

# HONG KONG SANATORIUM & HOSPITAL INTENSIVE CARE UNIT (ICU)

## ADMISSION AND DISCHARGE GUIDELINE

### I. Principle

The intensive care unit is operated on the principles of high turnover; ready accessibility as indicated by good clinical practice guideline; and maximal cost-efficiency for valuable nursing manpower. Hence, the average stay in the ICU should be short but sufficient for stabilisation of the cardio-respiratory parameters before a definitive discharge plan can be made. The managing clinicians and the family members must realise this functional nature of ICU such that long-term stay is strongly discouraged.

### II. Bed allocation

Beds are allocated based on two categories: elective for high-risk procedures as outlined in section IV and emergency admission as outlined in section V.

### III. Admission policy

1. Patients are admitted to the Intensive Care Unit by request from their attending doctor and on arrangement with the ICU Senior Sister or the Nurse in charge at the time of request.
2. A waiting list may be set up by the ICU Senior Sister under the supervision of the Hospital Management Committee.
3. A Chief Attending Physician has to be assigned if the patient is under the care of more than one doctor.

### IV. Elective admission under the reservation system

1. ICU bed can be reserved in advance following the attending doctor's order.
2. ICU bed is reserved on a first come first serve basis.
3. The following cases will require the signature of the nursing supervisor/ Medical-Superintendent\* on the "Record of waiting list" in order to reserve the ICU bed 24 hours in advance:
  - a. CABG.
  - b. PTCA/PTCS.
  - c. Cardiothoracic/open heart procedure
  - d. Major surgical procedures: e.g. hepatectomy, craniotomy, Whipple's operation, oesophagectomy, spinal surgery (this list is by no means exhaustive)
  - e. Transfer of ill patients from other hospitals

\* Medical Superintendent includes Deputy/Assistant Medical Superintendents

## **V. Emergency admission**

**Direct admission to ICU should be considered if the patients suffer from acute** life threatening conditions who may be benefited from the intensive care (See appendix I).

## **VI. Discharge from the ICU**

1. The following are discharge criteria from the ICU
  - a. Underlying Condition improved or resolved
  - b. Benefits of monitoring in AICU considered small
  - c. Patient with acute respiratory failure extubated and does not require assisted ventilation and in stable condition after observation for period appropriate to his/her condition.
  - d. Patients with shock:
    - Cause reversed and stable after taking off inotropes.
    - Stable cardiovascular status with minimal inotropes support for a reasonable period
  - e. Condition beyond salvage and might not benefit from intensive treatment in ICU.
2. For patients in stable condition requiring long-term ventilatory support, they should be discharged to and managed in the Assisted Ventilation Ward instead of ICU.
3. The discharge is decided by agreement between the patient's doctor, patient, patient's family members and the Nurse in charge conducted according to guideline as stipulated above.

## **VII. Clinician's admission privilege to the ICU**

1. The Hospital upholds the modern healthcare policy that clinicians managing patients in ICU should have proper training and adequate experience in the management of acute critical diseases in their field.
2. The usage of special ICU facility is similar to other special facilities in the Hospital such as operating theatre, minimally invasive surgery, etc. Hence, all clinicians who wish to admit patients to the ICU directly under their care should apply for ICU privilege.
3. ICU privilege would be granted by the Hospital Management Committee after review by the Hospital Privilege Subcommittee with recommendation from ICU Medical Advisory Committee when appropriate.
4. All clinicians granted ICU privilege must accept, acknowledge, and abide by the Admission and Discharge Guideline for ICU.
5. Clinicians granted ICU privilege should also, with the help of the ICU staff, explain the Admission and Discharge Guideline for ICU to patients and their family members.

### **VIII. Patient's admission to the ICU**

1. Patients and their family members will be informed by the attending clinicians, with the help of the ICU staff, the Admission and Discharge Guideline for ICU before patient's admission to ICU.
2. They will be requested to sign a form upon admission to the ICU acknowledging and confirming that they will abide by the Hospital's Admission and Discharge Guideline for ICU.

### **IX. Review**

1. The Admission and Discharge Guideline will be discussed, revised and updated every 12 months for improvement and better patient care.
2. The proper utilisation and adherence to the guideline will be monitored by international scoring system (e.g. APACHE II) on a regular basis. Clinicians will be given a feed back as to the results for their information and for hospital clinical audit.

