Yukon-Kuskokwim
HEALTH CORPORATION

PEDIATRIC CRITICAL CARE GUIDE

TABLE OF CONTENTS

Approved by YKHC MSEC 12/7/21.

Yukon-Kuskokwim HEALTH CORPORATION

PEDIATRIC CRITICAL CARE GUIDE - RESOURCES

ANMC PICU Accepting and Consult Physician 907-297-8809 ♦ LifeMed 800-478-5433 (*96)

Click the hyperlinks to see YKHC guidelines and resources about critical care topics.

Airway/Respiratory Support

- **Intubation**
- **High Flow Nasal Cannula**

Infectious Disease

- **Sepsis and Septic Shock**
- **Fever in Infants Less Than 90 Days**
- **Dexamethasone in Meningitis**
- **Croup and Stridor**
- **Bronchiolitis and Wheezing**
- **Pneumonia**

Trauma/Injury/Ingestion

- **Head Injury**
- **Burns**
- **Frostbite**
- **Acetaminophen Overdose**

Neurology/Endocrinology

- **Status Epilepticus Treatment**
- **DKA and Other Endocrine Emergencies**

Patient Transport

- **Medevac: Village to Bethel**
- **Medevac: Bethel to Anchorage**
- **Pediatric Medevacs: Bethel to Anchorage**
- **Activating Emergency Military Transport**

Neonatal

- **Neonatal Resuscitation Summary**
  - The Neonatal Resuscitation Summary should be used for newborns.
  - For non-newborn babies, use the appropriate weight-based page (Gray, Pink, etc.) of this Critical Care Guide.

Yukon-Kuskokwim HEALTH CORPORATION

PEDIATRIC CRITICAL CARE GUIDE

GRAY

3 kg – 4 kg – 5 kg

ANMC PICU Accepting and Consult Physician 907-297-8809 ♦ LifeMed 800-478-5433 (*96)

Patient's admission weight: _____ kg

RESUSCITATION	3 kg	4 kg	5 kg
Epinephrine IV/IO (0.1 mg/mL)	0.03 mg (0.3 mL)	0.04 mg (0.4 mL)	0.05 mg (0.5 mL)
Epinephrine ET (0.1 mg/mL)	0.3 mg (3 mL)	0.4 mg (4 mL)	0.5 mg (5 mL)
Atropine IV (1 mg/mL)	0.1 mg (0.1 mL)	0.1 mg (0.1 mL)	0.1 mg (0.1 mL)
Atropine ET (1 mg/mL)	0.15 mg (0.15 mL)	0.2 mg (0.2 mL)	0.25 mg (0.25 mL)
Sodium Bicarbonate 4.2% IV	3 mEq (6 mL)	4 mEq (8 mL)	5 mEq (10 mL)
Lidocaine 2% IV	3 mg (0.15 mL)	4 mg (0.2 mL)	5 mg (0.25 mL)
Lidocaine 2% ET	9 mg (0.45 mL)	12 mg (0.6 mL)	15 mg (0.75 mL)
Defibrillation			
1st dose	6 Joules	8 Joules	10 Joules
2nd dose	12 Joules	16 Joules	20 Joules
3rd dose	12-30 Joules	16-40 Joules	20-50 Joules
Synchronized cardioversion			
1st Dose	2 Joules	2 Joules	3 Joules
2nd Dose	4 Joules	4 Joules	6 Joules
Adenosine IV (3 mg/mL)			
1st dose	0.3 mg (0.1 mL)	0.4 mg (0.13 mL)	0.5 mg (0.17 mL)
2nd dose	0.6 mg (0.2 mL)	0.8 mg (0.27 mL)	1 mg (0.33 mL)
Amiodarone IV (50 mg/mL)	15 mg (0.3 mL)	20 mg (0.4 mL)	25 mg (0.5 mL)
Calcium Chloride 10% IV	60 mg (0.6 mL)	80 mg (0.8 mL)	100 mg (1 mL)
Magnesium Sulfate IV (1 gm/2 mL)	150 mg (0.3 mL)	200 mg (0.4 mL)	250 mg (0.5 mL)
Dextrose 25% IV (infuse over 3 min with fluids)	6 mL	8 mL	10 mL

SEIZURE	3 kg	4 kg	5 kg
Lorazepam (*Ativan*) IV (2 mg/mL)	0.3 mg (0.15 mL)	0.4 mg (0.2 mL)	0.5 mg (0.25 mL)
Levetiracetam IV (100 mg/mL)	180 mg (1.8 mL)	240 mg (2.4 mL)	300 mg (3 mL)
Fosphenytoin IV load (500 mg/10 mL)	60 mg (1.2 mL)	80 mg (1.6 mL)	100 mg (2 mL)
Phenobarbital IV load (130 mg/mL)	60 mg (0.46 mL)	78 mg (0.6 mL)	104 mg (0.8 mL)
Diazepam – RECTAL (5 mg/mL)	1.5 mg (0.3 mL)	2 mg (0.4 mL)	2.5 mg (0.5 mL)
Midazolam (*Versed*) IM (5 mg/mL)	0.5 mg (0.1 mL)	0.8 mg (0.16 mL)	1 mg (0.2 mL)
Diazepam (*Valium*) IV (5 mg/mL)	0.5 mg (0.1 mL)	0.8 mg (0.16 mL)	1 mg (0.2 mL)

OVERDOSE	3 kg	4 kg	5 kg
Dextrose 25% IV (infuse over 3 min)	6 mL	8 mL	10 mL
Naloxone IV (0.4 mg/mL)	0.32 mg (0.8 mL)	0.4 mg (1 mL)	0.48 mg (1.2 mL)
Flumazenil IV (0.1 mg/mL)	0.03 mg (0.3 mL)	0.04 mg (0.4 mL)	0.05 mg (0.5 mL)
Glucagon IV (1 mg/mL)	0.5 mg (0.5 mL)	0.5 mg (0.5 mL)	0.5 mg (0.5 mL)

ICP	3 kg	4 kg	5 kg
Hypertonic Saline 3% IV (run over 30-60 minutes)	12 mL	16 mL	20 mL
Mannitol 20% IV (1 gm/kg) (must filter)	15 mL	20 mL	25 mL

FLUIDS	3 kg	4 kg	5 kg
Volume Expansion			
Crystalloid (NS or LR)	60 mL	80 mL	100 mL
Blood (PRBC)	30 mL	40 mL	50 mL
Maintenance			
D5NS + 20 mEq KCl/L	12 mL/hour	16 mL/hour	20 mL/hour

INTUBATION	3 kg	4 kg	5 kg
PREMEDICATION (*for all patients*)			
Atropine (1 mg/mL)	0.1 mg (0.1 mL)	0.1 mg (0.1 mL)	0.1 mg (0.1 mL)
INDUCTION AGENTS (***must use both medications together***)			
Midazolam (5 mg/ml)	0.3 mg (0.06 mL)	0.4 mg (0.08 mL)	0.5 mg (0.1 mL)
AND			
Fentanyl	9 mcg	12 mcg	15 mcg
PARALYTIC AGENT			
Rocuronium (10 mg/mL)	3 mg (0.3 mL)	4 mg (0.4 mL)	5 mg (0.5 mL)
POST INTUBATION SEDATION			
See next page for mixing and dosing instructions.			

ANTIBIOTICS			
Ceftriaxone	300 mg	400 mg	500 mg
Vancomycin	60 mg	80 mg	100 mg
Acyclovir	60 mg	80 mg	100 mg

STEROIDS

Solumedrol for bronchospasm/anaphylaxis/fluid & catecholamine resistant shock…10 mg
Dexamethasone for upper airway edema……2.5 mg
Dexamethasone for suspected bacterial meningitis……0.6 mg
Recommendation is due to the high incidence of HiB/HiA infection in this region.
GIVE BEFORE OR CONCURRENT WITH FIRST DOSE OF ANTIBIOTICS.

PRESSORS

DOSE	MIXING INSTRUCTIONS
Push-Dose Epinephrine Concentration: 10 mcg/mL **Dose 0.3 mL**	1. Draw up 1 mL of epinephrine 1:10,000 (0.1 mg/mL). 2. Mix with 9 mL of normal saline for final concentration of 10 mcg/mL. 3. Dose is 0.1 mL/kg.
Norepinephrine 0.1–2 mcg/kg/min Concentration: 32 mcg/mL	1. Pull two norepinephrine 4 mg/4 mL vials and one dextrose 5% in water 250 mL bag from the Pyxis. 2. Remove and discard 8 mL from the 250 mL bag. 3. Draw up 8 mL from the two norepinephrine 4 mg/4 mL vials. 4. Inject the 8 mL into the bag. Shake the bag to mix.
Epinephrine 0.1–1 mcg/kg/min Concentration: 16 mcg/mL	1. Pull one epinephrine 30 mg/30 mL vial and one sodium chloride 0.9% 500 mL bag from the Pyxis. 2. Remove and discard 8 mL from 500 mL bag. 3. Draw up 8 mL from the epinephrine 30 mg/30 mL vial. 4. Inject the 8 mL into the bag. Shake the bag to mix.

EQUIPMENT

ET Tube	3.5 cuffed	**NP Airway**	14 French
ETT Depth	9-10.5 cm	**LMA**	1
Stylet	6 French	**Urinary Catheter**	5 French
Laryngoscope	1 Straight	**Chest Tube**	10-12 French
Oral Airway	50 mm	**NG Tube**	5-8 French
Glidescope	GVL 1-2	**Intraosseous**	18 Ga

ALWAYS CHECK SERIAL GLUCOSE LEVELS IN CRITICAL PATIENTS.

Approved by YKHC MSEC 12/7/21.

PEDIATRIC CRITICAL CARE GUIDE

GRAY

3 kg – 4 kg – 5 kg

ANMC PICU Accepting and Consult Physician 907-297-8809 ♦ LifeMed 800-478-5433 (*96)

Patient's admission weight: _____ kg

MIXING INSTRUCTIONS

Fentanyl (10 mcg/mL):

1. Remove two 250 mcg/5 mL ampules of fentanyl and one 50 mL bag of 0.9% sodium chloride from the Pyxis machine. The pharmacist must be called if this concentration is not available.
2. Withdraw and discard 10 mL from the 50 mL 0.9% sodium chloride bag, leaving 40 mL in the bag. (This is a crucial step for achieving an accurate concentration.)
3. Using a filter needle, draw 10 mL (500 mcg) from the fentanyl ampules. DO NOT INJECT INTO BAG USING FILTER NEEDLE.
4. Remove and discard the filter needle, replace with a regular needle, and inject the 10 mL (500 mcg) of fentanyl into the 0.9% sodium chloride bag.
5. Pull boluses from this infusion bag, NOT from fentanyl vials/ampules.

Midazolam for ≤ 5 kg (0.5 mg/mL):

1. Remove one 10 mL vial of midazolam 5 mg/mL and one 50 mL bag of 0.9% sodium chloride from the Pyxis machine. The pharmacist must be called if this concentration is not available.
2. Withdraw and discard 5 mL from the 50 mL 0.9% sodium chloride bag and discard, leaving 45 mL in the bag. (This is a crucial step for achieving an accurate concentration.)
3. Withdraw 5 mL (25 mg) from the midazolam vial and inject into the 0.9% sodium chloride bag.
4. Pull boluses from this infusion bag, NOT from midazolam vials/ampules.

