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PRESIDENT’S MESSAGE

Jeremy T. Cushman, MD MS FACEP
Associate Professor and Chief
Division of Prehospital Medicine
University of Rochester

In the Crosshairs

2020 is starting out with a repeat of many of the legislative challenges we faced last year, but fortunately never made it to law or regulation change. Legalizing marijuana remains a priority of the Governor’s administration and New York ACEP continues to maintain its position that I highlighted last year at this time (See https://www.nyacep.org/newsletter-02-18 for more). Regardless of where you stand on the issue, professionally it will impact our practice – and we provide enough uncompensated care as it is – so if they are going to balance the budget by pot revenue, the least they can do is pay us for the care we will have to provide.

“Surprise” medical bills continue to be a focus at both the state and federal level and the Governor pointed aim directly at us in his address: “To protect New Yorkers from unfair and unreasonable medical practices the Governor will introduce a three-point plan that will: prohibit all hospitals and emergency doctors from directly billing consumers for out-of-network services; require the disclosure of facilities fees that are unreasonably charged to New Yorkers and often not covered by insurance; and shorten the statute of limitations to collect unpaid medical debt to three years.” My emphasis added, and you’ve already heard my rant on this (See https://www.nyacep.org/newsletter-ny-20/13-newsletter-nov-19 for more), but really Mr. Cuomo, this is an insurance problem, not a doctor problem. We empathize for our patients who in many cases never want to go to an emergency department (ED), or are sent to an ED by another care provider and then the insurance does not cover it. In fact, most of the “surprise” bills are not by emergency physicians at all, they are from consultants and specialists!

This will remain highest on our legislative agenda this year given the tremendous impact on our practice.

At the same time we see efforts by insurers, most notably United Healthcare, systematically denying 99285 claims using an algorithm that uses the discharge diagnosis, thus completely undermining the prudent layperson standard that we have fought so hard for. Simply put, insurers must respect the prudent layperson standard and not retrospectively deny payment when a well-meaning patient thinks they are having a heart attack – and we do to – only to find that it is something much less ominous after a clinically appropriate workup. Protecting the prudent layperson standard is protecting our patients and we will continue to fight locally and nationally to maintain this.

So although we may be in the crosshairs of elected leaders and insurers for doing our jobs and expecting fair payment, it’s not all doom and gloom. New York ACEP has a fabulous lineup for 2020 to help you do your job, learn new things and stay well. Our Lobby Day in Albany is Tuesday, March 3, our ED Director Forum in New York City is Friday, May 8 and our Scientific Assembly at the Sagamore is July 7-9. I hope to see you at some of these events and thank you for your continued support of New York ACEP and for what you do in your Department every day.

“Surprise” bills are not by emergency physicians at all, they are from consultants and specialists!
Case
A 41-year-old female with past medical history of Buerger’s disease, Raynaud’s disease and history of opioid dependence on opioid replacement therapy (denying any recent IVDA) presented to the Emergency Department with intermittent word-finding difficulty, headache and left-handed weakness. She was recently diagnosed four months prior with splenomegaly, a splenic laceration and enlarged axillary lymph nodes in the setting of anemia that was concerning for a lymphoproliferative disorder as her father developed Hodgkin’s in his 30s. The patient had also been experiencing nightly fevers and diaphoresis which started around the same time. She was initially evaluated as an outpatient and referred to Hematology/Oncology for lymph node biopsy and further work-up. The patient presented to an Emergency Department at another hospital for lethargy and confusion. There she was found to be extremely anemic and was transferred to our department.

On arrival to our Emergency Department, the patient was oriented, however extremely anxious, tachypneic and slow to respond to questioning without focal neurological deficits. Vitals on arrival were 120/64, 39°C, 94% on 3L nasal cannula, HR of 117. Labs were remarkable for pancytopenia including a WBC 2.7k, H/H 4.4/14, Platelets 99k, Cr of 6.51mg/dl, BUN 64mg/dl and BNP 14,985 pg/mL. CT imaging of the head showed an ill-defined lesion in the right frontal lobe that was nonspecific, interpreted as a subacute infarct vs chronic small vessel disease vs calcification. CT of the chest showed pulmonary edema with enlarged mediastinal lymph nodes.

Figure 1: Apical 4 view of the heart with a mitral valve vegetation (red arrow)

Given the severity of anemia and new oxygen requirement, the acute concern was resuscitation with blood products. She was in multi-organ failure secondary to anemia thought to be from a blood dyscrasia versus an actively bleeding splenic laceration. The patient responded well to a blood transfusion. Vital signs stabilized and there continued to be no neurological deficits on exam. The patient then became hypotensive and had worsening encephalopathy which did not correlate to a diagnosis of a lymphoproliferative disorder.

At this time, we obtained a point-of-care cardiac ultrasound (POCUS) to assess for cardiac function in the setting of new hypotension of unclear etiology. This demonstrated a concerning mitral valve lesion (Figure 1). Infective endocarditis, which was initially felt to be less likely, became our immediate main focus. Based off of the findings of the cardiac POCUS, there was quick administration of antibiotics and further management for sepsis and septic emboli. Blood cultures grew gram-positive cocci 12 hours later and TEE during inpatient workup was significant for mitral and aortic valve masses.
Discussion
Infectious endocarditis is a rare, difficult to diagnose disorder and symptoms can be vague and nonspecific.1 Early diagnosis of infective endocarditis is crucial because of high mortality rates.1 Although prompt administration of antibiotics has reduced its mortality rate, the diagnosis continues to be a challenge to make in the Emergency Department.2 Based on the Duke Criteria, this patient would not have met the diagnosis of endocarditis upon initial presentation and resuscitation.2 On exam, she had no cutaneous evidence of endocarditis, no murmur and no objective fever initially. This case illustrates how the diagnosis is easily obscured by other possibilities including, in this patient, rheumatic disease or malignancy. However, with ultrasound evidence of a mitral valve lesion, a major clinical criterion for the Duke Criteria, the diagnosis of endocarditis became highly likely within the Emergency Department. Although the role of POCUS in diagnosing endocarditis has not yet been established, there are an increasing number of case reports where POCUS evidence of valvular lesions has changed the course of management.3,4,5,6 It is important to note that the absence of valvular lesions does not rule out the possibility of infective endocarditis.3 In our case, it shifted the management from a patient with pancytopenia, nightly fevers, and end-organ damage which was thought to be secondary to a blood dyscrasia not yet diagnosed, to concern for septic emboli leading to quick administration of antimicrobials. While this case should not be construed to suggest that valvular evaluation in the Emergency Department should become a core aspect of cardiac POCUS, it demonstrates that POCUS can provide additional diagnostic information that can be clinically relevant beyond the core applications and impact the clinical management in patient care and outcomes. As familiarity, skill and availability of POCUS in the Emergency Department continues to grow, practitioners should continue to expand what is feasible with an ultrasound probe.

Technique
• Position the patient in the left lateral decubitus (when possible). This will bring the heart closer to the chest wall and assist in obtaining higher quality views.
• Using the phased array transducer, with the marker dot toward the left hip (or the right shoulder for an alternate technique), scan inferiorly from the left clavicle down the lateral sternum until you see the heart. This is the parasternal long view. Here you will visualize the mitral and aortic valves. Please refer to Basic Echocardiography by Drs. Kristen Carmody and Amit Chandra in New York ACEP’s Empire State EPIC Volume 32 2:14, pages 6-8 for a review here:https://www.nyacep.org/images/stories/Empire_State_EPIC_32-02-14.pdf
• Turn the probe 90 degrees, towards the right hip (or left shoulder) to obtain the parasternal short view. Fan cranial to caudal and obtain views of the mitral and aortic valves in plane. At the level of the aortic valve you may also visualize the tricuspid and pulmonic valves.
• Turn the marker dot to the patient’s right side and slide down toward the apex aiming back up toward the right shoulder. This should enable one to obtain an apical four chamber view which shows excellent views of the mitral and tricuspid valves.

