Review Article

Triage Room Principles and Recommendations for 2019 Novel Coronavirus

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Abstract

Triage becomes necessary when resources and time are not sufficient to provide the best possible services to all patients. This condition is more common in situations with a large number of casualties, like infectious epidemics. What is apparent is that, in the case of a widespread outbreak of infectious disease, hospitals are on the front lines of infected patient admission and treatment. Since the training of health-care workers is one of the most important pillars of preventive measures in controlling this pandemic, this study was conducted with the aim of expressing the principles of triage of infectious disease epidemic with a COVID-19 approach.

Keywords: *COVID-19, emergency preparedness, hospitals, triage*

Introduction

The new coronavirus pandemic (SARS-CoV-2), known as COVID-19, began in December 2019 in Wuhan, in the province of Hubei, China. According to the World Health Organization (WHO), the disease has now spread to more than 195 countries. With the increasing outbreak, the WHO has officially declared a public health emergency of international concern.[1]

In the event of a widespread outbreak of infectious diseases, hospitals are at the front lines of the admitting and treating of infected patients; in this case the workload of these centers will multiply by a many times over, despite the same limited resources.[2] Disease control relies on rapid identification, proper risk assessment, segregation of possible cases, and measures to prevent the spread of the virus.[3] Accordingly, rapid identification and isolation of infectious patients as well as the complexity of triage and evaluation of patients with developing clinical symptoms and the potential of infectious diseases that may prolong for weeks and months are among the problems that hospitals face.[4]

Triage becomes necessary when resources and time are not sufficient to provide the best possible services to all patients. This condition is more common in situations with a large number of casualties, like infectious epidemics,[5] so the most critical measures to minimize the problems caused by patients' referrals start from triage stations. At present, due to the rapid and widespread outbreak of coronavirus, the state of emergency has been declared and hospitals will face a massive influx of patients.[6] Since training of health-care workers is one of the most important pillars of preventive measures in controlling this pandemic, this study was conducted with the aim of expressing the principles of triage of infectious disease epidemic with a COVID-19 approach. It is hoped that the present study will take an effective step toward maintaining and ensuring the health of the people and reducing the pain and suffering caused by COVID-19.

Triage Set-up

There should be a dedicated triage and waiting room for infectious epidemics, especially respiratory diseases. The triage unit is the first available place to patients upon arrival in the emergency department. Patient triage is based on the type, level, and volume of required services. In an epidemic situation, the place of triage and isolated rooms is one of the vital areas of the hospital, and the security staff of the hospital must constantly monitor this place to maintain its security.[7]

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The triage room should have only one entrance[8] and be separate from the main entrance of outpatients.[3] Signs should be posted at the entrance of the hospital and in the triage room with instructions to individuals with symptoms of a respiratory infection such as cough and shortness of breath to notify the triage staff immediately to take the necessary precautions. This poster should contain the symptoms of the disease and the necessary instructions for patients who enter the hospital with symptoms of a respiratory infection.[8]

Procedures to separate suspected cases from the other non-COVID-19 patients and isolation procedures are established, e.g. placed in different waiting rooms and use of different toilets; this also covers areas that need to be reached for water supplies.[5] The non-COVID-19 patients triaged by different nurses in a different place and visited by a different physician.

Face masks should be provided to coughing patients and other symptoms associated with COVID-19 upon entry to the hospital, and the necessary explanations should be given about the way of using it. If the mask is not available, patients can be informed to cover their mouth and nose with tissue paper, scarf, homemade mask, and similar kinds of stuff.[9] If possible, nurses can be present at the entrances of the hospital to control patients' fever using infrared thermometers, and if individuals have fever or clinical symptoms, remind them of the above guidelines and refer them to the pandemic infection triage room. Furthermore, in this situation, it is better to keep the distance of one meter between patients in the waiting room by drawing line or by marking on the ground to reduce the contact.[3] In the triage and waiting room, there should be necessary equipment and infrastructure to carry out preventive measures and infection control. Alcohol-based sanitizers for hand hygiene should be available at the entrance and in all common areas.[7]

