



## COVID-19 UPDATE

21 January 2021

### OXYGEN SAFETY – FIRE HAZARD

#### Fire prevention and management:

- All hospital teams should have a table top exercise to plan for any incident involving a fire/ oxygen failure every 6 months
- In any hospital unit where HFOT is being used, the risks of oxygen therapy should be clearly communicated to all staff
- A reminder that alcohol hand sanitiser may also be highly flammable
- Follow the RACE guideline: Rescue, Alert, Contain, Evacuate
- Immediately shut off zonal oxygen valve and assist/rescue patients nearby
- A fire extinguisher or hose reel may be used to fight a small contained fire initially

Oxygen therapy remains one of the steadfast treatment modalities of COVID-19. Not only has the number of patients needing oxygen therapy increased, but also the amount of oxygen being used per facility has increased significantly during the second wave.

For this reason, it is imperative that every person working in the hospital is aware of, and adheres to, the standard safety and fire precautions applicable to oxygen administration.

Standard oxygen administration through a nasal cannula or facemask does not require additional precautions, but please take note of the following information on the use of high flow oxygen therapies, i.e.

- Partial-; and non-rebreathing masks with 15L/min
- HFNC: e.g. Airvo®; Optiflo®
- Non-Invasive Ventilation (ventilators and frugal CPAP devices)
- Mechanical ventilators

1. *These therapy modalities are deemed as AGPs (aerosol generating procedures), so please ensure that staff working in these areas are using the appropriate PPE*
2. *These devices use a flow rate of 10 – 60L/min. This creates a potential high concentration of oxygen in a specific space, as all the oxygen is released into the atmosphere during exhalation. If a number of these devices are placed in a confined space, this can have serious consequences which needs to be avoided at all costs*
3. *For this reason it is essential that these devices are used in well ventilated areas, preferably with natural airflow through open windows, to prevent the build-up of oxygen to unacceptable levels*

4. *If no well-ventilated area is available, the number of devices should be reduced to a single device per area*

**Safety requirements when using these devices:**

- Ensure that these areas are marked clearly with warning signs of high concentration oxygen
- Ensure that escape routes from these areas are kept clean and unobstructed
- Ensure all staff working in these areas are wearing the appropriate PPE
- Ensure that these areas are well ventilated, and keep windows open as far as possible to create natural air changes and dilution
- Take special care with plugging or unplugging of medical and personal equipment (wiring and extensions of fans, cell phones, devices, etc.)
- Remove the oxygen before using a defibrillator on a patient. Oxygen should not be flowing freely across the chest or over the defibrillator when the defibrillator is being used
- Prohibit anything that can lead to sparks or open flames (ensure that all matches or lighters are removed from patients)
- All potential sources of combustion need to be mitigated and, if at all possible, removed, before commencing with usage of these devices. The risks and benefits need to be considered carefully before using devices of this nature
- In a well ventilated area, the risk will be low, but in a confined space the risk is much higher
- Plan and rehearse actions in the event of a sudden oxygen failure
- Ensure all oxygen emergency alarms are in working order, and ensure that these alarms are not placed in areas which are not manned 24/7, to draw immediate attention to all staff in the proximity to help in the event of oxygen failure
- Ensure bag-valve-mask units are readily available to patients requiring manual ventilation during electrical and/or oxygen failure
- Alcohol based hand rub (ABHR) should be placed away from any outlets (oxygen, electrical points) – in general the recommendation is that the ABHR be placed at the foot of the bed for ease of access when approaching the patient, so this likewise prevents stretching over the head of the bed or to the wall where services may be present
- Hands must be rubbed after application of ABHR until completely dry (and vapour evaporated)

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