

Anatomy of a Call Well Run:

“Logistics,
Dialogue, and Tools
for Success”

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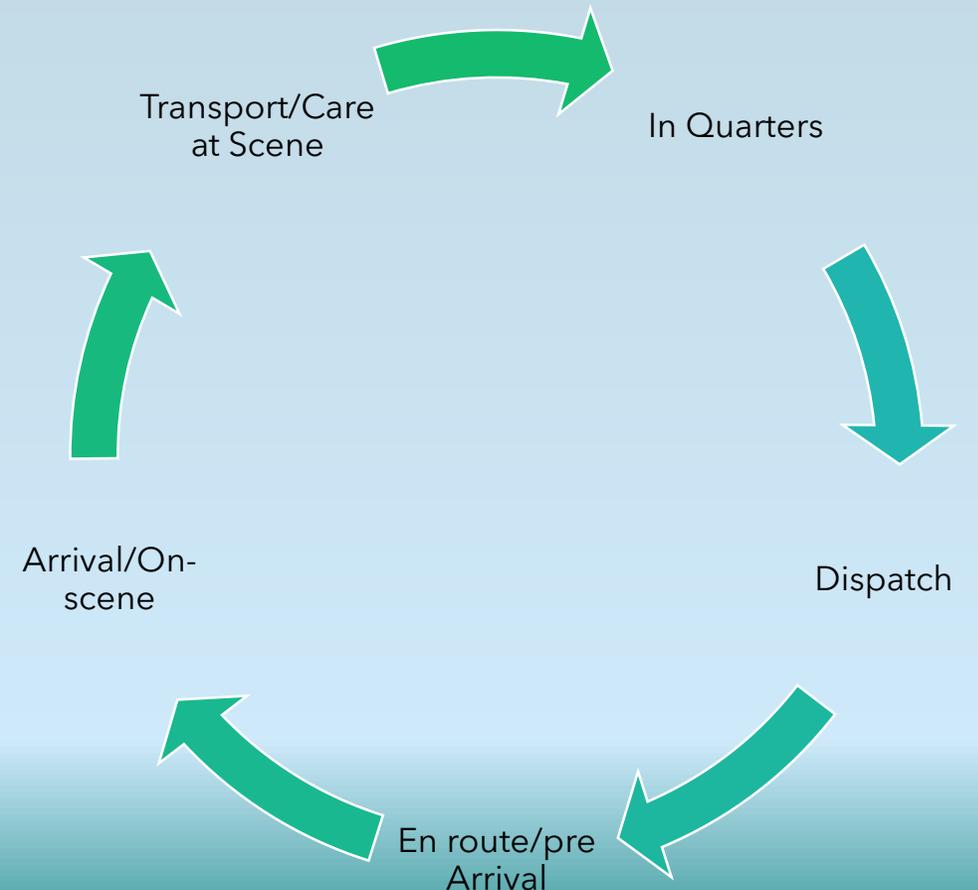


Always Ready, Always A Step Ahead

Pediatric care in the pre-hospital setting has the ability to overwhelm, overstress, and make even the most competent, prepared responders hesitate or second-guess their abilities and decisions. It doesn't always need to be this way though:

Early planning, familiarization, discussion, and individual and group resiliency-building are key in allowing you and your crews to feel confident and competent in responding to pediatric calls...

This presentation is a general overview of the sequences of a call and tips for preparing to navigate those sequences. More specifics and specialized content to come in the future!



Breaking Down the Call

Major Elements:

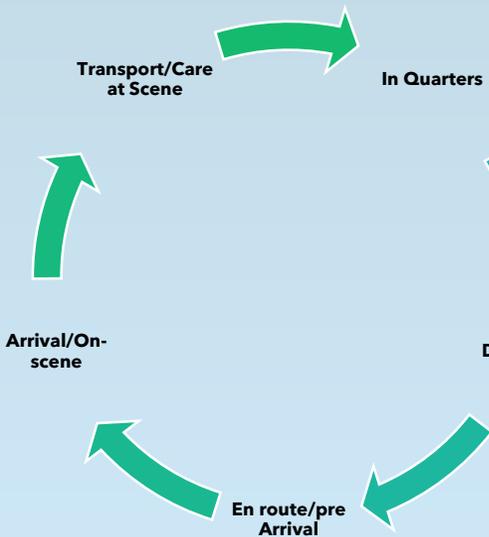
"In Quarters:" Pre-planning involves cognitive and physical prep such as sims/case reviews and crew-capability/equipment familiarization to visualize and prepare for pediatric calls. Create "playbook" of strategies and drill.

"Dispatch:" Break down call notes mentally and visualize what call looks like/what might be needed; if necessary, ask for more info. Time to get the mind in a calm and organized state.

"En-Route:" Review call information with crew, assign roles and responsibilities, talk through gurney set-up and gear needs/locations if time permits; possible doses/med needs; briefly pre-plan "stay or go" thresholds/situation and know your destination options.

Dispatch "Arrival:" Size-up the scene. Pull up apps/reference cards in advance so you can refer to them if needed in the moment (more on this later). Set-up gurney and gear quickly, but appropriately for efficacy and work-flow. Establish situational awareness and sense of ground. Greet family and patient. Use PAT to inform needs and decision making in addition to references. Establish effective communication through the use of tools and verbal/non-verbal means. Work simply and smartly. Be one step ahead and maintain calm for you, pt and family, and crew. Use your scene and your rig in smart and safe ways to give high-quality care.

"Transport:" Talk the family and patient through procedures, thoughts, decisions, and transitions. Evaluate time and resource constraints. Package patient and load gear and family for efficient, safe, and effect care. Organize the call on paper, verbally, or mentally for a successful patch or base report. Use distractors and comfort tools. Prepare family/patient for next steps. Give your handoff report how you want and when you feel is appropriate in the ED. Say goodbye.



Discussion, Survey, and Self-Reflections

- How do you train? How do your neighboring districts train? How often? What's missing?
- What are your strengths as an individual in terms of skill/knowledge, mental/emotional resiliency, leadership?
- What are your crewmember's strengths in terms of skill/knowledge, mental/emotional resiliency, leadership?
- What would be an effective and easy way to build-in an extra 10-30 mins during equipment/rig checks in the am (if time and call volume permits) to familiarize with gear and talk through scenarios?
- What gear and peds. dosing/sizing systems do you use? Why? What are their benefits and or/drawbacks?
- What are your fears or stress-points with pediatric care calls?



Considerations for you and your crew/partner:

Discussion and establishing baseline proficiencies, limitations, roles-*competence breeds confidence*

Crew management-strengths/weakness and filling in the gaps. Knowing your limitations

Building effective strategies from beginning to end with efficient uses of time, space, and resources.

Creating and not being afraid to use checklists and references

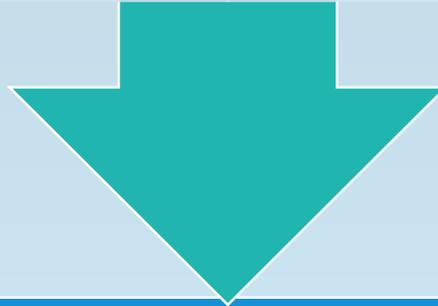
Equipment familiarization and re-strategizing

Troubleshooting equipment-learn it and prevent mishaps or missing items

Implementing conversational and interactive aids to improve the call

Improvising with limited gear or resources in a safe and effective manner

"Preparation begins now and shouldn't end with the ED doors closing behind you."



