GOVERNMENT OF THE REPUBLIC OF THE UNION OF MYANMAR
MINISTRY OF HEALTH AND SPORTS
DEPARTMENT OF MEDICAL SERVICES

INFECTION PREVENTION AND CONTROL IN ICU
WHEN COVID-19 IS SUSPECTED

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INFECTION PREVENTION AND CONTROL IN ICU

WHEN COVID-19 IS SUSPECTED (Version 1) as of 24-6-2020

General measures

- Actively identify and isolate patients suspected

- Effective contact tracing

- Rapid laboratory diagnostic testing

Strict hand hygiene and standard precautions for all patients

Standard precautions include hand and respiratory hygiene, the use of appropriate personal protective equipment (PPE) according to a risk assessment, injection safety practices, safe waste management, proper linens, environmental cleaning, and sterilization of patient-care equipment.

The rational, correct, and consistent use of PPE also helps reduce the spread of pathogens. PPE effectiveness depends strongly on adequate and regular supplies, adequate staff training, appropriate hand hygiene, and appropriate human behavior.

Environmental cleaning and disinfection procedures are followed consistently and correctly. Thoroughly cleaning environmental surfaces with water and detergent and applying commonly used hospital level disinfectants (such as sodium hypochlorite) are effective and sufficient procedures.

Medical devices and equipment

Equipment should be either single-use and disposable or dedicated equipment (e.g. stethoscopes, blood pressure cuffs and thermometers).

Disinfect shared equipment after use (thorough cleaning with water and detergent and then disinfect like 70% alcohol, chlorine compounds, aldehyde compounds)

Provision of (disposable) staff scrub suits in isolation wards

Appropriate handling of medical waste

Significant amounts of biohazard waste will be generated while caring for critically ill patients.

Adequate waste management capacity is necessary to upkeep a safe environment for HCWs and patients and should be managed in accordance with safe routine procedures according to hospital guideline.

Hospital issued guidelines for infection prevention, including handling of patient specimens and care of the deceased patient

Patient Placement

Single-patient rooms are always indicated for patients placed on Airborne Precautions

Care for suspected or confirmed cases in negative pressure AIIR—patients to wear face masks until transfer to AIIRs, ICU rooms should be subjected to negative pressure and a minimum of 12 air changes per hour

Implementing empiric additional precautions

Contact and droplet precautions

Staff PPE requirements

Droplet and Contact PPE: Surgical mask, eye protection, disposable gown, gloves, and cap

after patient care, appropriate doffing and disposal of all PPE and hand hygiene should be carried out. A new set of PPE is needed when care is given to a different patient;

Avoid moving and transporting patients out of their room or area unless medically necessary. Use designated portable X-ray equipment or other designated diagnostic equipment. If transport is required, use predetermined transport routes to minimize exposure for staff, other patients and visitors, and have the patient wear a medical mask;

limit the number of HCWs, family members, and visitors who are in contact with suspected or confirmed cases.

Airborne precautions for aerosol-generating procedures

Some aerosol-generating procedures, such as tracheal intubation, non-invasive ventilation, tracheotomy, cardiopulmonary resuscitation, manual ventilation before intubation, and bronchoscopy, have been associated with an increased risk of transmission.

Ensure that HCWs performing aerosol-generating procedures:

Perform AG procedures in an adequately ventilated room – that is, natural ventilation with air flow of at least 160 L/s per patient or in negative- pressure AIIR rooms with at least 12 air changes per hour and controlled direction of air flow when using mechanical ventilation.

Staff PPE requirements

- N95 respirator (consider PAPR use),
- Fit testing for all staff using N95 respirators
- eye protection (i.e. goggles or a face shield),
- disposable gown clean, non-sterile, long-sleeved gown and gloves. If gowns are not fluid-resistant, HCWs should use a water-proof apron, gloves,

Perform aerosol-generating procedures only in presence of a clear clinical indication

Consider the use of PAPR if available and staff are trained in its use

Limit staff involved in aerosol-generating procedures

Limit duration and exposure during aerosol-generating procedures (e.g. stop ventilation before circuit disconnection)

ICU-specific measures

Consider high-efficiency particulate air (HEPA) filters at expiratory port of breathing circuit, Bag-valve-mask interface, NIV mask interface

Use heat and moisture exchanger (HME) with bacterial/ viral filter instead of a heated humidifier

Use closed, in-line suction of tracheal tubes

Measures to reduce dispersion of aerosols during intubation as shown in Table

Use of single-use equipment if possible

For reusable items, it is important to ensure adequate capacity for prompt disinfection and sterilization.

Segregate ICU equipment (e.g. ultrasound machines)

Incorporation of infection control measures into ICU workflows (e.g. cardiac arrest and rapid response teams, transport, emergency operations and procedures)

In situ simulation sessions

References;

1) Brouqui P, Puro V, Fusco FM, et al (2009) Infection control in the management of highly pathogenic infectious diseases: consensus of the European Network of Infectious Disease, *Lancet Infectious Disease*; 9: 301–11
2) Infection prevention and control during health care when COVID-19 is suspected, Interim guidance, (WHO)19th March 2020
3) Goh KJ, Wong J, Tien JCC, Ng SY, Wen SD, Phua GC and Leong CKL (2020) Preparing your intensive care unit for the COVID-19 pandemic: practical considerations and strategies, *Critical Care;* 24:215