
COVID-19 - Overview of 8918 Medical Care Provided to Health Professionals with Respiratory Symptoms in a Large Hospital in São Paulo-Brazil.

Telma de Cássia dos Santos Nery ^{1,2}

Eric Kiyoshi Mochizuki Hara ²

Flávia Fazoli da Cunha Freitas Viana ²

Renilda Martins Prestes ²

Camila de Aquino Feijó ²

1. Divisao de Pneumologia, Instituto do Coracao, Hospital das Clinicas HCFMUSP, Faculdade de Medicina, Universidade de Sao Paulo, Sao Paulo, SP, BR.
2. Centro de Atencao ao Colaborador (CeAC), Hospital das Clinicas HCFMUSP, Faculdade de Medicina, Universidade de Sao Paulo, Sao Paulo, SP, BR.

Abstract

In December 2019, a new strain of coronavirus emerged and caused a worldwide pandemic through Coronavirus Disease 2019 (COVID-19) infecting and leading to the death of countless people. Health professionals are at great risk, because they need to act on the front line. This article aims to show an overview, in the period of March 12th, 2020 (beginning of pandemic care) to May 31st, 2020, of these professionals with respiratory symptoms, in a large hospital in the city of São Paulo, Brazil. It was observed that 8918 medical visits were performed in the service, of which 5139 (57.6%) resulted in RT/PCR test requests, of which 1566 were positive (30.5%). The female sex was the most prevalent, the average age was 38, 2 years. According to the professional category, the nursing team (nurses, auxiliaries and technicians) was the most prevalent, with 656 (43.5%) confirmed cases, followed by 289 (19.2%) physicians and medical residents. The statistics provided by the Ministry of Health only show an epidemiological profile (gender, age, geographic region, comorbidities), but do not portray the occupational groups they belong to and the vast majority may have been infected in the workplace. That is why it is important knowing the profile of the results of RT PCR tests for health professionals of hospital services as it contributes to the adoption of preventive measures among these professionals and ensure good working conditions with the organizational measures necessary for each environment and thus ensure better control of the pandemic.

Key Words: COVID-19, health professional, preventive measures, occupational health.

1. Introduction

Since December 2019, in Wuhan, China, a new strain of coronavirus has been identified as the virus causing the outbreak named Coronavirus Disease 2019 (COVID-19). On January 30th, 2020, the World Health Organization (WHO) ¹ declared a state of emergency in public health

due to its transmission in countries on all continents and on March 11th, 2020 it was characterized as a pandemic. The source of COVID-19, according to a WHO statement on January 23rd, 2020, is not yet fully known².

The symptomatology of COVID-19 has a quite varied spectrum of severity, ranging from mild respiratory symptoms to conditions like severe respiratory distress syndrome (SARS)². Because there is no definitive and effective treatment, sanitary measures are implemented to prevent transmission and include improved personal hygiene, use of masks, avoiding agglomerations and others².

The WHO estimates that approximately 80% of patients with COVID-19 should be asymptomatic and approximately "20% of cases may require hospital care because they have respiratory difficulty and of these cases approximately 5% may require support for the treatment of respiratory failure (ventilatory support)"³. Currently, it is estimated that the number of people affected by COVID-19 exceeded six million and more than 369,000 deaths worldwide⁴ and, in Brazil (data as of May 31st, 2020), about 498,440 cases and 28,334 deaths³.

As of May 14th, there were 31,790 cases of health professionals confirmed for COVID-19 and more than 114,000 in research⁵. Also, 113 deaths of physicians due to the disease had been computed⁶. It is incontestable that health professionals are part of the at risk category for the pandemic-causing virus.

The WHO advises that urgent and progressive measures should be taken to "prevent or at least mitigate" the impact of the disease and the deceleration of these measures should be based on the "best scientific evidence available to protect public health"⁷.

Health professionals should minimize the possibility of exposure in collection of tests for COVID - 19, as well as the transport of samples from laboratories of patients suspected of infection. Robotics would be interesting to assist in the care of suspected and infected patients, reducing the possibility of exposure of health professionals².