Tips
• The further you can position your patient in the left lateral decubitus position, the better views you will likely obtain.
• Patients with COPD may be best imaged from the subxiphoid view. Turning the probe so the marker dot faces the ceiling will allow you to obtain many of the same images from the parasternal short view only from the subxiphoid location.

Indications
• Chest pain
• Dyspnea
• Hypotension
• Syncope

Pitfalls and Limitations
• Absence of a vegetation on transthoracic echocardiogram does NOT rule out endocarditis.
• The pulmonic valve can be difficult to image and vegetation on this valve may not be easy to visualize with basic bedside echo techniques.
• This ultrasound examination is outside the scope of the basic core ACEP ultrasound guidelines.
• Calcifications on valves can mimic vegetations, but will usually be bright white or have posterior shadowing.

References
 Unsung Heroes of Emergency Medicine

Each department has at least one. The colleague who acts under a veil of humility. Who shows up and does the job without complaint. This year, New York ACEP is proud to announce a new award to celebrate our Unsung Heroes of Emergency Medicine in New York. The Unsung Hero of Emergency Medicine is the individual who goes beyond simply being the embodiment of what it means to be an emergency physician and is a stalwart of their emergency department. They are deeply committed to the mission of the emergency department, their colleagues, co-workers and patients. The Unsung Hero is always willing to help a colleague in or out of the clinical environment. The physician who has been there long enough to see it all and those we look to on shift when the unexpected happens. Those that show up out of thin air when we are in trouble and utter the phrase “there’s no lonelier place than being on a sinking ship alone,” then jump on the ship with us.

These physicians make profound impacts within their microcosm and on all others around them to create supportive environments in which we love to work. They turn the work unit into a work family. These physicians bring encouragement around just at the right time and keep the morale high even in the toughest times.

Our Unsung Heroes are the backbones of the departments who are fundamental to creating positive team cultures in one of the most challenging places to work in medicine. While they do not hold traditional leadership roles, they are the emergency medicine physicians that others look to as a battlefield commander to guide them through professional as well as personal challenges.

Please take the time this year to have your Director recognize your department’s Unsung Hero by submitting your recipient to New York ACEP no later than March 2, 2020.

Unsung Heroes will be honored and announced in May 2020.
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United Concierge Medicine has partnered with St. Peter’s Health Partners, recipient of two grants to provide SAFE services using telemedicine technology. The pilot program has two partners: Funding provided through the New York State Office of Victim Services: Grant number 2016-VF-GX-0049, awarded by the Office for Victims of Crime, Office of Justice Programs, U.S. Department of Justice. The opinions, findings, and conclusions or recommendations expressed in this product are those of the contributors and do not necessarily represent the official position or policies of the U.S. Department of Justice. Support funding from The New York State Department of Health, Division of Family Health.

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Calendar

**February 2020**
- 12 Education Committee Conference Call, 2:45 pm
- 12 Professional Development Conference Call, 3:30 pm
- 13 Practice Management Conference Call, 1:00 pm
- 19 Government Affairs Conference Call, 11:00 am
- 19 Emergency Medicine Resident Committee Conference Call, 2:00 pm
- 19 Research Committee Conference Call, 3:00 pm
- 20 EMS Committee Conference Call, 2:30 pm

**March 2020**
- 3 Advocacy Day, Albany, New York - 10:30 am - 4 pm
- 1 Education Committee Conference Call, 2:45 pm
- Professional Development Conference Call, 3:30 pm
- Practice Management Conference Call, 1:00 pm
- Government Affairs Conference Call, 11:00 am
- Emergency Medicine Resident Conference Call, 2:00 pm
- Research Committee Conference Call, 3:00 pm
- EMS Committee Conference Call, 2:30 pm

**April 2019**
- 8 Education Committee Conference Call, 2:45 pm
- 8 Professional Development Conference Call, 3:30 pm
- 9 Practice Management Conference Call, 1:00 pm
- 15 Government Affairs Conference Call, 11:00 am
- 15 Emergency Medicine Resident Committee Conference Call, 2:00 pm
- 15 Research Committee Conference Call, 3:00 pm
- 16 EMS Committee Conference Call, 2:30 pm
- 26-28 ACEP Leadership and Advocacy Conference

**May 2020**
- 7 Board of Directors Meeting, 1:30 pm - 5:30 pm
- 8 ED Director Forum, 8 am - 4 pm
- 13 Education Committee Conference Call, 2:45 pm
- 13 Professional Development Conference Call, 3:30 pm
- 14 Practice Management Conference Call, 1:00 pm
- 20 Government Affairs Conference Call, 11:00 am
- 20 Emergency Medicine Resident Committee Conference Call, 2:00 pm
- 20 Research Committee Conference Call, 3:00 pm
- 21 EMS Committee Conference Call, 2:30 pm
An Infectious Disease Outbreak: Coming Soon to a Community Near You

Too many patients, too few beds, admitted holds, bottlenecked throughput, laboratory delays, nursing shortages, satisfaction surveys, opiates and not enough turkey sandwiches in the patient refrigerator—these are just some of the challenges emergency providers deal with on a daily basis. Think you’ve got enough to worry about? Think again. The resurgence of once eliminated or largely controlled communicable diseases is every emergency department’s problem. With the anti-vaccination sentiment growing in not only some religious communities, but among people holding philosophical, governmental and environmental objections, all emergency departments have to now be on the lookout for diseases previously only seen in textbooks for most current emergency department (ED) staff members.

One such disease thought to be eliminated, but now reemerging, is measles. From September 30, 2018 to October 31, 2019, there were 1,487 cases of measles reported in 26 separate outbreaks in the United States. The largest of those outbreaks were centered in two closely related New York communities; one in Rockland County (412 cases) and the other in Brooklyn (702 cases). Both locations were heavily populated with under-vaccinated Orthodox Jewish communities. According to the CDC, approximately 90% of those infected in 2019 were unvaccinated or had an unknown vaccination status.1

Emergency department leaders and staff members can plan for an outbreak of measles (or other communicable diseases), however, when these patients start showing up in the waiting room, the plans may seem inadequate or become immaterial. Below are some lessons learned from one ED’s direct experience of being at the epicenter of a communicable disease outbreak.

Case Presentation

A patient with poor health literacy comes into your waiting room at 2 AM. It is cold and the patient is dressed in a hat, scarf and coat, covering much of his skin. The patient tells the registration clerk in broken English that he is here because of an allergic reaction. The clerk directs them to have a seat and the triage nurse will be with them momentarily. The patient sits down in the waiting area amongst other patients and visitors. The triage nurse is helping a short-staffed crew inside the department. After 15 minutes, the triage nurse sees the patient with a chief complaint of “allergic reaction” on the track board. She calls the patient in to the treatment area and walks him to an available room, passing by many staff, patients and visitors along the way. “Please get undressed and change into this gown,” she says. “I’ll be back in a few minutes.” The nurse returns with a language interpreter phone. The patient states that he has had a rash for a few days, but denies fever. He says, “I think I have a reaction to something.” He is in no distress. The patient is triaged as an ESI 4 and waits to be seen by a provider. Forty-five minutes later, the patient is assessed by a provider. A more complete history reveals that the patient works with someone who also had a rash and fever. The patient has red eyes and a dry cough. He does not know his vaccination history. After being in the department for over an hour, the provider orders respiratory isolation.

