EMSC Connects

VOLUME 6, ISSUE 8 **September 2017**

Emergency Medical Services for Children
Utah Bureau of EMS and Preparedness

A Word From Our Program Manager

Special points of interest:

- *Choking*
- *Symptomatic Bradycardia*
- *News from National*
- * *Opioid Poisoning*
- * *Infant Sleep*
- * *Suicide Prevention*

Inside this issue:

I have seen some sobering and humbling photos on Facebook of the damage done by Hurricane Harvey and as I write, it is not over yet. I watched the news last night and saw people being rescued from their homes and in the streets of Texas and asked myself: Are we ready for the next disaster in Utah? It is not a matter of if, but when. You never know when a disaster will strike. I think of the most vulnerable in our populations like the homeless, institutionalized patients, children, elderly, disabled and also our pets, wildlife and livestock. Are we ready? Are you prepared?

A recent article in the AAP newsletter was shared today by Pat Frost, RN, MS, PNP, who is the Director of Emergency Services for Contra Costa Health Services. She is a great resource for pediatric disaster preparedness. I encourage you to get on her email list: Patricia.Frost@hsd.cccounty.us We will also be posting some of her shared resources on our bureau website.

This article from the AAP Newsletter was recently shared by Pat.

"From the August AAP Newsletter Children and Disaster Newsletter Given the events in Texas with Hurricane Harvey....Preparedness has never been more important. Include children in preparedness activities"

"National Preparedness Month Each year during September, the AAP supports the Federal Emergency Management Agency (FEMA) sponsored National Preparedness Month to enable citizens to prepare for and respond to all types of

emergencies, including natural disasters and terrorist attacks. This year's theme is "Disasters Don't Plan Ahead. You Can." The AAP Children and Disasters Web site has a dedicated resource page for National Preparedness Month. This Web page includes ideas for members who wish to get involved or implement general preparedness activities, including strategies to address influenza prevention and control in high risk children. During National Preparedness Month, the AAP asks members to take specific actions to promote pediatric emergency readiness in September:

*Begin conversations with families about potential disasters in their area. Share the AAP Family Readiness Kit. This kit includes simple steps and information that will help families prepare for a disaster.

*Enhance your influenza prevention and control strategies. Get your annual flu shot and encourage others to do the same. Share the CDC Ready Wrigley activity book on influenza with families.

* Improve your personal preparedness planning. The Preparedness Checklist for Pediatric Practices offers tips on preparing an office practice for disasters. To request complimentary print copies, e -mail DisasterReady@aap.org.

*Review AAP policies related to disasters. See Disaster Preparedness in Neonatal Intensive Care Units, Ensuring the Health of Children in Disasters, Medical Countermeasures for Children in Public Health Emergencies, Disasters, or Terrorism, Providing Psychosocial Support to Children and Families in the Aftermath of Disasters and Crises, and Supporting the Grieving Child and Family.

*Work with or become a Disaster Preparedness Chapter Contact for your state."

For additional questions on pediatric preparedness in Utah, contact Chuck Cruz, RN, paramedic, at ccruz@utah.gov.

As always, thank you for all you do for the children of Utah. Please take good care of yourselves as well and "Be Ready Utah."

Jolene Whitney (jrwhitney@utah.gov)

To submit or subscribe to this newsletter
Email: Tdickson@utah.gov

Pedi Points
Tia Dickson RN, BSN Trauma Charge Nurse, PCH Emergency Department

Children are especially vulnerable to choking. Children under 3 year are at greatest risk but everyone can choke. In 2009 according to the most recent nationwide choking study...

- Foreign body aspiration accounted for more than 17,000 emergency department visits
- 1,099 children under the age of fifteen died due to unintentional choking.
- 94% of the 1,099 deaths were children under the age of five.
- One third of all toy-related fatalities reported to the CPSC were due to unintentional choking/strangulation.

Children are more susceptible than adults for many reasons. The explore the world with their mouths. They lack molar teeth which decreases their ability to sufficiently chew food. They tend to talk, laugh, and run while chewing which also increases risk of aspiration.

The most common things to be aspirated are small food items such as nuts, raisins, seeds, improperly chewed pieces of meat and small, smooth items such as grapes, hot dogs, and sausages. Small items that are round, smooth, or both are more likely to cause tracheal obstruction and asphyxiation. Dried foods may cause progressive obstruction as they absorb water.

