✦ BioTel PEDI-Guide© (Pediatric Emergency Drug & Interventions-Guide©)

Version 1.1

November 12, 2018

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✦ BioTel PEDI-Guide© (Pediatric Emergency Drug & Interventions-Guide©)

Purpose: To facilitate timely, safe administration of pediatric emergency medications using pre-calculated doses based on patient weight, length or age in order to minimize incidence of medication dosing errors
Inclusion Criteria: Pediatric patients less than 14 years of age
Exclusion Criteria: Adult patients
Refer to: BioTel Medication Administration Cross-Check (MACC); symptom-specific CPGs; Universal Care – Adult; Universal Care – Pediatric; and BioTel Formulary Drug Sheets

Background:

A. The BioTel PEDI-Guide© adapts elements of the Broselow™, color-coded Pediatric Emergency Reference Tape ("Broselow Tape") to the UTSW/Parkland BioTel EMS System formulary, AND it adds reference to patient **age** zones for circumstances when a critically-ill infant or child cannot be measured.
B. The goal is to reduce the number of calculations needed for dosing pediatric emergency medications.
C. **CRITICAL NOTE: As with any pre-calculated dosing system, accurate use of the BioTel PEDI-Guide© depends on knowing and rechecking the MEDICATION CONCENTRATION – *this information MUST be verified prior to EVERY medication administration*.** ⚠

Overview:

A. The BioTel PEDI-Guide© supplements the full BioTel CPGs, the Formulary Drug Sheets, and the BioTel MACC – it does not replace these documents.
B. Medication volumes in the BioTel PEDI-Guide© have been rounded in most cases to the nearest 1/10th of a milliliter (mL) for ease of administration, consistent with accuracy allowable by standard syringes:
   1. As such, PEDI-Guide© doses may vary slightly from precise, "mg/kg", manually-calculated doses.
C. The *current edition* Broselow Tape (or other approved, length-based, pediatric resuscitation tape) should be available on all BioTel EMS units to assist with measurement of pediatric patient length, as needed.
D. Always maintain situational awareness and take time to "Stop and Verify" every medication administration:
   1. Many medications are available in different **concentrations** and different **size** vials/ampules.
   2. Many medications are administered at different **doses** for different **clinical indications** and/or different **routes of administration**, especially for pediatric patients.
E. In addition to the BioTel MACC, pediatric medication preparation entails three steps:
   1. Step 1: SELECT the proper color chart based on weight (preferred), length (2nd choice) or age.
   2. Step 2: DILUTE (if indicated), using the dilution instructions on the back of each chart.
   3. Step 3: REDUCE the volume of drug administered (if indicated), using the Stopcock Method.

Step 1: SELECT the Color-Coded BioTel PEDI-Guide© Chart:

1. Select the appropriate BioTel PEDI-Guide© chart for infants/children **up to approximately 13 years of age (approximately 3 to 50 kg)**, using the following priorities:
   A. Use the patient's **weight** – *if known* – to select the PEDI-Guide© chart that matches the child's weight.
   B. If weight is unknown, use the Broselow Tape, when possible, to identify the color-coded **length** zone:
      i. Measure from the correct end of the tape top of head to child's heels (not to toes).
      ii. If the child appears overweight, consider using 1 zone higher for dosing only (*not equipment*).
   C. If weight is unknown and the length cannot be measured (e.g. respiratory distress or seizure and unable to lay flat on the tape), select the chart that matches the child's approximate **age**.
      i. In extremely time-sensitive circumstances, select the appropriate AGE chart for immediate care; switch to weight- or length-based chart when/if that information becomes available.
2. For **newly born infants less than 3 kg**, refer to the Neonatal CPG and consult BioTel for guidance.
3. For **older children approximately 12-13 years of age and weighing more than 37 kg**, use the patient's actual weight, if known, or refer to the BLACK chart in the BioTel PEDI-Guide©, if the weight is unknown.
4. For adolescents older than 14 years of age, use adult dosing per BioTel CPGs (unless specified otherwise).

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BioTel PEDI-Guide© Color Zones Table

Zone	WEIGHT	AGE	HR (per min)	RR (per min)	SBP** (mmHg)	Handtevy Weight	Age
GRAY	3, 4 and 5 kg	Less than 3 mo	100-180	30-60	At least 60		
PINK	6-7 kg	3-5 mo	100-180	30-45	At least 70		
RED	8-9 kg	6-11 mo	100-180	30-45	At least 70		
PURPLE	10-11 kg	12-23 mo	80-150	25-40	At least 75	10 kg	1 yr
YELLOW	12-14 kg	24-35 mo	80-150	25-40	At least 75		
WHITE	15-18 kg	3-4 yr	80-140	22-35	At least 75	15 kg	3 yr
BLUE	19-23 kg	5-6 yr	70-120	18-30	At least 80	20 kg	5 yr
ORANGE	24-29 kg	7-9 yr	70-120	18-30	At least 85	25 kg	7 yr
GREEN	30-36 kg	10-11 yr	60-100	12-20	At least 90	30 kg	9 yr
BLACK	37-50 kg	12-13 yr	60-100	12-20	At least 100		

Adapted from Broselow®-Luten Zones, with permission of Armstrong Medical Industries, Inc.

Vital sign ranges are approximate

Step 2: DILUTE Medication (When Indicated) To Achieve the Correct Concentration:

1. **The medication VOLUME to be administered (mL) is listed in the far-right, blue-shaded column.**
2. **Certain medications listed in bold, green font and "(D)" must be DILUTED before administration.**
3. **Dilution instructions are on the back side of each BioTel PEDI-Guide© Chart.**
4. The ***CONCENTRATION OF ALL MEDICATIONS MUST BE VERIFIED before administration***.
5. **Whenever possible, every syringe should be labeled with the drug name and concentration.**
6. The BioTel MACC should be followed for every medication dose, every time.
7. Several emergency interventions and equipment sizes are also included on each PEDI-Guide© chart.
8. For vasoactive drips, use the dilution listed on the chart and contact BioTel for specific dosing guidance.

Step 3: REDUCE the Volume of Medication (When Indicated), Using Stopcock Method:

1. For infants and smaller children, safe and accurate measurement of small drug volumes from a larger volume drug volume necessitates reduction using a 3-way stopcock and a small (1-mL or 3-mL) syringe.
2. **The medication VOLUME to be administered (mL) is listed in the far-right, blue-shaded column.**
3. **Certain medications listed in bold, green font and "(R)" must be REDUCED before administration.**
   A. If **not** listed in bold, green font with "(R)", medications may be drawn directly from the vial, without the stopcock reduction procedure, using a 1-mL, 3-mL or 5-mL syringe, as needed
4. The ***DOSE and VOLUME OF ALL MEDICATIONS MUST BE VERIFIED*** before administration.
5. Attach a 3-way stopcock to the labeled medication syringe (if dilution was performed) or pre-filled syringe:

6. ***Flush the stopcock with the drug syringe, to fill dead space and eliminate air bubbles.***

Continued on the next page…

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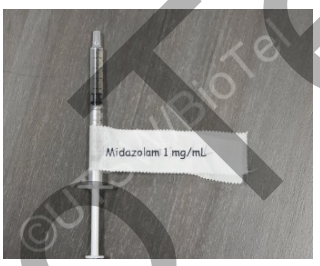
7. Attach a 1-mL (or rarely, if indicated, a 3-mL) syringe to another stopcock port:

8. Use the stopcock to draw up the correct drug volume into the 1-mL syringe:

9. Detach the 1-mL (or 3-mL) syringe from the stopcock/10-mL syringe assembly and LABEL it:



10. The ***DOSE (and volume and concentration) MUST BE VERIFIED before administration***.

11. **Administer the drug to the patient ONLY from the 1-mL (or 3-mL) syringe:**

12. For IV administration, flush the IV line with up to 5-10 mL of Normal Saline.

13. **NOTE:** ONLY the (labeled) 1-mL (or 3-mL) syringe should be used to administer medication!

14. **NOTE:** The large syringe or stopcock should NEVER be used directly to administer medication:

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Weight (kg): 3.0 – 3.9		Weight (lb): 6.6 – 8.5	
Age: Less than 1 month		Length: 47 – 52 cm	
Normal Vital Signs:	**HR 100 - 180**	**RR 30 - 60**	**SBP At least 60**
DEFIBRILLATION: 6 → 12 → 12 - 30 Joules		CARDIOVERSION: 3 → 6 → 12 Joules	
Newly-born infant CPR: 3:1 Ratio (Chest Compressions: Ventilations) **120 events per minute (90 compressions & 30 gentle ventilations)**			
OPA: 50 mm; NPA: 14 Fr	Laryngoscope: 1 Straight	Fluid bolus (20 mL/kg): 60 mL IV push	
ETT: 3.5 Uncuffed/ 3.0 Cuffed; Depth: 9 – 9.5 cm		King: Size 0; I-Gel: Size 1 Pink	

Avoid overventilation
Refer to Neonatal CPG for detailed resuscitation guidelines
Refer to Universal Care - Pediatric and Cardiac Arrest CPG for additional guidance

Medication Administration

NAME	CONCENTRATION	DOSE	ROUTE	VOLUME
Adenosine 1st Dose	3 mg/mL	0.3 mg	IV/IO	0.1 mL
Adenosine 2nd Dose	3 mg/mL	0.6 mg	IV/IO	0.2 mL
Albuterol NEB	2.5 mg/3mL	2.5 mg	NEB	3 mL
Amiodarone	50 mg/mL	15 mg	IV/IO	0.3 mL
Atropine - Bradycardia/PAI	0.1 mg/mL	0.05 mg	IV/IO	0.5 mL
Calcium Chloride	100 mg/mL	50 mg	IV/IO	0.5 mL
Dextrose 10%	0.1 g/mL	0.6 g	IV/IO	6 mL slow IVP
Dexamethasone - Allergic	4 mg/mL	2 mg	IV/IO/IM/PO	0.5 mL
Diazepam	5 mg/mL	0.5 mg	IV/IO	0.1 mL
Diphenhydramine	50 mg/mL	5 mg	IV/IO/IM	0.1 mL
Drips (Dopa/Epi/Norepi)	Refer to Dilution Chart on back and contact BioTel			
Epi 1:1000 IM	**1 mg/mL**	0.05 mg	**IM**	0.05 mL
Epi 1:10,000 IV	**0.1 mg/mL**	0.05 mg	**IV/IO**	0.5 mL
Epi Auto-Injector Junior	Not applicable unless syringe-dose epi is unavailable			
Epi 1:1000 NEB	1 mg/mL	3 mg	NEB	3 mL
Etomidate	2 mg/mL	1 mg	IV/IO	0.5 mL
Fentanyl	50 mcg/mL	5 mcg	IV/IO/IM/IN	0.1 mL
Glucagon	Contact BioTel for authorization			
Glucose Gel	15 g/37.5 mL tube	0.6 g	BUCCAL	1.5 mL
Hydroxocobalamin	5 g/200 mL	312.5 mg	IV	**See back**
Lidocaine 2% - Cardiac	20 mg/mL	4 mg	IV/IO	0.2 mL
Magnesium Sulfate	**See Dilution Chart**	120 mg	IV/IO	**See back**
Methylprednisolone	**125 mg/10 mL**	6.25 mg	**IV/IO**	**0.5 mL (D/R)**
Methylprednisolone	125 mg/2 mL	6.25 mg	**IM**	0.1 mL
Midazolam	**1 mg/mL**	0.6 mg	IV/IO/IM/IN	**0.6 mL (D/R)**
Morphine	**1 mg/mL**	0.3 mg	IV/IO/IM	**0.3 mL (D/R)**
Naloxone	1 mg/mL	0.5 mg	IV/IO/IM/IN	0.5 mL
Sodium Bicarbonate 8.4%	1 mEq/mL	3 mEq	IV/IO	3 mL

(D) = Must be DILUTED (R) = Must be volume-REDUCED

Less than 1 month (6.6 – 8.5 lb) 3.0 – 3.9 kg

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Medications not indicated: Ipratropium, Ketamine, Ondansetron

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Medication Dilution Instructions - These depend on proper concentration

ANY variance to the starting medication concentration will change the dilution recipe!