PROVIDER DOSING GUIDELINES

All dose adjustments must be ordered by the provider. Post intubation, titrate infusions and dosing to meet patient sedation needs as follows:

- Start fentanyl infusion and give Q15 minute boluses for the first hour. Overlapping boluses and infusions will accelerate achievement of steady state sedation. Midazolam can be started if blood pressure is stable.
- After an infusion has been started and several boluses have been given, reassess the level of sedation. If sedation is not adequate, the rate of infusion can be increased by 25-50% within the range on the table. This will not have an immediate effect, so give a bolus at the same time.
- May give fentanyl and/or midazolam boluses every 10-15 minutes (or sooner) as needed.
- If **hypotension is a concern**, hold or lower the midazolam dose. Fentanyl is less likely to cause hemodynamic changes.
- Boluses should be drawn up or bolused on the pump from pre-mixed bags so the same concentration is ALWAYS used.

REMEMBER

- Use boluses to rapidly increase the level of sedation.
- Patient will not have an immediate response to infusion rate changes; infusions are meant to maintain a level of sedation.
- Use lower doses of either medication if sedation is adequate.
- Fentanyl, midazolam, and pressors may be run together in the same line. However, DO NOT give a bolus in the same line as a pressor, as this would bolus the pressor as well.
- Fentanyl and midazolam are NOT compatible with bicarbonate.

Goal Dosing

Fentanyl (10 mcg/mL) – bolus dose 1-2 mcg/kg (max dose 50 mcg/bolus); infusion dose range 1-3 mcg/kg/hour.
Midazolam (0.5 mg/mL) – bolus dose 0.05-0.1 mg/kg (max dose 2 mg/bolus); infusion dose range 0.05-0.2 mg/kg/hour.

DRUG		3 kg	4 kg	5 kg
FENTANYL 10 mcg/mL	Bolus	3 mcg 0.3 mL	4 mcg 0.4 mL	5 mcg 0.5 mL
	Infusion	3-9 mcg/hr 0.3-0.9 mL/hr	4-12 mcg/hr 0.4-1.2 mL/hr	5-15 mcg/hr 0.5-1.5 mL/hr
MIDAZOLAM 0.5 mg/mL	Bolus	0.5 mg 1 mL	0.5 mg 1 mL	0.6 mg 1.2 mL
	Infusion	0.5-1.2 mg/hr 1-2.4 mL/hr	0.5-1.6 mg/hr 1-3.2 mL/hr	0.6-2 mg/hr 1.2-4 mL/hr

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PEDIATRIC CRITICAL CARE GUIDE

ANMC PICU Accepting and Consult Physician 907-297-8809 ♦ LifeMed 800-478-5433 (*96)

Patient's admission weight: _____ kg

RESUSCITATION

Epinephrine IV/IO (0.1 mg/mL)	0.065 mg (0.65 mL)
Epinephrine ET (0.1 mg/mL)	0.65 mg (6.5 mL)
Atropine IV (1 mg/mL)	0.14 mg (0.14 mL)
Atropine ET (1 mg/mL)	0.35 mg (0.35 mL)
Sodium Bicarbonate 4.2% IV	6.5 mEq (13 mL)
Lidocaine 2% IV	6.5 mg (0.33 mL)
Lidocaine 2% ET	20 mg (1 mL)
Defibrillation	
1st dose	14 Joules
2nd dose	28 Joules
3rd dose	28-60 Joules
Synchronized cardioversion	
1st / 2nd Dose	4 Joules / 8 Joules
Adenosine IV (3 mg/mL)	
1st dose	0.65 mg (0.22 mL)
2nd dose	1.3 mg (0.43 mL)
Amiodarone IV (50 mg/mL)	32 mg (0.64 mL)
Calcium Chloride 10% IV	130 mg (1.3 mL)
Magnesium Sulfate IV (1 gm/2 mL)	325 mg (0.65 mL)
Dextrose 25% IV	13 mL (infuse over 3 min with fluids)

SEIZURE

Lorazepam (*Ativan*) IV (2 mg/mL)	0.6 mg (0.3 mL)
Levetiracetam IV (100 mg/mL)	390 mg (3.9 mL)
Fosphenytoin IV load (500 mg/10 mL)	130 mg (2.6 mL)
Phenobarbital IV load (130 mg/mL)	130 mg (1 mL)
Diazepam – RECTAL (5 mg/mL)	3 mg (0.6 mL)
Midazolam (*Versed*) IM (5 mg/mL)	1.5 mg (0.3 mL)
Diazepam (*Valium*) IV (5 mg/mL)	1.3 mg (0.26 mL)

OVERDOSE

Dextrose 25% IV	13 mL (infuse over 3 min)
Naloxone IV (0.4 mg/mL)	0.64 mg (1.6 mL)
Flumazenil IV (0.1 mg/mL)	0.065 mg (0.65 mL)
Glucagon IV (1 mg/mL)	0.5 mg (0.5 mL)

ICP

Hypertonic Saline 3% IV	26 mL (run over 30-60 minutes)
Mannitol 20% IV (1 gm/kg)	33 mL (must filter and run over 20-30 minutes)

FLUIDS

Volume Expansion	
Crystalloid (NS or LR)	130 mL
Blood (PRBC)	65 mL
Maintenance	
D5NS + 20 mEq KCl/L	27 mL/hour

INTUBATION

PREMEDICATION (*For under 1 year old, for potential bradycardia, or if using ketamine.*)

Atropine (1 mg/mL)	0.14 mg (0.14 mL)

INDUCTION AGENTS ***(must use both medications together)***

Midazolam (5 mg/mL)	0.75 mg (0.15 mL)
AND	
Fentanyl	20 mcg

PARALYTIC AGENT

Rocuronium (10 mg/mL)	7 mg (0.7 mL)

POST INTUBATION SEDATION

See next page for mixing and dosing instructions.

ANTIBIOTICS

Ceftriaxone	650 mg	Meropenem	280 mg
Vancomycin	130 mg	Cefepime	350 mg
Acyclovir	130 mg		

STEROIDS

Solumedrol for bronchospasm/anaphylaxis/fluid & catecholamine resistant shock……14 mg
Dexamethasone for upper airway edema……3.5 mg
Dexamethasone for suspected bacterial meningitis……...1 mg
Recommendation is due to the high incidence of HiB/HiA infection in this region.
GIVE BEFORE OR CONCURRENT WITH FIRST DOSE OF ANTIBIOTICS.

PRESSORS

DOSE	MIXING INSTRUCTIONS
Push-Dose Epinephrine Concentration: 10 mcg/mL **Dose 0.6 mL**	1. Draw up 1 mL of epinephrine 1:10,000 (0.1 mg/mL). 2. Mix with 9 mL of normal saline for final concentration of 10 mcg/mL. 3. Dose is 0.1 mL/kg.
Norepinephrine 0.1–2 mcg/kg/min Concentration: 32 mcg/mL	1. Pull two norepinephrine 4 mg/4 mL vials and one dextrose 5% in water 250 mL bag from the Pyxis. 2. Remove and discard 8 mL from the 250 mL bag. 3. Draw up 8 mL from the two norepinephrine 4 mg/4 mL vials. 4. Inject the 8 mL into the bag. Shake the bag to mix.
Epinephrine 0.1–1 mcg/kg/min Concentration: 16 mcg/mL	1. Pull one epinephrine 30 mg/30 mL vial and one sodium chloride 0.9% 500 mL bag from the Pyxis. 2. Remove and discard 8 mL from 500 mL bag. 3. Draw up 8 mL from the epinephrine 30 mg/30 mL vial. 4. Inject the 8 mL into the bag. Shake the bag to mix.

EQUIPMENT

ET Tube	3.5 cuffed	**NP Airway**	14 French
ETT Depth	10.5-11 cm	**LMA**	1.5
Stylet	6 French	**Urinary Catheter**	8 French
Laryngoscope	1 Straight	**Chest Tube**	10-12 French
Oral Airway	50 mm	**NG Tube**	5-8 French
Glidescope	GVL 1-2	**Intraosseous**	15 Ga

ALWAYS CHECK SERIAL GLUCOSE LEVELS IN CRITICAL PATIENTS.

Approved by YKHC MSEC 12/7/21.

PEDIATRIC CRITICAL CARE GUIDE

PINK

6 – 7 kg

ANMC PICU Accepting and Consult Physician 907-297-8809 ♦ LifeMed 800-478-5433 (*96)

Patient's admission weight: _____ kg

MIXING INSTRUCTIONS

Fentanyl (10 mcg/mL):

1. Remove two 250 mcg/5 mL ampules of fentanyl and one 50 mL bag of 0.9% sodium chloride from the Pyxis machine. The pharmacist must be called if this concentration is not available.
2. Withdraw and discard 10 mL from the 50 mL 0.9% sodium chloride bag, leaving 40 mL in the bag. (This is a crucial step for achieving an accurate concentration.)
3. Using a filter needle, draw 10 mL (500 mcg) from the fentanyl ampules. DO NOT INJECT INTO BAG USING FILTER NEEDLE.
4. Remove and discard the filter needle, replace with a regular needle, and inject the 10 mL (500 mcg) of fentanyl into the 0.9% sodium chloride bag.
5. Pull boluses from this infusion bag, NOT from fentanyl vials/ampules.

Midazolam for > 5 kg (1 mg/mL):

1. Remove one 10 mL vial of midazolam 5 mg/mL and one 50 mL bag of 0.9% sodium chloride from the Pyxis machine. The pharmacist must be called if this concentration is not available.
2. Withdraw and discard 10 mL from the 50 mL 0.9% sodium chloride bag and discard, leaving 40 mL in the bag. (This is a crucial step for achieving an accurate concentration.)
3. Withdraw 10 mL (50 mg) from the midazolam vial and inject into the 0.9% sodium chloride bag.
4. Pull boluses from this infusion bag, NOT from midazolam vials/ampules.

PROVIDER DOSING GUIDELINES

All dose adjustments must be ordered by the provider. Post intubation, titrate infusions and dosing to meet patient sedation needs as follows:

- Start fentanyl infusion and give Q15 minute boluses for the first hour. Overlapping boluses and infusions will accelerate achievement of steady state sedation. Midazolam can be started if blood pressure is stable.
- After an infusion has been started and several boluses have been given, reassess the level of sedation. If sedation is not adequate, the rate of infusion can be increased by 25-50% within the range on the table. This will not have an immediate effect, so give a bolus at the same time.
- May give fentanyl and/or midazolam boluses every 10-15 minutes (or sooner) as needed.
- If **hypotension is a concern**, hold or lower the midazolam dose. Fentanyl is less likely to cause hemodynamic changes.
- Boluses should be drawn up or bolused on the pump from pre-mixed bags so the same concentration is ALWAYS used.

REMEMBER

- Use boluses to rapidly increase the level of sedation.
- Patient will not have an immediate response to infusion rate changes; infusions are meant to maintain a level of sedation.
- Use lower doses of either medication if sedation is adequate.
- Fentanyl, midazolam, and pressors may be run together in the same line. However, DO NOT give a bolus in the same line as a pressor, as this would bolus the pressor as well.
- Fentanyl and midazolam are NOT compatible with bicarbonate.

Goal Dosing

Fentanyl (10 mcg/mL) – bolus dose 1-2 mcg/kg (max dose 50 mcg/bolus); infusion dose range 1-3 mcg/kg/hour.
Midazolam (1 mg/mL) – bolus dose 0.05-0.1 mg/kg (max dose 2 mg/bolus); infusion dose range 0.05-0.2 mg/kg/hour.