Digital solutions are also pointed out in an English study as instruments that support the care of patients suspected of COVID-19 and can interpose early and improve the recovery of these⁸.

In Brazil, the city of São Paulo is the epicenter of the cases. In hospital care, health professionals are even more exposed to the virus and it is of paramount importance to know the profile of health professionals working in this context. This study describes characteristics of workers in a large tertiary-level hospital, located in the city of São Paulo and consisting of an average of 22,000 employees, 2,378 patients with the disease were hospitalized, of whom 1388 (58.3%) were discharged from the hospital and 484 (20.3%) died.

Table 1 illustrates the comparison of cases and deaths in the country, in the state of São Paulo, in the city/county of São Paulo and in the hospital studied.

Table 1: Number of Cases and Deaths

Place	Number of Cases	Number of Deaths
World	6.082.549	369.544
Brazil	498.440	28.834
São Paulo State	107.142	7.532
São Paulo- City	65.038	4308
Hospital of Study	2378	484

Source: John Hopkins Coronavirus Resource Center⁹ and CVE- ‘SP⁴

The aim of this article is to describe the profile of care of health professionals with symptoms of COVID-19 from a large hospital in the state of São Paulo.

2. Method

This is a descriptive study in which data were collected from the care records systems for symptomatic health professionals. This panel of hospital indicators (PIH) makes a collection of the data without nominally characterizing the patients, only provides general numerical data.

The data collected relate to the period from March 12th, 2020 (beginning of pandemic care) to May 31st, 2020. These were synthesized in graphs and tables with the aid of excel program and PIH itself. Next, the findings were discussed in recent literature.

3. Results

The hospital in question has a center of attention to employees, which provides care to more than 20,000 employees of the institution. This care is divided into clinical emergency room, general practice outpatient clinic and some specialties and occupational medicine. With the beginning of the pandemic, all efforts were concentrated in the emergency room, on March 12th, a protocol and flow of care was structured for all employees seeking assistance due to respiratory symptomatology.

The care flow protocol was elaborated by the hospital's coronavirus crisis committee and made available to the team responsible for care. The flow involves screening for respiratory symptoms through anamnesis and physical examination. At first, there was a distinction regarding the collection of tests between employees who provided direct assistance to the patient (who collected the examination at the first care, provided they were symptomatic for more than three days) and those who did not provide this care (who only collected if symptoms persisted for more than three days after the first care).

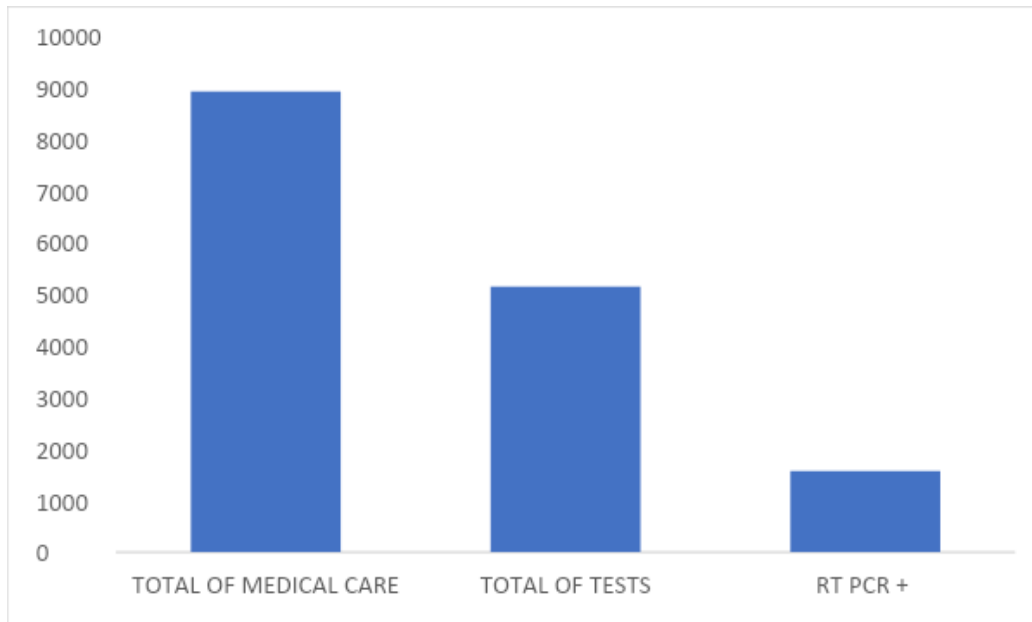
In mid-May this flow changed and the virus detection test (RT-PCR) is requested for any symptomatic respiratory employee for more than three days. At the time of care, when the