Some medications must be DILUTED before administration; some must be volume-REDUCED

Some medications must be BOTH DILUTED *AND* volume-REDUCED

(D) = DILUTION (R) = Volume REDUCTION

NAME ROUTE & INDICATION	STARTING CONCENTRATION	DESIRED CONCENTRATION	DILUTION RECIPE
Hydroxocobalamin - IV	Run 15 gtt/min **for 15 min** (1/16 vial or 12.5 mL). **Use 20 gtt/mL set in kit. Set timer!**		
Magnesium Sulfate (D) - IV/IO: Torsades de pointes WITH Pulse or **Respiratory Distress			
	5 g/10 mL	**10 mg/mL**	Add 2 mL (1 g) to 100 mL NS Run 48 gtt/min (12 mL) **for 15 min** **Use 60 gtt/mL set. Set Timer!**
**For Respiratory Distress - Contact BioTel for authorization			
Magnesium Sulfate (D) - IV/IO: PULSELESS Torsades de pointes			
	5 g/10 mL	**50 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL (0.5g) mag sulfate Give 2.4 mL, push slowly over 2 min
Methylprednisolone (D/R) - IV/IO	125 mg/2 mL	**125 mg/10 mL**	Reconstitute 125 mg in 2 mL NS Waste 2 mL from 10-mL NS flush Replace with 2 mL of drug Reduce & administer 0.5 mL
Midazolam (D/R) - IV/IO/IM/IN	5 mg/mL	**1 mg/mL**	Waste 6 mL from 10-mL NS flush Replace with 1 mL of midazolam Reduce & administer 0.6 mL **PAI IV/IO only **For PAI use half dose: Give 0.3 mL
Morphine (D/R) - IV/IO/IM	10 mg/mL	**1 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL of morphine Reduce & administer 0.3 mL
Dopamine Drip	Waste 50 mL from 250 mL NS bag; Replace with 50 mL (80 mg) of dopamine drawn from a 1,600 mcg/mL premixed dopamine bag; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): 5: 3 gtt/min | **7.5:** 4 gtt/min | **10:** 6 gtt/min | **12.5:** 7 gtt/min | **15:** 8 gtt/min | **20:** 11 gtt/min			
Epinephrine Drip	Add **10 mL (1 mg) of epi 0.1 mg/mL** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): 0.1: 5 gtt/min | **0.2:** 9 gtt/min | **0.3:** 14 gtt/min | **0.4:** 18 gtt/min | **0.5:** 23 gtt/min **0.6:** 27 gtt/min | **0.7:** 32 gtt/min | **0.8:** 36 gtt/min | **0.9:** 41 gtt/min | **1:** 45 gtt/min			
Norepinephrine Drip	Add **1 mL (1 mg)** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): 0.1: 5 gtt/min | **0.2:** 9 gtt/min | **0.3:** 14 gtt/min | **0.4:** 18 gtt/min | **0.5:** 23 gtt/min **0.6:** 27 gtt/min | **0.7:** 32 gtt/min | **0.8:** 36 gtt/min | **0.9:** 41 gtt/min | **1:** 45 gtt/min			

Less than 1 month (6.6 – 8.5 lb) 3.0 – 3.9 kg

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Weight (kg): 4.0 – 4. 9		Weight (lb): 8.6 – 10.8	
Age: Less than 2 months		Length: 52 – 55 cm	
Normal Vital Signs:	**HR 100 - 180**	**RR 30 - 60**	**SBP at least 60**
DEFIBRILLATION: 8 → 16 → 16 - 40 Joules		CARDIOVERSION: 4 → 8 → 16 Joules	

Newly-born infant CPR: 3:1 Ratio (Chest Compressions: Ventilations)
120 events per minute (90 compressions & 30 gentle ventilations)

OPA: 50 mm; NPA: 14 Fr	Laryngoscope: 1 Straight	Fluid bolus (20 mL/kg): 80 mL IV push
ETT: 3.5 Uncuffed/ 3.0 Cuffed; Depth: 9.5 – 10 cm		King: Size 0; I-Gel: Size 1 Pink

Avoid overventilation
Refer to Neonatal CPG for detailed resuscitation guidelines
Refer to Universal Care - Pediatric and Cardiac Arrest CPG for additional guidance

Medication Administration

NAME	CONCENTRATION	DOSE	ROUTE	VOLUME
Adenosine 1st Dose	3 mg/mL	0.3 mg	IV/IO	0.1 mL
Adenosine 2nd Dose	3 mg/mL	0.6 mg	IV/IO	0.2 mL
Albuterol NEB	2.5 mg/3mL	2.5 mg	NEB	3 mL
Amiodarone	50 mg/mL	20 mg	IV/IO	0.4 mL
Atropine - Bradycardia/PAI	0.1 mg/mL	0.1 mg	IV/IO	1 mL
Calcium Chloride	100 mg/mL	100 mg	IV/IO	1 mL
Dextrose 10%	0.1 g/mL	0.8 g	IV/IO	8 mL slow IVP
Dexamethasone - Allergic	4 mg/mL	2.4 mg	IV/IO/IM/PO	0.6 mL
Diazepam	5 mg/mL	1 mg	IV/IO	0.2 mL
Diphenhydramine	50 mg/mL	5 mg	IV/IO/IM	0.1 mL
Drips (Dopa/Epi/Norepi)	Refer to Dilution Chart on back and contact BioTel			
Epi 1:1000 IM	**1 mg/mL**	0.05 mg	**IM**	0.05 mL
Epi 1:10,000 IV	**0.1 mg/mL**	0.05 mg	**IV/IO**	0.5 mL
Epi Auto-Injector Junior	Not applicable unless syringe-dose epi is unavailable			
Epi 1:1000 NEB	1 mg/mL	3 mg	NEB	3 mL
Etomidate	2 mg/mL	1.2 mg	IV/IO	0.6 mL
Fentanyl	50 mcg/mL	5 mcg	IV/IO/IM/IN	0.1 mL
Glucagon	1 mg/mL	0.5 mg	IV/IO/IM/IN	0.5 mL
Glucose Gel	15 g/37.5 mL tube	2 g	BUCCAL	5 mL
Hydroxocobalamin	5 g/200 mL	312.5 mg	IV	**See back**
Lidocaine 2% - Cardiac	20 mg/mL	4 mg	IV/IO	0.2 mL
Magnesium Sulfate	**See Dilution Chart**	160 mg	IV/IO	**See back**
Methylprednisolone	**125 mg/10 mL**	6.25 mg	**IV/IO**	**0.5 mL (D/R)**
Methylprednisolone	125 mg/2 mL	6.25 mg	**IM**	0.1 mL
Midazolam	**1 mg/mL**	0.8 mg	IV/IO/IM/IN	**0.8 mL (D/R)**
Morphine	**1 mg/mL**	0.4 mg	IV/IO/IM	**0.4 mL (D/R)**
Naloxone	1 mg/mL	0.5 mg	IV/IO/IM/IN	0.5 mL
Sodium Bicarbonate 8.4%	1 mEq/mL	4 mEq	IV/IO	4 mL

(D) = Must be DILUTED (R) = Must be volume-REDUCED

Less than 2 months (8.6 – 10.8 lb) 4.0 – 4.9 kg

Medications not indicated: Ipratropium, Ketamine, Ondansetron

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Medication Dilution Instructions - These depend on proper concentration

ANY variance to the starting medication concentration will change the dilution recipe!

Some medications must be DILUTED before administration; some must be volume-REDUCED

Some medications must be BOTH DILUTED *AND* volume-REDUCED

(D) = DILUTION (R) = Volume REDUCTION

NAME ROUTE & INDICATION	STARTING CONCENTRATION	DESIRED CONCENTRATION	DILUTION RECIPE
Hydroxocobalamin - IV	Run 15 gtt/min **for 15 min** (1/16 vial or 12.5 mL). **Use 20 gtt/mL set in kit. Set timer!**		
Magnesium Sulfate (D) - IV/IO: Torsades de pointes WITH Pulse or **Respiratory Distress			
	5 g/10 mL	**10 mg/mL**	Add 2 mL (1 g) to 100 mL NS Run 64 gtt/min (16 mL) **for 15 min** **Use 60 gtt/mL set. Set Timer!**
**Respiratory Distress - Contact BioTel for authorization			
Magnesium Sulfate (D) - IV/IO: PULSELESS Torsades de pointes			
	5 g/10 mL	**50 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL (0.5g) mag sulfate Give 3.2 mL, push slowly over 2 min
Methylprednisolone (D/R) - IV/IO	125 mg/2 mL	**125 mg/10 mL**	Reconstitute 125 mg in 2 mL NS Waste 2 mL from 10-mL NS flush Replace with 2 mL of drug Reduce & administer 0.5 mL
Midazolam (D/R) - IV/IO/IM/IN	5 mg/mL	**1 mg/mL**	Waste 6 mL from 10-mL NS flush Replace with 1 mL of midazolam Reduce & administer 0.8 mL **PAI IV/IO only **For PAI use half dose: Give 0.4 mL
Morphine (D/R) - IV/IO/IM	10 mg/mL	**1 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL of morphine Reduce & administer 0.4 mL
Dopamine Drip	Waste 50 mL from 250 mL NS bag; Replace with 50 mL (80 mg) of dopamine drawn from a 1,600 mcg/mL premixed dopamine bag; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): 5: 4 gtt/min | **7.5:** 6 gtt/min | **10:** 8 gtt/min | **12.5:** 9 gtt/min | **15:** 11 gtt/min | **20:** 15 gtt/min			
Epinephrine Drip	Add **10 mL (1 mg) of epi 0.1 mg/mL** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): 0.1: 6 gtt/min | **0.2:** 12 gtt/min | **0.3:** 18 gtt/min | **0.4:** 24 gtt/min | **0.5:** 30 gtt/min **0.6:** 36 gtt/min | **0.7:** 42 gtt/min | **0.8:** 48 gtt/min | **0.9:** 54 gtt/min | **1:** 60 gtt/min			
Norepinephrine Drip	Add **1 mL (1 mg)** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): 0.1: 6 gtt/min | **0.2:** 12 gtt/min | **0.3:** 18 gtt/min | **0.4:** 24 gtt/min | **0.5:** 30 gtt/min **0.6:** 36 gtt/min | **0.7:** 42 gtt/min | **0.8:** 48 gtt/min | **0.9:** 54 gtt/min | **1:** 60 gtt/min			

Less than 2 months (8.6 – 10.8 lb) 4.0 – 4.9 kg

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Weight (kg): 5.0 – 5. 9		Weight (lb): 11 – 13	
Age: Less than 3 months		Length: 55 – 58 cm	
Normal Vital Signs:	**HR 100 - 180**	**RR 30 - 60**	**SBP At least 60**
DEFIBRILLATION: 10 → 20 → 20 - 50 Joules		CARDIOVERSION: 5 → 10 → 20 Joules	

2-Rescuer Infant CPR: 15:2 Ratio (Chest Compressions: Ventilations)
Compression Rate: 100 – 120/minute; Pause for breaths

OPA: 50 mm; NPA: 14 Fr	Laryngoscope: 1 Straight	Fluid bolus (20 mL/kg): 100 mL
ETT: 3.5 Uncuffed/ 3.0 Cuffed; Depth: 10 – 10.5 cm		King: Size 1 White; I-Gel: Size 1.5 Blue

Avoid overventilation
Refer to Universal Care - Pediatric and Cardiac Arrest CPG for additional guidance

Medication Administration

NAME	CONCENTRATION	DOSE	ROUTE	VOLUME
Adenosine 1st Dose	3 mg/mL	0.6 mg	IV/IO	0.2 mL
Adenosine 2nd Dose	3 mg/mL	1.2 mg	IV/IO	0.4 mL
Albuterol NEB	2.5 mg/3mL	2.5 mg	NEB	3 mL
Amiodarone	50 mg/mL	25 mg	IV/IO	0.5 mL
Atropine - Bradycardia/PAI	0.1 mg/mL	0.1 mg	IV/IO	1 mL
Calcium Chloride	100 mg/mL	100 mg	IV/IO	1 mL
Dextrose 10%	0.1 g/mL	1 g	IV/IO	10 mL slow IVP
Dexamethasone - Allergic	4 mg/mL	3.2 mg	IV/IO/IM/PO	0.8 mL
Diazepam	5 mg/mL	1 mg	IV/IO	0.2 mL
Diphenhydramine	50 mg/mL	5 mg	IV/IO/IM	0.1 mL
Drips (Dopa/Epi/Norepi)	Refer to Dilution Chart on back and contact BioTel			
Epi 1:1000 IM	**1 mg/mL**	0.05 mg	**IM**	0.05 mL
Epi 1:10,000 IV	**0.1 mg/mL**	0.05 mg	**IV/IO**	0.5 mL
Epi Auto-Injector Junior	Not applicable unless syringe-dose epi is unavailable			
Epi 1:1000 NEB	1 mg/mL	3 mg	NEB	3 mL
Etomidate	2 mg/mL	1.6 mg	IV/IO	0.8 mL
Fentanyl	50 mcg/mL	5 mcg	IV/IO/IM/IN	0.1 mL
Glucagon	1 mg/mL	0.5 mg	IV/IO/IM/IN	0.5 mL
Glucose Gel	15 g/37.5 mL tube	2 g	BUCCAL	5 mL
Hydroxocobalamin	5 g/200 mL	312.5 mg	IV	**See back**
Lidocaine 2% - Cardiac	20 mg/mL	4 mg	IV/IO	0.2 mL
Magnesium Sulfate	**See Dilution Chart**	200 mg	IV/IO	**See back**
Methylprednisolone	**125 mg/10 mL**	12.5 mg	**IV/IO**	**1 mL (D)**
Methylprednisolone	125 mg/2 mL	12.5 mg	**IM**	0.2 mL
Midazolam	**1 mg/mL**	1 mg	IV/IO/IM/IN	**1 mL (D/R)**
Morphine	**1 mg/mL**	0.5 mg	IV/IO/IM	**0.5 mL (D/R)**
Naloxone	1 mg/mL	0.5 mg	IV/IO/IM/IN	0.5 mL
Sodium Bicarbonate 8.4%	1 mEq/mL	5 mEq	IV/IO	5 mL

(D) = Must be DILUTED (R) = Must be volume-REDUCED

Less than 3 months (11 – 13 lb) 5.0 – 5.9 kg

Medications not indicated: Ipratropium, Ketamine, Ondansetron

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Medication Dilution Instructions - These depend on proper concentration

ANY variance to the starting medication concentration will change the dilution recipe!