DRUG		6-7 kg
FENTANYL 10 mcg/mL	Bolus	6 mcg 0.6 mL
	Infusion	6-21 mcg/hr 0.6-2.1 mL/hr
MIDAZOLAM 1 mg/mL	Bolus	0.3 mg 0.3 mL
	Infusion	0.3-1.2 mg/hr 0.3-1.2 mL/hr

Approved by YKHC MSEC 12/7/21.

Yukon-Kuskokwim HEALTH CORPORATION

PEDIATRIC CRITICAL CARE GUIDE

RED

8 – 9 kg

ANMC PICU Accepting and Consult Physician 907-297-8809 ♦ LifeMed 800-478-5433 (*96)

Patient's admission weight: _____ kg

RESUSCITATION

Epinephrine IV/IO (0.1 mg/mL)	0.085 mg (0.85 mL)
Epinephrine ET (0.1 mg/mL)	0.85 mg (8.5 mL)
Epi-Pen Junior	1 injection
Atropine IV (1 mg/mL)	0.18 mg (0.18 mL)
Atropine ET (1 mg/mL)	0.45 mg (0.45 mL)
Sodium Bicarbonate 4.2% IV	8.5 mEq (17 mL)
Lidocaine 2% IV	8.5 mg (0.43 mL)
Lidocaine 2% ET	26 mg (1.3 mL)
Defibrillation	
1st dose	17 Joules
2nd dose	33 Joules
3rd dose	33-80 Joules
Synchronized cardioversion	
1st / 2nd Dose	5 Joules / 10 Joules
Adenosine IV (3 mg/mL)	
1st dose	0.85 mg (0.28 mL)
2nd dose	1.7 mg (0.56 mL)
Amiodarone IV (50 mg/mL)	42 mg (0.84 mL)
Calcium Chloride 10% IV	170 mg (1.7 mL)
Magnesium Sulfate IV (1 gm/2 mL)	425 mg (0.85 mL)
Dextrose 25% IV	17 mL (infuse over 3 min with fluids)

SEIZURE

Lorazepam (*Ativan*) IV (2 mg/mL)	0.8 mg (0.4 mL)
Midazolam IN (*Versed*) (5 mg/mL)	2 mg = 0.4 mL (0.2 mL / naris)
Levetiracetam IV (100 mg/mL)	500 mg (5 mL)
Fosphenytoin IV load (500 mg/10 mL)	170 mg (3.4 mL)
Phenobarbital IV load (130 mg/mL)	169 mg (1.3 mL)
Diazepam – RECTAL (5 mg/mL)	4 mg (0.8 mL)
Midazolam (*Versed*) IM (5 mg/mL)	2 mg (0.4 mL)
Diazepam (*Valium*) IV (5 mg/mL)	1.5 mg (0.3 mL)

OVERDOSE

Dextrose 25% IV	17 mL (infuse over 3 min)
Naloxone IV (0.4 mg/mL)	0.84 mg (2.1 mL)
Flumazenil IV (0.1 mg/mL)	0.085 mg (0.85 mL)
Glucagon IV (1 mg/mL)	0.5 mg (0.5 mL)

ICP

Hypertonic Saline 3% IV	34 mL (run over 30-60 minutes)
Mannitol 20% IV (1 gm/kg)	43 mL (must filter and run over 20-30 minutes)

FLUIDS

Volume Expansion	
Crystalloid (NS or LR)	170 mL
Blood (PRBC)	85 mL
Maintenance	
D5NS + 20 mEq KCl/L	35 mL/hour

INTUBATION

PREMEDICATION (*For under 1 year old, for potential bradycardia, or if using ketamine.*)

Atropine (1 mg/mL)	0.18 mg (0.18 mL)

INDUCTION AGENTS ***(must use both medications together)***

Midazolam (5 mg/mL)	1 mg (0.2 mL)
AND	
Fentanyl	25 mcg

PARALYTIC AGENT

Rocuronium (10 mg/mL)	9 mg (0.9 mL)

POST INTUBATION SEDATION

See next page for mixing and dosing instructions.

ANTIBIOTICS

Ceftriaxone	850 mg	Meropenem	360 mg
Vancomycin	170 mg	Cefepime	450 mg
Acyclovir	170 mg		

STEROIDS

Solumedrol for bronchospasm/anaphylaxis/fluid & catecholamine resistant shock……18 mg
Dexamethasone for upper airway edema……4.5 mg
Dexamethasone for suspected bacterial meningitis……1.3 mg
Recommendation is due to the high incidence of HiB/HiA infection in this region.
GIVE BEFORE OR CONCURRENT WITH FIRST DOSE OF ANTIBIOTICS.

PRESSORS

DOSE	MIXING INSTRUCTIONS
Push-Dose Epinephrine Concentration: 10 mcg/mL **Dose 0.8 mL**	1. Draw up 1 mL of epinephrine 1:10,000 (0.1 mg/mL). 2. Mix with 9 mL of normal saline for final concentration of 10 mcg/mL. 3. Dose is 0.1 mL/kg.
Norepinephrine 0.1–2 mcg/kg/min Concentration: 32 mcg/mL	1. Pull two norepinephrine 4 mg/4 mL vials and one dextrose 5% in water 250 mL bag from the Pyxis. 2. Remove and discard 8 mL from the 250 mL bag. 3. Draw up 8 mL from the two norepinephrine 4 mg/4 mL vials. 4. Inject the 8 mL into the bag. Shake the bag to mix.
Epinephrine 0.1–1 mcg/kg/min Concentration: 16 mcg/mL	1. Pull one epinephrine 30 mg/30 mL vial and one sodium chloride 0.9% 500 mL bag from the Pyxis. 2. Remove and discard 8 mL from 500 mL bag. 3. Draw up 8 mL from the epinephrine 30 mg/30 mL vial. 4. Inject the 8 mL into the bag. Shake the bag to mix.

EQUIPMENT

ET Tube	3.5 cuffed	**NP Airway**	14 French
ETT Depth	10.5-11 cm	**LMA**	1.5
Stylet	6 French	**Urinary Catheter**	8 French
Laryngoscope	1 Straight	**Chest Tube**	10-12 French
Oral Airway	50 mm	**NG Tube**	5-8 French
Glidescope	GVL 2	**Intraosseous**	15 Ga

ALWAYS CHECK SERIAL GLUCOSE LEVELS IN CRITICAL PATIENTS.

Approved by YKHC MSEC 12/7/21.

PEDIATRIC CRITICAL CARE GUIDE

RED

8 – 9 kg

ANMC PICU Accepting and Consult Physician 907-297-8809 ♦ LifeMed 800-478-5433 (*96)

Patient's admission weight: _____ kg

MIXING INSTRUCTIONS

Fentanyl (10 mcg/mL):

1. Remove two 250 mcg/5 mL ampules of fentanyl and one 50 mL bag of 0.9% sodium chloride from the Pyxis machine. The pharmacist must be called if this concentration is not available.
2. Withdraw and discard 10 mL from the 50 mL 0.9% sodium chloride bag, leaving 40 mL in the bag. (This is a crucial step for achieving an accurate concentration.)
3. Using a filter needle, draw 10 mL (500 mcg) from the fentanyl ampules. DO NOT INJECT INTO BAG USING FILTER NEEDLE.
4. Remove and discard the filter needle, replace with a regular needle, and inject the 10 mL (500 mcg) of fentanyl into the 0.9% sodium chloride bag.
5. Pull boluses from this infusion bag, NOT from fentanyl vials/ampules.

Midazolam for > 5 kg (1 mg/mL):

1. Remove one 10 mL vial of midazolam 5 mg/mL and one 50 mL bag of 0.9% sodium chloride from the Pyxis machine. The pharmacist must be called if this concentration is not available.
2. Withdraw and discard 10 mL from the 50 mL 0.9% sodium chloride bag and discard, leaving 40 mL in the bag. (This is a crucial step for achieving an accurate concentration.)
3. Withdraw 10 mL (50 mg) from the midazolam vial and inject into the 0.9% sodium chloride bag.
4. Pull boluses from this infusion bag, NOT from midazolam vials/ampules.

PROVIDER DOSING GUIDELINES

All dose adjustments must be ordered by the provider. Post intubation, titrate infusions and dosing to meet patient sedation needs as follows:

- Start fentanyl infusion and give Q15 minute boluses for the first hour. Overlapping boluses and infusions will accelerate achievement of steady state sedation. Midazolam can be started if blood pressure is stable.
- After an infusion has been started and several boluses have been given, reassess the level of sedation. If sedation is not adequate, the rate of infusion can be increased by 25-50% within the range on the table. This will not have an immediate effect, so give a bolus at the same time.
- May give fentanyl and/or midazolam boluses every 10-15 minutes (or sooner) as needed.
- If **hypotension is a concern**, hold or lower the midazolam dose. Fentanyl is less likely to cause hemodynamic changes.
- Boluses should be drawn up or bolused on the pump from pre-mixed bags so the same concentration is ALWAYS used.

REMEMBER

- Use boluses to rapidly increase the level of sedation.
- Patient will not have an immediate response to infusion rate changes; infusions are meant to maintain a level of sedation.
- Use lower doses of either medication if sedation is adequate.
- Fentanyl, midazolam, and pressors may be run together in the same line. However, DO NOT give a bolus in the same line as a pressor, as this would bolus the pressor as well.
- Fentanyl and midazolam are NOT compatible with bicarbonate.

Goal Dosing

Fentanyl (10 mcg/mL) – bolus dose 1-2 mcg/kg (max dose 50 mcg/bolus); infusion dose range 1-3 mcg/kg/hour.
Midazolam (1 mg/mL) – bolus dose 0.05-0.1 mg/kg (max dose 2 mg/bolus); infusion dose range 0.05-0.2 mg/kg/hour.

DRUG		8-9 kg
FENTANYL 10 mcg/mL	Bolus	8 mcg 0.8 mL
	Infusion	8-27 mcg/hr 0.8-2.7 mL/hr
MIDAZOLAM 1 mg/mL	Bolus	0.4 mg 0.4 mL
	Infusion	0.4-1.6 mg/hr 0.4-1.6 mL/hr

Approved by YKHC MSEC 12/7/21.