The waiting room should be well ventilated (at least 12 times per hour air circulation or having natural ventilation) and has low traffic and be safe.[7] If there is no dedicated waiting room, a separate area in the main waiting room can be made by physical barriers to separate patients with a clinical presentation of epidemic disease; and contact between patients can be restricted. If the waiting room is not separated physically, the distance of one meter between patients with clinical symptoms of transmissible respiratory infection and other patients should be maintained unless they are members of one family with previous contact. Furthermore, the presence of family members should be limited. In the waiting rooms, toilets and handwashing places for patients with symptoms of infectious diseases should be considered. Locations for these patients should be marked from the hospital entrance with highlighted signs. Furthermore, there should be a queue system, to separate symptomatic patients from other patients. In waiting rooms, chairs or benches should be placed at a distance of 1 meter.[3,9]

The triage room must be equipped with negative pressure ventilation 9. There should be regular guidelines based on hospital protocols for cleaning common areas and equipment.[10] Ultraviolet and air disinfectants must disinfect the triage room at regular intervals.[3]

Tissues and no-touch receptacles should be available for disposal of tissues, masks, and other disposable items in waiting rooms and common areas.[10]

The reception desk in the triage room should be separated from the patients by a glass or plastic cover to minimize contact of the medical staff with the patients.[3]

Hospital Triage Team

Assign a supervisor to perform and monitor all triage steps. There should also be continuous monitoring of personal protective measures by medical staff.[7] Personal protective equipment and other infection prevention devices (hand sanitizers) that should be used by the medical staff should be sufficiently available at the patient's entrance, triage, and examination site.[11,12] Triage personnel should be trained on appropriate processes (questions to be asked and actions to be taken) to quickly identify and isolate suspicious cases.[9] Use eye protection (face shield or goggles) when hospital staff are in close contact with the patient with respiratory symptoms (e.g., cough or shortness of breath), as there is a risk of contact with the patient's respiratory secretions.[13] Emergency staff must also be aware of the clinical and exposure screening criteria and be updated as needed regarding case definition and screening for travel history.[14]

Principles of Triage

During an epidemic, the hospital must apply triage criteria to accept and isolate infected patients. In some cases, local health officials may consider another health center to focus on providing medical care to noninfected patients.[7] Although most people with COVID-19 have no symptom or have mild symptoms (81%), some have severe symptoms that require oxygen therapy (14%) and about 5% require intensive care unit admission.[15] Early detection of suspected patients makes it possible to initiate appropriate infection prevention and control (IPC) measurements in a timely manner. Elderly patients and those with comorbidities, such as cardiovascular disease and diabetes, have a higher risk of developing serious illness and mortality. These patients may have mild symptoms but are at serious risk and should be admitted to a specific ward for further monitoring. For mild patients may have signs and symptoms such as fatigue, fever, muscle pain, nasal congestion, headache, malaise, hospitalization may not be necessary unless there is concern about rapid deterioration or inability to return to the hospital immediately, but isolating and reducing virus transmission should be a priority.[15]

Patient admission and triage criteria (e.g., location of triage and entry/exit route) should be communicated to hospital staff, prehospital networks, and prehospital medical staff in accordance with hospital/national protocols.[7] The purpose of early detection of infectious patients is the prevention of transmission of infection to other patients and health-care workers.[11] Employees of each hospital must use the hospital triage protocol.[16] Implement the hospital's strategy for admission, inter-hospital movements, referral, and discharge of patients with ARDS with the help of local health authorities and in accordance with relevant criteria and operational protocols.

It is necessary to create a process for rapid guidance of patients to the place of triage. Early diagnosis and separation of patients with respiratory disease from other patients are essential.[17] The hospital can also provide a system for patients to wait in their personal vehicles or outside the hospital (if medically appropriate) and be notified by phone or other remote methods when it is their turn to be evaluated.[10] After arrival, immediately assess patients for fever, cough, shortness of breath, or any other symptoms that indicate a clinical presentation of the infection, to quickly take additional precautions. If the patient with a clinical presentation of a contagious infection is transported with an ambulance, make sure that the ambulance staff gives the information to the emergency department staff so that the IPC measures can be taken immediately. A nurse at the entrance to the waiting room checks the fever of all patients with an infrared thermometer. Scan and isolate all COVID-19 suspected patients in the first line of contact with the health-care system. For suspected individuals, an accurate history, physical examination should be performed.[18] All patients who are cared for outside the hospital (e.g., at home) should be instructed to manage themselves in accordance with local/regional public health protocols to separate themselves at home and if the condition gets serious, visit a dedicated hospital for COVID-19.[15]

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Conflicts of interest

There are no conflicts of interest.

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