MICU Orientation

Welcome to the Elmhurst MICU!

We are excited to have you rotating and participating in the care of our critically ill patients!

- This is an 8-bed "closed" intensive care unit (ICU) which means that only you, your fellow and attending have the opportunity to triage, admit, and manage patients here.
- The unit consists of doctors, nurses, respiratory therapists, clinical pharmacists, nutritionists, and ancillary medical and non-medical staff. We believe in working as a team and the input of each team member is important in the care of our patients. We treat each other with respect and professionalism while requiring members to have high standards for themselves and others.
- You and the rest of the team will be responsible for the care of the sickest patients in the hospital; you will be held to the highest standards of knowledge and professionalism with a keen eye to detail, as even the smallest mistakes or oversights can lead to significant consequences for these patients
- We encourage you to take ownership of your patients and dive deep into their care (researching differential diagnoses or obtaining collateral from outside sources)
- The MICU can be a hectic place to work at times and should you need help at any time for any issue, do not hesitate to talk to the MICU fellow, attending, director, chief, chief resident, or program director.
- Your voice and participation are appreciated as all feedback is noted to make the MICU a better place to work and learn.
- This orientation handbook details the protocols and expectations for your MICU rotation and is mandatory reading prior to the start of the rotation.
- We hope that your time here is a great learning experience. We pride ourselves on providing the best medical education in the hospital.
- Good luck, be safe and be great :)

Objectives of Rotation

The residents, interns and medical students (RIMS) will be supervised by a Pulmonary/Critical Care (PCCM) Attending and PCCM Fellow on rotation in the MICU. At all times, an attending intensivist is available to answer questions and to instruct the RIMS on the principles of critical care medicine. The RIMS will become familiar with principles of mechanical ventilator support, airway management, hemodynamic support and the treatment of the critically-ill patient. Principles of physiology, pathophysiology, and bioethics will be identified and explained during bedside rounds. The RIMS will perform and assist on invasive and noninvasive diagnostic and monitoring techniques utilized in the management of serious disorders of the respiratory and other organ systems. The RIMS are expected to learn the indications, contraindications, risks, benefits, and alternatives of a number of procedures and treatments for commonly encountered MICU situations. These procedures include the insertion and management of central venous lines, arterial lines, chest tubes, thoracentesis, intubations and mechanical ventilation. The RIMS will utilize techniques that promote patient safety and avoidance of iatrogenic complications. The MICU is usually medically staffed by two PGY-2 and one PGY-1 internal medicine residents, two emergency department residents, one PCCM fellow and one PCCM attending physician. Additional medical students, sub-interns, and residents seeking elective critical care experience may also be present.

The RIMS have much responsibility for the care of all patients in the MICU. They are expected to write all orders. Attending physicians and PCCM fellows will not routinely write orders but will supervise the effective dose, route and appropriateness of the same. The intern in the MICU derives early introduction

to the care of the critically ill patient under the supervision of the buddy senior resident and the entire critical care team. Institutional evidenced-based protocols and guidelines are followed, with an emphasis on best practices and patient-focused care.

Bedside rounds include management of various types of ventilator modes with the goal of managing the patient's condition and then liberating them from the ventilator. Emphasis on vent-bundles, the avoidance of health-care associated infections and ventilator-associated infections are key to success in the MICU. In addition, the use of central line bundles with strict sterile control is taught with the goal of managing the critically-ill patient appropriately, and with avoiding central line infections. Management of urethral catheters are discussed to limit catheter-associated urinary tract infections. Hand hygiene is taught and any repeated violations by any caregiver from attending physician on down is not acceptable. All members of the staff are empowered to identify and interdict potential violations of infection-prevention rules. This should be done in a professional yet direct manner.

MICU Workflow

7 am: Night resident signs out to day team; Overnight intensivist/fellow signs out to day fellow
7 to 8:30 am: Prepare for rounds

- Assign patients amongst residents/intern
- Review overnight/past-24hr events; read all new notes (including nursing)
- Review chart recommendations by subspecialties and possible day's tests needed
- Note pertinent laboratory and imaging results
- Speak with nursing about any concerns for your patients; Round and examine your patients; be mindful of all lines, drip medications, vent settings, and active medications
- Perform spontaneous breathing trials (SBTs) according to weaning protocol with the guidance of PCCM fellow and Respiratory Therapy

8:30 am: Round with MICU attending (See Rounds section below)
12 - 4:30pm: Run the list; Lunch; Implement plan discussed on rounds (call consults, update families, perform procedures and other miscellaneous tasks); Notes are to be done after tasks; Daily lecture; Additional teaching with Fellow/Attending
**If a new MICU consult is received, the long call resident is expected to prechart, evaluate the patient with the fellow, and then present to the attending for disposition
4:30pm: Afternoon rounds/running the list
5:00pm: Short call team signs out to long call resident
7:00pm: Day fellow signs out to overnight intensivist/fellow
8:00 pm: Long call resident signs out to night resident

Proposed Senior Resident Duties

The senior resident responsibilities include, but are not limited, to:

- Performing MICU consults and relaying these to the fellow with formed plan to discuss alongside attending
- Acting as the senior in buddy system to the intern in the MICU
  - The purpose of the buddy system is for the intern to have a more delineated structured set of goals and responsibilities for the day and learn as much as possible in preparation for the following year in the MICU. It is also intended for the resident to have the opportunity to develop teaching style and lead the evaluation and care of a patient jointly with the intern.
- Performing ultrasound evaluations with the guide of the MICU fellow on most if not all MICU patients and incorporating findings with evidenced-based articles and information for the team to learn and benefit from in real-time or as a dedicated assigned afternoon teaching topic.