collection is requested, a certificate of absence from their activities is also provided for three days (time to obtain the test result). The service and examination are performed in the same place.

If the test is positive, a medical team contacts the employee to question the evolution of symptoms, provide guidance on family protection measures and social isolation and extend the leave to 14 days (from the date of beginning of symptoms). In the meantime, guidelines are given for return to work, in which the employee must wear a mask and protection and does not require a new collection of examinations.

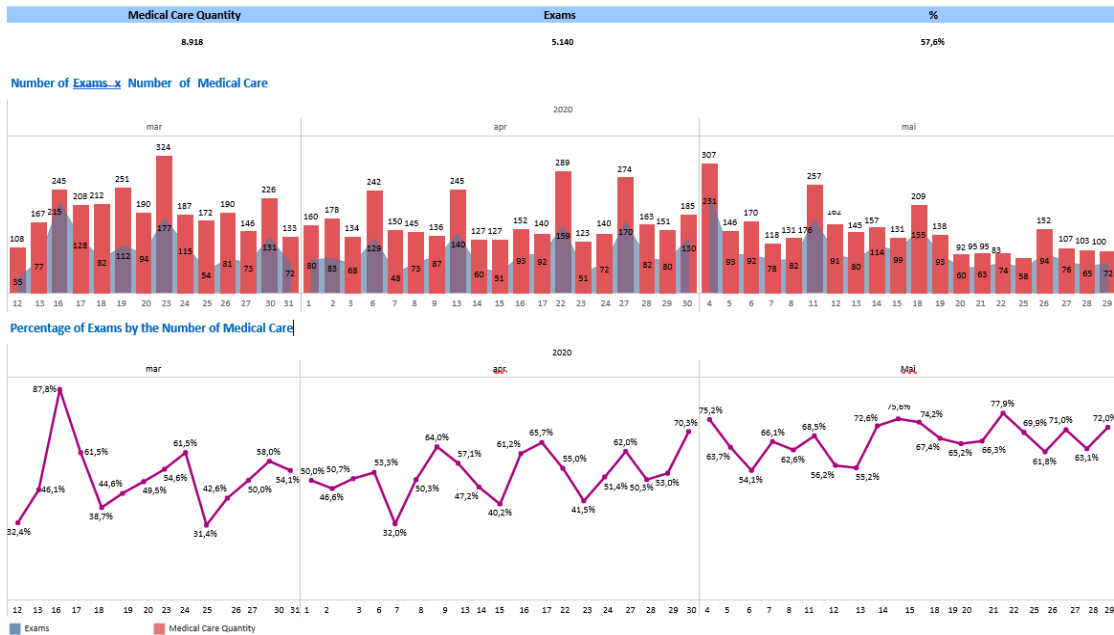
In the period, 8918 medical visits were performed in the service, of which 5139 (57.6%) resulted in RT/PCR test requests, of which 1566 were positive (30.5%) (graph 1). The data for each day are shown in graphs 2 and 3.

