lead to pneumonia, respiratory failure, acute respiratory distress syndrome (ARDS) and even death, especially in the elderly and people with underlying medical conditions (Iser et al., 2020).

The emergence of the novel coronavirus has triggered an unprecedented global response, with governments, health organizations, scientists and communities working together to contain the spread of the virus, develop treatments and vaccines, and mitigate the social and economic impacts of the pandemic. Measures such as social distancing, wearing face masks, frequent hand hygiene and travel restrictions have been adopted around the world to reduce the transmission of the virus and protect public health (Barbosa et al., 2021).

Since the emergence of the new coronavirus, millions of people have been infected and millions have died worldwide due to COVID-19. The pandemic has highlighted the vulnerability of global health systems and the need to strengthen preparedness and response to public health emergencies (Lana et al., 2020).

### **Covid-19 pandemic and its impact on health services in Brazil**

The Covid-19 pandemic, triggered by the emergence of the SARS-CoV-2 virus, has had a number of significant impacts on Brazil's health services. From the first nationwide reports, the Covid-19 crisis has challenged the capacity of the Brazilian health system to deal with an unprecedented public health emergency. One of the most obvious consequences was the overload of hospitals and health units, which faced a shortage of beds, personal protective equipment and health professionals, compromising care not only for Covid-19 patients, but also for those who needed other essential medical services (Kubo et al., 2020).

According to Santos et al. (2022, p. 327):

[...] although Brazil has an average proportion of ICU beds (2.2 per 10,000 inhabitants) considered satisfactory for the standards established by the WHO and the Ministry of Health (1 to 3 beds per 10,000 inhabitants), their supply has proved insufficient in this pandemic context; and their regional distribution, very uneven within the national territory.

Thus, although Brazil has a satisfactory number of ICU beds in global terms, both according to international and national criteria, when the data is analyzed segmentally between the public and private systems, it is possible to observe a disparity. The SUS has an average of 1.4 ICU beds for every 10,000 inhabitants, while the supplementary private network has an average of 4.9 beds for the same number of inhabitants (Santos et al., 2022).

It can be seen, therefore, that although the challenges are not new, they have become even more prominent in the pandemic scenario, bringing to the fore an insight into how resources are distributed regionally and how the public and private sectors interact in the field of health. Despite the existence of a universal, public healthcare system, the Brazilian healthcare system has faced a series of obstacles, such as gaps in service provision, the division between the public and private systems, fragmentation resulting from decentralization to municipalities, the lack of adequate regulation for access to specialist services, the challenges of Primary Health Care (PHC) in effectively coordinating care and a shortage of funding.

Faced with the crisis, many hospitals had to adapt quickly, creating specific wards for Covid-19 patients, expanding intensive care capacity and adopting strict safety protocols. In addition, elective procedures were cancelled or postponed to prioritize the treatment of the most severe cases of the disease, affecting the health and quality of life of many patients (Lopes; Costa, 2020).

The management of human and material resources also became a challenge, with a shortage of qualified health professionals and a lack of essential supplies such as respirators, diagnostic tests and PPE. This situation has put the safety of health professionals and the quality of care provided to patients at risk. In addition, the constant exposure to suffering and death, combined with the fear of contamination, has had a significant impact on the mental health of healthcare workers, increasing levels of stress, anxiety and exhaustion (Machado et al., 2023).

The pandemic has also highlighted the health inequalities that exist in Brazil, disproportionately affecting the most vulnerable populations, such as low-income, black, indigenous, quilombola and residents of rural areas and favelas. These communities have faced greater difficulties in accessing health services and greater exposure to the risks of contagion due to unfavorable socioeconomic conditions (Santos; Oliveira; Alburquerque, 2022). As Almeida, Luchmann and Martelli (2020, p. 22) reiterate, "these inequalities translate in various ways, dividing territories and social groups. One study showed that the chances of dying from Covid-19 in Brazil are higher among blacks than among whites and people with less schooling".

In this sense, social inequality has amplified the adverse impacts of the pandemic crisis. This context was further enhanced by the concomitant period of significant increases in unemployment, declining incomes and the weakening of social protection networks. The convergence of political and economic crises over the last few years had created a breeding ground for the implementation of measures that had been creeping into the national reality for some time: the relaxation of labor laws and the dismantling of public policies aimed at social security. This scenario, therefore, not only exacerbated pre-existing social disparities, but also imposed additional challenges on the capacity of the state and society to respond to the socio-economic impacts of the pandemic (Almeida; Luchmann; Martelli, 2020).

In a complementary way, Santos et al. (2022, p. 323-324) emphasize that:

[...] historically, the supply of hospital care in Brazil has been characterized by significant inequalities between regions and states, with more complex situations in the North and Northeast. In addition to the differences between the total supply and that actually available to the Unified Health System (SUS), market dynamics are also related to the distribution of health resources.

In addition to regional differences in the total supply of health services, there is also a disparity in the actual availability of these services for the Unified Health System (SUS). This suggests that market dynamics, as well as structural and governmental factors, play a crucial role in the distribution of health resources in the country. This analysis highlights the need for public policies that seek to mitigate these regional inequalities and ensure equitable access to health services for all Brazilians, especially in times of crisis, such as the Covid-19 pandemic.

#### **IV. Final Considerations**

As a result of this research, it was possible to see that the Covid-19 pandemic, caused by the new SARS-CoV-2 coronavirus, has revealed the fragility of health systems in many countries, including Brazil. First identified in Wuhan, China, at the end of 2019, the virus quickly spread around the world, challenging nations' ability to manage an unprecedented public health crisis. Its contagious structure and capacity for asymptomatic

transmission intensified the spread, leading to a global pandemic that has affected millions of people and resulted in an alarming number of deaths.

In Brazil, the impact of the pandemic on health services has been profound and multifaceted. The crisis has exposed the overload faced by hospitals and health units, which have struggled to cope with the unexpected demand from Covid-19 patients. The shortage of beds, protective equipment and health professionals compromised not only the care of those infected with the coronavirus, but also patients who needed essential medical care for other conditions. The inequality in the distribution of ICU beds between the public and private systems highlighted a significant disparity, with the SUS having an insufficient supply compared to the private sector.

The pandemic has also highlighted the deep social and regional inequalities in Brazil. More vulnerable populations, such as low-income people and marginalized ethnic groups, have been disproportionately affected. These communities faced greater difficulties in accessing health services and more intense exposure to the virus due to their unfavorable socio-economic conditions. Regional inequality, with notable disparities between the North and Northeast, was also clear, highlighting the urgent need for a more equitable distribution of health resources.

In addition to the structural challenges, the crisis has had a significant impact on the mental health of healthcare workers, who have faced high levels of stress and exhaustion due to the scarcity of resources and the high workload. The hospitals' rapid adaptation, with the creation of specific wards for Covid-19 patients and the postponement of elective procedures, illustrates their ability to respond to the emergency, but also highlights the limitations and the need to plan for future outbreaks.

In short, the Covid-19 pandemic has highlighted the importance of strengthening health systems, improving the distribution of resources and addressing existing inequalities. The lessons learned should guide the formulation of public policies that promote a more efficient and equitable response to public health crises, ensuring better preparedness and response capacity to face future challenges.

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