

Interim guidance note for hospitals

Managing hospital services, maintaining essential routine health care and generating surge capacity

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1. Introduction

1.1 Background

The role of hospitals has been critical during the response in the provision of care to patients experiencing non-severe and severe coronavirus disease 2019 (COVID-19), as well as non-COVID-19 case management. Hospitals have also been central to surveillance efforts not only for early detection of pathogens but also for managing disease burden and informing response measures. Countries have adopted different referral and health-care pathways, including designation of COVID-19 and non-COVID-19 treatment facilities. In the initial stages of the outbreak, hospitals may have the capacity to maintain essential services in addition to managing COVID-19 cases. However, as the COVID-19 caseload increases, they will need to make strategic shifts to optimize the limited resources to provide maximum benefit to the community (1).

While most people with COVID-19 develop mild or moderate disease, approximately 15% develop severe disease requiring hospitalization and oxygen support and 5% have critical disease that may require admission to an intensive care unit (ICU) (2). Health ministries, subnational authorities and hospital managers will often need to make difficult decisions to meet the demands due to COVID-19, while simultaneously coordinating and maintaining continuity of core hospital functions.

The purpose of this updated interim guidance is to incorporate most recent technical guidance on COVID-19 clinical management and infection prevention and control (IPC). This version complements existing WHO guidance on wider health system implications

and requirements and cross- government strategies on the COVID-19 response (2).

1.2 Target audience

National and subnational health authorities, senior decision-makers, hospital administrators and hospital staff.

2. Actions in hospitals

The main principles include: (i) manage the COVID-19 caseload, including the surge capacity; (ii) maintain continuity of essential services; (iii) ensure good coordination of the implementation of priority actions at every level; (iii) provide clear and accurate internal and external communication; make efficient use of scarce resources and swiftly adapt to increases in demand; and (v) create a safe environment for hospital staff (3).

Four interrelated aspects must be considered:

- Actions prior to receiving COVID-19 cases
- Actions to manage the initial COVID-19 caseload
- Actions to maintain essential routine health care
- Actions to generate and maintain surge capacity.

2.1 Actions prior to receiving COVID-19 cases

Hospitals must implement their emergency preparedness plans, where available. These plans should incorporate any actual or anticipated emergent needs associated with their COVID-19 response.

Actions to cope with the increased demand for services should be part of an overall health sector response, tailored to the specific

circumstances of each hospital. Hospitals must consider the following 5S actions.

2.1.1 Stewardship

- Review the functionality and operational status of the existing incident management system (5). Hospitals should have a well-established emergency response plan for COVID-19 and an activated hospital emergency incident command system, with clear roles and responsibilities. There should be a designated space for an emergency operations centre, or EOC, that is equipped, secure, protected and easily accessible to hospital staff to meet and coordinate activities within and outside the facility with various stakeholders. Please refer to guidance on scaling up emergency response mechanism.
- Assessments should be conducted to identify and address COVID-19 learning gaps. Critical areas of management should be identified, with simulation exercises conducted corresponding to different scenarios.
- Review the functionality of ethics committee to assist with rationing decisions on the allocation of scarce medical resources.
- Regularly monitor surge-related triggers for action. Coordinate with designated national and subnational authorities on the broader community and health sector response. (Refer to the WHO guidance on monitoring indicators for details (6).)
- Regulation of telemedicine
 - Ensure telemedicine is well understood by planners, stakeholders and implementers and concerns of hospitals, the private sector and patients are addressed.
 - Consider telemedicine education and training in hospitals to adapt to new realities.
 - Update telemedicine legal and regulatory standards to align with state regulatory institutions.
 - Partnership
 - Collaborate with isolation facilities, civil society organizations and local administration to augment performance of hospitals as well as coordinate and communicate effectively.
- Enable and strengthen partnerships that optimize pre-existing relationships with the private sector can leverage all the resources of a community in preparing for, protecting against and work after the COVID-19 pandemic.

