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## Guidelines

# Zoning of Hospitals during COVID 19 Outbreak

## Objective

These guidelines provide guidance to the public health & health professional of segregation of patients and health care resources, considering the way COVID-19 epidemic is unfolding itself. It has become a matter of utmost importance to access the capacity of acute healthcare facilities and make necessary arrangements. It is vital to evaluate that the influx of COVID-19 positive cases, while getting optimal treatment, does not pose an added threat to the existing hospital population.

## Rationale

Two most important interventions in limiting the infectious epidemic outbreak are: i) limiting the person to person transmission and ii) early diagnosis & treatment of the positive cases. The strategy of segregation of patients in acute care facilities attempts to combines these two interventions and is expected to go a long way in combating the current situation that is threatening to turn in to a devastating crisis.

## Hospital Zones

### 1. GREEN ZONE: The Clean Area

- This area of the hospital shall be reserved for the patient who have been tested and declared negative for COVID 19. This area shall observe the routine level of cleanliness observed in hospitals.
- No person from the red zone shall be allowed to enter the green area.

### 2. YELLOW ZONE: The Potentially Contaminated Area

#### a. The Fever Clinic

- Healthcare facilities shall set up a relatively independent fever clinic including an exclusive one-way passage at the entrance of the hospital with a visible sign. All individuals (patients, attendants, hospital staff) entering the clinic will wear a mask and will use hand sanitizer/wash hands before entering the premises.
- The movement of people in the health facility in general shall follow the principle of "three zones and two passages": a contaminated zone, a potentially contaminated zone and a clean zone provided and clearly demarcated, and two buffer zones between the contaminated zone and the potentially contaminated zone.



- An independent passage shall be equipped for contaminated items; set up a visual region for one-way delivery of items from an office area (potentially contaminated zone) to an isolation ward (contaminated zone).
- Appropriate procedures shall be standardized for medical personnel to put on and take off their protective equipment (Donning and Duffing). Make flowcharts of different zones, provide full-length mirrors and observe the walking routes strictly.
- Infection prevention and control technicians shall be assigned to supervise the medical personnel on putting on and removing protective equipment so as to prevent contamination.
- All reusable items in the contaminated zone that have not been disinfected shall not be removed.

#### **Zone Arrangement in the Fever Clinic:**

- Set up an independent examination room, a laboratory, an observation room, and a resuscitation room.
- Set up a pre-examination and triage area to perform preliminary screening of patients.
- Separate diagnosis and treatment zones: those patients with an epidemiological history and fever and/or respiratory symptoms shall be guided into a suspected COVID-19 patient zone; those patients with fever but no clear epidemiological history shall be guided into a routine fever patient zone.
- Those patients with an epidemiological history and fever and/or respiratory symptoms, in whom the test results for COVID-19 have not yet arrived but who need urgent hospitalization, shall be referred to an isolated acute care area of Emergency Room (ER)

#### **b. The Emergency Room**

- An isolated acute care of ER shall be established and isolated to segregate patients with an epidemiological history and fever and/or respiratory symptoms requiring hospitalization on urgent basis, from patients who are negative for COVID-19 but need hospitalization.
- This area should have one or more beds with full ICU facilities and monitoring as well.
- On arrival of the results of COVID-19 test, these patients shall be transferred to the red or green zone accordingly.

### **3. RED ZONE: The Contaminated Area**

#### **The Isolation Ward**

- The Red Zone includes isolation ward, an isolation ICU and operating room suite. The building layout and workflow shall meet the relevant requirements of the hospital isolation technical regulations. Medical providers with negative pressure rooms shall implement standardized management in accordance with relevant requirements. Access to isolation wards shall be strictly limited.

#### **Zone Arrangement in the Isolation Ward**

- Confirmed patients can be arranged in the same room with bed spacing of not less than 1.2 meters (appx 4 feet). The room shall be equipped with facilities such as a bathroom and the patient's activity must be confined to the isolation ward.
- Intensive Care Unit and its equipment service area.



- Operating Rooms for the Red Zone
  - Surgical procedures shall be conducted in a negative pressure operating room.
  - Create a buffer room between the operating room and the rest of the area.
  - During the operation, the buffer room and the operating room shall be tightly closed, and the operation must be carried out only if the operation room is under negative pressure

## Staff Management in The Yellow & Red Zones

- The hospital staff should be divided into teams including health care personnel, para medics, support and management staff, dedicated on rotation of 2-4 weeks for clean, contaminated and potentially contaminated areas. Each team should be limited to a maximum of 6-8 hours of working duty.
- Similarly, the reusable equipment, machines and other logistics should also be exclusively dedicated for clean, contaminated and potentially contaminated areas to avoid contamination.
- Arrange the duties of treatment, examination and disinfection for each team as a group to reduce the frequency of staff moving in and out of the isolation wards.
- The front-line staff in the isolation areas, including healthcare personnel, medical technicians and property & logistics personnel, should be well equipped with the recommended PPEs to reduce the exposure risks.
- Before going off duty, staff must wash themselves and conduct necessary personal hygiene regimens to prevent possible infection of their respiratory tracts and mucosa.
- The front-line staff in the isolation areas, including healthcare personnel, medical technicians and property & logistics personnel, shall live in an isolation accommodation and shall not go out without permission.
- A nutritious diet shall be provided to improve the immunity of medical personnel.
- Monitor and record the health status of all staff on the job, and conduct health monitoring for front-line staff, including monitoring body temperature and respiratory symptoms; help address any psychological and physiological problems that arise with relevant experts.
- If the staff members have any relevant symptoms such as fever, they shall be isolated immediately and screened.
- When the front-line staff including healthcare personnel, medical technicians and property & logistics personnel finish their work in the isolation area and are returning to normal life, they shall first be tested for COVID 19. If negative, they shall be isolated collectively at a specified area for 14 days before being discharged from medical observation.

*This guideline has been prepared after modification of information shared in the Handbook of COVID-19 Prevention and Treatment published by the First Affiliated Hospital, Zhejiang University School of Medicine, China.*

*Note: The above recommendations are being regularly reviewed by the Ministry of National Health Services, Regulations & Coordination and will be updated based on the international & national recommendations and best practices.*

*The Ministry acknowledges the contribution Irfan Mirza and HSA/ HPSIU/ NIH team to compile these guidelines.*

### **For more information, please contact:**

HSA/ HPSIU/ NIH, PM National Health Complex, Islamabad

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