

# DPM NEWS

(585) 463-2900 | 44 Celebration Drive, Suite 2100 | [dpm@urmc.rochester.edu](mailto:dpm@urmc.rochester.edu)

## Bleeding Control

On page 4, I outline recent training provided to the Rochester Police Department on trauma care.

## What the PECC!

Could your EMS agency use some additional support in pediatric care? Does your agency already have a PECC? See page 7 for all the information you need on this state initiative.

## EtCO<sub>2</sub> and BVMs

Ever struggle with measuring EtCO<sub>2</sub> in a patient for whom you are assisting ventilations with a BVM? I have. Dr. Cushman provides a simple solution (with a photo) on page 7.

I considered not publishing the spring DPM News since we are all focused on our response to COVID-19 and have plenty of daily reading to do as the virus situation unfolds. However, life rolls on outside of Coronavirus and patients still call us to help them with other medical problems. So, if you're looking for a distraction from the daily grind and want to brush up on some non-COVID-19 material, keep reading!

Stay safe and normothermic out there.

*Eric Rathfelder*  
*Editor-In-Chief*

## Why is National Registry Important?

*Maia Dorsett MD, PhD*  
*Christopher Galton MD, NRP, FP-C*



As providers of prehospital care, we spend a lot of time upset at the rest of healthcare for the lack of recognition that EMS is part of the house of medicine. Lack of understanding of what it is that EMTs and paramedics do is common in healthcare. We can find it infuriating but the truth is that we are partly at fault for their lack of understanding; what EMS providers can do varies more significantly from state to state than any other healthcare profession.

While the initial certification process is not the same as scope of practice, the fact that individual states opt out of a national process to determine minimum competency contributes to the problem. On the physician side, neither one of us took a State Exam to get our Medical Board Certifications – we took a nationally recognized exam that certified our competency in a way that transferred across state boundaries and unified us with members of our profession on a national scale.

The thing of it is, a national certification exam for EMRs, EMTs, AEMTs and paramedics exists. More significantly, it serves as the initial certifying exam in most states. The maps below demonstrate the states

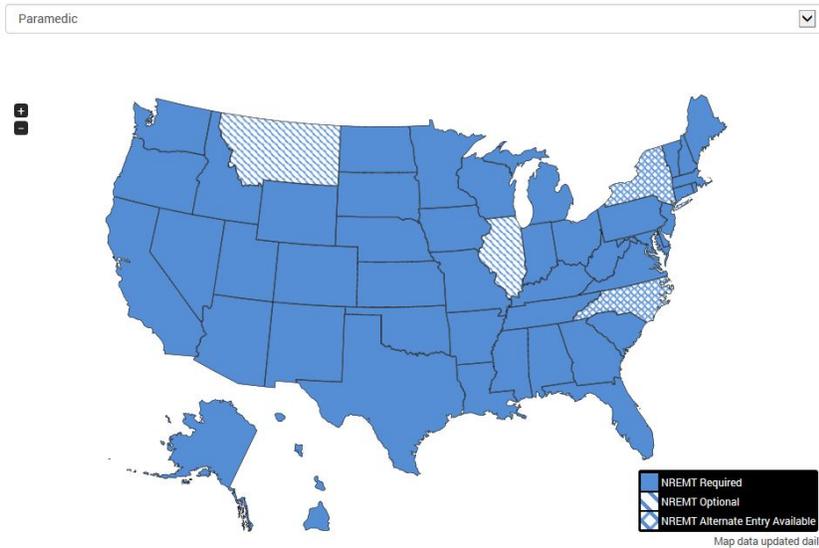
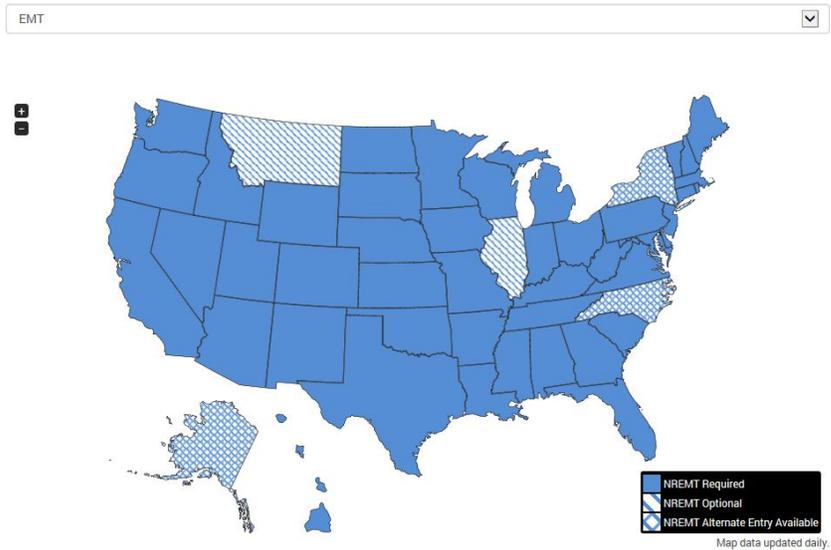
## Upcoming Events