The Choking Victim

Victims will instinctively grab at the throat and may panic, wheeze or gasp for breath. Do not delay calling 911. If a person can cough and speak and has normal skin color, he or she is getting air and is not choking. Encourage the person to continue coughing to resolve the partial blockage. Do not hit him on the back or try to give water.

If the person cannot cough or speak, the windpipe is blocked and he is choking and needs emergency help.

The Heimlich Maneuver

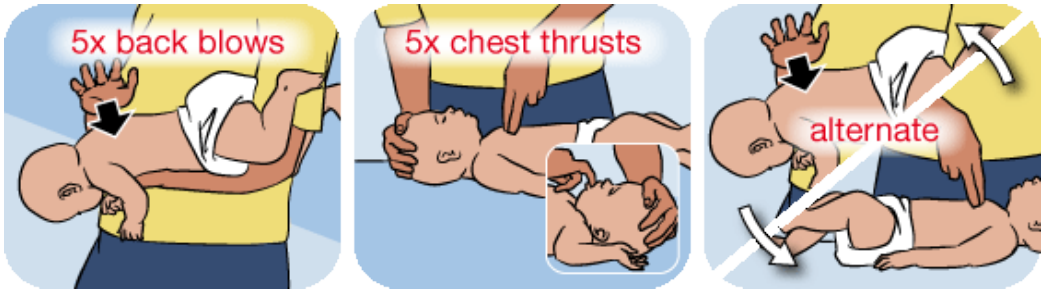
The Heimlich maneuver is an abdominal thrust that forces air up and out with enough force to clear the airway. The procedure can be used on adults and children one year and older.
To perform the Heimlich maneuver:

- Stand behind the victim and wrap your arms around his waist, bending him slightly forward.
- Place a fist just above the vicitm's navel. Cover your fist with the other hand and begin squeezing with quick, hard thrusts into the abdomen inward and upward.

Continue until the obstruction is cleared and the person is able to breathe.

The Heimlich maneuver can be adapted to other circumstances, such as with **babies younger than 1 year**, pregnant or obese people, or with a person who has lost consciousness.

- For obese and pregnant victims, put your hands at the base of their breastbones, right where the lowest ribs join together.
- For infants, hold the baby face down on your forearm. Thump the baby on the back five times. If he does not begin breathing, turn him over with the head positioned lower than the body. Using two fingers, compress his breastbone five times.



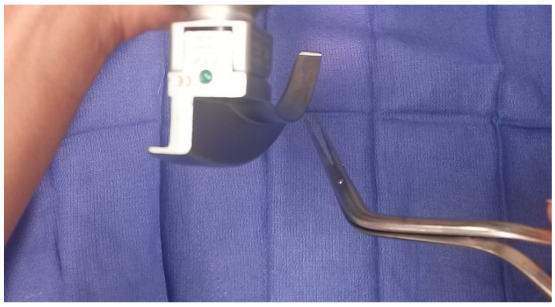
Pedi Points –continued

The procedure can be done on yourself if you are choking and alone. Give yourself abdominal thrusts, or stand over the back of a chair or counter and press against it hard to dislodge the airway obstruction.

If the obstruction does not dislodge the victim will likely lose consciousness. Bystanders should begin CPR. Hypoxia leads to bradycardia in children and that untreated rhythm will lead to cardiac arrest and death. ***Review the Bradycardia Guideline**

The EMS Responder

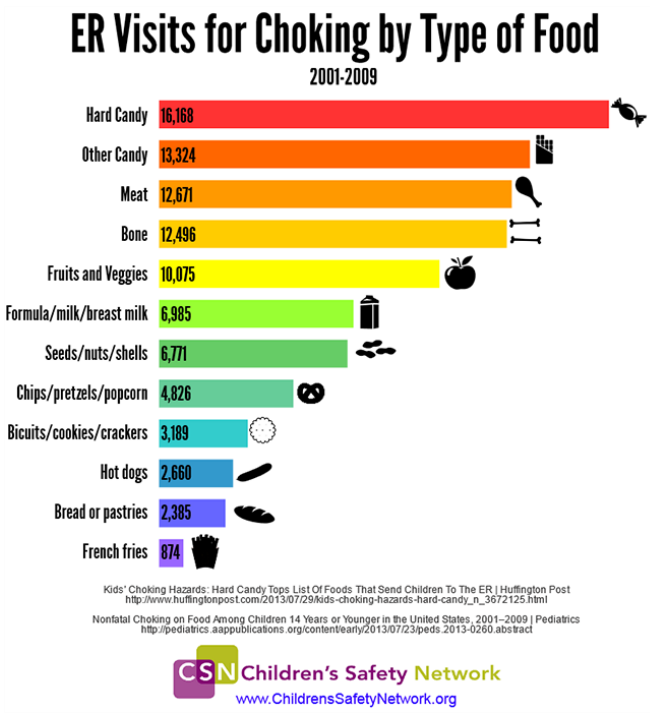
The best defense EMS providers have for managing the choking victim is direct laryngoscopy. This is endoscopy of the larynx. It allows the provider to obtain a view of the vocal folds and the glottis. Laryngoscopy may be performed to facilitate tracheal intubation or for evaluating the patency of the airway. The EMS provider can use this to look for foreign bodies and if seen, they can remove the item with Magill Forceps. Once the item is removed positive pressure breaths should be delivered via a Bag Valve Mask device.