Larger Scale:

Establishing Pediatric Care champions, training and equipment committees, action groups, sims/scenarios/case studies, cross trainings, standardizing

"Setting the Scene"

- creating a mental and physical workplace to reduce stress, maximize efficiency, and effectiveness.
 - **In Quarters:** skill drills and case studies
 - **Dispatch:** visualizing the call and breaking it down
 - **En route:** visualizing your needs and location of drugs, equipment
 - **Arrival:** e.g. employing brief mindful grounding exercise when stepping out of the rig; setting up the gurney and rig so things flow
 - **On scene:** using therapeutic communication, physical references
 - **Transport/Handoff:** Using the ambulance vs. using the scene as a safe and effective, controlled workspace

Building Emotional, Mental, Physical Resilience

(links to resources @ end of presentation)

Emotional:

- Participate in CISM/CISD trainings, interventions, and reviews.
- Practice empathetic listening.
- Immerse yourself in unfamiliar or uncomfortable environments outside of work with those of different backgrounds or philosophies.

Mental:

In advance:

- Learn algorithms and mnemonics, read blogs and listen to podcasts, drill on scenarios, review understanding of G&D stages, age-related care.
- Learn and practice mindfulness techniques-build a routine or grounding practice into your schedule or arrival checklist.

In practice:

- Plan for trigger-points in decision making or treatment/situational changes.
- Establish and build situational-awareness through activities during down-time or on calls.
- Emergency Conditioning (EC): Make the Unknown Familiar.
- Using visualization techniques is a good way to practice what we call emergency conditioning (EC).



Physical:

- Build muscle memory and familiarity by physically dissecting your bags, gear, equipment and uses.
- Practice difficult conversations and language skills for overcoming cultural, developmental, and situational barriers when with patient and families.
- Preparational and real-time breathwork.

*One study found that our breathing is so closely linked to our emotional state, that changing it can practically negate anxiety completely.

Avoid the “Mental Hijack and Stress Response”

1. Goal setting: When you are in a stressful situation, your amygdala is firing like crazy. Emotions, fear, stress, you name it; it’s a total chaos. The frontal lobes can bring structure to this inferno [through goal setting](#). They can keep the amygdala at ease. The key point is to see something positive in the future (in the near future, if possible) that serves as an anchor to your inner balance. Ground yourself first and realize where you are, then all else will fade from focus except what is at hand. **No Tunnel vision-Keep checking in and maintaining situational awareness.**

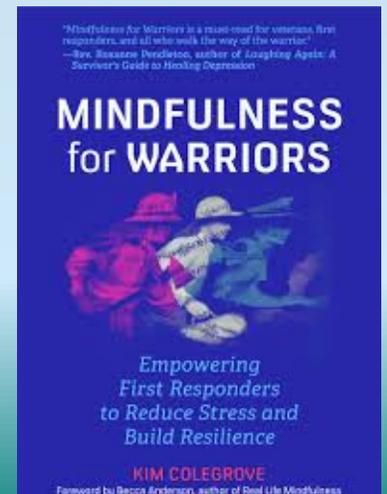
2. Mental rehearsal-Mental rehearsal is also known as “visualization,” and it refers to continuously running an activity in your mind. When a real situation occurs, you [are better prepared](#) to fight it. Take, for example, Michael Phelps: Few people know that his training is insane-same routine, preciseness of atom clock. Phelps’s coach used to name this routine “the track.” Now, in this track, Michael basically confronted all the scenarios that can possibly occur and they did and he was ready.

3. Self-talk-We know from research ([here](#) or [here](#)) that the average person speaks to himself more than 400 words per minute. Logic guides me to say that it would pay much of a difference if these words are predominantly positive. [These guys](#) say that positive self-talk can override the signals from the amygdala. I’ve personally learned about positive self-talk from Brian Tracy’s book [The Power of Self-Confidence](#).

4. Amygdala control- This is more of a physical exercise. It focuses on breathing, and it requires to deliberately breathe slower as it helps counteract some of the effects of panic. Long exhales mimic the process of relaxation within the body. Long inhales provide much more oxygen to the brain which results in better cognition processes.

Each of these techniques may not work when used individually due to the powerful signaling coming from the amygdala, but they can definitely be effective when used together.

WHITE	Unprepared & unready to take action.
YELLOW	Prepared, alert & relaxed. Good situational awareness.
ORANGE	Alert to probable danger. Ready to take action.
RED	Action mode. Focused on the emergency at hand
BLACK	Panic. Breakdown of physical & mental performance.



Establish competency and trust, reduce stress, improve workflow, accuracy, and safe practices using checklists and tools.

Change the culture of fear!

- Checklists
- Reference cards and tools-release the cognitive burden to focus on job at hand and real decision making-overcome the ego, come off as professional ,safe, and confident (review before during and after)
- Giving “jobs to the child and the parent” while on scene for both nerve-calming, info/hx gathering, and distraction purposes
- Running through the scenario before, on way, and after (closure)
- Knowing and using the right tools for care, communication, and transport

Pediatric Medical Kit P016-EMSC-BLS Bag Contents		Blue Pocket		Red Pocket		Green Pocket	
Item	Qty	Item	Qty	Item	Qty	Item	Qty
Gold Pocket							
Ped DH Stethoscope	1	Bite Stick	1	Shield-Mask combo	2	Airway, dual, 40mm-1	1
Aneroid Set, Infant	1	Digital Thermometer	1	Exam gloves, small	4	Airway, dual, 60mm-2	1
Aneroid Set, Ped	1	Therm. probe covers	1	Exam gloves, medium	4	Airway, dual, 80mm-3	1
Slash							
Paramed Shears, 7"	1	Tongue Depressors	6	Exam gloves, large	4	Airway, dual, 90mm-4	1
Shoulder Strap	1	2 x 2 Gauze sponge	2	Sani-Dex hand wipes	6	Airway, dual,100mm-5	1
Bag							
P-010-310 Trauma Bag	1	Bandaidls 1x3"	20	Biohaz bag, 12x15"	2	Airway, dual,110mm-6	1
Center Pocket							
		Bandaidls - XL	6	Convenience bag	2	NP Airway, 18Fr	1
		Gauze sponge, 4x4"	6				
		Surgipad dress, 5x9	2				
		Dressing, 8 x 10	2				
		Dressing, vaseline	2				
		NA Dressing, 4x3"	2				
		Conforming, 2"	2				
		Conforming, 3"	2				
		Kerlix Gauze, (NSTI)	1				
		Medical tape, 1/2"	1				
		Medical tape, 1"	1				
		Medical tape, 2"	1				
		Triangular bandage	1				
		Elastic bandage, 2"	1				
		Elastic bandage, 3"	1				
		Cleansing Toweletts	6				
		Bandage Scissors, 5"	1				
		Kelly Forceps, 5.5"	1				
		Splinter Forceps	1				
		Diagnostic Penlight	1				
		Space Rescue Blanket	1				
				BVM, MX-PRO, Adult	1	NP Airway, 20Fr	1
				BVM, MX-PRO, Infant	1	NP airway, 22Fr	1
				BVM, MX-PRO, Child	1	NP Airway, 24Fr	1
				APC Mask - Neonate	1	NP airway, 26Fr	1
				APC Mask - Toddler	1	NP Airway, 28Fr	1
				Suction Cath, 6Fr	1	O2 Mask, HC, Child	1
				Suction cath, 8Fr	1	O2 mask, MC, Child	1
				Suction Cath, 6Fr	1	O2 Mask, MC, Infant	1
				Suction cath, 8Fr	1	O2 Mask, MC, Adult	1
				Suction cath, 10Fr	1	O2 cannula, child	1
				Suction cath, 12Fr	1	O2 cannula, adult	1
				Suction cath, 14Fr	1	O2 Supply Tubing	1
				Cold compress	2	Manual suction - Lg.	1
				Hot Compress	2	Big Stick Suction	1
				Ambu Collar, Peds	1	Bulb syringe, 2oz	1
				Splint, FlexAll	1	Meconium Aspirator	1
						KY jelly	3

