

Care of Suspected or Confirmed Patients of Infection by the New Coronavirus (COVID-19) by the Mobile Pre-Hospital Service Teams: Literature Review

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Abstract

Introduction: Health professionals who are at the forefront of this pandemic must be highly trained to receive a patient and know how to handle the situation.

Objective: Address the care of patients suspected or confirmed of infection by the new coronavirus (COVID-19) by mobile pre-hospital care teams through literature review.

Method: It is a literature review search conducted by bibliographic search in a database, a formal and rigid work structure was included to guide this integrative literature review study.

Result and Discussions: The research made it possible to ponder the actions necessary to prevent and control the pandemic. Conducts were identified to ensure instrumental safety in mobile units, professional safety and patient safety in mobile pre-hospital care. As well as a concern with the safety of professionals and patients, since they adopted conducts for the prevention and control of the pandemic through the use of equipment, materials and preparation of the ambulance.

Conclusion: With the elaboration of the study it was possible that with a survey of the actions found in these articles, it is possible to analyze the performance of health professionals in the performance of the mobile pre-care service in suspected or confirmed cases of COVID-19. The importance of deepening the discussion on these topics at the international level is emphasized.

Keywords: *Pre-Hospital Care; COVID-19; Coronavirus; Health Professionals; Nursing*

Introduction

The year 2020 began with the news of the appearance of a new zoonotic coronavirus, which crossed species to infect populations becoming a pandemic. This virus, called 2019-nCoV, was first identified time in Wuhan, Hubei province, China. Like outbreaks caused by two other human respiratory coronaviruses that have appeared in the last two decades (SARS CoV, MERS-CoV), the new coronavirus COVID-19 causes potentially severe respiratory disease in some individuals [1].

Brazil is experiencing the most serious pandemic of an infectious disease caused by a new coronavirus. New coronavirus (COVID-19) it is potentially fatal and represents the most important global public health problem of the past 100 years, compared only to the Spanish flu that killed about 25 million people between 1918 and 1920 [2].

An important fact in transmission and COVID-19 is the high viral load in the upper respiratory tract, even among pre-symptomatic patients, which differs from other respiratory diseases. In many individuals, particularly the elderly, the diagnosis of infection based on symptoms is more difficult: many do not have a fever, have a chronic cough due to other pathologies, or have dyspnea on exertion due to insufficiency.-previous heart failure [3].

In prehospital care, mobile units have several specificities depending on the characteristics of the physical space where the care takes place, operational working conditions, the number of professionals in the teams, the equipment available and the procedures performed, and also the particularity of service scenarios. Such characteristics can give greater risk to its professionals, in the face of a pandemic such as that of COVID 19 [4].

Faced with a situation of cardiopulmonary resuscitation (CPR), special attention is required, particularly with regard to the increased risk of aerosols during chest compression and ventilation maneuvers, offering a relevant risk of contamination to the assistant team since it is a maximum emergency procedure and subject to occurrence in patients with COVID-19 [4].

Health professionals who are at the forefront of this pandemic must be highly trained to receive a patient and know how to handle the situation. The behavior and posture of health professionals and the population after the emergence of new cases, protection must be proportional to the risk. In cases of patients with respiratory symptoms, whether coronavirus or other transmissible virus, the adoption of the use of masks, eye protectors and facials are recommended in direct care; avoiding contact with people who suspect the disease is also indicated in other situations. In addition to hygiene care, such as washing your hands properly, not sharing personal items, covering your nose and mouth when coughing and sneezing [5].

The emergency medical team, in its pre-hospital performance, is required to attend and perform various procedures from home care, on the streets, highways, arriving at the transport of patients to the hospital unit and, in the current pandemic, possible occurrences in patients of COVID-19 [6].

As much as the nursing team is at the forefront in the fight against Covid-19 worldwide, working continuously to care for critically ill patients, many of whom use ventilators and require highly complex care, but are not super heroes. Nurses are at the forefront of treating cases at Covid-19, facing serious implications for their working conditions and personal safety to be recognized. But, in addition to this recognition, they need to be translated into effective policies, support and permanent consideration for these professionals who are fighting a fight against the virus, putting themselves at risk for the containment of the pandemic [7,8].

