

Volumetric Dosing: Is it the Ultimate Solution??

Kathleen Adelgais, MD MPH
EMSC Strategic Planning Meeting
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Objectives

- To recognize commonly available Length-Based Tape (LBT) and other weight estimation systems available for prehospital use
- To understand the pitfalls of length-based tape systems and their applicability to prehospital care
- To understand ways to apply the use of length-based tape systems to recently released pediatric prehospital evidence based guidelines

Case: Seizure

- You are on scene with a 5-year-old with a seizure. Mom reports he has diabetes and just got his insulin before lunch. D-stick on scene reveals a glucose of 30
 - You want to give dextrose, midazolam to stop the seizure
 - Mom says he weighs about 30 lbs
- How much do you give....?



Background

- Pediatric care is weight, size, and age based
 - Medication Dosages
 - Equipment size
 - VS norms
- Lots of formulas to figure these out:
 - ET tube size: $(\text{age}/4) \div 4$
 - ET tube distance $3 \times \text{Internal Diameter of tube}$
 - Dextrose Rule of 50's
 - Hypotension = $\text{SBP} < 70 + (2 \times \text{age in years})$
- Lack of consistent ways to find this information leads to increased risk of medical errors



Medication errors

1999 Institute of Medicine (IOM) report:

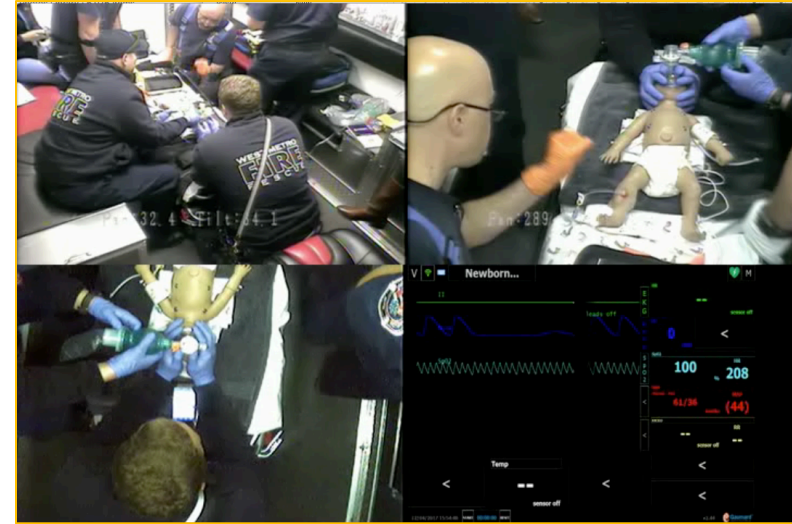
- 3-4% of hospital patients are harmed by the health care system
- 7% of hospital patients are exposed to a serious medication error
- 50,000 – 100,000 deaths/ yr from medical mistakes
 - Equivalent of 280 747s crashing in a year with no survivors



