SECURITY MEASURES DURING THE CORONAVIRUS INFECTION PANDEMIC*

MEDIDAS DE SEGURANÇA DURANTE A PANDEMIA DE INFECÇÕES POR CORONAVÍRUS*

MEDIDAS DE SEGURIDAD DURANTE LA PANDEMIA DE INFECCIONES POR CORONAVIRUS *

Adrielle Cristina Silva Souza ¹, Eurides Santos Pinho ², Amanda Melo e Santos Limongi ³, Cristiane Chagas Teixeira ⁴, Ana Lúcia Queiroz Bezerra ⁵, Thatianny Tanferri de Brito Paranaguá ⁶

ABSTRACT

Objective: to report the experience, lived by health services, in the analysis of security measures during the Coronavirus infection pandemic. Method: it is a qualitative, descriptive, experience-style study of the experiences of professionals in the health care network. It consisted in the survey of protective measures to avoid the transmission of COVID-19 in the environment of care with the use of SWOT matrix for the organization of data. Results: the results were grouped into categories: Strengths - good team qualification, adaptation of protective measures; Weaknesses - training and communication among professionals lagging behind, waste of inputs and precarious labor contracts; Opportunities - protocols elaborated, continued education on protective measures; Threats - declaration of a situation of public calamity, risk of deficit of inputs and professionals. Conclusion: it is concluded that the scenario of spreading SARS-CoV-2 is complex and challenging, so it is essential to undertake mitigation measures to address the disease, supporting worker and patient safety.

Descriptors: Safety Measures; Pandemic; Coronavirus Infections; Patient Safety; Worker’s Health; Health Planning.

RESUMO

Objetivo: relatar a experiência, vivenciada por serviços de saúde, na análise de medidas de segurança durante a pandemia de infecções por Coronavírus. Método: trata-se de um estudo qualitativo, descritivo, tipo relato de experiência, das vivências de profissionais da rede de atenção à saúde. Consistiu-se no levantamento de medidas protetivas para evitar a transmissão da COVID-19 no ambiente de prestação do cuidado com o uso da matriz SWOT para a organização de dados. Resultados: agruparam-se os resultados em categorias: Forças - boa qualificação da equipe, adaptação das medidas protetivas; Fraquezas - capacitação e comunicação entre profissionais aquém, desperdícios de insumos e contratos de trabalho precários; Oportunidades - protocolos
elaborados, educação continuada sobre medidas de proteção; Ameaças - declaração de situação de calamidade pública, risco de déficit de insumos e de profissionais. **Conclusão**: conclui-se que o cenário de propagação do SARS-CoV-2 é complexo e desafiador, assim, é imprescindível empreender medidas de mitigação no enfrentamento da doença, respaldando a segurança do trabalhador e do paciente.

**Descritores**: Medidas de Segurança; Pandemia; Infeções por Coronavírus; Segurança do Paciente; Saúde do Trabalhador; Planejamento em Saúde.

**RESUMEN**

**Objetivo**: reportar la experiencia vivida por los servicios de salud en el análisis de las medidas de seguridad durante la pandemia de infecciones por Coronavirus. **Método**: se trata de un estudio cualitativo, descriptivo, tipo de relato de experiencia, de las experiencias de los profesionales de la red asistencial. Consistió en plantear medidas de protección para prevenir la transmisión del COVID-19 en el ambiente de brindar cuidados con el uso de la matriz DAFO para la organización de datos. **Resultados**: los resultados se agruparon en categorías: Fortalezas - buena calificación del equipo, adaptación de las medidas de protección; Debilidades: formación y comunicación entre profesionales insuficientes, desperdicio de insumos y contratos laborales precarios; Oportunidades: protocolos elaborados, educación continua sobre medidas de protección; Amenazas - declaración de la situación de calamidad pública, riesgo de déficit de insumos y profesionales. **Conclusión**: se concluye que el escenario de propagación del SARS-CoV-2 es complejo y desafiante, por lo que es fundamental tomar medidas de mitigación en el afrontamiento de la enfermedad, apoyando la seguridad del trabajador y del paciente.

**Descriptores**: Medidas de Seguridad; Pandemias; Infecciones por Coronavirus; Seguridad del Paciente; Salud Laboral; Planificación en Salud.