Rounds

- All day-time team members must be present for rounds
- Resident/Intern team-members for WeekDay (not all 4 day-time members may be present every day; long-call residents alternate daily)
    - Resident Short Call (usually 2 residents): 7am – 5pm
    - Resident Long Call (1 resident): 7am – 8:15pm
    - Intern (1, always Short call): 7am – 5pm
    - Overnight Resident (1): 8pm – 7:15am
- Resident/Intern team-members for Saturday/Sunday
    - Resident Long Call (1): 7am – 8:15pm
    - Intern (1, always Short call): 7am – 5pm
    - Overnight Resident (1): 8pm – 7:15am

- A pre-round huddle will take place just before rounds with the entire MICU team, nurse manager, and nurses. This will be led by the fellow and is a very brief overview with nursing about any overnight issues, planned procedures for the day, reminders on catheters and foleys, and planned transfer-outs.
- Just before rounds, all residents are expected to set up with a Computer on Wheels (COW) and assign the following roles to themselves: (roles will change for each patient as the presenter changes)
    - Presenter
    - Placing orders (these are placed in real-time during rounds, not after)
    - Updating the handoff, showing images, showing labs
    - Research, calling urgent consults, answering pages/calls from pharmacy/lab/etc…

- The patients will be presented by the assigned resident/intern established during morning pre-rounds, and the order will depend on Attending preference, either numerically or (more likely) by acuity/new
- The Presenter should not be the one on the computer showing data, this should be delegated as above and makes rounds go more efficiently
- Interruptions for rounds should be minimized; all non-urgent nursing issues should be handled after rounds; Everyone must pay attention to every patient and should know the plan for all (no matter who your assigned patients are)
- Eating/drinking during rounds and in patient-care areas is not acceptable/permitted (unless medical condition warrants exception)
- Writing daily notes while on rounds is not acceptable/permitted as this creates a distraction for other team members and important treatment points and teaching points will be missed

- The intern is responsible for presenting selected cases in the ICU with the guidance of the second- year resident and fellow. They are also responsible for assisting in all manners possible during and after rounds. As interns gain experience and confidence during the year, their responsibilities will be expanded accordingly with the assessment of the fellow and attending.
- Medical students rotating through the MICU will also present cases during rounds and get feedback from the team regarding the presentation, format, diagnosis and treatment plan to be put in place. All patients followed by a medical student must also be followed by a resident and in turn by the fellow.

- Established MICU patients will be presented systematically, with the following data:

1. Admit reason; Brief one liner	**9.** Review Meds and orders
2. Overnight events	**10.** See patient with team
3. 24-hr vitals and glucose	**11.** Assessment & Plan
4. Intake/Output	**12.** Final Checklist (see below)
5. Subjective; Vent Settings; Sedation/Vasopressor dosing; Physical Exam; POCUS	
6. Labs	
7. Microbiology data	
8. New Imaging	

- In addition, for all new patients to the MICU:
  - HPI, with ED and/or hospital course (if patient admitted from the floor)
  - ROS, home medications, social history (including outpatient functional status)
  - Rest as above

- The Assessment and Plan will be presented as follows with the Problem/Diagnosis (Delineated by a **#**) called out under each respective organ system:
  - **Neuro** – include sedation plan or pain control, current RASS/CPOT score, describe assessment of delirium (CAM-ICU), patient baseline status if known
  - **CV** – include vasopressor management and fluid status
  - **Pulm** – include ventilator management, oxygenation management, include peak pressure and plateau pressure values if possible
  - **GI** – include feeding and prophylaxis
  - **Renal** – include use of Foley and justification for same if needed
  - **Heme** – include DVT ppx
  - **Endo** – include glucose control method
  - **ID** – include abx day # and anticipated total #, include all relevant cultures
  - **Final (Safety) Checklist:**
    - IV Access - include peripheral IVs, Midline/PICC lines, CVC lines, arterial lines (know insertion date for all, except for peripheral lines)
    - NGTubes, Drains, Foleys (know insertion date for all, except for NGTubes)
    - DVT prophylaxis
    - GI prophylaxis
    - Diet
    - PT/OT, Mobility goals
    - Code Status
    - Dispo – Stay in MICU vs A4 Transfer vs GenMed Transfer vs Other

- Make every effort to not simply read off your note during your MICU presentation; it is never natural; we do not speak in the same way we write, so it just comes off as very odd and robotic
- Feel free to use your note as a guide and template for your presentation so you know what you are to talk about next, but don't read word-for-word from it
- Do not read off the labs/vitals off from your templated note (they will go out of date), always read directly from the Epic vitals/lab tabs