Figure 1: Number of Medical Care, tests and positive results



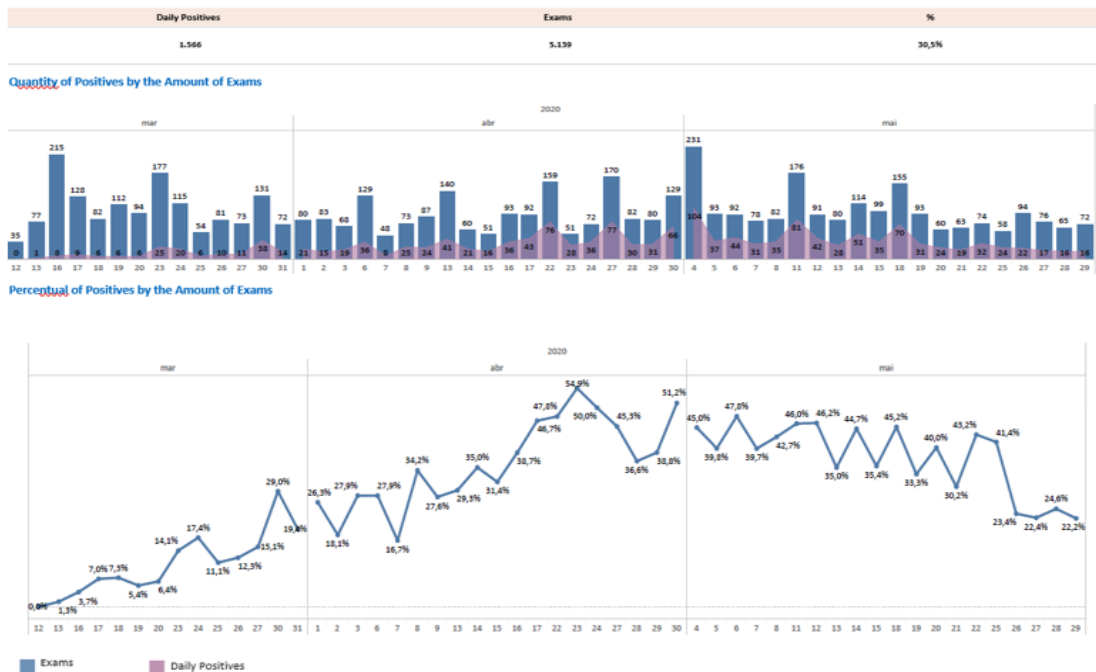
Source: PIH

Graph 2: Number of Exams x Number of Medical Care



Source: PIH

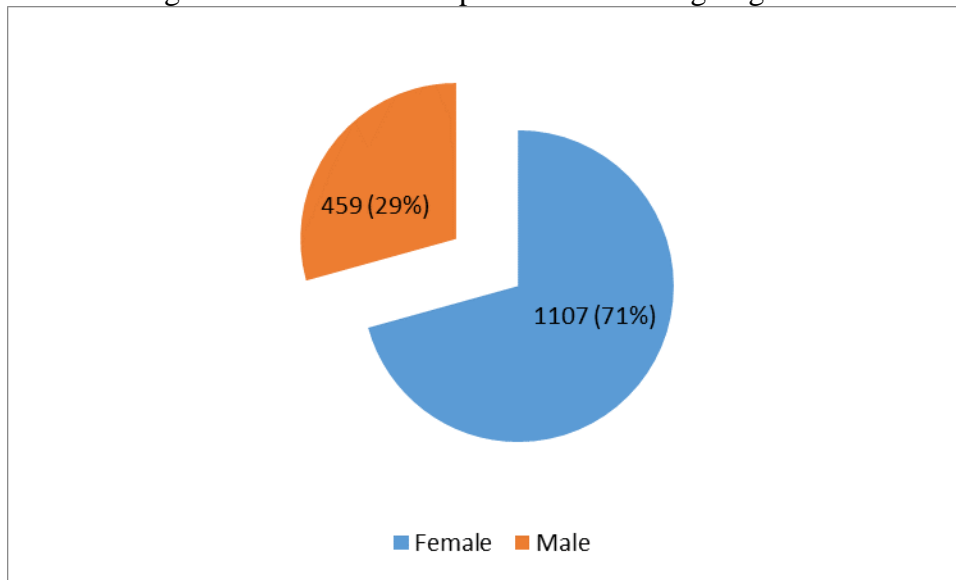
Graph 3: Quantity of Positive Exams



Source: PIH

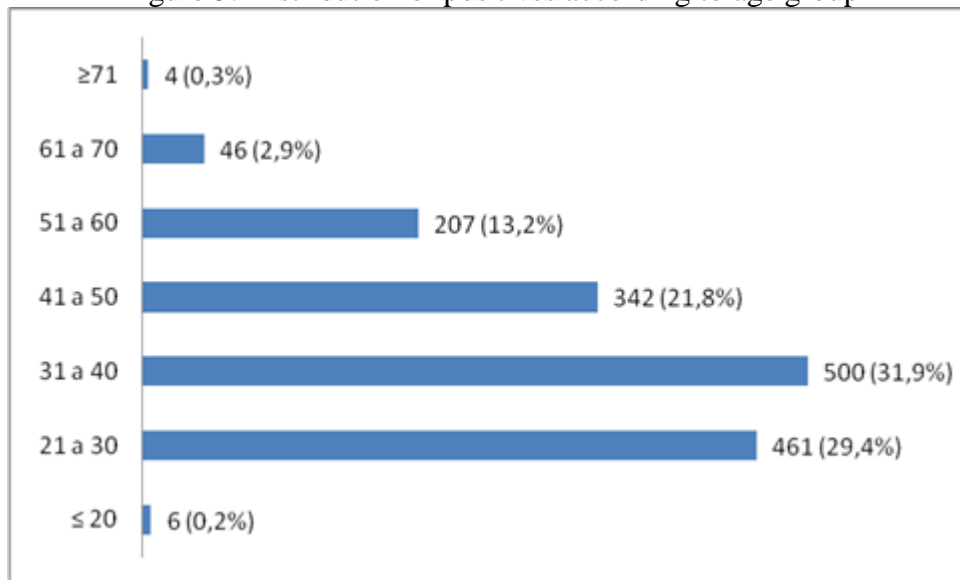
When classified according to gender, women represented a majority (71%) of infected