Medication Errors

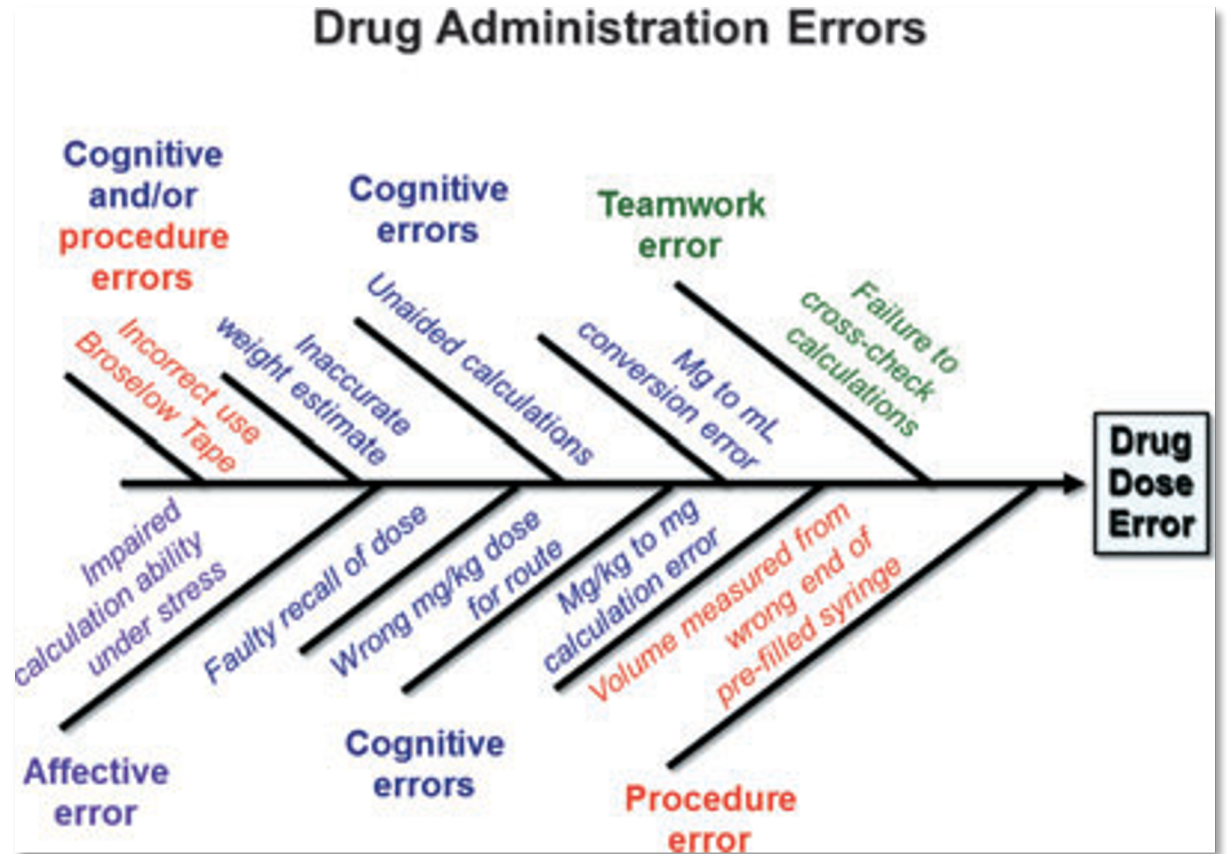
Prehospital Simulation Scenarios

- ALS providers completed pediatric patient simulation scenarios
 - Epinephrine dose incorrect: 68-73%
 - Failure to use Broselow tape: 50%
 - Incorrect use of Broselow tape: 47%



Fishbone model of errors

- Cognitive Errors
 - Unaided calculations
 - Incorrect weight estimate
- Procedural Errors
 - Incorrect use of LBT
 - Push wrong volume
- Teamwork Errors
 - Failure to cross check
- Affective Errors
 - Impaired calculation under stress



Barriers to accurate doses

- Drug packaging is not pediatric friendly – All drugs “packaged for adults”
 - All peds doses require calculations
- Math calculations are difficult
- Training doesn't include calculating, diluting and administering drugs

Options for Volumetric Dosing

Broselow Pediatric Emergency Tape

Handtevy™ System

Certa-Dose™

Broselow pediatric emergency tape™



- Developed by James Broselow and Robert Luten in early 1980's
- Relates height to estimated weight
- Designed for up to age 12 years, maximum weight of 36 kilograms

Broselow pediatric emergency Tape (Version 2011 Edition A)

- Has 9 color-coded zones corresponding to a range of weights
- Provides:
 - Medication doses
 - Equipment size and type
 - Voltage for cardioversion and defibrillation
 - Assessment tools: Pediatric Trauma Score
- Revisions over the years:
 - Change in Dextrose
 - Removal of GCS



How good is it???

- Heyming, et.al. (2012, Prehospital Emerg Care)
- Study of 572 patients transported by EMS
- Median age 24 months
- EMS providers required to obtain Broselow weight (color)
- Compared to ED Broselow and ED scale weight
- Correlation between EMS and ED Broselow: 0.92
- Correlation between ED Broselow and ED scale: 0.97

What about those obese kids?

- Broselow Tape based on the National Health and Nutrition Examination Survey dataset
- Actual body weight approximates 65% of the time
 - 20% are heavier than the Broselow estimate
 - 15% are lighter than the Broselow estimate
- Theoretically, dose can be adjusted up by one zone if patient appears obese



What about those obese kids?

- EMS Professionals report mistrust of LBT measurements
 - Some view themselves as good at estimating
 - Some compare child to a child with a known weight (own child, relative)
 - Some ask parent

Does it matter???? Probably not....