- Be prepared to answer questions from the Fellow and Attending; Be prepared to have to know/say things that are not in your note; Be prepared to be corrected and make mistakes; It's okay! Do not take any corrections personally, it is solely for your education, your continued improvement, and the betterment of the patient
- Be confident in your plan and stick to it, never say "I don't Know' when it comes to what we should do next for the patient; go over the possible options and talk it out; if you can justify your plan (with evidence, citations, etc…) then that is perfectly okay (even if there is a stylistic difference in opinion with the Fellow or Attending)
- After rounds, make sure each computer is plugged in and placed on the sides of the MICU
- If POCUS used on patient, must use separate Gel for each patient (throw it out when going to different room), make sure the probes are cleaned with Purple wipes after each use, make sure the US is plugged back in and looks neat

Notes

- Should follow the same Assessment & Plan format as above
- A progress note must be written daily for MICU patients (even if H&P/Consult written after midnight the same day; the after-midnight rule does not apply to MICU patients)
- Update your A&P every day, do not continue to copy-forward non-relevant information, do not have excessive bullet points with only a few words on it, do not make it into a long history book of everything that has occurred since admit; it should be concise and explanatory (not descriptive)
- Your A&P should tie everything within that problem/system together and form a differential diagnosis with higher/lower likelihood based on existing data
- Do not write "consider doing this/that" // You and the rest of the MICU team are the ones in charge
- **See Appendix 1 for Sample**

Work Rounds/Daily Activities

- At least one resident or fellow should remain in the MICU at all times.
- Shortly after rounds, a few minutes are spent Running the List between the Residents and Fellow to ensure all the To-Do tasks for each patient is made clear
- It is expected that all plans agreed to during rounds are carried out with report of any delay or major change to fellow or attending.
- All procedures and calling routine consults should also be done during this time (urgent consults should have been called during rounds). If consultants cannot be timely reached, escalate to MICU fellow or attending.
- Please remember to document when a significant event happens with an Event Note or there is a major change in the patient's status; inform Fellow/Attending as well
- Notes are to be started only after the tasks are done for the patients

Educational Conferences/Lectures

- In addition to informal teaching sessions by the fellow and/or attending throughout the day/afternoon, there are mandatory video-based mini-lectures as part of the MICU curriculum that should be watched as a group in the afternoons on most of the work-days with the intention of all lectures being completed by the end of the RIMS MICU rotation
- There are also paper-based handouts on important MICU topics that are part of the MICU curriculum that can serve as reference material
- **Lastly, All RIMS are expected to present at least one article or clinical topic pertaining to an ICU patient at least once weekly during the rotation**

MICU Consults

- The long call resident will receive consult pages for MICU evaluations from the general medicine floors, the Emergency Department, and/or other Critical Care areas.
- All consults should be seen within 60 minutes, and any delay must be relayed to the ED/consulting team.
- The resident will review these cases with the MICU fellow, who will then further consult with the attending physician.
- The attending should be more quickly made aware of the consult if the patient is unusually sick and/or unstable.
- Consults will be presented to the fellow/attending with a tentative analysis and plan

- Consults can be either accepted to the MICU as an admission ("Screen In"), or "Screened Out"
    - When accepted to the MICU for admission, the MICU nurses and staff should be made aware. The ED/ward nurses must also be informed so they can give report to the MICU staff.
    - If screened out, a full consult note is still to be written in the chart with a recommended level of care, and if the critical care consult team will continue to follow the patient.
    - Regardless of whether a patient is Screened In or Out of MICU, a Full Consult note must still be written with full recommendations (same format as MICU H&P note as above)
    - If the patient is accepted to MICU but there are no beds available, that should be conveyed to the consulting team along with plans for opening up a bed/disposition otherwise.
        - There will be instances when a patient may meet the MICU's admission criteria but who's anticipated clinical course based on diagnosis, extent of disease, and personal goals of care is such that no additional benefit is derived from transfer to the ICU. The MICU fellow in consultation with the MICU attending may elect to suggest admission to another unit (usually the A4 stepdown unit) where the patient is able to receive the appropriate care with Critical Care Consult service following. The MICU attending will be available to advise the admitting ED staff/attending when appropriate alternate non-ICU resources are recommended.
        - If patient requires ICU, with no MICU beds available, but an open bed is expected within 3-hours, the patient will come to MICU.
        - If ICU is needed, with no MICU beds anticipated within 3-hours, then a possible MICU/CCU bed swap can take place where MICU can give CCU the most stable current MICU patient in order to accept the new patient to MICU. This can occur as long as CCU has bed availability. This is typically an attending to attending discussion between MICU and CCU. <u>If admitted to CCU, the patient will not be a MICU overflow patient, but rather fully-staffed and under direct care of the CCU team.</u> The Critical Care Consult team may also be called to help follow.
        - If ICU is needed, with no MICU beds anticipated within 3-hours, with CCU also full, then STICU may be called in extreme circumstances (<u>will not be a MICU overflow patient, but rather fully-staffed and under direct care of the STICU team)</u>
        - Alternatively, decision can also be made to either admit to A4 (with Critical Care Consult team following), or have the patient stay in ED until an ICU bed becomes available. This decision will be made by MICU/ED attendings and staff.
    - <u>For consults of patients in the ED Cardiac room, orders are to be placed by the ED Cardiac Team (even if already accepted to MICU)</u> with your recommendations relayed to them (this is to help avoid confusion between residents, double-orders, etc…). The ED team is still technically managing the patient (pressors, vents, etc…). If a disagreement is met, inform the fellow/attending.