employees (Graph 4). Regarding age, this ranges from 19 to 75 years, with an average of 38.2 years. The most affected age group is between 31 and 40 years, which corresponds to 31.9% (graph 5).

Figure 4: Distribution of positives according to gender



Source: PIH

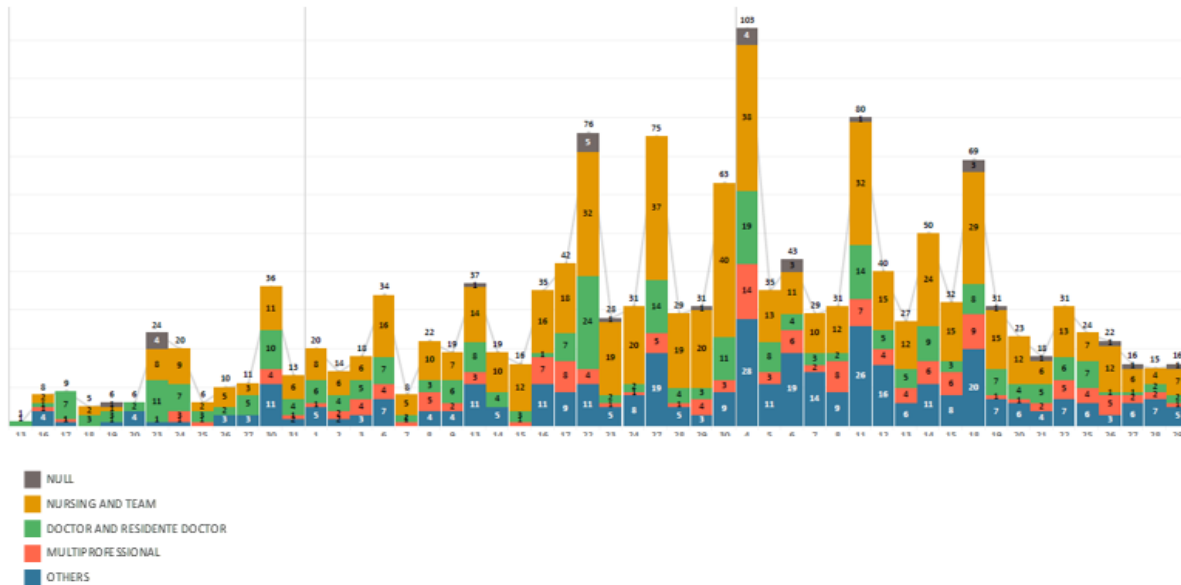
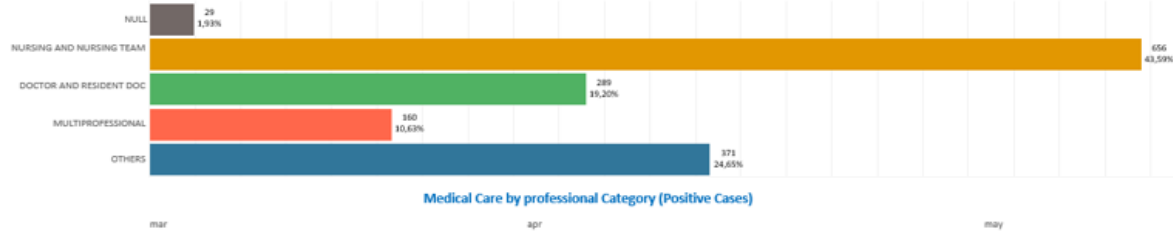
Figure 5: Distribution of positives according to age group