- Medication dosing is based on lean body mass and few medications are so fat soluble that dosing needs to be adjusted



Success story....

- Kaji, et.al., Pediatrics, October 2006
- LA County Paramedics
- 1994-1997 epinephrine dose error: 65.8% of the time
 - Fewer errors when Broselow tape used.
- Extensive quality improvement program to decrease error
- 2003-2004 epinephrine dose error: reduced to 35%

Broselow LBT information

Mainly for care of pediatric patients in critical situations

Medications:

- Seizure
- Fluids
- Overdose
- Increased ICP
- Resuscitation
- Rapid Sequence Intubation
 - Induction
 - Paralytics

Equipment:

- Airway: BVM, ETT, LMA
- Stylets, suction catheters
- OP/NP airways
- OG/NG tubes
- Urinary catheters
- Chest tubes
- Vascular access
- BP cuffs

Barriers with Broselow

- Buried in equipment or drug bag (out of sight out of mind-forget it's there)
- Frequently giving meds that are not weight based (e.g. nebulizers)
- Tape can be confusing (includes drugs they don't use-occasionally used upside down)

Pediatric prehospital care

- Majority of pediatric prehospital care is NOT critical care
- 1% of patients require a critical care procedure
- 14% of patients obtain IV access
- 20% of patients are respiratory and received standardized dosing
- What can agencies expect that they should be doing for kids..???

Broselow and Prehospital Evidence-Based Guidelines (2011 A Version)

- Among 7 evidence-based guidelines (seizure, pain, medical shock, traumatic shock, airway management, respiratory distress, anaphylaxis):
- 42 separate recommendations
 - 10 that apply to more than one guideline
- 28/42 (57%) recommendations can be followed correctly using the Broselow tape
 - 75% of the recommendations on equipment size could be followed and were correct
 - 4/26 (15%) of the medication recommendations could be followed and were correct
 - Information was missing or incorrect for the remaining medication recommendations

Broselow and Cognitive Errors

Cognitive Errors	Epinephrine		Dextrose	
	Handtevy % (n=80)	Broselow % (n=80)	Handtevy % (n=80)	Broselow % (n=80)
Total	9.8	7.4	15.4	73.1
Type of Error				
Unaided calculation	0	0	7.1	41.0
Faulty recall of dose	0	0	0	29.5
Mg to ml conversion error	3.7	1.2	2.3	21.9
Chose wrong concentration	6.1	1.2	2.3	32.0

Commercially Available Systems

Broselow™ Pediatric Emergency Tape

Handtevy™

Certa-Dose™



Broselow™ Pediatric Emergency Tape

Several different versions

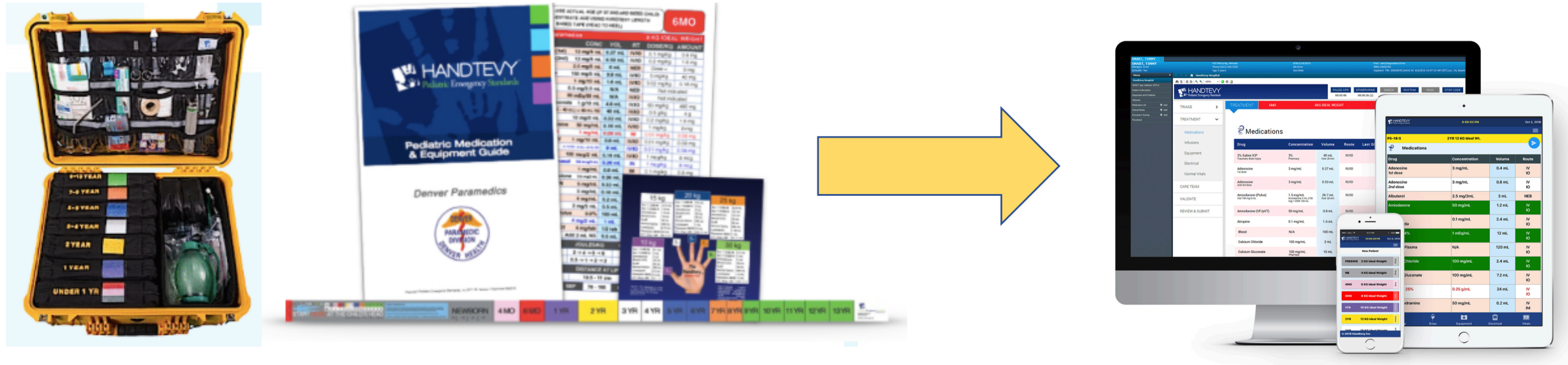
- Newest **2019** has:
 - Pre-calculated doses in milligrams and mL (*based on concentrations listed on tape*)
 - Habitus adjustment system:
 - Accurate estimate of Ideal Body Weight (*ideal for actual dose of medications*)
 - Updated with additional essential medications for both **EMS** and the ER.
 - Contains a separate section: Quick Access Meds → for those medications needed immediately