Objective of the Study

The objective of this work is to address the care of patients suspected or confirmed of infection by new COVID19 coronavirus by mobile pre-hospital care teams through literature review.

It is justified to carry out this study in order to contribute to the reflection of health professionals, nursing staff, managers and training centers, on the need to care for the suspected or confirmed patient of the new coronavirus in the APH, thus seeking that professionals have autonomy and seek their space when using their knowledge, in an attempt to break the dichotomy between what is recommended and what is performed in the daily care, collaborating for the planning and organization of practice and quality care.

Materials and Methods

It is a literature review research carried out by bibliographic search in a database, to guide this study of integrative literature review, a formal and rigid work structure was included.

The database of the Virtual Health Library (VHL) was used, which contains publications from Health Sciences in General sources, such as: Latin American Literature in Health Sciences (LILACS), International Literature in Health Sciences (MEDLINE) and Scientific Electronic Library Online (SCIELO) and also specialized areas such as the Bibliographic Database in the Nursing Area of Brazil among others with the keywords Mobile Pre-Hospital Care. COVID - 19. Coronavirus. Health professionals. Nursing. Held in June and July.

Of the 50 articles selected for reading, only 25 were chosen. The others were rejected for not fitting the proposed theme and not being within the time stipulated for the research.

Inclusion criteria were articles in their complete and free versions, in Portuguese as well as in English. Thus, the present work involves reading the articles, so that it requires an approach that privileges the understanding of the studied phenomenon. Therefore, the analysis documentary is used as the main technique of data capture. The present study has no conflict of interest.

Results

After this Declaration, the Ministry of Health (MS), through Ordinance No. 188, of February 3, 2020, declared Public Health Emergency of National Importance (ESPIN), due to Human Infection by the new Coronavirus (COVID-19), recognizing that the situation demands the urgent use of measures for the prevention, control and containment of risks, damages and damages to public health. The complexity of this situation mobilized a joint effort by all the services in the health network of the Unified Health System (SUS) to identify the etiology and adopt proportional and risk-restricted measures.

The virus can survive on different surfaces for several hours or even days, but with proper hygiene and precautions, simple disinfectants can kill you. Elderly people and people with chronic medical conditions, such as diabetes and heart disease, are people at risk for developing severe symptoms of the disease. As it is a new virus, the behavior of the virus in children is still investigated. We know that it is possible for people of any age to be infected with the virus, but so far there are relatively few cases of COVID-19 reported among children. The virus in some cases can be fatal, until now mainly among elderly people with pre-existing conditions [9-11].

COVID-19's person-to-person transmission routes included direct transmission, such as coughing, sneezing, droplet inhalation transmission, and contact transmission, such as contact with oral, nasal and ocular mucous membranes. It can also be transmitted through saliva, and oral-fetal routes can also be a potential route of transmission from person to person [12].

Given this, to avoid the high spread that the virus has, it is necessary to carry out preventive and control measures. The implementation of standard precautions is the main measure of prevention of transmission between patients and health professionals and must be adopted in the care of all patients (before arrival at the health service, on arrival, screening, waiting and during all assistance provided) regardless of risk factors or underlying disease, ensuring that internal policies and practices minimize exposure to respiratory pathogens, including COVID-19 [13].

Intra and prehospital urgent and emergency care services have also started preparing to receive patients affected by Covid-19. It is noteworthy that the majority of urgent and emergency institutions already had overcrowding of care due to other diseases that affect the population. The Mobile Emergency Care Service (SAMU) was created as a component of the Emergency Policy, after the institution of the National Emergency Care Policy, in September 2003, through Ordinance MS 1863/03. It is configured as mobile pre-hospital care.

In general, the demand for pre-hospital care has increased due to several factors, including increased urban violence, the number of car accidents and clinical conditions, such as acute myocardial infarction. In this context, this service becomes even more complex, as it acts to reduce death rates for these and other conditions, ensuring qualified and resolving care for small, medium and large emergencies, referring them to appropriate references. In addition, it performs inter-hospital transportation for reference and contract-reference, both for SUS and private units [14].

