COVID-19 Advanced Airway

• Standard Operating Procedures
• Staff and Public Safety
• Oxygenation
• Intubation
• Positive Pressure Ventilation
• Limited Resources
Standard Operating Procedure

Special Precautions during Aerosol Generating Medical Procedures like intubation or bronchoscopy or CPR when patient with ...  
• Febrile Respiratory Illness where there is significant risk of COVID-19 in local community  
• Suspected or confirmed COVID-19  

CPR for COVID-19 arrest is of high risk to health care team and must be weight against chance of success; rapid intubation for presumed hypoxic arrest, prolonged efforts likely futile and increase risk.

When does one to consider incorporating special precautions into standard practice during pandemic/outbreaks?

Staff and Public Safety

Aerosol Generating Medical Procedures  
• PPE (minimum) – gown, N95 fit-tested/seal-checked, goggles or face shield, gloves (double, cuff covers sleeve)  
  • Hoods? Coveralls?  
• Minimize staff exposure in time and numbers  
• Negative Pressure room if available or an isolated room doors closed; Minimize door openings; Have runner/outside communication available  
• Importance of doffing PPE; spotter/checklist?; automatic dispensing hand cleansers  
• Decontamination of equipment (suction) and room aerosol risk time, PPE required
Oxygenation

• Low flow nasal cannula <4-6 lpm with surgical mask on top
• >4-6 lpm advise Hi-Ox or Tavish type mask with filtered exhalation port
Oxygenation

High flow oxygenation in open circuit generates infectious aerosols
• Avoid nebulizations, High Flow Nasal Cannula (HFNC e.g. Optiflow) and Non-Invasive Ventilation (BiPAP, CPAP)
• Avoid Bag Valve Mask ventilation and Supraglottic airways if possible
• Avoid apneic oxygenation (high flow) during intubation
• Refractory hypoxemia so maintain high PEEP and avoiding derecruitment (BVM with two handed seal to face, PEEP and viral HME attached), low flow 4-6lpm oxygen to patient side of BVM valve (before filter), avoid positive pressure ventilation if possible
• Consider safety of closed circuit NIV BiPAP (two tube system) with viral HME filter, CPAP hood, or lower flow rate of HFNC
Intubation

• Monitor patient for respiratory failure (serial PaO2, PaCO2, pH, SpO2, P/F ratio)
• Not too early (risk to patient/staff and drain on resources) but not too late (uncontrolled): Earlier intubation to avoid crash tube or for medical transport, involve RCCR/ICU
• Risk of hypoxia and aerosols: Best intubator to minimize exposure time and attempts
• VL if available, use optimal techniques, backups ready (bougie, smaller tube)
• RSI recommended, avoid coughing, gagging, bucking or awake intubation. Have post intubation analgosedation +/- paralysis ready

Positive Pressure Ventilation (PPV)

• AVOID bag valve mask and supraglottic airway ventilation if possible, if these are necessary ensure viral HME attached to patient end and ensure that there is a good seal (e.g. use 2 person BVM technique with optimal positioning) and avoid high peak inspiratory pressures
• Recommended definitive airway is endotracheal tube with cuff inflated and viral HME filter attached before applying PPV
• Have closed system in-line suction ready at all times distal to the HME filter
• ETT and ventilation circuit secured to patient and secured connections to avoid leakage, accidental extubation; also adequate analgosedation
• Low Tidal Volume, High PEEP, lowest FiO2 possible ARDSnet ventilation strategy