

## CHALLENGES OF THE MEDICAL TEAM DURING HOSPITAL TREATMENT OF PATIENTS WITH SUSPECTED COVID-19

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### ABSTRACT:

In December 2019, a new disease was identified in China. From the investigation of cases of pneumonia of undefined origin, researchers came to the identification of a new coronavirus, named SARS-CoV-2. The health sector in Brazil is facing a huge load from the disease pandemic. Since February 26, 2020, when the first case of COVID-19 was registered in São Paulo, the Unified Health System, which offers universal access to health services, and the private sector face a growing pressure and overload on the system, with 241 thousand cases, 16 thousand deaths and 8 million of tests performed. In the most affected regions, health systems are near to the collapse - the result of years of fragmentation and decades of financial cuts, and deprivations of human and technical resources. This scenario never before faced in most of western countries, but already seen in eastern countries, is a major challenge for health teams and health managers in Brazil. This review aims to elucidate the main challenges of the hospital team in the management of patients suspected of COVID-19 during the 2020 pandemic in Brazil.

**Keywords:** SARS-CoV-2; Health professionals; Epidemiology; Hospitals.

### DEVELOPMENT

At the end of 2019, a new disease caused by a type of coronavirus, comes directly impacting the sectors of public health and hospital from around the world. The first notification of the disease was in Wuhan, Hubei province, China, on December 12, 2019, through a patient with pneumonia of unknown etiology. The disease was named COVID-19, caused by the coronavirus agent SARS-COV-2 (WU et al., 2020).

The clinical case is characterized by acute respiratory symptoms, with presentation of dry cough, breathing difficulty and pneumonia, with a marked increase in the cases severity and lethality rates in people over 60 years (WU et al., 2020; GUO et al., 2020). One of the major challenges in the hospital environment is transmission by an asymptomatic carrier (BAI et al., 2020).

The routine of hospital health professionals, especially those who are a reference in Infectious Diseases, changed dramatically from January 27, 2020 when the first suspicion of coronavirus infection occurred in the state of Minas Gerais. The female patient, 22 years old, with a history of student exchange with a trip to Wuhan and who returned to Brazil on January 24, 2020, started with symptoms on January 20, 2020 and was admitted on January 27, 2020. At this time, was activated the so-called "Contingency

Plan for conducting epidemics”, which already existed at the institution, but was adequate according to the situation and all the particularities related to COVID-19 (SES-MG, 2020).

Shortly after, the World Health Organization (WHO) declared, on January 30, 2020, that the outbreak of the disease caused by the new coronavirus (COVID-19) constituted a Public Health Emergency of International Importance, the highest level of alert in the Organization, as provided for in the International Health Regulations. Then, on March 11, 2020, COVID-19 was characterized by WHO as a pandemic (SES-MG, 2020; PAHO, 2020).

From this moment, with the great escalation of cases throughout Brazil, the hospital environment was restructured to receive suspected patients of COVID-19, both in physical and human resources, with an increase in the number of staff, including the entire medical team. Patients referred to hospitalization must, at the first moment, go through a detection process that begins upon arrival at the emergency care unit, where the nursing team reviews the signs and / or symptoms of severe acute respiratory syndrome (SARS). With respiratory symptoms, patients should receive a surgical mask and be directed through a differentiated flow to a separate area that has accessible respiratory and hand hygiene supplies, in addition to allowing at least 1 meter of distance between seats. After medical evaluation, if the pre-established criteria for suspected coronavirus infection are met, patients are then referred to hospitalization in isolated beds (BRASIL, 2020).

The early recognition of suspected patients, including those with serious illnesses, allows for the timely initiation of appropriate measures, optimized support treatments, and safe and prompt referral and admission to a designated hospital nursing bed or intensive care unit designated for this purpose, from according to institutional or national protocols (BRAZIL, 2020). Health services should encourage the professional to have a high level of suspicion, ensuring high sensitivity of the system and safety for other professionals and patients, being equipped and trained to perform their function in the manner recommended by the World Health Organization. Failure to comply with any of the precepts mentioned above may contribute to the dispersion of cases among health professionals and their patients (WHO, 2020).

Intrahospital transmission to other patients and transmission to health professionals has been one of the main characteristics of SARS, MERS outbreaks and has also been reported with COVID-19. In one report, 41% of hospitalized cases of COVID-19 were acquired in the hospital, including patients who were already hospitalized for other reasons and health professionals (ARABI et al., 2020). Measures must be implemented to avoid and or reduce risks of cross-infection by COVID-19, both by professionals working in health services and by the flow of suspected patients, during the assistance provided. The health service must ensure that both internal processes and good practices minimize exposure to respiratory pathogens.

This scenario led to a need for physical and organizational change, due to the large number of people infected at the same time by the coronavirus. It was necessary to organize isolated beds in a cohort, that is, to separate patients by type of disease / etiological agent. It is essential that a minimum distance of 1 meter be maintained between patient beds and there should be a concern to limit the number of accesses to this cohort area as much as possible, including visitors, to achieve greater control of the movement of people, avoiding unwanted traffic and the unnecessary crossing of people and services, since the transmission of the virus occurs through the formation of drops (ANVISA, 2020).

