White 3 ICU Pearls

Created by MGH Covid-19 CRNA Task Force

- Carts:
  - Airway Cart - Red cart in back next to code cart (Blades, ETT, Cric kit, etc)
  - Line cart - Blue cart in back with airway cart
  - Code Cart- Red draws
  - Anesthesia Cart – grey cart beside airway cart
    - Includes: Circuits, viral filters, PEEP valves, ambu bags, CO2 lines, scissors, Kelly clamps, CO2 canister, water traps, stethoscope, iso bottles, iso caps, twitch monitor, in-line suction, sedline stickers (get sedline machine from biomed)
- Clamps for ETT Tube:
  - One in each room on top of vent
  - Consider using kelly clamp and gauze (to cover teeth) because perfusion clamps are in short supply
  - Matt Harrell is working on our clamp supply
- Circuit:
  - 2 filters:
    - 1 viral filter to expiratory limb to machine (will be changed with 72 hour machine restarts)
      - This is a *hydrophobic* filter, different from ICU pleated filter.
    - 1 HME filter from ETT to circuit- will need to remove neck for in-line suction and to decrease dead space, check HME filter for condensation every shift
    - Be sure to tighten white cap on filter
  - Change circuit and HME filter every 24 hours – Follow steps on clipboard in room
- Machine Restart: in White 3 ICU we are restarting the anesthesia machine and performing a full machine check every 72 hours
  - Refer to "Anesthesia Machine Restart" on the clipboard in the patient's room
- Minute Ventilation (MV) = Fresh gas flows to prevent condensation and rebreathing
  - EX: If patient's MV is 10 L/min then FGF must equal 10 L/min.
  - CO2 absorber change will be much less if MV = Flows
    - *Changing the CO2 absorber is an aerosolizing procedure, so only change if necessary. - this conflicts other document that says that it is not an aerosolizing procedure.* Do not change only because of change in color. (EX: Change if FiCO2 > 5 or ETCO2 increasing)
- For patients on Inhaled Anesthetics:
  - Confirm bottle of agent and respective cap is in anesthesia machine drawer (Caps may be shared. Anesthesia techs are working on gathering more Iso caps.)
  - Confirm vaporizer is filled with agent
  - Confirm circuit is not filled with condensation
    - ***MV will be lower for patients on inhaled agents***
    - Approximately 2L/min max
  - Q4 hours, increase FGF to 6L/min of higher for 15 minutes to flush out circuit
  - Document inhaled anesthetic in your Progress Note and q 1 hour in Flowsheet. It will not slave into your EPIC Flowsheet.
    - Consider placing Iso MAC under type of ventilation (EX: AC/VC) as a comment q 1 hour
  - Reasons for using Isoflurane in COVID-19 patients:
    - Bronchodilation properties @ MAC 0.8 to 1.2
    - Sedation effects to wean off other sedatives
    - Anti-inflammatory (brain and lungs)
    - Anti-platelet properties (patients are hypercoagulable with elevated D-dimers)
- Documentation:
  - Progress Note for:
    - Admission
    - Start of shift