Some medications must be DILUTED before administration; some must be volume-REDUCED

Some medications must be BOTH DILUTED *AND* volume-REDUCED

(D) = DILUTION (R) = Volume REDUCTION

NAME ROUTE & INDICATION	STARTING CONCENTRATION	DESIRED CONCENTRATION	DILUTION RECIPE
Hydroxocobalamin - IV	Run 15 gtt/min **for 15 min** (1/16 vial or 12.5 mL). **Use 20 gtt/mL set in kit. Set timer!**		
Magnesium Sulfate (D) - IV/IO: Torsades de pointes WITH Pulse or **Respiratory Distress			
	5 g/10 mL	**10 mg/mL**	Add 2 mL (1 g) to 100 mL NS Run 80 gtt/min (20 mL) **for 15 min** **Use 60 gtt/mL set. Set Timer!**
**For Respiratory Distress - Contact BioTel for authorization			
Magnesium Sulfate (D) - IV/IO: PULSELESS Torsades de pointes			
	5 g/10 mL	**50 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL (0.5g) mag sulfate Give 4 mL, push slowly over 2 min
Methylprednisolone (D) - IV/IO	125 mg/2 mL	**125 mg/10 mL**	Reconstitute 125 mg in 2 mL NS Waste 2 mL from 10-mL NS flush Replace with 2 mL of drug Administer 1 mL
Midazolam (D/R) - IV/IO/IM/IN	5 mg/mL	**1 mg/mL**	Waste 6 mL from 10-mL NS flush Replace with 1 mL of midazolam Reduce & administer 1 mL **PAI IV/IO only **For PAI use half dose: Give 0.5 mL
Morphine (D/R) - IV/IO/IM	10 mg/mL	**1 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL of morphine Reduce & administer 0.5 mL
Dopamine Drip	Waste 50 mL from 250 mL NS bag; Replace with 50 mL (80 mg) of dopamine drawn from a 1,600 mcg/mL premixed dopamine bag; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): 5: 5 gtt/min | **7.5:** 7 gtt/min | **10:** 9 gtt/min | **12.5:** 12 gtt/min | **15:** 14 gtt/min | **20:** 19 gtt/min			
Epinephrine Drip	Add **10 mL (1 mg) of epi 0.1 mg/mL** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): 0.1: 8 gtt/min | **0.2:** 15 gtt/min | **0.3:** 23 gtt/min | **0.4:** 30 gtt/min | **0.5:** 38 gtt/min **0.6:** 45 gtt/min | **0.7:** 53 gtt/min | **0.8:** 60 gtt/min | **0.9:** 68 gtt/min | **1:** 75 gtt/min			
Norepinephrine Drip	Add **1 mL (1 mg)** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): 0.1: 8 gtt/min | **0.2:** 15 gtt/min | **0.3:** 23 gtt/min | **0.4:** 30 gtt/min | **0.5:** 38 gtt/min **0.6:** 45 gtt/min | **0.7:** 53 gtt/min | **0.8:** 60 gtt/min | **0.9:** 68 gtt/min | **1:** 75 gtt/min			

Less than 3 months

(11 – 13 lb)

5.0 – 5.9 kg

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Weight (kg): 6.0 – 7.9		Weight (lb): 13.2 – 15.4	
Age: 3 – 5 months		Length: 59 – 67 cm	
Normal Vital Signs:	**HR 100 - 180**	**RR 30 - 45**	**SBP At least 70**
DEFIBRILLATION: 13 → 26 → 26 - 60 Joules		CARDIOVERSION: 7 → 13 → 26 Joules	
OPA: 50 mm; NPA: 14 Fr	Laryngoscope: 1 Straight	Fluid Bolus (20 mL/kg): 150 mL	
ETT: 3.5 Uncuffed/ 3.0 Cuffed; Depth: 10 – 10.5 cm		King: Size 1 White; I-Gel: Size 1.5 Blue	

Medication Administration

NAME	CONCENTRATION	DOSE	ROUTE	VOLUME
Adenosine 1st dose	3 mg/mL	0.6 mg	IV/IO	0.2 mL
Adenosine 2nd dose	3 mg/mL	1.2 mg	IV/IO	0.4 mL
Albuterol NEB	2.5 mg/3mL	2.5 mg	NEB	3 mL
Amiodarone	50 mg/mL	35 mg	IV/IO	0.7 mL
Atropine - Bradycardia/PAI	0.1 mg/mL	0.15 mg	IV/IO	1.5 mL
Calcium Chloride	100 mg/mL	150 mg	IV/IO	1.5 mL
Dextrose 10%	0.1 g/mL	1.5 g	IV/IO	15 mL slow IVP
Dexamethasone - Allergic	4 mg/mL	4 mg	IV/IO/IM/PO	1 mL
Diazepam	5 mg/mL	1.5 mg	IV/IO	0.3 mL
Diphenhydramine	50 mg/mL	5 mg	IV/IO/IM	0.1 mL
Drips (Dopa/Epi/Norepi)	Refer to Dilution Chart on back and contact BioTel			
Epi 1:1000 IM	**1 mg/mL**	0.1 mg	**IM**	0.1 mL
Epi 1:10,000 IV	**0.1 mg/mL**	0.1 mg	**IV/IO**	1 mL
Epi Auto-Injector Junior	Brand dependent	0.15 mg	IM	Up to 3 units
Epi 1:1000 NEB	1 mg/mL	3 mg	NEB	3 mL
Etomidate	2 mg/mL	2 mg	IV/IO	1 mL
Fentanyl	50 mcg/mL	10 mcg	IV/IO/IM/IN	0.2 mL
Glucagon	1 mg/mL	0.5 mg	IV/IO/IM/IN	0.5 mL
Glucose Gel	15 g/37.5 mL tube	2 g	BUCCAL	5 mL
Hydroxocobalamin	5 g/200 mL	625 mg	IV	**See back**
Lidocaine 2% - Cardiac	20 mg/mL	8 mg	IV/IO	0.4 mL
Magnesium Sulfate	**See Dilution Chart**	280 mg	IV/IO	**See back**
Methylprednisolone	**125 mg/10 mL**	12.5 mg	**IV/IO**	**1 mL (D)**
Methylprednisolone	125 mg/2 mL	12.5 mg	**IM**	0.2 mL
Midazolam	**1 mg/mL**	1 mg	IV/IO/IM/IN	**1 mL (D/R)**
Morphine	**1 mg/mL**	0.7 mg	IV/IO/IM	**0.7 mL (D/R)**
Naloxone	1 mg/mL	1 mg	IV/IO/IM/IN	1 mL
Sodium Bicarbonate 8.4%	1 mEq/mL	7 mEq	IV/IO	7 mL

3 – 5 months (13.2 – 15.4 lb) 6 – 7.9 kg

(D) = Must be DILUTED (R) = Must be volume-REDUCED

Medications not indicated: Ipratropium, Ketamine, Ondansetron

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Medication Dilution Instructions - These depend on proper concentration

ANY variance to the starting medication concentration will change the dilution recipe!

Some medications must be DILUTED before administration; some must be volume-REDUCED

Some medications must be BOTH DILUTED *AND* volume-REDUCED

(D) = DILUTION (R) = Volume REDUCTION

NAME ROUTE & INDICATION	STARTING CONCENTRATION	DESIRED CONCENTRATION	DILUTION RECIPE
Hydroxocobalamin - IV	Run 30 gtt/min **for 15 min** (1/8 vial or 25 mL). **Use 20 gtt/mL set in kit. Set timer!**		
Magnesium Sulfate (D) - IV/IO: Torsades de pointes WITH Pulse or **Respiratory Distress			
	5 g/10 mL	**10 mg/mL**	Add 2 mL (1 g) to 100 mL NS Run 112 gtt/min (28 mL) **for 15 min** **Use 60 gtt/mL set. Set Timer!**
**For Respiratory Distress - Contact BioTel for authorization			
Magnesium Sulfate (D) - IV/IO: PULSELESS Torsades de pointes			
	5 g/10 mL	**50 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL (0.5g) mag sulfate Give 5.6 mL, push slowly over 2 min
Methylprednisolone (D) - IV/IO	125 mg/2 mL	**125 mg/10 mL**	Reconstitute 125 mg in 2 mL NS Waste 2 mL from 10-mL NS flush Replace with 2 mL of drug Administer 1 mL
Midazolam (D/R) - IV/IO/IM/IN	5 mg/mL	**1 mg/mL**	Waste 6 mL from 10-mL NS flush Replace with 1 mL of midazolam Reduce & administer 1 mL **PAI IV/IO only **For PAI use half dose: Give 0.5 mL
Morphine (D/R) - IV/IO/IM	10 mg/mL	**1 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL of morphine Reduce & administer 0.7 mL
Dopamine Drip	Waste 50 mL from 250 mL NS bag; Replace with 50 mL (80 mg) of dopamine drawn from a 1,600 mcg/mL premixed dopamine bag; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): **5**: 7 gtt/min | **7.5:** 10 gtt/min | **10:** 13 gtt/min | **12.5:** 16 gtt/min | **15:** 20 gtt/min | **20:** 26 gtt/min			
Epinephrine Drip	Add **10 mL (1 mg) of epi 0.1 mg/mL** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): **0.1:** 11 gtt/min | **0.2:** 21 gtt/min | **0.3:** 32 gtt/min | **0.4:** 42 gtt/min | **0.5:** 53 gtt/min **0.6:** 63 gtt/min | **0.7:** 74 gtt/min | **0.8:** 84 gtt/min | **0.9:** 95 gtt/min | **1:** 105 gtt/min			
Norepinephrine Drip	Add **1 mL (1 mg)** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): **0.1:** 11 gtt/min | **0.2:** 21 gtt/min | **0.3:** 32 gtt/min | **0.4:** 42 gtt/min | **0.5:** 53 gtt/min **0.6:** 63 gtt/min | **0.7:** 74 gtt/min | **0.8:** 84 gtt/min | **0.9:** 95 gtt/min | **1:** 105 gtt/min			

3 – 5 months (13.2 – 15.4 lb) 6 – 7.9 kg

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Weight (kg): 8 – 9.9		Weight (lb): 17.6 – 21.8	
Age: 6 – 11 months		Length: 67.7 – 74.5 cm	
Normal Vital Signs:	**HR 100 - 180**	**RR 30 - 45**	**SBP At least 70**
DEFIBRILLATION: 15 → 30 → 30 - 80 Joules		CARDIOVERSION: 8 → 16 → 30 Joules	
OPA: 50 mm; NPA: 14 Fr	Laryngoscope: 1 Straight	Fluid Bolus (20 mL/kg): 200 mL	
ETT: 3.5 Uncuffed/ 3.0 Cuffed; Depth: 10.5 – 11 cm		King: Size 1 White; I-Gel: Size 1.5 Blue	