Direct Laryngoscopy with Magill forceps
https://www.youtube.com/watch?v=l-ZfMa2-ykc

EMS personnel need to stay current in their airway skills, carry adult and pediatric Magill forceps in their first-in airway bags and bring suction in with them on all airway calls.

References
http://airway.jems.com/2011/08/direct-laryngoscopy-improves-choking-childs-outcome/
http://emedicine.medscape.com/article/1001253-overview#a5



WATCH OUT FOR THE FOLLOWING FOODS AND OBJECTS WITH CHILDREN UNDER AGE 6

FOOD • Raw vegetables such as celery, carrots, and peas; whole olives; and cherry tomatoes • Nuts, sunflower seeds, pumpkin seeds, etc. • Hard candy, lollipops, and cough drops • Taffy • Soft candies with a firm texture such as gel or gummi candies • Marshmallows • Caramels and jellybeans • Popcorn • Raw, unpeeled fruit slices such as apples and pears; whole grapes, cherries with pits, and dried fruits such as raisins or apricots • Chunks of foods, especially meat or poultry, hot dogs or sausages served whole or cut in "coins;" cheese cubes • Spoonfuls of peanut butter • Snack chips

NON FOOD ITEMS • Coins, button-cell batteries • Buttons (loose as well as those attached to clothing) • Deflated or broken balloons • Pencils, crayons, and erasers; pen and marker caps • Rings, earrings • Nails, screws, staples, safety pins, tacks, etc. • Small toys, such as tiny figures, balls or marbles, or toys with small parts • Holiday decorations, including tinsel or ornaments that are toy-like, and lights • Small stones • Damaged or loose nipples on pacifiers or bottles

Emergency Medical Services for Children

Protocols in Practice : Bradycardia (Symptomatic)

ALL PROVIDERS / EMT

- ❑ Focused history and physical exam
  - Assess for signs of poor perfusion, hypotension, altered mental status, signs of shock, chest pain, or acute heart failure.
  - Obtain a blood glucose level.
- ❑ Continuous ECG, CO2, 12 lead ECG, and pulse oximetry monitoring, when available
- ❑ **Treatment Plan**
  - Only treat bradycardia IF the patient is unstable (hypotension or signs of poor perfusion).
  - If patient is a newborn, follow the ***Newborn Resuscitation Guideline***.
  - Identify and treat the underlying cause:
    - Hypoxia
    - Shock
    - 2nd or 3rd degree heart block
    - Toxin exposure (beta-blocker, calcium channel blocker, organophosphate, digoxin)
    - Electrolyte disorder (hyperkalemia)
    - Increased intracranial pressure (ICP)
    - Hypothermia
    - Acute MI
    - Pacemaker failure
  - Maintain airway; assist with breathing as necessary, provide oxygen
- **Pediatric patient** (<8-year-old)
  - Aggressive oxygenation with high flow oxygen and assisted ventilations with a BVM, as indicated.
  - Persistent heart rate <60/min and signs of poor perfusion following aggressive oxygenation and ventilation: begin chest compressions.
  - Ensure patient warmth.
- **Key Considerations**
  - In pregnant patients of >20 weeks' gestation: Place wedge-shaped cushion or multiple pillows under patient's right hip to displace uterus to the left, off of the vena cava.
  - As nationally-established cardiac care guidelines (e.g. ACLS, PALS) are updated, these may be integrated into performance, as per agency medical director.
  - Pediatric lowest acceptable systolic blood pressures are birth to 1 month = 60mmHg, 1 month to 1 year = 70mmHg, 1 year to 10 years is = 70mmHg + (age x 2) and over 10 years = 90mmHg.