PEDIATRIC CRITICAL CARE GUIDE

ANMC PICU Accepting and Consult Physician 907-297-8809 ♦ LifeMed 800-478-5433 (*96)

Patient's admission weight: _____ kg

RESUSCITATION

Epinephrine IV/IO (0.1 mg/mL)	0.1 mg (1 mL)
Epinephrine ET (0.1 mg/mL)	1 mg (10 mL)
Epi-Pen Junior	1 injection
Atropine IV (1 mg/mL)	0.2 mg (0.2 mL)
Atropine ET (1 mg/mL)	0.5 mg (0.5 mL)
Sodium Bicarbonate 4.2% IV	10 mEq (20 mL)
Lidocaine 2% IV	10 mg (0.5 mL)
Lidocaine 2% ET	30 mg (1.5 mL)
Defibrillation	
1st dose	20 Joules
2nd dose	40 Joules
3rd dose	40-100 Joules
Synchronized cardioversion	
1st / 2nd Dose	5 Joules / 10 Joules
Adenosine IV (3 mg/mL)	
1st dose	1 mg (0.33 mL)
2nd dose	2.1 mg (0.7 mL)
Amiodarone IV (50 mg/mL)	50 mg (1 mL)
Calcium Chloride 10% IV	210 mg (2.1 mL)
Magnesium Sulfate IV (1 gm/2 mL)	550 mg (1.1 mL)
Dextrose 25% IV	21 mL (infuse over 3 min with fluids)

SEIZURE

Lorazepam (*Ativan*) IV (2 mg/mL)	1 mg (0.5 mL)
Midazolam IN (*Versed*) (5 mg/mL)	2 mg = 0.4 mL (0.2 mL/naris)
Levetiracetam IV (100 mg/mL)	630 mg (6.3 mL)
Fosphenytoin IV load (500 mg/10 mL)	210 mg (4.2 mL)
Phenobarbital IV load (130 mg/mL)	208 mg (1.6 mL)
Diazepam – RECTAL (5 mg/mL)	5 mg (1 mL)
Midazolam (*Versed*) IM (5 mg/mL)	2 mg (0.4 mL)
Diazepam (*Valium*) IV (5 mg/mL)	2 mg (0.4 mL)

OVERDOSE

Dextrose 25% IV	21 mL (infuse over 3 min)
Naloxone IV (0.4 mg/mL)	1 mg (2.5 mL)
Flumazenil IV (0.1 mg/mL)	0.1 mg (1 mL)
Glucagon IV (1 mg/mL)	0.5 mg (0.5 mg)

ICP

Hypertonic Saline 3% IV	42 mL (run over 30-60 minutes)
Mannitol 20% IV (1 gm/kg)	53 mL (must filter and run over 20-30 minutes)

FLUIDS

Volume Expansion	
Crystalloid (NS or LR)	210 mL
Blood (PRBC)	105 mL
Maintenance	
D5NS + 20 mEq KCl/L	43 mL/hour

INTUBATION

PREMEDICATION (*For under 1 year old, for potential bradycardia, or if using ketamine.*)

Atropine (1 mg/mL)	0.2 mg (0.2 mL)

INDUCTION AGENTS ***(must use both medications together)***

Midazolam (5 mg/mL)	1 mg (0.2 mL)
AND	
Fentanyl	30 mcg

PARALYTIC AGENT

Rocuronium (10 mg/mL)	11 mg (1.1 mL)

POST INTUBATION SEDATION

See next page for mixing and dosing instructions.

ANTIBIOTICS

Ceftriaxone	1000 mg	Meropenem	440 mg
Vancomycin	210 mg	Cefepime	550 mg
Acyclovir	210 mg		

STEROIDS

Solumedrol for bronchospasm/anaphylaxis/fluid & catecholamine resistant shock……22 mg
Dexamethasone for upper airway edema……6 mg
Dexamethasone for suspected bacterial meningitis……...1.6 mg
Recommendation is due to the high incidence of HiB/HiA infection in this region.
GIVE BEFORE OR CONCURRENT WITH FIRST DOSE OF ANTIBIOTICS.

PRESSORS

DOSE	MIXING INSTRUCTIONS
Push-Dose Epinephrine Concentration: 10 mcg/mL **Dose 1 mL**	1. Draw up 1 mL of epinephrine 1:10,000 (0.1 mg/mL). 2. Mix with 9 mL of normal saline for final concentration of 10 mcg/mL. 3. Dose is 0.1 mL/kg.
Norepinephrine 0.1–2 mcg/kg/min Concentration: 32 mcg/mL	1. Pull two norepinephrine 4 mg/4 mL vials and one dextrose 5% in water 250 mL bag from the Pyxis. 2. Remove and discard 8 mL from the 250 mL bag. 3. Draw up 8 mL from the two norepinephrine 4 mg/4 mL vials. 4. Inject the 8 mL into the bag. Shake the bag to mix.
Epinephrine 0.1–1 mcg/kg/min Concentration: 16 mcg/mL	1. Pull one epinephrine 30 mg/30 mL vial and one sodium chloride 0.9% 500 mL bag from the Pyxis. 2. Remove and discard 8 mL from 500 mL bag. 3. Draw up 8 mL from the epinephrine 30 mg/30 mL vial. 4. Inject the 8 mL into the bag. Shake the bag to mix.

EQUIPMENT

ET Tube	4.0 cuffed	**NP Airway**	18 French
ETT Depth	11-12 cm	**LMA**	2
Stylet	6 French	**Urinary Catheter**	8-10 French
Laryngoscope	1 Straight	**Chest Tube**	16-20 French
Oral Airway	60 mm	**NG Tube**	8-10 French
Glidescope	GVL 2-2.5	**Intraosseous**	15 Ga

ALWAYS CHECK SERIAL GLUCOSE LEVELS IN CRITICAL PATIENTS.

Approved by YKHC MSEC 12/7/21.

PEDIATRIC CRITICAL CARE GUIDE

PURPLE

10 – 11 kg

ANMC PICU Accepting and Consult Physician 907-297-8809 ♦ LifeMed 800-478-5433 (*96)

Patient's admission weight: _____ kg

MIXING INSTRUCTIONS

Fentanyl (10 mcg/mL):

1. Remove two 250 mcg/5 mL ampules of fentanyl and one 50 mL bag of 0.9% sodium chloride from the Pyxis machine. The pharmacist must be called if this concentration is not available.
2. Withdraw and discard 10 mL from the 50 mL 0.9% sodium chloride bag, leaving 40 mL in the bag. (This is a crucial step for achieving an accurate concentration.)
3. Using a filter needle, draw 10 mL (500 mcg) from the fentanyl ampules. DO NOT INJECT INTO BAG USING FILTER NEEDLE.
4. Remove and discard the filter needle, replace with a regular needle, and inject the 10 mL (500 mcg) of fentanyl into the 0.9% sodium chloride bag.
5. Pull boluses from this infusion bag, NOT from fentanyl vials/ampules.

Midazolam for > 5 kg (1 mg/mL):

1. Remove one 10 mL vial of midazolam 5 mg/mL and one 50 mL bag of 0.9% sodium chloride from the Pyxis machine. The pharmacist must be called if this concentration is not available.
2. Withdraw and discard 10 mL from the 50 mL 0.9% sodium chloride bag and discard, leaving 40 mL in the bag. (This is a crucial step for achieving an accurate concentration.)
3. Withdraw 10 mL (50 mg) from the midazolam vial and inject into the 0.9% sodium chloride bag.
4. Pull boluses from this infusion bag, NOT from midazolam vials/ampules.

PROVIDER DOSING GUIDELINES

All dose adjustments must be ordered by the provider. Post intubation, titrate infusions and dosing to meet patient sedation needs as follows:

- Start fentanyl infusion and give Q15 minute boluses for the first hour. Overlapping boluses and infusions will accelerate achievement of steady state sedation. Midazolam can be started if blood pressure is stable.
- After an infusion has been started and several boluses have been given, reassess the level of sedation. If sedation is not adequate, the rate of infusion can be increased by 25-50% within the range on the table. This will not have an immediate effect, so give a bolus at the same time.
- May give fentanyl and/or midazolam boluses every 10-15 minutes (or sooner) as needed.
- If **hypotension is a concern**, hold or lower the midazolam dose. Fentanyl is less likely to cause hemodynamic changes.
- Boluses should be drawn up or bolused on the pump from pre-mixed bags so the same concentration is ALWAYS used.

REMEMBER

- Use boluses to rapidly increase the level of sedation.
- Patient will not have an immediate response to infusion rate changes; infusions are meant to maintain a level of sedation.
- Use lower doses of either medication if sedation is adequate.
- Fentanyl, midazolam, and pressors may be run together in the same line. However, DO NOT give a bolus in the same line as a pressor, as this would bolus the pressor as well.
- Fentanyl and midazolam are NOT compatible with bicarbonate.

Goal Dosing

Fentanyl (10 mcg/mL) – bolus dose 1-2 mcg/kg (max dose 50 mcg/bolus); infusion dose range 1-3 mcg/kg/hour.
Midazolam (1 mg/mL) – bolus dose 0.05-0.1 mg/kg (max dose 2 mg/bolus); infusion dose range 0.05-0.2 mg/kg/hour.

DRUG		10-11 kg
FENTANYL 10 mcg/mL	Bolus	10 mcg 1 mL
	Infusion	10-33 mcg/hr 1-3.3 mL/hr
MIDAZOLAM 1 mg/mL	Bolus	0.5 mg 0.5 mL
	Infusion	0.5-2 mg/hr 0.5-2 mL/hr

Approved by YKHC MSEC 12/7/21.

Yukon-Kuskokwim HEALTH CORPORATION

PEDIATRIC CRITICAL CARE GUIDE

YELLOW

12 – 14 kg

ANMC PICU Accepting and Consult Physician 907-297-8809 ♦ LifeMed 800-478-5433 (*96)

Patient's admission weight: _____ kg

RESUSCITATION

Epinephrine IV/IO (0.1 mg/mL)	0.13 mg (1.3 mL)
Epinephrine ET (0.1 mg/mL)	1.3 mg (13 mL)
Epi-Pen Junior	1 injection
Atropine IV (1 mg/mL)	0.25 mg (0.25 mL)
Atropine ET (1 mg/mL)	0.65 mg (0.65 mL)
Sodium Bicarbonate 4.2% IV	13 mEq (26 mL)
Lidocaine 2% IV	13 mg (0.65 mL)
Lidocaine 2% ET	40 mg (2 mL)
Defibrillation	
1st dose	26 Joules
2nd dose	52 Joules
3rd dose	52-130 Joules
Synchronized cardioversion	
1st / 2nd Dose	7 Joules / 14 Joules
Adenosine IV (3 mg/mL)	
1st dose	1.3 mg (0.43 mL)
2nd dose	2.6 mg (0.86 mL)
Amiodarone IV (50 mg/mL)	65 mg (1.3 mL)
Calcium Chloride 10% IV	260 mg (2.6 mL)
Magnesium Sulfate IV (1 gm/2 mL)	650 mg (1.3 mL)
Dextrose 25% IV	26 mL (infuse over 3 min with fluids)

SEIZURE

Lorazepam (*Ativan*) IV (2 mg/mL)	1.4 mg (0.7 mL)
Midazolam IN (*Versed*) (5 mg/mL)	2.5 mg = 0.5 mL (0.3 mL to one naris, 0.2 mL to other)
Levetiracetam IV (100 mg/mL)	780 mg (7.8 mL)
Fosphenytoin IV load (500 mg/10 mL)	260 mg (5.2 mL)
Phenobarbital IV load (130 mg/mL)	260 mg (2 mL)
Diazepam – RECTAL (5 mg/mL)	6.5 mg (1.3 mL)
Midazolam (*Versed*) IM (5 mg/mL)	2.5 mg (0.5 mL)
Diazepam (*Valium*) IV (5 mg/mL)	2.5 mg (0.5 mL)

OVERDOSE

Dextrose 25% IV	26 mL (infuse over 3 min)
Naloxone IV (0.4 mg/mL)	1.3 mg (3.3 mL)
Flumazenil IV (0.1 mg/mL)	0.13 mg (1.3 mL)
Glucagon IV (1 mg/mL)	0.5 mg (0.5 mL)

ICP

Hypertonic Saline 3% IV	52 mL (run over 30-60 minutes)
Mannitol 20% IV (1 gm/kg)	65 mL (must filter and run over 20-30 minutes)

FLUIDS

Volume Expansion

Crystalloid (NS or LR)	260 mL
Blood (PRBC)	130 mL

Maintenance

D5NS + 20 mEq KCl/L	48 mL/hour

INTUBATION

PREMEDICATION (*For under 1 year old, for potential bradycardia, or if using ketamine.*)

Atropine (1 mg/mL)	0.25 mg (0.25 mL)

INDUCTION AGENTS ***(must use both medications together)***

Midazolam (5 mg/mL)	1.5 mg (0.3 mL)
AND	
Fentanyl	40 mcg

PARALYTIC AGENT

Rocuronium (10 mg/mL)	14 mg (1.4 mL)

POST INTUBATION SEDATION

See next page for mixing and dosing instructions.

