2019 Maine EMS Protocol Update
Frequently Asked Questions

This document represents a collection of frequently asked questions that have come to the Medical Direction and Practices Board (MDPB) members. The answers to these questions have been vetted and approved by the MDPB. This document will be updated as additional questions arise.

Question – Can Calcium Gluconate go through an Intraosseous line?

YES. Calcium Gluconate can be administered through an IO. Please recall, Calcium Gluconate is a new medication in the Maine EMS formulary. It has been introduced in the Crush Injury Protocol. Patients who are receiving calcium gluconate are also likely to have received sodium bicarbonate. Sodium bicarbonate and calcium gluconate CAN NOT be delivered through the same IV line. In cases in which access is difficult due to operational issues, patient location in the context of the rescue, etc. an IO line for the provision of calcium gluconate is appropriate.

Question – Why is oral dexamethasone only in the Pediatric Respiratory Distress with Stridor (aka croup) protocol?

The MDPB introduced the oral use of the IV formulation of dexamethasone in the 2019 protocols for use in suspected croup. At this time, this practice is limited to the Pediatric Respiratory Distress with Stridor (aka croup) protocol. In some circumstances, the MDPB will introduce a practice in a limited fashion before widespread use throughout the remaining protocols. As this is the first time the MDPB has encouraged the oral use of an IV medication, the MDPB opted to deliberately limit this to a single protocol before widening the use to include other indications, such as Respiratory Distress with Wheezing (including asthma) or in adults.

Question – The 2019 Maine EMS Protocols and the Maine EMS Rules have evolved to include cuffed endotracheal tubes instead of uncuffed endotracheal tubes in pediatric airway management. Should EMS agencies purchase manometers to measure cuff pressures after pediatric intubation?

NO. While measuring cuff pressures is an important step in the management of an intubated pediatric patient, this step is not necessary to perform in the immediate EMS phase of care. In fact, measurement of cuff pressures often does not occur in the emergency medicine phase of care and instead occurs in the Pediatric ICU once the patient is otherwise stabilized.

For more information about the change from uncuffed to cuffed endotracheal tubes in pediatrics, please refer to the 2019 Maine EMS Protocol White Paper titled "Cuffed Endotracheal Tubes for Pediatric Patients" at https://www.maine.gov/ems/sites/maine.gov.ems/files/inline-files/Cuffed-Endotracheal-Tubes-for-the-Pediatric-Patient-White-Paper-20190913.pdf

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Question – Is it necessary that a video laryngoscopy device be able to record?

Services interested in implementing video laryngoscopy should review and consider the recommendations listed in the 2019 MDPB "Airway Management" white paper listed on the Maine EMS Website at https://www.maine.gov/ems/sites/maine.gov.ems/files/inline-files/Airway-Management-White-Paper.pdf

While not a mandatory element, the MDPB believes recording the airway management event is a very helpful tool during QI and encourages system leaders to strongly consider the devices ability to record an airway management event when deciding upon which device to purchase.

Question – Why is the dose range for pediatric midazolam in the Post Intubation/BIAD Pain Control HIGHER for younger pediatric patients than older pediatric patients?

The 2019 Maine EMS Protocols have introduced the option of sedation (with OLMC approval) after airway management in pediatric patients. Some providers have recognized that the dosing range for the 6 months to 5-year-old patients is HIGHER than that for the 6-year to 12-year-old patients (0.05 – 0.1 mg/kg in younger patients versus 0.025 – 0.05 mg/kg in older patients).

These dosing schemes were approved and vetted by the MDPB. Younger patients may have a tendency to metabolize the medications at a higher rate and therefore the dosing range is HIGHER in these patients.

For ease of use, please note that in ALL age groups, 0.05 mg/kg is a reasonable starting dose.

Question – The 2019 Maine EMS Protocols have introduced the option of ondansetron at the AEMT scope of practice. During the educational update for the protocols, the MDPB focused on the importance of asking patients if they have a history of long QT syndrome. The education stated that the AEMT DID NOT need to perform a 12-lead before providing ondansetron, as AEMT's may not have been trained to measure the patient's QT interval on the 12-lead. As this IS in the scope of paramedics, should paramedics take the extra step of performing a 12-lead before providing ondansetron to ensure the patient does not have a prolonged QT?

NO, paramedics and AEMTs DO NOT need to perform a 12-lead before the provision of ondansetron, however, both paramedics and AEMT's should ask patients whether they have a history of prolonged QT syndrome. In cases in which patients DO have a history of prolonged QT syndrome, the patient should not receive ondansetron.

Question – Why is normal saline the fluid of choice in the new Crush Injury protocol?

There is little evidence to guide the management of crush injuries. In cases without robust evidence to guide care, the MDPB commonly reviews the work of other experts in the field. In this case, the MDPB reviewed the National EMS Model Guidelines document as well as the Airforce Pararescue Crush Injury Guidelines, both of which recommend saline as the fluid of choice in management of crush injuries.

Question – The 2017 Maine EMS Protocols listed a dosing range for glucagon in pediatrics. Why is this is not present in the 2019 protocols?

This is being corrected and should be updated on both the Maine EMS website and the Maine EMS Protocol Application. The proper dosing of Glucagon for pediatric patients is unchanged from the 2018 Maine EMS Protocols and is as follows:

Children less than 20 kg – 0.5 mg IM
Children greater than 20 kg – 1 mg IM

Question – What is a Special Circumstances Protocol? How are these approved? Do these have the same stature as the protocols in the 2019 Maine EMS Protocols?