Close Window

Checklists

<https://www.ncbi.nlm.nih.gov/pubmed/28593682>

<https://www.pedsanesthesia.org/critical-events-checklist/>

Prearrival Plan		Primary Survey		Secondary Survey	
Check or prepare: <input type="checkbox"/> Oxygen <input type="checkbox"/> Suction <input type="checkbox"/> Bag and mask <input type="checkbox"/> Intubation tray <input type="checkbox"/> Intubation medications <input type="checkbox"/> Defibrillator <input type="checkbox"/> CPR board <input type="checkbox"/> Consider ordering blood		A <input type="checkbox"/> Confirm C-spine is immobilized <input type="checkbox"/> Confirm airway is protected		Evaluate and state findings: <input type="checkbox"/> Head <input type="checkbox"/> Ears <input type="checkbox"/> Eyes <input type="checkbox"/> Facial bones <input type="checkbox"/> Nose <input type="checkbox"/> Mouth <input type="checkbox"/> Neck/C-spine <input type="checkbox"/> Chest <input type="checkbox"/> Abdomen <input type="checkbox"/> Pelvis <input type="checkbox"/> Upper extremities <input type="checkbox"/> Lower extremities <input type="checkbox"/> Log roll and back exam	
Assign team roles: <input type="checkbox"/> Airway <input type="checkbox"/> IV/IO access <input type="checkbox"/> Primary survey <input type="checkbox"/> Team leadership		B <input type="checkbox"/> Place O ₂ mask or connect existing mask to O ₂		Plan of Care Determine need for: Laboratory tests <input type="checkbox"/> Yes <input type="checkbox"/> No X-rays <input type="checkbox"/> Yes <input type="checkbox"/> No CT scans <input type="checkbox"/> Yes <input type="checkbox"/> No OR notification <input type="checkbox"/> Yes <input type="checkbox"/> No PICU notification <input type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> Brief team on incoming patient		C <input type="checkbox"/> Check pulses <input type="checkbox"/> Establish IV/IO access <input type="checkbox"/> Consider ordering blood		Departure Plan <input type="checkbox"/> State patient destination Prepare patient for travel: <input type="checkbox"/> Equipment <input type="checkbox"/> Medications <input type="checkbox"/> Identify who will travel with patient	
<input type="checkbox"/> Estimate weight: ____ kg		D <input type="checkbox"/> State GCS (eyes, verbal, motor) <input type="checkbox"/> State pupil size and response			
		E <input type="checkbox"/> Completely remove patient's clothing <input type="checkbox"/> Cover patient with warm blanket			
		RE-EVALUATE AIRWAY <input type="checkbox"/> Evaluate need for intubation <input type="checkbox"/> Report ET tube size and depth (if applicable) <input type="checkbox"/> Confirm ETco ₂ color change (if applicable)			
		MONITOR <input type="checkbox"/> Confirm heart rate is displayed <input type="checkbox"/> Confirm pulse ox waveform is displayed			
		VITALS State and evaluate whether WNL: <input type="checkbox"/> Heart rate <input type="checkbox"/> Respiratory rate <input type="checkbox"/> Blood pressure <input type="checkbox"/> Oxygen saturation <input type="checkbox"/> Temperature			

Figure 1. Checklist used during post-implementation pediatric trauma resuscitations at Children's National Medical Center

Trauma Resuscitation Checklist		Items in the shaded boxes pertain to high-acuity patients — may be marked as N/A	
Pre-arrival Plan <input type="checkbox"/> Introductions & confirm team roles <input type="checkbox"/> Brief team on incoming patient <input type="checkbox"/> Estimate weight: ____ kg <input type="checkbox"/> Oxygen connected to NRB <input type="checkbox"/> Suction hooked up <input type="checkbox"/> Trauma shears available <input type="checkbox"/> Bair hugger on bed <input type="checkbox"/> RSI meds removed from Pyxis For Attending activations: <input type="checkbox"/> N/A <input type="checkbox"/> Prepare intubation equipment <input type="checkbox"/> Order Code Orange blood <input type="checkbox"/> CPR board in room or on bed		Primary Survey <input type="checkbox"/> Confirm airway is protected <input type="checkbox"/> Confirm C-spine is immobilized properly (manually or with collar) A If intubating: <input type="checkbox"/> N/A <input type="checkbox"/> GCS assessed before giving RSI medications <input type="checkbox"/> Report ET tube size, depth, and color change <input type="checkbox"/> Confirm ETco ₂ reading on monitor <input type="checkbox"/> Order chest x-ray for placement confirmation B <input type="checkbox"/> Confirm O ₂ placement C <input type="checkbox"/> Check distal pulses (then central, if needed) <input type="checkbox"/> Confirm IV/IO access has been established <input type="checkbox"/> Give fluid bolus (NS/LR) or blood <input type="checkbox"/> N/A D <input type="checkbox"/> State GCS (eyes, verbal, motor) <input type="checkbox"/> State pupil size and response E <input type="checkbox"/> Completely remove patient's clothing <input type="checkbox"/> Cover patient with warm blanket <input type="checkbox"/> Take temperature	
Secondary Survey Evaluate and state findings: <input type="checkbox"/> Head <input type="checkbox"/> Ears <input type="checkbox"/> Ocular/periorbital integrity <input type="checkbox"/> Facial bones <input type="checkbox"/> Nose <input type="checkbox"/> Mouth <input type="checkbox"/> Neck <input type="checkbox"/> Chest <input type="checkbox"/> Abdomen <input type="checkbox"/> Pelvis <input type="checkbox"/> Lower extremities <input type="checkbox"/> Upper extremities <input type="checkbox"/> Log roll and back exam <input type="checkbox"/> C-spine exam		Departure Plan <input type="checkbox"/> Summarize 1* and 2* survey findings <input type="checkbox"/> Brief team on plan of care and patient destination Prepare patient for travel: <input type="checkbox"/> N/A <input type="checkbox"/> Equipment <input type="checkbox"/> Medications <input type="checkbox"/> Identify who will travel with patient <input type="checkbox"/> Notify destination (OR, PICU, etc.)	
VITALS State and evaluate whether logical and WNL for age: <input type="checkbox"/> Heart rate (with good waveform) <input type="checkbox"/> Respiratory rate <input type="checkbox"/> Oxygen saturation <input type="checkbox"/> Blood pressure			
DO NOT ADD TO MEDICAL RECORD			

Plan B - Rescue
 iGel
 NGT 12 Fr
 INTUBATE with ASCOPE
 Igel + 3 =ETT
 BMY VICE-GRIP & CALL FOR HELP IS WAKING UP AN OPTION?

