ENGLISH

MI-MEDIC

Michigan Medication Emergency Dosing and Intervention Cards

Based on the State of Michigan EMS Protocols
Revised 2023

Version 4.1.4

MI-MEDIC Instructions

Determine the appropriate card to be used based on the following order:

1. Select the card that matches the patient's weight when known. Be sure not to confuse pounds and kilograms.
2. Use approved length-based pediatric resuscitation tape to determine the correct card when weight is unknown.
3. Use the patient's age to determine the correct card when resuscitation tape is not available, estimating age when unknown.
4. If pediatric patient exceeds length-based tape, use **BLACK** (adult) card.

Pediatric Patients (≤ 14 years old)

1. Select the desired medication or intervention.
2. Assure the medication concentration on hand is the SAME as specified on the MI-MEDIC.
3. Administer volume of medication listed at the far right of the card, including dilution amount, if necessary.

Adult Patients (> 14 years old) – Black Cards

1. Select the desired medication or intervention.
2. Assure the medication concentration on hand is the SAME as specified on the MI-MEDIC.
3. Administer volume of medication listed at the far right of the card, including dilution amount, if necessary.

- ❑ Confirm medication DOSE and VOLUME to be delivered with colleague when possible.
- ❑ Contact Medical Control for questions or concerns.

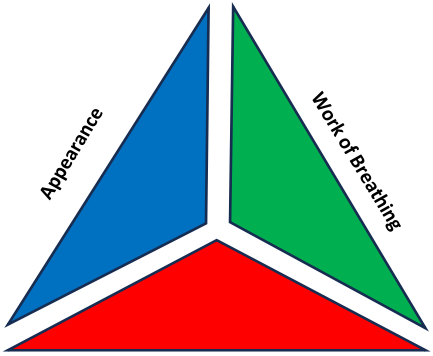
Note: Protocols are dynamic and may change based on current science. EMS personnel must be familiar with the most current set of approved protocols which take precedence over the information included in the MI-MEDIC.

Pediatric Assessment Tools

Pediatric Glasgow Coma Scale			
	< 1 Year	> 1 Year	Score
Eye Opening	Spontaneous	Spontaneous	4
	To Speech	To verbal command	3
	To pain	To pain	2
	No response	No response	1
Verbal Response	Coos, babbles	Oriented	5
	Cries and is consolable	Disoriented/Confused	4
	Cries to pain	Inappropriate words	3
	Grunts, moans	Incomprehensible sounds	2
	No response	No response	1
Motor Response	Spontaneous	Obeys	6
	Localizes pain	Localizes pain	5
	Withdraws from pain	Withdraws from pain	4
	Flexion (decorticate)	Flexion (decorticate)	3
	Extension (decerebrate)	Extension (decerebrate)	2
	No Response	No Response	1

Pain Scale

Pediatric Assessment Triangle



APGAR Scale			
Sign	0	1	2
Appearance: Color	Blue or Pale	Cyanosis in extremities	Completely pink
Pulse: Heart Rate	Absent	Less than 100 bpm	Greater than 100 bpm
Grimace: Reflex Irritability	No Response	Grimace	Cry or Active Withdrawal
Activity: Muscle Tone	Limp	Some Flexion	Active Motion
Respiration	Absent	Weak Cry: Hypoventilation	Good, Crying

Pediatric Burn Considerations

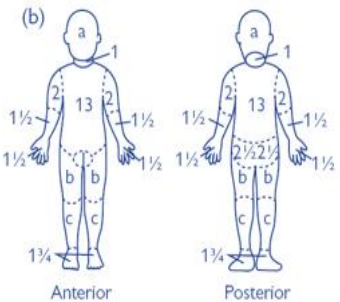
- Children have a greater body surface area (BSA) per unit of body mass than adults.
- Children require greater amounts of resuscitation fluid proportionally.
- Heads comprises > percentage of BSA.
- Large head contributes to > heat loss.
- Skin is thinner & more permeable; toxins will be absorbed faster & exert > systemic effects.

Calculating Burn Percentages in Children

Lund and Browder Chart - For large and TBSA burns.

- This method compensates for variation in body shape with age.

	0 yr.	1 yr.	5 yrs.	10 yrs.	15 yrs.
a ½ of head					
b ½ of 1 thigh		3.25	4	4.25	4.5
c ½ of 1 lower leg		2.5	2.75	3	3.25



The Palm Method

For burns scattered over the body:

- Use ***patient's hand*** as a guide.
- Entire palmar surface = 1% of the patient's body.

Poison Control
1-800-222-1222

Child Abuse Hotline
1-855-444-3911

Human Trafficking Hotline
1-888-373-7888

Human Trafficking Flags

Living circumstances

- No personal space, too many people in one place
- No or very few personal items
- No identification, may not know address
- Unusual security; barred windows, locks, cameras

Behavior

- Exhibit fear/paranoia of law enforcement or authority figures
- Avoid eye contact with responders
- Often trafficker is with them, controlling them & prevents person from speaking for themselves

Physical Signs

- Physical abuse; bruises, cuts, burns, scars
- Malnourishment
- Unusual tattoos and markings

Infectious Disease Precautions

Standard Precautions are used on all patient encounters and protect against contact with blood, body fluids, non-intact skin and mucous membranes.

PPE:

- Gloves during patient contact.
- Goggles/face shield and surgical masks for any airway procedures.
- Impermeable gown if splash or liquid generation expected.

Transport Considerations:

- Standard transportation to appropriate health care facility.
- If the patient compartment is equipped with an exhaust fan, ensure that it is on.

Contact Precautions are used to provide fluid-resistant barriers to infectious agents that are either highly pathogenic, drug resistant, contagious, or persistent and that can easily be contracted or spread to other environments via surface contact.

PPE:

- Disposable fluid-resistant gown that protects the provider's legs or consider disposable fluid-resistant coveralls.
- Disposable gloves.
- Ensure strict adherence to standard precautions based on situation (e.g., mask, goggles/face shield for splatter risk or airway interventions).

Transport Considerations:

- Consider applying a fluid-resistant barrier sheet to the patient to protect the responder and environmental surfaces in the presence of excessive wound drainage, fecal incontinence, or other discharges.
- Advise receiving hospital of patient on contact precautions who should preferably be transported to a private room.

Additional precautions may apply for special respiratory and viral hemorrhagic viruses.

Airborne Precautions provide respiratory protection against inhalation of potentially infectious airborne particles.

PPE:

- N95 respirator.
- Disposable gloves.
- Eye protection – goggles or face shield.

Transport Considerations:

- Notify the receiving hospital of the need for an airborne infection isolation room (AIIR) for patient placement.
- If possible, have the patient compartment exhaust vent on high and isolating the driver compartment from the patient compartment. Consider having the driver compartment ventilation fan set to high without recirculation.
- If driver/pilot compartment is not isolated from the patient compartment, vehicle operator should wear N95 respirator.
- Patients who are intubated should be ventilated with a bag-valve device or ventilator equipped with a HEPA filter in-line or on the exhalation port.

Droplet Precautions provide protection to the responder's mucous membranes and respiratory system from exposure to potentially infectious droplets during direct patient care activities.

PPE:

- Disposable surgical mask (N95 respirator per protocols).
- Disposable gloves.
- Eye protection – goggles or face shield.

Transport Considerations:

- If possible, have the patient compartment exhaust vent on high and isolating the driver compartment if performing aerosol generating procedures.
- Increase ventilation by having air or heat on non-recirculating cycle and/or open windows.
- Advise receiving hospital of respiratory symptoms and need for a private room (negative pressure not necessary) would be preferred.

TEN-4-FACESp

Bruising Clinical Decision Rule for Children < 4 Years of Age

When is bruising concerning for abuse in children < 4 years of age?
If bruising in any of the three components (Regions, Infants, Patterns) is present without a reasonable explanation, strongly consider evaluating for child abuse and/or consulting with an expert in child abuse.

REGIONS

TEN

Torso | **E**ars | **N**eck

FACES

Frenulum
Angle of Jaw
Cheeks *(fleshy part)*
Eyelids
Subconjunctivae

INFANTS

4 months and younger

Any bruise, anywhere

PATTERNS

Patterned bruising

Bruises in specific patterns like slap, grab or loop marks

See the signs

Unexplained bruises in these areas most often result from physical assault.
TEN-4-FACESp is not to diagnose abuse but to function as a screening tool to improve the recognition of potentially abused children with bruising who require further evaluation.

Ann & Robert H. Lurie Children's Hospital of Chicago®

TEN-4-FACESp was developed and validated by Dr. Mary Clyde Pierce and colleagues. It is published and available for FREE download at **luriechildrens.org/ten-4-facesp**.

