Pan American Health Organization

World Health Organization
REGIONAL OFFICE FOR THE Americas

Hospital Readiness Actions for COVID-19

Hospital Readiness Checklist for COVID-19

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Contents

Acronyms

ARI – Acute respiratory infection

COVID19 – Current name for 2019-nCoV

EOC – Emergency Operations Center

IBW – Infectious biological waste

PPE – Personal protection equipment

SARI – Serious acute respiratory infection

Glossary

Capacity: The combination of all the strengths, attributes, and resources available within an organization that can be used to achieve agreed goals. (2)

Contingency planning: A management process that analyzes disaster risks and establishes arrangements in advance to enable timely, effective, and appropriate responses. (2)

Disaster: A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability, and capacity, leading to one or more of the following: human, material, economic, and environmental losses and impacts. (2)

Disaster management: The organization, planning, and application of measures preparing for, responding to, and recovering from disasters. (2)

Disinfection: Health measures taken to control or kill infectious agents on a human or animal body surface or in/on baggage, cargo, containers, conveyances, goods, and postal parcels by direct exposure to chemical or physical agents. (1)

Early warning system: An integrated system of hazard monitoring, forecasting and prediction, disaster risk assessment, communication and preparedness activities systems, and processes that enables individuals, communities, governments, businesses, and others to take timely action to reduce disaster risks in advance of hazardous events. (2)

Emergency: A sudden and usually unforeseen event that calls for immediate measures to minimize its adverse consequences. (3)

Epidemic: The occurrence in a community or region of cases of an illness, specific health-related behavior, or other health-related events clearly in excess of normal expectancy. (3)

Isolation: The separation of ill or contaminated persons or affected baggage, containers, conveyances, goods, or postal parcels from others in such a manner as to prevent the spread of infection or contamination. (1)

Severe Acute Respiratory Infection (SARI): An acute respiratory infection (ARI) with history of fever or measured temperature ≥38 °C and cough; onset within the last ~10 days; and requiring hospitalization. However, the absence of fever does NOT exclude viral infection. (4)

Triage: The term is used in clinical settings to describe the process of classifying patients by type and urgency. Triage systems are essential to ensuring patient safety in an emergency setting. Classification is performed in many settings, including emergencies and disasters, during mass casualty incidents, and classification in the emergency department. The purpose is to rapidly sort patients needing immediate attention from those who can safely wait for evaluation and treatment. Triage systems focus on getting the right patient to the right place at the right time with the right health care provider. (5) ***Comment****: Patients with potentially fatal respiratory failure are triaged directly to the resuscitation area, since they may require mechanical ventilation, while patients with mild respiratory symptoms, cough, or sore throat may be transferred to an isolated waiting room to wait for evaluation and treatment; if their classification permits, they may continue home care. (6)*

BASICS

Introduction

A hospital's response capacity can be overwhelmed by the massive influx of patients demanding medical care as a result of an emergency. In such a scenario, it is necessary to consider whether the health facility is organized to ensure comprehensive management of the hospital response, functioning coordination mechanisms, integrated information management, logistical capacity to facilitate the response and the necessary resources to implement it, as well as an integrated response to patient care, while safeguarding the health and well-being of health workers. (7)

In this context, hospitals are urged to implement the actions they have developed in their emergency preparedness phase for biological threats, specifically those that may cause severe acute respiratory illness, in order to identify suspected cases, limit transmission within the facility, and provide specialized medical care. This includes activating protocols and procedures in safe physical spaces, emphasizing isolation measures, education and training of personnel in the use of personal protective equipment (PPE), patient management, sample collection and handling, and handling and disposal of hazardous biological waste.

Readiness

Preparedness for health emergencies is the result of continuous improvement activities, which are essential for hospitals to function at maximum capacity and mount a timely and effective response to health emergencies, regardless of the threat.

Readiness is basically the interface between preparedness actions and the immediate response to any emergency; i.e., the action and effect of being ready or prepared and/or being ready to respond.