Medication Administration

NAME	CONCENTRATION	DOSE	ROUTE	VOLUME
Adenosine 1st dose	3 mg/mL	0.9 mg	IV/IO	0.3 mL
Adenosine 2nd dose	3 mg/mL	1.8 mg	IV/IO	0.6 mL
Albuterol NEB	2.5 mg/3mL	2.5 mg	NEB	3 mL
Amiodarone	50 mg/mL	45 mg	IV/IO	0.9 mL
Atropine - Bradycardia/PAI	0.1 mg/mL	0.2 mg	IV/IO	2 mL
Calcium Chloride	100 mg/mL	200 mg	IV/IO	2 mL
Dextrose 10%	0.1 g/mL	2 g	IV/IO	20 mL slow IVP
Dexamethasone - Allergic	4 mg/mL	5.6 mg	IV/IO/IM/PO	1.4 mL
Diazepam	5 mg/mL	2 mg	IV/IO	0.4 mL
Diphenhydramine	50 mg/mL	10 mg	IV/IO/IM	0.2 mL
Drips (Dopa/Epi/Norepi)	Refer to Dilution Chart on back and contact BioTel			
Epi 1:1000 IM	**1 mg/mL**	0.1 mg	**IM**	0.1 mL
Epi 1:10,000 IV	**0.1 mg/mL**	0.1 mg	**IV/IO**	1 mL
Epi Auto-Injector Junior	Brand dependent	0.15 mg	IM	Up to 3 units
Epi 1:1000 NEB	1 mg/mL	3 mg	NEB	3 mL
Etomidate	2 mg/mL	2.8 mg	IV/IO	1.4 mL
Fentanyl	50 mcg/mL	10 mcg	IV/IO/IM/IN	0.2 mL
Glucagon	1 mg/mL	0.5 mg	IV/IO/IM/IN	0.5 mL
Glucose Gel	15 g/37.5 mL tube	2 g	BUCCAL	5 mL
Hydroxocobalamin	5 g/200 mL	625 mg	IV	**See back**
Ketamine SEDATE 1st dose	**10 mg/mL**	18 mg	**IV/IO**	**1.8 mL (D/R)**
Ketamine SEDATE 2nd dose		18 mg	**IV/IO**	**1.8 mL (D/R)**
Ketamine SEDATE 1st dose	100 mg/mL	40 mg	**IM**	0.4 mL
Ketamine SEDATE 2nd dose		20 mg	**IM**	0.2 mL
Ketamine PAIN 1st dose	**10 mg/mL**	2 mg	**IV/IO**	**0.2 mL (D/R)**
Ketamine PAIN 2nd dose		1 mg	**IV/IO**	**0.1 mL (D/R)**
Ketamine PAIN 1st dose		4 mg	**IM/IN**	**0.4 mL (D/R)**
Ketamine PAIN 2nd dose		2 mg	**IM/IN**	**0.2 mL (D/R)**
Lidocaine 2% - Cardiac	20 mg/mL	12 mg	IV/IO	0.6 mL
Magnesium Sulfate	**See Dilution Chart**	360 mg	IV/IO	**See back**
Methylprednisolone	**125 mg/10 mL**	12.5 mg	**IV/IO**	**1 mL (D)**
Methylprednisolone	125 mg/2 mL	12.5 mg	**IM**	0.2 mL
Midazolam	**1 mg/mL**	1.8 mg	IV/IO/IM/IN	**1.8 mL (D/R)**
Morphine	**1 mg/mL**	0.9 mg	IV/IO/IM	**0.9 mL (D/R)**
Naloxone	1 mg/mL	1 mg	IV/IO/IM/IN	1 mL
Sodium Bicarbonate 8.4%	1 mEq/mL	10 mEq	IV/IO	10 mL

(D) = Must be DILUTED (R) = Must be volume-REDUCED

Medications not indicated: Ipratropium, Ondansetron

6 – 11 months (17.6 – 21.8 lb) 8 – 9.9 kg

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Medication Dilution Instructions - These depend on proper concentration

ANY variance to the starting medication concentration will change the dilution recipe!

Some medications must be DILUTED before administration; some must be volume-REDUCED

Some medications must be BOTH DILUTED *AND* volume-REDUCED

(D) = DILUTION (R) = Volume REDUCTION

RED

6 – 11 months (17.6 – 21.8 lb)

8 – 9.9 kg

NAME ROUTE & INDICATION	STARTING CONCENTRATION	DESIRED CONCENTRATION	DILUTION RECIPE
Hydroxocobalamin - IV	Run 30 gtt/min **for 15 min** (1/8 vial or 25 mL). **Use 20 gtt/mL set in kit. Set timer!**		
Ketamine SEDATION (D/R) - IV/IO	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Reduce & give 1.8 mL 2nd dose: Reduce & give 1.8 mL
	If 100 mg/mL unavailable, see CPGs		
Ketamine PAIN (D/R) - IV/IO	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Reduce & give 0.2 mL 2nd dose: Reduce & give 0.1 mL
	If 100 mg/mL unavailable, see CPGs		
Ketamine PAIN (D/R) - IM/IN	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Reduce & give 0.4 mL 2nd dose: Reduce & give 0.2 mL
	If 100 mg/mL unavailable, see CPGs		
Magnesium Sulfate (D) - IV/IO: Torsades de pointes WITH Pulse or **Respiratory Distress			
	5 g/10 mL	**10 mg/mL**	Add 2 mL (1 g) to 100 mL NS Run 144 gtt/min (36 mL) **for 15 min** **Use 60 gtt/mL set. Set Timer!**
**For Respiratory Distress - Contact BioTel for authorization			
Magnesium Sulfate (D) - IV/IO: PULSELESS Torsades de pointes			
	5 g/10 mL	**50 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL (0.5g) mag sulfate Give 7.2 mL, push slowly over 2 min
Methylprednisolone (D) - IV/IO	125 mg/2 mL	**125 mg/10 mL**	Reconstitute 125 mg in 2 mL NS Waste 2 mL from 10-mL NS flush Replace with 2 mL of drug Administer 1 mL
Midazolam (D/R) - IV/IO/IM/IN	5 mg/mL	**1 mg/mL**	Waste 6 mL from 10-mL NS flush Replace with 1 mL of midazolam Reduce & administer 1.8 mL **PAI IV/IO only **For PAI use half dose: Give 0.9 mL
Morphine (D/R) - IV/IO/IM	10 mg/mL	**1 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL of morphine Reduce & administer 0.9 mL
Dopamine Drip	Waste 50 mL from 250 mL NS bag; Replace with 50 mL (80 mg) of dopamine drawn from a 1,600 mcg/mL premixed dopamine bag; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): **5**: 8 gtt/min | **7.5:** 13 gtt/min | **10:** 17 gtt/min | **12.5:** 21 gtt/min | **15:** 25 gtt/min | **20:** 34 gtt/min			
Epinephrine Drip	Add **10 mL (1 mg) of epi 0.1 mg/mL** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): **0.1:** 14 gtt/min | **0.2:** 27 gtt/min | **0.3:** 41 gtt/min | **0.4:** 54 gtt/min | **0.5:** 68 gtt/min **0.6:** 81 gtt/min | **0.7:** 95 gtt/min | **0.8:** 108 gtt/min | **0.9:** 122 gtt/min | **1:** 135 gtt/min			
Norepinephrine Drip	Add **1 mL (1 mg)** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): **0.1:** 14 gtt/min | **0.2:** 27 gtt/min | **0.3:** 41 gtt/min | **0.4:** 54 gtt/min | **0.5:** 68 gtt/min **0.6:** 81 gtt/min | **0.7:** 95 gtt/min | **0.8:** 108 gtt/min | **0.9:** 122 gtt/min | **1:** 135 gtt/min			

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Weight (kg): 10 – 11.9		Weight (lb): 22 – 26	
Age: 12 – 23 months		Length: 74.5 – 84 cm	
Normal Vital Signs:	**HR 80 - 150**	**RR 25- 40**	**SBP At least 75**
DEFIBRILLATION: 20 → 40 → 40 - 100 Joules		CARDIOVERSION: 10 → 20 → 40 Joules	
OPA: 60 mm; NPA: 18 Fr	Laryngoscope: 1 Straight	Fluid Bolus (20 mL/kg): 200 mL	
ETT: 4.0 Uncuffed/ 3.5 Cuffed; Depth: 11 – 12 cm		King: Size 1 White; I-Gel: Size 2 Gray	

Medication Administration

NAME	CONCENTRATION	DOSE	ROUTE	VOLUME
Adenosine 1st dose	3 mg/mL	1.2 mg	IV/IO	0.4 mL
Adenosine 2nd dose	3 mg/mL	2.4 mg	IV/IO	0.8 mL
Albuterol NEB	2.5 mg/3mL	2.5 mg	NEB	3 mL
Amiodarone	50 mg/mL	50 mg	IV/IO	1 mL
Atropine - Bradycardia	0.1 mg/mL	0.2 mg	IV/IO	2 mL
Calcium Chloride	100 mg/mL	200 mg	IV/IO	2 mL
Dextrose 10%	0.1 g/mL	2.5 g	IV/IO	25 mL slow IVP
Dexamethasone - Allergic	4 mg/mL	6.4 mg	IV/IO/IM/PO	1.6 mL
Diazepam	5 mg/mL	2 mg	IV/IO	0.4 mL
Diphenhydramine	50 mg/mL	10 mg	IV/IO/IM	0.2 mL
Drips (Dopa/Epi/Norepi)	Refer to Dilution Chart on back and contact BioTel			
Epi 1:1000 IM	**1 mg/mL**	0.1 mg	**IM**	0.1 mL
Epi 1:10,000 IV	**0.1 mg/mL**	0.1 mg	**IV/IO**	1 mL
Epi Auto-Injector Junior	Brand dependent	0.15 mg	IM	Up to 3 units
Epi 1:1000 NEB	1 mg/mL	3 mg	NEB	3 mL
Etomidate	2 mg/mL	3.2 mg	IV/IO	1.6 mL
Fentanyl	50 mcg/mL	10 mcg	IV/IO/IM/IN	0.2 mL
Glucagon	1 mg/mL	0.5 mg	IV/IO/IM/IN	0.5 mL
Glucose Gel	15 g/37.5 mL tube	3 g	BUCCAL	7.5 mL
Hydroxocobalamin	5 g/200 mL	625 mg	IV	**See back**
Ipratropium	0.5 mg/2.5 mL	0.5 mg	NEB	2.5 mL
Ketamine SEDATE 1st dose	**10 mg/mL**	22 mg	**IV/IO**	**2.2 mL (D/R)**
Ketamine SEDATE 2nd dose		22 mg	**IV/IO**	**2.2 mL (D/R)**
Ketamine SEDATE 1st dose	100 mg/mL	40 mg	**IM**	0.4 mL
Ketamine SEDATE 2nd dose		20 mg	**IM**	0.2 mL
Ketamine PAIN 1st dose	**10 mg/mL**	2 mg	**IV/IO**	**0.2 mL (D/R)**
Ketamine PAIN 2nd dose		1 mg	**IV/IO**	**0.1 mL (D/R)**
Ketamine PAIN 1st dose		4 mg	**IM/IN**	**0.4 mL (D/R)**
Ketamine PAIN 2nd dose		2 mg	**IM/IN**	**0.2 mL (D/R)**
Lidocaine 2% - Cardiac	20 mg/mL	12 mg	IV/IO	0.6 mL
Magnesium Sulfate	**See Dilution Chart**	440 mg	IV/IO	**See back**
Methylprednisolone	**125 mg/10 mL**	25 mg	**IV/IO**	**2 mL (D)**
Methylprednisolone	125 mg/2 mL	25 mg	**IM**	0.4 mL
Midazolam	**1 mg/mL**	2.2 mg	IV/IO/IM/IN	**2.2 mL (D/R)**
Morphine	**1 mg/mL**	1 mg	IV/IO/IM	**1 mL (D/R)**
Naloxone	1 mg/mL	1 mg	IV/IO/IM/IN	1 mL
Ondansetron IV or ODT	Not applicable			
Sodium Bicarbonate 8.4%	1 mEq/mL	10 mEq	IV/IO	10 mL

(D) = Must be DILUTED (R) = Must be volume-REDUCED

12 – 23 months (22 – 26 lb) 10 – 11.9 kg

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Medication Dilution Instructions - These depend on proper concentration

ANY variance to the starting medication concentration will change the dilution recipe!