Pediatric Equipment Sizes and Normal Vital Signs

	3 - 5 Kg 6-12 lbs GREY	6 - 7 Kg 13-16 lbs PINK	8 - 9 Kg 17-20 lbs RED	10 - 11 Kg 21-25 lbs PURPLE	12 - 14 Kg 26-31 lbs YELLOW	15 - 18 Kg 32-40 lbs WHITE	19 - 23 Kg 41-51 lbs BLUE	24 - 29 Kg 52-64 lbs ORANGE	30 - 36 Kg 65-79 lbs GREEN
NORMAL VITALS									
Heart Rate	100-180	100-180	100-180	80-160	80-130	80-120	70-110	70-110	70-110
Respiratory Rate	30-60	30-45	25-35	20-30	20-30	20-30	18-24	18-22	16-20
Systolic BP	60-100 mmHg	65-100 mmHg	70-110 mmHg	72-110 mmHG	74-110 mmHg	76-110 mmHg	80-110 mmHg	80-110 mmHg	90-120 mmHg
Blood Glucose	>60 mg/dl	>60 mg/dl	>60 mg/dl	>60 mg/dl	>60 mg/dl	>60 mg/dl	>60 mg/dl	>60 mg/dl	>60 mg/dl
Development	Flexed position when prone. Inhibited grasp reflex.	Rolls from front to back, back to side. Carries object to mouth.	Clear preference for caregiver with stranger anxiety. Sits steady without support	Able to cruise and beginning to walk. Uses cup well along with some spoon agility.	Able to manipulate small objects, turn door knobs and unscrew lids.	Speaks in sentences of 5 to 6 words. Draws circles and squares.	Able to tell a brief story with a complete sentence. Able to balance on one foot for a short period of time.	Dresses themselves, can catch a ball more easily.	Demonstrate abstract thinking. Highly emotional development stage.
EQUIPMENT SIZES									
OPA	50 mm	50 mm	50 mm	60 mm	60 mm	60 mm	70 mm	80 mm	80 mm
NPA	14 F	14 F	14 F	18 F	20 F	22 F	24 F	26 F	30 F
BVM	Infant	Infant	Infant	Child	Chlid	Child	Child	Child	Adult
Laryngoscope	0-1 (straight)	1 (straight)	1 (straight)	1 (straight)	2 (stragh/curved)	2 (straight/curved)	2 (straight/curved)	2 3 (straight/curved)	2 3 (straight/curved)
iGel	1.0 - 1.5	1.5	1.5	1.5 2.0	2.0	2.0	2.0	2.0 2.5	2.5 3.0
LMA Supreme	1.0 - 1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0 2.5	2.5 3.0
King-LT	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0 2.5	2.5 3.0
ETI NOTE	** NO ETI unless unable to ventilate ----- ETCO2 Mandatory ----- NO ETI unless unable to ventilate ----- ETCO2 Mandatory **								
ET Tube	2-2.5 (cuffed)	3 (cuffed)	3-3.5 (cuffed)	3.5 (cuffed)	3.5-4 (cuffed)	4.5-5 (cuffed)	5 (cuffed)	5.5 (cuffed)	6 (cuffed)
ET Depth	10-11 cm	11.5 cm	12-12.5 cm	13 cm	13-14 cm	15 cm	16-17 cm	18 cm	19-19.5 cm

GRAY

3-5 kilograms *(6-12 pounds)* / 0-2 Months
CARDIAC RESUSCITATION

Normal Vitals: HR: 100-180, RR: 30-60, Systolic BP: 60-100 mmHg, BG > 40 mg/dl

Resuscitation Medication - (confirm concentration is as specified)	**Dose**	**Volume**
Epinephrine (1 mg/10 mL prefilled syringe) IV/IO Q 3-5 min for arrest/bradycardia[1]	0.05 mg	**0.5 mL**
Amiodarone (150 mg/3 mL) IV/IO for shock resistant V-Fib	25 mg	**0.5 mL**
Lidocaine (100 mg/5 mL) IV/IO for shockable V-Fib (or wide-complex tachycardia*)	6 mg	**0.3 mL**
Atropine (1 mg/10 mL) IV/IO for bradycardia unresponsive to Epinephrine[1]	0.1 mg	**1 mL**
*Adenosine (6 mg/2 mL) IV/IO **1st Dose**. 0.1 mg/kg. For SVT (HR > 220)	0.5 mg	**0.2 mL**
*Adenosine (6 mg/2 mL) IV/IO **2nd Dose.** For SVT (HR > 220)	1 mg	**0.4 mL**
Epinephrine IV/IO (1 mg/10 mL) **Push Dose - Dilute 1 mL with 9 mL Normal Saline** = 10 mcg/1 mL	5 mcg	**0.5 mL (Diluted)**
Electrical Therapy	**Initial[2]**	**Repeat[2]**
Defibrillation (pediatric pads preferred) Adult pads may be used anterior/posterior.	**7 J**	**15 J**
*Synchronized Cardioversion[2] for unstable tachycardia	**5 J**	**10 J**

Equipment

OPA: **50 mm** NPA: **14 F** BVM: **Infant** Laryngoscope: **0-1 (straight)** iGel: **1.0-1.5** LMA Supreme: **1.0-1.5** King-LT: **0-1.0**

ET Tube: **2-2.5 (cuffed)** ET Depth: **10-11 cm** *No ETI unless unable to ventilate*

Fluid Bolus

Normal Saline **100 mL IV/IO** - **May repeat x 1 PRN**

***CONTACT MEDICAL CONTROL** [1]**CPR if HR < 60 after O2** [2]**May adjust to closest available energy setting**

3-5 kilograms *(6-12 pounds)* / 0-2 Months

CONDITIONS/MEDICATIONS

GRAY

Normal Vitals: HR: 100-180, RR: 30-60, Systolic BP: 60-100 mmHg, Blood Glucose > 40 mg/dl. **Special Precautions**: Be sure to keep the baby warm.

Development: Flexed position when prone. Inhibited grasp reflex.

Condition	Medication - (confirm concentration is as specified)	Dose	Volume
Wheezing	Albuterol Nebulized (2.5 mg/3 mL)	2.5 mg	**3 mL**
	Ipratropium Bromide Nebulized (0.5 mg/2.5 mL if wheezing)	500 mcg	**2.5 mL**
Anaphylaxis	Diphenhydramine IM/IV/IO (50 mg/mL)	5 mg	**0.1 mL**
	Methylprednisolone IV/IO/IM (125 mg/2 mL)	10 mg	**0.2 mL**
Anaphylaxis/ Profound Distress	Epinephrine IM (1 mg/mL) ***or*** 1 Pediatric Epinephrine Autoinjector IM (**Severe symptoms only**). Contact medical control, if possible.	0.1 mg	**0.1 mL IM**
Stridor	Racepinephrine 2.25% Nebulized (place 0.5 mL in 3 mL normal saline)	11.25 mg	**3.5 mL**
	Epinephrine (1 mg/mL) nebulized	5 mg	**5 mL**
Seizure	Midazolam IM (5 mg/mL)	0.5 mg	**0.1 mL IM**
Fever/Pain	Acetaminophen PO (160 mg/5 mL)	44.8 mg	**1.4 mL PO**
Hypoglycemia (<60 mg/dL)	D12.5% (6.25 g/50 mL) **12.5 mL of D50% diluted with 37.5 mL Normal Saline = D12.5% Give slow IV**	2.5 g	**20 mL (D12.5%)**
	Dextrose 10% (100mg/mL)	2.5 g	**25 mL**
	Glucagon IM (1 mg/mL)	0.5 mg	**0.5 mL IM**
Pain Management	Fentanyl IV/IN (100 mcg/2 mL)	5 mcg	**0.1 mL**
Narcotic OD	Naloxone IV/IM (2 mg/2 mL)	0.5 mg	**0.5 mL**
	Naloxone IN (2 mg/2 mL) **Divide dose equally between both nostrils**	0.5 mg	**0.5 mL IN**
Open Fracture	Cefazolin (1000 mg/10 mL) Mix 1 gm of medication per 10 mL NS **IV SLOWLY.**	150 mg	**1.5 mL IV Slowly**

6-7 kilograms *(13-16 pounds)* / 3-6 Months PINK

CARDIAC RESUSCITATION

Normal Vitals: HR: 100-180, RR: 30-45, Systolic BP: 65-100 mmHg, Blood Glucose > 40 mg/dl

