COVID-19 Clinical Emergency Response Teams Guidelines

**Goal:** To provide high quality care while minimizing exposure and decreasing risk of transmission of COVID-19. Only required team members should enter the patient room for each emergency response call. Other team members to await further instructions outside of the room.

**Summary of CHANGES as of 08/10/2020:**

- Due to the changes to inpatient asymptomatic testing, there could be an increase in the number of COVID Status Unknown patients or patients with pending test results during emergency response calls.
  - The COVID Status on Emergency Response pages will still appear "Needs Review" for unknown status and patient’s with negative test results (see pager info on pg. 3)
  - Continue to huddle at the door, secure proper PPE prior to entering. Please refer to inpatient PPE guidelines for more information.

![Diagram of unknown or pending result guidelines](image-url)
COVID-19 Clinical Emergency Response Teams Guidelines

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ETHICAL GUIDANCE

Emergency Response in COVID-19 and PUI patients

At UVMCC, it is top institutional priority to protect our staff by ensuring adequate supply, availability and utilization of PPE during all patient care. We have been fortunate thus far to have access to the PPE required to safely take care of Persons Under Investigation (PUI) and confirmed COVID-19 patients.

Despite these efforts, we put a plan in place in case our Emergency Response Teams experience PPE unavailability for any reason, similar to the situation in other health care facilities worldwide during this COVID-19 pandemic.

To protect health care professionals, and by extension the patients they will serve later, we require Emergency Response Team members to wear appropriate PPE prior to initiating resuscitative efforts.

That means, in the event of emergent resuscitation efforts for both PUI and confirmed COVID-19 patients, emergent resuscitation should be delayed until the recommended PPE is available, per institutional PPE guidelines.
1. Pager info for all Emergency Responses (except MET calls)

What is the patient’s COVID19 Status?
“COVID: Positive” = Confirmed positive
“COVID: PUI” = Patient under Investigation, being ruled out for COVID19, test to be ordered or is pending
“COVID: Needs Review” = Status Unknown or COVID negative – Team members MUST huddle outside of patient’s room to obtain clinical information and don appropriate PPE, prior to entering patient room.

2. Adult Code Blue Response

<table>
<thead>
<tr>
<th>In the Room</th>
<th>Outside of the Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team Leader = MICU Attending;</td>
<td>ANC (&quot;Bouncer&quot; at the door)</td>
</tr>
<tr>
<td>If MICU Attending not available within 3 minutes, Team Leader = Senior IM or Surgery Resident</td>
<td></td>
</tr>
<tr>
<td>Emergency Response Nurse(s)</td>
<td>PSS (Enter only for needed CPR support)</td>
</tr>
<tr>
<td>Department Charge Nurse (as needed)</td>
<td>ED Tech (Enter only if needed for I/O or CPR support)</td>
</tr>
<tr>
<td>Primary Bedside Nurse</td>
<td>EKG Technician (Use wireless set up for EKGs)</td>
</tr>
<tr>
<td>Respiratory Therapist (Limit # in room to 1 if possible)</td>
<td>Surgical Resident(s)</td>
</tr>
<tr>
<td>Anesthesia Attending/Senior Resident (limit # in room to only what is needed 1-2)</td>
<td>Primary Team Members</td>
</tr>
<tr>
<td>Vascular Access Nurse (to enter if needed)</td>
<td>Additional Code Blue team members</td>
</tr>
</tbody>
</table>

Airway Management:
- **Intubation/Code Blue Response for COVID Positive or PUI patients:**
  - ALL team members inside room must wear a fit-tested N95 mask, face shields gown, gloves
    - All team members immediately outside of the room (e.g. ANC, Recorder/timekeeper, etc.) maintain procedure mask or universal N95
  - Preference is to secure airway with endotracheal tube with in-line viral filter ASAP
    - If necessary, may intubate in neutral pressure room
      - Maintain Airborne Precautions in the room for at least for 1 hour post intubation in a neutral pressure room and for 30 minutes for a true negative pressure room (or do not enter room for respective time periods)
      - Per AHA COVID ACLS/PALS Guidelines, pause chest compressions for intubation. Can use bag mask (Ambu bag) with tight seal & HEPA filter OR use NRB (with procedure mask as external barrier) initially
- **Intubation/Code Blue Response for COVID "Status Unknown" Patients:**
If in a semi private room, move roommate out of room ASAP