Source: PIH

Distributing cases with positive RT-PCR according to the professional category, the nursing team (nurses, auxiliaries and technicians) was the most prevalent, with 656 (43.5%) confirmed cases, followed by 289 (19.2%) physicians and medical residents, 160 (10.6%) multidisciplinary team (physiotherapists, speech therapists, occupational therapists, etc.), 371 (24.6%) from other positions, 61 (3.8%) unclassified and 29 (1.9%) null, as graph 6 illustrates.

Graph 6: Medical Care by Professional Category (positive cases)



Source: PIH

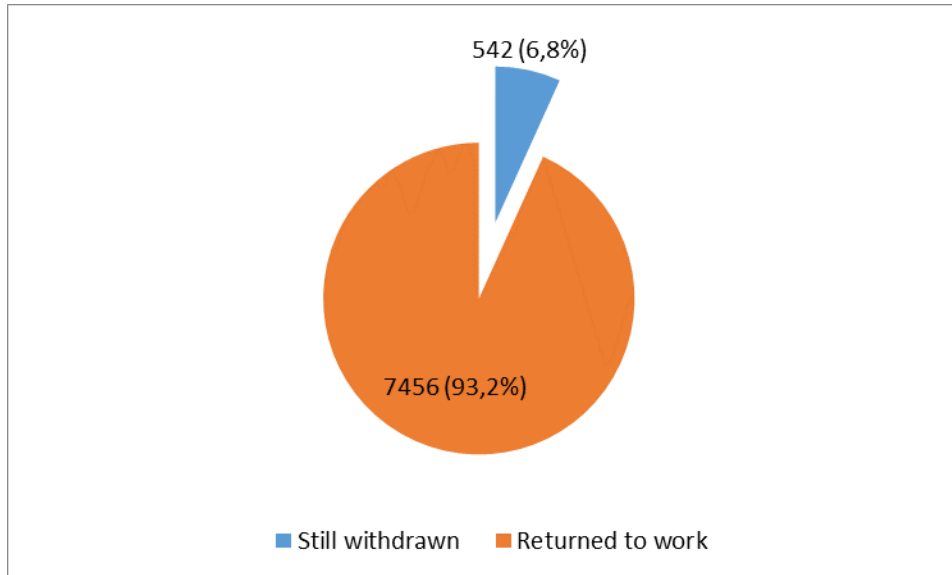
In the period studied, 7998 workers were removed (table 1), of these 7456 have already returned to their activities and 542 remain away (graph 7). It is noteworthy that, contrary to what was observed in the confirmation of the diagnosis, administrative employees are a significant category in the number of absences with 2346 of the total (29.3%), occupying the second position among the other categories. However, the nursing team is still leading, with 2695 (33.7%) away.

