

# How Brazil can hold back COVID-19

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**Wanderson Kleber de Oliveira**<sup>1</sup> –  orcid.org/0000-0002-9662-1930**Elisete Duarte**<sup>1</sup> –  orcid.org/0000-0002-0501-0190**Giovanny Vinícius Araújo de França**<sup>1</sup> –  orcid.org/0000-0002-7530-2017**Leila Posenato Garcia**<sup>2</sup> –  orcid.org/0000-0003-1146-2641<sup>1</sup>Ministério da Saúde, Secretaria de Vigilância em Saúde, Brasília, DF, Brasil<sup>2</sup>Instituto de Pesquisa Econômica Aplicada, Diretoria de Estudos e Políticas Sociais, Brasília, DF, Brasil

## Abstract

This article presents the strategies and actions adopted by the Brazilian Ministry of Health to hold back COVID-19. The response to the disease was immediate and occurred prior to the first case being detected in Brazil. Provision of information and communication to the population and the press was adopted as a fundamental strategy for addressing the epidemic. Guidance provided to the population has been clear, stressing the importance of coronavirus transmission prevention measures. Efforts have been directed towards strengthening health surveillance and health care, as well as boosting research, development and innovation. Actions have targeted human resource training and expanding coverage afforded by the Brazilian National Health System (SUS). Protecting health workers is a priority. All SUS health workers, managers and directors are dedicated to preserving the health and life of each and every Brazilian citizen.

**Keywords:** Coronavirus Infections; Epidemiology, Public Health Surveillance; Public Health.

COVID-19, a disease caused by the novel coronavirus named SARS-CoV-2, was identified for the first time in China, in December 2019.<sup>1</sup> On January 30<sup>th</sup> 2020, the World Health Organization (WHO) declared the event to be a Public Health Emergency of International Concern,<sup>2</sup> and on March 11<sup>th</sup> 2020 declared it to be a pandemic.

In Brazil, the Ministry of Health (MoH) acted immediately as soon as news began to be broadcast about the emerging disease.<sup>3</sup> On January 22<sup>nd</sup> the Ministry's Emergency Operations Center was deployed. The Center is coordinated by the Health Surveillance Secretariat to harmonize, plan and organize activities with the stakeholders involved and to monitor the epidemiological situation. Several government sectors were mobilized and a variety of actions were implemented, including the preparation of a contingency plan.<sup>4</sup> On February 3<sup>rd</sup> 2020, human infection by the novel coronavirus was declared a Public Health Emergency of National Concern (PHENC).<sup>5</sup>

Right from the start the MoH has turned to information and communication with the population and the press as fundamental strategies for withstanding the epidemic.

The numbers of confirmed cases and deaths have been publicized daily. Epidemiological bulletins have been published, containing guidance on surveillance actions within the context of the PHENC.<sup>6-8</sup> In addition, press conferences have been held almost daily, emphasizing MoH commitment to transparent information and rapid communication about the epidemiological situation and actions to address it.<sup>3</sup>

The MoH has also provided new forms of service provision to the population, such as the Coronavírus-SUS application and a specific WhatsApp channel.<sup>9</sup> The MoH Press Office has been working shifts, including at weekends.<sup>10</sup> Recognizing that fake news promotes disinformation and can contribute to making the situation worse, the MoH has acted to provide the population and the press with reliable information.

Guidance provided by the MoH to the population has been clear, right from the beginning, in the sense of reinforcing the importance of measures to prevent coronavirus transmission, which include: (i) washing hands with soap and water or sanitizing them with alcohol-

## Correspondence:

**Leila Posenato Garcia** – SBS, Quadra 1, Bloco J, Ed. BNDES/Ipea, Brasília, DF, Brazil. Postcode: 70.076-900  
E-mail: leila.garcia@ipea.gov.br



based gel; (ii) “respiratory etiquette”, which consists of covering one’s nose and mouth when sneezing or coughing; (iii) social distancing; (iv) not sharing objects intended for individual use, such as glasses and cutlery; and (v) keeping rooms well ventilated. With effect from April 2020, the MoH began advising the population to use cloth facemasks as a barrier against the spread of SARS-CoV-2.<sup>11,12</sup>