Patients who are asymptomatic and have an unknown COVID status/pending results i.e. non PUI
- For patients requiring Aerosol Generating Procedures (i.e. CPR, Nebulizers, etc.): Wear procedure mask and eye protection
- For instrumentation of the airway (i.e. intubation) please default to fit-tested N95 and face shield/approved eye protection per PPE guidelines

If a patient has developed new COVID-19 symptoms, treat patient as a PUI and follow appropriate PPE guidelines (Procedure mask and face shield with gown and gloves for all care except AGP and Intubation which would require fit tested N-95 and face shield or PAPR with gown and gloves)

Intubation/Code Blue Response for COVID Negative patients:
- If in a semi private room, move roommate out of room ASAP
- For COVID Negative patient: During intubation and chest compressions (and all other aerosol-generating procedures), staff should wear a procedure mask PLUS a face shield or fluid shield or other approved protective eyewear
- Add gown, and gloves if splash or splatter is expected

COVID Code Blue Medication Box:
Located on all code carts in departments with PUI or COVID positive patients

- **DO NOT** bring Code Carts into isolation rooms-maintain a “clean” staff member in hallway to pull and pass meds into isolation room

**Visit the COVID Code Blue Box/Code Cart section on the Intranet Coronavirus site for more details**

Each Box contains:
- 2 amps of Epi
- 1 amp of Calcium Chloride
- 1 amp of Sodium Bicarbonate
- 1 amp Lidocaine (use in place of Amiodarone)
- Saline Flushes

(These boxes can be brought into Isolation Rooms)

PPE Guidelines:
See “Airway Management” above and Full PPE Guidelines

- PSS will carry “PPE packs” to every Emergency Response call (use only if floor stock is unavailable)
- “PPE Pack” contents: fit-tested N95 respirators, face shields and fluid shields
- All team members at a minimum, should wear a procedure mask PLUS a face shield, fluid shield, or approved protective eyewear

For suspected Symptomatic or PUI patients in “open areas” (i.e. Peri-op/procedural areas, etc.) with only curtains as barriers, move patient to private room ASAP.
- If unable to move patient to private room:
  - If patient is not receiving aerosol generating procedures, use procedure mask/universal N95 PLUS eye protection on either side of the curtain
  - If patient is receiving aerosol generating procedures:
    - For staff on the inside of the curtain, use fit-tested N95 PLUS face shield (or PAPR), gown & gloves for the procedure and 1 hour post procedure completion. For staff on the outside of the curtains - use procedure mask or universal n95 PLUS eye protection.
• **For suspected Symptomatic or PUI patients in semi private rooms**, please move roommate out of room ASAP

**Transport of COVID patients:** See Transport Guidelines
• Please alert the ANC and Security of impending patient transport thru the hospital
• ICU team including ICU Charge and/or ICU bedside RN will respond to assist in transfer
  o “Contaminated team members” inside of the room will prepare the patient for transport.
  “Clean team members” should be ready in PPE to receive the patient to transport the patient to ICU. “Contaminated team members” will then doff when exiting.

**Radiology Testing of COVID patients:** (For further details please refer to Coronavirus (2019-nCoV)
*Radiology Screening and Workflow Procedures*)
  1. Place the Order in Epic
  2. The Radiology Technologist will be reviewing all radiology orders for PUI or Positive patients with the Radiology Attending on service

### 3. Rapid Response Team Call

<table>
<thead>
<tr>
<th>In the Room</th>
<th>Outside of the Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attending Hospitalist Only</td>
<td>ANC (“Bouncer”)</td>
</tr>
<tr>
<td>Emergency Response Nurse(s)</td>
<td>PSS</td>
</tr>
<tr>
<td>RRT Respiratory Therapist (if needed)</td>
<td>EKG Technician (Use wireless set up for EKGs)</td>
</tr>
<tr>
<td>Vascular Access Nurse (if needed)</td>
<td>Phlebotomist</td>
</tr>
<tr>
<td>Primary Bedside Nurse</td>
<td>Primary Team &amp; other RRT Members</td>
</tr>
</tbody>
</table>

**See Patient Transport guidelines if transferring the patient is required**

- If a patient develops NEW respiratory symptoms while on the medical/surgical floor, he/she is now a PUI. Order test for COVID19.
  - **Immediately do the following**:
    1. Notify nursing staff and RRT members of suspected COVID
    2. Nurse to place signage on the door immediately
    3. Order the “COVID-19 Test State Lab Panel” – Nasopharynx swab
    4. Wear appropriate PPE prior to patient assessment based on PPE Guidelines