1) Use Missed Cases as Educational Opportunities

Measles is a tricky virus. Almost all patients eventually get a rash and fever, but patients are contagious before the rash appears and early symptoms can be variable and non-specific (i.e., flu-like). Every employee, from the security guards and the registrars, to nurses and providers must be educated about what measles looks like, risk factors for the disease and how it may present.

No matter how much the ED staff is trained to recognize measles, someone is going to miss a case. Let’s face it, there may only be one or two seasoned members on the staff who has seen a measles rash in an actual patient. Since measles was officially listed by the CDC as eliminated in the US in 2000, most providers and nurses currently working in medicine have never seen an actual case. Therein lies the problem. How do you effectively educate an entire staff to recognize a relatively rare disease entity when there are so many more common and likely explanations for patients showing up with general malaise, fever, cough and/or rash? This is an enormous endeavor, considering several challenges:

a. Security guards, registrars or volunteers may be a patient’s first point of contact upon arrival. Therefore they need to be able to at least recognize a patient with a suspicious presentation. These staff members generally have no medical education and may be resistant to accepting clinical responsibility of identifying a patient with a potential disease. Providing a simple check list with illustrations may help with training and competency.

b. It is difficult to provide department-wide education (initial and ongoing) to staff members who work in your department infrequently, particularly part time or per diem employees. All employees must keep a high index of suspicion at all times. Ongoing education is essential. Weekly emails, informational posters in staff-only areas, sticky notes on computer screens...
and daily rounding with staff all helps with retention of newly adopted protocols.

c. When someone misses a case on arrival (and it will happen), it is important to use that incident as a learning experience for all, while remaining positive and supportive. Frequently recognize staff members for their hard work during difficult circumstances.

2) Initiate Your Intake and Triage Procedures Outside the ED

The measles virus is highly contagious and can spread when an infected person coughs and sneezes. Respiratory droplets laden with viruses can linger airborne for up to two hours, infecting unsuspecting passersby after the infected patient has left the area. If a patient is not masked prior to entry and placed in a negative pressure room immediately, then air-handling systems in the waiting room or regular treatment areas can potentially circulate infectious airborne particles throughout the entire department. Once the patient walks through the ED front door, everyone in the department is potentially exposed, in addition to any patients arriving in the ED for the next two hours.

It is an immense task to retrospectively identify patients, visitors and staff members that were in the ED at the time the measles patient walked through the door un-masked, in addition to all persons who may have walked through the department for two hours after the patient was (finally) placed in isolation. Contacting all of those potential exposures to tell them they were exposed is even more monumental. All exposed persons will need to show proof of immunity (proof of vaccination is not adequate) or return to get immunized. Suffice it to say, people will be rather dissatisfied.

When developing plans to prevent or limit exposure, evaluate how many portals of entry your department has. The front door to the ED lobby and the EMS entrance are obvious. Have you considered that a patient may wander in through the main (or secondary) hospital entrance, though the hospital corridors and into the ED through the back door or staff entrance? How do you keep your department safe when there are so many ways into the ED? Posting a sign at the entrance(s) with a box of masks, asking anyone with fever, cough or rash to wear a mask may be inexpensive and easy, but unfortunately it is largely ineffective. Most people ignore these unmanned stations or wear the mask incorrectly.

The Department of Health (DOH) mandated that health care centers in the outbreak area restrict movement into facilities by screening everyone (patients and visitors) for measles risk prior to entry. Despite being instructed to do so, county or state emergency funds to offset this cost were not made available. Most hospitals these days work on extremely tight budgets and bringing in extra staff to man the entrances is a luxury. In response, you should plan to use already scheduled staff to provide 24-hour coverage at the entrances to screen arrivals. Minimally, screening questions should include whether a person has had a rash or fever, was exposed to someone who had a rash or fever or had recently traveled internationally.

If the patient or visitor screened positive, a mask would be placed on the individual and would be escorted into a negative pressure room until cleared by a provider. Alternatively, the patient/visitor could be kept outside and a clinician pulled off the ED floor to perform a secondary screening prior to entry. Additionally, factor in how many negative pressure rooms are available and what to do if these rooms are filled. Also, once a presumed infectious patient is placed in one of these rooms, it is off limits for use for two hours after the patient leaves the ED.

Take a minute to think about how your department might function losing a nurse or tech from the floor during each shift during an outbreak, potentially for months. Also think about how your personal capability of caring for patients as an ED provider might be affected if you were asked to stop what you were doing multiple times a day to walk outside to screen a patient who presented to the ED with a fever or flu-like illness. Lastly, think about how your department would react to losing one or more treatment areas for two hours every time a potential measles case was discharged. What about losing your entire waiting area if a patient came in, sat in the lobby and was later found to potentially have measles? All of the above have significant impacts on patient care and flow.

3) Don’t Forget EMS – They Are Your Eyes and Ears in the Community

By working with the squad captains and company educators, ED leadership can train EMS to pre-screen and identify potentially infectious patients. EMS crews can verbally communicate an impending arrival with a patient of concern, allowing the ED to ready themselves (i.e., prepare a negative pressure room). Patients can be masked prior to arrival and placed immediately in isolation, negating exposure of others. This identification benefits EMS and the community too. If a patient is not masked prior to entry into an EMS vehicle, then the vehicle is out service to the community for two hours after drop off at the hospital.

4) Establish Who Needs to Be Tested and Have a Plan for Obtaining the Correct Samples

Do not assume that every potentially infected patient should have testing. Patients presenting with suspicious symptoms but no rash should not be tested (yet). A provider or a liaison from your hospital should plan to discuss all possible cases with the DOH prior to sending samples for testing. This process can be time-consuming and you may need to keep the patient in your department before a plan for follow-up can be established with the DOH.

Furthermore, keep in mind that most testing for measles will not be done at your facility. Though you may have the ability to send measles testing to be completed in your own lab or at an outside lab contracted to perform the tests not done in-house, the DOH may mandate that specific samples should be sent to the New York State Laboratory. That may mean that sample(s) ordered in your electronic medical record (EMR) and sent to a hospital-affiliated outside lab will not be usable for analysis by the DOH.

Lastly, consider the ease (or difficulty) to rapidly build order sets into your electronic medical record which clearly state which
I had the pleasure of interviewing Joel Pasternack, MD PhD. Dr. Pasternack is a professor of clinical emergency medicine (EM) at the University of Rochester Medical Center. Originally trained in general surgery, he began working in emergency medicine in the 1980s and later became a board certified emergency physician. He is a recipient of the 2019 ACEP National Emergency Medicine Excellence in Bedside Teaching Award, among numerous other awards and achievements. I am fortunate to have him as a colleague and am grateful to have had some time to sit down and discuss how he has seen emergency medicine grow and hear his advice for others.

Having trained in surgery, what initially drew you to emergency medicine? Can you tell me more about your career path?

It was simple; working in the emergency department (ED) was fun. In the early 1980s, many residents had moonlighting jobs, mine was working in the ED at Rochester General Hospital. We would see a wide variety of major and minor complaints, including lots of injuries, abdominal pain and back pain. I could apply what I was learning in residency. I worked with people I liked and became part of the ED family. There were no EM residencies at the time, so I joined the ED physician staff as a permanent moonlighter. It was a great job. When I left surgical residency, to work five 8-hour shifts per week, it seemed like I was on vacation. We were able to develop collegial relationships with the consulting services. I learned a lot from my ED colleagues and from the consultants. For the most part the consultants wanted us to learn, so they could be uninterrupted in the Operating Room (OR) or in the office.