2.1.2. Space (physical infrastructure)

- Map the existing capacity, including level of care offered, number of beds, isolation and intensive care capacity, and mortuary capacity. Assess the use of space to identify additional temporary capacity.
- Establish an effective patient flow (screening, triage and targeted referral) at all levels. Maintain strict adherence to IPC measures at all stages of care (7).
- In coordination with the local authorities, identify additional sites for conversion to patient care facilities (e.g. convalescent homes, hotels, schools, community centres, gymnasiums). Determine the level of care that can feasibly and safely be provided in each facility. (Refer to the guidance note on repurposing facilities for accommodating mild COVID-19 patients (8).)

2.1.3 Staff

- Develop facility-level minimum staffing plans to resource essential services and functions, as identified in the health-care facility business continuity plan. Estimate additional staffing needs and identify roles that can be supported by surge staff or volunteers.
- Identify key skills required to run services, including key staff for crossover roles and specific surge support. Develop contingency plans with detailed arrangements for redeployment of staff.
- Maintain ongoing (re)training/upskilling of staff in management of suspected or confirmed COVID-19 cases, including IPC measures.
- Prevention, identification and management of health worker infection in the context of COVID-19 (9).
- Familiarize staff to work in high-demand areas (e.g. infectious disease wards, emergency care unit and ICU) to support surge response.

2.1.4 Supplies

- Identify key medical and non-medical supplies, including proper space and conditions for stockpiling (where possible/appropriate, adequate quantification and establishment of a supply chain for personal protective equipment, or PPE).
- Clearly outline the procedures for ordering additional supplies, including steps for fast-tracking the process.

2.1.5. Strategic communications

- Establish clear lines of communication within the hospital, including external communication channels with partner organizations, the media and the public. This includes regular updating mechanisms, roles and responsibilities for staff and ongoing training. Streamline mechanisms for sharing information between the hospital administration, department/unit heads and key staff.
- Identify communication needs for maintaining services within the hospital, including distribution lists, frequency and use.
- Regularly update COVID-19 risk communication protocols and standard operating procedures and make them available for use by all staff, patients, visitors and other stakeholders, including members of the community. Provide regular briefings by designated staff on transmission dynamics, steps taken and changes made, and include addressing rumours.
- Refer to the Risk Communication and Community Engagement (RCCE) guidance, as appropriate, ensuring people and communities participate in sharing trustworthy information, lead community actions and nurture trust in public health and social measures, through two-way communication.

2.1.6 Administration, finance and human resources

In addition to the 5S actions, hospitals need to consider the following:

- Ensure all legal procedures for administration and finance mechanisms are in place with staff trained, including on procurement, liability and insurance coverage, fee waivers, staff turnover, outsourcing services and functionalizing continuity plans.
- Adjust hospital payment systems, for example by modifying diagnosis-related group or DRG-based payments, increasing per diem rates or adding fees to fee-for-service systems. Payment adjustments could accompany and support the concentration of care, for example by making the designation as a COVID-19 centre a prerequisite for receiving COVID-19-related payments. Processes need to be put in place to rapidly adjust payment systems to meet new challenges, where and when needed.
- Put in place hospital systems and procedures to manage staffing needs for COVID-19 patient management and continuity of essential services, ensuring training, repurposing, optimization, safety and monitoring of occupational health hazards.
- Ensure policies and procedures exist addressing occupational safety and mental health of staff. Staff should be protected, trained and equipped to provide safe and quality care to people with suspected, probable or confirmed COVID-19.
- Include consideration of telehealth technology integrated to support health service delivery.

2.2 Actions to manage the initial COVID-19 caseload

- Hospitals must be prepared to identify and manage COVID-19 cases. This includes availability of guidelines and protocols for clinical management, laboratory confirmation of cases, and medicines, supplies and medical devices. Hospitals should consider the following suggested actions.