Melinda Johnston

For more information about any event listed below, please visit the training calendar at [MLREMS.org](http://MLREMS.org)

**\*\*Will return in the summer 2020 edition since all events are currently in flux\*\***

that require National Registry for initial certification for the EMT and Paramedic certification respectively.



If New York State is not an eyesore on these maps, then get your glasses checked.

For those of you that have moved in or out of New York State, you can commiserate about how difficult the process can be. For most of the registry states, the process is as simple as providing proof of active registry status and paying a small fee. When entering New York, if you have not taken a practical and written examination within the last 18 months, you are required to take a refresher and then

a test that is below the standards set by the National Registry. When leaving New York with only your NYS paramedic card, you are laughed at and required to refresh and then take the National Registry exams. How would you feel if you have been a paramedic for 20 years and now have to take a more challenging paramedic exam covering material that you have not studied in many years?

For the majority of people reading this article who may have always practiced in New York, certification through the national registry has not had much perceived value. But this is founded in New York State's lack of willingness to change over to the Registry. The reasons for that are far beyond our knowledge but it certainly has left us behind the rest of the nation when it comes to standardizing ourselves and providing benefit to our profession. It is time to stand up for ourselves and ask more of New York State.

It is time for us to demand value from a state that takes so much from us in taxes, fees, sweat, and time. We are out there saving lives and preventing suffering on a daily basis. It's about time New York State got some common sense and caught on to what makes sense for 96% of the other states in this union. Look for a National Registry test and get the national EMS credential. The full recognition of EMS as a healthcare profession needs it.

If you have any questions or thoughts about this column, we can be reached at [christopher\\_galton@urmc.rochester.edu](mailto:christopher_galton@urmc.rochester.edu) or [maia\\_dorsett@urmc.rochester.edu](mailto:maia_dorsett@urmc.rochester.edu).

## BRUE

*Jeremy T. Cushman MD, MS, EMT-P, FACEP, FAEMS*



We've added a new acronym to your EMS vocabulary: BRUE (Brief Resolved Unexpected Event). So what is it? It's a symptom, really, not a diagnosis at all. Its not SIDS or near SIDS, nor is it an overreacting mother or father. It's an episode in an infant or child less than 2 years old which is frightening to the observer and is characterized by one or more of the following:

- Apnea (central or obstructive)
- Skin color change: cyanosis (blue), erythema (red), pallor (white), plethora (fluid)
- Marked change in muscle tone ("floppy")
- Choking or gagging not associated with feeding or a witnessed foreign body aspiration
- Seizure-like activity

Now, you probably are thinking – I've heard of that! But it was called ALTE (Apparent Life Threatening Event). And you are right it was indeed called ALTE, and for reasons that I really don't understand, they decided to change the name to BRUE. Its fundamentally the same thing, and it's always a good thing to review.

BRUE occurs most frequently in infants less than one year of age, although cases have been reported in children up to two, thus the criteria you see above (which also just happens to be in your collaborative protocols!).