- Special Circumstances Protocols are protocols specific to an individual patient's unique medical needs. Some patients have medical circumstances that require very specialized care, and, in these instances, a Special Circumstances Protocol may guide the needs of that patient rather than create a protocol in the Maine EMS Protocols. These protocols undergo the same review as the Maine EMS Protocols and hold the same weight of the Maine EMS Protocols. Patients are instructed to work closely with their home EMS Agency and their Primary Medical Provider to draft these protocols, which are then taken to the MDPB via the Regional Medical Director. Patients are instructed to keep a copy of the Special Circumstances Protocol on hand, as well as any unique medications or devices called for in the protocol. For questions about specific Special Circumstances Protocols or guidance on how to initiate a Special Circumstances Protocol, please contact your Regional office or Maine EMS staff. All Maine EMS providers are expected to follow the special circumstances protocol, based on their license level, for that

individual patient (and that patient only), provided the protocol is presented to the EMS providers at that time.

Question – Where is the list of approved devices for pediatric transport?

The 2019 Maine EMS Protocols introduced a protocol surrounding pediatric transport. Since then, Maine EMS has received questions about approved equipment for pediatric transport. At present, there are no specific devices that Maine EMS has approved for pediatric transport, as there are no studies and no evidence to guide approval of one device rather than another. Maine EMS has posted the National Association of State EMS Officials "*Pediatric Transport Products for Ground Ambulances*" document on the EMS-C Resources Page located at the following website: https://www.maine.gov/ems/sites/maine.gov.ems/files/inline-files/Pediatric-Transport-Products-for-Ground-Ambulances-v2.0_0.pdf This document may act as a resource to assist EMS Service Leadership in choosing devices.

In addition, when transporting a pediatric patient, it is essential to consider that transporting a child in any of the following ways is NEVER appropriate:

- Unrestrained;
- On a parent/guardian/other caregiver's lap or held in their arms;
- Using only horizontal stretcher straps, if the child does not fit according to cot manufacturer's specifications for proper restraint of patients;
- On the multi-occupant bench seat or any seat perpendicular to the forward motion of the vehicle, even if the child is in a child safety seat.

Even with childbirth in the field, it is NEVER appropriate to transport a child held in the parent/guardian/caregiver's arms or on a parent/guardian/caregiver's lap.
Transport newborn secured to the rear-facing provider seat /captain's chair using a size appropriate child restraint system. Either a convertible safety seat with a forward-facing belt path or an integrated child restraint system certified by the manufacturer to meet FMVSS No. 213 may be used to secure infant. Do NOT use a rear-facing only safety seat in the rear-facing provider seat / captain's chair as this is dangerous and may lead to significant injuries.

Newborn infants are prone to hypothermia which may lead to hypoglycemia, hypoxia and lethargy. Aggressive rewarming techniques should be initiated including drying, swaddling, and warm blankets covering body and head. Medical circumstances permitting, allow adequate time for mother/newborn skin to skin contact, which may require 15-30 minutes on scene. Raise temperature in ambulance patient compartment during transport.

Question – The new Tracheostomy Care Protocol discusses hemorrhage around the trach site and suggests that inflation of the bulb with up to 50 cc is one strategy to tamponade the hemorrhage. When some providers have tried this on an ETT, the bulb has ruptured.

Please recall, any hemorrhage, even if seemingly minor or brief, should be evaluated in the hospital to ensure no major vascular injury exists. If the hemorrhage is major, providers can hyper-inflate the **balloon of the trach** with UP TO 50 cc. Please recall, the protocol mentions that the cuff should be inflated slowly, to prevent cuff rupture, and depending on the make and model of the tube, inflating the entire 50 mL may not be possible.

Question – Why does the MDPB require On-Line Medical Control before TXA in anticoagulated patients?

There remain concerns that the combination of Tranexamic Acid (TXA) in addition to medications used to reverse certain anticoagulants, particularly warfarin (Coumadin), may exacerbate a hypercoagulable state. In these instances, most physicians focus on reversing the anticoagulant. As the evidence for these concerns is evolving rapidly, the MDPB believes dialogue between the health care professionals taking care of the patient now (EMS) and in the near future (the hospital physician) is valuable. Please recall in the non-anticoagulated patient, OLMC is not required, but available for any questions.

Blood products should not be transfused through the same IV/IO as TXA due to the *possibility* of micro-clot formation and embolization. When TXA is administered, the vascular access used should be clearly noted and communicated to the receiving staff.

Question – *Are Advanced EMTs allowed to administer ondansetron to pediatric patients?*

At this time, administration of ondansetron by the Advanced EMT is limited to adult patients only. The AEMT may ***not*** currently administer ondansetron to pediatric patients. Pediatric patients are defined by protocol (p.17 Purple 4 in Protocols) as patients who are “pre-pubertal (without pubic, axillary, or facial hair).” This topic will be revisited for the 2021 protocol revisions.

Question – *Ondansetron administration has been approved for nausea and vomiting by the Advanced EMT (Nausea and Vomiting protocol, Gold 19). However, it is only mentioned for use*

at the paramedic level, when treating nausea and vomiting as signs or symptoms of other conditions (anxiolysis for CPAP, universal pain management). This is confusing. Is ondansetron approved for AEMT administration for anxiolysis and ophthalmology also?

Anxiolysis for CPAP (Blue 10) – Ondansetron is only approved for administration by the AEMT via the ODT route. Since it is assumed that the CPAP patient will be wearing a CPAP mask and use of the ODT tablet will not likely be possible, ondansetron must therefore be administered via the IM/IO/IV route by the Paramedic level provider.

Universal Pain Management #2 (Green 18) – Though only mentioned for the paramedic level, administration of ondansetron by the AEMT via ODT ***may*** be approved with OLMC contact, under the trauma protocols where nausea and vomiting is a sign/symptom. It is important to remember that, even for paramedics, OLMC must be contacted prior to administration in the following circumstances:

- Isolated trauma involving the head
- Any patient with mental status changes
- Any patient with unstable vital signs