2.2.1 Case management and continuity of essential services (10)

- Implement the national clinical management guidelines for suspected or confirmed COVID-19 cases, addressing:
 - locations where cases should be managed (i.e. level of care, community or hospital setting);
 - screening and triage;
 - admission criteria;
 - treatment protocols including dexamethasone or systemic steroid use, ventilation, supportive treatment and treatment for secondary infections;
 - IPC protocols for health-care workers and caregivers;
 - criteria for laboratory testing and advanced diagnostics; and
 - specimen collection.
- Patient management includes admission or referral, triage, diagnosis, treatment, patient flow and tracking, discharge and follow-up, as well as management of support services.
 - Ensure updated protocols and pathways are in place for providing health-care services to patients with and without COVID-19.
 - Implement available IPC standard operating procedures in transportation services for pre- and post-[hospital referral](#), including transferring patients from home care.
 - Refer to guidance on home care for COVID-19 patients.
 - Telemedicine, hotlines and social media have been used successfully for triage, consultation and follow-up, especially for managing noncommunicable diseases (NCDs), maternal, newborn and child health, immunization and geriatrics. Consider also electronic prescribing and use of home delivery of medicines for people with chronic conditions, which have been operationalized in different settings.
- Ensure staff are trained in triage, identification, screening, sampling of suspected COVID-19 cases, their monitoring and follow-up (including deferred treatments). Confirm communication systems are in place for timely actions with information and posters about PPE and biosafety measures posted strategically. Refer to the guidance on [operational considerations for case management](#) in health facilities and communities.
- Identify spaces for the isolation and management of suspected and/or confirmed COVID-19 cases. Develop recommendations (including floor plans and PPE) to manage patient flow in the hospital.
- Establish systems to coordinate the transfer of cases between facilities, including referral and transport systems, hospital or ICU bed tracking, centralized patient distribution and call centres. (Refer to *Indicators To Monitor Health-Care Capacity and Utilization for Decision-Making on COVID-19 (6)* and *Algorithm for Triage and Referral (11)* for details.)
- Review all services offered by the hospital. Identify and agree on the prioritized services to maintain essential services to the extent possible. Where applicable, this should be done in accordance with national guidance. There should be adequate backup resources for maintenance and monitoring of these services including human, financial, logistics, supplies, additional hospital space, pharmacy services, morgue facilities, power, communications, food, water, laundry and security services. Refer to the guidance on continuing [essential health services](#) and think through [dual track health systems](#) and their operationalization.
- Ensure medicines, supplies and medical devices required to implement the clinical

management guidelines are available at all levels. Consider securing access through measures such as advance purchase agreements and stockpiling.

2.2.2 Laboratory services

- Ensure systems are in place to transport collected specimens to designated testing laboratories. Ensure biosafety protocols are properly implemented in the laboratories and staff have received appropriate biosafety and biosecurity training. (Refer to the technical guidance on laboratory testing for 2019 novel coronavirus in humans for details (12).)
- Identify essential and backup laboratory personnel, supplies and resources to ensure continuity of routine laboratory tests.
- Estimate needs for additional facilities, trained staff, equipment (including PPE) and reagents. Develop surge plans to manage increased demand for testing and transport of clinical specimens.
- Ensure needed supplies are available to implement the recommended IPC measures (e.g. PPE, water, sanitation and hygiene or WASH facilities (13), and hand hygiene supplies).

2.2.3 Infection prevention and control

- Ensure IPC protocols with standardized procedures for managing COVID-19 are updated and functional, with adequate supplies available, staff trained and a monitoring mechanism in place. This includes protocols for transport of patients and measures at the points of entry and exit in a hospital. A printed or electronic record of all essential people entering a COVID-19 patient's room should be available and maintained.
- Put in place designated isolation areas with appropriate signage and equipment, and adequate ventilation. Practise precautions for airborne-generating procedures (e.g. using negative-pressure rooms with at least 12 air changes per hour and a controlled direction of airflow when using mechanical ventilation). Physical space and guidelines should be available for managing the bodies

of those who die of COVID-19, including guidelines for providing a safe and dignified burial.

- Train staff in [IPC](#) and [clinical management](#) specifically for COVID-19. Reinforce [IPC strategies](#) to limit transmission in health-care settings. Use [appropriate PPE](#) for health workers providing direct care to COVID-19 patients. Implement guidance on [mask use for health facilities](#) during community transmission.
- Ensure hospital staff at all levels are adequately trained in health and safety skills related to COVID-19 and personal and patient safety, including case definitions, triage and use of clinical data platforms. Prioritize incorporating patient feedback and suggestions. Refer to [surveillance guidance for COVID-19](#).
- Regularly monitor health-care worker infections as an early warning mechanism. Refer to the [guidance on health-care worker infections](#). Establish an enhanced surveillance capacity and data management system for reporting.
- Ensure IPC guidelines and protocols are implemented at all levels, including hospital wards and clinics, ambulance and emergency services in the community, and clinical laboratories (7).