Until 1988, a doctor could qualify to take the EM board certification exam based on work experience without having been in an EM residency. I had worked about 2000 hours a year for 5 years, which met the hours and years requirement, so I took the ABEM boards. I was probably one of the first (if not the first) board-certified emergency physician in Rochester.

How has the job changed?

In the 1980s the ED functioned as an amalgam of internal medicine, surgery and pediatrics, with ortho, gynecology and psychiatry regular consultants with their own space. Going forward in the 1990s, the emergency medicine model took hold and eliminated triage to medical or surgical. At the same time many innovations came to the ED – thrombolysis for acute MI, rapid sequence intubation, cardiac meds such as adenosine, calcium channel blockers, metoprolol replacing digoxin and propranolol, great sedation meds like propofol and ketamine replacing meperidine, phenergan & thorazine. And then portable ultrasound machines became available for use in the ED. There was always something new to learn. Who knows what new things we will have in 15-20 years?

How have you managed to maintain your enthusiasm for emergency medicine?

You have to have variability in what you do. Changing what you do and re-looking at what you are doing allows you to keep working. Otherwise it is an endless line of charts in the rack, or red patients on the computer track board - a marathon with no end in sight.

In 2000, our ED needed another doctor in pediatrics, so I offered to help. I was comfortable with pediatric injuries and worked to learn more. For a year I worked almost all pediatric shifts. So much so that people started saying “I didn’t know you saw adults,” when they would see me on the adult side. I had great help from our pediatric EM team, as they shared their expertise evaluating undifferentiated complaints – a baby struggling to breathe, a kid with a fever, “something is wrong with my baby”. It was fun learning the basics from experts. It was mind expanding and invigorating to learn about complex pediatric topics like inborn errors of metabolism, congenital endocrinopathies and congenital heart disease. This was not an academic exercise; it was a necessity to understand the sick kid before you.

You can learn a lot from those around you, including, of course, the patients, but also from the residents and nurses. You have to be careful, because in the end, you’re the responsible attending, but you have to keep an open mind.

In the early 1990s, ultrasound started to appear and I went to several courses on ultrasound. Learning new skills puts life in what you do.

Knowing what you know now, what advice would you give to medical students and residents?

The main advice I would give to anyone is to recognize that for each patient, what you do is very important. To you it may seem simple, but for them it is important. People still have respect for doctors, the patients are anxious for us to listen to them. And you can have their undivided attention. You may have to give bad news, or you may know how to fix something or move the patient toward recovery. Either way, if you consider the patient’s perspective, and show them respect, you can feel good about your work. Also, the job is more fun when you accept that you don’t know everything.

What advice do you have for physicians in practice?

You have to be willing to constantly upgrade yourself. No matter how much you know this year, next year you have to review and make sure it is still appropriate. This constant updating and review applies to...
exam skills, procedural techniques and treatment paradigms. For residents it’s easy - they have required lectures and labs. For me, I was heavily involved in cadaver labs which helped me teach and learn, but each physician should find a way to learn that suits his/her style. Use your CME, talk to friends, discuss with colleagues. I am an auditory learner, so I listen to CME tapes in the car. Long ago, I had an after market audiotape cassette player for my car, until I moved on to CDs and now to my phone. You have to keep up and know what is going on in Emergency Medicine. Keeping up to date keeps you from feeling uncomfortable. Further advise: follow up on your patients, those you’re worried about and those who you think will do well. A follow-up phone call can help you do better the next time, or boost your self-esteem. In either case, you will have learned something and communicated your concern to the patient.

What does your teaching award mean to you?
In my mind it was a recognition that what I have found interesting for all these years, other people find interesting too. This is how I have taught. I would just teach what I found interesting and sharing my enthusiasm facilitated communication.

Any last thoughts?
I love that everything I have learned about medicine is relevant to our work taking care of patients in the ED. Not everyone can say that about his or her specialty, but we know something about every specialty - not to say we know everything. EM practices provides a broad field for us to learn, study and think about. It is a privilege to be able to do this.

specimens to obtain and how specimens are to be handled. Not having clear instructions in the EMR for obtaining and handling specimens can result in a great deal of confusion among the clinical and laboratory staff, not to mention a fair number of samples being deemed unusable. Thus, a good rule of thumb is to plan on the DOH dictating who needs testing, what specimens to draw, and what to do with them once obtained. Work with your nursing and laboratory teams to ensure that once specimens are obtained they are handled according to DOH specifications.

5) Recognize That People Will Be Angry at You for Doing the Right Thing

Enacting precautions will help keep patients, visitors and the public at-large as safe as possible. Instituting outdoor screening stations at all entries, encouraging mask usage indoors, restricting visitation to certain hours of the day as well as to certain units and restricting entry for persons under 18 years of age (those most likely to be unimmunized or lack full immunization) except when seeking medical treatment are a few measures that can be instituted to promote decreased risk of exposure.

Whereas some of the general public will applaud these preventative efforts, many will be annoyed or downright angry at the inconvenience that these measures impose on their daily lives. Staff members may be verbally berated or threatened with physical assault. Some visitors and patients will result to lying to the screening questions in an effort to circumvent the system, tossing aside any concern for other patients, visitors and the public. The fact is that making these decisions as an institution is difficult. Telling a family that a 10-year-old cannot come into the hospital to visit his mother on the mother-baby unit and meet his just-born sibling is not ideal. Families may not accept or appreciate what you are trying to accomplish - particularly in a society which highly values having personal liberties. Yet, if your hospital has to make these complicated decisions, make sure that you have the support of security and your administration to achieve your goals because your efforts will almost certainly drum up resistance.

In conclusion, measles is just one communicable disease once thought to be a thing of the past (at least in the US), but is now resurging. Diphtheria, pertussis, rubella and mumps were all largely controlled secondary to vaccination efforts and herd immunity, but have reappeared with increased incidence of recent date. With people delaying or refusing vaccination at alarming rates, we must face the reality that certain diseases may reappear within our communities. EDs are often the first stop for patients presenting with these maladies. Certainly, plan ahead for an outbreak in your community and hope it never comes. However, bear in mind that if it does come, you likely will encounter unanticipated snags which will require some real-time modifications to your plan.

Reference
MCI Sim Day

Jacobi Medical Center, situated in the Bronx, NY, was given an opportunity to partner with several large organizations in the participation of a mass casualty disaster. A section of the US Army wanted to practice their mass decontamination units in the advent of a CBRNE (Chemical-Biological-Radiation-Nuclear-Explosive) event, specifically in coordination with local EMS resources and a local trauma center. Our Department of Emergency Medicine, in coordination with the Division of Trauma Surgery, lead an effort to refresh our staff’s training in decontamination procedures, donning/doffing protective gear, disaster plan activation, etc. On the morning of September 28, we ran a chemical exposure mass casualty drill that involved about thirty minutes.

The Morning Tour

Dr. Kolli: As I finished up my overnight shift, I noticed that the department was eerily quiet. However, when I peeked outside the ambulance bay, I saw everything that was set up while I was in the emergency department (ED); several large army tents and trailers with what looked like a sprinkler system inside.

Dr. Manyapu: Like Dr. Kolli, I was also coming off an overnight shift. I happened to drive by the setup as I was coming in and noticed a large trailer in our ambulance parking lot area, as well as many impressive army tents with soldiers walking around. Later, in person, I saw the inside of the trailer, or the decon area, and saw multiple stalls, sort of like shower-curtained areas in a gym. There were two sides to the trailer, presumably to divide and conquer the multitude of patients about to come through. While the action had not quite started yet, the layout was clear: ambulances coming through one end to drop off patients, enter through the decon area, and exit into a triage area right at the entrance of the emergency room.