ANTIBIOTICS

Ceftriaxone	1300 mg	Meropenem	560 mg
Vancomycin	260 mg	Cefepime	700 mg
Acyclovir	260 mg		

STEROIDS

Solumedrol for bronchospasm/anaphylaxis/fluid & catecholamine resistant shock……26 mg
Dexamethasone for upper airway edema……7 mg
Dexamethasone for suspected bacterial meningitis……...2 mg
Recommendation is due to the high incidence of HiB/HiA infection in this region.
GIVE BEFORE OR CONCURRENT WITH FIRST DOSE OF ANTIBIOTICS.

PRESSORS

DOSE	MIXING INSTRUCTIONS
Push-Dose Epinephrine Concentration: 10 mcg/mL **Dose 1.2 mL**	1. Draw up 1 mL of epinephrine 1:10,000 (0.1 mg/mL). 2. Mix with 9 mL of normal saline for final concentration of 10 mcg/mL. 3. Dose is 0.1 mL/kg.
Norepinephrine 0.1–2 mcg/kg/min Concentration: 32 mcg/mL	1. Pull two norepinephrine 4 mg/4 mL vials and one dextrose 5% in water 250 mL bag from the Pyxis. 2. Remove and discard 8 mL from the 250 mL bag. 3. Draw up 8 mL from the two norepinephrine 4 mg/4 mL vials. 4. Inject the 8 mL into the bag. Shake the bag to mix.
Epinephrine 0.1–1 mcg/kg/min Concentration: 16 mcg/mL	1. Pull one epinephrine 30 mg/30 mL vial and one sodium chloride 0.9% 500 mL bag from the Pyxis. 2. Remove and discard 8 mL from 500 mL bag. 3. Draw up 8 mL from the epinephrine 30 mg/30 mL vial. 4. Inject the 8 mL into the bag. Shake the bag to mix.

EQUIPMENT

ET Tube	4.0 cuffed	**NP Airway**	20 French
ETT Depth	13.5 cm	**LMA**	2
Stylet	6 French	**Urinary Catheter**	10 French
Laryngoscope	2 Straight	**Chest Tube**	20-24 French
Oral Airway	60 mm	**NG Tube**	10 French
Glidescope	GVL 2.5-3	**Intraosseous**	15 Ga

ALWAYS CHECK SERIAL GLUCOSE LEVELS IN CRITICAL PATIENTS.

Approved by YKHC MSEC 12/7/21.

PEDIATRIC CRITICAL CARE GUIDE

YELLOW

12 – 14 kg

ANMC PICU Accepting and Consult Physician 907-297-8809 ♦ LifeMed 800-478-5433 (*96)

Patient's admission weight: _____ kg

MIXING INSTRUCTIONS

Fentanyl (10 mcg/mL):

1. Remove two 250 mcg/5 mL ampules of fentanyl and one 50 mL bag of 0.9% sodium chloride from the Pyxis machine. The pharmacist must be called if this concentration is not available.
2. Withdraw and discard 10 mL from the 50 mL 0.9% sodium chloride bag, leaving 40 mL in the bag. (This is a crucial step for achieving an accurate concentration.)
3. Using a filter needle, draw 10 mL (500 mcg) from the fentanyl ampules. DO NOT INJECT INTO BAG USING FILTER NEEDLE.
4. Remove and discard the filter needle, replace with a regular needle, and inject the 10 mL (500 mcg) of fentanyl into the 0.9% sodium chloride bag.
5. Pull boluses from this infusion bag, NOT from fentanyl vials/ampules.

Midazolam for > 5 kg (1 mg/mL):

1. Remove one 10 mL vial of midazolam 5 mg/mL and one 50 mL bag of 0.9% sodium chloride from the Pyxis machine. The pharmacist must be called if this concentration is not available.
2. Withdraw and discard 10 mL from the 50 mL 0.9% sodium chloride bag and discard, leaving 40 mL in the bag. (This is a crucial step for achieving an accurate concentration.)
3. Withdraw 10 mL (50 mg) from the midazolam vial and inject into the 0.9% sodium chloride bag.
4. Pull boluses from this infusion bag, NOT from midazolam vials/ampules.

PROVIDER DOSING GUIDELINES

All dose adjustments must be ordered by the provider. Post intubation, titrate infusions and dosing to meet patient sedation needs as follows:

- Start fentanyl infusion and give Q15 minute boluses for the first hour. Overlapping boluses and infusions will accelerate achievement of steady state sedation. Midazolam can be started if blood pressure is stable.
- After an infusion has been started and several boluses have been given, reassess the level of sedation. If sedation is not adequate, the rate of infusion can be increased by 25-50% within the range on the table. This will not have an immediate effect, so give a bolus at the same time.
- May give fentanyl and/or midazolam boluses every 10-15 minutes (or sooner) as needed.
- If **hypotension is a concern**, hold or lower the midazolam dose. Fentanyl is less likely to cause hemodynamic changes.
- Boluses should be drawn up or bolused on the pump from pre-mixed bags so the same concentration is ALWAYS used.

REMEMBER

- Use boluses to rapidly increase the level of sedation.
- Patient will not have an immediate response to infusion rate changes; infusions are meant to maintain a level of sedation.
- Use lower doses of either medication if sedation is adequate.
- Fentanyl, midazolam, and pressors may be run together in the same line. However, DO NOT give a bolus in the same line as a pressor, as this would bolus the pressor as well.
- Fentanyl and midazolam are NOT compatible with bicarbonate.

Goal Dosing

Fentanyl (10 mcg/mL) – bolus dose 1-2 mcg/kg (max dose 50 mcg/bolus); infusion dose range 1-3 mcg/kg/hour.
Midazolam (1 mg/mL) – bolus dose 0.05-0.1 mg/kg (max dose 2 mg/bolus); infusion dose range 0.05-0.2 mg/kg/hour.

DRUG		12-13 kg	14 kg
FENTANYL 10 mcg/mL	Bolus	12 mcg 1.2 mL	14 mcg 1.4 mL
	Infusion	12-39 mcg/hr 1.2-3.9 mL/hr	14-45 mcg/hr 1.4-4.5 mL/hr
MIDAZOLAM 1 mg/mL	Bolus	0.6 mg 0.6 mL	0.7 mg 0.7 mL
	Infusion	0.6–2 mg/hr 0.6–2 mL/hr	0.7–2.8 mg/hr 0.7–2.8 mL/hr

Approved by YKHC MSEC 12/7/21.

PEDIATRIC CRITICAL CARE GUIDE

WHITE

15 – 18 kg

ANMC PICU Accepting and Consult Physician 907-297-8809 ♦ LifeMed 800-478-5433 (*96)

Patient's admission weight: _____ kg

RESUSCITATION

Epinephrine IV/IO (0.1 mg/mL)	0.17 mg (1.7 mL)
Epinephrine ET (0.1 mg/mL)	1.7 mg (17 mL)
Epi-Pen Junior	1 injection
Atropine IV (1 mg/mL)	0.35 mg (0.35 mL)
Atropine ET (1 mg/mL)	0.85 mg (0.85 mL)
Sodium Bicarbonate 4.2% IV	16.5 mEq (33 mL)
Lidocaine 2% IV	17 mg (0.85 mL)
Lidocaine 2% ET	50 mg (2.5 mL)
Defibrillation	
1st dose	33 Joules
2nd dose	66 Joules
3rd dose	66-160 Joules
Synchronized cardioversion	
1st / 2nd Dose	8 Joules / 16 Joules
Adenosine IV (3 mg/mL)	
1st dose	1.7 mg (0.56 mL)
2nd dose	3.3 mg (1.1 mL)
Amiodarone IV (50 mg/mL)	80 mg (1.6 mL)
Calcium Chloride 10% IV	330 mg (3.3 mL)
Magnesium Sulfate IV (1 gm/2 mL)	850 mg (1.7 mL)
Dextrose 25% IV	33 mL (infuse over 3 min with fluids)

SEIZURE

Lorazepam (*Ativan*) IV (2 mg/mL)	1.8 mg (0.9 mL)
Midazolam IN (*Versed*) (5 mg/mL)	3.5 mg = 0.7 mL (0.4 mL to one naris, 0.3 mL to other)
Levetiracetam IV (100 mg/mL)	1000 mg (10 mL)
Fosphenytoin IV load (500 mg/10 mL)	330 mg (6.6 mL)
Phenobarbital IV load (130 mg/mL)	325 mg (2.5 mL)
Diazepam – RECTAL (5 mg/mL)	8 mg (1.6 mL)
Midazolam (*Versed*) IM (5 mg/mL)	3.5 mg (0.7 mL)
Diazepam (*Valium*) IV (5 mg/mL)	3.5 mg (0.7 mL)

OVERDOSE

Dextrose 25% IV	33 mL (infuse over 3 min)
Naloxone IV (0.4 mg/mL)	1.6 mg (4 mL)
Flumazenil IV (0.1 mg/mL)	0.16 mg (1.6 mL)
Glucagon IV (1 mg/mL)	0.5 mg (0.5 mL)

ICP

Hypertonic Saline 3% IV	68 mL (run over 30-60 minutes)
Mannitol 20% IV (1 gm/kg)	85 mL (must filter and run over 20-30 minutes)

FLUIDS

Volume Expansion

Crystalloid (NS or LR)	325 mL
Blood (PRBC)	165 mL

Maintenance

D5NS + 20 mEq KCl/L	55 mL/hour

INTUBATION

PREMEDICATION (*For under 1 year old, for potential bradycardia, or if using ketamine.*)

Atropine (1 mg/mL)	0.35 mg (0.35 mL)

INDUCTION AGENTS ***(must use both medications together)***

Midazolam (5 mg/mL)	2 mg (0.4 mL)
AND	
Fentanyl	50 mcg

PARALYTIC AGENT

Rocuronium (10 mg/mL)	18 mg (1.8 mL)

POST INTUBATION SEDATION

See next page for mixing and dosing instructions.

ANTIBIOTICS

Ceftriaxone	1700 mg	Meropenem	720 mg
Vancomycin	340 mg	Cefepime	900 mg
Acyclovir	340 mg		

STEROIDS

Solumedrol for bronchospasm/anaphylaxis/fluid & catecholamine resistant shock……34 mg
Dexamethasone for upper airway edema……9 mg
Dexamethasone for suspected bacterial meningitis……...2.7 mg
Recommendation is due to the high incidence of HiB/HiA infection in this region.
GIVE BEFORE OR CONCURRENT WITH FIRST DOSE OF ANTIBIOTICS.