Brazil’s first COVID-19 case was confirmed on February 26<sup>th</sup> 2020. The case was that of an elderly man living in São Paulo/SP who had returned from a trip to Italy. The disease spread rapidly. In less than one month after the first case was confirmed, community transmission was already happening in some cities. Brazil’s first COVID-19 death occurred on March 17<sup>th</sup> 2020. This case was also that of an elderly man living in São Paulo/SP who had diabetes and hypertension but had no record of having traveled abroad recently. On March 20<sup>th</sup> 2020, community transmission of COVID-19 was recognized throughout the national territory.<sup>13</sup> Figure 1 shows the daily number of new cases, from February 26<sup>th</sup> to April 6<sup>th</sup> 2020. Figure 2 shows the daily number of deaths, from March 17<sup>th</sup> to April 6<sup>th</sup> 2020.

At the time the disease was introduced into the country, the majority of cases were imported and the strategy to contain it was based on tracing and isolating cases and contacts, in order to avoid sustained person-to-person transmission of the virus. With the growth in the number of COVID-19 cases and the occurrence of community transmission, mitigation strategies were introduced with the aim of avoiding the occurrence of severe cases and deaths from the disease. These strategies include hospital care measures for severe cases, as well as isolation measures for mild cases and contacts.<sup>15-17</sup>

In this sense, MoH actions have also been based on strengthening health care. Actions have targeted human resource training and increasing National Health System (SUS) coverage, by hiring more health workers, especially physicians. A total of 5,811 additional job positions have been made available for doctors to work in Primary Health Care Centers in 1,864 municipalities, as well as in 19 Special Indigenous Health Districts, nationwide. State capital cities and large urban centers have been benefited, since they have higher population density and are places more propitious to coronavirus spreading. Another highlight is the strategic action called “*O Brasil conta comigo*” (Brazil can count on me), involving registration and training of health workers to join the

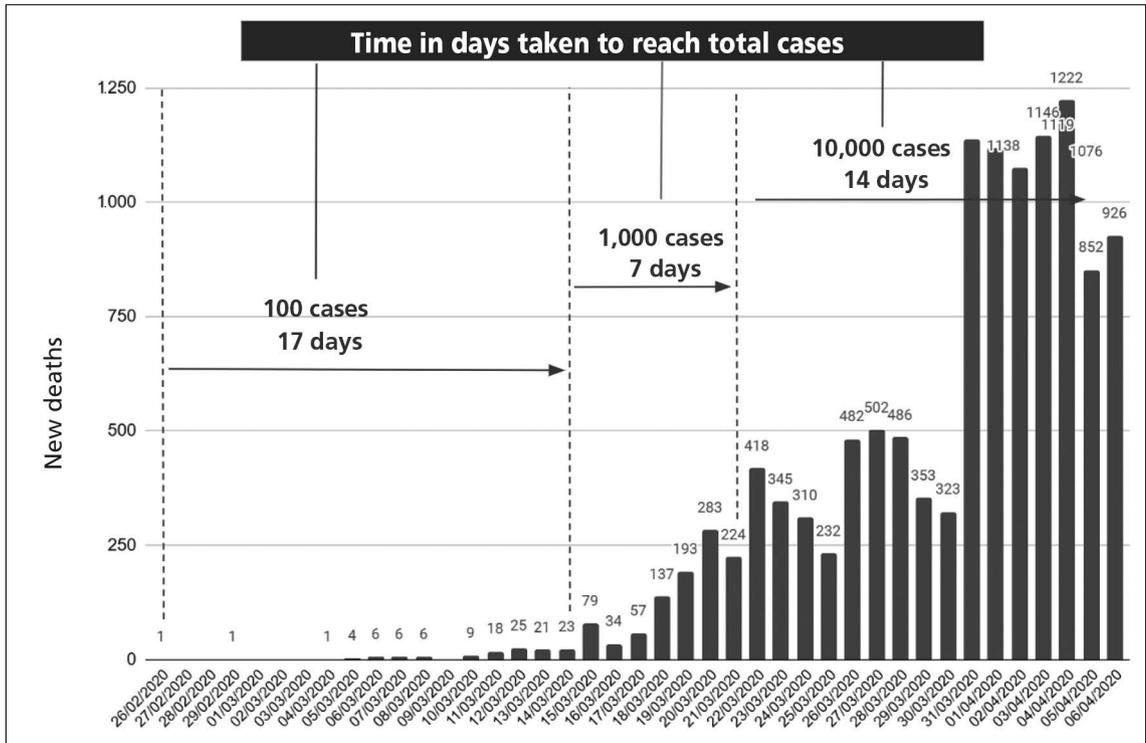
fight against COVID-19. Students in the final year of medicine, nursing, physiotherapy and pharmacology courses at both public and private higher education institutions can also become part of this effort.<sup>18</sup>