*Make sure you
check your
version!!!*



Handtevy

- Handtevy by Pediatric Emergency Standards, Inc.



Handtevy system™

- Booklets are organized by age and color
- Color parallels Broselow color zones (patent expired)
- Allows for providers to plan en route if age of patient is known
- Customized to formulary carried by individual agency

Handtevy™

- Advantages:
 - Allows for planning
 - Customized to agency formulary
 - Reduces cognitive error
- Disadvantages:
 - Cost
 - Need to keep booklets up to date???

Option 1

-USE ACTUAL AGE (IF STANDARD SIZED CHILD)

Option 2

-ESTIMATE AGE USING HANDTEVY LENGTH BASED TAPE (HEAD TO HEEL)

NB

PINELLAS COUNTY EMS

4 KG IDEAL WEIGHT

DRUG	CONC	VOL	RT	DOSE/KG	AMOUNT
Adenosine [1st]	6 mg/2 mL	0.13 mL	IV	0.1 mg/kg	0.4 mg
Adenosine [2nd]	6 mg/2 mL	0.27 mL	IV	0.2 mg/kg	0.8 mg
Albuterol	2.5 mg/3 mL	1.5 mL	NEB	Dose =	1.25 mg
Amiodarone	150 mg/3 mL	0.4 mL	IV	5 mg/kg	20 mg
Atropine	1 mg/10 mL	1 mL	IV	Dose =	0.1 mg
Bicarb 4.2% (Dilute 8.4% 1:1 NS)		8 mL	IV	1 mEq/kg	4 mEq
Calcium Chloride	1 g/10 mL	0.8 mL	IV	20 mg/kg	80 mg
Dextrose 10% in Water	25 g/250 mL	20 mL	IV	0.5 g/kg	2 g
Diazepam IV	10 mg/2 mL	0.08 mL	IV	0.1 mg/kg	0.4 mg
Diazepam PR	10 mg/2 mL	0.4 mL	PR	0.5 mg/kg	2 mg
Diphenhydramine	50 mg/mL	0.08 mL	IV/IM	1 mg/kg	4 mg
Dopamine	400 mg/250 mL	1 gtt/min	IV	Titrate to BP: Max 4 gtt/min	
Epinephrine 1:1,000 IM	1 mg/mL	0.04 mL	IM	0.01 mg/kg	0.04 mg
Epinephrine 1:10,000 IV	1 mg/10 mL	0.4 mL	IV	0.01 mg/kg	0.04 mg
Fentanyl Intranasal	250 mcg/5 mL	0.18 mL	IN	1 mcg/kg	4 mcg
Fentanyl IV	250 mcg/5 mL	0.04 mL	IV	0.5 mcg/kg	2 mcg
Glucagon	1 mg/mL	0.5 mL	IV/IM	Dose =	0.5 mg
Glucose (oral)	15 g/pouch	N/A	PO	Not Indicated	
Ipratropium Bromide	0.5 mg/2.5 mL	1.25 mL	NEB	Dose =	0.25 mg
Magnesium Sulfate	1 g/2 mL	0.4 mL	IV	50 mg/kg	200 mg
Methylprednisolone	125 mg/2 mL	0.13 mL	IV	2 mg/kg	8 mg
Midazolam Intranasal	10 mg/2 mL	0.26 mL	IN	0.2 mg/kg	0.8 mg
Midazolam IV/IM	10 mg/2 mL	0.08 mL	IV/IM	0.1 mg/kg	0.4 mg
Morphine	10 mg/mL	0.04 mL	IV	0.1 mg/kg	0.4 mg
Morphine	4 mg/mL	0.1 mL	IV	0.1 mg/kg	0.4 mg
Naloxone	2 mg/2 mL	0.4 mL	IV/IM	0.1 mg/kg	0.4 mg
Naloxone Intranasal	2 mg/2 mL	1 mL	IN	Dose =	1 mg
Normal Saline Bolus	0.9%	40 mL	IV	10 mL/kg	40 mL
Ondansetron IV	4 mg/2 mL	1 mL	IV	Dose =	2 mg
Ondansetron ODT	4 mg/tab	N/A	PO	Not Indicated	