So if it's a symptom, what is it a symptom of? Well, the list is really long and includes everything from GI (volvulus, intussusception, gastroesophageal reflux, etc), Neurologic (seizure, infection, malignancy, malformations, CNS bleeding, etc), Respiratory (infection, partial airway obstruction, central apnea, etc), Cardiac (arrhythmia, congenital heart disease, cardiomyopathy, etc), Metabolic Abnormalities (endocrine disorders, inborn errors of metabolism, sepsis, etc), child abuse, and our favorite – idiopathic (meaning we just don't know). As you can see, some of those things, like reflux, aren't too big a deal and some, like congenital heart disease, are. How do we know which one is which? We don't. Not in the field at least. It's just as hard in the ED – nearly every patient that presents with a BRUE will be admitted to the hospital for lots of tests and observation because the potential for bad things is high, and there is nothing on physical exam or an EKG that will allow a pediatrician to accurately exclude some of the "bad things".

We've all taken the call: "Respond for the infant not breathing." Right? We get there and the child is happily playing in mom's arms. We cancel ALS, mom doesn't want the 8 month old to go to the hospital. Sure the child went floppy in her arms and started to turn blue, but shortly after she called 9-1-1 the child

suddenly perked back up. Besides, the kid sure does look great now. We have them sign our PCR, she'll follow up with the pediatrician, and we go back in service. Sound familiar?

Hmm, lets take a look at the evidence. A study evaluated a region similar to ours and found about 7% of pediatric calls could be classified as a BRUE. Unfortunately we don't know exactly how many potential BRUE calls we run in this region but its safe to assume the percentage is similar. 83% of the time, the EMS provider got on scene and found the child to be in no acute distress and had a normal exam (sound familiar?). However, 48% of patients that had a normal exam on scene, had significant illnesses upon ED and hospital admission. Uh oh.

So what does that tell us? It tells us that no matter how good we think we are in determining who is sick and who's not – we aren't. Basic, paramedic or doc, it doesn't make a difference – particularly when you are assessing an infant. Therein lies the purpose of the protocol: if a BRUE occurs (which remember, is by history, not by how the child looks when you get there) you should make every attempt to get the child to the ED for an evaluation. You are doing what is in the best interest of the child.

That means the only person that can refuse transport is a parent or legal guardian (not the babysitter) and if they are refusing transport, you must call pediatric medical control. Not because we don't think you can convince them, but to help you use every resource at your disposal to get the patient to the hospital for the evaluation they should have.

What do we do on the way to the hospital? Honestly, not much. Supportive care, ALS evaluation and transport. These patients should have an ALS evaluation, no matter how good the child looks, so please don't cancel them once you get on scene. Sure, they can slow down, but they should still be part of the management and decision team to help ensure the infant is evaluated in the ED. Monitor if you can, IV only if you really need to give them something, don't make it a routine part of your work up since the poor kid is sure to get poked in the ED to draw blood cultures and other tests.

BRUE is an important addition to our vocabulary, and recognizing and taking it seriously is imperative to the young infants who look to us for care. That's why in almost any case where a family is refusing treatment for an infant, you pretty much any infant should consider calling pediatric medical control to talk it over. I hope you now understand why.

## RPD Officers Arrest the Bleeding

*Eric Rathfelder MS, EMT-P, Police Sergeant*



Police officers are often the first emergency responders to arrive at the scene of a trauma and sometimes the sole responders, for a period of time, due to scene security considerations.

One of the many responsibilities for these officers at a trauma scene can be providing life-saving medical interventions, most often in the form of major hemorrhage control. Greater than half of preventable trauma deaths are caused by uncontrolled hemorrhage which can sometimes be mitigated through recognition and simple techniques like applying a tourniquet or packing a wound.

Rochester Police Department (RPD) officers have the opportunity to employ these skills many times every year on both citizens and, sometimes, fellow officers. All officers are trained in bleeding control in the academy that begins their career but, like other knowledge and skills, proficiency diminishes with time and distance. While officers must qualify regularly in certain areas, like firearms, there is no similar

requirement for trauma care. In a collaborative effort between the RPD, the URMC Division of Prehospital Medicine (DPM), and the URMC Trauma Program, Dr. Cushman spearheaded the creation of a multifaceted training program in bleeding control for police officers.