MICU Patient Transports

- Except for patients being transported to general medical ward, each patient needs a resident or intern escort wherever the patient is going (A4, imaging, etc..). Exceptions to be cleared by fellow/attending.
- All patients must be transported with a life pack; if the patient is hemodynamically unstable at the time of planned transport, please speak with the fellow/attending before transporting.
- All intubated patients must be transported/vented using a transport ventilator. Respiratory technicians need to be called promptly and timely to be able to carry out the transportation of the patient via transport ventilator.
- Intubated patients should not be ventilated using the manual Ambu-bag (only under rare/extreme circumstances)
- If any problems arise off the unit, call the fellow/attending or other senior staff for help. If necessary, call a RRT/Code as appropriate

MICU Admissions

- The patient is to be evaluated again in the MICU upon physical arrival to the unit
- Ensure that all drips are set to the correct dosing, and that the ventilator is appropriately set-up with the intended settings
- Double-check all central and arterial lines are in place and as expected from sign-out
- If the patient has an arterial line, double-check to ensure it is level (at level of heart) to ensure adequate BP readings
- Families including next of kin or surrogates much be contacted and notified of MICU admission. If difficulty in contacting them, may include social work for assistance
- If the patient is being treated for confirmed or suspected sepsis, then all applicable sepsis bundles and templates must be completed.
- All MICU patients should have DVT prophylaxis (anticoagulation and/or SCD's) depending on medical condition. All mechanically ventilated patients should have GI prophylaxis unless a contraindication exists (exceptions can be discussed with team). There are additional indications for GI prophylaxis as well.
- When possible, code status and advanced directive forms must be completed and placed in chart, with DNR/DNI orders also placed on Epic as appropriate.
- Restraints
    - Restraints are ordered for patient/staff safety only and should be addressed daily for need.
    - Restraint orders need to be renewed every 24 hours between 12 MN and 12:30 am (to have an order every calendar day in chart and 24 hours apart - public health mandate).
- Central lines
    - Central lines must be addressed daily for need, as indicated in the plan.
    - Most if not all ER central lines need to be changed within 48 hours of arrival to MICU as per protocol.
- Intra Osseous devices
    - Must be addressed daily for need with planned removal within 24-hrs of placement
- Foleys (Indwelling and external)
    - Their continuation must be addressed daily for need, as indicated in the plan
- Advanced directives
    - When possible, address advance directives, health care proxy etc…
- Medication Reconciliation
    - All new MICU patients must have their MedRec completed on Epic (an Event note is not sufficient, as Epic does not 'know' that the MedRec has occurred)
    - All attempts to speak with patient, family, and/or pharmacy must be made to confirm all home medications; do not rely on existing data on Epic

Afternoon Rounds

The attending, fellow and residents should do a focused walking rounds session in the ICU before the day is over (just prior to short-call resident/intern leaving). At this time, labs and procedures throughout the day should be reviewed for completion and appropriate management changes implemented. The overnight plan for any anticipated emergencies should be also discussed for sign-out to the night team. Any major changes in treatment plan should also be addressed.

As always, please remember to document when a significant event happens or there is a major change in the patient's status during the day with a Significant Event note on Epic; These should also be conveyed to the Fellow/Attending in real-time throughout the day as well

Overnight

- Take note of any items/tasks to follow throughout the night during day-team sign-out
- When starting night shift, write your name/number on the white-board in the MICU nursing station
- Shortly after starting shift, you will meet with the overnight intensivist or fellow regarding any concerns, brief rounds with the MICU patients (physically visiting each bed and taking note of vitals/drips/vent/pt status, etc…)
- Periodically walk around the unit showing your presence and eyeballing each patient (very often you will catch things before the nurses do) and provides for easier communication; do not spend all night in the MICU conference room; MICU is much more active as compared to CCU nights, so do not expect the same routine
- The overnight resident (night float) will take any calls/pages from other intensive care units, the wards and the ED for a new consult, whether or not there are beds available.
- All of these cases will be discussed with the in-house night intensivist or overnight PCCM fellow (on Sunday night it may be a PCCM fellow).
- The PCCM Fellow or intensivist will be notified by the night resident of the following indications (but not limited to):

1. Massive hemoptysis
2. All ARDS patients
3. Persistent or unexplained lactic acidosis or hypoglycemia
4. Vasoplegic shock with multiple vasopressors, ARDS, persistent lactic acidosis
5. Patients returning from surgery (including post tracheostomy) and acutely deteriorating
6. Unstable patients, such as…
    a. Patients newly in shock requiring higher doses or multiple vasopressors
    b. Patients who significantly deteriorated since the team last rounded
    c. Patients who can no longer be adequately ventilated or oxygenated
    d. Patients with myocardial infarction or cerebrovascular accident
7. Any change in respiratory status:
    a. New NIPPV with high settings
    b. New High Flow with high settings
    c. New intubations
    d. Unplanned extubations
8. Intubated asthmatics with respiratory acidosis, elevated peak airway pressures, or other ventilatory difficulty
9. Pregnant and post-partum patients requiring critical care assessment and care
10. Unclear source of shock
11. Massive or unstable PTE
12. Massive or unstable GIB
13. If therapeutic decisions or procedures are deemed to be difficult or controversial

