1. INTRODUCTION

1.1 The novel Severe Acute Respiratory Syndrome Corona Virus 2 (SARS-CoV-2) is a devastating challenge threatening millions worldwide.

1.2 It is causing the "Corona Virus Disease 2019" (COVID-19), which is a rapidly spreading disease that has a mortality ranging from less than 1% in some parts of the world, up to 12% in other parts.

1.3 The world health organization characterized COVID-19 outbreak as a pandemic on March 12, 2020 after reporting more than 20,000 confirmed cases and more than 1000 deaths related to COVID-19 in Europe (i.e. outside of Wuhan, China).

1.4 Health care facilities around the world are challenged with large numbers of admissions, many of which have severe or moderately severe respiratory illness that require respiratory support as a bridge to disease recovery.

1.5 Developing clinical practice guidelines for the management of this rapidly spreading and fatal disease is very important to guide the front line clinicians, whether critical care physicians or physicians from other specialties involved in the care of patients with COVID-19 in the ICU during the crisis.

2. PURPOSE

2.1 To optimize resource use and to improve outcomes, Intensive Critical Care Units (ICU) admissions and discharge guidelines based on a combination of patient needs and critical care interventions that can only be addressed in the ICU environment.

3. APPLICABILITY

3.1 All the Intensive Care Services Department (ICS) staff including physicians, nurses & paramedical staff.

4. RESPONSIBILITIES

4.1 Director of ICS or his designee is responsible for its implementation and monitoring.

5. POLICY

5.1 All referrals to Department of ICS will be through Code **GREEN** for the RRT activation.

5.2 ICS Consultant on duty will take decision regarding the Priority of Admission of the referred COVID 19 (confirmed or suspected) patient.

5.3 COVID 19 patients for advance care (HFO, NO & ECMO) should be admitted to ICS in the designated rooms only. (GICU 1, Beds 29 to 32 & GICU 2, Beds 25 & 26).

5.4 All Aerosol Generating Medical Procedures should be done in a negative pressure Airborne Isolation Room. In case of unavailability of Negative Pressure Room, Single Room with Portable HEPA Filter must be used.

5.5 Once a Priority 1 or 2 suspected COVID 19 patient results are negative, he/she can be moved to a regular bed in ICS.

5.6 Once Priority 3 & 4 suspected COVID 19 patient result is negative, he/she can be moved to a regular bed in the ward.

6. PROCEDURES

6.1 Rapid Response Team (RRT) Activation (CODE GREEN)

6.1.1 Patients fulfilling the hospital approved RRT criteria, i.e. requiring FiO2 of 40% or more to maintain adequate oxygen saturation, or with SPO2 of < 90% in spite of adequate oxygen support (more than 5 L/min via simple face mask), should be referred to RRT-ICU team by activating the "Code Green".

6.1.2 Patient's sick enough to be referred to ICU must be kept in a negative pressure room (or alternatively, in an isolation room with a portable HEPA filter in place, if a negative pressure room is not available).

6.1.3 The patient must be evaluated physically by a competent ICU physician.

6.1.4 The most senior on-duty ICU physician (a consultant) is responsible for making triage decisions.

6.1.5 Based on the severity of disease and probability of benefit from Critical Care management, RRT will triage patients into priorities 1 to 4.

6.1.6 The patient's code status (Don't Resuscitate - DNR status) must be determined during initial RRT assessment and before transfer to any critical care area assigned for COVID patients. The code status should be determined based on pre-existing medical conditions and likelihood of survival and NOT based on the positivity of COVID-PCR test.

6.1.7 The patient must be evaluated by RRT at least once a shift, depending on the severity of illness.

6.1.8 Priorities 1 & 2 must be admitted to a negative pressure room in assigned areas for COVID-19 patients, described separately in "COVID-19 Disaster Plan".

6.1.9 Transfer time of priorities 1 & 2 patients from the A&E or the ward to the assigned critical care area (described above) should be optimally completed within 1 hour (but should never exceed 3 hours) from the time of RRT activation if a bed is available.

6.1.10 If the ICU bed is unavailable, ICU physicians continue to deliver care for critical care patients in the emergency department or the ward with the help of the primary team, provided that HEPA filter is put inside the patient's room.

6.1.11 All patients referred to, or admitted under ICU care should have thorough initial assessment, secured IV access and continuous vital sign monitoring.

6.1.12 The severity of COVID-19 can be categorized into mild, moderate and severe using the Severity Assessment Criteria:

6.1.12.1 **Mild:** The clinical symptoms are, mild and no pneumonia manifestations can be found on imaging.

6.1.12.2 **Moderate**: Patients have symptoms such as fever and lower respiratory symptoms and Pneumonia manifestations can be seen on imaging.

6.1.12.3 **Severe:** Respiratory rate > 30 breaths/min, Oxygen saturations < 93% at a resting state, Arterial partial pressure of oxygen (PaO2)/oxygen concentration (FiO2) < 300 mmHg, Patients with >50% progression of lesions within 24 to 48 hours on lung imaging.

6.1.13 Any confirmed or suspected cases of COVID-19 are recommended to have airway evaluation at the initial assessment to predict patients with difficult airways and prepare for difficult airway management if intubation is needed.

6.1.14 Patients referred to ICU are either on aerosol-generating medical procedures (AGMPs) or likely to need them soon, therefore they should be dealt with using airborne precautions until the RRT and the infection control teams declare that it is safe to switch to droplet precautions.

6.1.15 AGMPs should be avoided whenever possible until COVID-19 is ruled out or infection is resolved, e.g. defer Bronchoscopy whenever possible and use MDI bronchodilators instead of nebulizers.

6.1.16 If AGMPs are required, these should ideally be performed in a negative pressure room. However, severely ill patients may not be stable enough to be transferred to a negative pressure room, in which case AGMPs are delivered carefully after applying a portable HEPA filter in a regular isolation room.

6.2 ICU ADMISSION CRITERIA FOR COVID PATIENTS

6.2.1 COVID patients of all priorities (1-4) must be admitted to critical care areas assigned for critically ill COVID patients.

6.2.2 If the capacity for critical care areas assigned for critically ill COVID patients becomes very limited, the admission priority will be for priorities 1 & 2.

6.2.3 Patients with priorities 1 & 2 will be further categorized by the most senior on-duty intensivist into:

6.2.3.1 Patients for standard ICU care (paralysis, proning, advanced mechanical ventilation modes…etc.)

6.2.3.2 Patients for advanced ICU care (Nitric Oxide, HFO & ECMO).

6.2.4 Patients for standard ICU care will be admitted to critical care areas assigned for critically ill COVID patients outside the ICU as per **ICS COVID 19 Disaster Plan**.

6.2.5 Patients for advanced ICU care will be admitted to critical care areas assigned for critically ill COVID patients within the ICU (GICU-1 beds 29-32 & GICU-2 beds 25 & 26).

6.2.6 Suspected COVID patients with priorities 1 & 2 for whose result comes as negative and their COVID status is cleared by ICU and infection control teams must be moved immediately to a regular room in one of ICU units to provide negative pressure beds for other patients.

6.3 ICU DISCHARGE CRITERIA FOR COVID PATIENTS

6.3.1 Discharge criteria of COVID patients from ICU care should be the same as the ICU discharge criteria for non-COVID patients.

6.3.2 Disposal of patients into a COVID ward and a regular ward depends on the COVID status of the patient as determined by infection control team.

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