In December (2019), RPD command staff set aside a day where about 20 members of the department participated in a training run by content experts from the organizations mentioned above. These officers, who represented each of the RPD Sections and “platoons” (shifts), became familiar with the required medical concepts, lessons plans, and training materials to qualify them to act as trainers for their respective platoons. In January and February (2020), these officers delivered a three part training to all officers and supervisors in the patrol division. Part one consisted of a didactic overview of traumatic injury, compressible/non-compressible injuries, airway management, trauma patient destination decisions, and the use of tourniquets and wound packing. Part two involved realistic practice in performing a “rake” for traumatic injury and tourniquet use. Part three was practice with wound packing and compression dressings. Please note: officers are taught the “hasty” or “high & tight” method of tourniquet application whereby the tourniquet is applied as proximal as practical on the compromised extremity.



**Tourniquets applied by RPD and AMR. Photo courtesy Dr. Mark Gestring of URMC Trauma.**

In the coming months, the police department will be working to standardize and simplify the trauma supplies officers are issued but it may be helpful for EMS providers to know what police officers at RPD have available to them. Most officers carry a CAT Gen-7 tourniquet as part of their uniform. They will additionally have gauze or a hemostatic agent for wound packing, an emergency trauma dressing (“Israeli Bandage”), tape, and, of course, naloxone.

So, why does any of this matter to EMS providers? First of all, I hope it might help guide dialogue and feedback between EMS providers and law enforcement officers. As EMS providers, you are the expert when it comes to medical care and, even seemingly trivial feedback or reactions, can have a significant impact on the future actions of police officers when it comes to emergency medical care.

Think about an interaction, however short or inconsequential, that you have had with someone who is an expert in their field. It could be the way a physician interacted with you during patient handoff or on the medical control phone. Police officers are asked to fulfill many roles, all of which are constantly changing. Only a very small portion of their job responsibilities involves providing emergency medical care and your interaction with them in this realm can have a lasting impact since most will view you as knowledgeable about medical matters. Therefore, try to provide feedback in a positive manner, with realistic expectations, and always with the goal of encouraging officers to provide appropriate interventions when they involve low risk but high gain. For example, if an officer places a tourniquet on a wound that you feel might not necessitate a tourniquet, was any harm done? Will the tourniquet be able to be removed in a timeframe that will prevent any permanent damage to the extremity from lack of circulation? Will sarcastic or negative feedback make the officer second guess placing a tourniquet in the future when it might save a life? Try to keep these things in mind as you interact with law enforcement officers who are doing what they think is right when it comes to emergency medical interventions. After all, we are all driving towards the same goal - preservation of life.

Second, it is always helpful to have knowledge about the capabilities, training, and resources of partnering first response entities. Nationally and locally we continue to work towards integration of police, fire, and EMS when unified responses are required. Even at mundane, “routine” calls, clear knowledge of what can be expected of other emergency responders improves cooperation and relationships and leads to better outcomes. For example, a police officer who understands ALS providers are capable of sedation but BLS providers are not can request an ALS ambulance upon recognizing a patient is in Excited Delirium. That knowledge streamlines the response process and could save a life (and a lawsuit). Likewise, when an EMS provider understands the criteria police officers must follow to make a compulsory detention under the Mental Hygiene Laws, EMS and law enforcement can work together towards a reasonable, legal outcome rather than be frustrated by what actions the other responder can, or cannot, take. In trauma care, seconds count and every first responder needs to know the capabilities of sister agencies standing at their side.

Third, EMS providers need informed expectations for what police officers can do to act as a force multiplier in situations where it is warranted. Think about instances of Aggressive Deadly Behavior (ADB) where scene safety considerations often make it impractical for a large number of EMS providers to engage with patients in an active, or not yet “cold”, scene. An EMS provider who knows which trauma care skills police officers are trained to perform and the equipment officers have access to, can more effectively triage and treat a larger number of patients. RPD, like many fire and EMS agencies, has Mass Trauma Kits (MTK) staged in apparatus likely to be on scene at an ADB event. These kits contain tourniquets, emergency trauma dressings, and gauze for wound packing. Consider employing a police officer with an MTK as a force multiplier.