Escalation

- If any of the above new events occur during the day (same Night list as above), promptly inform the PCCM Fellow/Attending
- At any point, day or night, if something is concerning you regarding a patient, do not hesitate to inform the PCCM Fellow/Attending
- For any new shock or hypoxemia, you must physically see and assess the patient promptly and perform necessary diagnostic work-up (vent adjustments, POCUS, etc…). Do Not blindly order IVF and/or vasopressors from the workroom before assessing the patient.

Orders

- This is a "closed" ICU. Orders are to be written by MICU staff only (except otherwise agreed upon by MICU attending). Recommendations given by consult services should be discussed first with the PCCM Fellow or Attending prior to implementation.
- Pharmacy may contact MICU staff and these calls are to be taken promptly and addressed appropriately.
- **All new "Stat" orders are to be verbalized to the nurse in charge of the patient**
- All orders should be followed up in a timely manner to ensure they have been carried out; do not assume that because an order was placed that it has occurred. We do not want to find out during afternoon rounds that several things have not yet been done (despite you putting in the order). You are expected to follow them up to completion.
- Vasopressors and any other titratable infusion drips need to have current parameters in order to be given and the order and the infusion rate being received by the patient must match. In addition to the orders on EPIC for vasopressors, please write:
    - "Once MAP of 65 reached, please use lowest dose of medication possible to maintain the MAP of 65"
    - For sedative drips, please use a specific RASS goal, commonly RASS -1 (not a range)
    - For analgesics (Fentanyl), you should be using pain-specific goals (CPOT or BPS), not RASS
    - Make sure only 1 drip medication is ordered as titratable, with other pressors/sedatives ordered as continuous (usually Fentanyl & Precedex are continuous, and Propofol is Titratable). Titratable meds can have dosing changed by the nursing to meet parameters.
- When placing medication orders in the ICU, pay close attention to any needed drug level monitoring, renal and/or liver adjustments that need to be made. These parameters change daily in the ICU and need to be monitored for correct dosages.
- Delivery of medications is important and so care must be taken to order "NGT" vs "oral" vs "via PEG" given the patient.
- **House staff should not routinely self-titrate (or turn off/on) the IV pumps at beside. If changes need to be made, then the corresponding nurse should be alerted to these changes. EPIC orders should then be changed promptly**.
- Not all patients need daily labs or CXRs and care should be to clarify these in advance with the fellow or attending.

- For intubated patients or those on HFNC/BiPAP/CPAP:
    - Ensure settings match those on Epic and change them in real-time
    - If correct desired settings are not placed, respiratory therapist may need to place patient on "last settings noted"
    - No ventilator changes are to be made by a resident without fellow or attending supervision
    - A "Daily SBT Assessment" Epic order should be placed on intubated patients if weaning is expected. Confirm with fellow/attending patient candidacy prior to ordering. This allows nursing/RT to follow the protocol every morning so that SBT trials can be initiated by RT.

MICU Transfers/Discharges

- Planned ICU transfer outs should be discussed with the fellow/attending prior to rounds with the order placed specifying the correct level of care (GenMed, Telemetry, A4, other ICU)
- The ICU house staff should also notify the floor team and give verbal sign-out
- Transfer notes are to be completed prior to patient physically leaving the unit
- The accepting team is responsible for writing orders on the patient once the patient is transferred.
- If there is concern from the accepting team about the stability of the patient, please contact the fellow
- Any patient leaving the MICU, and not being transferred (those that are discharged home, discharged to facility, elopement, left against medical advice, death), requires a Discharge Summary

****The family/next of kin must be notified of planned transfers from ICU and a brief note needs to be written with contact person notified (day or night). Any issues with transfers encountered in these communications should be discussed with the fellow and/or attending**

Codes in MICU (Resuscitation Team)

- A code alarm button is located behind each MICU bed. This alerts the nursing station of an event. To activate a hospital-wide response team, a member of the MICU (any) can dial 4-1911
- Medical codes are usually managed the same way as in any other area in the hospital in order to activate all resources needed. Decision to have an internal resuscitation team will be on a case-by-case basis and carried out in conference with attending, fellow and nursing staff. This is not routine.
- Codes in MICU will activate RT, physician extenders. anesthesia, additional residents and interns as well as the medical TR in charge.
- MICU staff are not routinely expected to respond to Codes outside of the MICU.
- A post-code debrief should take place between all those involved to evaluate improvements/concerns