PRESSORS

DOSE	MIXING INSTRUCTIONS
Push-Dose Epinephrine Concentration: 10 mcg/mL **Dose 1.5 mL**	1. Draw up 1 mL of epinephrine 1:10,000 (0.1 mg/mL). 2. Mix with 9 mL of normal saline for final concentration of 10 mcg/mL. 3. Dose is 0.1 mL/kg.
Norepinephrine 0.1–2 mcg/kg/min Concentration: 32 mcg/mL	1. Pull two norepinephrine 4 mg/4 mL vials and one dextrose 5% in water 250 mL bag from the Pyxis. 2. Remove and discard 8 mL from the 250 mL bag. 3. Draw up 8 mL from the two norepinephrine 4 mg/4 mL vials. 4. Inject the 8 mL into the bag. Shake the bag to mix.
Epinephrine 0.1–1 mcg/kg/min Concentration: 16 mcg/mL	1. Pull one epinephrine 30 mg/30 mL vial and one sodium chloride 0.9% 500 mL bag from the Pyxis. 2. Remove and discard 8 mL from 500 mL bag. 3. Draw up 8 mL from the epinephrine 30 mg/30 mL vial. 4. Inject the 8 mL into the bag. Shake the bag to mix.

EQUIPMENT

ET Tube	4.5-5.0 cuffed	**NP Airway**	22 French
ETT Depth	14-15 cm	**LMA**	2
Stylet	6 French	**Urinary Catheter**	10-12 French
Laryngoscope	2 Straight	**Chest Tube**	20-24 French
Oral Airway	60 mm	**NG Tube**	10 French
Glidescope	GVL 2.5-3	**Intraosseous**	15 Ga

ALWAYS CHECK SERIAL GLUCOSE LEVELS IN CRITICAL PATIENTS.

Approved by YKHC MSEC 12/7/21.

PEDIATRIC CRITICAL CARE GUIDE

WHITE

15 – 18 kg

ANMC PICU Accepting and Consult Physician 907-297-8809 ♦ LifeMed 800-478-5433 (*96)

Patient's admission weight: _____ kg

MIXING INSTRUCTIONS

Fentanyl (10 mcg/mL):

1. Remove two 250 mcg/5 mL ampules of fentanyl and one 50 mL bag of 0.9% sodium chloride from the Pyxis machine. The pharmacist must be called if this concentration is not available.
2. Withdraw and discard 10 mL from the 50 mL 0.9% sodium chloride bag, leaving 40 mL in the bag. (This is a crucial step for achieving an accurate concentration.)
3. Using a filter needle, draw 10 mL (500 mcg) from the fentanyl ampules. DO NOT INJECT INTO BAG USING FILTER NEEDLE.
4. Remove and discard the filter needle, replace with a regular needle, and inject the 10 mL (500 mcg) of fentanyl into the 0.9% sodium chloride bag.
5. Pull boluses from this infusion bag, NOT from fentanyl vials/ampules.

Midazolam for > 5 kg (1 mg/mL):

1. Remove one 10 mL vial of midazolam 5 mg/mL and one 50 mL bag of 0.9% sodium chloride from the Pyxis machine. The pharmacist must be called if this concentration is not available.
2. Withdraw and discard 10 mL from the 50 mL 0.9% sodium chloride bag and discard, leaving 40 mL in the bag. (This is a crucial step for achieving an accurate concentration.)
3. Withdraw 10 mL (50 mg) from the midazolam vial and inject into the 0.9% sodium chloride bag.
4. Pull boluses from this infusion bag, NOT from midazolam vials/ampules.

PROVIDER DOSING GUIDELINES

All dose adjustments must be ordered by the provider. Post intubation, titrate infusions and dosing to meet patient sedation needs as follows:

- Start fentanyl infusion and give Q15 minute boluses for the first hour. Overlapping boluses and infusions will accelerate achievement of steady state sedation. Midazolam can be started if blood pressure is stable.
- After an infusion has been started and several boluses have been given, reassess the level of sedation. If sedation is not adequate, the rate of infusion can be increased by 25-50% within the range on the table. This will not have an immediate effect, so give a bolus at the same time.
- May give fentanyl and/or midazolam boluses every 10-15 minutes (or sooner) as needed.
- If **hypotension is a concern**, hold or lower the midazolam dose. Fentanyl is less likely to cause hemodynamic changes.
- Boluses should be drawn up or bolused on the pump from pre-mixed bags so the same concentration is ALWAYS used.

REMEMBER

- Use boluses to rapidly increase the level of sedation.
- Patient will not have an immediate response to infusion rate changes; infusions are meant to maintain a level of sedation.
- Use lower doses of either medication if sedation is adequate.
- Fentanyl, midazolam, and pressors may be run together in the same line. However, DO NOT give a bolus in the same line as a pressor, as this would bolus the pressor as well.
- Fentanyl and midazolam are NOT compatible with bicarbonate.

Goal Dosing

Fentanyl (10 mcg/mL) – bolus dose 1-2 mcg/kg (max dose 50 mcg/bolus); infusion dose range 1-3 mcg/kg/hour.

Midazolam (1 mg/mL) – bolus dose 0.05-0.1 mg/kg (max dose 2 mg/bolus); infusion dose range 0.05-0.2 mg/kg/hour.

DRUG		15-16 kg	17-18 kg
FENTANYL 10 mcg/mL	Bolus	15 mcg 1.5 mL	17 mcg 1.7 mL
	Infusion	15-45 mcg/hr 1.5-4.5 mL/hr	17-50 mcg/hr 1.7-5 mL/hr
MIDAZOLAM 1 mg/mL	Bolus	0.8 mg 0.8 mL	0.9 mg 0.9 mL
	Infusion	0.8-2.8 mg/hr 0.8-2.8 mL/hr	0.9-3 mg/hr 0.9-3 mL/hr

Approved by YKHC MSEC 12/7/21.

PEDIATRIC CRITICAL CARE GUIDE

BLUE

19 – 23 kg

ANMC PICU Accepting and Consult Physician 907-297-8809 ♦ LifeMed 800-478-5433 (*96)

Patient's admission weight: _____ kg

RESUSCITATION

Epinephrine IV/IO (0.1 mg/mL)	0.21 mg (2.1 mL)
Epinephrine ET (0.1 mg/mL)	2.1 mg (21 mL)
Epi-Pen Junior	1 injection
Atropine IV (1 mg/mL)	0.4 mg (0.4 mL)
Atropine ET (1 mg/mL)	1 mg (1 mL)
Sodium Bicarbonate 4.2% IV	21 mEq (42 mL)
Lidocaine 2% IV	20 mg (1 mL)
Lidocaine 2% ET	60 mg (3 mL)
Defibrillation	
1st dose	40 Joules
2nd dose	80 Joules
3rd dose	80-200 Joules
Synchronized cardioversion	
1st / 2nd Dose	11 Joules / 22 Joules
Adenosine IV (3 mg/mL)	
1st dose	2.1 mg (0.7 mL)
2nd dose	4.2 mg (1.4 mL)
Amiodarone IV (50 mg/mL)	105 mg (2.1 mL)
Calcium Chloride 10% IV	420 mg (4.2 mL)
Magnesium Sulfate IV (1 gm/2 mL)	1050 mg (2.1 mL)
Dextrose 50% IV	21 mL (infuse over 3 min with fluids)

SEIZURE

Lorazepam (*Ativan*) IV (2 mg/mL)	2 mg (1 mL)
Midazolam IN (*Versed*) (5 mg/mL)	4 mg = 0.8 mL (0.4 mL / naris)
Levetiracetam IV (100 mg/mL)	1250 mg (12.5 mL)
Fosphenytoin IV load (500 mg/10 mL)	420 mg (8.4 mL)
Phenobarbital IV load (130 mg/mL)	416 mg (3.2 mL)
Diazepam – RECTAL (5 mg/mL)	10 mg (2 mL)
Midazolam (*Versed*) IM (5 mg/mL)	4 mg (0.8 mL)
Diazepam (*Valium*) IV (5 mg/mL)	4 mg (0.8 mL)

OVERDOSE

Dextrose 50% IV	21 mL (infuse over 3 min)
Naloxone IV (0.4 mg/mL)	2 mg (5 mL)
Flumazenil IV (0.1 mg/mL)	0.2 mg (2 mL)
Glucagon IV (1 mg/mL)	1 mg (1 mL)

ICP

Hypertonic Saline 3% IV	84 mL (run over 30-60 minutes)
Mannitol 20% IV (1 gm/kg)	105 mL (must filter and run over 20-30 minutes)

FLUIDS

Volume Expansion

Crystalloid (NS or LR)	420 mL
Blood (PRBC)	210 mL

Maintenance

D5NS + 20 mEq KCl/L	63 mL/hour

INTUBATION

PREMEDICATION (*For under 1 year old, for potential bradycardia, or if using ketamine.*)

Atropine (1 mg/mL)	0.4 mg (0.4 mL)

INDUCTION AGENTS ***(must use both medications together)***

Midazolam (5 mg/mL)	2.5 mg (0.5 mL)
AND	
Fentanyl	55 mcg

PARALYTIC AGENT

Rocuronium (10 mg/mL)	23 mg (2.3 mL)

POST INTUBATION SEDATION

See next page for mixing and dosing instructions.

ANTIBIOTICS

Ceftriaxone	2000 mg	Meropenem	920 mg
Vancomycin	420 mg	Cefepime	1150 mg
Acyclovir	420 mg		

STEROIDS

Solumedrol for bronchospasm/anaphylaxis/fluid & catecholamine resistant shock……42 mg
Dexamethasone for upper airway edema……..11 mg
Dexamethasone for suspected bacterial meningitis……...3.4 mg
Recommendation is due to the high incidence of HiB/HiA infection in this region.
GIVE BEFORE OR CONCURRENT WITH FIRST DOSE OF ANTIBIOTICS.

PRESSORS

DOSE	MIXING INSTRUCTIONS
Push-Dose Epinephrine Concentration: 10 mcg/mL **Dose 2 mL**	1. Draw up 1 mL of epinephrine 1:10,000 (0.1 mg/mL). 2. Mix with 9 mL of normal saline for final concentration of 10 mcg/mL. 3. Dose is 0.1 mL/kg, max 2 mL.
Norepinephrine 0.1–2 mcg/kg/min Concentration: 32 mcg/mL	1. Pull two norepinephrine 4 mg/4 mL vials and one dextrose 5% in water 250 mL bag from the Pyxis. 2. Remove and discard 8 mL from the 250 mL bag. 3. Draw up 8 mL from the two norepinephrine 4 mg/4 mL vials. 4. Inject the 8 mL into the bag. Shake the bag to mix.
Epinephrine 0.1–1 mcg/kg/min Concentration: 16 mcg/mL	1. Pull one epinephrine 30 mg/30 mL vial and one sodium chloride 0.9% 500 mL bag from the Pyxis. 2. Remove and discard 8 mL from 500 mL bag. 3. Draw up 8 mL from the epinephrine 30 mg/30 mL vial. 4. Inject the 8 mL into the bag. Shake the bag to mix.

EQUIPMENT

ET Tube	5.0-5.5 cuffed	**NP Airway**	24 French
ETT Depth	16.5 cm	**LMA**	2-2.5
Stylet	6 French	**Urinary Catheter**	10-12 French
Laryngoscope	2 Straight or curved	**Chest Tube**	24-32 French
Oral Airway	70 mm	**NG Tube**	12-14 French
Glidescope	GVL 2.5-3	**Intraosseous**	15 Ga

ALWAYS CHECK SERIAL GLUCOSE LEVELS IN CRITICAL PATIENTS.

Approved by YKHC MSEC 12/7/21.