Plan A - Primary Strategy
 10 ml syringe LUBE TAPE ApOx
 TWO ET TUBES OF APPROPRIATE SIZE
 CONSIDER KIMI GRIP w BOUGIE
 Mac #3 & #4
 OPTIMISE - POSITION & PHYSIOLOGY

Plan C - CICO
 Size 10
 +
 1.5 ETT
 LARYNGEAL HANDSHAKE
 SCALPEL - FINGER - BOUGIE - TUBE

PreOx-ReOx-ApOx
 PEEP valve nasal prongs ETCO2 checked
 15 l/min O2
 Consider NIPPV

CHECK
 Two IVs
 Pre-Ox, ApOx & Re-Ox
 Position & Physiology Optimised?
 BP - SpO2 - EDG - ETCO2
 Airway plan & transitions agreed?
 Drug doses agreed & checked?
 Roles assigned?
 Problems anticipated & discussed?
 Post RSI sedation & ventilation strategy?

Alternative Strategies
 Fiberoptic Approach
 VL
 - Awake FOI
 - LMA as conduit
 Ketamine & Topicalisation

Reference Tools

Age	Weight (kg)	Pulse	Resp	Systolic BP*
Newborn	3	100-160	30-60	60-70
1 mo	7	100-160	30-60	70-80
2	12	100-160	24-40	72-107
3	15	80-130	24-40	75-113
4	16	80-120	22-34	78-115
5	18	80-120	22-34	80-116
6	20	70-110	18-30	82-117
8	25	70-110	18-30	86-120
10	35	60-100	16-24	90-123
12	40	60-100	16-24	90-127
14	50	60-100	16-24	90-132
15+	55+	60-100	14-20	90-135

* BP in children is a late and unreliable indicator of shock.

www.clemsc.com

Pediatric Assessment Tools

Sponsored by the Pediatric Liaison Nurses of Los Angeles County

Normal Pediatric Vital Signs

	HR beats/min	RR breath/min	BP (sys) mm/hg	BP (dias) mm/hg
Newborn	100 - 180	30 - 60	73 - 92	52 - 65
Infant	80 - 150	30 - 60	90 - 109	53 - 67
Toddler	75 - 130	25 - 35	95 - 105	56 - 68
Pre-school age	75 - 120	22 - 32	99 - 110	55 - 70
School age	70 - 110	20 - 30	97 - 118	60 - 76
Pre-adolescent	70 - 110	18 - 22	105 - 124	60 - 80
Adolescent	65 - 105	16 - 22	110 - 133	63 - 83
Adult	50 - 90	12 - 20	113 - 136	65 - 84

Wong-Baker FACES Pain Rating Scale



Alternate Coding:

- 0 No Hurt
- 1 Hurts Little Bit
- 2 Hurts Little More
- 3 Hurts Even More
- 4 Hurts Whole Lot
- 5 Hurts Worst

FLACC (< 44 weeks - 3 years)

Category	0	1	2
Face	No particular expression, smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant frown, clenched jaw, quivering chin
Legs	Normal position or relaxed	Uneasy, restless, tense	Kicking or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense	Arched, rigid or jerking
Cry	No cry (awake or asleep)	Moans, whimpers, occasional complaint	Crying steadily, screams or sobs frequent complaints
Consolability	Content, relaxed	Reassured by occasional touching, hugging or being talked to, distractable	Difficult to console or comfort

Glasgow Coma Scale

For Patients < 2 years old

- Eye Opening (E)
 - (4) Spontaneous
 - (3) To speech
 - (2) To pain
 - (1) None
- Verbal Response (V)
 - (5) Coos, babbles
 - (4) Irritable, cries
 - (3) Cries to pain
 - (2) Moans to pain
 - (1) None
- Motor Response (R)
 - (6) Normal spontaneous movements
 - (5) Withdraws to touch
 - (4) Withdraws to pain
 - (3) Abnormal flexion
 - (2) Abnormal extension
 - (1) None

For Patients > 2 years old

- (4) Spontaneous
- (3) To speech
- (2) To pain
- (1) None
- (5) Oriented
- (4) Confused
- (3) Inappropriate words
- (2) Incomprehensible
- (1) None
- (6) Obeys command
- (5) Localizes pain
- (4) Withdraws to pain
- (3) Flexion (pain)
- (2) Extension (pain)
- (1) None

EDAP Emergency Department Approved for Pediatrics 2005

Yale New-Haven Health
Yale New Haven Children's Hospital

Pediatric Transport Resource Guide

Y-Access Transfer Line
888-YNH-BED

V/Fib / Pulseless V-TACH

- Consider H's and T's
- Immediate Defibrillation (unsynchronized) 2J/kg
- Begin chest compressions
- Establish intravenous or intraosseous access
- Epinephrine 0.01mg/kg 1:1000 (Max 1mg/dose) IV/IO
- Defibrillate 4J/kg
- Continue chest compressions
- Amiodarone 2.5-5mg/kg (Max 300mg/dose) IV/IO (may repeat twice for a total of 15mg/kg daily dose)
- Or Lidocaine 1mg/kg (Max 100mg/dose) IV/IO (may repeat q 5 min. 0.5mg/kg total of 3mg/kg daily dose)
- Defibrillate 4J/kg
- Continue chest compressions
- Epinephrine 0.01mg/kg 1:1000 (Max 1mg/dose) IV/IO (repeat q 3-5 min)
- Defibrillate 4J/kg

Asystole / PEA

- Consider H's and T's
- Chest compressions and ventilate
- Establish intravenous or intraosseous access
- Epinephrine 0.01mg/kg 1:1000 (Max 1mg/dose) IV/IO (repeat q 3-5 min)

H's and T's

- Hypoxia
- Hypovolemia
- Hydrogen ions (acidosis)
- Hypothermia
- Hypocalcemia
- Hypoglycemia
- Hypertension
- Trauma
- Thrombosis
- Toxins/drugs
- Tension pneumothorax
- Tamponade (cardiac)

JumpSTART Pediatric MCI Triage

ABLE TO WALK? YES → MINOR → SECONDARY TRIAGE

NO → BREATHING

Breathing? YES → Position Upper Airway → APNEIC → Palpable Pulse? → YES → 5 Rescue Breaths → APNEIC → DECEASED

NO → BREATHING

Breathing? YES → Respiratory Rate <15 or >45 → IMMEDIATE

15-45 → Palpable Pulse? → NO → IMMEDIATE

YES → AVPU → "A" "V" OR "P" (APPROPRIATE) → DELAYED

"N" (INAPPROPRIATE) POSTURING OR "U" → IMMEDIATE

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START TRIAGE

Re-Order DMS-05704

All Walking Wounded → RESPIRATIONS

RESPIRATIONS: YES → MINOR → IMMEDIATE

NO → Position Airway

Position Airway: YES → IMMEDIATE

NO → DECEASED

Respirations 30, Perfusion 2, Mental Status CAN DO

PERFUSION: Radial Pulse Present → IMMEDIATE

Radial Pulse Absent → Capillary Refill

Capillary Refill: Over 2 Seconds → IMMEDIATE

Under 2 Seconds → MENTAL STATUS

MENTAL STATUS: Control Bleeding → IMMEDIATE

Can't Follow Simple Commands → IMMEDIATE

Can Follow Simple Commands → DELAYED

DMS SYSTEMS, INC.