**Airway Management** - See Airway Management on p.3

- Low threshold to intubate COVID Positive and PUI patients:
  - Preferential Escalating O2 device plan: See Appendix A
    - Nasal Cannula (NC) → Oxymizer or Hudson → Nonrebreather (NRB) → Intubation
- Low threshold to involve MICU attending, who has final determination re: Intubation

Owners: Preetika Muthukrishnan, MD & Becca Wilson, MSN, RN
• **Can transport patient on these oxygen devices only:**
  o With a surgical mask as an external barrier: NC, Oxymizer or Hudson, NRB
  o Intubated with HEPA filter in place

### 4. MET Call

<table>
<thead>
<tr>
<th>Direct Patient Contact</th>
<th>“In the periphery”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Response Nurse</td>
<td>PSS</td>
</tr>
<tr>
<td><em>(Perform symptom screen for fever, cough, or SOB)</em></td>
<td>ANC</td>
</tr>
<tr>
<td>Provide patient with mask for respiratory symptoms and communicate with ED Charge Nurse for appropriate room/triage area</td>
<td>Security</td>
</tr>
<tr>
<td></td>
<td>ED Tech</td>
</tr>
</tbody>
</table>

### 5. Stroke Code

<table>
<thead>
<tr>
<th>In the Room</th>
<th>Outside of Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>On call or Senior Neuro Resident and/or Attending</td>
<td>ANC</td>
</tr>
<tr>
<td>Emergency Response Nurse</td>
<td>PSS</td>
</tr>
<tr>
<td>Respiratory Therapist (if needed)</td>
<td>Any other Ancillary Staff</td>
</tr>
<tr>
<td>Vascular Access Nurse (if needed)</td>
<td>Primary Team members</td>
</tr>
<tr>
<td>Primary Bedside Nurse</td>
<td>Other Stroke Code Team Members</td>
</tr>
</tbody>
</table>

- For all Stroke Codes that require a CT scan: these are permitted and do not need additional clearance per Radiology. The following steps need to occur:
  1. Airway management *(see guidelines under Code Blue/Rapid Response sections)*
  2. If the patient is requiring high level of O2 and the patient is low probability for a stroke, the decision to not scan the patient can be made by the Neurology Attending or Senior Neurology Resident only
  3. Notify CT personnel, ANC and Security ahead of time that the patient needs to travel to Radiology. *See Transportation Guidelines on Share Point*
  4. The only staff members who are to transport the patient are team members already in the patient’s room.
    a. PSS will only transport if more assistance is required than the staff available
    b. For airborne precautions, staff transporting the patient will be required to doff contaminated PPE and don new PPE prior to moving the patient into the hallway
    c. Patient needs to have a surgical mask. Bed must be wiped down
    d. Repeat PPE doffing/donning process for return to inpatient department
If a COVID-19 patient is brought to CT, then that scanner will be considered “down”/not useable for the 30 minute cleaning process before it can be used again.

6. Massive Transfusion Protocol (MTP) Response - for all patients  
(NEWLY CREATED PROTOCOL AS OF 4/1/2020)

<table>
<thead>
<tr>
<th>In the Room</th>
<th>Outside of Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most Senior Primary Resident and/or</td>
<td>ANC</td>
</tr>
<tr>
<td>Attending (if needed)</td>
<td></td>
</tr>
<tr>
<td>Emergency Response Nurse(s)</td>
<td>PSS (obtain MTP Rounds)</td>
</tr>
<tr>
<td>Vascular Access Nurse (if needed)</td>
<td>Other Primary Team members</td>
</tr>
<tr>
<td>Bedside Nurse and/or Charge Nurse</td>
<td>Any other Ancillary Staff</td>
</tr>
</tbody>
</table>

**How to Activate a Massive Transfusion Protocol (MTP)**

1. **Dial 111 and request to activate a MTP**
   - Information you will need to provide to the code operator:
     - Patient Name
     - Patient Date of Birth
     - Patient MRN
     - Patient location
     - Name of physician or APP requesting the MTP
     - Name of caller and call back phone number

2. **Place “Initiate Massive Transfusion Protocol” order into EPIC** (this is how you will get lab orders)