PHILIPS MRx	JOULES/KG	1ST	2ND	3RD	4TH
Defibrillation	2 → 4 → 6 → 10	8	15	20	50
Cardioversion	0.5 → 1 → 2 → 2	2	4	8	8

ET TUBE	DISTANCE AT LIP
2.5 Uncuffed / 3.0 Cuffed	3 KG: 9-9.5 cm 4 KG: 9.5-10 cm 5 KG: 10-10.5 cm

VITALS	SBP	60 - 100	HR	100 - 160	RR	30 - 60
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Color-coded syringes: Certa-Dose™

- Prefilled syringes with volume of medication according to Broselow color zones
- Advantages:
 - No math, no error in drawing up incorrect volume
- Disadvantage:
 - Expiration of medications in pre-filled syringes
 - Does not work as well for smaller patients (doses)
 - Every syringe must be medication specific



Home Grown Systems...

Colorado EMS for Children Dosing Guide

MI-MEDIC (State of Michigan)



Colorado EMSC Pediatric Dosing Guide

FORMULARY

RESUSCITATION	DOSING					PACKAGING			
	DOSE	UNIT	PER	MAX DOSE	UNIT	AMOUNT	UNIT	VOLUME	CONCENTRATION PER mL
Adenosine - 1st Dose	0.2	mg	kg	6	mg	12	mg	4 mL	3
Adenosine - 2nd Dose	0.2	mg	kg	12	mg	12	mg	4 mL	3
Amiodarone - Resuscitation	5	mg	kg	300	mg	150	mg	3 mL	50
Atropine - Min Dose 0.1mg	0.02	mg	kg	0.5	mg	1	mg	10 mL	0.1
Calcium Chloride	20	mg	kg	1000	mg	1000	mg	10 mL	100
Calcium Gluconate	60	mg	kg	1000	mg	5000	mg	50 mL	100
Epinephrine - 1:10,000	0.01	mg	kg	1	mg	1	mg	10 mL	0.1
Epinephrine - 1:1,000	0.01	mg	kg	1	mg	1	mg	1 mL	1
Dextrose - 25%	0.5	GM	kg	25	GM	12.5	GM	50 mL	0.25
Dextrose - 12.5%	0.5	GM	kg	25	GM	6.25	GM	50 mL	0.125
Dextrose - 10%	0.5	GM	kg	25	GM	5	GM	50 mL	0.1
Magnesium Sulfate	50	mg	kg	2000	mg	1000	mg	2 mL	500
Naloxone (Narcan)	0.1	mg	kg	2	mg	4	mg	10 mL	0.4
Sodium Bicarbonate	1	mEq	kg	100	mEq	50	mEq	50 mL	1
Vasopressin	0.5	Units	Kg	40	Units	20	Units	1 mL	20
FUTURE EXPANSION			Kg					mL	#VALUE!

- Volume based calculations based on LBT Color
- Customizable protocols and formulary
- Easily modified
- Available in multiple formats (chart, cards. etc.)

