YNHH MICU/SDU Admission Guidelines (v1.12.2023)

Appropriate clinical interventions should be initiated regardless of patient location under care of Rapid Response Team or Adult Medical Emergency Team pending admission to appropriate higher level of care.

RESPIRATORY FAILURE

DIAGNOSIS	COMMENTS/DEFINITIONS	CRITERIA	UNIT
Acute Respiratory Failure	1. ABG **highly recommended** in the evaluation of Acute Respiratory Failure. 2. NIPPV includes CPAP / Bi-Level non-invasive ventilation.	1. Mechanical ventilation 2. Initiation of NIPPV for acute respiratory failure 3. Initiation or continuation of HFNC greater than **60% 30L** 4. Initiation of HFNC (any level) for patients being escalated from a floor level of care 5. Hypoxia with inability to wean FiO2 to less than 60% to maintain SPO_2 >90% 6. Hypercapnia with pH<7.32 7. Suctioning needs more frequent than q2H	**MICU**
	1. **All HFNC initiations in SDU should have the MICU attending be aware of the patient since early escalation may be needed** 2. In designated **surge** conditions (increased COVID/Influenza/etc census) these criteria may be expanded with medical director approval and will be provided.	1. Initiation of HFNC **100% 30L** in existing SDU patients (with successful down titration over ensuing shift) or continuation of HFNC from ICU or ED up to **60% 30L.** **Patient must meet following criteria:** a. No AMS b. RR <25 c. No evidence of hypercarbia / acidosis per ABG 2. Initiation or continuation of HFNC **higher** than **60% 30L** in patients with limitations in care in place (DNR/DNI/No NIPPV). 3. NIPPV for chronic respiratory failure, OSA, OHS (at home settings). 4. NIPPV for palliative indications (DNR/DNI or CMO). 5. Continuous nebulizer treatments 6. Initiation of Oximizer	**SDU**
Chronic Respiratory Failure		**All below criteria must be met:** 1. Tracheostomy in place ≥ 24 hours 2. FiO2 < 60% ≥ 24 hours 3. PEEP < 10 ≥ 24 hours 4. Suctioning needs less frequent than q2H. 5. No continuous nebulizer treatments.	**EP 10-7**
		1. Suctioning needs less frequent that q4H 2. Oximizer use at patient's home setting 3. HFNC if patient CMO if unit has functional ability (medical air).	**Floor**

PULMONARY EMBOLUS: Refer to PE care pathways for dx, tx and follow up for PE.			
DIAGNOSIS	**COMMENTS/DEFINITIONS**	**CRITERIA**	**UNIT**
PE **High-Risk (Massive)** **Or** **High-Risk Right Heart Thrombi (RHT)**	**Definition High Risk PE:** Meeting any of the following criteria: (1) hemodynamic instability (e.g. SBP ≤ 90 or ≤ 40 from baseline or MAP ≤ 65 or need for vasopressors); (2) requiring mechanical ventilation; and/or (3) causing cardiac arrest. Definition High Risk RHT: RHT with underlying RV dysfunction or large mobile RHT. **Note: Activate full PERT for high risk PE and high risk RHT.**	1. Meeting high-risk PE criteria. 2. Need for vasopressors, IV pulmonary artery vasodilators or inhaled pulmonary artery vasodilators. 3. Meeting high risk RHT (*consider transfer to York Street in consultation with PERT team.)	**MICU or other ICU**
PE – Intermediate-high Risk (Sub-massive with high-risk features)	**Definition:** No hemodynamic compromise but evidence of RV dysfunction (TTE or CT PA) **AND** elevated biomarkers (hs trop > 52, or lactate > 2.5) **Note:** OSH transfer for anticipated need for catheter directed therapy should be monitored in SDU or MICU. Consider discussion with PERT prior to acceptance as this may determine MICU versus SDU. **Note: Activate modified PERT.**	1. Treatment with or anticipated treatment with catheter directed thrombolysis (CDL, e.g., EKOS). 2. Need for FiO_2 > 40% to maintain oxygen saturation > 95%. 3. Need for NIPPV or HFNC of any level. 4. PESI IV or V with shock index > 1.0 OR BOVA Stage III.	**MICU**
		1. S/p catheter directed embolectomy (CDE, e.g., FlowTriever). 2. FiO2 ≤ 40% to maintain oxygen sat > 95%. 3. PESI of IV or V with shock index < 1.0 OR BOVA Stage I or II. **Note: CDL for venous clot (example DVT) okay in SDU.**	**SDU**
		PESI score I, II, or III; or low risk sPESI with shock index < 1.0 with absence of above ICU / SDU criteria. Patients with PESI IV or V without other ICU/SDU criteria with improvement of HR, shock index, and/or biomarkers on f/u evaluation can be considered for floor admission.	**Floor**
PE Intermediate-low Risk (Sub-massive with low-risk features)	**Definition:** Evidence of RV dysfunction (TTE or CT PA) **OR** elevated biomarkers (hs trop > 52, or lactate > 2.5) **Note: Activate modified PERT.**	None of the above MICU or SDU indications	**Floor (telemetry preferred)**
PE Low Risk	**Definition:** No evidence of RV dysfunction or elevated biomarkers as above. **Note: See early discharge pathway**	sPESI 0, PESI I/II	**Floor or Discharge**