A significant percentage of trauma deaths can be prevented with the use of simple bleeding control techniques and supplies. As the largest police department in the region, RPD encounters many trauma patients including their own officers. Providing these officers with ongoing proficiency in bleeding control skills and standardizing the trauma supplies carried by these officers should give them the best chance at saving lives by effectively managing trauma patients requiring immediate intervention.

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## Prehospital Pediatric Emergency Care Coordinators

*Ben Sensenbach FP-C, TP-C*

*Donna Kabm MBA, SPHR (Southern Tier Health Care System, Inc.)*



Currently seven agencies in the Monroe-Livingston EMS region have enrolled in the New York State (NYS) Prehospital Emergency Care Coordinator Program (PECC). What is a PECC? Why is it important?

Although there are nearly 30 million patients seen in Emergency Departments every year, only 5-10 percent of them will arrive by ambulance. Pediatric transports make up less than 10 percent of our EMS call volume but are often some of our higher acuity patients.

Nationally this challenge was met by creating the Emergency Medical Service of Children Program (EMSC) in 1984. In New York State, EMSC has participated in protocol development, training initiatives and equipment standards. Recognizing that there is still a need to enhance pediatric EMS care in NYS, the Bureau of EMS and Trauma Systems teamed up with the Southern Tier Health Care System to create the PECC Program. This new initiative has already grown to include 183 agencies across the state.

### WHAT IS A PREHOSPITAL PECC?

A Pediatric Emergency Care Coordinator or PECC is an individual or individuals who are responsible for coordinating pediatric-specific activities for your agency. By registering your agency in the PECC Program and assigning a PECC you will receive periodic updates sharing information and training materials.

### WHAT IS A PECC RESPONSIBLE FOR?

A PECC is responsible for being a resource for education on pediatric medications, equipment and supplies, promoting and sharing pediatric continuing-education opportunities, encouraging pediatric simulations/hands on pediatric skills assessments and encouraging that fellow providers follow pediatric clinical-practice guidelines.

More information and resources regarding the PECC Program are available on the NYS PECC website (<https://www.nyspecc.org/>). The fillable PDF is located on the NYS PECC website on the PECCs on NYS page. Just scroll all the way to the bottom to download the form if you are reading a paper version of this newsletter. To register your agency, complete the attached form and email a copy to [mlrems@mlrems.org](mailto:mlrems@mlrems.org). Please feel free to call me at (585) 463-2900 if you have any questions.

Congratulations to the following agencies that have already enrolled in the program:

Brighton Ambulance  
 Dansville Ambulance  
 Gates Volunteer Ambulance Service  
 Livingston County EMS  
 Northeast Quadrant ALS  
 Union Hill Ambulance  
 Webster EMS

## Using ET<sub>CO</sub><sub>2</sub> with a BVM

*Jeremy T. Cushman MD, MS, EMT-P, FACEP, FAEMS*



Often a provider may place a patient on nasal EtCO<sub>2</sub> to monitor their respiratory status only to then assist their ventilations with a BVM. The nasal EtCO<sub>2</sub> is then under the mask which can potentially disrupt a mask seal and, since the BVM is essentially at a flush rate of oxygen, causes dilution/underestimation of the exhaled air (EtCO<sub>2</sub>). This is especially likely



when the patient is not breathing through their nose – which is most often the case if we are supporting their ventilation. I would encourage you to alternatively use the in-line EtCO<sub>2</sub> device to attach between the mask and the BVM any time you are choosing to both support ventilations and to measure EtCO<sub>2</sub>. This will allow all exhaled air to come through the EtCO<sub>2</sub> device, not disrupt a mask seal, likely get a better estimated EtCO<sub>2</sub>, and should you proceed to intubation, you don't have to worry about taking off the nasal and then attaching the in-line EtCO<sub>2</sub> device.