ADULT	PEDIATRIC (<15 years of Age) NOTE: Pediatric weight based dosing should not exceed Adult dosing.
AEMT	**AEMT**
❑ Advanced airway, vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy Guidelines*** ❑ **Atropine 0.5 mg** IV/IO • Repeat as needed every 3 minutes • Maximum total dose of 3mg ❑ **Epinephrine: 1 mg (0.1 mg/ml/1:10,000)** IV/IO push • Repeat every 3-5 minutes	❑ Supportive care of airway, vascular access and fluid therapy per ***IV/IO Access and Fluid Therapy guidelines*** ❑ **Atropine 0.02 mg/kg** IV/IO • Minimum single dose of 0.1 mg • Maximum single dose of 0.5mg • Repeat Atropine every 3-5 minutes as needed until Max 1mg for child and 2mg for adolescents. ❑ **Epinephrine: 0.01 mg/kg = 0.1 ml/kg (0.1 mg/ml/1:10,000)** IV/IO • Repeat every 3-5 minutes
PARAMEDIC	**PARAMEDIC**
SYMPTOMATIC BRADYCARDIA ❑ **Transcutaneous pacing (TCP)** at an initial rate of 80	**IF BRADYCARDIA IS SEVERE WITH SIGNS OF POOR PERFUSION**

Protocols in Practice – Continued

beats per minute if the patient does not respond to medications
- ❑ Consider Sedation for TCP as per the ***Violent Patient / Chemical Sedation Protocol***
- ❑ **Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters.**
- ❑ **Epinephrine 2–10 mcg/min** IV/IO infusion for persistent hypoperfusion. Titrate to maintain a SBP >100 mmHg. **And/or**
- ❑ **Norepinephrine initial dose: 0.5-1 mcg/minute** IV/IO titrated to effect. For patients in refractory shock: 8-30mcg/min

- ❑ **Transcutaneous pacing (TCP)** at an initial rate of 100 beats per minute, if the patient does not respond to medications
- ❑ Consider Sedation for TCP as per the ***Violent Patient / Chemical Sedation Protocol***
- ❑ **Contact OLMC for dosages above those provided or use of medication NOT fitting the guideline parameters**
- ❑ **Epinephrine 0.1–2 mcg/kg/min** IV/IO infusion for hypoperfusion. Titrate to maintain a SBP >70 + (age in years x 2) mmHg

News From National

New CSN Infographic on Opioid Medication Poisoning

This infographic covers poison control center calls about children and teens exposed to opioid medications.

How often are children and teens exposed to opioid medication? Each year, opioid medication poisoning causes more than 300 deaths in children and teens. Every 45 minutes, poison control centers get a call about children and teens exposed to opioid medication. About 1 in 10 of these cases are admitted to health care facilities.
What ages of children and teens are most at risk? Young children (ages 5 and younger) account for 60% of these calls. Most of these cases (86%) are unintentional, like when a child finds pills that are within reach. Teenagers (ages 13 through 19) account for 30% of the calls. Most of these cases (72%) are intentional, like when a teen takes their parents' medication.

View the full CSN infographic

Substance Abuse Prevention
Drug Overdose Deaths Among Adolescents Aged 15-19 in the United States: 1999-2015 | CDC NCHS Data Brief

New Research on Safe Infant Sleep

A new study published in Pediatrics found that 44% of mothers surveyed reported that their infant always slept on their back, which is the position that doctors recommend.

Read the study in *Pediatrics*

Suicide Prevention

Video: Effective Suicide Prevention [4 minutes] | Suicide Prevention Re-

September 2017

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7 PGR–Infections	8 EMSC Coordinators Retreat	9 →
10 →	11	12	13	14 PGR–ICentra	15 UTN & Eastern Utah Trauma Conference	16 PEPP Delta →
17	18	19	20	21 PALS Renewal Cassia → PGR–Medical Cannabis	22	23
24	25	26	27	28 PGR–Therapeutic Hypo-thermia	29	30

Pediatric Education Around the State

Pediatric Grand Rounds (PGR) are educational/CME offerings webcast weekly (Sept-May) at 0800-0900 you can watch live or archived presentations. It is geared towards hospital personnel. But will qualify for BEMSP CME Access at https://intermountainhealthcare.org/locations/primary-childrens-hospital/for-referring-physicians/pediatric-grand-rounds/

EMS Grand Rounds (EGR) This offering alternates with Trauma Grand Rounds every other month, it is geared towards EMS. Live viewings qualify for CME credit.