ASTHMA EXACERBATION			
DIAGNOSIS	**COMMENTS/DEFINITIONS**	**CRITERIA**	**UNIT**
Severe Asthma Exacerbation	1. ABG strongly recommended 2. Consider that air entry can be very diminished without wheeze in cases of severe bronchospasm.	1. Presence of any two of following: Dyspnea at rest, RR > 30, HR > 120, accessory muscle use, paO2 < 60, paCO2 > 42, SaO2 < 91% 2. PaCO2 > 45, pH < 7.35. 3. Pulsus Paradoxus or evidence of RV or RA collapse on TTE. 4. FiO2 > 40% to maintain oxygen saturation > 90%. 5. Other criteria as listed for acute respiratory failure.	**MICU**
		1. PaCO2 ≤ 45, pH ≥ 7.35 2. Normal mental status 3. FiO2 ≤ 40% to maintain oxygen saturation > 90% 4. Continuous nebs or nebulized therapy more frequent than q4 hours	**SDU**
		1. Frequency of nebulized therapy no more frequently than q4 hours 2. Normal mental status	**Floor**
PULMONARY HYPERTENSION			
DIAGNOSIS	**COMMENTS/DEFINITIONS**	**CRITERIA**	**UNIT**
Pulmonary Hypertension: **<u>Medications</u>** IV **Epoprostenol** (Flolan, Veletri) IV and subQ **Treprostinil** (Remodulin) Inhaled **Treprostinil** (Tyvaso) Oral **Treprostinil** (Orenitram) Oral **Selexipag** (Uptravi)	1. Epoprostenol, treprostinil, and selexipag have geographic restrictions (see criteria to right). If patients on these medications have a concomitant medical or surgical concern that would be best served on a different unit (e.g., **NOT** EP9-7, EP10-7 or NP 9/10), this can be reviewed on a case-by-case basis with the attending physician, and nursing leadership on the receiving unit. 2. PH patients on fixed dose home inotropes e.g. Dobutamine (<5mcg/kg/min) can be admitted to SDU with long term IV access (PICC/ Port/ Hickman). No peripheral pressors or inotropes permitted in SDU.	1. Initiation and titration of IV epoprostenol. 2. Initiation and titration of IV treprostinil with dose titrations (up or down) as frequently as q6 hours (or faster) for increments between 2-4ng per titration (or higher).	**MICU (YSC ONLY)**
		1. Initiation and titration of IV treprostinil with dose titrations (up or down) no more frequently than q8 hours in increments of 2ng per titration. 2. Home or stable dose treprostinil (IV, subQ, inhaled or oral), IV epoprostenol or oral selexipag permitted in SDU but do not require SDU level of care.	**SDU (YSC ONLY)**
		1. Initiation of IV treprostinil on stable patients with titrations no more than every 8h hours permitted on 10-7 (excludes 9-7). 2. Titration of IV treprostinil (up or down*)* no more frequently than every 12 hours in increments of 2ng per titration (10-7 & 9-7). 3. Home or stable dose treprostinil (IV, subQ, inhaled or oral), IV epoprostenol or oral selexipag. (10-7 & 9-7).	**EP 9-7 and 10-7 ONLY**

