

Interfacility Formulary and Scope of Practice
YNHH CEMS – New Haven

Medications			
Medication	ALS	SCT – Adult Only (Call for Peds)	CCT⁺
Amiodarone (bolus)	*	*	*
Amiodarone (infusion)	*	*	*
Antibiotics	*	*	*
Bicarbonate infusion	*	*	*
Blood – continuation (after 15 min)	*	*	*
Blood – initiation			*
Calcium	*	*	*
D25 (Adult)		*	*
D5/10 (Adult)	*	*	*
D50 bolus	*	*	*
Dexmedetomidine		*	*
Diazepam	*	*	*
Epinephrine	*	*	*
Esmolol (infusion, no titration)	*	*	*
Esmolol (infusion, titration)		*	*
Fentanyl (bolus)	*	*	*
Fentanyl (infusion, no titration)	*	*	*
Fentanyl (infusion, titration)		*	*
Heparin (infusion, no titration)	*	*	*
Hydromorphone (infusion, titration)		*	*
Insulin (infusion)		*	*
Lidocaine	*	*	*
Lorazepam (bolus)	*	*	*
Lorazepam (infusion)		*	*
Magnesium Sulfate	*	*	*
Metoprolol	*	*	*
Midazolam (bolus)	*	*	*
Midazolam (infusion, titration)		*	*
Morphine (bolus)	*	*	*
Morphine (infusion, no titration)	*	*	*
N-acetylcysteine	*	*	*
Naloxone	*	*	*
Nicardipine (infusion, no titration)	*	*	*
Nicardipine (infusion, titration)		*	*
Nitroglycerin	*	*	*
Norepinephrine	*	*	*
Phenylephrine (infusion)		*	*
Potassium	*	*	*
Propofol		*	*
Thrombolytic Therapy (tPA, TNK)	*	*	*

Devices			
Device	ALS	SCT – Adult Only (Call for Peds)	CCT⁺
BiPAP/CPAP for Resp Failure		*	*
Chest Tube (Water Seal)		*	*
Chronic Ventilator– Home Settings	*	*	*
Complex or Unstable Ventilator			*
ECMO			*
High Flow Nasal Cannula		*	*
IABP			*
Impella			*
Pericardial Drain – 24 hours or older		*	*
Pericardial Drain – less than 24 hours			*
Stable Ventilator– ACVC, SIMV, ACPC, PS		*	*

CCT⁺: May have additional capabilities and anything outside of this outline should be discussed with Direct Medical Oversight (DMO) for scheduling transport.

Specialty Care Transport Protocols

- Where a patient has a medical condition that cannot be appropriately treated under the existing protocols and has provided the provider with a written treatment plan prepared by the patient's sending physician and approved by the provider's direct medical oversight, the provider may perform the treatments prescribed in the treatment plan provided they are within their level and scope of practice. This specific instance would not require contact with direct medical oversight.
- All non-titratable infusions can be continued per sending physician orders. In the instance of pump failure, stop infusion and hold until arrival at destination or call DMO for instruction if infusion falls outside of Connecticut Statewide EMS Protocol.
- All sending physician orders should be in writing or printed and documented or uploaded in the ePCR.
- All medications without a specific protocol should be given in accordance with Connecticut Statewide EMS Protocol or YNHH CEMS Policy and Procedure Manual
 - If there is a medication out of scope or of question that is not included in SCT protocol, state protocol or YNHH CEMS Policy and Procedure Manual call DMO
- Interfacility Transport DMO
 - Contact EMS Physician via MedCom. Specify this is not for the Red Phone but rather the EMS Physician for Interfacility or Specialty Care Transport

SCT Medication Protocols

Blood Continuation Protocol

- Confirm blood has been cross matched with standard hospital protocol
 - Note: have a higher level of suspicion for reactions with uncrossed blood
- Continue blood transfusion per sending physician orders
- Repeat vitals and exam of patient at least every 20 minutes while blood is running and for at least 1 hour post transfusion is complete
- For any suspected transfusion reaction
 - STOP the infusion if any of the above symptoms are discovered!
 - Start infusion of normal saline
 - Treat hypotension and anaphylactic reaction with CT EMS Statewide Protocol
 - Contact DMO
 - If minor allergic reaction (urticaria) administer **diphenhydramine**, 50 mg IV
 - If SpO2 is below 92% or patient experiences wheezing / rales, administer high-flow supplemental oxygen and consider positive pressure ventilation per Statewide CT EMS Protocol. If significant signs of volume overload, consider furosemide, 40 mg IV if available.
 - Notify issuing hospital's blood bank of any suspected reaction.
 - GH: 863-3080, BH: 384-3062, SRC: 789-4010, YNH: 688-2443, LMH: 860-444-5110, WH: 401-348-3305

D25 (Adult)

- **Rare to be used, call DMO for infusion**
- Obtain an order from the sending provider for a D25 bolus or infusion and reasoning for high concentration, dose, rate, titration parameters with glucose goals
- Central line infusion only
- ****serum glucose levels must be monitored every 30 minutes (q30 min) while on an D25 infusion****