There are 2 ways to watch

1. Live real time viewing via the internet at: www.emsgrandrounds.com If you would like to receive CME for viewing this presentation live, email Zach Robinson (Zachary.robinson@hsc.utah.edu)
2. Delayed viewing at your personal convenience, a week after the presentation at: www.emsgroundrounds.com

July 11th 2:00 pm—3:00 pm *Heat Environment Emergencies* John Meyer MD

Peds EMS Lecture Series (PEL) Free monthly pediatric CME/CEU presentations from Primary Children's Emergency Department Attending Physicians to Utah's EMS. Offered every 3rd Thursday. Contact Lynsey.Cooper@imail.org for info. To resume in September 2017

Project ECHO Burn and Soft Tissue Injury (ECHO) has a pediatric and adult component. CME/CEU and MD CME available https://crisisstandardsofcare.utah.edu click request access and follow instructions.

Upcoming Peds Classes, 2017

For PEPP and PALS classes throughout the state contact Andy Ostler Aostler@utah.gov

For PALS and ENPC classes in Filmore, Delta and MVH contact Kris Shields at shields57@gmail.com

Save the Date

Sept 7-23rd, 2017 Child Passenger Safety Week

Sept 8-10th, 2017 Annual EMSC Coordinator's Workshop

Sept 15-16, 2017 5th Annual Eastern Utah Emergency Services Symposium

Sept 15th, 2017 14th Annual Utah Trauma Network (UTN) conference

Oct 15-21, 2017 Teen Driver Safety Week

Oct 16-20, 2017 School Bus Safety Week

April 11-12, 2018 Zero Fatalities Safety Summit

Emergency Medical Services for Children
Utah Bureau of EMS and Preparedness

Utah Department of Health
Bureau of EMS and Preparedness
Emergency Medical Services for Children
3760 S. Highland Drive, Room 133
Salt Lake City, UT 84106

Phone: 801-707-3763
Email: tdickson@utah.gov

The Emergency Medical Services for Children (EMSC) Program aims to ensure that emergency medical care for the ill and injured child or adolescent is well integrated into an emergency medical service system. We work to ensure that the system is backed by optimal resources and that the entire spectrum of emergency services (prevention, acute care, and rehabilitation) is provided to children and adolescents, no matter where they live, attend school or travel.

WE ARE ON THE WEB

HTTPS://BEMSP.UTAH.GOV/

Our Great State

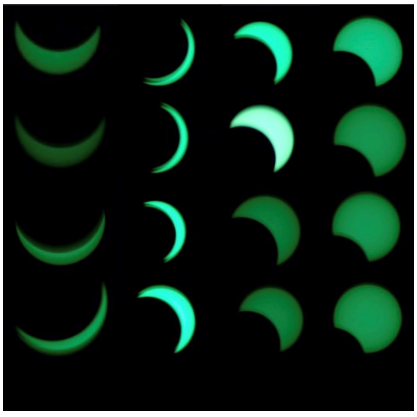
August 21st, Utah was in the direct path of a solar eclipse and people. ER's geared up for increased patient numbers.

"I suspect there will be an increase in patient traffic to ERs, especially in areas expecting a large influx of eclipse watchers," Dr. Becky Parker, president of the American College of Emergency Physicians (ACEP), said in a statement. These include areas in the path of the total solar eclipse, which will span from Oregon to South Carolina.

"When a population surges, even temporarily, ER visits tends to rise," Parker said. Anything that shakes up people's regular routines, including an eclipse, or even daylight saving time switches, can lead to more car accidents on roads, Parker said. "Be mindful of that."

Working in the ER this year was a pleasant surprise. As many of the state's children headed back to school, the ER was wonderfully slow. The staff were able to take turns in the ambulance bay catching glimpses of the solar eclipse.

Despite predictions of chaos, people seemed to revel in the sense of community as we all stared up at the sky in wonder. Such a neat experience and a reminder that when we come together for positive experiences it increases our sense of well-being.



Taken by Courtney Lawrence
PCH RN in Salt Lake City, Utah
August 21, 2017