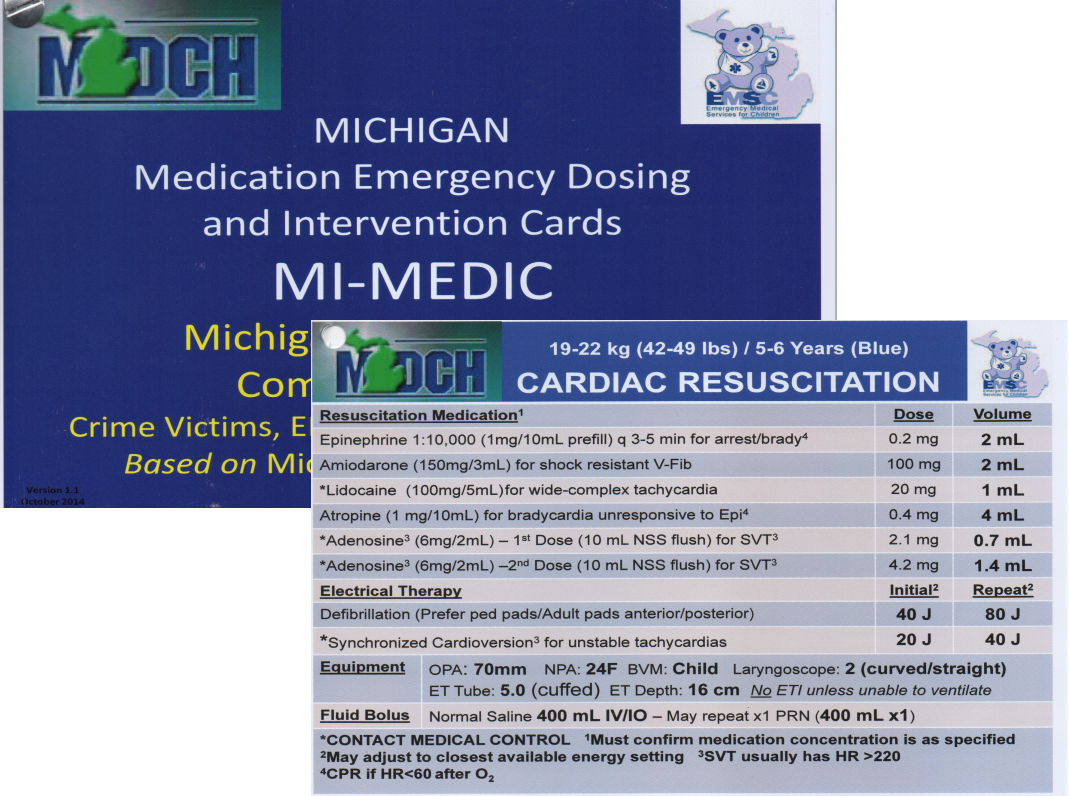
Colorado EMSC pediatric dosing guide

- After completing formulary...
- Volume-based dose automatically calculates

RESUSCITATION	DOSE	TERM	4 MONTHS	8 MONTHS	1 YR	2 YR	4 YRS	
1st Defibrillation / Cardioversion	2 J / kg	7 J	12 J	16 J	20 J	26 J	32 J	
2nd Defibrillation	4 J / kg	14 J	24 J	32 J	40 J	52 J	64 J	
Fluid Bolus - 20ml/kg	20 mL / kg	70 mL	120 mL	160 mL	200 mL	260 mL	320 mL	
Adenosine - 1st Dose	0.2 mg / kg	0.2 mL	0.4 mL	0.5 mL	0.7 mL	0.9 mL	1.1 mL	
Adenosine - 2nd Dose	0.2 mg / kg	0.2 mL	0.4 mL	0.5 mL	0.7 mL	0.9 mL	1.1 mL	
Amiodarone - Resuscitation	5 mg / kg	0.4 mL	0.6 mL	0.8 mL	1.0 mL	1.3 mL	1.6 mL	
Atropine - Min Dose 0.1mg	0.02 mg / kg	0.1 mL	1.2 mL	1.6 mL	2.0 mL	2.6 mL	3.2 mL	
Calcium Gluconate	60 mg / kg	2.1 mL	3.6 mL	4.8 mL	6.0 mL	7.8 mL	9.6 mL	
Epinephrine - 1:10,000	0.01 mg / kg	0.4 mL	0.6 mL	0.8 mL	1.0 mL	1.3 mL	1.6 mL	
Dextrose - 25%	0.5 GM / kg				20.0 mL	26.0 mL	32.0 mL	
Dextrose - 12.5%	0.5 GM / kg	14.0 mL	24.0 mL	32.0 mL	40.0 mL	52.0 mL	64.0 mL	
Dextrose - 10%	0.5 GM / kg	17.5 mL	30.0 mL	40.0 mL	50.0 mL	65.0 mL	80.0 mL	
Naloxone (Narcan)	0.1 mg / kg	0.9 mL	1.5 mL	2.0 mL	2.5 mL	3.3 mL	4.0 mL	
Sodium Bicarbonate	1 mEq / kg	3.5 mL	6.0 mL	8.0 mL	10.0 mL	13.0 mL	16.0 mL	

State of Michigan field guide

- Developed in response to research by Lammers, Hoyle
- Distributed statewide along with training booklet
- Provides info based on assumed concentrations of medication
- Released April 2015-
 - **Every** licensed ALS vehicle, hospital, EMS education program



The image shows the cover of the Michigan Medication Emergency Dosing and Intervention Cards (MI-MEDIC) booklet. The cover is dark blue with the MICHIGAN logo in green and white. The title "MICHIGAN Medication Emergency Dosing and Intervention Cards MI-MEDIC" is written in white. Below the title, it says "Michigan Crime Victims, E" and "Based on Mi". A small logo for EMS (Emergency Medical Services) is in the top right corner. The booklet is for "19-22 kg (42-49 lbs) / 5-6 Years (Blue)".