Some medications must be DILUTED before administration; some must be volume-REDUCED

Some medications must be BOTH DILUTED *AND* volume-REDUCED

(D) = DILUTION (R) = Volume REDUCTION

NAME ROUTE & INDICATION	STARTING CONCENTRATION	DESIRED CONCENTRATION	DILUTION RECIPE
Hydroxocobalamin - IV	Run 30 gtt/min **for 15 min** (1/8 vial or 25 mL). **Use 20 gtt/mL set in kit. Set timer!**		
Ketamine SEDATION (D/R) - IV/IO	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Reduce & give 2.2 mL 2nd dose: Reduce & give 2.2 mL
	If 100 mg/mL unavailable, see CPGs		
Ketamine PAIN (D/R) - IV/IO	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Reduce & give 0.2 mL 2nd dose: Reduce & give 0.1 mL
	If 100 mg/mL unavailable, see CPGs		
Ketamine PAIN (D/R) - IM/IN	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Reduce & give 0.4 mL 2nd dose: Reduce & give 0.2 mL
	If 100 mg/mL unavailable, see CPGs		
Magnesium Sulfate (D) - IV/IO: Torsades de pointes WITH Pulse or **Respiratory Distress			
	5 g/10 mL	**10 mg/mL**	Add 2 mL (1 g) to 100 mL NS Run 29 gtt/min (44 mL) **for 15 min** **Use 10 gtt/mL set. Set Timer!**
**For Respiratory Distress - Contact BioTel for authorization			
Magnesium Sulfate (D) - IV/IO: PULSELESS Torsades de pointes			
	5 g/10 mL	**50 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL (0.5g) mag sulfate Give 8.8 mL, push slowly over 2 min
Methylprednisolone (D) - IV/IO	125 mg/2 mL	**125 mg/10 mL**	Reconstitute 125 mg in 2 mL NS Waste 2 mL from 10-mL NS flush Replace with 2 mL of drug Administer 2 mL
Midazolam (D/R) - IV/IO/IM/IN	5 mg/mL	**1 mg/mL**	Waste 6 mL from 10-mL NS flush Replace with 1 mL of midazolam Reduce & administer 2.2 mL **For PAI use half dose: Give 1 mL
		**PAI IV/IO only	
Morphine (D/R) - IV/IO/IM	10 mg/mL	**1 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL of morphine Reduce & administer 1 mL
Dopamine Drip	Waste 50 mL from 250 mL NS bag; Replace with 50 mL (80 mg) of dopamine drawn from a 1,600 mcg/mL premixed dopamine bag; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): **5**: 10 gtt/min | **7.5:** 15 gtt/min | **10:** 21 gtt/min | **12.5:** 26 gtt/min | **15:** 31 gtt/min | **20:** 41 gtt/min			
Epinephrine Drip	Add **10 mL (1 mg) of epi 0.1 mg/mL** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/min): **2:** 30 gtt/min | **4:** 60 gtt/min | **6:** 90 gtt/min | **8:** 120 gtt/min | **10:** 150 gtt/min			
Norepinephrine Drip	Add **1 mL (1 mg)** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): **0.1:** 17 gtt/min | **0.2:** 33 gtt/min | **0.3:** 50 gtt/min | **0.4:** 66 gtt/min | **0.5:** 83 gtt/min **0.6:** 99 gtt/min | **0.7:** 116 gtt/min | **0.8:** 132 gtt/min | **0.9:** 150 gtt/min (max dose reached)			

12 – 23 months

(22 – 26 lb)

10 – 11.9 kg

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Weight (kg): 12 – 14.9		Weight (lb): 26.4 – 32.8	
Age: 24 – 35 months		Length: 74.5 – 84 cm	
Normal Vital Signs:	**HR 80 - 150**	**RR 25 - 40**	**SBP At least 75**
DEFIBRILLATION: 25 → 50 → 50 - 130 Joules		CARDIOVERSION: 13 → 26 → 50 Joules	
OPA: 60 mm; NPA: 20 Fr	Laryngoscope: 2 Straight	Fluid Bolus (20 mL/kg): 250 mL	
ETT: 4.5 Uncuffed/ 4.0 Cuffed; Depth: 12.5 - 13.5 cm		King: Size 2 Green; I-Gel: Size 2 Gray	

Medication Administration

NAME	CONCENTRATION	DOSE	ROUTE	VOLUME
Adenosine 1st dose	3 mg/mL	1.2 mg	IV/IO	0.4 mL
Adenosine 2nd dose	3 mg/mL	2.4 mg	IV/IO	0.8 mL
Albuterol NEB	2.5 mg/3mL	2.5 mg	NEB	3 mL
Amiodarone	50 mg/mL	70 mg	IV/IO	1.4 mL
Atropine - Bradycardia	0.1 mg/mL	0.25 mg	IV/IO	2.5 mL
Calcium Chloride	100 mg/mL	250 mg	IV/IO	2.5 mL
Dextrose 10%	0.1 g/mL	3 g	IV/IO	30 mL slow IVP
Dexamethasone	4 mg/mL	8 mg	IV/IO/IM/PO	2 mL
Diazepam	5 mg/mL	2.5 mg	IV/IO	0.5 mL
Diphenhydramine	50 mg/mL	10 mg	IV/IO/IM	0.2 mL
Drips (Dopa/Epi/Norepi)	Refer to Dilution Chart on back and contact BioTel			
Epi 1:1000 IM	**1 mg/mL**	0.15 mg	**IM**	0.15 mL
Epi 1:10,000 IV	**0.1 mg/mL**	0.15 mg	**IV/IO**	1.5 mL
Epi Auto-Injector Junior	Brand dependent	0.15 mg	IM	Up to 3 units
Epi 1:1000 NEB - Croup	1 mg/mL	5 mg	NEB	5 mL
Etomidate	2 mg/mL	4 mg	IV/IO	2 mL
Fentanyl	50 mcg/mL	15 mcg	IV/IO/IM/IN	0.3 mL
Glucagon	1 mg/mL	0.5 mg	IV/IO/IM/IN	0.5 mL
Glucose Gel	15 g/37.5 mL tube	3 g	BUCCAL	7.5 mL
Hydroxocobalamin	5 g/200 mL	1.25 g	IV	**See back**
Ipratropium	0.5 mg/2.5 mL	0.5 mg	NEB	2.5 mL
Ketamine SEDATE 1st dose	**10 mg/mL**	28 mg	**IV/IO**	**2.8 mL (D/R)**
Ketamine SEDATE 2nd dose		28 mg	**IV/IO**	**2.8 mL (D/R)**
Ketamine SEDATE 1st dose	100 mg/mL	60 mg	**IM**	0.6 mL
Ketamine SEDATE 2nd dose		30 mg	**IM**	0.3 mL
Ketamine PAIN 1st dose	**10 mg/mL**	3 mg	**IV/IO**	**0.3 mL (D/R)**
Ketamine PAIN 2nd dose		1 mg	**IV/IO**	**0.1 mL (D/R)**
Ketamine PAIN 1st dose		6 mg	**IM/IN**	**0.6 mL (D/R)**
Ketamine PAIN 2nd dose		3 mg	**IM/IN**	**0.3 mL (D/R)**
Lidocaine 2% - Cardiac	20 mg/mL	12 mg	IV/IO	0.6 mL
Magnesium Sulfate	**See Dilution Chart**	520 mg	IV/IO	**See back**
Methylprednisolone	**125 mg/10 mL**	25 mg	**IV/IO**	**2 mL (D)**
Methylprednisolone	125 mg/2 mL	25 mg	**IM**	0.4 mL
Midazolam	**1 mg/mL**	2.6 mg	IV/IO/IM/IN	**2.6 mL (D/R)**
Morphine	**1 mg/mL**	1.4 mg	IV/IO/IM	**1.4 mL (D/R)**
Naloxone	1 mg/mL	1.5 mg	IV/IO/IM/IN	1.5 mL
Ondansetron IV or ODT	Contact BioTel for authorization			
Sodium Bicarbonate 8.4%	1 mEq/mL	15 mEq	IV/IO	15 mL

(D) = Must be DILUTED (R) = Must be volume-REDUCED

24 – 35 months (26.4 – 32.8 lb) 12 – 14.9 kg

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Medication Dilution Instructions - These depend on proper concentration

ANY variance to the starting medication concentration will change the dilution recipe!

Some medications must be DILUTED before administration; some must be volume-REDUCED

Some medications must be BOTH DILUTED *AND* volume-REDUCED

(D) = DILUTION (R) = Volume REDUCTION

YELLOW

12 – 14.9 kg (26.4 – 35 lb) 24 – 35 months

NAME ROUTE & INDICATION	STARTING CONCENTRATION	DESIRED CONCENTRATION	DILUTION RECIPE
Hydroxocobalamin - IV	Run 60 gtt/min **for 15 min** (1/4 vial or 50 mL). **Use 20 gtt/mL set in kit. Set timer!**		
Ketamine SEDATION (D/R) - IV/IO	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Reduce & give 2.8 mL 2nd dose: Reduce & give 2.8 mL
	If 100 mg/mL unavailable, see CPGs		
Ketamine PAIN (D/R) - IV/IO	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Reduce & give 0.3 mL 2nd dose: Reduce & give 0.1 mL
	If 100 mg/mL unavailable, see CPGs		
Ketamine PAIN (D/R) - IM/IN	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Reduce & give 0.6 mL 2nd dose: Reduce & give 0.3 mL
	If 100 mg/mL unavailable, see CPGs		
Magnesium Sulfate (D) - IV/IO: Respiratory Distress or Torsades de pointes WITH Pulse			
	5 g/10 mL	**10 mg/mL**	Add 2 mL (1 g) to 100 mL NS Run 35 gtt/min (52 mL) **for 15 min** **Use 10 gtt/mL set. Set Timer!**
Magnesium Sulfate (D) - IV/IO: PULSELESS Torsades de pointes			
	5 g/10 mL	**50 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL (0.5g) mag sulfate Give 10 mL, push slowly over 2 min
Methylprednisolone (D) - IV/IO	125 mg/2 mL	**125 mg/10 mL**	Reconstitute 125 mg in 2 mL NS Waste 2 mL from 10-mL NS flush Replace with 2 mL of drug Administer 2 mL
Midazolam (D/R) - IV/IO/IM/IN	5 mg/mL	**1 mg/mL**	Waste 6 mL from 10-mL NS flush Replace with 1 mL of midazolam Reduce & administer 2.6 mL **PAI IV/IO only **For PAI use half dose: Give 1.2 mL
Morphine (D/R) - IV/IO/IM	10 mg/mL	**1 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL of morphine Reduce & administer 1.4 mL
Dopamine Drip	Waste 50 mL from 250 mL NS bag; Replace with 50 mL (80 mg) of dopamine drawn from a 1,600 mcg/mL premixed dopamine bag; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): **5**: 12 gtt/min | **7.5:** 18 gtt/min | **10:** 24 gtt/min | **12.5:** 30 gtt/min | **15:** 37 gtt/min | **20:** 49 gtt/min			
Epinephrine Drip	Add **10 mL (1 mg) of epi 0.1 mg/mL** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/min): **2:** 30 gtt/min | **4:** 60 gtt/min | **6:** 90 gtt/min | **8:** 120 gtt/min | **10:** 150 gtt/min			
Norepinephrine Drip	Add **1 mL (1 mg)** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): **0.1:** 20 gtt/min | **0.2:** 39 gtt/min | **0.3:** 59 gtt/min | **0.4:** 78 gtt/min | **0.5:** 98 gtt/min **0.6:** 117 gtt/min | **0.7:** 137 gtt/min | **0.8:** 150 gtt/min (max dose reached)			

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Weight (kg): 15 – 18.9		**Weight (lb): 33 – 41.6**	
Age: 3 – 4 years		**Length: 95 – 108 cm**	
Normal Vital Signs:	**HR 80 - 140**	**RR 22 - 35**	**SBP At least 75**
DEFIBRILLATION: 33 → 65 → 65 - 150 Joules		CARDIOVERSION: 17 → 33 → 65 Joules	
OPA: 60 mm; NPA: 22 Fr	Laryngoscope: 2 Straight	Fluid Bolus (20 mL/kg): 300 mL	
ETT: 5.0 Uncuffed/ 4.5 Cuffed; Depth: 14 – 15 cm		King: Size 2 Green; I-Gel: Size 2 Gray	