Key IPC precautions include:

- 1) Screening and triage for early recognition of patients with suspected COVID-19, as well as rapid implementation of source control measures, such as transfer in isolation or designated waiting areas.
- 2) Strict adherence to standard precautions for all patients such as: hand hygiene and use of PPE when in direct and indirect contact with patients' blood, body fluids, secretions (including respiratory secretions) and non-intact skin; prevention of needle-stick or sharps injury; safe waste management; cleaning and disinfection of equipment; and cleaning and disinfection of the environment.

- 3) Additional precautions
 - Isolation and cohorting of patients with suspected or confirmed COVID-19.
 - Standard, contact and droplet precautions before entering the room where suspected or confirmed COVID-19 patients are admitted.
 - Airborne precautions, when performing aerosol-generating procedures, in addition of standard, contact and eye protection. Procedures should be performed in adequately ventilated rooms, wearing a fit-tested particulate respirator at least as protective as an N95 respirator certified by the United States National Institute for Occupational Safety and Health (NIOSH), an FFP2 respirator of European Union (EU) standard, or equivalent.
- 4) Administrative controls/measures related to health workers
 - Providing adequate training for health workers.
 - Ensuring an adequate patient-to-staff ratio.
 - Establishing active syndromic surveillance of health workers at the facility entrance when they arrive at work.
 - Maintaining a list of individuals (including caregivers and health workers) who may have had potential exposure to COVID-19 cases.
- 5) Environmental and engineering controls are an integral part of IPC and include standards for adequate ventilation according to specific areas in health-care facilities, adapted structural design, spatial separation and adequate environmental cleaning.

2.2.4. Essential support services

- Provide safe water, sanitation and waste management, and hygienic conditions is essential in preventing a COVID-19 outbreak (13).
- Ensure staff and supplies are in place for essential support services such as laundry, cleaning, waste management and

disposal, dietary services, and mortuary management.

- Develop surge plans to manage increased demand for essential support services.

2.3 Actions to maintain essential routine health care

Hospitals have the capacity to deliver essential routine health care when the COVID-19 caseload is relatively limited. However, as the caseload increases, they will need to implement targeted actions to reorganize and maintain access to quality essential routine health care (14).

2.3.1 Identification of context-specific essential routine health care

- Based on the business continuity plan and national guidelines (if available), establish a list of essential routine health-care services. Suggested high-priority services include: preventive services such as vaccination; reproductive services such as maternal and newborn care; management of emergency conditions and acute presentations requiring time-sensitive interventions; and services for vulnerable groups such as infants, older adults and individuals with underlying chronic conditions. Regularly review and adjust the scope of prioritized services based on hospital capacity and stage of outbreak. Identify possible alternative methods/locations of delivery for these services (e.g. telemedicine, multi-month dispensing of medications for chronic conditions including NCDs, HIV, etc.). Increase delegation/referral of services to alternate treatment sites (e.g. home for mild illness, temporary medical shelters, primary care), depending on the capacity and local setting. Clearly communicate all decisions on deferred services to the public to avoid distrust and discontent.

2.3.2. Mechanisms to maintain availability of staff, essential medications, equipment and supplies

- Estimate staff requirements to maintain essential routine health care. Deploy staff in line with the hospital's business continuity plan. Facilitate safe task sharing, and consider expansion of scopes of practice, where possible.
- Map the essential services list to resource requirements. Create a platform for reporting inventory and stock-outs and for coordinating the redistribution of supplies.

2.4 Actions to generate and maintain surge capacity (15)

Service capacity can be augmented through active management of available space and resources. In situations where demand exceeds capacity and alternative means have been exhausted, specific inclusion and exclusion criteria may be required to limit service access. Refer to the guidance on [adjusting surrounding public health and social measures](#) based on an analysis of the level of transmission, the capacity of the health system to respond and other contextual factors. Attention must be given to vulnerable groups and geographically disadvantaged populations. The ethical framework for pandemic planning should be used to guide decisions on deferral, admission and discharge from services (16). The following outlines some suggested actions.