Dexmedetomidine

- This is a poor choice for transport due to the stimulation during transport compared to the ICU. Please discuss with sending physician on dexmedetomidine as only sedative, first ask for alternatives and significant PRN boluses of other medications for emergent sedation.
 - If denied call DMO for discussion with sending physician
 - Keep patient in soft wrist restraints for duration of transport given **high risk of self-extubating**
- Infusion: 0.2 – 0.7 mcg/kg/hr
- Titration: 0.1 mcg/kg/hr q30min for RASS -1 to +1 or sending physician RASS goal order
- No bolus dosing of Dexmedetomidine
- Adjunct Emergent Sedation:
 - Midazolam 2.5 mg IV q5min max of 5 mg **OR**
 - Fentanyl 100mcg IV q5min max 300mcg

Esmolol (infusion, titration)

- Obtain HR/BP goal orders from sending physician
 - Note – Esmolol is better at controlling HR than BP
 - Ask for 2nd agent if being used for BP control
- Dose range: 50-200 mcg/kg/min
- Titrate by: 50mcg/kg/min every 4 minutes as needed for HR goal
- Hold with HR < 60 beat/min, MAP <65, SBP <90, or any contraindications

Fentanyl (Infusion, titration)

- Indication: Sedation and Analgesia in the Intubated Patient
 - Infusion: 0.5 mcg/kg/hr
 - Titrate by: 0.25 mcg/kg/hr q2 minutes
 - Maximum dose range: 10 mcg/kg/hr
 - Goal RASS -1 to +1 or sending physician RASS goal order
 - Hold for SBP < 100mmHg or HR < 60bpm, oversedation, or any contraindications
- Emergent bolus with infusion
 - Fentanyl 1 mcg/kg slowly IV/IO/IM
 - Maximum 100mcg per dose
 - May repeat every 5 minutes x 3 doses
 - Hold with SBP < 100mmHg or with any contraindication
 - Contact Medical Control if additional doses are required

Hydromorphone (infusion, titration)

- Infusion: 0.2 to 5 mg/hr
- Titration should be avoided but if necessary, should be a stable infusion: 0.2 mg/hr every 30 min for RASS -1 to +1 or sending physician RASS goal order
- Rarely used infusion, obtain indication from sending physician rather than more common alternatives

Insulin (Infusion)

- Do not bolus insulin, up titration orders need to be discussed with DMO prior to transport
- ****serum glucose levels must be monitored every 30 minutes (q30 min) while on an insulin infusion****
- Obtain an order from the sending provider for an insulin drip, dose, rate
 - Including when to decrease and add dextrose containing fluids in DKA
 - Default option if no sending orders
 - When BGL 250 mg/dL or less in DKA
 - STOP the insulin infusion and obtain BGL every 15 minutes
 - Contact DMO if glucose is over 350 mg/dL and ask about re-initiation and dosing of insulin infusion

- **SCT can only down titrate insulin by sending physician orders, for any up titration contact DMO**
- Discuss regular insulin drip rate with the sending provider
 - Standard Initiation dose – 0.1 units/kg/hr or less
 - Maximum dose 15 units/hr
- With decrease in serum blood glucose by more than 100 mg/dL/hr
 - STOP the insulin infusion
- **With hypoglycemia < 70 mg/dL**
 - STOP the insulin infusion
 - Dextrose 50% (D50) OR Dextrose 10% infusion (D10), 25g IV bolus
 - Glucagon 1mg SQ/IM if no IV access
 - Repeat BGL every 15 minutes and continue until stabilized above 150 mg/dL

Lorazepam (infusion)

- Infusion: 1-20mg/hr
- Titration: 0.5mg/hr q15min for RASS -1 to +1
- Emergent Bolus: 1 mg q30 min
 - Use CT State Protocol dosing for breakthrough seizure and contact DMO

Midazolam (Infusion, titration)

- Infusion: 0.5 mg/hr
- Titrate by: 0.5 mg/hr q5 minutes
- Maximum dose: 20 mg/hr
- Goal RASS -1 to +1 or sending physician RASS goal order
- RASS less than -1: Decreased to prior effective dose or by half
- Hold with hemodynamic instability, or any contraindications
- Emergent Bolus: 1 mg IV over 1 minute (bolus from infusion bag or EMS Narcotics)
 - Use CT State Protocol dosing for breakthrough seizure and contact DMO

Nicardipine (infusion, titration)

- Obtain BP goal orders from sending physician
- Infusion: 5-15mg/hr
- Titrate by 2.5mg/hr q10minutes
- Maximum dose: 15mg/hr
- Hold with HR < 60 beat/min or any contraindications

Phenylephrine (infusion, titration)

- Obtain BP goal orders from sending physician, if patient is stable on dose, this dose can be continued as starting infusion dose.
- Starting infusion: 0.25-9 mcg/kg/min for a goal of MAP >65 or SBP >90
- Infusion range for PIV: 0.25- 4.5 mcg/kg/min
- Titrate by 0.25 mcg/kg/min every 1-2 minutes
- Max Dose: 9 mcg/kg/min