---

1 Pontifical Catholic University of Goiás/PUCGoiás. Aparecida de Goiânia (GO), Brazil.
1 [http://orcid.org/0000-0002-9169-7143](http://orcid.org/0000-0002-9169-7143)

2 Municipal Health Secretariat/SMS. Aparecida de Goiânia (GO), Brazil.
2 [https://orcid.org/0000-0002-1158-8247](https://orcid.org/0000-0002-1158-8247)
2 [https://orcid.org/0000-0001-9652-1887](https://orcid.org/0000-0001-9652-1887)

4,5 Federal University of Goiás/UFG. Goiânia (GO), Brazil.
4 [https://orcid.org/0000-0002-4752-0439](https://orcid.org/0000-0002-4752-0439)
4 [https://orcid.org/0000-0002-6439-9829](https://orcid.org/0000-0002-6439-9829)
5 University of Brasilia/UNB. Brasília (DF), Brazil.
5 [https://orcid.org/0000-0003-0562-8975](https://orcid.org/0000-0003-0562-8975)

---

How to cite this article
The world encountered the disease caused by a new Coronavirus, called SARS-CoV-2, an etiological agent of the disease COVID-19, initially detected in China in December 2019. It was declared, by the World Health Organization (WHO), International Public Health Emergency (IPHE), revealing the situation as a worldwide pandemic by the high dissemination among people and countries. This is a unique moment for the population, especially for health workers, due to the exposure to the risks present in the work environment, the increase in physical, mechanical, psychological, biological and chemical loads and also due to the fear of accidents and health problems.

It is informed that, at this time of pandemic, it is part of the essential functions of Public Health to provide preventive actions, paying attention to the particular conditions of vulnerabilities of population subgroups, such as hospitalized patients, the elderly, people in mental distress, the street population and health professionals. In order to minimize the impact of viral infection, actions of social distancing and isolation of cases/communicants, use of Personal Protection Equipment (PPEs) for health professionals, increased testing capacity and early identification and follow-up of suspected and confirmed cases are recommended.

It is known that the current pandemic may become a health catastrophe, because there are no clear expectations about when the spread of SARS-CoV-2 will be controlled. It is understood that, in this regard, it is urgent to program and improve care strategies that prioritize health worker safety and patient safety.

For this reason, health services have been obliged, in a short period of time, to develop strategies to maintain the safety of patients and professionals at all levels of health care, from the central administration to the care itself. In this scenario, the protection of priority health workers is considered, since they are the front line in the fight against COVID-19, with the protagonism in the diagnosis and treatment of cases. It is added that, in this way, they need to feel safe to promote protection to patients who seek assistance in their respective practice scenarios.

**OBJECTIVE**

To report the experience, lived by health services, in the analysis of security measures during the Coronavirus infection pandemic.

**METHOD**

It is a qualitative, descriptive, experience report type study of the professionals linked to the HCN of the Municipal Health Secretariat of Aparecida de Goiânia, Goiás, which has an estimated population of 565,957 inhabitants and is located in the Metropolitan Region of Goiânia.
The Primary Care in the city is composed by 40 Basic Health Units (BHUs), with 82 Family Health Teams, two teams of the Street Clinic (CnaR) and four teams of the Municipal Expanded Family Health Core (NASF).

There is a specialized psychosocial care network with four Psychosocial Care Centers (PSCC), two for alcohol and drugs (one for adults and one for people up to 17 years and eleven months) and two PSCC for people with mental suffering or severe and persistent mental disorders (one for adults and one for people up to 17 years and eleven months), a specialized outpatient unit and psychiatric beds in an Emergency Care Unit (ECU).

It is informed that the emergency network has three ECUs, size 3, two mixed units, the Comprehensive Health Care Center (CHCC) for emergency and outpatient care, a maternity clinic, the Mobile Emergency Care Service (SAMU), which serves the entire South Central Region (composed of 25 municipalities in the state) and the Home Care Service (HCS), composed of three Multidisciplinary Home Care Teams (MHCT) and a Multidisciplinary Support Team (MST).

The experience between March and May 2020, driven by the pandemic, consisted in the survey of protective measures to avoid transmission of COVID-19 in the environment of care delivery using the SWOT matrix.

It is explained that the SWOT matrix is a management tool that enables the analysis of external and internal factors related to the organizational environment.\(^8\) External analysis focuses on environmental threats and opportunities, while internal analysis helps identify organizational strengths and weaknesses.\(^8\)\(^9\) Helps the organization, through the use of the SWOT matrix, to understand its resources and capabilities and choose the most appropriate strategies to address the situation under analysis.\(^8\)

This matrix is named for joining the initials of the following English words: Strengths; Weaknesses; Opportunities; and Threats.\(^10\) It is understood that the SWOT matrix is a management tool that helps the organization of data and projects the crossing of information from the environment, which enables the internal and external analysis of the organization.\(^9\) Due to its sensitivity in guiding the planning and analyzing strategies defined in a broad context, such as the Health Care Network, it was chosen to use it in the process of surveying/implementing the protective measures in the work environment associated with the control of transmission of COVID-19 and early identification of cases.