Dr. Del Valle: I arrived after the simulation areas had been set up. It was impossible not to notice the impressive military-green tent now established just outside the ED ambulance bay and the flurry of activity with which hospital, FDNY and US Army staff were now preparing for the impending simulation. There were two primary decontamination areas: one to be run by military staff via their own decon system, and one to be run by hospital staff using our recently acquired decon system. The military tent was designed for high throughput and made use of patient conveyor belts and well-delineated stations with all staff having received extensive prior training in their roles. The hospital’s decon station was comprised of a large platform with two decon ‘hallways’ through which two streams of patients could be processed prior to arriving to the main triage station established just outside the ED entrance. Inside the chamber were multiple showers with both cold water and specialized solution options. Large scrubbers through which water could be run were also available in order to remove as much contaminant as possible. There were multiple showers and scrubbers available in each of the two parallel hallways so that patients could be progressively moved downstream in order to maintain throughput while cleaning. Contaminated clothing was deposited in embedded chutes toward exterior biohazard containment bins. The flow was to be oriented so that FDNY ambulances would arrive at a newly designated area immediately next to and feeding into both the military and hospital-run decontamination areas. Patients would exit the ambulances, be rapidly triaged by a physician and then proceed to the decontamination areas.

Donning

Dr. Del Valle: Having been assigned to the hospital’s decontamination area, I joined the rest of the team and began the process of gowning up. Our Personal Protective Equipment (PPE) during the simulation was made up of a decontamination coverall suit with hood, safety goggles, N95 masks, and thick gloves and boots which were then sealed to the suit using a specialized tape. The outfit was surprisingly difficult to put on and required the generous help of multiple assistants who were helping any would-be decontaminator correctly don the bulky gloves and boots and seal them closed. We were an amusing bunch once gowned up – a cluster of residents and PAs dressed in awkwardly large grey suits which loudly crinkled with the slightest of movements – but we were ready for disaster.

Dr. Kolli: This was my first experience with any kind of decon drill so the entire gowns up process was new. The HAZMAT suit felt awkward and entirely too large but I figured it was necessary to keep...
myself protected from any and all chemicals. At first, I thought many of the layers we had to put on were redundant – for example, why did I have to put rubber boots on when my suit came with shoe covers? Why did I have to use tape over my gloves? I would realize later on that even with these seemingly over the top protections, the chemicals would find a way inside the suit. The gowning up process also made me aware of how important teamwork is in this situation. I had someone help me with just about every aspect of this process, from putting on the suit itself, to taping up my boots and gloves, to letting me know when I’ve done something incorrectly.

Dr. Manyapu: As an EMT in a past life, I’ve been lucky enough to participate in a variety of mass casualty drills. That being said, however, I had never donned on a full HAZMAT suit. It’s almost as complicated as it looks, with multiple layers, multiple methods of protection and multiple hands needed to gown one person. I needed help not just slipping into the suit, but once it was on, putting on shoe covers, gloves, the head gear, the gogles and then taping all these things together so nothing would seep in. On an otherwise chilly morning, I realized very quickly how warm it can be inside of a HAZMAT suit when I was wearing multiple layers and just breathing in my own air.

The Triage Team

Dr. Salama: Initially I was designed to be part of the Hot Zone Team, however as the simulation began I teamed up with one of our senior PAs to assist with triage. We had an attending designated for triage and realized that communication was key. It was simple when the ambulances came in one at a time, but when they came in bunches, we saw how easy it was for one doctor to get overwhelmed, particularly when the “walking wounded” came by. Having extra hands ensured that those with medical priority would get decontaminated first. We were almost an upfront barricade preventing anyone from passing without going through the necessary protocols and procedures. In addition, after our attending saw the patients and designated them for decon, we were the extra eyes that would determine which decon chamber was open and ready for the next patient. It also allowed us to communicate to the decon teams about what injuries the patients sustained. With time we became more efficient, using hand signals to let everyone know the number of patients coming, patient gender and ability to ambulate, to name a few.

The Hot Zone Team

Dr. Del Valle: The simulation began quietly at first. Calls went out across the radio and short bursts of static followed brief confirmations of the events transpiring. The teams were made aware of the situation: an explosion had occurred at a local city marathon which subsequently ignited a nearby chemical contained causing it to explode – both resulting in a large unknown number of casualties. The FDNY ambulances started slowly at first. One set of sirens in the distance quickly became an orchestra filling the air as rig after rig pulled up to our designated arrival area. Two physicians rapidly assess gross injuries as the victims entered the decon chamber. Calls range out through the decon chamber from those on the “arrivals” side in order to prepare those further downstream. “One female, ambulatory!” “Two males, first lower extremity injury, second decreased vision!” As patients entered the chamber into the hall, we would briefly introduce ourselves and our roles, undress them to the best that their injuries allowed, use the showers and scrubber to remove contaminants and guide the patients from the chamber exit toward the external triage area prior to entering the ED.

The Warm Zone Team

Dr. Koll: I was stationed in the clean decon area, meaning that the patients I was seeing had already been through the dirty decon area. By the time they came over to my side, they had their contaminated clothes removed and went though the first set of showers. The first thing I noticed when patients started to approach me was the stark difference between them and me. I was in a full HAZMAT suit with a hood and fogged up goggles and I thought I barely looked human at that point. However, my patients looked very much human. They were all shivering, barely clothed and fearful of what would happen next. When I saw patients with penetrating trauma, I wanted to stop what I was doing and treat them right away. But, I had to keep in mind the scale of the situation and the fact that not every wound could be treated right away; I had to prioritize. I also had to keep in mind the fact that everyone had a role and I had to stick to mine. I was responsible for ensuring the patients were free of contamination before they entered the hospital and I had to trust my team in the hospital to take care of the patients once they left my area.

Dr. Manyapu: I spent my time just at the end of the clean decon area, right after Dr. Koll, you could say. I would hear ambulance sirens, but would never see them, since I was inside the trailer. At some point, I would hear the commotion of patients being brought in through the “dirty” or contaminated side. The showers and sprinklers were running the entire time, and even though I was warm in my suit, I could see how cold and uncomfortable it would be for a patient to be doused in cold water. No surface was left untouched: clothes were removed, underarms and scalp were washed, and each patient spent time in four different shower areas. From severely injured to minor cuts and bruises, they would file through one by one. The dirty side people would yell to me and Dr. Koll what the patient’s age was and a brief overview of whatever injuries they could find, but admittedly, it was sometimes hard to hear over the sprinklers. Patients were passed along from shower to shower in an assembly line fashion. While initially it was a little more chaotic as we figured out what worked and did not work, by the end we had a routine. My HAZMAT suit stayed soaked the entire time, and by the end of the drill there was water pooling around us full of blood (albeit fake) and other debris. I could see how difficult it could be to handle a large decon with water dripping over your eye shield, large gloves with minimal dexterity and the large cacophony of sounds. I lost track of how many patients we shuffled through, but they varied in age, size, gender and morbidity. Whether it was chest pain or broken bones or a deceivingly normal appearance, we cleaned and decontaminated all in the same exact way.

