Palliative Ventilator De-Escalation Recommendations
for COVID-19 positive or PUI at END-OF-LIFE

Note that endotracheal tube will remain in place and ventilator circuit will remain intact to reduce exposure of Covid-19 to bedside staff

Pre-procedure

- Make arrangements with unit coordinator to determine if any family will be allowed on the unit and discuss plan with family. Offer virtual option to family members who are unable to come to bedside.
- If family joining virtually, designate a provider to manage the device and zoom meeting.
- Prepare family that prognosis can be unpredictable, but with patients who are COVID-19 + with severe ARDS, prognosis will likely be very short, possibly minutes.
- Change code status to DNAR-CMO, discontinue labs and place "Adult Comfort Measures" order set.
- Ensure that the patient does not have an active defibrillator and if they do, ensure this is deactivated before de-escalation. A magnet can also be taped in place over the device if it is unable to be deactivated.
- Ensure no paralytic medications have been given recently OR that they have worn off completely.
- Discontinue tube feeds and decompress stomach.
- If patient is on dialysis, disconnect and remove machinery from room (removing machinery more important if family is present in room).

Procedure

- Confirm correct patient and confirm plan for de-escalation with appropriate surrogate decision maker.
- In setting of fentanyl shortage, would recommend using IV morphine or dilaudid for pain and air hunger. If patient is already on a continuous opioid infusion, continue current drip rate and order bolus doses of 100-200% of drip rate to be given q 10min PRN.
- If patient is opioid naïve and not on a continuous infusion, consider starting with morphine 3-5mg IV or dilaudid 0.5-1mg IV q 10min PRN.
- Recommend ordering Ativan 1-2mg q 30min PRN or midazolam 2-4mg q 10min PRN for anxiety. If patient is already on a midazolam continuous infusion, continue at current rate with boluses of 100-200% of drip rate available q 10min PRN.
- Recommend premedicating with an opioid bolus as above (100% of drip rate) 10-15minutes prior to de-escalation.
- Recommend premedicating with 1mg of IV Ativan or 2-4mg of midazolam 10-15min prior to de-escalation.
- Recommend glycopyrrolate 0.4mg IV q 30min PRN for secretions.
- If patient has shown that they require sedative medication (propofol, precedex, etc.) for comfort, would recommend continuing this as ventilator is weaned.
- Recommend stopping vasopressors just prior to weaning ventilator.
- Ensure that patient appears comfortable prior to reducing ventilator settings.
- If patient is completely obtunded and expected to die abruptly after ventilator is weaned, recommend immediate reduction in ventilator settings to pressure support 5/5 and room air. Bolus opioid and benzodiazepine aggressively if needed to ensure comfort.
- If the patient is more alert, would recommend a more gradual reduction in ventilator settings, initially, to ensure that the patient remains comfortable with less support. Would initially decrease FIO2 in increments of 10% until at 21%. Would then decrease PEEP in increments of 2 until at a value of 5.

Once FIO2 is 21% and PEEP is 5, would transition to pressure support with PS of 20. Decrease PS in increments of 2 until at 5 (PS 5/5). Titrate analgesia and sedation as needed during this reduction.

- Once ventilator is set at PS 5/5 and FIO2 of 21%, leave endotracheal tube in place and leave ventilator circuit intact for end of life.
- Continue to titrate opioids, benzodiazepines and sedation as needed to ensure comfort.
- If patient appears stable after weaning to PS 5/5 and FIO2 of 21%, and anticipated prognosis is in the hours to days range, it would be reasonable to disconnect endotracheal tube from ventilator, using a filtration device over the endotracheal tube to reduce risk of virus dissemination to bedside staff. It would also be reasonable to remove endotracheal tube for patient comfort, using Covid+ precautions for the extubation process.

Proposed guideline has been reviewed by Palliative Care and Pulmonary/Critical Care faculty and has received final approval by the Critical Care Committee