A sample card for "CARDIAC RESUSCITATION" is shown. It includes a table for Resuscitation Medication with columns for the medication, dose, and volume. It also includes a table for Electrical Therapy with columns for the type of therapy, initial dose, and repeat dose. The card also includes sections for Equipment, Fluid Bolus, and Contact Medical Control.

Resuscitation Medication ¹	Dose	Volume
Epinephrine 1:10,000 (1mg/10mL prefill) q 3-5 min for arrest/brady ⁴	0.2 mg	2 mL
Amiodarone (150mg/3mL) for shock resistant V-Fib	100 mg	2 mL
*Lidocaine (100mg/5mL) for wide-complex tachycardia	20 mg	1 mL
Atropine (1 mg/10mL) for bradycardia unresponsive to Epi ⁴	0.4 mg	4 mL
*Adenosine ³ (6mg/2mL) – 1 st Dose (10 mL NSS flush) for SVT ³	2.1 mg	0.7 mL
*Adenosine ³ (6mg/2mL) – 2 nd Dose (10 mL NSS flush) for SVT ³	4.2 mg	1.4 mL

Electrical Therapy	Initial ²	Repeat ²
Defibrillation (Prefer ped pads/Adult pads anterior/posterior)	40 J	80 J
*Synchronized Cardioversion ³ for unstable tachycardias	20 J	40 J

Equipment OPA: 70mm NPA: 24F BVM: Child Laryngoscope: 2 (curved/straight)
ET Tube: 5.0 (cuffed) ET Depth: 16 cm *No ETI unless unable to ventilate*

Fluid Bolus Normal Saline 400 mL IV/IO – May repeat x1 PRN (400 mL x1)

*CONTACT MEDICAL CONTROL ¹Must confirm medication concentration is as specified
²May adjust to closest available energy setting ³SVT usually has HR >220
⁴CPR if HR < 60 after O₂


You have your
tool...now what???



Procedural and Affective Errors

Procedural and Affective	Epinephrine		Dextrose	
	Handtevy	Broselow	Handtevy	Broselow
	% (n=80)	% (n=80)	% (n=80)	% (n=80)
Procedural (Total)	25.9	28.3	17.8	38.2
Type of Error				
Incorrect use of tape	8.6	16.0	4.7	6.4
Incorrect volume	18.5	14.8	10.7	17.9
Dilution error	0	1.2	8.3	15.3
Affective (Total)	0	0	2.3	11.5

No difference in procedural errors between systems!!!





DOSING ERRORS MADE BY PARAMEDICS DURING PEDIATRIC PATIENT SIMULATIONS AFTER IMPLEMENTATION OF A STATE-WIDE PEDIATRIC DRUG DOSING REFERENCE

John D. Hoyle, Jr., MD, Glenn Ekblad, DO, MSN, MPH, Tracy Hover, BS, Alyssa Woodwyk, MS, Richard Brandt, MS, Bill Fales, MD, Richard L. Lammers, MD

PREHOSPITAL EMERGENCY CARE 2019;

Objective

- To evaluate the rate of medication errors, including errors of omission and commission, after implementation of a state-wide Pediatric Drug Resource