Once readiness has been verified, it is necessary to set priorities in order to address identified gaps in areas that endanger patients' lives and health workers' well-being, while keeping in mind that leadership is a key factor in the success or failure of the emergency response.

After this prioritization, solutions should be implemented immediately (not in the medium or long term), designating who is responsible for each action and who their alternates are, as well as deadlines for completion.

Finally, the readiness process must be constantly monitored, so that appropriate corrective measures or decisions can be taken.

Purpose

The purpose of this tool is to help countries verify readiness for COVID-19 in designated hospitals, identifying immediate, high-priority actions for mounting an efficient and timely response to the emergency.

This tool complements the efforts and progress made by countries in preparing for the influenza pandemic over the last decade.

Audience

- Those responsible for the response to COVID-19 in designated hospitals.
- Health authorities in designated hospitals.
- Those responsible for the response to COVID-19 at the national level of health institutions.
- Ministries of health.

Methodology

How this document was developed

This instrument is based on the preparedness checklist for pandemic influenza emergencies published by the World Health Organization (WHO) Regional Office for Europe (2009), and other documents on emergency and disaster readiness in hospitals.

To prepare this checklist, the minimum functions necessary for hospital response were identified, based on the experience and lessons learned from the 2009 influenza pandemic, (8) and considering the evolution of the emergency as described in WHO technical guidance documents.

Once the structure was designed, objectives were set for each function. From this starting point, proposals for activities (items) to meet the objectives underwent extensive discussion and review.

The items on the checklist have been developed to be confirmed dichotomously, i.e., whether or not they have been achieved. If activities have begun, even if they have not yet been implemented or tested, it should be noted that they are in process, facilitating the monitoring of each activity.

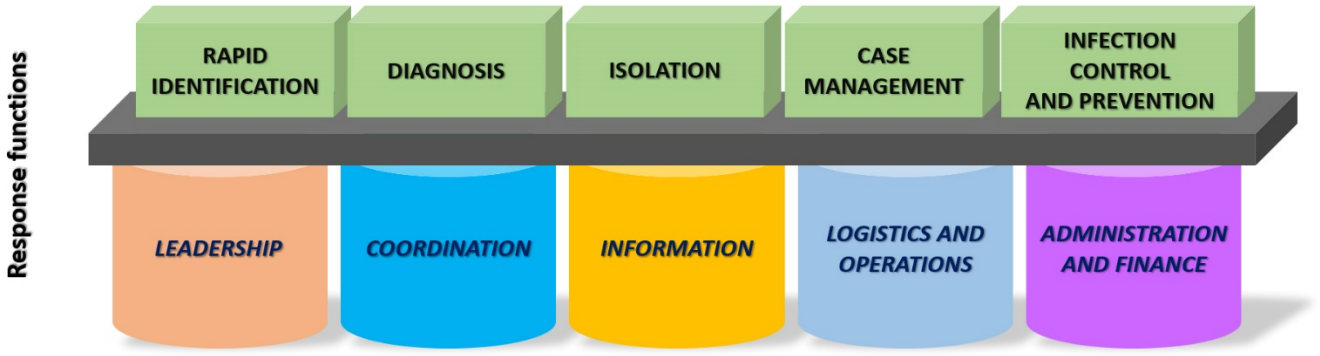

Figure 1. Functions for the response to COVID-19 in hospitals

The hospital readiness checklist for COVID-19 encourages hospitals to ensure that medium- and long-term preparations are in place; if not, immediate actions must be taken to address identified gaps.

Activities prior to using the checklist

It is suggested that a work team be created, consisting of people who have been assigned one or more duties and responsibilities in the response, in accordance with their administrative level (management, coordination, or operational) and capacities. Consideration should be given to the aspects of confidentiality that the health authority considers relevant.