The matrix was built in a collective way, through virtual meetings, by primary care supervisors, specialized attention and emergency and emergency network, motivated by the need to reformulate protocols implemented in the municipality to meet the moment of pandemic. The
product was validated by 12 managers linked to the services involved. The execution of critical and reflexively actions was described, according to the categories of the SWOT matrix.

**RESULTS**

The measures implemented to prevent the transmission of COVID-19 during the assistance in the HCN components in the SWOT matrix are presented (Figure 1).

![SWOT Matrix](image)

**Strengths and potential for patient and worker safety**

The work process was reorganized as follows: in Primary Care, the BHUs started to attend, as a priority, any user with flu symptoms, regardless of the area attached; to reduce the flow of people within the health services, the scheduling of appointments was reduced with the expansion of vacancies for spontaneous demands, and home visits by Community Health Agents (CHAs) were replaced, when possible, by telephone contacts.

The CnaR’s approach to Street Population (SP) was modified; the greetings with touch of hands and cultural circles with music and/or conversations were replaced by physical distance, the use of masks and the spaces for listening started to be individualized or in small groups.

Priority was given, by Health Education actions, to signs and symptoms of COVID-19, identification of risk groups, individual and collective protection measures, respiratory etiquette, hand hygiene, environment and mask conditioning.
In the mental health specialized care services, the scheduled appointments were reduced and organized by schedule. The validity of psychotropic prescriptions was also changed to 60 days, in cases that present stability of the psychic picture, and other cases were directed to therapeutic monitoring. The initial reception was restricted to urgent cases and other work processes developed by professionals, such as workshops and therapeutic groups, were suspended.

Initial care and risk classification in tents outside the usual environment, with assessment of vital signs, especially temperature, were performed in the Urgency and Emergency Network. It is important to point out that the temperature is now gauged, including all accompanying persons and health professionals.

It was defined that cases with suspicion of COVID-19 should await medical attention in specific spaces, prioritizing physical isolation, and, after attending, symptomatic users and those belonging to risk groups should be referred for PCR testing in the unit. A telemedicine flow was structured for that purpose, training a team of professionals for the notification of the PCR result, monitoring and orientation of suspected and confirmed patients.

**Opportunities from protective actions against COVID-19**

With the pandemic, specific committees were created to deal with the organization of the necessary structure to confront it. The teams of the committees and the HCN, especially those of the emergency and emergency type, began to develop flows, protocols, training, redesigning the profile of the unit and its sectors for the organization of isolation measures, in order to attend and/or receive patients suspected of the disease, as well as the use of telemedicine to attend the population and support professionals.

It is believed that the process of continuing education and health education also provide opportunities for measures to protect and promote mental and physical health and guidelines for scheduling multiprofessional care, and changes in care were made available through social networks, videos and live videos for the population.

It is registered that the visits to the patients, in the health establishments, were cancelled for an indeterminate time. Medical bulletins were made available via telephone (call or report by application), in two hours, in order to inform and nurture the families.

For users and professionals who had positive PCR testing, telemonitoring and teleconsultation were organized, as well as a reserve of vacancies for psychiatric and psychological care, until the stabilization of the instated psychic illness (attention during and after the pandemic). This action represents the role of empathic leadership of joint construction in such an atypical moment when caring, in a special way, for the front line caregivers.

**Weaknesses and limitations in facing the pandemic**
The need for training of the different professional categories was identified, since they presented difficulties related to the adherence to hand hygiene, the correct paramentation and de-paramentation of PPEs and, also, the knowledge of the assistance to the critically ill patient using a respirator. To solve the problem, despite the reduction of the face-to-face training, remote activities were carried out.

Hand sanitizing has been gained, especially with the use of antiseptic friction and alcohol gel, also important for the general population and health professionals. For all the modifications, the opportunity was given to re-evaluate the real needs of the health units regarding the use of inputs. It is noted that, with the declaration of social isolation in the state, there was a considerable reduction in non-emergency care at the doorway of the emergency network units.

One of the specialized mental health services, PSCC for children and youths, the health team, family members and users for the production and sale of fabric masks, were articulated in a project of solidarity economy, and this provided financial return in times of unemployment and difficulties related to family income.

**Threats to health services in the face of the pandemic scenario**

The main threat was the declaration of a public calamity situation, in Legislative Decree No. 162 of April 3, 2020, due to the pandemic by COVID-19. The panic caused by the pandemic led to the indiscriminate use of PPE, and there may be a risk of shortages of this equipment, while the bidding and purchase process was underway.