CARDIAC/SHOCK STATES			
DIAGNOSIS	**COMMENTS/DEFINITIONS**	**CRITERIA**	**UNIT**
ACS	1. Contact cardiology and consider admission to CCU or cardiac SDU. 2. Pericardial drains not limited to higher level of care. Bed placement based on other clinical conditions 3. Nursing cannot manipulate drains. Cardiology providers only.	1. Inotrope support 2. Recurrent ventricular arrhythmias 3. Evidence of shock 4. ST-elevation MI 5. Arterial sheaths	**MICU or CCU**
		1. No need for inotropic support. 2. Use of IIb/IIIa inhibitor permissible in SDU. 3. Venous sheaths	**SDU**
Arrhythmias	1. Contact cardiology and consider admission to CCU or cardiac SDU. 2. See also Pharmacy Adult IV Guidelines. 3. Transvenous pacemakers cannot be *placed* at the bedside in the MICU.	1. Hypotension (SBP < 90 or > 30 mmHg below baseline) 2. VT / VF 3. Temporary transvenous/transcutaneous pacemakers.	**MICU or CCU**
		1. Normotensive 2. Continuous infusions: Diltiazem, Amiodarone, Esmolol 3. Anti-arrhythmic loading allowed in SDU if HD stable 4. Bradyarrhythmia's not requiring continuous drips or temporary transvenous pacers. *5.* External placement of implantable pacemaker by EP approval only (not a transvenous pacer).	**SDU**
CHF	1. Contact patient's cardiologist and consider admission to CCU or cardiac SDU.	1. Evidence of shock 2. Active titration of inotropes / vasopressors 3. Intra-aortic balloon pump (SRC MICU only, no IABP in YCS MICU)	**MICU**
		1. Absence of shock or titration upward of inotropes.	**SDU (SRC only)**
Hypertensive Urgency/Emergency	1. See also Pharmacy Adult IV Guidelines	1. Need for continuous drip to control BP 2. Evidence of end organ dysfunction.	**MICU**
		1. Need for intermittent dosing of IV meds capable of achieving BP goals < 180	**SDU**
		2. SBP < 180 with limited IV intervention needed 3. No end organ dysfunction	**Floor**

CARDIAC/SHOCK STATES (continued)			
DIAGNOSIS	**COMMENTS/DEFINITIONS**	**CRITERIA**	**UNIT**
Hypotension/shock	1. SBP < 90 mmHg or greater than 30 mmHg below baseline after volume expansion 2. Relative hypotension with organ dysfunction (including altered mental status)	1. Need for vasopressors/inotropes 2. Failure to respond to 30cc/kg of crystalloid (up to 3.5 liters) 3. Ongoing evidence of shock after reassessment (failure to clear lactate) 4. Lactate > 4	**MICU**
		1. No need for vasopressors/inotropes 2. Resolving shock after volume expansion 3. Lactate $\leq$ 4.	**SDU**
		1. Shock resolution, normotension, normal lactate after 30cc/kg	**Floor**
Hypothermia	1. In the absence of other ICU or SDU admission criteria, a warm air convection device (e.g., Bair Hugger) can be used to rewarm patients with a temp ≥34^{o} C or 93.2^{o} F, on any adult med/surg unit.	1. Post-arrest targeted temperature management. 2. Core or rectal temp < 34^{c} or 93.2F.	**MICU**

GI BLEED			
DIAGNOSIS	**COMMENTS/DEFINITIONS**	**CRITERIA**	**UNIT**
GI Bleed	1. Chronic blood loss (low Hgb in setting of clinical stability and no evidence of active bleeding) does not necessitate MICU / SDU 2. Shock, syncope, and postural signs suggest ICU level of care	1. Active GI blood loss or high-risk re-bleeding. 2. Confirmed or suspected variceal bleed (regardless of hemodynamic stability). 3. Requiring large volume (> 3 liters crystalloid) or blood product resuscitation for hypotension / shock 4. High risk lesion on EGD 5. Need for emergent (bedside) endoscopy	**MICU**
		1. Less than 3 liters crystalloid needed to achieve stable hemodynamics. 2. Serial Hgb needed more frequently than q8H. 3. No emergent (bedside) procedures anticipated / planned.	**SDU**
		1. No evidence of shock, postural signs or syncope 2. No emergent (bedside) procedures anticipated / planned.	**Floor**

