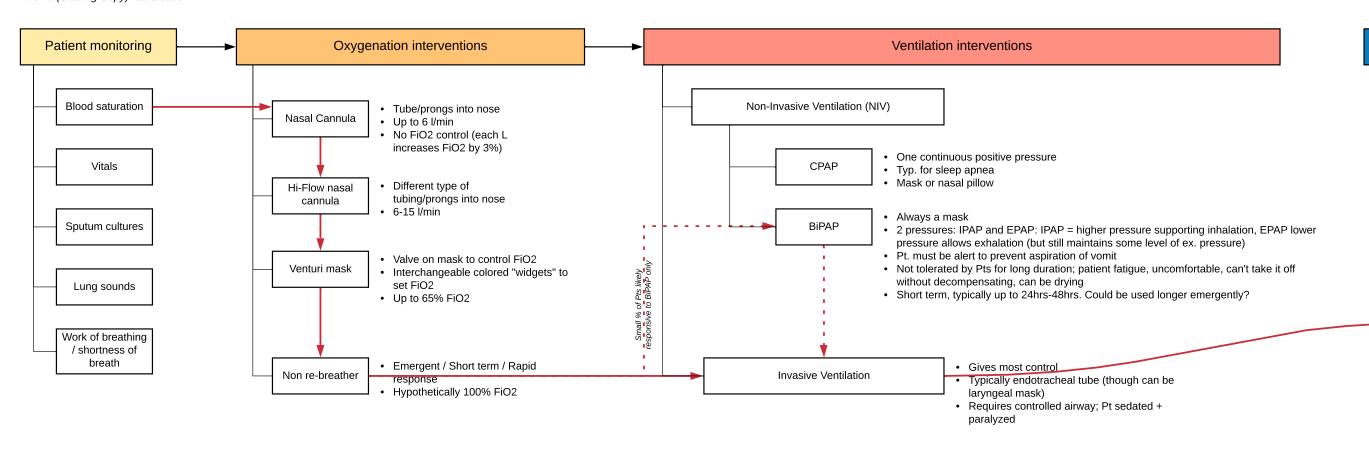
COVID-19 RESPIRATORY DISTRESS WORKFLOW HYPOTHESIS

Rev 5 (Sharing Copy)- 3/23/2020



KEY QUESTIONS:

- 1. What changes would make this a more accurate representation of clinical needs?
- 2. What are the most important ventilator modes and features?



COVID-SPECIFIC VENTILATION STRATEGY Treat similar to ARDS Low lung compliance = higher pressures to ventilate Volume control mode likely best to increase oxygenation (at risk of lung damage) Treat w/ "Lung Protective Ventilation": Lower tidal volumes (4-6ml/kg-ideal [8 normal]) Higher respiratory rate (20-35 BPM [12-16 normal]) Higher PEEP (10-20 cmH2O [5-7 normal]) Level of PEEP requires secured airway (endotracheal tube) Prioritize inspiratory time vs. exhaust time Expiration filtering critical to protect patients/providers Sources: MICU Medical Director Interventional Pain Medicine Physician

Program Director Critical Care Anesthesiology

Respiratory Therapist

ICU RNCRNA

Vent modes/features Respiratory circuit Invasive or non-invasive Single limb · Limited exhalation/PEEP control Valve driven by ventilator pressure Non-vented Typ. On/Off, can work as limted PEEP valve Orifice(s) at the mask shell/swivel connector Vented Orifice(s) at distal end of circuit (whisper swivel) valve b/w circuit and mask (Plateau valve) Inspiratory and expiratory limb connected to Double limb discrete ports on vent Control modes Clinician sets the peak flow rate, flow pattern, tidal Volume Control volume, respiratory rate, PEEP, FiO2 (VC) • Can overcome lower lung compliance in ARDS Risk of lung injury if over-pressured Pressure Control · Clinicians sets inspiratory pressure • Limits max pressure delivered (PC) **Breath Sequences** • Ventilator provides all breaths; spontaneous pt Continuous breaths not allowed Mandatory (CMV) Spontaneous breaths allowed between Intermittent Mandatory (IMV) ventilator-mandated breaths Continuous • All breaths are spontaneous/pt. driven Spontaneous · Vent supports pt. initiated breaths (CSV)