Resuscitation Medication - **(confirm concentration is as specified)**	**Dose**	**Volume**
Epinephrine (1 mg/10 mL prefilled syringe) IV/IO Q 3-5 min for arrest/bradycardia[1]	0.1 mg	**1 mL**
Amiodarone (150 mg/3 mL) IV/IO for shock resistant V-Fib	35 mg	**0.7 mL**
Lidocaine (100 mg/5 mL) IV/IO for shockable V-Fib (or wide-complex tachycardia*)	8 mg	**0.4 mL**
Atropine (1 mg/10 mL) IV/IO for bradycardia unresponsive to Epinephrine[1]	0.15 mg	**1.5 mL**
*Adenosine (6 mg/2 mL) IV/IO **1st Dose.** For SVT (HR >220)	0.6 mg	**0.2 mL**
*Adenosine (6 mg/2 mL) IV/IO **2nd Dose.** For SVT (HR > 220)	1.2 mg	**0.4 mL**
Epinephrine IV/IO (1 mg/10 mL) **Push Dose - Dilute 1 mL with 9 mL Normal Saline** = 10 mcg/1 mL	7 mcg	**0.7 mL (Diluted)**
Electrical Therapy	**Initial[2]**	**Repeat[2]**
Defibrillation (pediatric pads preferred) Adult pads may be used anterior/posterior.	**15 J**	**30 J**
*Synchronized Cardioversion[2] for unstable tachycardia	**10 J**	**20 J**

Equipment

OPA: **50 mm** NPA: **14 F** BVM: **Infant** Laryngoscope: **1 (straight)** iGel: **1.5** LMA Supreme: **1.5** King-LT: **1.0**

ET Tube: **3 (cuffed)** ET Depth: **11.5 cm** *No ETI unless unable to ventilate*

Fluid Bolus

Normal Saline **130 mL IV/IO** - **May repeat x 1 PRN**

***CONTACT MEDICAL CONTROL** **[1]CPR if HR < 60 after O2** **[2]May adjust to closest available energy setting**

6-7 kilograms *(13-16 pounds)* / 3-6 Months

CONDITIONS/MEDICATIONS

PINK

Normal Vitals: HR: 100-180, RR: 30-45, Systolic BP: 65-100 mmHg, Blood Glucose > 40 mg/dl. **Special Precautions**: Be sure to keep the baby warm.

Development: Rolls from front to back, back to side. Carries object to mouth.

Condition	Medication - (confirm concentration is as specified)	Dose	Volume
Wheezing	Albuterol Nebulized (2.5 mg/3 mL)	2.5 mg	**3 mL**
	Ipratropium Bromide Nebulized (0.5 mg/2.5 mL if wheezing)	500 mcg	**2.5 mL**
Anaphylaxis	Diphenhydramine IM/IV/IO (50 mg/mL)	10 mg	**0.2 mL**
	Methylprednisolone IV/IO/IM (125 mg/2mL)	12.5 mg	**0.2 mL**
Anaphylaxis/ Profound Distress	Epinephrine IM (1 mg/mL) ***or*** 1 Pediatric Epinephrine Autoinjector IM (**Severe symptoms only**) Contact medical control, if possible.	0.1 mg	**0.1 mL**
Stridor	Racepinephrine 2.25% Nebulized (place 0.5 mL in 3 mL normal saline)	11.25 mg	**3.5 mL**
	Epinephrine (1 mg/mL) nebulized	5 mg	**5 mL**
Seizure	Midazolam IM (5 mg/mL)	1 mg	**0.2 mL**
Fever/Pain	Acetaminophen PO (160 mg/5 mL)	96 mg	**3 mL PO**
Hypoglycemia (<60 mg/dL)	D25% (12.5 g/50 mL) **25 mL of D50% diluted with 25 mL of Normal Saline = D25% Give Slow IV**	3.25 g	**13 mL (D25%)**
	Dextrose 10% (100mg/mL)	3.3 g	**33 mL (D10%)**
	Glucagon IM (1 mg/mL)	0.5 mg	**0.5 mL IM**
Pain Management	Fentanyl IV (100 mcg/2 mL)	10 mcg	**0.2 mL**
Narcotic OD	Naloxone IV/IM (2 mg/2 mL)	0.7 mg	**0.7 mL**
	Naloxone IN (2 mg/2 mL) **Divide dose equally between both nostrils**	1 mg	**1 mL IN**
Open Fracture	Cefazolin (1000 mg/10 mL) Mix 1 gm of medication per 10 mL NS **IV SLOWLY.**	200 mg	**2 mL IV SLOWLY**
	Ceftriaxone (1000 mg/10 mL) Mix 1 gm of medication per 10 mL NS. **Administer IV SLOWLY.**	300 mg	**3 mL**

8 9 kilograms *17-20 pounds)* / 7 10 Months

CARDIAC RESUSCITATION

RED

Resuscitation Medication - (confirm concentration is as specified)	**Dose**	**Volume**
Epinephrine (1 mg/10 mL prefilled syringe) IV/IO Q 3-5 min for arrest/bradycardia[1]	0.1 mg	**1 mL**
Amiodarone (150 mg/3 mL) IV/IO for shock resistant V-Fib	50 mg	**1 mL**
Lidocaine (100 mg/5 mL) IV/IO for shockable V-Fib (or wide-complex tachycardia*)	10 mg	**0.5 mL**
Atropine (1 mg/10 mL) IV/IO for bradycardia unresponsive to Epinephrine[1]	0.2 mg	**2 mL**
*Adenosine (6 mg/2 mL) IV/IO **1st Dose.** For SVT (HR > 220)	0.9	**0.3 mL**
*Adenosine (6 mg/2 mL) IV/IO **2nd Dose.** For SVT (HR > 220)	1.8	**0.6 mL**
Epinephrine IV/IO (1 mg/10 mL) **Push Dose - Dilute 1 mL with 9 mL Normal Saline** = 10 mcg/1 mL	9 mcg	**0.9 mL (Diluted)**
Electrical Therapy	**Initial[2]**	**Repeat[2]**
Defibrillation (pediatric pads preferred) Adult pads may be used anterior/posterior.	**20 J**	**50 J**
*Synchronized Cardioversion[2] for unstable tachycardia	**10 J**	**20 J**

Equipment

OPA: **50 mm** NPA: **14 F** BVM: **Infant** Laryngoscope: **1 (straight)** iGel: **1.5** LMA Supreme: **1.5** King-LT: **1.0**

ET Tube: **3-3.5 (cuffed)** ET Depth: **12-12.5 cm** *No ETI unless unable to ventilate*

Fluid Bolus

Normal Saline **170 mL IV/IO** - **May repeat x 1 PRN**

***CONTACT MEDICAL CONTROL** **[1]CPR if HR < 60 after O2** **[2]May adjust to closest available energy setting**

8 9 kilograms *17-20 pounds)* / 7 10 Months

CONDITIONS/MEDICATIONS

RED

Normal Vitals: HR 100-180, RR: 25-35, Systolic BP: 70-110 mmHg, Blood Glucose > 40 mg/dl. **Special Precautions**: Infants must be kept warm.

Development: Clear preference for caregiver with stranger anxiety**.** Sits steady without support.

Condition	Medication - (confirm concentration is as specified)	Dose	Volume
Wheezing	Albuterol Nebulized (2.5 mg/3 mL)	2.5 mg	**3 mL**
	Ipratropium Bromide Nebulized (0.5 mg/2.5 mL if wheezing)	500 mcg	**2.5 mL**
Anaphylaxis	Diphenhydramine IM/IV/IO (50 mg/mL)	10 mg	**0.2 mL**
	Methylpredinsolone IV/IO/IM (125 mg/2 mL)	12.5 mg	**0.2 mL**
Analphylaxis/ Profound Distress	Epinephrine IM (1 mg/mL) ***or*** 1 Pediatric Epinephrine Autoinjector IM (**Severe symptoms only**). Contact Medical Control, if possible.	0.1 mg	**0.1 mL IM**
Stridor	Racepinephrine 2.25% Nebulized (place 0.5 mL in 3 mL normal saline)	11.25 mg	**3.5 mL**
	Epinephrine (1 mg/mL) nebulized	5 mg	**5 mL**
Seizure	Midazolam IM (5mg/mL) **Give first if no IV**	1 mg	**0.2 mL IM**
	Midazolam IV (5mg/mL)	0.5 mg	**0.1 mL**
Fever/Pain	Acetaminophen PO (160 mg/5 mL)	128 mg	**4 mL PO**
	Ibuprofen PO (100 mg/5 mL)	80 mg	**4 mL PO**
Hypoglycemia (<60 mg/dL)	D25% (12.5 g/50 mL) **25 mL of D50% diluted with 25 mL of Normal Saline = D25% Give Slow IV**	4.25 g	**17 mL (D25%)**
	Dextrose 10% (100mg/mL)	4.3 g	**43mL**
	Glucagon IM (1 mg/mL)	0.5 mg	**0.5 mL IM**
Pain Control	Fentanyl IV/IN (100 mcg/2 mL)	10 mcg	**0.2 mL**
Narcotic OD	Naloxone IV/IM (2 mg/2 mL)	0.9 mg	**0.9 mL**
	Naloxone IN (2 mg/2 mL) **Divide dose equally between both nostrils**	1 mg	**1 mL IN**
Open Fracture	Cefazolin (1000 mg/10 mL) Mix 1 gm of medication per 10 mL NS IV **SLOWLY.**	250 mg	**2.5 mL IV SLOWLY**
	Ceftriaxone (1000 mg/10 mL) Mix 1 gm of medication per 10 mL NS. **Administer IV SLOWLY.**	400 mg	**4 mL**