RENAL AND ELECTROLYTE DISTURBANCES			
DIAGNOSIS	**COMMENTS/DEFINITIONS**	**CRITERIA**	**UNIT**
Urgent indications for renal replacement	1. Intermittent HD can be urgently initiated in the SDU or MICU.	1. pH < 7.25 2. Elevated K with QRS widening 3. Altered mental status 2^{o} uremia	**MICU**
		1. pH 7.25 – 7.29 2. Elevated K without QRS widening	**SDU**
Electrolytes Disturbances	Hypo/hypernatremia	1. Evidence of seizure or depressed mental status unable to protect airway 2. Serum sodium < 115mEq/L or Serum sodium > 170mEq/L 3. Need for 3% saline (via central access only).	**MICU**
		1. Sodium 115 – 119 mEq/L 2. Sodium 160 - 170mEq/L 3. Need for 1.5% saline permitted in SDU with Renal or Endocrine consult.	**SDU**
		1. Sodium 120 – 160 mEq/L	**Floor**
	Hypo/hyperkalemia	1. Serum potassium < 2mEq/L 2. Serum potassium elevated with ECG changes (e.g., QRS widening)	**MICU**
		1. K > 6 without ECG changes (e.g., QRS widening)	**SDU**
		1. Serum potassium 2 – 6 mEq/L without ECG changes (e.g., QRS widening)	**Floor with Telemetry**
	Hypercalcemia	1. Serum calcium > 15mg/dl (assuming absence of other MICU indications).	**SDU**
HRS Hepatorenal Syndrome *(YSC)*		1. Vasopressin for HRS 2. Norepinephrine for HRS with dose adjustment more frequent than every 12 hours OR dose > 0.1 mcg/kg/min	**MICU**
		1. Norepinephrine for HRS with dose ≤ 0.1 mcg/kg/min AND titration no more than every 12 hours. If more than 2 consecutive up titrations in 12-hour period and/or max dose exceeded → move patient to MICU.	**YSC SDU**

ENDOCRINE			
DIAGNOSIS	**COMMENTS/DEFINITIONS**	**CRITERIA**	**UNIT**
DKA	1. Concomitant electrolyte abnormalities may necessitate higher level of care 2. Insulin gtt alone is not a contraindication to floor admission at YSC 3. pH can be arterial or venous.	1. pH ≤ 7.15 2. Glucose > 650mg/dL	**MICU**
		1. pH 7.16-7.29 or 2. Glucose 450-649mg/dL	**SDU**
		1. pH 7.30 or greater 2. Glucose < 450mg/dL 3. Insulin gtt stable	**Floor**
Hypoglycemia / Insulinoma		Fasting protocol for hypoglycemia requires SDU or higher care. Direct admits permissible.	**SDU (or MICU)**
Hyperglycemia / Hyperosmolar State		Glucose >/= 750mg/dL	**MICU**
		Glucose 600-749mg/dL	**SDU**
		Glucose <600 mg/dL	**Floor**

NEUROLOGIC DISEASE			
DIAGNOSIS	**COMMENTS/DEFINITIONS**	**CRITERIA**	**UNIT**
Alcohol Withdrawal	1. MICU and SDU use MINDS protocol for withdrawal scoring; floor uses CIWA. 2. If CIWA score > 15 on 3 occasions, consider transfer to higher level of care. 3. Phenobarbital loading protocol can be used in ER, MICU or SDU; subsequent scheduled and rescues doses can be done on the floor.	1. Required or anticipated continuous infusions to manage alcohol withdrawal. 2. MINDS score > 20 on 2 occasions with an escalation of treatment in between scores with no clinical response. 3. Loading dose phenobarb plus #1 or #2.	**MICU**
		1. Loading dose phenobarb without MICU indications.	**SDU**
		Phenobarb scheduled or rescue doses AFTER successful completion of loading dose in ER, MICU or SDU. Absence of MICU/SDU indications above.	**FLOOR**
Opiate Overdose		1. Declining mental status 2. pH < 7.30	**MICU**
		1.Absence of above 2.Narcan gtts acceptable	**SDU**
Lumbar Drains	**MICU/SDU does not accept lumbar drains.**		
Other Neurologic Disease	1. If primary reason for level of care is neurosurgical /neurologic then patient should go to NICU 2. Common diagnoses include CVA, SAH, SDU, ICH, and unsecured cerebral aneurysms	1. Neuro checks required more frequently than every 2 hours. 2. ICP monitor **(*YSC ONLY)*** 3. Open shunt / drain 4. Unable to protect airway	**MICU**
		1. Neuro checks 2-4 hours. *Frequent neuro checks as the ONLY indication for higher level of care NEEDS neuro/neurosurgery attending attestation.*	**SDU (also Neuro SDU)**

OTHER			
DIAGNOSIS	**COMMENTS/DEFINITIONS**	**CRITERIA**	**UNIT**
Desensitization	1. Drug desensitization requires written protocol	Nursing care ratio greater than 1:3 requires ICU admission.	**MICU**
		Appropriate nursing ratio in protocol + only for patients with a mild rash/ dermatologic reaction in the past.	**SDU**
Endobronchial Valve Cases		SDU admission for 72 hours observation.	**SDU**
Hematology		Plasmapheresis and leukopheresis including catheter placement allowable in SDU.	**YSC SDU**