HOSPITAL READINESS CHECKLIST FOR COVID-19

Leadership

Objective: Ensure comprehensive management of the hospital response to the emergency, through actions implemented by those responsible for the response to COVID-19. The person with the leadership function is responsible for activating the hospital's emergency response mechanism. (9)

The emergency response mechanism should ideally be located in an Emergency Operations Center, to implement and execute functions for response, surveillance, and monitoring of the situation; activation and organization of the response; resource mobilization; identification of risks and needs; evaluation of interventions; and production of reports for decision-making. The adoption of measures to ensure the safety and well-being of all staff deployed in the response is an important element. (9) (10)

Leadership Activities	***Meets***	***Does not meet***	***In Process***
Activate the emergency response mechanism: Hospital Committee for Emergencies and Disasters and/or Hospital Incident Management System.	○	○	○
Designate a response operations manager.	○	○	○
Establish a secure and well-equipped physical area that is protected and easily accessible, with immediate operational capacity to coordinate the response (Emergency Operations Center), paying particular attention to internal and external communications.	○	○	○
Assign roles and responsibilities for the different response functions, with sufficient trained staff available to ensure operational continuity; include up-to-date directory of telephone numbers and email addresses.	○	○	○
Designate official spokespersons.	○	○	○

Use occupational health mechanisms that ensure the well-being and safety of personnel during the response, including monitoring of exposed personnel.	○	○	○
Distribute information to all staff about the emergency situation and the roles and responsibilities of personnel and the hospital, as well as current and future actions.	○	○	○

Coordination

Objective: Ensure proper functioning of coordination mechanisms. (9) (10)

Coordination Activities	***Meets***	***Does not meet***	***In Process***
Identify and establish coordination mechanisms with health and disaster management authorities.	○	○	○
Activate mechanisms for coordination, communication, and collaboration with the integrated health services network at the local level, considering: patient care, necessary drugs, supplies and equipment, and patient transfer.	○	○	○

Information

Objective: Compile, compare, and analyze information on developments in the emergency, response management, and other contextual data on existing risks and needs. (10) (11)

Information Management Activities	***Meets***	***Does not meeet***	***In Process***
Make procedures and personnel available to collect, confirm, and validate data and information related to the emergency.	○	○	○
Provide a standardized form for reporting on: emergency activities, hospital occupancy rate (including critical services), incidence of suspected and confirmed cases, clinical situation, and deaths.	○	○	○

Logistics and operations

Objective: Facilitate emergency response, supported by the logistical capacities of the facility.

The emergency committee or manager should define the scope and limitations for setting up physical spaces and, within them, the procedures that should be carried out by deployed personnel. Consider the logistical and operational aspects that may be required if the hospital's surge capacity is needed to meet increased demand for clinical care. (9) (10)

Surge mechanism (if needed) (12)
1. Calculate intake capacity based on: ✓ installed capacity (number of beds: total and in each critical area); ✓ percentage of regular occupancy; ✓ availability of human resources (for all shifts); ✓ availability of functional equipment; ✓ maximum daily use of supplies per patient. 2. Estimate increase in demand for hospital-based services during an outbreak of nCoV-2019, using projections from monitoring and epidemiological surveillance systems or other planning assumptions. 3. Identify ways of increasing hospital in-patient and critical-area capacity (physical space, staff, supplies, processes). 4. Calculate capacity for total expansion and for each service, based on: ✓ physical spaces with isolation (number of beds) for non-critical patients (hospitalization); ✓ physical spaces with isolation (modules installed) for expansion of critical areas (safe and equipped with vital lines); ✓ staff available for all shifts 24 hours a day, 7 days a week; ✓ mechanical ventilation equipment (mechanical ventilators) and supplies; ✓ consumables and drugs. 5. Release capacity and resources by transferring non-critical patients to alternative hospitals, cancelling elective surgery, and cancelling outpatient appointments. 6. Identify and establish a referral and counter-referral procedure for the health services network, focusing on nearby hospitals.