Moreover, ensuring protection of health workers is a priority, as they form the front line in the battle against COVID-19, fulfilling their role as protagonists in case diagnosis and treatment. The MoH has paid special attention to producing, purchasing and distributing personal protective equipment for health workers throughout the entire country. Infection prevention measures must be implemented in all health services and their vehicles.<sup>19</sup>

Scaling up structure to care for severe cases that require hospitalization and/or intensive care is being done by purchasing equipment and supplies, building hospital units, increasing the capacity of existing units, renting beds in private or supplemental health sector hospitals, as well as providing support for field hospitals to be set up. Priority has also been given to encouraging production and purchasing of ventilators, the availability and distribution of which are essential for meeting the needs of severe cases. In March 2020, the federal administration transferred over BRL 1 billion to state and municipal governments to fund actions to combat COVID-19.<sup>20</sup>

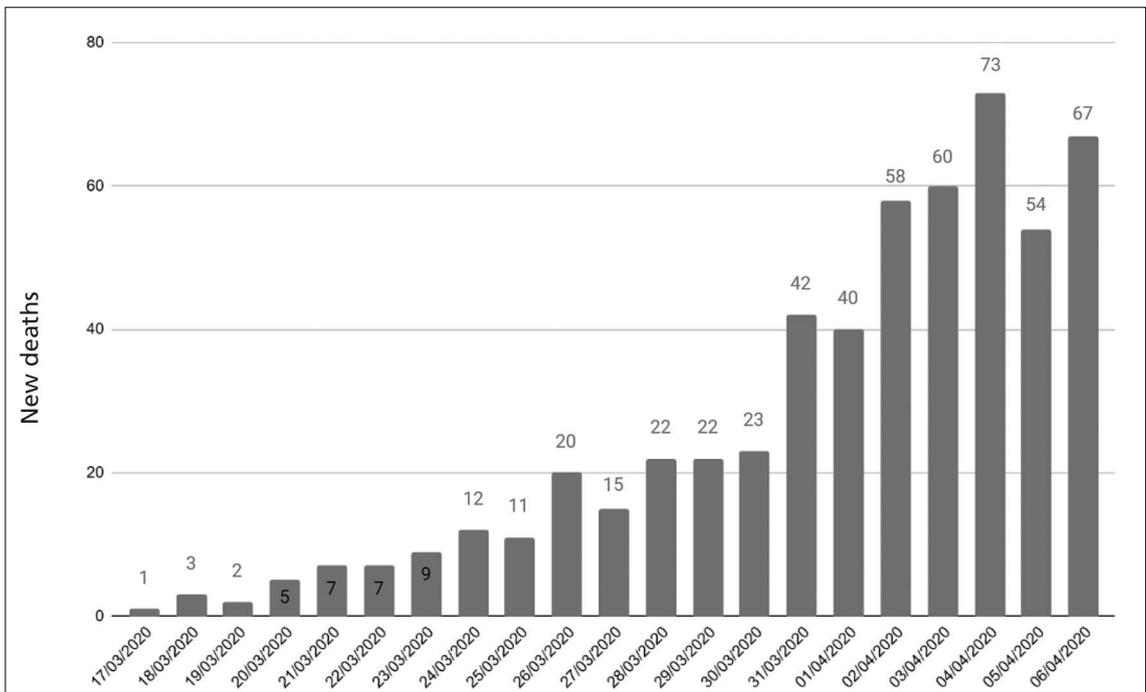
The MoH has made efforts to fulfill the WHO recommendations for testing suspected cases, detecting positive cases and advising isolation of people with the disease and their household contacts, so as to reduce dissemination. However, once COVID-19 began to spread via community transmission, there was not sufficient SUS health center capacity to test everyone suspected of having the disease. The MoH rapidly increased the number of tests for COVID-19 diagnosis, including two types of tests: (i) RT-PCR, which detects virus present in the sample; and (ii) the rapid serologic test, which detects coronavirus antibodies. Initially, priority was given to testing health workers and the police, as well as severe cases and deaths.<sup>21</sup>

In order to guarantee an adequate response to the emergency, the MoH is working to expand the Influenza-Like Syndrome Sentinel Network. The number of establishments that collect samples for surveillance of this condition is expected to increase from 168 to 500 within three months.<sup>21</sup> Logistics will be enhanced and testing capacity will be increased through partnerships with the private sector.