Medication Administration

NAME	CONCENTRATION	DOSE	ROUTE	VOLUME
Adenosine 1st dose	3 mg/mL	1.8 mg	IV/IO	0.6 mL
Adenosine 2nd dose	3 mg/mL	3.6 mg	IV/IO	1.2 mL
Albuterol NEB	2.5 mg/3mL	2.5 mg	NEB	3 mL
Amiodarone	50 mg/mL	90 mg	IV/IO	1.8 mL
Atropine - Bradycardia	0.1 mg/mL	0.35 mg	IV/IO	3.5 mL
Calcium Chloride	100 mg/mL	350 mg	IV/IO	3.5 mL
Dextrose 10%	0.1 g/mL	5 g	IV/IO	50 mL
Dexamethasone	4 mg/mL	10.4 mg	IV/IO/IM/PO	2.6 mL
Diazepam	5 mg/mL	3.5 mg	IV/IO	0.7 mL
Diphenhydramine	50 mg/mL	15 mg	IV/IO/IM	0.3 mL
Drips (Dopa/Epi/Norepi)	Refer to Dilution Chart on back and contact BioTel			
Epi 1:1000 IM	**1 mg/mL**	0.2 mg	**IM**	0.2 mL
Epi 1:10,000 IV	**0.1 mg/mL**	0.2 mg	**IV/IO**	2 mL
Epi Auto-Injector Junior	Brand dependent	0.15 mg	IM	Up to 3 units
Epi 1:1000 NEB - Croup	1 mg/mL	5 mg	NEB	5 mL
Etomidate	2 mg/mL	5.2 mg	IV/IO	2.6 mL
Fentanyl	50 mcg/mL	20 mcg	IV/IO/IM/IN	0.4 mL
Glucagon	1 mg/mL	0.5 mg	IV/IO/IM/IN	0.5 mL
Glucose Gel	15 g/37.5 mL tube	3.75 g	BUCCAL	1/4 tube
Hydroxocobalamin	5 g/200 mL	1.25 g	IV	**See back**
Ipratropium	0.5 mg/2.5 mL	0.5 mg	NEB	2.5 mL
Ketamine SEDATE 1st dose	**10 mg/mL**	34 mg	**IV/IO**	**3.4 mL (D)**
Ketamine SEDATE 2nd dose		34 mg	**IV/IO**	**3.4 mL (D)**
Ketamine SEDATE 1st dose	100 mg/mL	70 mg	**IM**	0.7 mL
Ketamine SEDATE 2nd dose		40 mg	**IM**	0.4 mL
Ketamine PAIN 1st dose	**10 mg/mL**	3 mg	**IV/IO**	**0.3 mL (D/R)**
Ketamine PAIN 2nd dose		2 mg	**IV/IO**	**0.2 mL (D/R)**
Ketamine PAIN 1st dose		7 mg	**IM/IN**	**0.7 mL (D/R)**
Ketamine PAIN 2nd dose		4 mg	**IM/IN**	**0.4 mL (D/R)**
Lidocaine 2% - Cardiac	20 mg/mL	20 mg	IV/IO	1 mL
Magnesium Sulfate	**See Dilution Chart**	680 mg	IV/IO	**See back**
Methylprednisolone	**125 mg/10 mL**	37.5 mg	**IV/IO**	**3 mL (D)**
Methylprednisolone	125 mg/2 mL	37.5 mg	**IM**	0.6 mL
Midazolam	**1 mg/mL**	3.4 mg	IV/IO/IM/IN	**3.4 mL (D)**
Morphine	**1 mg/mL**	1.8 mg	IV/IO/IM	**1.8 mL (D/R)**
Naloxone	1 mg/mL	2 mg	IV/IO/IM/IN	2 mL
Ondansetron IV or ODT	Contact BioTel for authorization			
Sodium Bicarbonate 8.4%	1 mEq/mL	20 mEq	IV/IO	20 mL

3 – 4 years (33 – 41.6 lb) 15 – 18.9 kg

(D) = Must be DILUTED (R) = Must be volume-REDUCED

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Medication Dilution Instructions - These depend on proper concentration

ANY variance to the starting medication concentration will change the dilution recipe!

Some medications must be DILUTED before administration; some must be volume-REDUCED

Some medications must be BOTH DILUTED *AND* volume-REDUCED

(D) = DILUTION (R) = Volume REDUCTION

NAME ROUTE & INDICATION	STARTING CONCENTRATION	DESIRED CONCENTRATION	DILUTION RECIPE
Hydroxocobalamin - IV	Run 60 gtt/min **for 15 min** (1/4 vial or 50 mL). **Use 20 gtt/mL set in kit. Set timer!**		
Ketamine SEDATION (D) - IV/IO	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Administer 3.4 mL 2nd dose: Administer 3.4 mL
	If 100 mg/mL unavailable, see CPGs		
Ketamine PAIN (D/R) - IV/IO	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Reduce & give 0.3 mL 2nd dose: Reduce & give 0.2 mL
	If 100 mg/mL unavailable, see CPGs		
Ketamine PAIN (D/R) - IM/IN	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Reduce & give 0.7 mL 2nd dose: Reduce & give 0.4 mL
	If 100 mg/mL unavailable, see CPGs		
Magnesium Sulfate (D) - IV/IO: Respiratory Distress or Torsades de pointes WITH Pulse			
	5 g/10 mL	**10 mg/mL**	Add 2 mL (1 g) to 100 mL NS Run 45 gtt/min (68 mL) **for 15 min** **Use 10 gtt/mL set. Set Timer!**
Magnesium Sulfate (D) - IV/IO: PULSELESS Torsades de pointes			
	5 g/10 mL	**200 mg/mL**	Waste 4 mL from 10-mL NS flush Replace with 4 mL (2 g) mag sulfate Give 3.4 mL, push slowly over 2 min
Methylprednisolone (D) - IV/IO	125 mg/2 mL	**125 mg/10 mL**	Reconstitute 125 mg in 2 mL NS Waste 2 mL from 10-mL NS flush Replace with 2 mL of drug Administer 3 mL
Midazolam (D) - IV/IO/IM/IN	5 mg/mL	**1 mg/mL**	Waste 6 mL from 10-mL NS flush Replace with 1 mL of midazolam Administer 3.4 mL **PAI IV/IO only **For PAI use half dose: Give 1.6 mL
Morphine (D/R) - IV/IO/IM	10 mg/mL	**1 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL of morphine Reduce & administer 1.8 mL
Dopamine Drip	Waste 50 mL from 250 mL NS bag; Replace with 50 mL (80 mg) of dopamine drawn from a 1,600 mcg/mL premixed dopamine bag; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): **5**: 16 gtt/min | **7.5:** 24 gtt/min | **10:** 32 gtt/min | **12.5:** 40 gtt/min | **15:** 48 gtt/min | **20:** 64 gtt/min			
Epinephrine Drip	Add **10 mL (1 mg) of epi 0.1 mg/mL** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/min): **2:** 30 gtt/min | **4:** 60 gtt/min | **6:** 90 gtt/min | **8:** 120 gtt/min | **10:** 150 gtt/min			
Norepinephrine Drip	Add **1 mL (1 mg)** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): **0.1:** 26 gtt/min | **0.2:** 51 gtt/min | **0.3:** 77 gtt/min | **0.4:** 102 gtt/min | **0.5:** 128 gtt/min | **0.6:** 150 gtt/min Max dose reached at 0.6 mcg/kg/min			

3 – 4 years

(33 – 41.6 lb)

15 – 18.9 kg

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Weight (kg): 19 – 23.9		Weight (lb): 41.8 – 52.6	
Age: 5 – 6 years		Length: 109 – 122.5 cm	
Normal Vital Signs:	**HR 70 - 120**	**RR 18 - 30**	**SBP At least 80**
DEFIBRILLATION: 40 → 80 → 80 - 200 Joules		CARDIOVERSION: 20 → 40 → 80 Joules	
OPA: 70 mm; NPA: 24 Fr	Laryngoscope: 2 Straight	Fluid Bolus (20 mL/kg): 400 mL	
ETT: 5.5 Uncuffed/ 5.0 Cuffed; Depth: 15.5 – 16.5 cm		King: Size 2 Green; I-Gel: Size 2 Gray	

Medication Administration

NAME	CONCENTRATION	DOSE	ROUTE	VOLUME
Adenosine 1st dose	3 mg/mL	2.1 mg	IV/IO	0.7 mL
Adenosine 2nd dose	3 mg/mL	4.2 mg	IV/IO	1.4 mL
Albuterol NEB	2.5 mg/3mL	2.5 mg	NEB	3 mL
Amiodarone	50 mg/mL	100 mg	IV/IO	2 mL
Atropine - Bradycardia	0.1 mg/mL	0.4 mg	IV/IO	4 mL
Calcium Chloride	100 mg/mL	400 mg	IV/IO	4 mL
Dextrose 10%	0.1 g/mL	5 g	IV/IO	50 mL
Dexamethasone	4 mg/mL	12 mg	IV/IO/IM/PO	3 mL
Diazepam	5 mg/mL	4 mg	IV/IO	0.8 mL
Diphenhydramine	50 mg/mL	20 mg	IV/IO/IM	0.4 mL
Drips (Dopa/Epi/Norepi)	Refer to Dilution Chart on back and contact BioTel			
Epi 1:1000 IM	**1 mg/mL**	0.2 mg	**IM**	0.2 mL
Epi 1:10,000 IV	**0.1 mg/mL**	0.2 mg	**IV/IO**	2 mL
Epi Auto-Injector Junior	Brand dependent	0.15 mg	IM	Up to 3 units
Epi 1:1000 NEB - Croup	1 mg/mL	5 mg	NEB	5 mL
Etomidate	2 mg/mL	6 mg	IV/IO	3 mL
Fentanyl	50 mcg/mL	20 mcg	IV/IO/IM/IN	0.4 mL
Glucagon	1 mg/mL	1 mg	IV/IO/IM/IN	1 mL
Glucose Gel	15 g/37.5 mL tube	7.5 g	BUCCAL	1/2 tube
Hydroxocobalamin	5 g/200 mL	1.25 g	IV	**See back**
Ipratropium	0.5 mg/2.5 mL	0.5 mg	NEB	2.5 mL
Ketamine SEDATE 1st dose	**10 mg/mL**	42 mg	**IV/IO**	**4.2 mL (D)**
Ketamine SEDATE 2nd dose		42 mg	**IV/IO**	**4.2 mL (D)**
Ketamine SEDATE 1st dose	100 mg/mL	80 mg	**IM**	0.8 mL
Ketamine SEDATE 2nd dose		40 mg	**IM**	0.4 mL
Ketamine PAIN 1st dose	**10 mg/mL**	4 mg	**IV/IO**	**0.4 mL (D/R)**
Ketamine PAIN 2nd dose		2 mg	**IV/IO**	**0.2 mL (D/R)**
Ketamine PAIN 1st dose		8 mg	**IM/IN**	**0.8 mL (D/R)**
Ketamine PAIN 2nd dose		4 mg	**IM/IN**	**0.4 mL (D/R)**
Lidocaine 2% - Cardiac	20 mg/mL	20 mg	IV/IO	1 mL
Magnesium Sulfate	**See Dilution Chart**	840 mg	IV/IO	**See back**
Methylprednisolone	**125 mg/10 mL**	50 mg	**IV/IO**	**4 mL (D)**
Methylprednisolone	125 mg/2 mL	50 mg	**IM**	0.8 mL
Midazolam	**1 mg/mL**	4.2 mg	IV/IO/IM/IN	**4.2 mL (D)**
Morphine	**1 mg/mL**	2 mg	IV/IO/IM	**2 mL (D/R)**
Naloxone	1 mg/mL	2 mg	IV/IO/IM/IN	2 mL
Ondansetron	2 mg/mL	4 mg	**IV/IO**	2 mL
Ondansetron	Formulation dependent	1 full 4-mg **ODT** **OR** ½ of 8-mg **ODT**		
Sodium Bicarbonate 8.4%	1 mEq/mL	20 mEq	IV/IO	20 mL

5 – 6 years (41.8 – 52.6 lb) 19 – 23.9 kg

(D) = Must be DILUTED (R) = Must be volume-REDUCED

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Medication Dilution Instructions - These depend on proper concentration

ANY variance to the starting medication concentration will change the dilution recipe!

