

EMSC for ME

IMPROVING EMRGENCY CARE FOR THE CHILDREN OF MAINE



Welcome!

The Maine EMS for Children (EMS-C) Program is happy to share with you this new monthly newsletter designed to share info, topics, education and events to better the care we all deliver to the pediatric population in Maine!

Did you Know?

The three most common types of transport by EMS for pediatric patients in Maine during 2018 were:

1. Behavioral Emergencies (17%)
2. Head Trauma (8%)
3. Seizures (7%)

Infectious Diseases

Click [here](#) for American Academy of Pediatrics' "Red Book Online" for up-to-date information and resources on current infectious disease outbreaks affecting the pediatric population in all states. (<https://redbook.solutions.aap.org/selfserve/ssPage.aspx?SelfServeContentId=outbreaks>)



PEDIATRIC TRANSPORT STUDY

Released in late October 2018, a new paper from Johns Hopkins University on pediatric transport and safety was released supporting the development of evidence based guidelines in line with those for adults. Please find the publication [here](#).

(<https://www.ncbi.nlm.nih.gov/books/NBK513234/>)

TAKE A DEEPER DIVE INTO PEDIATRIC SEIZURES

Managing a pediatric seizure can be a challenging call for any level of EMS provider. According to the Merck Manual, seizures are an abnormal, unregulated electrical discharge of nerve cells in the brain or part of the brain. This abnormal discharge can alter awareness or cause abnormal sensations, involuntary movements, or convulsions. Convulsions are violent, involuntary, rhythmic contractions of the muscles that affect a large part of the body. To see any person experiencing a seizure is unforgettable, for the parent, bystanders, and the EMS providers. Our goal as EMS providers is to limit the length of the seizure, and protect the patient from injury. At the same time, we must try and determine the cause of this seizure. Causes may include: fever, sepsis, head injury, bleeding within the brain, stroke, blood chemistry disorders (including low blood sugar, but also levels of magnesium, calcium and sodium), and drug ingestion.

The Maine EMS protocol Pediatric Seizures, on page Pink 6 & 7 outline the steps involved in treating the patient. All EMS providers should begin with a thorough assessment and history to help narrow the focus to a cause(s). Because of the lack of muscular coordination, breathing changes, poor airway position and vomiting may occur. This must be addressed first. If trauma is suspected, prevent further injury once seizure(s) have stopped, through the use of spinal restriction. Assess blood glucose regardless of history, and if above 60 mg/dl, look for other causes. If fever is suspected, remove diapers/heavy clothing and keep warm, but not hot. If not an ALS provider, request ALS, and determine if the ALS response is sooner than transport to an Emergency Department. If you are ALS, continue with IV access and application of a cardiac monitor (AEMTs should do this en route to a hospital unless a paramedic would arrive sooner). Paramedics should administer midazolam if seizures remain. Options are:

- IM – 0.2 mg/kg to max of 10mg
- IV – 0.1 mg/kg to max of 5mg
- IN – 0.2 mg/kg over 15 sec, split dose between each nostril. Maximum volume per nostril is 1ml. Max dose of 6mg total.

Repeat doses of midazolam require OLMC approval.

Providers should monitor pulse oximetry and ALS should monitor ETCO₂ and manage airway as needed.

Some patients may have a Vagus Nerve Stimulator (VNS) which may help stop seizures by sending pulses through the vagus nerve. The VNS can be restarted through the use of a magnet (which looks like an iWatch) held over the device (usually near the left clavicle) during a seizure. Any level EMS provider may use this, but must consult OLMC (Brown 5).

Pediatric Seizure #1

E

EMT

1. Manage airway as needed per Blue 5
2. Spinal immobilization if indicated
3. Protect the patient from self-injury
4. Perform finger stick to measure blood glucose, if so trained. If blood glucose is less than 60 mg/dL, refer to Pink 13
5. Request ALS

A

ADVANCED EMT

6. Cardiac monitor
7. IV access en route

PARAMEDIC

11. Administer IM midazolam if no IV is established. If an IV is established, administer midazolam via the IV route:
 - a. Intramuscular dosing – midazolam 0.2 mg/kg IM to maximum dose of 10 mg
 - b. Intravenous dosing - midazolam 0.1 mg/kg IV maximum 5 mg
 - c. Alternate routes to IM/IV dosing:
 - i. Intranasal dosing – midazolam 0.2 mg/kg IN over 15 sec, one half of dose into each nostril to a maximum dose of 6 mg
 - d. Contact OLMC if repeat dosing of midazolam by IM/IV/IN is necessary

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Pediatric Seizure #2

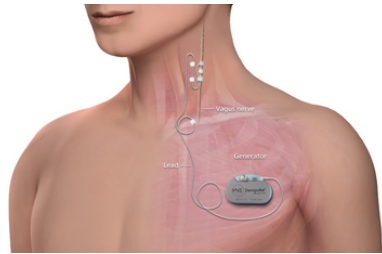
P

12. Monitor oxygenation and ventilation with O₂ saturation and EtCO₂ in all patients receiving midazolam, especially if providing repeated doses of midazolam
13. Manage the patient's airway as necessary

PEARLS for Seizures:
Intranasal dosing must be performed with concentrated midazolam. The maximum volume of medication absorbed per nostril is 1 mL.