**Figure 1 – Number of new COVID-19 cases notified in Brazil, from February 26<sup>th</sup> to April 6<sup>th</sup> 2020**

Source: Ministério da Saúde (BR). Secretaria de Vigilância em Saúde. Bol Epidemiol. 2020.<sup>14</sup>



**Figure 2 – Number of COVID-19 deaths in Brazil, from March 17<sup>th</sup> to April 6<sup>th</sup> 2020**

Source: Ministério da Saúde (BR). Secretaria de Vigilância em Saúde. Bol Epidemiol. 2020.<sup>14</sup>

The TeleSUS initiative uses artificial intelligence for active tracing of suspected COVID-19 cases by means of telephone calls. People with signs and symptoms of SARS-CoV-2 infection can get guidance at home without needing to go to a health service.<sup>22</sup> Moreover, by means of cellular telephones, the Chronic Disease Risk and Protective Factor Surveillance Telephone Survey (Vigitel Covid-19) will obtain information from people aged 18 or over, living in all the Brazilian state capitals and Federal District, about COVID-19 prevention practices, as well as information about their state of health.<sup>23</sup>

Use of telemedicine is another strategy. The Federal Council of Medicine (CFM)<sup>24</sup> has produced regulations for on-line medical consultations, as well as telesurgery and telediagnosis, among other forms of remote medical care, which will be important for ensuring care not only for people affected by COVID-19, but for all people who need medical assistance.

Another area focused by MoH actions is the promotion of research, innovation and development. The MoH Science, Technology and Strategic Supplies Secretariat is leading the production of evidence summaries to guide the decisions of the MoH Emergency Operations Center. Support for research projects on COVID-19 and other severe acute respiratory diseases will be provided by the MoH in partnership with the National Scientific and Technological Development Council, by means of a call for proposals.<sup>25</sup> Priority will be given to projects following different research tracks capable of contributing to the production of evidence about the natural history of the disease, diagnosis, health care organization, effectiveness of surveillance, prevention and control measures, treatment alternatives, as well as support for development and evaluation of diagnostic test accuracy. Research considered to be priority is being supported in a more agile manner through the collaboration of research institutions and charitable hospitals that take part in the National Health System Institutional Development Program, by means of the initiative called the Brazil COVID Coalition. National multicenter clinical trials to evaluate the efficacy and safety of medication and combination treatment have been prioritized. The Oswaldo Cruz Foundation (Fiocruz) is taking part in the global SOLIDARITY trial, launched by WHO to test promising treatment for COVID-19. The Ministry of Science, Technology, Innovation and Communication is also collaborating with these initiatives and has created a Virus Network Specialists Committee with the

aim of promoting integration of scientific research and technological development efforts.

Notwithstanding the efforts made by the MoH, the characteristics of COVID-19 make it difficult to control. Its high transmissibility, including through asymptomatic cases, and its tendency to lead to severe complications, hospitalizations and deaths, together with the absence of prior immunity (as it is a virus unknown to the human species), inexistence of vaccine or treatment known to be efficacious and the vulnerability of the Brazilian population (living and health conditions), mean it can be assumed that infection incidence will be high and that the number of severe cases, needing hospitalization and/or intensive care, may exceed health service capacity.<sup>26</sup>

In this context it is recommendable to adopt measures that contribute to flattening the COVID-19 epidemic curve, preventing an abrupt increase in the number of cases and reducing the peak in demand for health services. The aim is to avoid the health system from becoming overloaded and collapsing, which could lead to increased mortality owing to lack of hospital beds and intensive care. In view of the disease's characteristics, finding the balance between COVID-19 incidence and availability of medium and high complexity health care will be fundamental for avoiding deaths among severe cases.<sup>27</sup>

In order to stand up to a disease that spreads very quickly, and which not only attacks people, but also compromises the health system and society as a whole, individual prevention measures are not sufficient and community measures must also be adopted. Such measures include restricting access to schools, universities, community gathering places, public transport, as well as other places where large numbers of people gather, such as social and sports events, theaters, cinemas and commercial establishments, which are not characterized as providing essential services.<sup>28</sup> Adoption of such measures is recommended based on the experience of countries affected by COVID-19 before Brazil, WHO recommendations and evidence available so far about effective interventions for controlling the disease, based on studies conducted in other nations.