The risk of professional deficit due to withdrawals by COVID-19 was identified, since most health professionals are over 60 years old and have comorbidities such as heart disease, diabetes, among others. In addition, since they are considered risk groups and, therefore, more susceptible to infection by COVID-19, they were dismissed from care, as well as the contaminated professionals, reducing the number of personnel.

It is important to emphasize that the actions to prevent and contain the contamination by the new Coronavirus meet the principle of equity, prioritizing those cases that most need health care. Professionals, patients and family caregivers should be aware of the formation of a network of care that aims at the biopsychosocial safety and welfare of the patient.

The organization of inputs and the availability of PPE as health forces and workers and users were oriented and encouraged as to the continuous use of protective masks during their stay in the health services since the beginning of the pandemic.

It was followed, by the use of PPE, the Municipal Protocol nº 001/2020, based on the GVIMS/GGTES/ANVISA technical note nº 04/2020. It is detailed that the changes adopted were the
implementation of the mandatory use of masks for all servers, users and companions; use of goggles or face shield and cloak for professionals who perform services in the offices and/or procedure rooms; strengthening of hand hygiene with provision of sinks with liquid soap, paper towel and alcohol gel dispensers distributed in the units; guidelines on respiratory etiquette and physical distance of at least one meter between people and, for the protection of SP, the strategy for the reduction of damages was the delivery of water for hydration, masks and hygiene kits, in partnership with the Social Work Secretariat.

During the pandemic period, the Ministry of Health paid special attention to the production, acquisition and distribution of PPE for health workers throughout the country. It is considered that the changes experienced in the work processes were successful due to the composition of the HCN team of specialists, which prioritized interpersonal relations and multiprofessional care. The professionals committed to reinventing new forms of care, with emphasis on adhering to protective measures, in addition to promoting health education, were shown to be.

In the referenced services, health education actions were involved through non-pharmacological interventions, such as hand hygiene, respiratory etiquette, use of masks and social distancing. It covers the isolation of confirmed cases, the quarantine applied to contacts and the voluntary practice of not going to places with agglomerations of people. It is also observed, as a favorable factor, that most of the health units have an adequate physical structure for the health care of the population and undergo daily cleaning and sanitization processes.

The opportunities of the external environment are seen as novelties and trends that, if exploited, become forces. The created committees organized the structure and the confrontation with the respective preventive measures.

Telemedicine was used to assist the general population and support health professionals. Telemedicine is known to be an important tool in facing the contemporary challenges of universal health systems, and has the potential to solve problems related to access to specialized medical services, regardless of geographic location.

The wide dissemination of information material on mental health promotion and the use of telecare was a powerful strategy in the face of the recognized risk of mental illness at the time of the pandemic, since people are "prevented" from going to social environments, have changed their routines for remote work and many have lost their jobs or sources of income. It also becomes the maintenance of actions as close as possible to the routines previously established, such as performing physical activities, healthy eating, maintenance of social support networks, via digital, during quarantine, essential for mental health, since the breakdown of social and physical connections is an important facilitator of negative psychological impacts.
The construction of the therapeutic project was directed, guaranteeing intersectoriality, for the use of video calls or telephone contacts. Therefore, its operationalization methods were reinvented, allowing greater network integration by facilitating the participation of a greater number of professionals and units in real time.

It was also demanded a greater integration of the SP transport network for health care, which was previously carried out by the car intended for the work of the CnaR team, on a voluntary basis and as a strategy of accessibility and integrality. This action was suspended in order to maintain the safety of the patient and of the professional.

It was thus defined that specific and adequate services for transportation (SAMU and sanitary transport) would be activated, as foreseen in their respective competencies, and to avoid the refusal of transportation due to the lack of escorts, the CnaR team would accompany the user in its vehicle until the admission in the health unit. This favored the sharing of care, guaranteeing the user access to the service.

The collaborative attitude of managers and professionals in favor of the safety of workers and, consequently, of patients, in strategies for the conscientious provision of PPE is highlighted. Specific knowledge about distance learning was required by the scenario. This methodology should combine learning methods and technologies, associated to debates and analysis of the work scenarios experienced, challenging health workers in the daily practice of assistance.

Another weakness is related to failures in communication between services and the community and, for the success of social distancing actions and with the objective of making the situation less traumatizing, access to information, especially about the situational reality and justifications about the behaviors adopted, is fundamental. Clear and precise information can minimize negative effects on emotional health and the propagation of false data in relation to COVID-19.