Propofol

- Starting infusion: 5mcg/kg/min, if patient is stable on dose of less than 80mcg/kg/min this dose can be continued as starting infusion dose.
- Titrate by: 5mcg/kg/min q5 minutes to a RASS -1 to +1 or sending physician RASS goal order
- Reduce dose by half OR 10 mcg/kg/min for any SBP of less than 90mmHg or MAP less than 65 and start pressors.
- Maximum dose range: 80mcg/kg/min.
 - Note: contraindicated in patients with allergies to eggs, egg products, soybean, or soy products.
 - Note: avoid in patients with pancreatitis

SCT Miscellaneous and Device Protocols

BiPAP/CPAP

- **Bilevel positive airway pressure (BiPAP)**
 - Indication: hypercapnia, or hypercapnia and hypoxia
 - Continue current BiPAP settings with orders from sending physician
 - Standard initiation and minimum is IPAP 10 cmH₂O and EPAP 5 cmH₂O (**BiPAP 10/5** cmH₂O)
 - Increase the delta pressure by increasing IPAP as needed for improved ventilation
 - Titrate FiO₂ as needed for O₂ Sat >94%,
 - increase EPAP as needed for FIO₂ resistant hypoxia
 - Max Settings: **BiPAP 20/15**,
 - Minimum delta pressure (IPAP – EPAP): **5 cmH₂O**
 - **** Note: closely monitor hemodynamic status in patients with increasing delta pressure, as it can result in abrupt hypotension ****
 - Monitor tidal volume and respiratory rate (RR), and adjust settings as needed
 - If failing BiPAP management call DMO
- **Continuous positive airway pressure (CPAP)**
 - (only if desired over BiPAP from sending physician)
 - Indication: hypoxia without hypercapnia initiate continuous positive airway pressure (CPAP)
 - Start with CPAP 5 cmH₂O
 - **** Note: closely monitor hemodynamic status in patients with increasing CPAP levels, as it can result in abrupt hypotension ****
 - Titrate FiO₂ as needed for hypoxia

Ventilator – ACVC, SIMV, ACPC, PS

- Obtain the following information from the sending provider prior to transfer:
 - Reason for intubation
 - Number of days intubated
 - Ventilator settings, any recent adjustments, failed modes of ventilation
 - Patient's height and ideal body weight
 - ETT placement (at the teeth) and confirmatory imaging studies
- Ventilator mode: Assist Control (AC)
 - Tidal volume: 6-8 ml/kg (ideal body weight)
 - Rate: 10-20 breaths/minute
 - FiO₂: 21-100% (titrate to SpO₂ > 92%)
 - PEEP: 2-15 cm H₂O
- Call DMO for other approved ventilator modes (SIMV, ACPC, PS) for specific settings

- First ask if the patient can be transitioned to ACVC for transport, if not then knowing why from sending physician will be helpful for DMO physician decision making
- All intubated patients should be in soft wrist restraints
- All advanced airways need continuous ETCO2 monitoring

Tube Thoracostomy (Chest Tubes)

- Obtain orders from sending physician related to chest tube
 - Indication, position, suction status and duration it has been present
- Listen to breath sounds to get baseline before moving patient
 - Examine patient and repeat vital signs often to ensure tube is still functional
- Ensure tube is connected to the patient and re-evaluate the connections after every patient movement to ensure no leaks
- Monitor the following items after routine assessment of patient's vital signs:
 - Drainage (document the appearance and amount of fluid, at the start and at the conclusion of transport)
 - Bubbling in the water seal chamber
 - Gentle rise and fall of the water level, which corresponds with the patient's respirations is called "tidalling" and indicates that the system is functioning properly.
- Keep drain chamber lower than thorax and ensure there are no hanging loops or kinks in the tubing
 - Keep the drainage chamber system (pleuovac, atrium, ect.) up right, ensure there is space for drainage remaining, if nearly full should be exchanged or emptied by sending facility prior to transport
 - If the system falls over: place upright without fully rotating device, see if the air leak area has fluid remaining and if it is still at marked line, if so no changes, if not call DMO for instructions.
 - If a tube becomes fully dislodged from the chest: place a 3 sided dressing, especially in spontaneously breathing patients
 - Call DMO as soon as possible
 - Closely monitor for changes in breath sounds
 - If tension pneumothorax is suspected, then proceed with needle decompression per CT Statewide EMS Protocol
 - If partially dislodged and sentinel fenestration is visible, place an occlusive dressing over the fenestration and treat as fully dislodged
 - Never clamp a chest tube that is working, if clamped at sending facility, ask to unclamp for transport, if denied call DMO
- If the chest drainage system is crushed or broken open, or the chest drain becomes detached from the chest tube
 - **Call DMO** immediately, do not reconnect; you may be instructed to place the end of the chest tube in a bottle of sterile water to create a seal.
- ****Call DMO for instructions as soon as possible for any complications****

Pericardial Drain (non-traumatic indications only)

- Obtain orders from sending physician related to pericardial drain
 - Indication, position, and duration it has been present

- Pericardial drain must be present and functional for **>24 hours** prior to SCT Transport
- Keep the drainage bag below the level of the heart
- Pay special attention to the drain while moving patient
- ****If a complication of any type occurs call DMO****