PEDIATRIC CRITICAL CARE GUIDE

BLUE

19 – 23 kg

ANMC PICU Accepting and Consult Physician 907-297-8809 ♦ LifeMed 800-478-5433 (*96)

Patient's admission weight: _____ kg

MIXING INSTRUCTIONS

Fentanyl (10 mcg/mL):

1. Remove two 250 mcg/5 mL ampules of fentanyl and one 50 mL bag of 0.9% sodium chloride from the Pyxis machine. The pharmacist must be called if this concentration is not available.
2. Withdraw and discard 10 mL from the 50 mL 0.9% sodium chloride bag, leaving 40 mL in the bag. (This is a crucial step for achieving an accurate concentration.)
3. Using a filter needle, draw 10 mL (500 mcg) from the fentanyl ampules. DO NOT INJECT INTO BAG USING FILTER NEEDLE.
4. Remove and discard the filter needle, replace with a regular needle, and inject the 10 mL (500 mcg) of fentanyl into the 0.9% sodium chloride bag.
5. Pull boluses from this infusion bag, NOT from fentanyl vials/ampules.

Midazolam for > 5 kg (1 mg/mL):

1. Remove one 10 mL vial of midazolam 5 mg/mL and one 50 mL bag of 0.9% sodium chloride from the Pyxis machine. The pharmacist must be called if this concentration is not available.
2. Withdraw and discard 10 mL from the 50 mL 0.9% sodium chloride bag and discard, leaving 40 mL in the bag. (This is a crucial step for achieving an accurate concentration.)
3. Withdraw 10 mL (50 mg) from the midazolam vial and inject into the 0.9% sodium chloride bag.
4. Pull boluses from this infusion bag, NOT from midazolam vials/ampules.

PROVIDER DOSING GUIDELINES

All dose adjustments must be ordered by the provider. Post intubation, titrate infusions and dosing to meet patient sedation needs as follows:

- Start fentanyl infusion and give Q15 minute boluses for the first hour. Overlapping boluses and infusions will accelerate achievement of steady state sedation. Midazolam can be started if blood pressure is stable.
- After an infusion has been started and several boluses have been given, reassess the level of sedation. If sedation is not adequate, the rate of infusion can be increased by 25-50% within the range on the table. This will not have an immediate effect, so give a bolus at the same time.
- May give fentanyl and/or midazolam boluses every 10-15 minutes (or sooner) as needed.
- If **hypotension is a concern**, hold or lower the midazolam dose. Fentanyl is less likely to cause hemodynamic changes.
- Boluses should be drawn up or bolused on the pump from pre-mixed bags so the same concentration is ALWAYS used.

REMEMBER

- Use boluses to rapidly increase the level of sedation.
- Patient will not have an immediate response to infusion rate changes; infusions are meant to maintain a level of sedation.
- Use lower doses of either medication if sedation is adequate.
- Fentanyl, midazolam, and pressors may be run together in the same line. However, DO NOT give a bolus in the same line as a pressor, as this would bolus the pressor as well.
- Fentanyl and midazolam are NOT compatible with bicarbonate.

Goal Dosing

Fentanyl (10 mcg/mL) – bolus dose 1-2 mcg/kg (max dose 50 mcg/bolus); infusion dose range 1-3 mcg/kg/hour.
Midazolam (1 mg/mL) – bolus dose 0.05-0.1 mg/kg (max dose 2 mg/bolus); infusion dose range 0.05-0.2 mg/kg/hour.

DRUG		19-20 kg	21-23 kg
FENTANYL 10 mcg/mL	Bolus	20 mcg 2 mL	22 mcg 2.2 mL
	Infusion	20-60 mcg/hr 2-6 mL/hr	20-70 mcg/hr 2-7 mL/hr
MIDAZOLAM 1 mg/mL	Bolus	1 mg 1 mL	1 mg 1 mL
	Infusion	1-3 mg/hr 1-3 mL/hr	1-3 mg/hr 1-3 mL/hr

Approved by YKHC MSEC 12/7/21.

PEDIATRIC CRITICAL CARE GUIDE

ANMC PICU Accepting and Consult Physician 907-297-8809 ♦ LifeMed 800-478-5433 (*96)

Patient's admission weight: _____ kg

RESUSCITATION

Epinephrine IV/IO (0.1 mg/mL)	0.27 mg (2.7 mL)
Epinephrine ET (0.1 mg/mL)	2.7 mg (27 mL)
Epi-Pen Adult	1 injection
Atropine IV (1 mg/mL)	0.5 mg (0.5 mL)
Atropine ET (1 mg/mL)	1 mg (1 mL)
Sodium Bicarbonate 4.2% IV	27 mEq (54 mL)
Lidocaine 2% IV	28 mg (1.4 mL)
Lidocaine 2% ET	80 mg (4 mL)
Defibrillation	
1st dose	53 Joules
2nd dose	106 Joules
3rd dose	106-250 Joules
Synchronized cardioversion	
1st / 2nd Dose	13 Joules / 26 Joules
Adenosine IV (3 mg/mL)	
1st dose	2.7 mg (0.9 mL)
2nd dose	5.4 mg (1.8 mL)
Amiodarone IV (50 mg/mL)	130 mg (2.6 mL)
Calcium Chloride 10% IV	530 mg (5.3 mL)
Magnesium Sulfate IV (1 gm/2 mL)	1350 mg (2.7 mL)
Dextrose 50% IV	27 mL (infuse over 3 min with fluids)

SEIZURE

Lorazepam (*Ativan*) IV (2 mg/mL)	2.8 mg (1.4 mL)
Midazolam IN (*Versed*) (5 mg/mL)	5.5 mg = 1.1 mL (0.6 mL to first naris, 0.5 to other)
Levetiracetam IV (100 mg/mL)	1500 mg (15 mL)
Fosphenytoin IV load (500 mg/10 mL)	530 mg (10.6 mL)
Phenobarbital IV load (130 mg/mL)	533 mg (4.1 mL)
Diazepam – RECTAL (5 mg/mL)	10 mg (2 mL)
Midazolam (*Versed*) IM (5 mg/mL)	5.5 mg (1.1 mL)
Diazepam (*Valium*) IV (5 mg/mL)	5.5 mg (1.1 mL)

OVERDOSE

Dextrose 50% IV	27 mL (infuse over 3 min)
Naloxone IV (0.4 mg/mL)	2 mg (5 mL)
Flumazenil IV (0.1 mg/mL)	0.2 mg (2 mL)
Glucagon IV (1 mg/mL)	1 mg (1 mL)

ICP

Hypertonic Saline 3% IV	108 mL (run over 30-60 minutes)
Mannitol 20% IV (1 gm/kg)	135 mL (must filter and run over 20-30 minutes)

FLUIDS

Volume Expansion

Crystalloid (NS or LR)	530 mL
Blood (PRBC)	270 mL

Maintenance

D5NS + 20 mEq KCl/L	68 mL/hour

INTUBATION

PREMEDICATION (*For under 1 year old, for potential bradycardia, or if using ketamine.*)

Atropine (1 mg/mL)	0.5 mg (0.5 mL)

INDUCTION AGENTS (***must use both medications together***)

Midazolam (5 mg/mL)	3 mg (0.6 mL)
AND	
Fentanyl	85 mcg

PARALYTIC AGENT

Rocuronium (10 mg/mL)	29 mg (2.9 mL)

POST INTUBATION SEDATION

See next page for mixing and dosing instructions.

ANTIBIOTICS

Ceftriaxone	2000 mg	Meropenem	1160 mg
Vancomycin	540 mg	Cefepime	1450 mg
Acyclovir	540 mg		

STEROIDS

Solumedrol for bronchospasm/anaphylaxis/fluid & catecholamine resistant shock……58 mg
Dexamethasone for upper airway edema……..14 mg
Dexamethasone for suspected bacterial meningitis……...4 mg
Recommendation is due to the high incidence of HiB/HiA infection in this region.
GIVE BEFORE OR CONCURRENT WITH FIRST DOSE OF ANTIBIOTICS.

PRESSORS

DOSE	MIXING INSTRUCTIONS
Push-Dose Epinephrine Concentration: 10 mcg/mL **Dose 2 mL**	1. Draw up 1 mL of epinephrine 1:10,000 (0.1 mg/mL). 2. Mix with 9 mL of normal saline for final concentration of 10 mcg/mL. 3. Dose is 0.1 mL/kg, max 2 mL.
Norepinephrine 0.1–2 mcg/kg/min Concentration: 32 mcg/mL	1. Pull two norepinephrine 4 mg/4 mL vials and one dextrose 5% in water 250 mL bag from the Pyxis. 2. Remove and discard 8 mL from the 250 mL bag. 3. Draw up 8 mL from the two norepinephrine 4 mg/4 mL vials. 4. Inject the 8 mL into the bag. Shake the bag to mix.
Epinephrine 0.1–1 mcg/kg/min Concentration: 16 mcg/mL	1. Pull one epinephrine 30 mg/30 mL vial and one sodium chloride 0.9% 500 mL bag from the Pyxis. 2. Remove and discard 8 mL from 500 mL bag. 3. Draw up 8 mL from the epinephrine 30 mg/30 mL vial. 4. Inject the 8 mL into the bag. Shake the bag to mix.

EQUIPMENT

ET Tube	5.5 cuffed	**NP Airway**	26 French
ETT Depth	17-18 cm	**LMA**	2.5
Stylet	6-8 French	**Urinary Catheter**	12 French
Laryngoscope	2 Straight or curved	**Chest Tube**	28-32 French
Oral Airway	80 mm	**NG Tube**	14-18 French
Glidescope	GVL 2.5-3	**Intraosseous**	15 Ga

ALWAYS CHECK SERIAL GLUCOSE LEVELS IN CRITICAL PATIENTS.

Approved by YKHC MSEC 12/7/21.

PEDIATRIC CRITICAL CARE GUIDE

ORANGE

24 – 29 kg

ANMC PICU Accepting and Consult Physician 907-297-8809 ♦ LifeMed 800-478-5433 (*96)

Patient's admission weight: _____ kg

MIXING INSTRUCTIONS

Fentanyl (10 mcg/mL):

1. Remove two 250 mcg/5 mL ampules of fentanyl and one 50 mL bag of 0.9% sodium chloride from the Pyxis machine. The pharmacist must be called if this concentration is not available.
2. Withdraw and discard 10 mL from the 50 mL 0.9% sodium chloride bag, leaving 40 mL in the bag. (This is a crucial step for achieving an accurate concentration.)
3. Using a filter needle, draw 10 mL (500 mcg) from the fentanyl ampules. DO NOT INJECT INTO BAG USING FILTER NEEDLE.
4. Remove and discard the filter needle, replace with a regular needle, and inject the 10 mL (500 mcg) of fentanyl into the 0.9% sodium chloride bag.
5. Pull boluses from this infusion bag, NOT from fentanyl vials/ampules.

Midazolam for > 5 kg (1 mg/mL):

1. Remove one 10 mL vial of midazolam 5 mg/mL and one 50 mL bag of 0.9% sodium chloride from the Pyxis machine. The pharmacist must be called if this concentration is not available.
2. Withdraw and discard 10 mL from the 50 mL 0.9% sodium chloride bag and discard, leaving 40 mL in the bag. (This is a crucial step for achieving an accurate concentration.)
3. Withdraw 10 mL (50 mg) from the midazolam vial and inject into the 0.9% sodium chloride bag.
4. Pull boluses from this infusion bag, NOT from midazolam vials/ampules.