Deaths

- The MICU resident must examine the patient, confirm death, and fill out a standard “Death Note”. Interns must have this supervised by the senior resident.
- The ICU fellow and attending must be notified of all deaths.
- Family or next of kin must be notified in a timely manner and documented in chart. If family is not able to be reached at time of death, then an event note should be written as to that fact
- Consent for autopsy must be offered to every patient’s family and documented in chart
- Organ donation (LiveOnNY = 1-800-GIFT-4-NY) should be notified of all patients that are being considered for palliative extubation, terminal extubation or when brain death is a possibility for donation after cardiac death (DCD) or as death occurs (within 1 hour)
- Any patient passing away in the MICU for any reason needs a discharge summary as deceased.
- The Medical Examiner (ME) should be called if any death is unexpected (they will decide if accepted as case).
    - Some examples include, but are not limited to the following (Criteria from the Office of Chief Medical Examiner (OCME) from nyc.gov website):
        - All forms of criminal violence or from an unlawful act or criminal neglect
        - All accidents (motor vehicle, industrial, home, public place, etc.)
        - All suicide
        - All deaths that are caused or contributed to by drug and/or chemical overdose or poisoning
        - Deaths of all persons in legal detention, jails or police custody
            - This category also includes any prisoner who is a patient in a hospital, regardless of the duration of hospital confinement
        - Deaths which occur in any suspicious or unusual manner
        - OCME office also investigates any case that may present a threat to public health

Isolation and Infection Control

- All medical providers working or rotating through the MICU must abide by current rules and regulations as set forth by the office of Infection Prevention and Control (IPAC) at Health and Hospitals – Elmhurst
- **Everyone must follow hand washing guidelines (before and after entering room)**
- Please wear gown/gloves/patient infection control stethoscope when under standard contact precautions
- DO NOT draw blood cultures from any lines including A-lines, central lines. HD lines, or PICC lines
- DO NOT order routine urine cultures as a part of fever work up. Send UA first from **new** Foley catheter or clean catch urine, and if abnormal with concern for infection, then send culture. Make sure other more common and obvious sources have been explored, with discussion with fellow/attending beforehand
- If any doubt about the type of isolation a patient requires, then call infection control
- NO eating or drinking at the nursing station, during rounds or in any patient care area.
- **Ensure that no sharps, medications, procedure kits, or unattended PHI is in the workroom or within the baskets of the US machines or GlideScope**
- No medical "practice" equipment are to be kept in the workroom
- GlideScopes, ultrasound machines and the disposable bronchoscopy tower must be kept clean at all times, restocked, and within easy reach
- For GlideScopes, there must be (2) S3 and (2) S4 handles + (2) rigid stylets with PEEP valves at all times
- For the disposable bronchoscopy tower, there must be blue swivel ventilator adapters and PEEP valves
- All equipment should be maintained clean and free of any residue, blood or dirt and can be cleaned with purple wipes found in MICU after each use
- Ultrasounds borrowed by non-MICU staff must be signed out to fellow or attending prior to use.
- No equipment shall be removed from MICU without the knowledge of ICU fellow or attending.

Procedures

- The patient's nurse should be informed as soon as you know a procedure is needed
- **Consent (with laterality/location) and time-out must be done for all procedures unless deemed emergent and documented as such in the chart**. If no family or next of kin available, then 2-attending consent is needed and will be documented on EPIC (no paper form needed in this case)
- All invasive procedures must be supervised by the fellow or attending
- Central lines cannot be done unless the intern or resident has completed central line training, is deemed cleared to do so, or is supervised by someone who is qualified. If not, a senior resident should be contacted and/or fellow involvement.
- Inform nursing before starting any procedures. Do "Time Out" in real time of the procedure with nursing and document the timeout in chart.
- For unstable/crashing patients, the most experienced person available should perform the procedure
- All intravascular procedures require strict aseptic precautions. This includes cap, mask, sterile gown, sterile sheet and sterile gloves.
- Nursing staff or another observer should also be present throughout the procedure with the authority to halt the procedure if sterile technique has been compromised.
- If guidewire used (central/HD lines or long A-lines), then guidewire must be shown after removal to an outside observer of the procedure with documentation of this in the procedure note.
- Please clean up after the procedure is complete and be CAREFUL WITH SHARPS. This includes the immediate area, the room in which procedure took place and equipment used to perform procedure.
- If procedure done in femoral area or left for prolonged periods of time then documentation must be in place for explanation.

- Remember that intraosseous devices are available in MICU for emergent situations (or selected situations) and should always be considered in certain cases (for example, there should be no need for an emergent central line, place an IO instead)
- Placement and removal of A-lines, central lines, endotracheal tubes, tracheostomies, chest tubes, and/or other procedures need to be carried out as a team with involvement of the MICU fellow and attending. When in doubt, ask attending.
- A-lines and central/HD lines must also be sutured in place w/ BioPatch
- After each procedure, make sure the site is marked and dated as appropriate.
- After each procedure, promptly ensure a Procedure Note is documented and co-signed to Attending
- Endotracheal Intubation in the MICU:
    - Endotracheal intubations are to be performed only by PCCM Fellows or Attendings, or Anesthesia staff, unless otherwise agreed upon by team including attending present.
    - All non-anesthesia intubations will be done with the presence of an "intubating pulmonary attending" physically at bedside with fellow.
    - If no PCCM attending or fellow available or present, then ventilation efforts should continue and anesthesia paged for procedure.
    - Intubation equipment orange boxes at located in MICU visible areas
    - Intubation medication boxes are found in the narcotic room and should be retrieved by nursing
    - Prior to intubation, routine drips that be should be ordered include Levophed, Fentanyl and Propofol (in most cases). They should be hung and ready to go.
    - After the procedure, all materials used should be replenished and cleaned including Glidescope stylets/handles and ultrasounds.
    - Once opened, the intubation medication boxes should be taken back to the 4th floor pharmacy, a new one obtained and, and then taken promptly back to the MICU and placed in the narcotic room with assistance of an ICU nurse.
    - Within each intubation medication box, there is a form that must be filled out prior to return to the pharmacy (details the meds used)
    - In situations deemed to be likely difficult intubations, anesthesia and/or ENT and/or surgery may be called upon immediately as ventilation efforts continue

