Anatomy of a Call
Well Run:

“Logistics, Dialogue, and Tools for Success”

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Pediatric care in the pre-hospital setting has the ability to overwhelm, overstretch, 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.

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

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
Reference Tools

Pediatric Assessment Tools
Sponsored by the Pediatric Liaison Nurses of Los Angeles County

Normal Pediatric Vital Signs

<table>
<thead>
<tr>
<th>Age Group</th>
<th>HR (beats/min)</th>
<th>RR (breaths/min)</th>
<th>BP (sys) (mmHg)</th>
<th>BP (dia) (mmHg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neonate 0-1 month</td>
<td>100-180</td>
<td>30-60</td>
<td>73-92</td>
<td>52-65</td>
</tr>
<tr>
<td>Infant 1-3 months</td>
<td>80-150</td>
<td>30-60</td>
<td>90-100</td>
<td>53-67</td>
</tr>
<tr>
<td>Toddler 1-5 years</td>
<td>75-130</td>
<td>25-35</td>
<td>95-105</td>
<td>56-68</td>
</tr>
<tr>
<td>Pre-school age 5-8 years</td>
<td>75-120</td>
<td>22-32</td>
<td>99-110</td>
<td>55-70</td>
</tr>
<tr>
<td>School age 8-11 years</td>
<td>70-110</td>
<td>20-30</td>
<td>97-118</td>
<td>60-76</td>
</tr>
<tr>
<td>Pre-adolescent 11-12 years</td>
<td>70-110</td>
<td>18-22</td>
<td>105-124</td>
<td>60-80</td>
</tr>
<tr>
<td>Adolescent 13-18 years</td>
<td>65-105</td>
<td>16-22</td>
<td>110-133</td>
<td>63-83</td>
</tr>
<tr>
<td>Adult 18+ years</td>
<td>50-90</td>
<td>12-20</td>
<td>113-136</td>
<td>65-84</td>
</tr>
</tbody>
</table>

Wong-Baker FACES Pain Rating Scale

<table>
<thead>
<tr>
<th>Category</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLACC (&lt; 44 weeks - 3 years)</td>
<td>No cry (no vocalization)</td>
<td>Crying</td>
<td>moaning</td>
</tr>
<tr>
<td></td>
<td>Occasional grimace or sneeze</td>
<td>Crying</td>
<td>moaning</td>
</tr>
<tr>
<td></td>
<td>Uncontrolled, subset of crying</td>
<td>Crying</td>
<td>moaning</td>
</tr>
<tr>
<td></td>
<td>Arched, head or body movement</td>
<td>Crying</td>
<td>moaning</td>
</tr>
<tr>
<td></td>
<td>Anticipatory activity</td>
<td>Crying</td>
<td>moaning</td>
</tr>
<tr>
<td></td>
<td>Consolability</td>
<td>Crying</td>
<td>moaning</td>
</tr>
<tr>
<td></td>
<td>Not comforted by external sources</td>
<td>Crying</td>
<td>moaning</td>
</tr>
<tr>
<td></td>
<td>Difficulty to console as comfort</td>
<td>Crying</td>
<td>moaning</td>
</tr>
</tbody>
</table>

Glasgow Coma Scale

For Patients < 2 years old

<table>
<thead>
<tr>
<th>Eye Opening (E)</th>
<th>Verbal Response (V)</th>
<th>Motor Response (M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 (no response)</td>
<td>3 (answer)</td>
<td>3 (no response)</td>
</tr>
<tr>
<td>2 (consensual)</td>
<td>2 (to pain)</td>
<td>2 (no response)</td>
</tr>
<tr>
<td>1 (pupil reflex)</td>
<td>1 (no response)</td>
<td>1 (no response)</td>
</tr>
<tr>
<td>0 (no response)</td>
<td>0 (no response)</td>
<td>0 (no response)</td>
</tr>
</tbody>
</table>