**Who does the MTP Response Activate?** Code operator will call Blood Bank and page the following:

- Blood Bank
- Patient Support Services (PSS)
- Emergency Response Nurse (ERN)
- Pharmacy
- Hematology lab
- ANC

**What Happens Next? - See policy for full updates**

- PSS will respond directly to Blood Bank to obtain the First Round of MTP
- **Rounds will now come in Coolers**
- ERN will respond to the MTP location and will help run the MTP
- ANC will respond to the MTP unit to help facilitate transfer to a higher level care if needed
- Request additional rounds of MTP from Blood Bank as needed

**When the MTP is complete, Dial 111 and request a “Complete MTP” page**

- Return all unused blood products to Blood Bank
- Complete blood product slips and place in chart/return to Blood Bank
7. Pediatric Code Blue Response

<table>
<thead>
<tr>
<th>In the Room</th>
<th>Ante Room</th>
<th>Outside of the Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team Leader = Pediatric Attending** or Senior Pediatric Resident Physician</td>
<td>B5 Charge Nurse</td>
<td>ANC (“Bouncer” at the door/monitor)</td>
</tr>
<tr>
<td>PICU Charge Nurse (Or in Ante Room)</td>
<td>Or PICU Charge Nurse</td>
<td>PSS (enter only for needed CPR support)</td>
</tr>
<tr>
<td>Emergency Response Nurse(s)</td>
<td></td>
<td>ED Tech (Enter only if needed for I/O or CPR support)</td>
</tr>
<tr>
<td>Baird 5 Charge Nurse** (Or in Ante Room)</td>
<td></td>
<td>EKG Technician (Use wireless set up for EKGs)</td>
</tr>
<tr>
<td>Baird 5 Primary Bedside Nurse**</td>
<td></td>
<td>Surgical Resident(s)</td>
</tr>
<tr>
<td>Respiratory Therapist (Limit # in room to 1 if possible)</td>
<td></td>
<td>Primary Team Members</td>
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<tr>
<td>Anesthesia Attending/Senior Resident (limit # in room to only what is needed 1-2)</td>
<td></td>
<td>Additional Code Blue team members</td>
</tr>
<tr>
<td>Vascular Access Nurse (to enter if needed)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Pediatric Hospitalist Attending or PICU attending

**Airway Management**
- See Adult Code Blue Airway Management (p.4) for PPE guidance on all patients
- Preference is to secure airway via endotracheal tube (with in-line viral filter) ASAP for COVID/PUI
  - No in-line viral filter necessary for NON-COVID patients
- Can transport patient on these oxygen devices only:
  - With a surgical mask as an external barrier: NC, Oxymizer, or Hudson, NRB
  - Intubated with HEPA filter in place

**Transport:**
- If a patient codes on Baird 5 and needs to be transported to PICU, the PICU team (PICU Charge and/or PICU bedside RN) will respond to Baird 5 to assist in transfer.
- Transport staff: limited to those already in patient’s room and the receiving bedside staff
- All staff members who have been in the patient’s room need to doff their contaminated PPE and don new PPE before transporting the patient through the hospital

**MEDS:** There are COVID Code Blue Boxes on top of the Code Carts on Baird 5 and the PICU
- See above (top of page 3) for more info

**Radiology:** Unless the patient is a Stroke Code or ED Trauma Patient, any tests requiring the patient to be transported to Radiology (IR, X-ray, CT, MRI, etc.) will require approval from the on-call “COVID 19 Team Radiologist” - this is a hard stop.
1. Place the imaging Order in Epic
2. The Radiology Technologist will contact ordering Physician & Radiologist for a team conference call
8. OB Emergency
(Any obstetric emergency in a hospital location other than The Birthing Center)

<table>
<thead>
<tr>
<th>At the patient’s bedside/location</th>
<th>Outside the Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited OB Team: OB/GYN Emergency Resident</td>
<td>In House OB Anesthesia Attending/Resident Additional L&amp;D RN</td>
</tr>
<tr>
<td>In-House OB Attending (or Private Attending if in house)</td>
<td>Limited NICU Team: NICU nurse, RT, Team Leader Additional neonatal team members</td>
</tr>
<tr>
<td>L&amp;D RN</td>
<td>IV Team, Security, ANC, PSS, CSR</td>
</tr>
</tbody>
</table>

- The OB Emergency page should include the patient’s COVID status.
- Staff transporting the mother and newborn will be limited to those that have already been providing direct care.
- PPE will be provided by Patient Support if otherwise unavailable to team members.
- All staff who have been caring for the patient need to doff their contaminated PPE and don new PPE before transporting the patient through the hospital.
- The newborn of a patient with confirmed COVID-19 is considered a Person Under Investigation (PUI) and will be brought to a separate room as soon as possible after birth.