Table 2: Census of removal of employees by COVID-19

Occupation	Still withdraw	Returned to work	Total
Doctor	23	592	615
Resident doctor	19	520	539
Nursing	63	805	868
Nursing team	113	1714	1827
Multi-professional team	99	1263	1362
Administrative	186	2160	2346
Support team	39	402	441
Total	542	7456	7998

Source: PIH

Figure 7: Total sick leave and return to work of employees by COVID-19



Source: PIH

4. Discussion

This study shows, that of the workers who underwent RT PCR tests, 30.5% tested positive. A research conducted in the United States evaluated the professional categories exposed to COVID-19 infections and among the main highlights are: health services, services for the protection of people and property (police, firefighters), administrative support (post office, delivery services), education (teachers, daycare workers) and community service occupations (social workers), showing the importance that several work fronts are exposed to the virus and can contribute to the spread of the virus¹⁰.

The statistics provided by the Ministry of Health only show an epidemiological profile (gender, age, geographic region, comorbidities), but do not portray the occupational groups they belong to as the vast majority may have been infected in the workplace. The Federal Nursing Council¹¹, in turn, created a platform called The Nursing Observatory to disseminate the data on the involvement of these professionals. By May 31st, 16467 had been affected by COVID-19 and 165 had died. In the state of São Paulo alone, 3,945 nursing professionals became ill. The 656 employees of this category of the hospital under study represent 16.6% of the total state.

The available protocols are involved in biosafety and prevention measures, but there are several reports of workplaces with lack of personal protective equipment (PPE), lack of training for teams working in the front line, stressful workload and environment with lack of hygiene¹².

The Federal Nursing Council (COFEN)¹³ points out that in addition to the scarcity of personal protective equipment available to nursing professionals, the quality of this is questionable. It also highlights the deficiency in training for the use of these equipments, both in paramentation, as well as in the deparamentation where the contamination of professionals occurs.

In a hospital in the United Kingdom, symptomatic employees were evaluated and the creation of a flow in Occupational Medicine, which consisted of initial contact, via e-mail, followed by a call for a screening with a qualified team (nurse and physician) and, if indicated, the collection of RT-PCR with self-isolation and work leave guidelines is performed. The result is made available in 24 hours, also by e-mail, and the employee is clinically monitored, via telephone, by the same team. It was concluded that most positive cases belonged to the group that deals directly with the patient (medical and nursing staff) and with training for correct use and departmentation of PPE, as well as isolation protocols are sufficient to avoid greater levels of nosocomial transmission¹⁴.

The analysis of graph 2 shows that the number of symptomatic visits, as well as the number of tests performed had a progressive increase, corresponding to the advance of the epidemic in the city of São Paulo.

The performance of the test is important because it allows the return to work of those who tested negative before fulfilling the period of isolation indicated for those who do not have availability to perform the exam. This is especially important when considering the context of the pandemic and the need to rely on the workforce of health professionals, since the number of professionals trained to care for critically ill patients is scarce in several countries of the world¹⁵.

Testing on all health professionals, as described in a UK article¹⁵, allows early isolation and reduction of transmissibility to the team and community. And this reduction is relevant in situations where there is limited access to personal protective equipment.

The reduced number of human resources around health professionals, in the pandemic, the redistribution of these to unknown environments and limited training are presented as major challenges. So, mass testing in health professionals improves the current depletion of the

workforce and reduces the risk of asymptomatic dissemination of SARS-CoV-2¹⁶. However, it is not a reality in all countries.

In March 2020, Provisional Measure 927/2020¹⁷ was published on labor measures to address the state of calamity instituted because of the pandemic. In the original version Article 29 states that "cases of coronavirus contamination will not be considered occupational, except upon proof of causal link". This was suspended by the Supreme Court, which understood the disease as occupational¹⁸. This ensures protection especially for the group of workers at higher risk of contamination, including health professionals¹².

Knowing the profile of the results of RT PCR tests for health professionals of hospital services contributes to the adoption of preventive measures among these professionals. The high number of cases serves as a warning for the elaboration of epidemiological surveillance measures in the sectors in which professionals carry out their activities and prevention against COVID-19. To prevent further spread of the virus it is necessary to ensure good working conditions with the organizational measures necessary for each environment and thus ensure better control of the pandemic.

Providing exclusive care to employees and ensuring their access to faster and more homogeneous medical follow-up, in terms of conduct, are essential in this moment of pandemic to support those who care.

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