Supervision

- All students, residents and fellows have direct continuous supervision by a medical intensivist.
- Chain of command: Intern → Residents → PCCM Fellow → PCCM Attending → Alternative PCCM Attendings → Director of MICU → Chief of PCCM → Director of Medicine
- Please ensure contact numbers are noted of the PCCM Fellow and Attending (contact sheet on top of MICU conference room white-board)
- In urgent situations where the PCCM Fellow/Attending not physically present, call them (do not text or page). If no response multiple times, escalate as above via Chain of Command
- Additional contact information regarding other services can be found under Amion (Medicine and Pulmonary departments can be viewed)
- In the case where a procedure needs to be done and the resident is unfamiliar, uncomfortable or not "credentialed", the resident must call the fellow or attending and alert them of the situation.
- Procedures done by residents should be assisted and supervised by fellow or attending at all times.
- Consider alternatives to treatment options in some situations. An example of this could be that a resident is certified in femoral lines but not on internal jugular approach and so a femoral line may be placed or an interosseous (IO) device may be temporarily placed for medication administration until rest of team is available.
- No procedures are to be done outside of the MICU at any time by acting MICU personnel unless there is an especially urgent situation where no one else is available, or if earlier MICU consult results in a RRT/code (as sometimes may occur on GenMed floors)
- The in-house "Bell" attending is available form 4 pm – 8 pm daily to provide attending face-to-face immediate assistance with administrative issues that may require two attendings.
- The Administrator on duty (AOD) is also available to assist with administrative issues that may arise.

Fatigue/Wellness

- If you are sleep deprived, tired, or fatigued and feel that you cannot perform your daily duties, please speak with the attending.
- If you have encountered an inappropriate situation or conversation, please speak with the attending.
- Residents, as well as nursing staff, fellows and attendings, are encouraged to speak up if they see a colleague(s) in need of attention after a particularly taxing situation (code, procedure, etc…). They will be referred to the Chief Resident for time-off or focused assistance for their well-being.
- There is a no-tolerance policy for harassment or discrimination

Criteria for Assessment and Evaluation

- At the end of the rotation, each RIM is formally evaluated by the attending physician on how well the RIM met the goals of the rotation as well as any improvements that may be suggested by the RIM for the rotation.
- The RIMS will be evaluated in terms of:
    - **Patient Care**: Ability to accurately collect historical data, perform physical assessments, interpret laboratory data, formulate an assessment, and implement a plan of action.
    - **Medical Knowledge**: Depth relative to the level of experience, ability to acquire new knowledge, and ability to apply knowledge to patient care.
    - **Practice-Based Learning Improvement**: Ability to learn from experience and improve clinical skills.
    - **Interpersonal and Communication Skills**: Ability to communicate and establish a professional relationship with patients and families; Quality of hand-offs
    - **Professionalism**: Ability to communicate with consultants, teachers, and other caregivers: demonstrate integrity and respect
    - **System-Based Practice**: Ability to work within the healthcare environment and accomplish needed tasks.
- The intern and resident will receive feedback about his/her performance. In addition, the intern and resident will have an opportunity to formally evaluate the rotation and make constructive criticism.
- Participation on rounds may serve as a surrogate for a formal oral examination as by program requirements.

MICU Conference Room and Lockers

- The MICU conference room has lockers that are to be used by RIMS that are on MICU rotation. These lockers are not for permanent storage but to be used during rotation time only. You are responsible for the safe keeping of the contents you keep in the MICU conference room/lockers and we encourage you to use your own lock for the duration of the locker use. Locks and valuables kept in the lockers that are left past the duration of your rotation will be cut off and belongings given to the Chief Resident for safe-keeping or discarded at their discretion. Elmhurst Hospital is not responsible for any and all valuables lost or missing from lockers at any time. You cannot store (but not limited to) explosives or potentially explosive materials, perishables, corrosive items, live animals, or medical equipment other than that typically used for patient examinations in the lockers. Storage of any potentially hazardous materials may lead to corrective action. **Please do not leave personal things outside of lockers** as these can be stolen.