TriageTags.com

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TriageTags.com

The Handtevy Pediatric Code

15 kg, 20 kg, 25 kg, 30 kg, 10 kg

Epi 1:1,000 IM, Epi 1:10,000 IV, Amiodarone, Bicarb 8.4%, D₂₀W, Normal Saline, Lorazepam, *Diazepam IM/IN, ETT / King / LMA

1 yr, 3 yr, 5 yr, 7 yr, 9 yr

*NOTE: The Diazepam IV dose is HALF (1/2) the volume of the listed Diazepam IM / IN dose. FCC 2014, ver 18

In Quarters

- Protocol/Gear familiarization and scenarios-Take 10 and learn!
- Conversations with crews and reviewing call tapes/critical calls
- Equipment checks, organization, and reorganization
- Make your own guide or playbook based on the protocols and resources you have in district

Podcasts and blogs with latest guidelines and practices

*while these may be common sense of standard practice, we often get busy, complacent, or too comfortable with our morning and “base” routines which lead for us to get caught off guard at the worst times.

- <https://www.jems.com/2018/04/01/the-psychology-of-prehospital-pediatric-emergencies/>
- <https://emsimcases.com/category/cases/pediatrics/>
- <https://www.ems1.com/pediatric-care/articles/pediatric-patient-abcs-7-tips-for-ems-and-paramedics-KYLWD13oQPR9q8Qx/>



In Quarters: Equipment

- **Equipment for Packaging**

- Age/size appropriate?
- Appropriate for use on all calls?
- Improvisation?

- **Equipment for Stabilization**

- Based on latest EBG or safe measures?
- Age/size appropriate?
- Easily adaptable?
- Time to set-up?

- **Equipment for Care**

- Adequate sized cuffs, airways, pulse oximeters, splints, etc?
- Distraction or Special Needs tools?

- **Equipment for Transport**

- How and with what will you transport pediatric patients and family members?
- Is everything in place and are all required accessories/straps working?
- How long to set-up
- Multiple patients?



EMS1 Recommends:



- EMS leaders should strongly consider adding the following items:
- **A set-up for pull-push fluid administration.** According to the most recent sepsis and shock guidelines, children in shock should receive 20 mL/kg in the first 5 to 10 minutes. Fluid resuscitation goals are to achieve normal vital signs within the first hour of shock presentation. Infusions at this rate are simply not possible using the unregulated administration of fluid through an intravenous bag alone or through a burette system. Services should consider carrying a three-way stopcock device and 60-cc Luer lock tip syringes that can be used to quickly and accurately administer fluid during resuscitation.
- **Diagnostic equipment to assess blood pressure and pulse oximetry.** This includes appropriately sized blood pressure cuffs and pulse oximetry probes. In addition, automatic blood pressure cuffs, which are essential in obtaining a blood pressure on infants and toddlers, should be strongly considered. Previous teaching that blood pressure measurement is unimportant in children should be disregarded, as this vital sign is as critical to effective assessment and care of children as it is in adults.
- **Mushroom-tip or BBG type suction catheters** are significantly more effective than bulb syringes or traditional Yankauer rigid suction tips at removing nasal secretions, especially in young children unable to blow their noses to alleviate respiratory distress. Such a device is easier to use and less traumatic, and does not risk stimulation of a vagal response.
- **Appropriate distraction and trust-building tools** such as stuffed animals or search-and-find distraction books can assist children in coping with the EMS encounter.

<https://www.ems1.com/ems-products/neonatal-pediatric/articles/ems-leaders-8-step-guide-to-excellent-pediatric-care-HXKp4iWFDEuL97p6/>

Choosing the Right Gear

- **Bundling equipment by patient size.**

- A length-based tape for estimating pediatric patient's weight assigns "colors" for different size equipment. Bundling equipment by its color size and color matched bags puts resuscitation equipment in one place for rapid access.

- **2. Recommendations from local or regional pediatric care experts.**

- Since most EMS professionals infrequently use pediatric equipment ask local or regional experts from pediatric critical care transport services or children's hospitals for equipment recommendations. From their regular use they will be able to advise what works well and what does not.

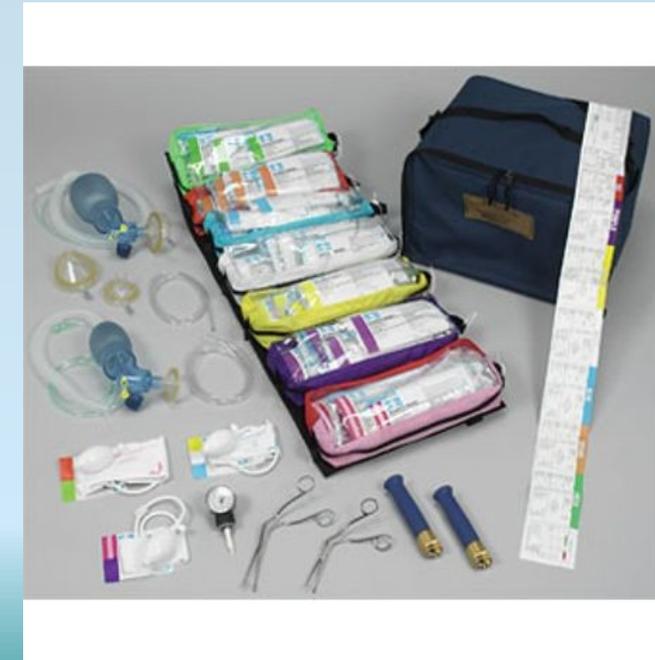
- **3. Pediatric assessment bag.**

- Store pediatric assessment and treatment equipment in a specific "peds bag." The bag at a minimum should include a length-based tape for weight estimation, airway management equipment, vascular access supplies, and fluid administration tools.

- Length based vs Age based—both rely on weights in the end, but different approaches and algorithms
- Color coding and bundling—all you need for a call or a code
- Multi Purpose and Modules/Compartments

- **4. Ensure effectiveness of novelty items.**

- Pediatric oxygen administration supplies and nebulized medication delivery devices are designed into various animal and dinosaur shapes. If selecting items with novelty designs talk to pediatric care experts to make sure these devices actual work. If a child is in severe respiratory distress the primary concern should be administering the medication not giving the child a toy to play with.