It is warned that due to fear and intense anxiety, many people use PPE in an exaggerated way, resulting in wasteful workflows. It is revealed that the greatest difficulty found in health units, according to their managers, is the control of PPE. It was identified that some servers, who do not act directly in care, require aprons and faceshields for fear of acquiring the disease; others wear two or more facial masks at the same time and there are still those who, even with the realization of training, do not put into practice the use of masks, hand hygiene and maintenance of physical distance, as recommended.

Service contracts or accreditation are considered a negative factor, due to the precarious nature of the work relationship, since they do not offer the right to medical certificates, vacations, nor the 13th salary. This situation is understood as lack of investments in workers, offering risk to the user’s safety monitoring, since it may omit information related to their own health. This contract
also results in high professional turnover, leaving several teams incomplete at UBS, and such precariousness directly interferes in the quality of services by discouraging professional qualification and the continuous search for improvement of work processes.\textsuperscript{6}

The challenges regarding the demands of COVID-19 must be minimized, guaranteeing the necessary investments and training, recognizing all the work performed by the health teams and which resources need to be guaranteed to these services and professionals in order to act in a technical, scientific, dignified and humanitarian manner.\textsuperscript{23}

It is noted that threats are external factors that can generate unfavorable conditions in health organizations.\textsuperscript{8} Lack of inputs and PPE, incorrect use and other factors could result in contamination by COVID-19 in the work environment itself, configuring threats. It is worth mentioning that the need for protection of health establishment professionals has gained great repercussion and, in Brazil, graphs presenting data stratified by gender, age group and geographic region are frequently elaborated as subsidies to guide monitoring, control and prevention measures, as well as for planning and allocation of resources needed for worker and user safety.\textsuperscript{24}

It has generated, by the removal of professionals, an increase in the workload of those who remain in the front line of care. Added to this were concerns about you and your family members during the pandemic, due to changes in cautious behaviors imposed on the population during the intracrisis period, and this increased the emotional, physical and social role burden, facilitating the triggering, aggravation or recurrence of mental disorders or physical diseases.\textsuperscript{25}

The risk for mental illness related to fear and anxiety of professionals in treating patients with suspicion or diagnosed with COVID 19 was verified. It was pointed out that the patient's safety centers, in these units, were overloaded, because, besides their attributions, they took on epidemiological surveillance actions in relation to the notifications of COVID-19, the follow-up of the PCR collections in the units and the follow-up of the patients, professionals and their contacts with positive diagnosis.

It is observed that if, on the one hand, some safety goals have reached their best numbers, such as hand sanitizing, on the other hand, notifications of adverse events have been reduced, directly compromising the monitoring of patient safety.

There are also fears, as a threat, of the worsening of the illness situation, because, among the actions adopted in this period, the limitation of individual care, a 50% reduction in care for all professional categories and, thus, the occurrence of adverse events (worsening in preventable health) in non-serious patients tends to increase.

It is considered, in the care of the SP, that the care network is incomplete, because there are no transitory reception units in this municipality and, therefore, the implementation of social isolation
is compromised. Therefore, the assistance contingency plan must provide an adequate environment for the SP to practice social distancing, adequate hygiene and be welcomed and assisted.

Finally, the communication deficit between the HCN services was also identified as a threat, resulting in failures in protocol compliance, especially related to the referral of patients and professionals to perform PCR testing. In relation to the communication between the HCN services, the power of door entry of any of them should also be highlighted, i.e., patients can be welcomed and guided in any instance and, thus, can have their health needs referred, regardless of the social and health moment they all experience.

CONCLUSION

The pandemic scenario provided an opportunity to mobilize health and management teams to build protective measures to avoid contagion by COVID-19 in the care environment and ensure care to users.

The SWOT matrix made it possible to recognize strengths, opportunities and, especially, weaknesses and threats of the services for the elaboration of contingency plans and to confront moments of crisis. This scenario demonstrated the capacity and potentiality of the public health service to reinvent itself. It is expected that, by the end of the pandemic, health services may be resilient and continue to guarantee care free from the damages associated to care.

By reporting on this experience, it is hoped to contribute to the development of HCN contingency plans and (re)inventions in the process of health care for the population.

CONTRIBUTIONS

It is informed that all the authors also contributed in the conception of the article collection, analysis and discussion of the data, as well as in the writing and critical review of the content with intellectual contribution and in the approval of the final version of the study.

CONFLICT OF INTERESTS

Nothing to declare.

REFERENCES


Correspondence
Adrielle Cristina Silva Souza
Email: enfeadrielle@gmail.com