Some medications must be DILUTED before administration; some must be volume-REDUCED

Some medications must be BOTH DILUTED *AND* volume-REDUCED

(D) = DILUTION (R) = Volume REDUCTION

NAME ROUTE & INDICATION	STARTING CONCENTRATION	DESIRED CONCENTRATION	DILUTION RECIPE
Hydroxocobalamin - IV	Run 60 gtt/min **for 15 min** (1/4 vial or 50 mL). **Use 20 gtt/mL set in kit. Set timer!**		
Ketamine SEDATION (D) - IV/IO	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Administer 4.2 mL 2nd dose: Administer 4.2 mL
	If 100 mg/mL unavailable, see CPGs		
Ketamine PAIN (D/R) - IV/IO	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Reduce & give 0.4 mL 2nd dose: Reduce & give 0.2 mL
	If 100 mg/mL unavailable, see CPGs		
Ketamine PAIN (D/R) - IM/IN	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Reduce & give 0.8 mL 2nd dose: Reduce & give 0.4 mL
	If 100 mg/mL unavailable, see CPGs		
Magnesium Sulfate (D) - IV/IO: Respiratory Distress or Torsades de pointes WITH Pulse			
	5 g/10 mL	**10 mg/mL**	Add 2 mL (1 g) to 100 mL NS Run 56 gtt/min (84 mL) **for 15 min** **Use 10 gtt/mL set. Set Timer!**
Magnesium Sulfate (D) - IV/IO: PULSELESS Torsades de pointes			
	5 g/10 mL	**200 mg/mL**	Waste 4 mL from 10-mL NS flush Replace with 4 mL (2 g) mag sulfate Give 4.2 mL, push slowly over 2 min
Methylprednisolone (D) - IV/IO	125 mg/2 mL	**125 mg/10 mL**	Reconstitute 125 mg in 2 mL NS Waste 2 mL from 10-mL NS flush Replace with 2 mL of drug Administer 4 mL
Midazolam (D) - IV/IO/IM/IN	5 mg/mL	**1 mg/mL**	Waste 6 mL from 10-mL NS flush Replace with 1 mL of midazolam Administer 4.2 mL **PAI IV/IO only **For PAI use half dose: Give 2 mL
Morphine (D/R) - IV/IO/IM	10 mg/mL	**1 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL of morphine Reduce & administer 2 mL
Dopamine Drip	Waste 50 mL from 250 mL NS bag; Replace with 50 mL (80 mg) of dopamine drawn from a 1,600 mcg/mL premixed dopamine bag; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): **5**: 20 gtt/min | **7.5:** 30 gtt/min | **10:** 39 gtt/min | **12.5:** 49 gtt/min | **15:** 59 gtt/min | **20:** 79 gtt/min			
Epinephrine Drip	Add **10 mL (1 mg) of epi 0.1 mg/mL** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/min): **2:** 30 gtt/min | **4:** 60 gtt/min | **6:** 90 gtt/min | **8:** 120 gtt/min | **10:** 150 gtt/min			
Norepinephrine Drip	Add **2 mL (2 mg)** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/min): **2:** 15 gtt/min | **4:** 30 gtt/min | **6:** 45 gtt/min | **8:** 60 gtt/min | **10:** 75 gtt/min			

5 – 6 years

(41.8 – 52.6 lb)

19 – 23.9 kg

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ORANGE

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Weight (kg): 24 – 29		Weight (lb): 53 – 64	
Age: 7 – 9 years		Length: 123 – 131 cm	
Normal Vital Signs:	**HR 70 - 120**	**RR 18 - 30**	**SBP At least 85**
DEFIBRILLATION: 55 → 110 → 110 - 260 Joules		CARDIOVERSION: 27 → 52 → 100 Joules	
OPA: 80 mm; NPA: 26 Fr	Laryngoscope: 2 Straight	Fluid Bolus (20 mL/kg): 500 mL	
ETT: 6.0 Cuffed; Depth: 17 – 18 cm		King: Size 2.5 Orange; I-Gel: Size 2.5 White	

Medication Administration

NAME	CONCENTRATION	DOSE	ROUTE	VOLUME
Adenosine 1st dose	3 mg/mL	2.7 mg	IV/IO	0.9 mL
Adenosine 2nd dose	3 mg/mL	5.4 mg	IV/IO	1.8 mL
Albuterol NEB	2.5 mg/3mL	2.5 mg	NEB	3 mL
Amiodarone	50 mg/mL	140 mg	IV/IO	2.8 mL
Atropine - Bradycardia	0.1 mg/mL	0.5 mg	IV/IO	5 mL
Calcium Chloride	100 mg/mL	550 mg	IV/IO	5.5 mL
Dextrose 10%	0.1 g/mL	10 g	IV/IO	100 mL
Dexamethasone	4 mg/mL	16 mg	IV/IO/IM/PO	4 mL
Diazepam	5 mg/mL	5 mg	IV/IO	1 mL
Diphenhydramine	50 mg/mL	25 mg	IV/IO/IM	0.5 mL
Drips (Dopa/Epi/Norepi)	Refer to Dilution Chart on back and contact BioTel			
Epi 1:1000 IM	**1 mg/mL**	0.25 mg	**IM**	0.25 mL
Epi 1:10,000 IV	**0.1 mg/mL**	0.25 mg	**IV/IO**	2.5 mL
Epi Auto-Injector Junior	Brand dependent	0.15 mg	IM	Up to 3 units
Epi 1:1000 NEB - Croup	1 mg/mL	5 mg	NEB	5 mL
Etomidate	2 mg/mL	8 mg	IV/IO	4 mL
Fentanyl	50 mcg/mL	25 mcg	IV/IO/IM/IN	0.5 mL
Glucagon	1 mg/mL	1 mg	IV/IO/IM/IN	1 mL
Glucose Gel	15 g/37.5 mL tube	15 g	BUCCAL	1 tube
Hydroxocobalamin	5 g/200 mL	2.5 g	IV	**See back**
Ipratropium	0.5 mg/2.5 mL	0.5 mg	NEB	2.5 mL
Ketamine SEDATE 1st dose	**10 mg/mL**	54 mg	**IV/IO**	**5.4 mL (D)**
Ketamine SEDATE 2nd dose		54 mg	**IV/IO**	**5.4 mL (D)**
Ketamine SEDATE 1st dose	100 mg/mL	100 mg	**IM**	1 mL
Ketamine SEDATE 2nd dose		50 mg	**IM**	0.5 mL
Ketamine PAIN 1st dose	**10 mg/mL**	5 mg	**IV/IO**	**0.5 mL (D/R)**
Ketamine PAIN 2nd dose		3 mg	**IV/IO**	**0.3 mL (D/R)**
Ketamine PAIN 1st dose		10 mg	**IM/IN**	**1 mL (D/R)**
Ketamine PAIN 2nd dose		5 mg	**IM/IN**	**0.5 mL (D/R)**
Lidocaine 2% - Cardiac	20 mg/mL	28 mg	IV/IO	1.4 mL
Magnesium Sulfate	**See Dilution Chart**	1000 mg	IV/IO	**See back**
Methylprednisolone	**125 mg/10 mL**	50 mg	**IV/IO**	**4 mL (D)**
Methylprednisolone	125 mg/2 mL	50 mg	**IM**	0.8 mL
Midazolam	**1 mg/mL**	5 mg	IV/IO/IM/IN	**5 mL (D)**
Morphine	**1 mg/mL**	2.8 mg	IV/IO/IM	**2.8 mL (D/R)**
Naloxone	1 mg/mL	2 mg	IV/IO/IM/IN	2 mL
Ondansetron	2 mg/mL	4 mg	**IV/IO**	2 mL
Ondansetron	Formulation dependent	1 full 4-mg **ODT** **OR** ½ of 8-mg **ODT**		
Sodium Bicarbonate 8.4%	1 mEq/mL	30 mEq	IV/IO	30 mL

7 – 9 years (53 – 64 lb) 24 – 29 kg

(D) = Must be DILUTED (R) = Must be volume-REDUCED

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ORANGE

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Medication Dilution Instructions - These depend on proper concentration

ANY variance to the starting medication concentration will change the dilution recipe!

Some medications must be DILUTED before administration; some must be volume-REDUCED

Some medications must be BOTH DILUTED *AND* volume-REDUCED

(D) = DILUTION (R) = Volume REDUCTION

NAME ROUTE & INDICATION	STARTING CONCENTRATION	DESIRED CONCENTRATION	DILUTION RECIPE
Hydroxocobalamin - IV	Run 120 gtt/min **for 15 min** (1/2 vial or 100 mL). **Use 20 gtt/mL set in kit. Set timer!**		
Ketamine SEDATION (D) - IV/IO	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Administer 5.4 mL 2nd dose: Administer 5.4 mL
	If 100 mg/mL unavailable, see CPGs		
Ketamine PAIN (D/R) - IV/IO	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Reduce & give 0.5 mL 2nd dose: Reduce & give 0.3 mL
	If 100 mg/mL unavailable, see CPGs		
Ketamine PAIN (D/R) - IM/IN	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Reduce & give 1 mL 2nd dose: Reduce & give 0.5 mL
	If 100 mg/mL unavailable, see CPGs		
Magnesium Sulfate (D) - IV/IO: Respiratory Distress or Torsades de pointes WITH Pulse			
	5 g/10 mL	**10 mg/mL**	Add 2 mL (1 g) to 100 mL NS Run 67 gtt/min (100 mL) **for 15 min** **Use 10 gtt/mL set. Set Timer!**
Magnesium Sulfate (D) - IV/IO: PULSELESS Torsades de pointes			
	5 g/10 mL	**200 mg/mL**	Waste 4 mL from 10-mL NS flush Replace with 4 mL (2 g) mag sulfate Give 5.2 mL, push slowly over 2 min
Methylprednisolone (D) - IV/IO	125 mg/2 mL	**125 mg/10 mL**	Reconstitute 125 mg in 2 mL NS Waste 2 mL from 10-mL NS flush Replace with 2 mL of drug Administer 4 mL
Midazolam (D) - IV/IO/IM/IN	5 mg/mL	**1 mg/mL**	Waste 6 mL from 10-mL NS flush Replace with 1 mL of midazolam Administer 5 mL **PAI IV/IO only **For PAI use half dose: Give 2.5 mL
Morphine (D/R) - IV/IO/IM	10 mg/mL	**1 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL of morphine Reduce & administer 2.8 mL
Dopamine Drip	Waste 50 mL from 250 mL NS bag; Replace with 50 mL (80 mg) of dopamine drawn from a 1,600 mcg/mL premixed dopamine bag; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min):	**5:** 25 gtt/min | **7.5:** 38 gtt/min | **10:** 51 gtt/min | **12.5:** 63 gtt/min | **15:** 76 gtt/min | **20:** 101 gtt/min		
Epinephrine Drip	Add **10 mL (1 mg) of epi 0.1 mg/mL** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/min):	**2:** 30 gtt/min | **4:** 60 gtt/min | **6:** 90 gtt/min | **8:** 120 gtt/min | **10:** 150 gtt/min		
Norepinephrine Drip	Add **2 mL (2 mg)** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/min):	**2:** 15 gtt/min | **4:** 30 gtt/min | **6:** 45 gtt/min | **8:** 60 gtt/min | **10:** 75 gtt/min		

7 – 9 years (53 – 64 lb)

24 – 29 kg

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Weight (kg): 30 – 36.9		Weight (lb): 66 – 81	
Age: 10 – 11 years		Length: 131 – 144 cm	
Normal Vital Signs:	**HR 60 - 100**	**RR 12 - 20**	**SBP At least 90**
DEFIBRILLATION: 55 → 110 → 110 - 260 Joules		CARDIOVERSION: 27 → 52 → 100 Joules	
OPA: 80 mm; NPA: 26 Fr	Laryngoscope: 3 Straight	Fluid Bolus (20 mL/kg): 700 mL	
ETT: 6.5 Cuffed; Depth: 18.5 – 19.5 cm		King: Size 3 Yellow; I-Gel: Size 3 Yellow	

Medication Administration

NAME	CONCENTRATION	DOSE	ROUTE	VOLUME
Adenosine 1st dose	3 mg/mL	3 mg	IV/IO	1 mL
Adenosine 2nd dose	3 mg/mL	6.6 mg	IV/IO	2.2 mL
Albuterol NEB	2.5 mg/3mL	2.5 mg	NEB	3 mL
Amiodarone	50 mg/mL	160 mg	IV/IO	3.2 mL
Atropine - Bradycardia	0.1 mg/mL	0.5 mg	IV/IO	5 mL
Calcium Chloride	100 mg/mL	650 mg	IV/IO	6.5 mL
Dextrose 10%	0.1 g/mL	10 g	IV/IO	100 mL
Dexamethasone	4 mg/mL	16 mg	IV/IO/IM/PO	4 mL
Diazepam	5 mg/mL	5 mg	IV/IO	1 mL
Diphenhydramine	50 mg/mL	35 mg	IV/IO/IM	0.7 mL
Drips (Dopa/Epi/Norepi)	Refer to Dilution Chart on back and contact BioTel			
Epi 1:1000 IM	**1 mg/mL**	0.3 mg	**IM**	0.3 mL
Epi 1:10,000 IV	**0.1 mg/mL**	0.3 mg	**IV/IO**	3 mL
Epi Auto-Injector ADULT	1 mg/mL	0.3 mg	IM	Up to 3 units
Epi 1:1000 NEB - Croup	1 mg/mL	5 mg	NEB	5 mL
Etomidate	2 mg/mL	10 mg	IV/IO	5 mL
Fentanyl	50 mcg/mL	35 mcg	IV/IO/IM/IN	0.7 mL
Glucagon	1 mg/mL	1 mg	IV/IO/IM/IN	1 mL
Glucose Gel	15 g/37.5 mL tube	15 g	BUCCAL	1 tube
Hydroxocobalamin	5 g/200 mL	2.5 g	IV	**See back**
Ipratropium	0.5 mg/2.5 mL	0.5 mg	NEB	2.5 mL
Ketamine SEDATE 1st dose	**10 mg/mL**	66 mg	**IV/IO**	**6.6 mL (D)**
Ketamine SEDATE 2nd dose		66 mg	**IV/IO**	**6.6 mL (D)**
Ketamine SEDATE 1st dose	100 mg/mL	140 mg	**IM**	1.4 mL
Ketamine SEDATE 2nd dose		70 mg	**IM**	0.7 mL
Ketamine PAIN 1st dose	**10 mg/mL**	7 mg	**IV/IO**	**0.7 mL (D/R)**
Ketamine PAIN 2nd dose		3 mg	**IV/IO**	**0.3 mL (D/R)**
Ketamine PAIN 1st dose		14 mg	**IM/IN**	**1.4 mL (D/R)**
Ketamine PAIN 2nd dose		7 mg	**IM/IN**	**0.7 mL (D/R)**
Lidocaine 2% - Cardiac	20 mg/mL	32 mg	IV/IO	1.6 mL
Magnesium Sulfate	**See Dilution Chart**	1320 mg	IV/IO	**See back**
Methylprednisolone	**125 mg/10 mL**	62.5 mg	**IV/IO**	**5 mL (D)**
Methylprednisolone	125 mg/2 mL	62.5 mg	**IM**	1 mL
Midazolam	**1 mg/mL**	5 mg	IV/IO/IM/IN	**5 mL (D)**
Morphine	**1 mg/mL**	3.4 mg	IV/IO/IM	**3.4 mL (D)**
Naloxone	**1 mg/mL**	2 mg	IV/IO/IM/IN	2 mL
Ondansetron	2 mg/mL	4 mg	**IV/IO**	2 mL
Ondansetron	Formulation dependent	1 full 4-mg **ODT** **OR** ½ of 8-mg **ODT**		
Sodium Bicarbonate 8.4%	1 mEq/mL	35 mEq	IV/IO	35 mL

10 – 11 years (66 – 81 lb) 30 – 36.9 kg

(D) = Must be DILUTED (R) = Must be volume-REDUCED

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Medication Dilution Instructions - These depend on proper concentration

ANY variance to the starting medication concentration will change the dilution recipe!