Minimal Equipment Lists

BLS EQUIPMENT AND SUPPLIES
<p>Essential Oropharyngeal airways: infant, child, adult (sizes 00-5) Self-inflating resuscitation bag: child and adult sizes¹ Masks for bag-valve-mask device: infant, child, and adult Sizes² Oxygen masks: infant, child, and adult sizes Nonrebreathing mask: pediatric and adult sizes Stethoscope Backboard Cervical immobilization device³ Blood pressure cuff: infant, child, and adult sizes Portable suction unit with a regulator Suction catheters: tonsil-tip and 6F-14F Extremity splints: pediatric sizes Bulb syringe Obstetric pack Thermal blanket⁴ Water-soluble lubricant</p>
<p>Desirable Infant car seat⁵ Nasopharyngeal airways: sizes 18F-34F, or 4.5-8.f mm⁶ Glasgow Coma Scale reference Pediatric Trauma Score reference Small stuffed toy</p>

(Committee on Ambulance Equipment and Supplies, National Emergency Medical Services for Children Resource Alliance. Guidelines for Pediatric Equipment and Supplies for Basic and Advanced Life Support Ambulances. *Annals of Emergency Medicine*. 1996;28:699-701. Reprinted with permission.)

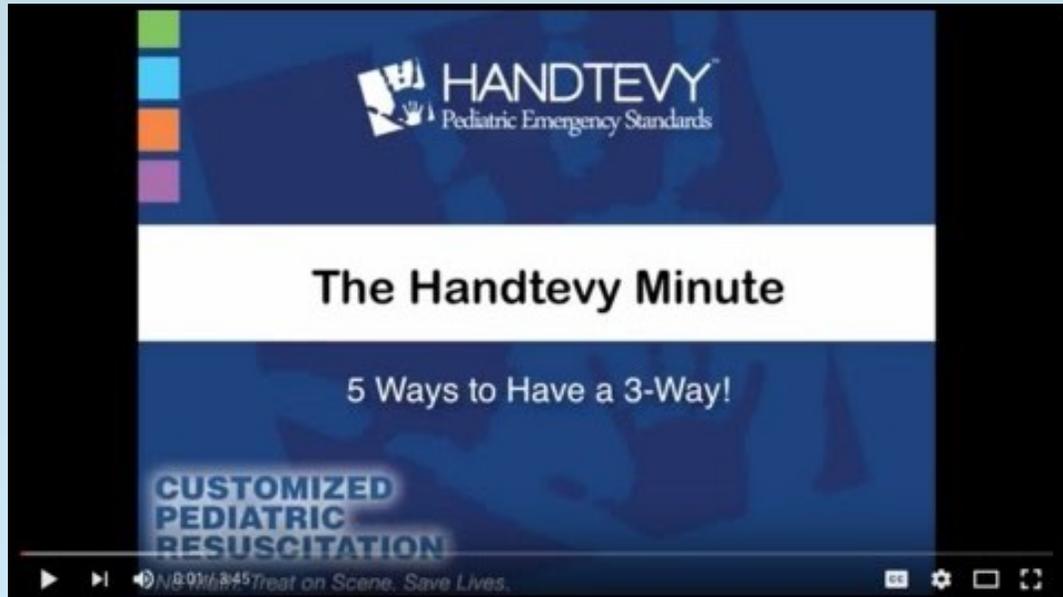
ALS EQUIPMENT AND SUPPLIES
<p>All ALS ambulances should carry everything on the BLS list, plus the following items.</p>
<p>Essential Transport monitor Defibrillator with adult and pediatric paddles¹ Monitoring electrodes: pediatric sizes Laryngoscope with straight blades 0-2, curved blades 2-4 Endotracheal tube stylets: pediatric and adult sizes Endotracheal tubes: uncuffed sizes 2.5-6.0, cuffed sizes 6.0-8.0 Magill forceps: pediatric and adult Nasogastric tubes: 8F-16F² Nebulizer IV catheters: 16 to 24 gauge</p>

(Committee on Ambulance Equipment and Supplies, National Emergency Medical Services for Children Resource Alliance. Guidelines for Pediatric Equipment and Supplies for Basic and Advanced Life Support Ambulances. *Annals of Emergency Medicine*. 1996;28:699-701. Reprinted with permission.)

<https://www.tandfonline.com/doi/full/10.3109/10903127.2013.851312>

<https://www.facs.org/-/media/files/quality-programs/trauma/publications/ambulance.ashx>

Good Stuff to Have



- Tools to boost assessment/baseline-ice/cold, stethoscope,
- Paper for parents to process and regurgitate all they know
- GCS card, reference cards, toys and lights, stickers, bears
- 3 way stop-cocks
- Tweezers/forceps
- Masks for you, patient, family
- Bougie, bp cuffs legs, splints for IVs, stabilization, distraction, tongue depressors
- Thermometer (two types)
- Suction (nasal and oral-various types and tips)
- Airways-SALAD bulb or suction tip parked next to laryngoscope, bougie first
- Towels for positioning airway, neck support, splinting, warmth, etc.
- Syringes (TB and 1-60cc) -multi-purpose

Dispatch

- Dissecting the call notes and info-what do you need to know
- Visualization of the call being run-3rd person oversight
- Early call for resources
- Gear Prep/Rig Ready-Quick double-check

En-Route/Pre Arrival

- Running through the call with crew (procedure, role, triggers, communication factors)
- Visualization of equipment and procedures
- Preparing checklists, doses, calculations
- Discussing and assigning roles, timing, positioning
 - Pit crew, divide and conquer, wait/hold patterns
 - BLS prep rig or scene for anticipation of or knowledge of ALS intercept for flow of care and ease of transition.

Arrival and Onscene:

Setting the scene helps create a workplace to reduce stress, maximize efficiency, and effectiveness...

- Pre-staging/prepping stretcher/Rig readiness based on needs (fluids (warm/cool?) , blankets, temp, transport devices)
- Surveying the scene and environment and comparing with notes to inform care.
- Preparing for the conversations/dialogue with family and assignment of care
- Mindfulness/Grounding
- Check and re-check



On Scene: Patient and Family Contact

- Introduction, establishing trust and goals
- Survey of scene and human condition
- Going to work-roles and assignments (who talks to who, who is lead provider, who prepares report)
- Double checking protocols for safety and confidence and verbalized decision-making or questioning helps build trust and rapport
- Giving the family a job and ascertaining info
- Involving the right people in care-make sure only those necessary to the patients comfort/safety and your job being done right are nearby, ask others to give space.