10-11 kilograms *21-25 pounds)* /11-18 Months

PURPLE

CARDIAC RESUSCITATION

Resuscitation Medication - (confirm concentration is as specified)	**Dose**	**Volume**
Epinephrine (1 mg/10 mL prefilled syringe) IV/IO Q 3-5 min for arrest/bradycardia[1]	0.1 mg	**1 mL**
Amiodarone (150 mg/3 mL) IV/IO for shock resistant V-Fib	50 mg	**1 mL**
Lidocaine (100 mg/5 mL) IV/IO for shockable V-Fib (or wide-complex tachycardia*)	10 mg	**0.5 mL**
Atropine (1 mg/10 mL) IV/IO for bradycardia unresponsive to Epinephrine[1]	0.2 mg	**2 mL**
*Adenosine (6 mg/2 mL) IV/IO **1st Dose.** For SVT (HR >180)	1.2 mg	**0.4 mL**
*Adenosine (6 mg/2 mL) IV/IO **2nd Dose.** For SVT (HR > 180)	2 mg	**0.7 mL**
Epinephrine IV/IO (1 mg/10 mL) **Push Dose - Dilute 1 mL with 9 mL Normal Saline** = 10 mcg/1 mL	10 mcg	**1 mL (Diluted)**
Electrical Therapy	**Initial[2]**	**Repeat[2]**
Defibrillation (pediatric pads preferred) Adult pads may be used anterior/posterior.	**20 J**	**50 J**
*Synchronized Cardioversion[2] for unstable tachycardia	**10 J**	**20 J**
Equipment		
OPA: **60 mm** NPA: **18 F** BVM: **Child** Laryngoscope: **1 (straight)** iGel: **1.5-2.0** LMA Supreme: **1.5** King-LT: **1.0**		
ET Tube: **3.5 (cuffed)** ET Depth: **13 cm** *No ETI unless unable to ventilate*		
Fluid Bolus		
Normal Saline **200 mL IV/IO** - **May repeat x 1 PRN**		

***CONTACT MEDICAL CONTROL** **[1]CPR if HR < 60 after O2** **[2]May adjust to closest available energy setting**

10-11 kilograms *21-25 pounds)* /11-18 Months

CONDITIONS/MEDICATIONS

PURPLE

Normal Vitals: HR: 80-160, RR: 20-30, Systolic BP: 72-110 mmHg, Blood Glucose > 60 mg/dl

Development: (12 mos) Able to cruise and beginning to walk. (15-18 mos) Uses cup well along with some spoon agility.

Condition	Medication - (confirm concentration is as specified)	Dose	Volume
Wheezing	Albuterol Nebulized (2.5 mg/3 mL)	2.5 mg	**3 mL**
	Ipratropium Bromide Nebulized (0.5 mg/2.5 mL if wheezing)	500 mcg	**2.5 mL**
Anaphylaxis	Diphenhydramine IM/IV/IO (50 mg/mL)	15 mg	**0.3 mL**
	Methylprednisolone IV/IO/IM (125 mg/2 mL)	18.8 mg	**0.3 mL**
Anaphylaxis/ Profound Distress	Epinephrine IM (1 mg/mL) ***or*** 1 Pediatric Epinephrine Autoinjector IM (**Severe symptoms only**)	0.1 mg	**0.1 mL IM**
Stridor	Racepinephrine 2.25% Nebulized (place 0.5 mL in 3 mL normal saline)	11.25 mg	**3.5 mL**
	Epinephrine (1 mg/mL) nebulized	5 mg	**5 mL**
Seizure	Midazolam IM (5 mg/mL) **Give first if no IV**	1 mg	**0.2 mL IM**
	Midazolam IV (5 mg/mL)	0.5 mg	**0.1 mL**
Fever/Pain	Acetaminophen PO (160 mg/5 mL)	160 mg	**5 mL PO**
	Ibuprofen PO (100 mg/5 mL)	100 mg	**5 mL PO**
Hypoglycemia (<60 mg/dL)	D25% (12.5 g/50 mL) **25 mL of D50% diluted with 25 mL of Normal Saline = D25% Give Slow IV**	5.0 g	**20 mL (D25%)**
	Dextrose 10% (100mg/mL)	5.0 g	**50 mL**
	Glucagon IM (1 mg/mL)	0.5 mg	**0.5 mL IM**
Pain Management	Fentanyl IV/IO/IN (100 mcg/2 mL) **(For IN, divide dose between two nostrils)**	10 mcg	**0.2 mL**
	Ketamine IN (100 mg/1 mL)	10 mg	**0.1 mL IN**
Narcotic OD	Naloxone IV/IM (2 mg/2 mL)	1 mg	**1 mL**
	Naloxone IN (2 mg/ 2mL) **Divide dose equally between both nostrils**	1 mg	**1 mL IN**
Open Fracture	Cefazolin (1000 mg/10 mL) Mix 1 gm of medication per 10 mL NS **IV SLOWLY.**	300 mg	**3 mL IV SLOWLY**
	Ceftriaxone (1000 mg/10 mL) Mix 1 gm of medication per 10 mL NS. **Administer IV SLOWLY.**	500 mg	**5 mL**

12-14 kilograms *(26-31 pounds)* /19-35 Months

CARDIAC RESUSCITATION

YELLOW

Normal Vitals: HR: 80-130, RR: 20-30, Systolic BP: 74-110 mmHg, Blood Glucose > 60 mg/dl

Resuscitation Medication - (confirm concentration is as specified)	**Dose**	**Volume**
Epinephrine (1 mg/10 mL prefilled syringe) IV/IO Q 3-5 min for arrest/bradycardia[1]	0.15 mg	**1.5 mL**
Amiodarone (150 mg/3 mL) IV/IO for shock resistant V-Fib	75 mg	**1.5 mL**
Lidocaine (100 mg/5 mL) IV/IO for shockable V-Fib (or wide-complex tachycardia*)	14 mg	**0.7 mL**
Atropine (1 mg/10 mL) IV/IO for bradycardia unresponsive to Epinephrine[1]	0.25 mg	**2.5 mL**
*Adenosine (6 mg/2 mL) IV/IO **1st Dose.** For SVT (HR > 180)	1.5 mg	**0.5 mL**
*Adenosine (6 mg/2 mL) IV/IO **2nd Dose.** For SVT (HR > 180)	3 mg	**1 mL**
Epinephrine IV/IO (1 mg/10 mL) **Push Dose - Dilute 1 mL with 9 mL Normal Saline** = 10 mcg/1 mL	10 mcg	**1 mL (Diluted)**
Electrical Therapy	**Initial[2]**	**Repeat[2]**
Defibrillation (pediatric pads preferred) Adult pads may be used anterior/posterior.	**30 J**	**50 J**
*Synchronized Cardioversion[2] for unstable tachycardia	**15 J**	**30 J**

Equipment

OPA: **60 mm** NPA: **20 F** BVM: **Child** Laryngoscope: **2 (straight/curved)** iGel: **2.0** LMA Supreme: **2.0** King-LT: **2.0**

ET Tube: **3.5-4 (cuffed)** ET Depth: **13-14 cm** *No ETI unless unable to ventilate*

Fluid Bolus

Normal Saline **250 mL IV/IO** - **May repeat x 1 PRN**

***CONTACT MEDICAL CONTROL** **[1]CPR if HR < 60 after O2** **[2]May adjust to closest available energy setting**

12-14 kilograms *(26-31 pounds)* /19-35 Months

CONDITIONS/MEDICATIONS

YELLOW

Normal Vitals: HR: 80-130, RR: 20-30, Systolic BP: 74-110 mmHg, Blood Glucose > 60 mg/dl

Development: Able to manipulate small objects, turn door knobs and unscrew lids.