## **Appendix I**

### **1. Critical Conditions**

#### **a) Pulmonary System**

- (i) Acute respiratory failure requiring ventilatory support
- (ii) Non-ventilated patients
  - Severe Acute Asthma
  - Severe Community Acquired Pneumonia with CURB-65 Score  $\geq 3$
  - Acute Upper Airway Obstruction or pending obstruction
  - Massive haemoptysis

#### **b) Sepsis and Trauma**

- (i) Septic shock not promptly responding to appropriate fluid replacement
- (ii) Severe Sepsis
- (iii) Life Threatening Trauma

#### **c) Cardiovascular System**

- (i) Acute myocardial infarction with life threatening complications
- (ii) Cardiogenic shock
- (iii) Acute pulmonary oedema with respiratory failure and / or requiring haemodynamic support
- (iv) Hypertensive emergencies
- (v) Post cardiac arrest
- (vi) Cardiac tamponade with haemodynamic instability
- (vii) Pulmonary emboli with haemodynamic instability
- (viii) Dissecting aortic aneurysm
- (ix) Life threatening haemorrhage

#### **d) Neurological Disorders**

- (i) Acute stroke requires intubation, with CT Scan ruling out conditions for immediate neurosurgical intervention with very poor prognosis
- (ii) Coma: metabolic, toxic, or anoxic
- (iii) Encephalo-meningitis with altered mental status or respiratory compromise
- (iv) Central nervous system or neuromuscular disorders with deteriorating neurological or pulmonary functions
- (v) Status epilepticus

#### **e) Drug Ingestion and Drug Overdose**

- (i) Drug intoxication leading to cardiorespiratory instability.
- (ii) Seizures following drug intoxication
- (iii) Drug intoxication requiring urgent RRT(Renal Replacement Therapy)/hemocharcoal perfusion.

#### **f) Gastrointestinal Disorders**

- (i) Life threatening gastrointestinal bleeding
- (ii) Fulminant hepatic failure

**g) Metabolic**

- (i) Acute diabetic decompensation, including diabetic ketoacidosis and non-ketotic hyperosmolar coma
- (ii) Thyroid storm or myxoedema coma
- (iii) Adrenal crises
- (iv) Severe hypercalcaemia with altered mental status, requiring haemodynamic monitoring
- (v) Hypo- or hypernatraemia with seizures, altered mental status
- (vi) Hypo- or hyperkalaemia with arrhythmias or muscular weakness

**h) Miscellaneous**

- (i) Environmental injuries (lightning, near drowning, hypo/hyperthermia)
- (ii) Acute or acute on chronic renal failure for which immediate renal replacement therapy is considered necessary.
- (iii) Major anaphylactic or anaphylactoid reactions
- (iv) Patients who are moderately ill with infections and yet the clinical conditions was so unstable that caring in the Isolation Wards may not be adequate.
- (v) Arterial pH < 7.1 or > 7.7

**2. Unstable vital signs**

- a)** Pulse < 40 or > 150 beats/minute not responsive to treatment
- b)** Systolic arterial pressure < 80 mmHg or mean arterial pressure < 60 mm Hg, which does not respond promptly to fluid resuscitation
- c)** Diastolic arterial pressure > 120 mmHg
- d)** Respiratory rate > 35 breaths/minute

## **Appendix II**

### **Supplementary readings**

1. Dawson JA. Admission, discharge, and triage in critical care. Principles and practice. *Crit Care Clin* 1993; 9: 555-574.
2. No author. Consensus statement on the triage of critically ill patients. Society of critical care medicine ethics committee. *JAMA* 1994; 271: 1200-1203.
3. No author. Guidelines for intensive care unit admission, discharge, and triage. Task force of the American College of Critical Care Medicine, Society of critical Care Medicine. *Crit Care Med* 1999; 27: 633-638
4. Gruppo di Studio ad Hoc della Commissione de Bioetica della SIAARTI. SIAARTI guidelines for admission to and discharge from Intensive Care Units and for limitation of treatment in intensive care. *Minerva Anesthesiol* 2003; 68: 101-118.
5. Heidegger CP, Treggiari MM, Romand JA, the Swiss ICU network. A nationwide survey of intensive care unit discharge practices. *Intensive Care Med* 2005; 31: 1672-1682.
6. Walter KL, Siegler M, Hall JB. How decisions are made to admit patients to medical intensive care units (MICUs): a survey of MICU directors at academic medical centers across the United States. *Crit Care Med* 2008; 36: 414-420.