Therapeutic Communication

Table 1. Comparison of Four Commonly Used Protocols for Delivering Bad News

Six-steps	SPIKES	BREAKS	ABCDE
Buckman, 1992	Baile et al., 2000	Narayanan et al., 2010	Vandekieft, 2001; Rabow and McPhee, 1999
Getting started	Set up for the interview	Background: review medical record Rapport: set up space	Advance preparation
Finding out how much the patient knows	Perception: access patient's knowledge and understanding	Explore: determine what patient knows	
			Build a therapeutic relationship
Finding out how much the patient wants to know	Invitation: obtain patient's permission to proceed		
Sharing the information	Knowledge: share information	Announce: deliver warning and then the bad news	Communicate well
Responding to the patient's and parent's needs	Emotions: recognize and respond to patient's emotions	Kindling: recognize and respond to patient's emotions	Deal with patient and family Encourage and validate emotions
Planning and following through	Summarize and explain strategy and plan	Summarize	

TABLE III DOS AND DON'T'S OF COMMUNICATION

Do	Don't
<ul style="list-style-type: none"> • Greet the child and parent by name. • Smile. • Sit down when talking. • Try to talk in the patient's language. • Direct the conversation to relevant directions. • At the end of the consultation, ask if the parents have any questions. • Engage the parents in a dialogue. • Give time for the parents to absorb and understand the content of your explanations, then to ask questions. 	<ul style="list-style-type: none"> • Look at your watch frequently. • Appear to be in a hurry. • Use too many medical terms. • Talk with your hand on the door handle, or foot outside the door. • Interrupt all the time. • Start examination and then write out a prescription before the main problem has been identified. • Give long lectures as explanation. • Ignore concerns mentioned by parents.

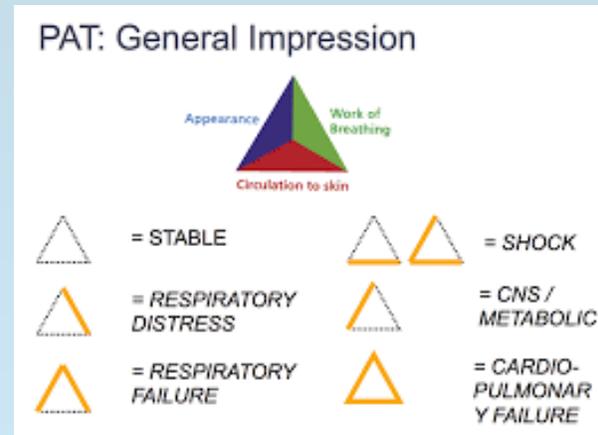
Discuss the child's history and behaviors, relationship with parents/friends, triggers, emotional baseline, cognitive baseline, explain all procedures before, during and what's to come. Give options-involve parents in care if it helps you and the parents to maintain peace and sense of purpose/doesn't distract from the task. Depending on age and developmental stage of patient, allow or invite them to learn, participate in care, or "help out."

On Scene: Where to care?

- Create an environment you need to work-whether in back of the rig, in the patient's house or business.
- Eliminate distractions and stressors to best extent-assign crew for family/crowd control as well as for specific scene mgmt. tasks if available.
- Consider resources and space needed for quality care
- Consider patient's condition and preference for comfort (parent's arms, on couch, in room vs. outside)
- Use local protocols
- Care using smart, quick reference and tested methods like age/wt. tapes, color systems, etc. and always have a backup or alternative tool or drug for those that don't fit the standard recommendation or failed first-pass/ first attempts.

On Scene: Assessment

- ABCDE's and PAT-use equipment that is prepped to meet these foundational tools and prioritize these over histories and secondary assessments if patient is truly sick.
- Acknowledge anatomical differences
- Pay attention to the chief complaint; the parents
- Signs of abuse?
- Special Considerations: Pain, Distractions, Establishing Baseline, special needs/communication factors or barriers?
- Using your equipment properly, accurately, and purposefully for better outcomes, not just going through the motions; if the sat probe doesn't fit, find a better one or improvise. (more to come on that in another presentation).



Useful Tools for Establishing Baseline and Creating Distractions

The ABC's of Distraction

A – Assorted visuals

B – Breathing techniques

C – Comfort Positions

D – Diversional Talk

Give a choice only when choice exists

Limit number of voices

E – Encouragement and praise

Specific - “You’re doing a good job taking deep breaths”
instead of “Good boy”

Distraction Toolbox Components

LED keychains



Glitter iSpy wand



Rubik's cube

Hot/cold packs



DistrACTION Cards



Pacifier &
Sucrose
Water

Transport

- Equipment at hand vs. stored
- Methods of transport/lights and sirens or slow and easy?
- Rig layout and seating arrangement for safety and efficiency
 - Making best use of space, seats, resources, and securing devices
- Communication: Radio report and making the call; briefing the patient and parent(s) on what to expect



Safe Transport Strategies:

Think what's best for interventions, crew/space mgmt, safety, comfort, trust, and easy transition.

<https://nasmso.org/committees/safe-transport-of-children/>

Case Study

Considerations?

How do you feel before this call in terms of preparation, mental/emotional capacity, readiness?

What can you do to get into the proper mental and emotional framework for this call in the interim?

What resources do you have immediately available for this call (individual, crew-wise, equipment-wise, system wise)

How will you delegate or run this call?

What will you employ to create a safe working environment, free of med-errors or critical mistakes?

Where is your equipment and meds for this call and whose responsibilities is it to set them up properly and use accordingly?

How will you discuss this call and approach to care with family?

How will you package and transport this patient and family?

What does your report sound/look like?

How do you transfer care?

What does your debrief look like/review of call?

SEIZURE: EPILEPSY		
Goals/Objectives: <ul style="list-style-type: none"> Assess and secure airway Recognition of risk and/or presence of secondary trauma Recognition of transport necessity 	Dispatch Information: Responding to a 4-year-old female having a seizure at school. Patient is a known epileptic, well-controlled on medication. Patient was playing with friends on the playground when the other children alerted the teacher she was having a seizure.	
	Chief Complaint: Seizure	Additional Resources Requested: Police and Fire Department, ALS
Scene Description: <ul style="list-style-type: none"> Spring afternoon at local preschool/daycare, high of 88 degrees Two adults carried the patient inside and are currently with her You are waved to the door by the school's main office 		
Initial Impression: Patient is in regular street clothes noted to lying in caregiver's arms. Mouth is open, eyes rolled back in head and breathing is rapid and shallow. Patient is not currently seizing. All seizure activity ended about a minute ago.		
Vital Sign – Set 1 AVPU: Painful B/P: 98/62 HR: 144, regular Resp: 36, non-labored O ₂ Sat: 90% (room air) Pain: GCS: 5 (1, 1, 3) BGL:	Physical Exam HEENT: Head: Small "goose egg" spot to R temporal Eyes: Initially, Right pupil is dilated, non-reactive Ears: Unremarkable Nose: Unremarkable Oral Cavity: Unremarkable Patient able to clear and control own airway	HPI: See events prior below S/S: Initially, limp limbs, but will respond to pain Allergies: NKDA Medications: Multivitamin, Keppra 120mg BID PmHx: Seizures, Concussion at 3yo
Vital Sign – Set 2 AVPU: Verbal Inappropriate B/P: 96/52 HR: 138, regular Resp: 28, non-labored O ₂ Sat: 98% (O ₂ applied) Pain: GCS: 10 (3, 2, 5) BGL: 107 mg/dl	Chest: Equal chest rise and fall noted Lung sounds clear No external trauma noted Back: Small red mark noted to patient's mid-back on the right side Abdomen/Pelvis: No guarding noted upon quadrant palpation No trauma noted Pelvis stable	Last Meal: Snack, 45min ago Events Prior: Classmates said patient slipped on climbing structure and hit her head on the railing. Teacher witnessed the patient fall onto soft recycled tire material Current on Immunizations? Yes Patient Weight: 17kgs
Vital Sign – Set 3 AVPU: Alert, Confused B/P: 90/70 HR: 120, regular Resp: 24, non-labored O ₂ Sat: 98% (O ₂ applied) Pain: GCS: 13 (4, 4, 5) BGL:	Extremity: No trauma noted to legs or arms PMS x 4 (presumed, since child moves limb away when pain applied) Other: Skin: Pale, warm No step off's or tenderness noted to neck Pupils both return to PERL during transport	Notes: Body Temp: 97.1 ECG: Sinus Tachycardia Parents will meet at local hospital. Patient moans and whimpers with any intervention. Muscles are weak, and patient is easily restrained and compliant during treatment Transport Consideration: Securing patient properly on cot
Suggested Treatment: O ₂ , Monitor, C-spine precautions		