Debrief

Dr. Del Valle: Mass casualty incidents are chaos. Simulations like these are intrinsically flawed in that they allow the luxury of both physical and mental preparation in a low risk setting. Once the simulation began it became apparent how extremely essential training and preparation were to any real scenario. One example is the decon suits themselves. Having had no training in correctly sealing or maneuvering inside of bulky

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decon suits, we quickly realized the error of our ways. Many of us, myself included, found ourselves working with perpetually misty goggles, water trickling down our faces, and the unpleasant squeaking of wet shoes inside our boots. The issue of communication also became pronounced. As patients arrived, our team began identifying new methods of increasing efficiency and preparedness. After our initial few patients we began shouting out brief, relevant details regarding victims as they entered the decon chamber. Factors such as ambulatory status, ability to see, gross penetrating injuries or blast wounds, etc. were all called out in advance in order to prime those downstream. Despite our attempts, these calls were frequently lost in the din of ambulance sirens, scrubbing showers, and our own suit-covered ears. Adaptability was key. Instead of shouting fingers to those watching ahead further downstream in order to indicate numbers of patients. If there was a delay in the arrival of new patients, we then had the time to quickly walk back and indicate any relevant injuries as the patients moved up the ramp toward the decon chamber. We had also initially planned on separating the two halls of the chamber into male and female sides. This quickly became an apparent flaw as multiple male or female patients would arrive in clusters and overwhelm one hall. Instead we multiple male or female patients would arrive in clusters and overwhelm one hall. Instead we

Dr. Kolli: Even before the debrief I felt like I was made aware of areas of improvement. For example, as I was gawking up I could see evaluators with clipboards checking off what I had done right and what I had missed. As soon as I taped up my boots, I knew I had done something incorrectly and this was confirmed after spending about five minutes in the decon showers. I noticed that one of my shoes started to get wet and before I knew it, I was walking around with about two inches of water in my boot. At that point, I knew why the evaluators were so disappointed in my boot-taping technique. The most important lesson I learned from the simulation was that there’s only so much you can learn by reading about mass casualty preparedness. Being a part of the simulation revealed all the nuances that can impact how I would react in a real incident. For example, when I was helping patients in the decon showers, my goggles were constantly fogging up and at some points, I could barely see the patients. There was theoretically supposed to be a clean and dirty side to the shower, but each time we had a patient on a stretcher, there was contamination during the hand off. Also, I noticed how difficult it was to ensure patients on stretchers were adequately decontaminated.

Dr. Manyapu: As with any drill or practice, you quickly learn what works and what does not work. Goggles are a necessary evil. HAZMAT suits all seem to need more sizing, considering there really is only one size. How do we ensure that patient information is not lost in translation? There were two key features of the drill that ensured our success: teamwork and flexibility. As we figured through the process, we communicated the changes and the issues in real time, ensuring that as we moved forward, we moved together. In conjunction with teamwork, we needed to be flexible. We learned early on that it was challenging to pass patients over from the contaminated side to the decontaminated side with multiple hands. After splitting up the process and assigning one shower head to each person, the process moved a little smoother. Not only that, we learned that we had to yell and repeat patient information multiple times in order to ensure that information was correct. These are just some minor examples of aspects we learned in real time. Other parts such as the necessity of tape to keep boots and gloves sealed, water drainage from the trailer, and communication with in-hospital staff were harder to address during the drill. After the drill, the large debrief was a perfect summary to the morning. Addressing every station’s issues, summarizing roles and discussing areas of improvement were just some of the conversations had during the debrief. This debrief was large, with all the participants including nurses, techs, orderlies, physicians, medical students and observers. It was representative of the amount of people involved in this kind of undertaking, drill or real life.

Conclusion

The MCI was incredibly useful because on a large scale, it allowed our whole hospital community to visualize how we would set up for and handle such an incident. Additionally, it brought to light what we can work on, whether it be correctly suiting up or optimizing flow though different stations.

Mass casualties can range in presentation from chemical exposures, like this one, to mass shootings and large fires. As an emergency medicine physician, we have unique responsibilities and skills in triaging and treating these patients in a rapid and efficient manner. Our daily routine incorporates much of the skills needed, from flexibility and adaptability, to emergent resuscitation techniques. More-so, emergency personnel are particularly useful in handling such situations as we are trained to work in a team with high volume and high acuity cases. These drills are vital to continued preparation for the mass casualties that will inevitably come through our doors.

Contributors

Michael Del Valle, MD is a PGY-2 from Florida with interests in wilderness medicine, international health, and healthcare policy.

Shilpa Kolli, MD is a PGY-1 from Stamford, Connecticut, with interests in toxicology and critical care.

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Maha Salama, MD is a PGY-4 from the Bronx, New York with interests in critical care, advanced resuscitation and wilderness medicine.
Until Help Arrives: Has the Horse Left the Barn or Is This a Better Option?

In October 2016, The American College of Surgeons publicly introduced to the public a bleeding control course. Since then, over one million individuals have been trained in the Stop the Bleed program. These programs have focused on the individuals on scene as immediate responders… Until Help Arrives. Classically, the focus was on first responders in emergent situations. After the shootings at Sandy Hook Elementary, it was recognized that victims were dying from hemorrhagic shock before first responders could reach them. This information led to the Hartford Consensus, in which ACEP participated and the development of the Stop the Bleed program. Much like the American Heart Association who advocates for bystander response with CPR education courses, the goal was to bring training to the masses. While the driver was violent incidents, we recognize that morbidity and mortality from hemorrhage occurs in many settings including the home in otherwise benign activities. Many of us in Emergency Medicine have taken the course and become official instructors and the program set a broad range of individuals with medical training who could apply to be instructors after taking the course. Additionally, they allow students in healthcare training who have taken the course to become associate instructors.

Recently, ACEP has promoted the Until Help Arrives program. This program has similar training to Stop the Bleed but goes beyond and adds in compression only CPR. The program is derived from the government sponsored “You’re the help until help arrives” program but focuses on care of the injured person. Like Stop the Bleed it allows for a wide range of healthcare staff to become instructors including physicians, nurses, EMS and advance practice providers (and students in these disciplines).

Both programs focus on bleeding control with wound packing, direct pressure, hemostatic agents and tourniquet application. Additionally, scene safety, activation of the 911 system and identification of injury are central to the training. Both programs have recommended equipment and kits available for training classes. Each provide information for instructors to give to attendees and have premade lecture material. There is also a push to expand access and availability of bleeding control kits to individual citizens and in public locations, much like the AED program. Texas has even mandated these kits be available on every school campus.

The Until Help Arrives program is coming into play after Stop the Bleed but this is a situation where last isn’t least. With the American Heart Association training people and promoting compression only CPR since 2012, the Until Help Arrives program is not only expanding public awareness and training in bleeding control but providing course participants with the added training to assist in other emergencies.

The goal of both programs is simply to prevent preventable death. This is important for local and national emergency preparedness. Regardless of the program or when it was implemented, the emergency medicine community should be supporting each other to become instructors and train as many individuals in the public as possible creating an immediate responder safety net. Like vaccination and herd immunity, when enough members of the public are trained, care for the acutely injured will improve… Until Help Arrives.

For more information:
http://www.acep.org/education/until-help-arrives/
https://www.stopthebleed.org
Statewide Retention of New York State Emergency Medicine Residency Graduates: A Descriptive Analysis

Introduction

Emergency medicine (EM) residency programs not only train new doctors to become emergency specialists, but also serve as a conduit to recruit new faculty members for that department and local region upon residency graduation. Survey data from 1995 demonstrated that 43% of graduating EM residents chose to practice in the city or metropolitan area where they trained and, of those who stayed, 46% had no ties to the area prior to training. Hence, residency programs can be vital to attract and retain new and highly qualified physicians to practice in a particular location. Nationwide, residency-trained board-eligible emergency physicians remain in high demand. A 2005 review noted that nearly all states (49/50) lacked sufficient numbers of board-certified emergency physicians to fully staff their emergency departments. Retaining these well-trained doctors is, therefore, an important consideration for academic emergency departments.