Most seizures are self-limited. Unless a specific underlying condition exists (i.e. diabetes with hypoglycemia), treatment of a seizure or multiple seizures with a total duration of less than 5 minutes should focus on patient protection and oxygenation.

For patients with Vagus Nerve Stimulator who are having repeated/continuous seizure activity, consider activation of the Vagus Nerve Stimulator; if not already attempted, by holding the patient's hand-held magnet over the Vagus Nerve Stimulator.



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This project is supported by the Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB), Emergency Medical Services for Children (EMSC) State Partnership grant program, Grant # H33MC31622.

This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.

Pediatric Educational Opportunities



Maine Medical Center
MaineHealth

Maine Medical Center is offering a Clinical Updates in Pediatric Practice conference on January 25 from 715 until 330 pm at the Dana Center at Maine Medical Center, Portland. A pdf flyer is attached, registration and more information is through Susan Woods at 207-662-2290 or by email at woods4@mmc.org



Atlantic Partners EMS

Atlantic Partners EMS is offering a variety of Pediatric Advanced Life Support (PALS), Pediatric Emergency Assessment, Recognition & Stabilization (PEARS) and Emergency Pediatric Care (EPC) courses. For more info and to sign up, visit www.apems.org, or contact APEMS at 207-877-0936, or by e-mail at staylor@apems.org

1. PALS Provider - Thursday, Jan 17 & Friday, Jan 18 at Northern Light Medical Transport
2. PALS Refresher - Friday, Jan 18 at Northern Light Medical Transport
3. PALS Provider - Thursday, Jan 30 & Friday, Jan 31 at Poland Fire & Rescue
4. PALS Refresher - Friday, Jan 31 at Poland Fire & Rescue
5. PALS Provider - Monday, Feb 25 & Tuesday, Feb 26 at St. Mary's Regional Medical Center
6. PALS Refresher - Tuesday, Feb 26 at St. Mary's Regional Medical Center
7. PEARS- Thursday, Mar 27 at Northern Light Medical Transport
8. PEPP Hybrid (BLS & ALS) - Wednesday, Apr 17 Location TBD
9. PEARS - Thursday, May 16 at Northern Light Medical Transport
10. PALS Provider - Thursday, May 22 & Friday, May 23 at St. Mary's Regional Medical Center
11. PALS Refresher - Friday, May 23 at St. Mary's Regional Medical Center
12. PEARS - Tuesday, June 11 at St. Mary's Regional Medical Center
13. EPC - Tuesday, June 25 & Wednesday, June 26 Location TBD



United Training Center in Lewiston is offering the following pediatric education programs:

| | | | | | |
|---------------------|-------------|--------|--------|--------|--------|
| PALS Refresher | 8:30a-5:00p | Jan 16 | Apr 26 | Aug 13 | Nov 12 |
| PEPP ALS/BLS Hybrid | 8:30a-5:00p | Mar 21 | Jun 11 | Oct 22 | |

To register for the above programs, please visit www.unitedambulance.com

January 25, 2019 9:00a-3:30p Pregnancy & Childbirth Complications & Care of the Neonate
4 Hours OB/Peds, 2 Hours BLS Skills

February 15, 2019 9:00a-3:30p Ages and Stages, What's Normal & What's Not. Disease Variances with Adults vs Children 4 Hours OB/Peds, 2 Hours Medical

To register for either of these programs, please call 782-8414 x247

Free Online CAPCE approved Opportunities (<https://www.boundtree.com/university/free-online-ceus>)

Pediatric Shortness of Breath

Safe Transport of the Pediatric Patient

We are happy to share your pediatric related education opportunities. Contact marc.a.minkler@maine.gov

Clinical Updates in Pediatric Practice 2019

Susan A. Wood
Administrative Specialist II
Center for Clinical & Professional
Development
Maine Medical Center
22 Bramhall St, MGB2, Rm 2644
Portland, ME 04102-3175

Friday, January 25, 2019

Location:
Dana Health Education Center
Auditorium
Maine Medical Center
Portland, Maine

OEC
Outreach Education Council



Overview:

The achievement of excellence in pediatric health care practices and patient/family outcomes requires on-going knowledge and implementation of evidence-based practices.

The goal of this program is to explore contemporary practices related to the care of children with acute or chronic illnesses and to provide evidence-based information and tools for learners to incorporate into their own pediatric practices.

Target Audience

Pediatric nurses and healthcare providers caring for children in a variety of settings

Learning Outcomes:

As a result of participating in this educational activity, the learner will identify strategies to include in the care of infants and children in their practice environment.