        - End of shift (prior to 6PM or 6AM)
        - Use ...CRNA smart phrase (DEPARTMENT: MGH CRITICAL CARE)
    - Validate ventilator data q1hr to meet APSF recommendations for rounding on patients Q1H
        - Click on "Adult Ven Doc" tab, Highlight relevant mechanical ventilation data, right click and click "File selected"
    - Check and document placement of ETT @ teeth or lip q shift
    - Check and document ETT pilot balloon cuff pressure (manometer will be stocked in each room eventually) - Jeremi ordering.
    - Help RN change ETT from right to left PRN, preferably on night shift
    - Check TOF if patient is paralyzed and report results to ICU RN
    - Check Plateau Pressure (PPlat) every shift
        - In extra settings, increase Tip:Tinsp to 20%. Tip:Tinsp should be at 0 or 10%.
        - This can only be done on patients in controlled ventilation (VCV, VAF, PC), not PSV.
        - Document on "Adult Vent Doc" Flowsheet and Progress Note.
        - Make sure Tip:Tinsp is changed back to 0 or 10% when done.
    - Daily checks: CO2 absorber check every shift, 72h machine checks, HME changed q72hr + PRN, circuit change q72hrs.
- Ventilator Checklist, Best PEEP Trial Worksheet and Anesthesia Machine Power Up Test Checklist on clipboard in room
- Have handoff sheets available for sign-out at end of every shift
- Best PEEP trial see document/worksheet
- Best PEEP video: https://m.youtube.com/watch?v=AdvEhoiqYBE&noapp=1
- Dan Chipman RRT resource- asst director RT 617 416 9722 (cell), Email:DCHIPMAN@mgh.harvard.edu
    - Expectation is that we will manage our own ventilator issues. If you must contact RRT for issues in White 3 (PAGER 24225 "Resp Charge Resource Therapist - Code Pager") Please limit utilizing them if possible because they are very busy and not supposed to be covering our unit.
    - Dan Chipman also willing to respond to issues Days M-F.
- Anesthesia Machine Hotline (APSF & ASA) available from 6AM to 10PM daily
    - 1-800-224-1001
- MDI/Bronchodilators
    - Highly discouraged. Only use if a 10 to 15% change in PiP - plateau pressure.
    - If using, must clamp tube and connect Meter adapter distal to HME filter (closest to pt)
    - This IS AN aerosolizing procedure
    - Record PIP-Plateau Pressure before and after administering the bronchodilator
- Airway cart stationary near Omnicell in White ICU
- If anesthesia machine alarms "Comp Port 2 Failure", it is an EPIC information gathering problem. It is not an internal software problem.
- **7AM – 7PM Workflow:**
    - Circle Up Debrief & Patient Handoff
    - Disinfect workstation
    - Perform safety check for items on top of anesthesia machine: ambu bag with PEEP valve and filter attached, ETT clamp, manometer
    - Round with ICU team begin ~ 8:00AM
    - Contact Anesthesia Tech to resupply each room with filters, circuit, PEEP valve for ambu bag
    - Complete end of shift Progress Note by 6:00 PM
- **7PM – 7AM Workflow:**
    - Circle Up Debrief & Patient Handoff
    - Disinfect workstation
    - Rounds with ICU team begin @ ~ 7:45PM (varies in length depending acuity)
    - Assess patients and implement ventilator changes/confirm settings are the same if no changes needed
        - ETT position and securement
        - If changes are made to vent settings, update Ventilator Settings Sheet on clipboard
    - Perform "Bedside ICU Ventilator Checklist" and "Machine Checklist" on clipboard

    - Complete Progress Note after rounds
    - Perform an anesthesia machine check on all unused machines @ ~5:00AM if time allows
        - Verify ambu bag w/ PEEP valve and viral filter on top of anesthesia machines
        - Verify viral filter on expiratory limb of anesthesia machine
    - Complete end of shift Progress Note by 5:00AM
- On Admission for Lateral Transfer:
    - Take Ambu bag, PEEP Valve, and Tram/Brick/Cords out of room
    - Patient will come down from ICU with own Ambu bag, PEEP valve, and viral filter
    - Speak with RT prior to disconnecting patient from transport vent or ambu bag
        - Make a plan for clamping ETT and reconnecting patient to anesthesia machine
    - KINDLY request that patient come down to White 3 with In-line Suction in place (we are VERY VERY short on these)
        - Ellison 3 ICU and Ellison 4 SICU *may* have extra in-line suctions
- Biothreats determines COVID-19 Status for patients, like when to repeat swabs or sputum samples. This can affect or change the patient's care plan.
- **Vent Synchronization (VERY IMPT)**
    - Can be used on VC, PC, and PCVG
    - Done by: Turn PS to 0, Go to Extra Settings, Place Trigger on 3
    - You will notice that **Sync** will be displayed to the right of the Machine Ventilation Mode
    - Why needed: This allows the vent to sense when the patient attempts to initiate a breath. If this occurs during end expiration, the vent will deliver the next breath early.
    - Pressure Support mode is not desired for long-term management of Covid patients (due to negative pressure breathing)