Outside Hospital Referral

- Outside hospital calls for respiratory ECMO referral to UW TC are preferentially directed to Harborview.
- If Harborview is at capacity, TC will re-route the referral to UWMC Montlake.
- TC will conference referring physician with ECMO consult attending and MICU/COVID ICU attending.
- If HMC and UWMC Montlake capacity is low, ECMO leadership will reach out to PNW ECMO consortium.
- If decision made for cannulation, cannulation will be performed by the ECMO team.

In-House Consultation

- For COVID patients, the COVID ICU team should call the ECMO consult attending.
- If accepted for cannulation, ECMO leadership will identify appropriately trained cannulation team (two physicians one attending facile with cardiac POCUS to site wires/cannula in IVC).

Cannulation

- As the majority of critically ill patients with COVID-19 will be located in an isolation area (COVID ICU), the ECMO team should be mobilized to that location (do not move the patient).
- Preparation of the patient by primary team:
  a. Right IJ and (ideally right) femoral vein open for use (additional central access in other locations)
  b. Deep sedation, neuromuscular blockade
- Cannulation should be performed at bedside with as little equipment and personnel possible to allow a safe cannulation procedure while at the same time protecting staff.
  a. Cannulation configuration: two cannulas (right internal jugular and ideally right femoral vein)
  b. Equipment in the room:
    i. Ultrasound for vascular access, site wires in IVC and site venous drainage cannula at IVC-right atrial junction
    ii. C-Arm may be used at the discretion of the cannulating physician if needed. C-Arm to be cleaned with Sani Wipes (one wipe per swipe) and allowed to dry for 2 minutes prior to removing from the room
    iii. Cardiohelp pump & circuit, clamps, emergency priming line, 1 L crystalloid
    iv. Cannulation supplies (Gather from cart and placed in large bag):
      1. heparin bolus
      2. large prep stick x3
      3. C-arm drape
      4. laparotomy drape: prep in right IJ, femoral vein, subxiphoid space (for ultrasound)
      5. 6 pack sterile towels x2
      6. sterile trauma shears
      7. skin stapler
      8. ultrasound probe cover x2
      9. Sorin dilator kit
      10. central line kit
      11. 5Fr sheath
      12. 4 sterile tubing clamps
      13. ECMO major pack: Asepto syringe, basin, sterile table field, scalpel
14. 1 L sterile plasmalyte
15. 4x4 boat gauze x4
16. needle driver
17. 0 Prolene 5 pack x3
18. Foley holders to secure cannulas
19. 21 Fr return, 25 Fr drainage cannulas
20. 4 sterile disposable gowns, 4 gloves, 2 hats

v. Cannulators: put on disposable surgical gown and surgical gloves and PAPR/airborne PPE outside of room (non-sterile), put on second set of sterile disposable surgical gown & surgical gloves once inside the room for procedure. Don’t wear plastic PPE gown as base layer (too hot).

c. Staff in the room for cannulation: follow HMC Infection Control recommendations for procedural PPE
   i. Two cannulating physicians
   ii. Bedside nurse nurse to manage medication pumps and give heparin bolus.
   iii. One ECMO operator to prepare and manage the ECMO circuit

Daily Patient Management:

- An ECMO operator will be deployed to this care unit to provide ECMO-specific care. This will be coordinated by the Nursing Supervisor.
- The ECMO attending will provide daily ECMO consultation for the patient, will round on the patient (without entering room to save PPE, use video conferencing when possible or phone), write daily ECMO management note (including on day of initiation), and is available to the ECMO specialist and COVID/MICU attending 24/7.
- The general critical care management of the patient and placement of all orders will remain with the COVID ICU/MICU team. The ECMO attending will be available for consultation 24/7 and will leave daily ECMO recommendations to COVID ICU/MICU team. For more ECMO education: www.corECMO.com.
- If an emergent cannula or mechanical circuit problem arises an ECMO response should be called through the operator.

Important ECMO phone numbers:

ECMO Consult Attending on Call  *call operator

ECMO Leadership:

1. Sam Mandell       425-736-7306
2. Eileen Bulger     206-251-6376

COVID ECMO TEAM

Sam Mandell
Eileen Bulger
Barclay Stewart

Updated 5/25/2020: Mandell, Bulger, Taylor
Harborview Medical Center ECMO for COVID-19

CONSULTATION, REERRAL, CANNULATION AND PATIENT MANAGEMENT

Deepika Nehra
Rebecca Maine

ECMO Operator On call: ECMO activation page through the hospital operator

Updated 5/25/2020: Mandell, Bulger, Taylor