IMPORTANT:

- Do not bring in biological specimens into the conference room. They should be processed, labeled and bagged at bedside.
- **Do not leave patient confidential information unattended anywhere at any time**
- **Do not leave any documents with patient identifiable information or material unattended**
- **Do not leave medical procedural equipment or medicines unattended anywhere at any time**

Over-Night Critical Care Intensivist (ONCCI)

- The ONCCI (Attending, or at times PCCM Fellow) is present in-house for the MICU from 7 pm to 7 am. The ONCCI will contact the evening resident, introduce him or herself as intensivist for the shift, and will be available by direct presence, pager, or phone for the MICU team at all times
- Contact information for all PCCM Attendings and Fellows are listed at the top of the whiteboard in the MICU Conference Room
- MICU consults (screens) are to be seen and then discussed with the ONCCI to determine diagnosis, plan and disposition
- The ONCCI will be available during shift to carry out teaching and guidance relevant to any MICU admission or topic of choice currently needed or previously agreed upon by the night team.
- Both medical and non-medical Issues regarding any MICU patient should be discussed with the ONCCI as needed in a timely manner.
- The ONCCI will supervise and, if needed, assist with all night-time procedures performed by the MICU over-night team as long as these procedures fall within the repertoire of the said intensivist. These may include, but not be limited to, point-of-care ultrasound (POCUS), central line access placement and removal, arterial line placement and removal, intraosseous access placement and removal, pigtail chest tube placement and removal, video assisted or direct laryngoscopy endotracheal intubation, thoracentesis, paracentesis, lumbar puncture or prone positioning.
- The ONCCI will be available to discuss questions from the Progressive Care Unit (PCU, aka…A4 team) regarding any new or currently admitted patient to best assist them with patient care or triage.
    - When PCCM fellows are on overnight, the scope of practice is in limited fashion for this A4 unit, and will not include the formal 'staffing' of A4 admissions. However, it is expected that they assist in questions/concerns/urgent matters, or in MICU consult evaluation
- The ONCCI will supervise and, if needed, assist with any procedures (as above) performed by the A4/PCU team while also deciding if the patient may be better served in MICU or any other critical care area.
- Any circumstances where dramatic differences in opinion arise between resident and ONCCI may be addressed with daytime MICU attending, MICU Director, and/or PCCM division chief
- The ONCCI may call the administrator on duty (AOD), MICU Director, and/or PCCM division chief with any administrative or medical concerns respectively that he or she may have on a timely basis.

Resources

- Chest (https://journal.chestnet.org/) // ATS (www.atsjournals.org/journal/ajrccm)
- SCCM Journal (https://journals.lww.com/ccmjournal)
- EMCrit Blog + Internet Book of Critical Care (IBCC): https://emcrit.org/ibcc/toc/
- CriticalCareNow YouTube: https://www.youtube.com/CriticalCareNow
- ICU EDU: https://www.icuedu.org/
- Life in the Fast Lane (LITFL): https://litfl.com/
- RebelEM: https://rebelem.com/
- The Bottom Line: https://www.thebottomline.org.uk/
- Critical Care Reviews: https://criticalcarereviews.com/
- YouTube – Mt Sinai Critical Care Medicine Grand Rounds: https://www.youtube.com/playlist?app=desktop&list=PLCT7BA-HcHlgnlQjQvR_bALjmzQhttwHI

Appendix 1: Sample Assessment & Plan

Assessment:

34yo M with hx of HCV admitted for anemia secondary to blood loss, hemorrhagic shock secondary to likely esophageal varices, and possible meningitis.

Plan: (by organ system, with # delineating Problem/Diagnosis within that organ system, as well as a plan)

CNS

#Septic encephalopathy
Will continue supportive care for now, CT of the head with no contrast negative for ICH, doubt seizures, neuro critical care following case
#Possible meningitis
Will plan for LP this morning, change dosage of Abx to include Ceftriaxone, Vancomycin and Acyclovir

Cardiology

Rapid atrial fibrillation - new onset
Will place on Amio drip for now, monitor heart rate

Pulmonary

Acute Hypoxemic Respiratory Failure
Likely secondary to aspiration of blood leading to hypoxemia, CXR with RLL opacity (aspirated blood)

GI

Anemia secondary to blood loss, likely esophageal variceal bleed
Will continue PPI drip
Will continue Octreotide
GI aware of case and will do EGD today after arrives in MICU

Renal

Acute Renal Injury
Likely due to hypovolemia/hemorrhage, will do bladder scan and monitor bladder pressures to rule out abdominal compartment syndrome
Hypokalemia and hypomagnesemia
Replete PRN for goal K > 4 and Mg > 2

Heme

Hep sq ppx held for now, only SCDs

Endo

No active issues

ID

SBP Prophylaxis
Ceftriaxone 1g IV daily (started 7/1/24) – covered by meningitis dose Ceftriaxone
Awaiting cultures, neg to date
Possible meningitis
Will cover with Ceftriaxone, Vancomycin and Acyclovir for now, LP this morning

Access

TLC at R IJ - day 2 (or placed 'date')
A line at L Radial – day 2 (or placed 'date')
Foley – to be removed today (or placed 'date')
ETT – at 23 cm at the teeth

Prophylaxis

DVT ppx – SCDs alone for now
GI ppx – on PPI IV BID (treatment dose)

Advanced Directives

DNR/DNI unless for reversible situation, called HCP and agreed for intubation with trial of critical care

Dispo

Remains critically ill and will monitor in MICU