Some medications must be DILUTED before administration; some must be volume-REDUCED

Some medications must be BOTH DILUTED *AND* volume-REDUCED

(D) = DILUTION (R) = Volume REDUCTION

NAME ROUTE & INDICATION	STARTING CONCENTRATION	DESIRED CONCENTRATION	DILUTION RECIPE
Hydroxocobalamin - IV	Run 120 gtt/min **for 15 min** (1/2 vial or 100 mL). **Use 20 gtt/mL set in kit. Set timer!**		
Ketamine SEDATION (D) - IV/IO	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Administer 6.6 mL 2nd dose: Administer 6.6 mL
	If 100 mg/mL unavailable, see CPGs		
Ketamine PAIN (D/R) - IV/IO	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Reduce & give 0.7 mL 2nd dose: Reduce & give 0.3 mL
	If 100 mg/mL unavailable, see CPGs		
Ketamine PAIN (D/R) - IM/IN	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine **1st dose: Reduce & give 1.4 mL 2nd dose: Reduce & give 0.7 mL
	If 100 mg/mL unavailable, see CPGs		
Magnesium Sulfate (D) - IV/IO: Respiratory Distress or Torsades de pointes WITH Pulse			
	5 g/10 mL	**20 mg/mL**	Add 4 mL (2 g) to 100 mL NS Run 44 gtt/min (66 mL) **for 15 min** **Use 10 gtt/mL set. Set Timer!**
Magnesium Sulfate (D) - IV/IO: PULSELESS Torsades de pointes			
	5 g/10 mL	**200 mg/mL**	Waste 4 mL from 10-mL NS flush Replace with 4 mL (2 g) mag sulfate Give 6.6 mL, push slowly over 2 min
Methylprednisolone (D) - IV/IO	125 mg/2 mL	**125 mg/10 mL**	Reconstitute 125 mg in 2 mL NS Waste 2 mL from 10-mL NS flush Replace with 2 mL of drug Administer 5 mL
Midazolam (D) - IV/IO/IM/IN	5 mg/mL	**1 mg/mL**	Waste 6 mL from 10-mL NS flush Replace with 1 mL of midazolam Administer 5 mL **PAI IV/IO only **For PAI use half dose: Give 2.5 mL
Morphine (D) - IV/IO/IM	10 mg/mL	**1 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL of morphine Administer 3.4 mL
Dopamine Drip	Waste 50 mL from 250 mL NS bag; Replace with 50 mL (80 mg) of dopamine drawn from a 1,600 mcg/mL premixed dopamine bag; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): **5**: 31 gtt/min | **7.5:** 46 gtt/min | **10:** 62 gtt/min | **12.5:** 77 gtt/min | **15:** 93 gtt/min | **20:** 124 gtt/min			
Epinephrine Drip	Add **10 mL (1 mg) of epi 0.1 mg/mL** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/min): **2:** 30 gtt/min | **4:** 60 gtt/min | **6:** 90 gtt/min | **8:** 120 gtt/min | **10:** 150 gtt/min			
Norepinephrine Drip	Add **2 mL (2 mg)** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/min): **2:** 15 gtt/min | **4:** 30 gtt/min | **6:** 45 gtt/min | **8:** 60 gtt/min | **10:** 75 gtt/min			

10 – 11 years (66 – 81 lb) 30 – 36.9 kg

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Weight (kg): 37 – 50		Weight (lb): 81.4 – 110	
Age: 12 – 13 years		Length: 131 – 144 cm	
Normal Vital Signs:	**HR 60 - 100**	**RR 12 - 20**	**SBP At least 100**
DEFIBRILLATION: 75 → 150 → 150 - 360 Joules		CARDIOVERSION: 40 → 80 → 160 Joules	
OPA: 80 mm; NPA: 28 Fr	Laryngoscope: 4 or 5	Fluid Bolus (20 mL/kg): 800 mL	
ETT: 7.0 Cuffed; Depth: 21 – 22.5 cm		King: Size 3 Yellow; I-Gel: Size 3 Yellow	

Medication Administration

NAME	CONCENTRATION	DOSE	ROUTE	VOLUME
Adenosine 1st	3 mg/mL	4.2 mg	IV/IO	1.4 mL
Adenosine 2nd	3 mg/mL	8.4 mg	IV/IO	2.8 mL
Albuterol NEB	2.5 mg/3mL	2.5 mg	NEB	3 mL
Amiodarone	50 mg/mL	200 mg	IV/IO	4 mL
Atropine - Bradycardia	0.1 mg/mL	0.5 mg	IV/IO	5 mL
Calcium Chloride	100 mg/mL	800 mg	IV/IO	8 mL
Dextrose 10%	0.1 g/mL	10 g	IV/IO	100 mL
Dexamethasone	4 mg/mL	16 mg	IV/IO/IM/PO	4 mL
Diazepam	5 mg/mL	5 mg	IV/IO	1 mL
Diphenhydramine	50 mg/mL	40 mg	IV/IO/IM	0.8 mL
Drips (Dopa/Epi/Norepi)	Refer to Dilution Chart on back and contact BioTel			
Epi 1:1000 IM	**1 mg/mL**	0.4 mg	**IM**	0.4 mL
Epi 1:10,000 IV	**0.1 mg/mL**	0.4 mg	**IV/IO**	4 mL
Epi Auto-Injector ADULT	1 mg/mL	0.3 mg	IM	Up to 3 units
Epi 1:1000 NEB - Croup	1 mg/mL	5 mg	NEB	5 mL
Etomidate	2 mg/mL	12 mg	IV/IO	6 mL
Fentanyl	50 mcg/mL	40 mcg	IV/IO/IM/IN	0.8 mL
Glucagon	1 mg/mL	1 mg	IV/IO/IM/IN	1 mL
Glucose Gel	15 g/37.5 mL tube	15 g	BUCCAL	1 tube
Hydroxocobalamin	5 g/200 mL	2.5 g	IV	**See back**
Ipratropium	0.5 mg/2.5 mL	0.5 mg	NEB	2.5 mL
Ketamine SEDATE 1st dose	**10 mg/mL**	80 mg	**IV/IO**	**8 mL (D)**
Ketamine SEDATE 2nd dose		80 mg	**IV/IO**	**8 mL (D)**
Ketamine SEDATE 1st dose	100 mg/mL	160 mg	**IM**	1.6 mL
Ketamine SEDATE 2nd dose		80 mg	**IM**	0.8 mL
Ketamine PAIN 1st dose	**10 mg/mL**	8 mg	**IV/IO**	**0.8 mL (D/R)**
Ketamine PAIN 2nd dose		4 mg	**IV/IO**	**0.4 mL (D/R)**
Ketamine PAIN 1st dose		16 mg	**IM/IN**	**1.6 mL (D/R)**
Ketamine PAIN 2nd dose		8 mg	**IM/IN**	**0.8 mL (D/R)**
Lidocaine 2% - Cardiac	20 mg/mL	40 mg	IV/IO	2 mL
Magnesium Sulfate	**See Dilution Chart**	1600 mg	IV/IO	**See back**
Methylprednisolone	**125 mg/10 mL**	62.5 mg	**IV/IO**	**5 mL (D)**
Methylprednisolone	125 mg/2 mL	62.5 mg	**IM**	1 mL
Midazolam	**1 mg/mL**	5 mg	IV/IO/IM/IN	**5 mL (D)**
Morphine	**1 mg/mL**	4 mg	IV/IO/IM	**4 mL (D)**
Naloxone	1 mg/mL	2 mg	IV/IO/IM/IN	2 mL
Ondansetron	2 mg/mL	4 mg	**IV/IO**	2 mL
Ondansetron	Formulation dependent	1 full 4-mg **ODT** **OR** ½ of 8-mg **ODT**		
Sodium Bicarbonate 8.4%	1 mEq/mL	40 mEq	IV/IO	40 mL

12 – 13 years (81.4 – 110 lb) 37 – 50 kg

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Some medications must be BOTH DILUTED *AND* volume-REDUCED

(D) = DILUTION (R) = Volume REDUCTION

NAME ROUTE & INDICATION	STARTING CONCENTRATION	DESIRED CONCENTRATION	DILUTION RECIPE
Hydroxocobalamin - IV	Run 120 gtt/min **for 15 min** (1/2 vial or 100 mL). **Use 20 gtt/mL set in kit. Set timer!**		
Ketamine SEDATION (D) - IV/IO	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Reduce & give 8 mL 2nd dose: Reduce & give 8 mL
	If 100 mg/mL unavailable, see CPGs		
Ketamine PAIN (D/R) - IV/IO	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine 1st dose: Reduce & give 0.8 mL 2nd dose: Reduce & give 0.4 mL
	If 100 mg/mL unavailable, see CPGs		
Ketamine PAIN (D/R) - IM/IN	100 mg/mL	**10 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL ketamine **1st dose: Reduce & give 1.6 mL 2nd dose: Reduce & give 0.8 mL
	If 100 mg/mL unavailable, see CPGs		
Magnesium Sulfate (D) - IV/IO: Respiratory Distress or Torsades de pointes WITH Pulse			
	5 g/10 mL	**20 mg/mL**	Add 4 mL (2 g) to 100 mL NS Run 53 gtt/min (80 mL) **for 15 min** **Use 10 gtt/mL set. Set Timer!**
Magnesium Sulfate (D) - IV/IO: PULSELESS Torsades de pointes			
	5 g/10 mL	**200 mg/mL**	Waste 4 mL from 10-mL NS flush Replace with 4 mL (2 g) mag sulfate Give 8 mL, push slowly over 2 min
Methylprednisolone (D) - IV/IO	125 mg/2 mL	**125 mg/10 mL**	Reconstitute 125 mg in 2 mL NS Waste 2 mL from 10-mL NS flush Replace with 2 mL of drug Administer 5 mL
Midazolam (D) - IV/IO/IM/IN	5 mg/mL	**1 mg/mL**	Waste 6 mL from 10-mL NS flush Replace with 1 mL of midazolam Administer 5 mL **For PAI use half dose: Give 2.5 mL
		**PAI IV/IO only	
Morphine (D) - IV/IO/IM	10 mg/mL	**1 mg/mL**	Waste 1 mL from 10-mL NS flush Replace with 1 mL of morphine Administer 4 mL
Dopamine Drip	Use **1600 mcg/mL Premix** OR Add **400 mg** to 250ml NS Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/kg/min): **5**: 8 gtt/min | **7.5:** 11 gtt/min | **10:** 15 gtt/min | **12.5:** 19 gtt/min | **15:** 23 gtt/min | **20:** 30 gtt/min			
Epinephrine Drip	Add **10 mL (1 mg) of epi 0.1 mg/mL** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/min): **2:** 30 gtt/min | **4:** 60 gtt/min | **6:** 90 gtt/min | **8:** 120 gtt/min | **10:** 150 gtt/min			
Norepinephrine Drip	Add **2 mL (2 mg)** to 250 mL NS; Use 60 gtt/mL set; Contact BioTel		
Dose (mcg/min): **2:** 15 gtt/min | **4:** 30 gtt/min | **6:** 45 gtt/min | **8:** 60 gtt/min | **10:** 75 gtt/min			

12 – 13 years (81.4 – 110 lb) 37 – 50 kg

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