The time at which these measures are adopted and how long they last for are fundamental for their success. It is a considerable challenge to determine the best time to start community restriction measures, as if they are implemented too soon this can result in social and economic hardships with limited benefit for public

health and, over time, can result in fatigue and the population ceasing to commit to the measures. On the other hand, late implementation, after the disease has become widespread, can limit their benefits. In other words, the intervention needs to start soon enough to prevent the initial sharp rise in the number of cases, and last long enough to cover the peak of the expected epidemic curve.<sup>14</sup>

In Brazil, a country of continental dimensions and very diverse local realities, it is not appropriate to adopt from the outset a uniform procedure for all states and municipalities. The need exists to have knowledge of and assess local data in order to inform decision making. A plan also needs to be built to make feasible actions that can and must continue, especially those considered to be essential and which guarantee production, storage and distribution of equipment, materials and supplies needed to address the pandemic.<sup>14</sup>

As such, the Brazilian National Health System (SUS) needs to be fully mobilized in an articulated manner, with the indivisible participation of the municipalities, the states and the Union, as well as involvement of all governments at all three levels of administration, the National Congress, the Judiciary and Brazilian society. Hard times are ahead, and the course of the epidemic will demand that strategies be constantly reviewed. The work of epidemiological surveillance services is therefore crucial. Timely and correct case and death notification will help to inform sounder decision making.

The COVID-19 pandemic is exposing SUS structural weaknesses and bottlenecks, in particular the lack – or unequal distribution –, in the territory, of health workers and medium and high complexity care infrastructure, as well as limited capacity to produce and perform diagnostic tests. It does, however, also bring to light the strengths of the world's largest public and universal health system, which plays a paramount role in health surveillance and health care, as well as in organizing and articulating actions to address the pandemic, at all three levels of administration, in all the Brazilian Federative Units

The challenges that are looming are huge and made worse by our social situation, which imposes precarious living and health conditions, especially for people who live on the poor outskirts of large urban centers. Escalation of mental health conditions is expected, as a consequence of fears caused by the pandemic and isolation. The fact that COVID-19 will overlap in space

and time with other diseases – such as arboviruses transmitted by *Aedes aegypti*, seasonal influenza, tuberculosis, AIDS, noncommunicable diseases and conditions, among others – is a further challenge

The country not only faces a new disease, but also an unprecedented situation, which requires radical changes in behavior at both individual and community level. Collaboration by society in standing up to COVID-19 will be a determining factor for the epidemic's progression. Everyone without fail should follow the guidance of health authorities, based on available scientific evidence and in line with WHO recommendations, respecting isolation, quarantine and restrictions on movement and social contact, as indicated in each situation. Common sense and solidarity need to guide the actions of all Brazilians, in order for it to be possible to reduce the impact of COVID-19 on the population's health and on the economy.

Protecting the elderly is a priority strategy, given that they form a group at greater risk of complications and death due to COVID-19. Because they are more vulnerable, people aged over 60 should stay at home whenever possible, restrict their movements to doing only strictly necessary activities, avoid using public transport and not frequent places where people are gathered. People in other age groups should also do their part, since reducing transmission in the community is necessary for everyone's protection. Children and those who develop asymptomatic infection can contribute to spreading the disease and infecting the elderly and other groups more prone to suffering complications, such as people with diabetes, hypertension and cancer.<sup>29,30</sup>

SUS performance will be a determining factor. The SUS is a national heritage, a State policy that guarantees access to health actions and services to the more than 210 million people who live in Brazil. Since it was created in 1988, the SUS has become ever more present in people's lives. SUS workers, including community health agents and professionals who work on the front line, SUS managers and MoH directors will do their utmost to preserve the health and life of each and every Brazilian. Through SUS strength and the contribution of society, Brazil can hold back COVID-19. Before long the country will be able to return to normal, with more strength, more solidarity, more empathy, and with new habits and values that will enable social development and economic growth to be resumed, in a more sustainable and equitable manner, towards a better future.

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