In order that the cohort beds do not generate possible nosocomial infections by the coronavirus to hospitalized patients, a risk analysis must be performed, and the probabilities of the patients being infected or not by the virus should be evaluated, classifying them as low probability or high probability. This happens through the analysis of several factors, such as: a very detailed medical history, which links the date of the onset of symptoms, the evolution of the clinical case, suggestive epidemiology, previous history, association with comorbidities, possibility of other diagnoses and / or overlapping of two different diseases and data from physical, laboratory and radiological examinations.

From there, one of the great challenges for the medical team of the specialized service begins, the limitation of emergency services, the lack of structure for carrying out complementary tests, such as blood gas analysis, chest tomography, chest angiotomography, impacting the diagnostic decision, leading patients with severe acute respiratory syndrome (SARS) to be classified as a possible suspicion of COVID-19 and referred for hospitalization with other patients.

Another challenge is related to the result of one of the specific tests for coronavirus infection: molecular test for the amplification of the SARS-CoV-2 nucleic acid by real-time PCR preceded by a reverse transcription reaction, a test that amplifies the RNA of the virus, allowing its identification. It should be noted that the sensitivity of the PCR is reduced, when samples with low viral load are used, and that this test has some disadvantages, such as the time required between the collection and availability of the result and the need for specialized physical structure and qualified technical team. Considering the seasonality of respiratory viruses, this collection must be performed until the 7th day after the appearance of the first signs or symptoms (BRASIL, 2020).

Patients placed in a cohort may be more exposed to the acquisition of the disease in the hospital environment because there is great difficulty in performing a chest tomography early, that when has alterations suggestive of viral pneumonia and is associated with the result of COVID-positive RT-PCR has a high diagnostic sensitivity in approximately 97% of cases (HOPE, 2020). Another important situation is the use of computed tomography (CT) of the chest to assist in the classification of low or high probability associated with a positive clinical and epidemiological history, particularly before the result of the RT-PCR, which can minimize the intrahospital transmission of COVID- 19. The composition of the health care team is a challenge that involves several issues: the insecurity of the medical class that does not work in the field of infectious diseases or intensive care, which can substantially influence patient care because many professionals may feel unprepared to perform the clinical intervention of patients infected with a new virus, about which little is known and for which there is no well-established clinical evidence of protocols or treatments. In addition, equipment insecurity can increase the consumption of supplies necessary for infection control, such as surgical masks and N95 or PPF2 masks, alcohol-based hand hygiene and surface disinfectant (ARABI et al., 2020).

Incomplete teams due to professionals developing respiratory symptoms and the need to be kept away until symptoms improve and until test results are available, allowing follow-up of contacts of patients known to be infected. The care for patients infected with COVID -19 represents a substantial exposure and greater risk for nursing care staff and, especially, those who work in intensive care units due to high and prolonged exposure to critically ill patients, who, presumably, they have a higher viral release in the environment (ARABI et al., 2020). There is little precise information about the number of health professionals affected. According to the Ministry of Health, 199,768 health professionals with suspected covid-19 were identified. Of these, 31,790 have been confirmed and

114,301 are under investigation. Another 53,677 discarded. Among the suspected cases, the most affected are nursing technicians or assistants (34.2%), nurses (16.9%), doctors (13.3%) and receptionists (4.3%) (EBC, 2020).

The mental health-related challenges of health professionals involved in caring for patients with suspected COVID-19 start from preparing the health system to deal with the pandemic, which is rapidly spreading and difficult to control, up to the experience of unexpected situations, quick and irreversible decision making during an exhausting working day (GREENBERG et al., 2020).

Due to the exponential increase in demand for health services, health professionals face long shifts, usually with few resources and limited infrastructure, and with the need to use personal protective equipment (PPE) that can cause physical discomfort and difficulty in breath (GREENBERG et al., 2020).

Decision making under conditions of uncertainty can create significant psychological pressure. Decisions that healthcare professionals face may include: allocating scarce resources equally given to needy patients, balancing their own physical and mental aspects with the health needs of their patients, aligning their obligations and duties to patients and the family, and caring for all critically ill patients with resources that delay the diagnostic definition. This can cause some professionals to experience moral injury or mental health problems (GREENBERG et al., 2020).

In addition to concerns about patients and their own health, health professionals are anxious about the possibility of spreading the virus to their families. These factors can result in different levels of psychological pressure, which can trigger feelings of loneliness and helplessness, or a series of dysphoric emotional states, such as stress, irritability, physical and mental fatigue, and despair. Although health teams are used to feeling physical fatigue and mental fatigue, especially professionals who work in the emergency services, the appearance of the pandemic can generate fear, insecurity and uncertainty, factors that affect human relationships (GREENBERG et al., 2020).

With this, health professionals must be prepared for the moral dilemmas they will face during the COVID-19 pandemic, and must be continuously guided by their team leaders who will help and guide the changes that occur constantly as the situation progresses. (GREENBERG et al., 2020).

## CONCLUSIONS

The current scenario of COVID-19 for the health system in Brazil is a major challenge for health teams in the public and private sector, considering that a pandemic of such magnitude and severity has never been observed in Brazil. All protocols for patient care, screening and management must be systematically checked and remodelled in view of the structure and capacity of each service location. Health teams that do not work daily with infectious contagious diseases may not use strict biosafety rules as a routine and, adjust to the rapid insertion of the rules, without often having adequate and continued training, generating fear and anguish in view of the possible consequences that a disease of recent knowledge to himself, his patients and his family.

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