Objectives:

- Identify steps to ensure the safest transportation of pediatric patients
- Discover Northern New England transport resources that are available for sick and injured pediatric patients
- Identify first line strategies for the management of pediatric asthma in the emergency department
- Consider criteria for determining appropriate level of care for pediatric patients with asthma exacerbations
- Review signs, symptoms of infant presenting with fever
- Discuss workup and management of the febrile infant
- Discuss acute management of pediatric diabetic ketoacidosis (DKA)
- Identify potential complications of pediatric DKA
- Consider the parent experience of therapeutic hypothermia and strategies for communication and support
- Examine regional differences in outcomes of inborn vs. outborn infants in Maine
- Debrief on case study presented using high-fidelity simulation

| | |
|----------|--|
| 7:15 AM | Registration & Continental Breakfast |
| 8:00 AM | Welcome & Opening Remarks <i>Deborah A. Johnson, MSN, RN-BC</i> <i>Nicole Manchester, MSN, RN, CNL</i> |
| 8:15 AM | Transport of the Pediatric Patient: A look at pediatric critical care transportation <i>Michael Bohanske, MD</i> <i>Christopher Pare, NRP</i> |
| 8:45 AM | Asthma <i>Mary Ellen Corrigan, APRN, PNP</i> |
| 9:45 AM | Break |
| 10:15 AM | Febrile Infant <i>Noah Diminick, MD</i> |
| 11:15 AM | Management of Pediatric Diabetic Ketoacidosis <i>Michael Ferguson, MD</i> |
| 12:15 PM | Lunch |
| 1:15 PM | Updates on Therapeutic Hypothermia Research in Maine <i>Alexa Craig, MD</i> |
| 2:15 PM | Pediatric Case Simulation with Debrief <i>Michael Ferguson, MD</i> <i>Multidisciplinary Team</i> |
| 3:15 PM | Wrap Up and Evaluations |
| 3:30 PM | Adjourn |

Faculty

Faculty & Program Committee

* Maine Medical Center/Maine Medical Partners faculty unless noted

Michael S. Bohanske, MD

Emergency and EMS Physician

Medical Director – MMC Angel Transport Program

Medical Director – Southern Maine Region – Maine EMS

Christopher W. Pare, NRP

Manager – EMS and R.E.M.I.S.

Director – Angel Transport Program

Mary Ellen Corrigan, APRN, PNP

Pediatric Specialty Care

Noah Diminick, MD

Pediatric Specialist

Michael Ferguson, MD

Pediatric Critical Care Specialist

Alexa Craig, MD

Neonatal Neurologist

Accreditation



Maine Medical Center Department of Nursing is accredited with distinction as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation. Contact hours: 5.75

Fees

➤ OEC Members (*see below listing)

Nurses/Allied Health: \$40.00

Physicians: \$80.00

Add \$7.50 for box lunch

➤ Maine Medical Center Employees

Exempt from registration fees due to MMC sponsorship

Add \$7.50 for box lunch

➤ Non OEC Members

Nurses / Allied Health: \$100.00

Physicians: \$140.00

Includes box lunch

* Outreach Education Council

(Staff employed by member institutions listed below)

Central Maine Medical Center

Eastern Maine Medical Center

LincolnHealth

- Miles Memorial Hospital

- St. Andrews Hospital

MaineGeneral Medical Center

Maine Medical Center

Memorial Hospital, North Conway

Mercy Hospital

Mid Coast – Parkview Health

Penobscot Bay Medical Center

Southern Maine Health Care

- Biddeford Medical Center

- Sanford Medical Center

Stephens Memorial Hospital

St. Mary's Regional Medical Center

VAMC, Togus

York Hospital

Maine Medical Center is available to assist persons having specific needs relative to participation in this program. If you need ancillary aids for effective communication at the program & to ensure availability, make your request by calling 662-2290 prior to January 18, 2019

Clinical Updates in Pediatric Practice

January 25, 2019

First Name

Last Name

E-Mail address (for confirmation of registration)

Mailing Address

City St Zip Home Telephone

Hospital/Agency Affiliation

Job Title

Dept/Unit

Discipline: RN APRN MD/DO

Other (Specify): _____

- Registration Deadline: January 18, 2019
(Refunds up to January 18th)

To order box lunch ✓ choice: (\$7.50/lunch)

- Turkey Wrap with mayo, lettuce, tomato
- Tuna Salad Sandwich with lettuce, tomato
- Garden Salad w/greens, cherry tomatoes, sliced cucumbers, green pepper, 1 egg
- Ham Italian w/cheese, green peppers, tomatoes, pickles & black olives

* Chips, Cookie, and bottled water

- Make checks payable to:

MMC/Center for Clinical & Professional
Development

- Send registration to:

Center for Clinical & Professional Development
Maine Medical Center
Attn: Susan Wood, Admin. Specialist II
22 Bramhall St, MGB2, Rm 2644
Portland, ME 04102-3175
Phone: 207/ 662-2290
Fax: 207/662- 3001
E-mail – woods4@mmc.org