PROVIDER DOSING GUIDELINES

All dose adjustments must be ordered by the provider. Post intubation, titrate infusions and dosing to meet patient sedation needs as follows:

- Start fentanyl infusion and give Q15 minute boluses for the first hour. Overlapping boluses and infusions will accelerate achievement of steady state sedation. Midazolam can be started if blood pressure is stable.
- After an infusion has been started and several boluses have been given, reassess the level of sedation. If sedation is not adequate, the rate of infusion can be increased by 25-50% within the range on the table. This will not have an immediate effect, so give a bolus at the same time.
- May give fentanyl and/or midazolam boluses every 10-15 minutes (or sooner) as needed.
- If **hypotension is a concern**, hold or lower the midazolam dose. Fentanyl is less likely to cause hemodynamic changes.
- Boluses should be drawn up or bolused on the pump from pre-mixed bags so the same concentration is ALWAYS used.

REMEMBER

- Use boluses to rapidly increase the level of sedation.
- Patient will not have an immediate response to infusion rate changes; infusions are meant to maintain a level of sedation.
- Use lower doses of either medication if sedation is adequate.
- Fentanyl, midazolam, and pressors may be run together in the same line. However, DO NOT give a bolus in the same line as a pressor, as this would bolus the pressor as well.
- Fentanyl and midazolam are NOT compatible with bicarbonate.

Goal Dosing

Fentanyl (10 mcg/mL) – bolus dose 1-2 mcg/kg (max dose 50 mcg/bolus); infusion dose range 1-3 mcg/kg/hour.
Midazolam (1 mg/mL) – bolus dose 0.05-0.1 mg/kg (max dose 2 mg/bolus); infusion dose range 0.05-0.2 mg/kg/hour.

DRUG		24-29 kg
FENTANYL 10 mcg/mL	Bolus	30 mcg 3 mL
	Infusion	25-75 mcg/hr 2.5-7.5 mL/hr
MIDAZOLAM 1 mg/mL	Bolus	1.5 mg 1.5 mL
	Infusion	1-4 mg/hr 1-4 mL/hr

Approved by YKHC MSEC 12/7/21.

PEDIATRIC CRITICAL CARE GUIDE

GREEN

30 – 36 kg

ANMC PICU Accepting and Consult Physician 907-297-8809 ♦ LifeMed 800-478-5433 (*96)

Patient's admission weight: _____ kg

RESUSCITATION

Epinephrine IV/IO (0.1 mg/mL)	0.33 mg (3.3 mL)
Epinephrine ET (0.1 mg/mL)	3.3 mg (33 mL)
Epi-Pen Adult	1 injection
Atropine IV (1 mg/mL)	0.5 mg (0.5 mL)
Atropine ET (1 mg/mL)	1 mg (1 mL)
Sodium Bicarbonate 4.2% IV	33 mEq (66 mL)
Lidocaine 2% IV	34 mg (1.7 mL)
Lidocaine 2% ET	100 mg (5 mL)
Defibrillation	
1st dose	66 Joules
2nd dose	130 Joules
3rd dose	130-300 Joules
Synchronized cardioversion	
1st / 2nd Dose	17 Joules / 34 Joules
Adenosine IV (3 mg/mL)	
1st dose	3.3 mg (1.1 mL)
2nd dose	6.6 mg (2.2 mL)
Amiodarone IV (50 mg/mL)	165 mg (3.3 mL)
Calcium Chloride 10% IV	660 mg (6.6 mL)
Magnesium Sulfate IV (1 gm/2 mL)	1650 mg (3.3 mL)
Dextrose 50% IV	33 mL (infuse over 3 min with fluids)

SEIZURE

Lorazepam (*Ativan*) IV (2 mg/mL)	3.4 mg (1.7 mL)
Midazolam IN (*Versed*) (5 mg/mL)	6.5 mg = 1.3 mL (0.7 mL to first naris, 0.6 to other)
Levetiracetam IV (100 mg/mL)	2000 mg (20 mL)
Fosphenytoin IV load (500 mg/10 mL)	660 mg (13.2 mL)
Phenobarbital IV load (130 mg/mL)	660 mg (5.1 mL)
Diazepam – RECTAL (5 mg/mL)	10 mg (2 mL)
Midazolam (*Versed*) IM (5 mg/mL)	6.5 mg (1.3 mL)
Diazepam (*Valium*) IV (5 mg/mL)	6.5 mg (1.3 mL)

OVERDOSE

Dextrose 50% IV	33 mL (infuse over 3 min)
Naloxone IV (0.4 mg/mL)	2 mg (5 mL)
Flumazenil IV (0.1 mg/mL)	0.2 mg (2 mL)
Glucagon IV (1 mg/mL)	1 mg (1 mL)

ICP

Hypertonic Saline 3% IV	132 mL (run over 30-60 minutes)
Mannitol 20% IV (1 gm/kg)	165 mL (must filter and run over 20-30 minutes)

FLUIDS

Volume Expansion

Crystalloid (NS or LR)	660 mL
Blood (PRBC)	330 mL

Maintenance

D5NS + 20 mEq KCl/L	73 mL/hour

INTUBATION

PREMEDICATION (*For under 1 year old, for potential bradycardia, or if using ketamine.*)

Atropine (1 mg/mL)	0.5 mg (0.5 mL)

INDUCTION AGENTS ***(must use both medications together)***

Midazolam (5 mg/mL)	3.5 mg (0.7 mL)
AND	
Fentanyl	100 mcg

PARALYTIC AGENT

Rocuronium (10 mg/mL)	36 mg (3.6 mL)

POST INTUBATION SEDATION

See next page for mixing and dosing instructions.

ANTIBIOTICS

Ceftriaxone	2000 mg	Meropenem	1440 mg
Vancomycin	660 mg	Cefepime	1800 mg
Acyclovir	660 mg		

STEROIDS

Solumedrol for bronchospasm/anaphylaxis/fluid & catecholamine resistant shock……70 mg
Dexamethasone for upper airway edema……..16 mg
Dexamethasone for suspected bacterial meningitis……...5 mg
Recommendation is due to the high incidence of HiB/HiA infection in this region.
GIVE BEFORE OR CONCURRENT WITH FIRST DOSE OF ANTIBIOTICS.

PRESSORS

DOSE	MIXING INSTRUCTIONS
Push-Dose Epinephrine Concentration: 10 mcg/mL **Dose 2 mL**	1. Draw up 1 mL of epinephrine 1:10,000 (0.1 mg/mL). 2. Mix with 9 mL of normal saline for final concentration of 10 mcg/mL. 3. Dose is 0.1 mL/kg, max 2 mL.
Norepinephrine 0.1–2 mcg/kg/min Concentration: 32 mcg/mL	1. Pull two norepinephrine 4 mg/4 mL vials and one dextrose 5% in water 250 mL bag from the Pyxis. 2. Remove and discard 8 mL from the 250 mL bag. 3. Draw up 8 mL from the two norepinephrine 4 mg/4 mL vials. 4. Inject the 8 mL into the bag. Shake the bag to mix.
Epinephrine 0.1–1 mcg/kg/min Concentration: 16 mcg/mL	1. Pull one epinephrine 30 mg/30 mL vial and one sodium chloride 0.9% 500 mL bag from the Pyxis. 2. Remove and discard 8 mL from 500 mL bag. 3. Draw up 8 mL from the epinephrine 30 mg/30 mL vial. 4. Inject the 8 mL into the bag. Shake the bag to mix.

EQUIPMENT

ET Tube	6.0-6.5 cuffed	**NP Airway**	26 French
ETT Depth	18.5-19.5 cm	**LMA**	3
Stylet	6-8 French	**Urinary Catheter**	12 French
Laryngoscope	3 Straight or curved	**Chest Tube**	32-38 French
Oral Airway	80 mm	**NG Tube**	16-18 French
Glidescope	GVL 3	**Intraosseous**	15 Ga

ALWAYS CHECK SERIAL GLUCOSE LEVELS IN CRITICAL PATIENTS.

Approved by YKHC MSEC 12/7/21.

PEDIATRIC CRITICAL CARE GUIDE

GREEN

30 – 36 kg

ANMC PICU Accepting and Consult Physician 907-297-8809 ♦ LifeMed 800-478-5433 (*96)

Patient's admission weight: _____ kg

MIXING INSTRUCTIONS

Fentanyl (10 mcg/mL):

1. Remove two 250 mcg/5 mL ampules of fentanyl and one 50 mL bag of 0.9% sodium chloride from the Pyxis machine. The pharmacist must be called if this concentration is not available.
2. Withdraw and discard 10 mL from the 50 mL 0.9% sodium chloride bag, leaving 40 mL in the bag. (This is a crucial step for achieving an accurate concentration.)
3. Using a filter needle, draw 10 mL (500 mcg) from the fentanyl ampules. DO NOT INJECT INTO BAG USING FILTER NEEDLE.
4. Remove and discard the filter needle, replace with a regular needle, and inject the 10 mL (500 mcg) of fentanyl into the 0.9% sodium chloride bag.
5. Pull boluses from this infusion bag, NOT from fentanyl vials/ampules.

Midazolam for > 5 kg (1 mg/mL):

1. Remove one 10 mL vial of midazolam 5 mg/mL and one 50 mL bag of 0.9% sodium chloride from the Pyxis machine. The pharmacist must be called if this concentration is not available.
2. Withdraw and discard 10 mL from the 50 mL 0.9% sodium chloride bag and discard, leaving 40 mL in the bag. (This is a crucial step for achieving an accurate concentration.)
3. Withdraw 10 mL (50 mg) from the midazolam vial and inject into the 0.9% sodium chloride bag.
4. Pull boluses from this infusion bag, NOT from midazolam vials/ampules.

PROVIDER DOSING GUIDELINES

All dose adjustments must be ordered by the provider. Post intubation, titrate infusions and dosing to meet patient sedation needs as follows:

- Start fentanyl infusion and give Q15 minute boluses for the first hour. Overlapping boluses and infusions will accelerate achievement of steady state sedation. Midazolam can be started if blood pressure is stable.
- After an infusion has been started and several boluses have been given, reassess the level of sedation. If sedation is not adequate, the rate of infusion can be increased by 25-50% within the range on the table. This will not have an immediate effect, so give a bolus at the same time.
- May give fentanyl and/or midazolam boluses every 10-15 minutes (or sooner) as needed.
- If **hypotension is a concern**, hold or lower the midazolam dose. Fentanyl is less likely to cause hemodynamic changes.
- Boluses should be drawn up or bolused on the pump from pre-mixed bags so the same concentration is ALWAYS used.

REMEMBER

- Use boluses to rapidly increase the level of sedation.
- Patient will not have an immediate response to infusion rate changes; infusions are meant to maintain a level of sedation.
- Use lower doses of either medication if sedation is adequate.
- Fentanyl, midazolam, and pressors may be run together in the same line. However, DO NOT give a bolus in the same line as a pressor, as this would bolus the pressor as well.
- Fentanyl and midazolam are NOT compatible with bicarbonate.

Goal Dosing

Fentanyl (10 mcg/mL) – bolus dose 1-2 mcg/kg (max dose 50 mcg/bolus); infusion dose range 1-3 mcg/kg/hour.
Midazolam (1 mg/mL) – bolus dose 0.05-0.1 mg/kg (max dose 2 mg/bolus); infusion dose range 0.05-0.2 mg/kg/hour.

DRUG		30-36 kg
FENTANYL 10 mcg/mL	Bolus	33 mcg 3.3 mL
	Infusion	30-90 mcg/hr 3-9 mL/hr
MIDAZOLAM 1 mg/mL	Bolus	2 mg 2 mL
	Infusion	1.5-4 mg/hr 1.5-4 mL/hr

Approved by YKHC MSEC 12/7/21.