For Patients > 2 years old

<table>
<thead>
<tr>
<th>Eye Opening (E)</th>
<th>Verbal Response (V)</th>
<th>Motor Response (M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 (opening to command)</td>
<td>4 (answer)</td>
<td>4 (normal movements)</td>
</tr>
<tr>
<td>3 (consciously)</td>
<td>3 (to pain)</td>
<td>3 (normal movements)</td>
</tr>
<tr>
<td>2 (consensual)</td>
<td>2 (no response)</td>
<td>2 (normal movements)</td>
</tr>
<tr>
<td>1 (pupil reflex)</td>
<td>1 (no response)</td>
<td>1 (no response)</td>
</tr>
<tr>
<td>0 (no response)</td>
<td>0 (no response)</td>
<td>0 (no response)</td>
</tr>
</tbody>
</table>

EDAP Emergency Department Approved for Pediatrics 2005

START Triage

- Respirations
- Perfusion
- Capillary Refill
- Mental Status

JumpSTART Pediatric MCI Triage

- Evacuation
- Safety
- Necessity
- Attention
- Degrees

TriageTags.com
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://emsimcases.com/category/cases/pediatrics/](https://emsimcases.com/category/cases/pediatrics/)
- [https://www.ems1.com/pediatric-care/articles/pediatric-patient-abcs-7-tips-for-emts-and-paramedics-KYLWD13oQPR9q8Qx/](https://www.ems1.com/pediatric-care/articles/pediatric-patient-abcs-7-tips-for-emts-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.

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**

<table>
<thead>
<tr>
<th>Essential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oropharyngeal Airways: infant, child, adult (sizes 00-5)</td>
</tr>
<tr>
<td>Self-inflating resuscitation bag: child and adult sizes1</td>
</tr>
<tr>
<td>Masks for bag-valve-mask device: infant, child, and adult Sizes2</td>
</tr>
<tr>
<td>Oxygen masks: infant, child, and adult sizes</td>
</tr>
<tr>
<td>Nonrebreathing mask: pediatric and adult sizes</td>
</tr>
<tr>
<td>Stethoscope</td>
</tr>
<tr>
<td>Backboard</td>
</tr>
<tr>
<td>Cervical immobilization device3</td>
</tr>
<tr>
<td>Blood pressure cuff: infant, child, and adult sizes</td>
</tr>
<tr>
<td>Portable suction unit with a regulator</td>
</tr>
<tr>
<td>Suction catheters: tonsil-tip and 6F-14F</td>
</tr>
<tr>
<td>Extremity splints: pediatric sizes</td>
</tr>
<tr>
<td>Bulb syringe</td>
</tr>
<tr>
<td>Obstetric pack</td>
</tr>
<tr>
<td>Thermal blanket</td>
</tr>
<tr>
<td>Water-soluble lubricant</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Desirable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant car seat1</td>
</tr>
<tr>
<td>Nasopharyngeal Airways: sizes 18F-34F, or 4.5-8.5 mm6</td>
</tr>
<tr>
<td>Glasgow Coma Scale reference</td>
</tr>
<tr>
<td>Pediatric Trauma Score reference</td>
</tr>
<tr>
<td>Small stuffed toy</td>
</tr>
</tbody>
</table>

**ALS EQUIPMENT AND SUPPLIES**

All ALS ambulances should carry everything on the BLS list, plus the following items.

<table>
<thead>
<tr>
<th>Essential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport monitor</td>
</tr>
<tr>
<td>Defibrillator with adult and pediatric paddles1</td>
</tr>
<tr>
<td>Monitoring electrodes: pediatric sizes</td>
</tr>
<tr>
<td>Laryngoscope with straight blades 0-2, curved blades 2-4</td>
</tr>
<tr>
<td>Endotracheal tube styles: pediatric and adult sizes</td>
</tr>
<tr>
<td>Endotracheal tubes: uncuffed sizes 2.5-6.0, cuffed sizes 6.0-8.0</td>
</tr>
<tr>
<td>Magill forceps: pediatric and adult</td>
</tr>
<tr>
<td>Nasogastric tubes: 8F-16F</td>
</tr>
<tr>
<td>Nebulizer</td>
</tr>
<tr>
<td>IV catheters: 16 to 24 gauge</td>
</tr>
</tbody>
</table>


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.
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
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://nasemso.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?
Ease the nerves, practice for yourself—may help to organize calls, assessment, and hand-offs much more effectively!