The state of New York trains a large number of residents annually, with 29 EM residency programs accounting for 14% of the total EM residency spots filled by the National Resident Matching Program (NRMP) in 2019. Given the breadth and diversity of programs, New York should ostensibly be positioned to successfully retain graduates. A survey sent to all ACGME-accredited EM residencies in 1995 found that New York successfully retained 63% of its own graduates in-state. We seek to update this data in our article.

Objective

Our primary objective was to determine how often a graduate from a New York state emergency medicine residency chooses to stay in New York state for their immediate post-graduation employment. Secondary objectives were to determine if there were variations in annual retention of residents through the last seven years and variations in retention through different regions of New York State.

Background

A literature search was conducted using MEDLINE, Embase, Scopus, Google Scholar and Web of Science with the search terms “graduating resident retention location”, “emergency medicine resident retention by state”, “emergency medicine resident retention”, and “emergency medicine first practice location” published during any date. There exists some literature discussing residents in primary care specialties but only two articles. In addition to the ones mentioned above, articles were found that discussed emergency medicine residents, one from 1983 stating “almost half” of the emergency medicine residency graduates were employed in the same state that they trained in and one from 2004 about retention of emergency medicine residency graduates in the South-west inter-region of France (81% of residents would remain in the region). There was no information regarding retention of emergency medicine residents in any individual American state, except for the 1995 article.

Methods

We conducted a retrospective study using data collected from a resident database updated annually by the New York Chapter of the American College of Emergency Physicians (New ACEP). The database was created and updated through the use of queries sent to affiliated residencies about graduation information for the years 2013-2019. Programs were asked a single question about each graduate: did he or she choose to work in New York State after completing residency?

Results

Of the 2,005 graduates from that time period, data was obtained for 1,472 graduates, a 73.4% response rate. Programs that responded were split into three groups based on program location - Upstate New York, New York City and Long Island. Below is a list of residencies for which at least partial data was obtained for the years 2013-2019, split by region.

Discussion

In our study, we found that New York State has seen a decrease in the retention of its own emergency medicine residents, from 63% in 1995 to 48% during the past seven years, with
Table 1: Data on graduating residents and whether they stayed or left New York State after graduation with respective percentage.

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<th>Upstate</th>
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<th>Long Island</th>
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<td>472 (49.2%)</td>
<td>90 (45.7%)</td>
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<tr>
<td>Left NY (%)</td>
<td>170 (53.8%)</td>
<td>399 (50.8%)</td>
<td>88 (45.7%)</td>
<td>618 (51.9%)</td>
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Figure 1: Percentage of graduates who stayed in New York State by year

Figure 2: Percentage of graduates who stayed in New York State by year and location

the highest retention rate seen in the New York City region.

There are many possible factors that can explain this lack of retention of EM residents in New York. First, New York State is one of the lowest paying regions of the United States for EM physicians. In fact, New York City is 2019’s lowest paying area in the country for emergency physicians, continued on page 17
States.9 Second, New York is a highly litigious state, burdening physicians with high malpractice payouts and premiums, increasing medical liability rates10, and lack of tort reform.11 New York’s practice environment is also subject to frequent shifts. Issues, such as emergency medicine positions in other states are viewed as more desirable than New York positions.12

Our study cannot find an exact reason for this decline in emergency medicine retention in part because of several limitations. It is a retrospective analysis of a database without a complete response rate. We did not take into account possible confounders, such as prior resident ties to New York, preference of an academic versus community practice environment and fellowship training. Future aims of our database analysis will seek to incorporate these additional factors. We also hope that our work encourages other states to perform their own analysis to see if their retention rates are similar.

Conclusion
New York State has seen a decrease in its retention of emergency medicine residency graduates. Although the reasons are not yet clear, this highlights an important trend with regards to recruitment and highlights the need for further attention to increase attraction and retention of talent in the region.

Acknowledgements
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References
Social media has dramatically changed the landscape of academic medicine. As a result, the traditional standards academic institutions once used to judge criteria for promotion and academic appointments has also changed, and continues to change, at a relatively quick pace - medically speaking of course.

Medical knowledge is growing at an ever increasing rate. Prior studies have estimated that the doubling time of medical knowledge in 1950 was 50 years; in 1980, 7 years; and in 2010, 3.5 years. It is projected that in 2020, the doubling time for medical knowledge will be just 73 days. On the other hand, the time for medical textbooks to be edited and published averages two to three years, if not longer. Publishing in a journal does not fare much better, and can take up to several months to years. At such a rate, the information we urge our residents to consume from textbooks and journals are, for lack of a better word, outdated. An important goal for all of us in academic medicine is to improve healthcare by imparting and disseminating valuable, new medical knowledge. Social media provides us with a tool to relatively quickly create, curate and exchange knowledge in multiple different formats, including text, video, podcasts, images and forums.

Numerous clinicians have embraced this new technology as a way to create an online presence and hone in on an academic niche. Such clinicians have been able to not only distribute knowledge to a wide audience, but also to build strong communities of practice with other like-minded clinicians, promote discussion and advance research. Time honored practices of clinical or basic research, bedside teaching and direct patient care have been, in more recent decades, augmented by quality improvement, informatics and innovation to redefine and broaden the scope of scholarly work. Building an online social media portfolio has more recently been added to this realm. As a result, a number of academic promotion and tenure committees in the United States have started to adapt and modify their appraisal systems in response to this change.

Many of us are familiar with the old adage of “publish or perish”. Traditional focus on basic and clinical research, characterized by obtaining grants and ultimately distributing that work in peer-reviewed publications remains the standard by which most promotions committees view the worthiness of a clinicians’ body of work. More recently, academic clinicians have been able to include educational research activities as an equally meritorious means to be considered for promotion. However, given the nebulous nature of social media, many within these academic institutions have raised the valid question of how to judge the academic merit, quality and overall value of digital scholarly work for academic promotion. Recently, a framework for how social media scholarship can be considered by promotions committees has been published.

Central to this new framework is the understanding and acceptance of *altmetrics* as a method to measure the dissemination and impact of social media, or “alternative academic products”. Included in this definition is the acceptance that social media may include varied products, such as digital publishing of articles from print versions, online-only peer-reviewed publications, instructional videos, blogs, podcasts, amongst other formats. Interestingly, one of the advantages of the instantaneous nature of social media is that it allows for more immediate information about the distribution, dissemination and impact of the content posted. Many platforms are currently being created to aid with the objective identifiers used by traditional publications to measure impact factors and other such surrogate markers.

One of the greatest challenges and limitations identified by promotions committees has been in assessing the quality of scholarly work due to the heterogeneity of social media content currently available. Acknowledging the lack of a consensus on criteria for social media based scholarship in health professions education, in 2014, the International Conference on Residency Education defined four key features for social media based scholarship. Included in this criteria is that social media based scholarship must (1) be original; (2) advance the field of medical education by building on theory, research or best practice; (3) be archived and disseminated; and (4) be open to allowing for open feedback in a transparent environment.

Clinical educators must first start by creating a social media portfolio to present to their promotions committee when seeking academic advancement. Included in this portfolio should be a clearly demonstrated academic niche, quality product and a measure of the impact of that product. In a recent article by Chan, et al., simple guidelines are provided for how clinicians may utilize their social media presence to amplify their career. The authors support best practices in establishing a social media presence which include being authentic, ensuring that posted content abides by institution-specific social media policy and being careful to safeguard one’s online presence.