*Emergency Response Nurses (ERNs) do not respond to OB Emergencies*

(If additional help is needed from the ERN department- page 222 for an ERN only consult)

***Overall patient/staff safety and reducing disease exposure/transmission are of the utmost importance. If alterations to these Clinical Emergency Response guidelines needs to occur, all team members must discuss and agree, though with a low threshold to involve the APC, Incident Command and/or Clinical Emergency Response Team Leaders.

9. Oxygen support algorithm
(Age 12yo and up) for COVID-19 Positive/PUI
10. ACLS Algorithm

ACLS Cardiac Arrest Algorithm for Suspected or Confirmed COVID-19 Patients

Updated April 2020

Don PPE
- Limit personnel
- Consider resuscitation appropriateness

Start CPR
- Give oxygen (limit aerosolization)
- Attach monitor/defibrillator
- Prepare to intubate

Rhythm shockable?
Yes

VF/pVT

No

Asystole/PEA

Shock

Prioritize Intubation / Resume CPR
- Pause chest compressions for intubation
- If intubation delayed, consider supraglottic airway or bag-mask device with filter and tight seal
- Connect to ventilator with filter when possible

CPR 2 min
- IV/I/O access
- Epinephrine every 3-5 min
- Consider mechanical compression device

Rhythm shockable?
Yes

Shock

No

CPR 2 min
- IV/I/O access
- Epinephrine every 3-5 min
- Consider mechanical compression device

Rhythm shockable?
Yes

Shock

No

CPR 2 min
- Amiodarone or lidocaine
- Treat reversible causes

Rhythm shockable?
Yes

Shock

No

CPR 2 min
- Amiodarone or lidocaine
- Treat reversible causes

CPR 2 min
- IV/I/O access
- Epinephrine every 3-5 min
- Consider mechanical compression device

CPR 2 min
- Treat reversible causes

CPR 2 min
- IV/I/O access
- Epinephrine every 3-5 min
- Consider mechanical compression device

CPR 2 min
- Treat reversible causes

Return of Spontaneous Circulation (ROSC)
- Pulse and blood pressure
- Abrupt sustained increase in PVR
- Spontaneous arterial pressure waves with intra-arterial monitoring

Reversible Causes
- Hypovolemia
- Hypotension
- Acidosis (metabolic)
- Hypo-hyperkalemia
- Hypothermia
- Tension pneumothorax
- Tamponade, cardiac
- Toxins
- Thrombosis, pulmonary
- Thrombosis, coronary

CVR Quality
- Push hard (at least 2 inches [5 cm] and fast [100-120/min] and allow complete chest recoil.
- Minimize interruptions in compressions.
- Avoid excessive ventilation.
- Change compressor every 2 minutes, or sooner if fatigued.
- If no advanced airway, 30:2 compression-ventilation ratio.
- Quantitative waveform capnography
- If PtcCO₂ < 10 mm Hg, attempt to improve CPR quality.
- Intra-arterial pressure
- If relaxation phase diastolic pressure < 20 mm Hg, attempt to improve CPR quality.

Shock: Energy for Defibrillation
- Biphasic: Manufacturer recommendation (e.g., initial dose of 200-300 J). If unknown, use maximum available. Second and subsequent doses should be equivalent, and higher doses may be considered.
- Monophasic: 360 J

Advanced Airway
- Minimize closed-circuit disconnection
- Use intubator with highest likelihood of first pass success
- Consider video laryngoscopy
- Endotracheal intubation
- Waveform capnography or capnometry to confirm and monitor ET tube placement
- Once advanced airway in place, give 1 breath every 6 seconds (10 breaths/min) with continuous chest compressions

Drug Therapy
- Epinephrine IV/I/O dose: 1 mg every 3-5 minutes
- Amiodarone IV/I/O dose: First dose: 300 mg bolus. Second dose: 150 mg.
- Lidocaine IV/I/O dose: First dose: 1-1.5 mg/kg. Second dose: 0.5-1.0 mg/kg

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