Condition	Medication - (confirm concentration is as specified)	Dose	Volume
Wheezing	Albuterol Nebulized (2.5 mg/3 mL)	2.5 mg	**3 mL**
	Ipratropium Bromide Nebulized (0.5 mg/2.5 mL if wheezing)	500 mcg	**2.5 mL**
Anaphylaxis	Diphenhydramine IM/IV/IO (50 mg/mL)	15 mg	**0.3**
	Methylprednisolone IV/IO/IM (125 mg/2mL)	18.75 mg	**0.3 mL**
Anaphylaxis/ Profound Distress	Epinephrine (1 mg/mL) ***or*** 1 Pediatric Epinephrine Autoinjector IM (**Severe symptoms only**)	0.2 mg	**0.2 mL**
Stridor	Racepinephrine 2.25% Nebulized (place 0.5 mL in 3 mL normal saline)	11.25 mg	**3.5 mL**
	Epinephrine (1 mg/mL) nebulized	5 mg	**5 mL**
Seizure	Midazolam IM (5 mg/mL) **Give first if no IV**	1.5 mg	**0.3 mL IM**
	Midazolam IV (5 mg/mL)	1 mg	**0.2 mL**
Fever/Pain	Acetaminophen PO (160 mg/5 mL)	192 mg	**6 mL PO**
	Ibuprofen (100 mg/5 mL)	120 mg	**6 mL PO**
Hypoglycemia (<60 mg/dL)	D25% (12.5 g/50 mL) **25 mL of D50% diluted with 25 mL of Normal Saline = D25% Give Slow IV**	6.25 g	**25 mL (D25%)**
	Dextrose 10% (100mg/mL)	6.25 g	**62.5 mL**
	Glucagon IM (1 mg/mL)	0.5 mg	**0.5 mL IM**
Pain Management	Fentanyl IV/IN (100 mcg/2 mL) (For IN, divide dose between two nostrils)	10 mcg	**0.2 mL**
	Ketamine IN (100 mg/1 mL)	10 mg	**0.1 mL**
	Morphine IV/IM/IO (10 mg/mL)	2 mg	**0.2 mL**
Narcotic OD	Naloxone IV/IM (2 mg/2 mL)	1.5 mg	**1.5 mL**
	Naloxone IN (2 mg/2 mL) **Divide dose equally between both nostrils**	1.5 mg	**1.5 mL IN**
Open Fracture	Cefazolin (1000 mg/10 mL) Mix 1 gm of medication per 10 mL NS. **Administer IV SLOWLY.**	400 mg	**4 mL**
	Ceftriaxone (1000 mg/10 mL) Mix 1 gm of medication per 10 mL NS. **Administer IV SLOWLY.**	650 mg	**6.5 mL**

15-18 kilograms *(32-40 pounds)* / 3-4 Years

CARDIAC RESUSCITATION

WHITE

Normal Vitals: HR: 80-120, RR: 20-30, Systolic BP: 76-110 mmHg, Blood Glucose > 60 mg/dl

Resuscitation Medication - (confirm concentration is as specified)	**Dose**	**Volume**
Epinephrine (1 mg/10 mL prefilled syringe) IV/IO Q 3-5 min for arrest/bradycardia[1]	0.2 mg	**2 mL**
Amiodarone (150 mg/3 mL) IV/IO for shock resistant V-Fib	100 mg	**2 mL**
Lidocaine (100 mg/5 mL) IV/IO for shockable V-Fib (or wide-complex tachycardia*)	20 mg	**1 mL**
Atropine (1 mg/10 mL) IV/IO for bradycardia unresponsive to Epinephrine[1]	0.35 mg	**3.5 mL**
*Adenosine (6 mg/2 mL) IV/IO **1st Dose.**	1.8 mg	**0.6 mL**
*Adenosine (6 mg/2 mL) IV/IO **2nd Dose.**	3.6 mg	**1.2 mL**
Epinephrine IV/IO (1 mg/10 mL) **Push Dose - Dilute 1 mL with 9 mL Normal Saline** = 10 mcg/1 mL	10 mcg	**1 mL (Diluted)**
Electrical Therapy	**Initial[2]**	**Repeat[2]**
Defibrillation (pediatric pads preferred) Adult pads may be used anterior/posterior.	**50 J**	**70 J**
*Synchronized Cardioversion[2] for unstable tachycardia	**20 J**	**40 J**

Equipment

OPA: **60 mm** NPA: **22 F** BVM: **Child** Laryngoscope: **2 (straight/curved)** iGel: **2.0** LMA Supreme: **2.0** King-LT: **2.0**

ET Tube: **4.5-5.0 (cuffed)** ET Depth: **15 cm** *No ETI unless unable to ventilate*

Fluid Bolus

Normal Saline **300 mL IV/IO** - **May repeat x 1 PRN**

***CONTACT MEDICAL CONTROL** **[1]CPR if HR < 60 after O2** **[2]May adjust to closest available energy setting**

15-18 kilograms *(32-40 pounds)* / 3-4 Years

CONDITIONS/MEDICATIONS

WHITE

Normal Vitals: HR: 80-120, RR: 20-30, Systolic BP: 76-110 mmHg, Blood Glucose > 60 mg/dl

Development: Speaks in sentences of 5 to 6 words. Draws circles and squares.

Condition	Medication - (confirm concentration is as specified)	Dose	Volume
Wheezing	Albuterol Nebulized (2.5 mg/3 mL)	2.5 mg	**3 mL**
	Ipratropium Bromide Nebulized (0.5 mg/2.5 mL if wheezing)	500 mcg	**2.5 mL**
Anaphylaxis	Diphenhydramine IM/IV/IO (50 mg/mL)	20 mg	**0.4 mL**
	Methylprednisolone IV/IO/IM (125 mg/2mL)	31 mg	**0.5 mL**
Anaphylaxis/ Profound Distress	Epinephrine IM (1 mg/mL) ***or*** 1 Pediatric Epinephrine Autoinjector IM (**Severe symptoms only**)	0.2 mg	**0.2 mL**
Stridor	Racepinephrine 2.25% Nebulized (place 0.5 mL in 3 mL normal saline)	11.25 mg	**3.5 mL**
	Epinephrine (1 mg/mL) nebulized	5 mg	**5 mL**
Seizure	Midazolam IM (5 mg/mL) **Give first if no IV**	1.5 mg	**0.3 mL IM**
	Midazolam IV (5 mg/mL)	1 mg	**0.2 mL**
Fever/Pain	Acetaminophen PO (160 mg/5 mL)	224 mg	**7 mL PO**
	Ibuprofen PO (100 mg/5 mL)	150 mg	**7.5 mL PO**
Hypoglycemia (<60 mg/dL)	D25% (12.5 g/50 mL) **25 mL of D50% diluted with 25 mL of Normal Saline = D25% Give Slow IV**	8 g	**32 mL (D25%)**
	Dextrose 10% (100mg/mL)	8 g	**80 mL**
	Glucagon IM (1 mg/mL)	0.5 mg	**0.5 mL IM**
Pain Management	Fentanyl IV (100 mcg/2 mL)	15 mcg	**0.3 mL**
	Ketamine IN (100 mg/1 mL)	10 mg	**0.1 mL IN**
	Morphine IV/IM/IO (10 mg/mL)	2 mg	**0.2 mL**
Narcotic OD	Naloxone IV/IM (2 mg/2 mL)	1.8 mg	**1.8 mL**
	Naloxone IN (2 mg/2 mL) **Divide dose equally between both nostrils**	1.8 mg	**1.8 mL IN**
Open Fracture	Cefazolin (1000 mg/10 mL) Mix 1 gm of medication per 10 mL NS. **Administer IV SLOWLY.**	500 mg	**5 mL**
	Ceftriaxone (1000 mg/10 mL) Mix 1 gm of medication per 10 mL NS. **Administer IV SLOWLY.**	850 mg	**8.5 mL**

19-23 kilograms *(41-51 pounds)* / 5-6 Years

CARDIAC RESUSCITATION

BLUE

Normal Vitals: HR: 70-110, RR: 18-24, Systolic BP: 80-110 mmHg, Blood Glucose >60 mg/dl