Discussions

Instrumental safety in mobile units

According to Marques (2020), when the team is directed to the occurrence through radio activation, they receive detailed information about the care that will be provided, the severity level of the patient, sex, age, location and, in case of need for transportation, the place where it will be taken. However, when it comes to primary care, the destination of the patient is only defined on the spot by the regulator, after recognition of the condition and clinical condition. Thus, in several situations, it is often not possible to predict whether or not there are suspected and/or confirmed cases of Covid-19, which makes it essential to implement comprehensive preventive measures before, during and after these visits.

Reduce or remove non-essential equipment and materials from the vehicle or store non-essential equipment in a closed compartment before patient boarding. This reduces the time consumed in carrying out terminal cleaning after transport; avoid opening cabinets and compartments unless it is essential. If any equipment is needed should be removed from the cabinet before start patient care; Keep the vehicle/ambulance windows open to facilitate ventilation and air circulation. Air conditioning or ventilation in vehicles must be configured to extract and not recirculate air inside the vehicle [6].

For the protection of professionals and even patients, changes were made to ensure the effectiveness of care without causing risks. As for the cleaning of the ambulances, the teams prepare the ambulance by cleaning the surfaces with neutral detergent, followed by disinfection with disinfectant solutions. This disinfection can be done with 70% alcohol, sodium hypochlorite or disinfectant indicated specifically for this purpose [15]. When cleaning and disinfection is complete, all cloths used must be disposed of in infectious waste and cleaning utensils (e.g. buckets) cleaned with hypochlorite and stored for spontaneous drying. These measures meet the recommendations adopted by the National Health Surveillance Agency (Anvisa) for the prevention and control of the pandemic [16].

In addition to these other measures, were: wrapping the front seats of the ambulance with a plastic bag [8] and protect them equipment and other waterproof items with thick transparent PVC film (0.40 mm) to facilitate subsequent cleaning. Plastic boxes, washable material, were also used, organized with essential materials, such as syringes, needles and venipuncture catheters. Materials not essential to care were placed in a closed compartment at the top, in order to reduce the risk of contamination and the time spent in carrying out terminal cleaning after transport [17].

You should minimize the number of people in the ambulance with the patient during the transport. Family members should be guided to follow by their own means. Transporting patients when using mechanical ventilation, the FVO team must evaluate the compatibility of the circuits of the original unit and the transport fan and, if possible, use them. Transport with the equipment in use in the original unit can be considered, depending on portability. The use of HEPA filter is an essential condition [18].

In the event of cardiorespiratory resuscitation, all work surfaces used to position airway/resuscitation equipment will also need to be cleaned in accordance with local guidelines. Specifically, check that the equipment used in airway interventions (for example, laryngoscope, face masks) was not left on the patient's bed - try to leave them on a tray; take care that the suction cannula is also not on the patient's bed - discard the contaminated tip inside a disposable glove [4].

Professional security in times of covid-19

Health professionals who will act directly in the care of these patients, must not have characteristics defined as a risk group (diabetes, hypertension and cardiovascular diseases. Ensure that the professionals who will participate in these services have adequate training in standard precaution techniques, contact and aerosols [19,20].

Staff safety is a key aspect of all pre-hospital mobile care. Properly use the appropriate Personal Protective Equipment (PPE) (cap, waterproof apron or cloak, glasses or face shield, respirator or N95 mask, gloves covering the apron cuff, closed and waterproof shoes that allow disinfection). Hand hygiene before and after putting and removing PPE (CDC, 2020c). Pay attention to the correct fit of the mask to the face [21].

According to Marques (2020), in his research he found that as it is a mobile pre-hospital care, in which there is contact with patients from different locations, some of which are difficult to access, the need to adapt some materials to the realities faced by these teams was identified. The apron made available and recommended by institutions such as the Ministry of Health, for example, creates a feeling of insecurity in the pre-hospital context, as it does not allow the coverage of the entire body extension, especially for professionals who are taller. In addition, when they bend down, the exposed area increases, as the apron is attached at the back to the cervical region and tied by the waist.

Due to these reasons, the Brazilian Association of Emergency Medicine (ABRAMEDE) and other associated institutions suggest for professionals in pre-hospital care the use of overalls with head protection (360° protection), made with high density polyethylene, with handles and elastic ankles (example Tyvec/tychen). These measures aim to expand the protection of those who provide pre-hospital care and, therefore, who daily enter environments already saturated, with contaminated surfaces and where multiple contacts are present, requiring superior protection.