10-11 kilograms (21-25 pounds) /11-18 Months (Purple)			
CONDITIONS/MEDICATIONS			
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
Bronchospasm Anaphylaxis	Albuterol Nebulized (2.5 mg/3 mL)	2.5 mg	3 mL
	Ipratropium Bromide Nebulized (0.5 mg/2.5 mL if wheezing)	0.25 mg	1.25 mL
	Diphenhydramine IM/IV/IO (50 mg/mL) Diluted with 4 mL Normal Saline = 10 mg/mL (Anaphylaxis only)	10 mg	1 mL (Diluted)
	Epinephrine 1:1000 IM (1 mg/mL) <i>or</i> 1 EpiPen Jr. IM (Severe symptoms only)	0.1 mg	0.1 mL IM
Seizure	Solu-Medrol IV/IO (125 mg/2 mL) Diluted with 3 mL Normal Saline = 25 mg/mL	20 mg	0.8 mL (Diluted)
	Midazolam IM (5 mg/mL) Give first if no IV	1 mg	0.2 mL IM
Fever	Midazolam IV (5 mg/mL) Diluted with 4 mL Normal Saline = 1 mg/mL	0.5 mg	0.5 mL (Diluted)
	Acetaminophen PO (160 mg/5 mL)	120 mg	3.75 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%)
	Glucagon IM (1 mg/mL)	0.5 mg	0.5 mL IM
Pain Control	Fentanyl IV (100 mcg/2 mL) Diluted with 8 mL Normal Saline = 10 mcg/mL	10 mcg	1 mL (Diluted)
	Fentanyl IN (100 mcg/2 mL) Divide dose equally between both nostrils	10 mcg	0.2 mL IN
	Morphine IV/IM/IO (10 mg/mL) Diluted with 9 mL Normal Saline = 1 mg/mL	1 mg	1 mL (Diluted)
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
Fluid Bolus	Normal Saline 200 mL IV/IO - May repeat x 1 PRN	N/A	200 mL
Equipment	OPA: 60 mm NPA: 18 F BVM: Child Laryngoscope: 1 (straight) ET Tube: 3.5 (cuffed) ET Depth: 12 cm <i>No</i> ETI unless unable to ventilate		

Methods and Outcomes

- **Setting:** Simulation study among 15 agencies
- **Design:**
 - Infant with seizures (midazolam, dextrose)
 - Infant cardiac arrest (epinephrine)
 - 18-month-old with burn (fentanyl)
 - 5-year-old with anaphylaxis (epinephrine)
- **Methods:**
 - Used regular equipment
 - Used MI-MEDIC dosing card
- **Primary outcome:** Medication Errors (*defined at +/- 20% of the expected dose*)
 - Overdoses
 - Underdoses
- **Secondary outcomes:**
 - Magnitude of medication errors
 - Errors before and after MI-MEDIC dosing card (PDR)

Results

TABLE 2. Total number of doses and number correct

Drug /route	# Correct/total	% Correct (95% CI)
Midazolam IM	21 /32	65.6% (46.8%, 81.4%)
Midazolam IV	7 /18	38.9% (17.3%, 64.3%)
Dextrose	20 /28	71.4% (51.3%, 86.9%)
Epinephrine (1 mg/1 mL) IM	22 /30	73.3% (54.1%, 87.7%)
Diphenhydramine	24 /30	82.8% (64.2%, 94.2%)
Methylprednisolone	10 /13	76.9% (46.2%, 95.0%)
Fentanyl IN	2 /4	50.0% (6.8%, 93.2%)
Fentanyl IV	37 /57	64.9% (51.1%, 77.1%)
Morphine IV	4 /6	66.7% (22.3%, 95.7%)
Epinephrine (1 mg/10 mL or 1:10,000) IV	51 /70	72.9% (60.9%, 82.8%)
All drugs	198 /288	68.8% (63.5%, 74.2%)

Results: Overdoses and Underdoses

Medication	Over (magnitude)		Under (magnitude)	
Midazolam IM	2	2.25	9	0.5
Midazolam IV	8	3.75	3	0.75
Dextrose	3	7.7	5	0.73
Epinephrine IM	4	6.7	4	0.67
Epinephrine IV	13	3.6	6	0.07
Fentanyl IN	1	1.25	1	0.25
Fentanyl IV	16	5.0	4	0.6
Methylprednisolone	NONE	N/A	1	0.43

Results: Overall Improvement (Correct Doses)

Medication	Before PDR	After PDR
Midazolam	24%	65.6%
Dextrose	6%	71.4%
Epinephrine IM	25%	73.3%
Epinephrine IV	31%	72.9%

Take Home Points:

- Training needs to include:
 - Practicing drawing up medications
 - Practicing mixing of medications
 - Dextrose
 - Cross checking with other providers
 - Practicing administration



Summary

- Weight estimation and medication dosing is challenging in the pre-hospital setting
- Broselow and other systems can help but need to be used in the context of other tools
- Training on any tool you use is critical!



Questions?

kathleen.adelgais@childrenscolorado.org