If human resources and materials are not available, there is a risk of not being able to address the emergency within the establishment. (12)

Logistics and Operations Activities	***Meets***	***Does not meet***	***In Process***
Establish a physical space to triage patients with acute respiratory symptoms. Locate a space with optimal conditions for the prevention and control of infections.	○	○	○
Identify areas that can be used to increase patient care capacity (expanded capacity), considering the necessary personnel, equipment, and supplies.	○	○	○
Identify nonessential services that could be suspended, if necessary, in order to increase hospital capacities (human and material resources, equipment, and physical space).	○	○	○
Have someone responsible and a procedure in place for supply chain management (medicines and supplies), considering increased demands on the supply and distribution chain, and respecting technical specifications and established protocols.	○	○	○
Have a procedure in place and someone responsible for the management of work teams, including rest areas, safe transportation, and staff well-being.	○	○	○
Test the facility's telecommunications systems.	○	○	○
Have a procedure in place and someone responsible for the management of ambulances for transportation between hospitals and for the inventory of available vehicles.	○	○	○

Administration and finance

Objective: Implement financial, managerial, and administrative support mechanisms needed for the response. Activation of these emergency-focused mechanisms includes the purchase and procurement of equipment, materials, and drugs, in addition to management of overtime and/or expansion of the workforce, as well as monitoring financial execution and reporting of expenses resulting from the emergency. (9) (10)

Administration and Finance Activities	*Meets*	*Does not meet*	*In Process*
Activate legally available and authorized administrative and financial mechanisms for emergency management, as well as procedures for the purchase and procurement of supplies and services.	○	○	○

Readiness activities for health operations

Rapid identification

Objective: Contain transmission within the facility and generate patient information for timely treatment. (13)

Rapid Case Identification Activities	*Meets*	*Does not meet*	*In Process*
Train health workers for accurate rapid identification and timely reporting of suspected cases to the corresponding level, in any area of the hospital.	○	○	○
Have a communications and monitoring system in place that allows for timely alerts and reporting of suspected cases in any area of the hospital, including the facility's points of entry and patient arrival, in order to adjust prevention and control activities.	○	○	○
Establish a triage procedure in the emergency area, focusing on rapid identification of patients with acute respiratory symptoms.	○	○	○

Diagnosis

Objective: Ensure procedure for confirmation of suspected cases. (4) (13)

Diagnosis Activities	*Meets*	*Does not meet*	*In Process*
Train staff in taking samples, handling them properly, and transporting them (with biosafety measures) to the reference laboratory.	○	○	○
Establish and activate a procedure for sending samples, following biosafety measures established in national and international guidelines.	○	○	○
Make procedures and personal protective equipment available in the laboratory for the handling of samples and the final disposal of biological waste.	○	○	○

Isolation

Objective: Ensure that health services have a space for triage and isolation of suspected or confirmed cases. Isolation procedures should be consistent with the physical spaces assigned for the waiting room, triage, initial treatment, and hospitalization of suspected or confirmed patients. (10) (12)

Isolation Activities	*Meets*	*Does not meet*	*In Process*
Make triage space available in the emergency area, with isolation measures for suspected and confirmed cases.	○	○	○
Identify, mark, and equip areas for medical care of suspected and confirmed cases in secure and isolated conditions.	○	○	○
Review, update, and test procedures for receiving and transferring patients, within the hospital, to authorized isolation areas, and to other diagnostic and therapeutic support services	○	○	○

Case management

Objective: Establish secure, equipped, and isolated areas for patient treatment, including basic and advanced life support.