Resuscitation Medication - **(confirm concentration is as specified)**	**Dose**	**Volume**
Epinephrine (1 mg/10 mL prefilled syringe) IV/IO Q 3-5 min for arrest/bradycardia[1]	0.2 mg	**2 mL**
Amiodarone (150 mg/3 mL) IV/IO for shock resistant V-Fib	100 mg	**2 mL**
Lidocaine (100 mg/5 mL) IV/IO for shockable V-Fib (or wide-complex tachycardia*)	20 mg	**1 mL**
Atropine (1 mg/10 mL) IV/IO for bradycardia unresponsive to Epinephrine[1]	0.4 mg	**4 mL**
*Adenosine (6 mg/2 mL) IV/IO **1st Dose. Follow with 10 mL Normal Saline flush. For SVT (HR > 180)**	2.1 mg	**0.7 mL**
*Adenosine (6 mg/2 mL) IV/IO **2nd Dose. Follow with 10 mL Normal Saline flush. For SVT (HR > 180)**	4.2 mg	**1.4 mL**
Epinephrine IV/IO (1 mg/10 mL) **Push Dose - Dilute 1 mL with 9 mL Normal Saline** = 10 mcg/1 mL	10 mcg	**1 mL (Diluted)**
Electrical Therapy	**Initial[2]**	**Repeat[2]**
Defibrillation (pediatric pads preferred) Adult pads may be used anterior/posterior.	**50 J**	**100 J**
*Synchronized Cardioversion[2] for unstable tachycardia	**20 J**	**50 J**

Equipment

OPA: **70 mm** NPA: **24 F** BVM: **Child** Laryngoscope: **2 (straight/curved)** iGel: **2.0** LMA Supreme: **2.0** King-LT: **2.0**
ET Tube: **5 (cuffed)** ET Depth: **16-17 cm** *No ETI unless unable to ventilate*

Fluid Bolus

Normal Saline **400 mL IV/IO** - **May repeat x 1 PRN**

***CONTACT MEDICAL CONTROL** [1]**CPR if HR < 60 after O2** [2]**May adjust to closest available energy setting**

19-23 kilograms *41-51 pounds)* / 5 6 Years

CONDITIONS/MEDICATIONS

BLUE

Normal Vitals: HR: 70-110, RR: 18-24, Systolic BP 80-110 mmHg, Blood Glucose > 60 mg/dl

Development: Able to tell a brief story with a complete sentence. Able to balance on one foot for a short period of time.

Condition	Medication - (confirm concentration is as specified)	Dose	Volume
Wheezing	Albuterol Nebulized (2.5 mg/3 mL)	2.5 mg	**3 mL**
	Ipratropium Bromide Nebulized (0.5 mg/2.5 mL if wheezing)	500 mcg	**2.5 mL**
Anaphylaxis	Diphenhydramine IM/IV/IO (50 mg/mL)	25 mg	**0.5 mg**
	Methylprednisolone IV/IO/IM (125 mg/2mL)	37.5 mg	**0.6 mL**
Anaphylaxis/ Profound Distress	Epinephrine IM (1 mg/mL) ***or*** 1 Pediatric Epinephrine Autoinjector IM (**Severe symptoms only**)	0.2 mg	**0.2 mL**
Stridor	Racepinephrine 2.25% Nebulized (place 0.5 mL in 3 mL normal saline)	11.25 mg	**3.5 mL**
	Epinephrine (1 mg/mL) nebulized	5 mg	**5 mL**
Seizure	Midazolam IM (5 mg/mL) **Give first if no IV**	2 mg	**0.4 mL IM**
	Midazolam IV (5 mg/mL)	1 mg	**0.2 mL**
Fever/Pain	Acetaminophen PO (160 mg/5 mL)	288 mg	**9 mL PO**
	Ibuprofen PO (100 mg/5 mL)	190 mg	**9.5 mL PO**
Hypoglycemia (<60 mg/dL)	D25% (12.5 g/50 mL) **25 mL of D50% diluted with 25 mL of Normal Saline = D25% Give Slow IV**	10 g	**40 mL (D25%)**
	Dextrose 10% (100mg/mL)	10 g	**100 mL**
	Glucagon IM (1 mg/mL)	1 mg	**1 mL IM**
Pain Management	Fentanyl IV/IN (100 mcg/2 mL) **For IN, divide dose equally between both nostrils**	20 mcg	**0.4 mL IV/IN**
	Ketamine IN (100 mg/1 mL)	20 mg	**0.2 mL IN**
	Ketorolac IV/IM (15 mg/1 mL)	10.5 mg	**0.7 mL IV/IM**
	Morphine IV/IM/IO (10 mg/mL)	2 mg	**0.2 mL**
Narcotic OD	Naloxone IV/IM (2 mg/2 mL)	2 mg	**2 mL**
	Naloxone IN (2 mg/2 mL) **Divide dose equally between both nostrils**	2 mg	**2 mL IN**
Open Fracture	Cefazolin (1000 mg/10 mL) Mix 1 gm of medication per 10 mL NS. **Administer IV SLOWLY.**	600 mg	**6 mL**
	Ceftriaxone (1000 mg/10 mL) Mix 1 gm of medication per 10 mL NS. **Administer IV SLOWLY.**	1 g	**10 mL**

24-29 kilograms *(52-64 pounds)* / 7-9 Years

CARDIAC RESUSCITATION

ORANGE

Normal Vitals: 70-110, RR: 18-22, Systolic BP: 80-110 mmHg, Blood Glucose > 60 mg/dl

Resuscitation Medications - (confirm concentration is as specified)	**Dose**	**Volume**
Epinephrine (1 mg/10 mL prefilled syringe) IV/IO Q 3-5 min for arrest/bradycardia[1]	0.3 mg	**3 mL**
Amiodarone (150 mg/3 mL) IV/IO for shock resistant V-Fib	125 mg	**2.5 mL**
Lidocaine (100 mg/5 mL) IV/IO for shockable V-Fib (or wide-complex tachycardia*)	30 mg	**1.5 mL**
Atropine (1 mg/10 mL) IV/IO for bradycardia unresponsive to Epinephrine[1]	0.5 mg	**5 mL**
*Adenosine (6 mg/2 mL) IV/IO **1st Dose.** For SVT (HR > 180)	3 mg	**1 mL**
*Adenosine (6 mg/2 mL) IV/IO **2nd Dose**. For SVT (HR > 180)	6 mg	**2 mL**
Epinephrine IV/IO (1 mg/10 mL) **Push Dose - Dilute 1 mL with 9 mL Normal Saline** = 10 mcg/1 mL	10 mcg	**1 mL (Diluted) IV/IO**
Electrical Therapy	**Initial[2]**	**Repeat[2]**
Defibrillation (pediatric pads preffered) Adult pads may be used anterior/posterior.	**50 J**	**100 J**
*Synchronized Cardioversion[2] for unstable tachycardia	**30 J**	**70 J**

Equipment

OPA: **80 mm** NPA: **26 F** BVM: **Child** Laryngoscope: **2-3 (straight/curved)** iGel: **2.0-2.5** LMA Supreme: **2.0-2.5** King-LT: **2.0-2.5**
ET Tube: **5.5 (cuffed)** ET Depth: **18 cm** *No ETI unless unable to ventilate*