2.4.1. Optimization of available resources

- Routinely collect and monitor facility and health-care capacity data to inform the assessment of epidemic transmission stage, determining the tightening or loosening the non-pharmaceutical interventions, making operational decisions, and tracking increase in health-care capacity and utilization. Refer to WHO guidance on monitoring indicators.
- When planning for surge capacity, allow progressive scale-up of activities over several stages, with clearly defined activation thresholds for each stage. Put in place a functional plan for surge and replenishment procedures that addresses staffing, supplies, equipment, physical

infrastructure and stewardship, based on real-time calculations to progressively scale up and then scale down activities. This plan will include arranging or establishing, among others, effective patient flow in facilities, [PPE supplies](#), screening of health workers for infection, mental health support for health workers, waiting areas, ambulatory services and usage of non-health spaces.

- Forecast the resources required to generate the needed surge capacity using available tools and calculators, such as the COVID-19 Essential Supplies Forecasting Tool (ESFT) (17), the Adaptt Surge Planning Support Tool (18) and the Health Workforce Calculator (19). Hospitals have used different [planning tools](#) and [models](#) to manage surges.
- Introduce measures to augment hospital capacity by opening closed beds, reorganizing units and services, and revising admission and discharge policies. Consider delegating care of non-critical patients to appropriate alternative treatment sites (e.g. home for mild illness, temporary medical shelters) (8).
- Recruit and train surge capacity staff (e.g. retired staff, reserve military personnel, university affiliates/students). Develop procedures to mobilize, screen, train and accredit volunteers to provide additional surge capacity, if required.
- Review policies to manage and retain staff, including insurance, incentives, sick leave, and occupational health and safety. Develop services to support response staff (e.g. health monitoring, counselling, stress management and psychosocial support).
- Prioritize supplies in line with the business continuity plan. Coordinate with customs authorities to expedite the receipt and deployment of imported medicines and supplies.

2.4.2. Service prioritization

- Anticipate an increased workload. Consider strategies of augmenting hospital staffing, equipment and supplies including redistribution of workforce and services in accordance to the characteristics of the

epidemic in the area. It is important to address the equipment and supplies necessary to maintain high-quality health care especially for patients with severe COVID-19.

- Develop a triage protocol to prioritize medical treatment for identified groups (e.g. children, pregnant women, health-care workers). Consult with the hospital ethics committee on rationing decisions to allocate scarce medical resources. Refer to guidance on [clinical management of COVID-19](#).
- Decide on cancellation of clinics, elective surgeries and uncomplicated inpatient admissions based on an assessment of the hospital capacity and anticipated increases in the COVID 19 caseload.
- Communicate admission criteria and triage logistics (e.g. location, routes of entry/exit) to the relevant hospital staff, referring hospitals and primary care facilities, pre-hospital networks, and ambulance services.

2.4.3. Deferral of treatment

- Decide on the services that will be deferred. Identify triggers for deferral of services and communicate them to all relevant staff and stakeholders. Consider restrictions on some preventive interventions and screenings.
- Maintain records of patients whose treatment has been deferred.
- Operationalize individual patient prioritization if services are overwhelmed. Review the ICU triage process, including restriction of treatment options in the unit where unavoidable.

primary care facilities, community/home-based care and telephone follow-up.

- Consider interstate/subnational movement of workers, resources and patients to manage surges.

2.4.5. Excess mortality

- Map locations and storage capacities of mortuary facilities in hospitals and funeral homes. Identify resources and alternative sites for emergency mortuary facilities.
- Implement strict IPC procedures for the safe management of dead bodies (19).

3. Strengthening subnational capacity

While the previous section provides guidance on actions for maintaining the delivery of essential health services at a hospital level, this section attempts to provide an overview of considerations to build capacity at the subnational and local levels, with the goal to mitigate the overwhelming of health systems and prevent mortality.

Suboptimal health-care pathways in countries could have existed even before COVID-19, with the pandemic exacerbating the situation. The challenges possibly include issues around space, staff, supplies and stewardship, which would clog the system during surges, but could also be an asymmetry in the attention and resources between national and subnational facility-based surge capacity and service utilization. To manage surges in COVID-19 cases and prevent hospitals from approaching maximum capacity, a balance needs to be struck between the urban tertiary care settings and the semi-urban/rural tertiary

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