The activities described below are in accordance with the standardized management protocol recommended by WHO and focus on establishing safe, equipped, and isolated areas for treatment of patients, including basic and advanced life support. All clinical scenarios that a patient could present at admission and during hospitalization should be considered. (4) (8)

Protection recommendations for case management (8)
Standard precautions: ✓ hand hygiene; ✓ use of appropriate personal protective equipment (PPE): cap, nitrile gloves, face mask; ✓ injection safety practices; ✓ safe waste management; ✓ cleaning of environment and sterilization of patient care equipment. Contact and droplet risk precautions: ✓ isolation of patients; ✓ appropriate ventilation (60 L/s per patient is considered appropriate for general rooms with natural ventilation); ✓ PPE: Use of facemask; eye protection (goggles or face shield); clean, non-sterile, long-sleeve gown; and gloves (after patient care, remove and discard PPE and perform hand hygiene). Precautions for risk of airborne transmission and aerosol-producing procedures: ✓ ventilation of site where procedure is carried out (for natural ventilation: air flow of at least 160 L/s per patient, or in negative-pressure rooms with at least 12 air changes per hour and controlled direction of air flow when mechanical ventilation is used); ✓ PPE: particle respirator (N95, FFP2, or equivalent); eye protection (goggles or face mask); clean, long-sleeve, non-sterile gown; and gloves; ✓ if gowns are not fluid-resistant, use a waterproof apron for procedures that are expected to produce large volumes of fluid that could penetrate the gown. In all cases: after caring for the patient, all PPE should be removed and discarded, and hand hygiene performed. A new set of PPE is needed when care is provided to a different patient.

It is important to have an education and training program for all health staff, emphasizing correct use of personal protective equipment (PPE) and hand washing. (4) (8)

Case Management Activities	***Meets***	***Does not meet***	***In Process***
Make protocol for management of suspected or confirmed cases available.	○	○	○
Have trained staff and equipment available for initial medical care of suspected or confirmed patients (primary screening, resuscitation, initial stabilization, mechanical ventilation), with access to personal protective equipment.	○	○	○
Train and educate staff for continuous care of suspected or confirmed patients requiring hospitalization, with access to personal protective equipment. Consider training and education in the use of personal protective equipment and in the handling and disposal of contaminated waste during procedures, in addition to ensuring the safety of patients and personnel.	○	○	○
Plan installed capacity for medical care of suspected or confirmed patients requiring intensive care (mechanical ventilation, hemodynamic monitoring, multi-organ support); list of equipment for medical care (orotracheal cannulas, NIV masks, n95 masks, personal protective equipment); equipment (volumetric ventilators to meet invasive and non-invasive mechanical ventilation needs).	○	○	○

Infection prevention and control

Objective: Prevent and control coronavirus transmission in health services that care for suspected or confirmed coronavirus cases. Procedures should be identified and tested for triage, hospital transportation, and management of patients and infectious biological waste. Protocols or procedures for decontamination and disinfection of equipment used in patient management should be reviewed, updated, and disseminated to biomedical support personnel to prevent their exposure and ensure that they have safe equipment. (4) (13)

Infection Prevention and Control Activities	*Meets*	*Does not meet*	*In Process*
Have a triage procedure in place in the emergency department for isolation of suspected and confirmed cases.	○	○	○
Identify, mark, and equip available areas for medical care of suspected and confirmed cases in secure and isolated conditions.	○	○	○
Have procedures for receiving and transferring patients within the hospital, to and from authorized isolation areas, and to other diagnostic and therapeutic support services have been reviewed, updated, and tested.	○	○	○
Train health workers in the use of personal protective equipment, and consider additional precautions for specific transmission mechanisms (droplets, contact, aerosols, fomites).	○	○	○
Have protocols or procedures available for cleaning and hygiene of clinical areas, including training in the use of decontamination materials.	○	○	○
Ensure the health facility has protocols for disinfection and sterilization of biomedical equipment and material.	○	○	○
Have an area in the facility for disinfection and sterilization of biomedical equipment and material.	○	○	○
Ensure the facility has a protocol and a marked route for management and final disposal of infectious biological waste, including sharps, disposal of fomites.	○	○	○
Ensure the facility has infrastructure and procedures for proper hand hygiene, including sinks, continuous training, and supplies.	○	○	○
Ensure physical space and guidelines for disposal of corpses resulting from the emergency.	○	○	○

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