Fluid Bolus

Normal Saline **500 mL IV/IO** - **May repeat x 1**

***CONTACT MEDICAL CONTROL** [1]**CPR if HR < 60 after O2** [2]**May adjust to closest available energy setting**

24-29 kilograms *(52-64 pounds)* / 7-9 Years

ORANGE

CONDITIONS/MEDICATIONS

Condition	Medication - (confirm concentration is as specified)	Dose	Volume
Anaphylaxis	Diphenhydramine IM/IV/IO (50 mg/mL)	30 mg	**0.6 mL**
	Prednisone PO (50 mg tablet)	50 mg	**1 tablet PO**
	Methylprednisolone IV/IO/IM (125 mg/2mL)	50 mg	**0.8 mL**
Stridor	Racepinephrine 2.25% Nebulized (place 0.5 mL in 3 mL normal saline)	11.25 mg	**3.5 mL**
	Epinephrine (1 mg/mL) nebulized	5 mg	**5 mL**
Seizure	Midazolam IM (5 mg/mL) **Give first if no IV**	2.5 mg	**0.5 mL IM**
	Midazolam IV (5 mg/mL)	1.5 mg	**0.3 mL**
Fever/Pain	Acetaminophen PO (160 mg/5 mL)	384 mg	**12 mL PO**
	Ibuprofen PO (100 mg/5 mL)	260 mg	**13 mL PO**
Hypoglycemia (<60 mg/dL)	D50% (25 g/50 mL) **Give Slow IV**	12.5 g	**25 mL (D50%)**
	Dextrose 10% (100mg/mL)	12.5 g	**125 mL**
	Glucagon IM (1 mg/mL)	1 mg	**1 mL IM**
Pain Management	Fentanyl IV/IN (100 mcg/2 mL) For IN, divide dose equally between both nostrils	25 mcg	**0.5 mL**
	Ketamine IN (100 mg/1 mL) Divide dose equally between both nostrils	30 mg	**0.3 mL**
	Ketorolac IV/IM (15 mg/1 mL)	15 mg	**1 mL IV/IM**
	Morphine IV/IO (10 mg/mL)	3 mg	**0.3 mL**
Narcotic OD	Naloxone IV/IM (2 mg/2 mL)	2 mg	**2 mL**
	Naloxone IN (2 mg/2 mL) **Divide dose equally between both nostrils**	2 mg	**2 mL IN**
Open Fracture	Cefazolin (1000 mg/10 mL) Mix 1 gm of medication per 10 mL NS. **Administer IV SLOWLY.**	800 mg	**8 mL**
	Cefazolin (1000 mg/10 mL) Mix as above. **Add specific dose to 100 mL NS.**	800 mg	**8 mL in 100 mL NS**
	Ceftriaxone (1000 mg/10 mL) Mix 1 gm of medication per 10 mL NS. **Administer IV SLOWLY.**	1.3 g	**13 mL**
	Ceftriaxone (1000 mg/10 mL) Mix as above. **Add specific dose to 100 mL NS.**	1.3 g	**13 mL in 100 mL NS**

30-36 kilograms *65-79 pounds)* / 10-14 Years

CARDIAC RESUSCITATION

GREEN

Normal Vitals: HR: 70-110, RR: 16-20, Systolic BP: 90-120 mmHg, Blood Glucose > 60 mg/dl

Resuscitation Medications - (confirm concentration is as specified)	**Dose**	**Volume**
Epinephrine (1 mg/10 mL prefilled syringe) IV/IO Q 3-5 min for arrest/bradycardia[1]	0.3 mg	**3 mL**
Amiodarone (150 mg/3 mL) IV/IO for shock resistant V-Fib	150 mg	**3 mL**
Lidocaine (100 mg/5 mL) IV/IO for shockable V-Fib (or wide-complex tachycardia*)	30 mg	**1.5 mL**
Atropine (1 mg/10 mL) IV/IO for bradycardia unresponsive to Epinephrine[1]	0.5 mg	**5 mL**
*Adenosine (6 mg/2 mL) IV/IO **1st Dose.** For SVT (HR > 180)	4 mg	**1.3 mL**
*Adenosine (6 mg/2 mL) IV/IO **2nd Dose**. For SVT (HR > 180)	8 mg	**2.6 mL**
Epinephrine IV/IO (1 mg/10 mL) **Push Dose - Dilute 1 mL with 9 mL Normal Saline** = 10 mcg/1 mL	10 mcg	**1 mL (Diluted) IV/IO**
Electrical Therapy	**Initial[2]**	**Repeat[2]**
Defibrillation (pediatric pads preferred) Adult pads may be used anterior/posterior.	**70 J**	**150 J**
*Synchronized Cardioversion[2] for unstable tachycardia	**30 J**	**70-75 J**

Equipment

OPA: **80 mm** NPA: **30 F** BVM: **Adult** Laryngoscope: **2-3 (straight/curved)** iGel: **2.5-3.0** LMA Supreme: **2.5-3.0** King-LT: **2.5-3.0**
ET Tube: **6 (cuffed)** ET Depth: **19-19.5 cm** *No ETI unless unable to ventilate*

Fluid Bolus

Normal Saline **700 mL IV/IO** - **May repeat x 1 PRN**

***CONTACT MEDICAL CONTROL** **[1]CPR if HR < 60 after O2** **[2]May adjust to closest available energy setting**

30-36 kilograms *65-79 pounds)* / 10-14 Years

CONDITIONS/MEDICATIONS

GREEN

Normal Vitals: HR: 70-110, RR: 16-20, Systolic BP: 90-120 mmHg, Blood Glucose > 60 mg/dl

Condition	Medication - (confirm concentration is as specified)	Dose	Volume
Anaphylaxis	Diphenhydramine IM/IV/IO (50 mg/mL)	40 mg	**0.8 mL**
	Prednisone PO (50 mg tablet)	50 mg	**1 tablet PO**
	Methylprednisolone IV/IO/IM (125 mg/2mL)	62.7 mg	**1 mL**
Fever/Pain	Acetaminophen PO (160 mg/5 mL)	480 mg	**15 mL**
	Ibuprofen PO (100 mg/5 mL)	300 mg	**15 mL**
Hypoglycemia (<60 mg/dL)	D50% (25 g/50 mL) **Give Slow IV**	15 g	**30 mL (D50%)**
	Dextrose 10% (100mg/mL)	15 g	**150 mL**
	Glucagon IM (1 mg/mL)	1 mg	**1 mL IM**
Pain Management	Fentanyl IV/IN (100 mcg/2 mL) For IN, divide dose equally between both nostrils	30 mcg	**0.6**
	Ketamine IV/IO (100 mg/1 mL) **Mix dose in 100 mL NS, administer over 10 minutes**	10 mg	**0.1 mL in 100 mL NS**
	Ketamine IN (100 mg/1 mL) Divide dose equally between both nostrils	30 mg	**0.3 mL**
	Ketorolac IV/IM (15 mg/1 mL)	15 mg	**1 mL IV/IM**
	Morphine IV/IO (10 mg/mL)	4 mg	**0.4 mL**
Narcotic OD	Naloxone IV/IM/IN (2 mg/2 mL) **For IN, divide dose equally between both nostrils**	2 mg	**2 mL**
Open Fracture	Cefazolin (1000 mg/10 mL) Mix 1 gm of medication per 10 mL NS. **Administer IV SLOWLY.**	1 g	**10 mL**
	Cefazolin (1000 mg/10 mL) Mix as above. **Add specific dose to 100 mL NS.**	1 g	**10 mL in 100 mL NS**
	Ceftriaxone (1000 mg/10 mL) Mix 1 gm of medication per 10 mL NS. **Administer IV SLOWLY.**	1.7 g	**17 mL**
	Ceftriaxone (1000 mg/10 mL) Mix as above. **Add specific dose to 100 mL NS.**	1.7 g	**17 mL in 100 mL NS**

>36 kilograms (> 80lbs) Adult >14 Years

CARDIAC RESUSCITATION

BLACK

Normal Vitals: HR: 60-100, RR: 12-20, Systolic BP: 100-140 mmHg, Blood Glucose > 60 mg/dl

Resuscitation Medications - (confirm concentation is as specified)	**Dose**	**Volume**
Epinephrine (1 mg/10 mL prefilled syringe) IV/IO Q 3-5 min **for arrest/bradycardia**	1 mg	**10 mL**
Amiodarone (150 mg/3 mL) IV/IO **for shock resistant V-Fib**	300 mg	**6 mL**
Lidocaine (100 mg/5 mL) IV/IO for shockable V-Fib (or wide-complex tachycardia)	100 mg	**5 mL**
Amiodarone (150 mg/3 mL) IV for stable wide-complex tachy or symptomatic irregular narrow tachy. **Over 10 minutes**	150 mg	**3 mL**
Diltiazam (25 mg/5 mL) IV for symptomatic irregular narrow tachycardia.	20 mg	**4 mL**
Verapamil (10 mg/4 mL) IV for symptomatic irregular narrow tachycardia.	5 mg	**2 mL**
Atropine (1 mg/10 mL) IV/IO **for bradycardia, every 3-5 min to a max of 3 mg**	1 mg	**10 mL**
Adenosine (6 mg/2 mL) IV/IO **1st Dose.** For SVT (HR > 150)	6 mg	**2 mL**
Adenosine (6 mg/2 mL) IV/IO **2nd Dose.** For SVT (HR > 150)	12 mg	**4 mL**
Epinephrine IV/IO (1 mg/10 mL) **Push Dose - Dilute 1 mL with 9 mL Normal Saline** = 10 mcg/1 mL	10 -20 mcg	**1 - 2 mL (Diluted)**
Electrical Therapy	**Initial[1]**	**Repeat[1]**
V-Fib or Pulseless V-Tach: **Defibrillation**	**120-200 J**	**Maximum**
Unstable, wide irregular tachycardia. Heart rate > 150 bpm: **Defibrillation**	**120-200 J**	**Maximum**
Unstable, narrow complex tachycardia. Heart rate > 150 bpm: **Synchronized Cardioversion**	**100 J**	**≥ 100 J[2]**
Narcotic Overdose	**Dose**	**Volume**
Naloxone IV/IM (2 mg/2 mL)	2 mg	**2 mL**
Naloxone IN (2 mg/2 mL) **Divide dose equally between both nostrils**	2 mg	**2 mL IN**
Fluid Bolus		
Normal Saline **1000 mL IV/IO - May repeat one time, PRN**		