SEIZURE: EPILEPSY

Additional Things to Consider about the Scene:

- Have there been any changes to her medications
- How far was the fall from the playground equipment to the ground
- Did patient fall on her head or land on another body part
- How exactly was the patient carried into the school from the playground
- Family centered care

Additional Things to Consider during Treatment/Transport:

- Have there been any changes to her medications
- When was her last lab work completed
- Is incontinence noted
- Oral cavity can have trauma secondary to biting of the tongue
- Keep back of ambulance lighting/temperature appropriate for patient comfort, low stimulation
- Transport to the nearest appropriate facility

Additional Educational Resources to Consider:

- Epilepsy Foundation
 - <https://www.epilepsy.com/living-epilepsy/parents-and-caregivers/about-kids>

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Things to consider based on your EMS protocols, procedures and/or policies:

__Sedative__ _____

__Anticonvulsant__ _____

Base Call Report Practice

Ease the nerves, practice for yourself-may help to organize calls, assessment, and hand-offs much more effectively!

Base Call Report Guide			
State: Agency, Unit Number, Age, Sex and Purpose of Call Purpose of Call: Trauma Activation, Trauma Destination, Medical Example: "This is [redacted], unit 210 with a twenty six, 2-6 year old male with a Trauma Destination call" Pediatric Patients: "This is [redacted], unit 210 with a PEDIATRIC 4, 0-4 year old male with a Trauma Destination call"			
Opening Statement	Destination	Activation	Medical
Situation (Mechanism)	Motor Vehicle/Motorcycle: <ul style="list-style-type: none"> Speed (Known MPH AND/OR Freeway or City Streets) Type of Impact (roll over, head on, rear end, etc) Type of vehicle (Newer model or older model) Any extrication and time to extricate Patient Compartment Intrusion/ steering wheel intact/airbag deployment/restrained Protective Clothing (motorcycle) Fall <ul style="list-style-type: none"> Distance, surface, Blood thinners? Assault <ul style="list-style-type: none"> Object Impact area Any other situation/mechanism, please give pertinent information and continue report.	Medical calls to Base can include AMA, ending of resuscitative measures and medication orders. If the reason you are calling is not for a Trauma or Medical call, please state up front the reason for the call. <ul style="list-style-type: none"> What is the situation? State urgent issues and immediate needs up front! 	
Background (Injuries)	<u>Physical Assessment</u> EXPOSE & PALPATE!!!!	KILL ZONE Assessment: Head, Neck, Chest (Anterior & Posterior) Abdomen, Pelvis, Femurs. EXPOSE & PALPATE!!!!	<ul style="list-style-type: none"> What has happened up to this point? What past history would be important to know for further patient treatment?
Assessment (Vital Signs)	Full Set of Vitals: Blood Pressure, Pulse, Respirations, GCS, SPO2, Skin Signs, Pupils	Airway (yes/no) Key Vital Signs: GCS, Pulse (location, rate & strength), Respirations, Skin signs, Pupils.	<ul style="list-style-type: none"> How is the patient now? Full Set of Vitals including any EKGs Patient Stable or unstable?
Rx Recap (Treatment)	Key Treatment: (Spinal Precautions, Any Medication administered, Splints)	Key Treatment: (Spinal Precautions, Any Medication administered, Advance Airway, Tourniquets, Splints)	<ul style="list-style-type: none"> Treatment and what was the outcome? Concerns?
ETA	Destination decision should be made by ED MD based on information given. Please provide the Base with name/destination/ETA after destination determination made.	ETA to Trauma Center [redacted]	ETA to the closest and/or preferred facility.

Goals/Objectives: <ul style="list-style-type: none"> Assess and secure airway Recognition of risk and/or presence of secondary trauma Recognition of transport necessity 	Dispatch Information: Responding to a 15-month-old male having a seizure. Patient's father called 911 after he brought child into his room when child would not settle down. Father stated that patient kept thrashing around and then realized he was having a seizure.
	Chief Complaint: Seizure
	Additional Resources Requested: Police and Fire Department, ALS
Scene Description: <ul style="list-style-type: none"> December 21st at 0100 Outside temperature is 25 degrees F with 1 inch of new snow on top of 2 inches of ice Patient's father meets Fire and EMS in living room with child Home noted to be clean 	
Initial Impression: Patient is in pajamas being held by father. Patient is sleepy and whimpers when moved.	
Vital Sign – Set 1 AVPU: Alert B/P: 80/50 HR: 124, regular Resp: 30, non-labored O ₂ Sat: 94% (room air) Pain: GCS: 11 (3, 4, 4) BGL:	Physical Exam HEENT: Head: Unremarkable Eyes: Initially, Left – sluggish, Right - quick Ears: Unremarkable Nose: Unremarkable Oral Cavity: Unremarkable Patient able to clear and control own airway
Vital Sign – Set 2 AVPU: Alert B/P: 96/52 HR: 138, regular Resp: 28, non-labored O ₂ Sat: 98% (O ₂ applied) Pain: GCS: 12 (3, 4, 5) BGL: 107 mg/dl	Chest: Equal chest rise and fall noted Lung sounds clear No external trauma noted Back: No trauma noted Abdomen/Pelvis: No guarding noted upon quadrant palpation No trauma noted Pelvis stable
Vital Sign – Set 3 AVPU: Alert B/P: 90/70 HR: 120, regular Resp: 24, non-labored O ₂ Sat: 98% (O ₂ applied) Pain: GCS: 13 (4, 4, 5) BGL:	Extremity: No trauma noted to legs or arms PMS x 4 (presumed, since child moves limb away when pain applied) Other: Skin: pale, warm No step off's or tenderness noted to neck Pupils noted to be PERL 10 minutes into call
Suggested Treatment: O ₂ , Monitor, Airway monitor/control	HPI: See events prior below S/S: pale, GCS 11 initially; limp limbs, but will move to pain Allergies: NKDA Medications: None PmHx: Ear infection three weeks ago Last Meal: Dinner, 7hr ago Events Prior: Patient's mother is out of town, so father brought son into their room to sleep. Patient awoke his father when he was noted to be moaning Current on Immunizations? Yes Patient Weight: 11kgs Notes: Body Temp: 99.4 ECG: Sinus Tachycardia Father denies noting any recent fevers
	Transport Consideration: Securing patient properly on cot Guardian ride along