The use of a long-sleeved uniform and boots is recommended. The use of high-top rubber boots in the composition of a uniform during the pandemic is allowed due to the ease of cleaning with water, soap and 1% sodium hypochlorite; Do not use the uniform outside the workplace and do not circulate with this PPE in public environments such as restaurants and public transportation, among others [18].

Workers on health teams and essential services recently left their homes to live in another environment, or even their cars, as a way to avoid contact with family members and in an attempt to protect them from any contagion. Specifically in the daily work of the mobile emergency services teams, care during this pandemic period has been offered as carefully as possible to patients and family members and, at the same time, seeking to protect all professionals from possible contagion [14].

Patient safety in pre-hospital care

Patient safety refers to the prevention of possible damage caused during the health care of patients and other subjects involved in this process, who are always susceptible to a chain of errors, due to the complexity of the factors that involve care. For this prevention to be achieved effectively, some basic patient safety strategies need to be implemented, such as professional training for safety, organizational and institutional awareness, the distribution of resources and the constant updating of processes, with a critical evaluation, to build a system conducive to the development of a positive and structured safety culture to reduce risks and prevent errors [3].

According to the Brazilian Association of Emergency Medicine (ABRAMEDE) in recommendations for the care of patients suspected or confirmed of infection by the new coronavirus by mobile prehospital care teams, suspected or confirmed patients should wear a surgical mask during service and transport to the health facility, if tolerated; In suspected or confirmed cases of COVID 19, oxygen administration through devices should be carefully analyzed. Consider:

- The smallest flow required for the best possible result should be used, therefore, titrate the response considering pulse oximetry and the response patient clinic;
- If oxygen therapy is indicated, preferably use cannulas and catheters nasal flow up to 5 l/min and place a surgical mask over the cannula;
- Non-repellent masks have high aerosolization potential and should only be used if absolutely necessary, such as example in case of moderate to severe respiratory distress, hypoxia significant or failed response to the nasal catheter;
- Nebulization is contraindicated at the APH, at this time of pandemic.

In order to promote patient safety in the prehospital context, during primary care or interhospital transport of suspected or confirmed cases of Covid-19, we seek to obtain as much information as possible about the patient's condition, so that all the team can plan for service. This planning includes separation of the necessary PPE, preparation of the ambulance and provision for possible interventions/procedures to be performed. It is an essential step to promote patient safety in a differentiated context, such as that experienced by urgency and emergency teams, especially those inserted in mobile pre-hospital care units [14].

According to Anvisa, if there is a need for a companion in suspected or confirmed cases, the patient and companion should wear a surgical mask throughout the journey, in addition to tissues in case they need to cough and/or sneeze, then hand hygiene with alcohol 70%. The disposable mask, in patients using oxygen therapy, must be used over the oxygen cannula [17].

In search of adopting measures in favor of qualified care in times of pandemic, professionals inserted in the pre-hospital context seek to promote their own safety and that of the patient, ensuring that it is correctly identified and evaluated, as well as investing in improving communication among professionals, in increasing safety in the prescription, use and administration of medications and strengthening hand hygiene [17].

Thus, when primary care or inter-hospital transport is performed, priority must be given to the quality of care through the provision of trained and safe care that ensures, in the best possible way, the well-being and safety of patients and until arrival at the destination [14].

Conclusion

With the elaboration of the study it was possible that with a survey of the actions found in these articles, it is possible to analyze the performance of health professionals in the performance of the mobile pre-care service in suspected or confirmed cases of COVID-19. The importance of deepening the discussion on these topics at the international level is emphasized.

The knowledge of this reality allows us to value the need to restructure the current health system, in the perspective of consolidating the principles of SUS.

Health professionals should always improve their knowledge through studies, seeking to add new knowledge, to develop its activities in a systematic and humanized way, providing quality assistance through a holistic view, based on the ethical and legal principles of the profession.

It is hoped that this reflection can contribute to a new look in relation to the nursing care performed by nurses in the pre-hospital mobile service to promote the safety of professionals and patients amid so many difficulties currently experienced to reduce exposure to Covid-19.

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