[1]Based on biphasic, use manufacturer's recommended energy

[2]If no response to first shock, increase energy in a stepwise manner by 20-50 J

>36 kilograms (> 80lbs) Adult >14 Years (Black)

CONDITIONS/MEDICATIONS

BLACK

Normal Vitals: HR: 60-100, RR: 12-20, Systolic BP: 100-140 mmHg, Blood Glucose > 60 mg/dl

Condition	Medication - (confirm concentration is as specified)	Dose	Volume
Wheezing	Albuterol Nebulized (2.5 mg/3 mL)	2.5 mg	**3 mL**
	Ipratropium Bromide Nebulized (0.5 mg/2.5 mL if wheezing)	500 mcg	**2.5 mL**
Anaphylaxis	Diphenhydramine IM/IV/IO (50 mg/mL)	50 mg	**1 mL**
	Prednisone PO (50 mg tablet)	50 mg	**1 tablet PO**
	Methylprednisolone IV/IO/IM (125 mg/2mL)	125 mg	**2 mL**
Anaphylaxis/ Profound Distress	Epinephrine IM (1 mg/mL) ***or*** 1 Epinephrine Autoinjector IM (**Severe symptoms only**)	0.3 mg	**0.3 mL**
Seizure (Sedation)	Midazolam IM (5 mg/mL) **Give first if no IV**	10 mg	**2 mL IM**
	Midazolam IV (5 mg/mL)	5 mg	**1 mL**
Fever/Pain	Ibuprofen PO (100 mg/5 mL)	600 mg	**30 mL PO**
	Acetaminophen PO (160 mg/5 mL) 15 mg/kg, max dose 1 g	800 mg	**25 mL PO**
Hypoglycemia (<60 mg/dL)	D50% (25 g/50 mL) **Give Slow IV**	25 g	**50 mL (D50%)**
	D10% (25 g/250 mL)	25 g	**250 mL**
	Glucagon IM (1 mg/mL)	1 mg	**1 mL IM**
Pain Management	Fentanyl IV (100 mcg/2 mL) **For IN, divide dose equally between nostrils**	50-100 mcg	**1-2 mL**
	Ketamine IV/IO (500mg/5 mL) **Mix dose in 100 mL NS, administer over 10 minutes**	10-20 mg	**0.1-0.2 mL in 100 mL NS**
	Ketamine IN (500 mg/5 mL) Divide dose equally between both nostrils	30-50 mg	**0.3-0.5 mL**
	Ketorolac IV/IM (15 mg/ 1 mL)	15 mg	**1 mL IV/IM**
	Morphine IV/IO/IM (10 mg/mL)	4-5 mg	**0.4-0.5 mL**
Procedural Sedation	Midazolam (5 mg/mL) 1-5 mg titrated **SLOWLY**	1-5 mg	**0.2 - 1 mL**
	Diazepam (10 mg/2mL) 5-10 mg titrated **SLOWLY**	5-10 mg	**1 - 2 mL**
	Fentanyl IV (100 mcg/2 mL) 50-100 mcg titrated **SLOWLY**	50-100 mcg	**1 - 2 mL**
	Ketamine IV (500 mcg/5 mL) 1.5 mg/kg	75-150 mg	**0.75-1.5 mL**
Delirium w/Severe Agitation	Ketamine IM (500 mg/5 mL) 4 mg/kg, MAX dose 500 mg **FOR SEVERE AGITATION ONLY**	200-400 mg	**2-4 mL IM**
Open Fracture	Cefazolin (1000 mg/10 mL) Mix 1 gm of medication per 10 mL NS. **Administer IV SLOWLY.**	2 g	**20 mL**
	Cefazolin (1000 mg/10 mL) Mix as above. **Add specific dose to 100 mL NS.**	2 g	**20 mL in 100 mL NS**
	Ceftriaxone (1000 mg/10 mL) Mix 1 gm of medication per 10 mL NS. **Administer IV SLOWLY.**	2 g	**20 mL**
	Ceftriaxone (1000 mg/10 mL) Mix as above. **Add specific dose to 100 mL NS.**	2 g	**20 mL in 100 mL NS**

Nerve Agent/Organophosphate Antidotes/Countermeasures

Weight	Age	Duodote[1] Mod-Severe Sxs	Atropen[2] (1 mg) Mod-Severe Sxs	Atropine Dose (0.1 mg/kg) IM/IV/IO	Atropine Vial[2] (1 mg/mL)	Cardiac Atropine[2,3] (1 mg/10 mL)	Midazolam[4] (10 mg/2 mL) IM/IV/IO
3-5 kg (6-11 lbs)	0-2 months	1	1	0.4 mg	0.4 mL	4 mL	0.1 mL
6-7 kg (13-16 lbs)	3-6 months	1	1	0.7 mg	0.7 mL	7 mL	0.2 mL
8-9 kg (17-20 lbs)	7-10 months	1	1	0.9 mg	0.9 mL	9 mL	0.2 mL
10-11 (21-25 lbs)	11-18 months	1	1	1 mg	1 mL	10 mL	0.2 mL
12-14 kg (26-31 lbs)	19-35 months	1	2	1.3 mg	1.3 mL	13 mL	0.25 mL
15-18 kg (32-40 lbs)	3-4 years	1	2	1.6 mg	1.6 mL	16 mL	0.3 mL
19-23 kg (41-51)	5-6 years	1	2	2 mg	2 mL	20 mL	0.4 mL
24-29 kg (52-64)	7-9 years	2	3	2.6 mg	2.6 mL	26 mL	0.5 mL
30-36 kg (65-79 lbs)	10-14 years	2	3	3.3 mg	3.3 mL	33 mL	0.6 mL
Adult	>14 years	2 to 3	4 to 6	4 to 6 mg	4 to 6 mL	40-60 mL	2 mL

[1]Preferred initial autoinjector, [2]May Repeat atropine every 5 minutes until airway secretions decrease (6 mg maximum), [3]Not available in MEDDRUN, [4]Patients with severe symptoms should receive midazolam even if not obviously seizing

Cyanokit® Administration for Suspected Cyanide Poisoning (including serious smoke inhalation)

Broselow (Weight)	Age	Cyanokit® Dose[1] (~70 mg/ml +/-) IV/IO	Cyanokit® Volume to Administer[2] IV/IO
3-5 kg (6-11 lbs)	**0-2 months**	250 mg	**mL[3]**
6-7 kg (13-16 lbs)	**3-6 months**	500 mg	**mL[3]**
8-9 kg (17-20 lbs)	**7-10 months**	625 mg	**25 mL[3]**
10-11 (21-25 lbs)	**-18 months**	750 mg	**30 mL[3]**
12 14 kg (26-31 lbs)	**19-35 months**	900 mg	**36 mL[3]**
15-18 kg (32-40 lbs)	**3-4 years**	1100 mg	**44 mL[3]**
19-23 kg (41-51)	**5-6 years**	1400 mg	**56 mL[3]**
24-29 kg (52-64)	**7-9 years**	1750 mg	**70 mL[3]**
30-36 kg (65-79 lbs)	**10-14 years**	2500 mg	**100 mL[4] (1/2 bottle)**
Adult	**>14 years**	5000 mg	**200 mL[4] (full bottle)**

[1]The safety and efficacy in pediatrics has not been established, [2]Administer slowly over 15 minutes.
[3]Push slowly over 15 minutes, [4]Infuse over 15 minutes

MDHHS Michigan Department of Health & Human Services | Bureau of Emergency Preparedness, EMS and Systems of Care

MICHIGAN EMSC State Partnership Program

MI-MEDIC is provided by the Michigan Department of Health and Human Services (MDHHS), Bureau of Emergency Preparedness, EMS and Systems of Care. MI-MEDIC was developed and edited in partnership with Western Michigan University Homer Stryker MD School of Medicine, Division of EMS and Disaster Medicine.

This project is supported by the Health Resources and Services Administration (HRSA) of the US Department of Health and Human Services (HHS) under the EMSC Partnership Grant. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS, or the US Government.

If you have questions or comments about MI-MEDIC, contact: EMS@Michigan.Gov

FST5

Do you need resources related to mental health challenges?
Call 1-833-34-STRONG or go to www.fst5.org