Social media is a powerful tool to disseminate information to the masses at a lightning fast speed previously unimaginable, particularly in academic medicine. Engaging in social media can aid one advance their career by finding mentors, raising awareness, making others know who one is and by contributing to scholarly collaboration. However, it is also important to be aware of the various pitfalls and problems that come with any new technology. Promotions committees are beginning to realize the potential impact of social media, but doing so requires a paradigm shift that may require some time to be fully embraced. New national guidelines and local institutional frameworks are starting to emerge to accommodate institutions in recognizing the validity and scope of scholarly work in this new modern age, but there is still quite a ways to go. Stay tuned!

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Call for Board and Councillor Nominations

Councillor Nominations
Active members of New York ACEP interested in serving as a New York ACEP Councillor are encouraged to submit their nominations to the 2020 Nominating Committee for consideration as the committee develops the slate of candidates.

Councillors with Terms Ending in 2020
Nicole Berwald, MD FACEP
Robert M. Bramante, MD RDMS FACEP
Jeremy T. Cushman, MD FACEP
Mathew Foley, MD FACEP
Abbas Husain, MD FACEP
Stuart G. Kessler, MD FACEP
Angelo Mascia, DO (Resident)
Laura D. Melville, MD

Joshua B. Moskovitz, MD MBA MPH FACEP
Nestor B. Nestor, MD FACEP
Jeffrey S. Rabrich, DO FACEP FAEMS
Christopher C. Raio, MD MBA FACEP
Virgil W. Smaltz, MD MPA FACEP
Jessica Thomas, MD (Resident)
Peter Viccellio, MD FACEP
Joseph A. Zito, MD MHA FACEP

Councillors With Terms Ending in 2021
Brahim Ardolic, MD FACEP
Joseph Basile, MD MBA FACEP
Sanjey Gupta, MD FACEP
Marc P. Kanter, MD FACEP
Penelope C. Lema, MD FACEP
Robert F. McCormack, MD FACEP
William F. Paolo, Jr., MD FACEP

Jennifer L. Pugh, MD MBA FACEP
Louise A. Prince, MD FACEP
James G. Ryan, MD FACEP
Gary S. Rudolph, MD FACEP
Livia M. Santiago-Rosado, MD FACEP
L. Carlos Zapata, MD FACEP

The Board of Directors will elect Councillors at the Thursday, July 9, 2020 Board meeting at the Sagamore Resort. Members interested in representing New York ACEP at the ACEP Annual Council Meeting (October 24-25, 2020 in Dallas, TX) should submit a nomination form and their CV to New York ACEP. New York ACEP will be represented by 30 Councillors at the 2020 ACEP Council meeting.

Board Nominations
Active members of New York ACEP who meet the criteria and are interested in serving on the Board of Directors are encouraged to submit their nominations to the 2020 Nominating Committee for considerations as the Committee develops the slate of candidates.

Four directors will be elected by the membership through a proxy ballot distributed at least 30 days prior to the annual membership meeting. The annual membership meeting will be held Wednesday, July 8, 2020 at the Sagamore Resort on Lake George.

Board Members with Terms Ending in 2019
Open Board Position
Michael W. Dailey, MD FACEP
Sanjey Gupta, MD FACEP

Abbas Husain, MD FACEP
Livia M. Santiago-Rosado, MD FACEP

Interested candidates should review the Criteria for New York ACEP Board Nomination, Board Member Duties and Responsibilities and send a completed nomination form along with a copy of their CV to New York ACEP by April 1, 2020. Self nomination and nominations of colleagues are accepted. To request the policies and nomination form, contact New York ACEP at (585) 872-2417 or by email at nyacep@nyacep.org.

Successful nominees will be notified by May 11, 2020. Board candidates are required to submit background information on their professional career, a photograph and answer questions posed to all board candidates. Candidates will have approximately two weeks to submit material.

Nomination Deadline: April 1, 2020


BACKGROUND: Telemedicine is being rapidly adopted by traditional health care systems. We have used teledicine in a program we call Express Care to allow a single physician to remotely perform evaluations of low-acuity patients.

MATERIALS AND METHODS: We conducted a retrospective cohort study of quality assurance data comparing low-acuity patients treated by an emergency department (ED) physician through teledicine (Express Care) with those treated by an ED physician in person between July 16, 2016 and September 30, 2017. We compared patient demographics, length of stay (LOS), visit severity as measured by emergency severity index (ESI), visit diagnosis type, return visits, and patient satisfaction scores.

RESULTS: There were 3,266 low-acuity patients seen through teledicine and 21,129 seen in person during the observation period. Patients receiving evaluation by teledicine were younger (mean age ± standard deviation [in years]: 42 ± 18 vs. 45 ± 17; p < 0.001) and more likely to be male (51% vs. 46%; p < 0.001). Median ESI was slightly lower for patients treated by teledicine [4 (4-5) vs. 4 (4-4); p < 0.001], and there were modest differences in diagnosis type between the two groups. Median ED LOS was 63.6 (interquartile range [IQR] 42.6-93.6) min for teledicine patients and 133.8 (IQR 90.6-196.8) min for patients seen in person (p < 0.001). Seventy-two hour returns (3.4% vs. 3.0%; p = 0.302) and 72-h returns requiring admission (0.2% vs. 0.3%; p = 0.252) were similar between groups. Patient satisfaction scores were also similar between the groups.

CONCLUSION: Teledicine evaluation for ED patients can be effective and safe when treating low-acuity conditions without compromising patient satisfaction.

Implementation of a Pediatric Emergency Teledicine Program.


OBJECTIVES: Our goal was to describe the experiences after the launch of a pediatric emergency teledicine program at a large, urban, academic medical center.

METHODS: We launched 3 unique pediatric emergency teledicine programs at an urban, academic medical center: direct-to-consumer pediatrics, virtual urgent care, pediatrics emergency department (PED) teledicine follow-up, and teledicine medical screening examination in the PED.

RESULTS: We evaluated 84 patients via direct-to-consumer pediatrics, virtual urgent care with the most common chief complaint related to fever, dermatologic, or respiratory systems; we referred 12% to the PED, and 20% of those required hospital admission. We evaluated 38 patients via PED teledicine follow-up; we referred 19% back to the PED, and 43% of those required hospital admission. Median duration for a teledicine encounter was 10 minutes. We screened 3809 patients in the PED using teledicine medical screening examination.

CONCLUSIONS: We offer a description of an innovative and comprehensive new pediatric emergency teledicine program implemented at a large, urban, academic medical center. Our initial findings demonstrate short visit times, antibiotic stewardship, and low rates of PED referral and subsequent admission for patients who use a teledicine service. We plan to further examine the impact of pediatric emergency teledicine on the care of children as our program expands.

The Los Angeles Motor Scale as a Predictor of Angiographically Determined Large Vessel Occlusion.

Brandler ES, Thode H, Fiorella D; State University of New York at Stony Brook, Stony Brook; Intern Emerg Med; 2020 Jan 11.

Recent advances in time-sensitive mechanical thrombectomy for the treatment of emergent large vessel occlusion (ELVO) have changed the role of prehospital providers from simply identifying a stroke to identifying the likely presence of ELVO. No one method for identifying ELVO in the field has been demonstrated to be superior. We sought to describe how this might be best accomplished using the Los Angeles Motor Scale (LAMS) in concert with other physical exam findings by paramedics and emergency medical technicians (EMTs). We had paramedics and EMTs examine patients with suspected stroke in the hospital. We compared their exams to the standard neurologist exams and to the results of angiography. We performed multiple analyses to identify the exam elements that would best identify large vessel occlusions. Using LAMS with a threshold score of 4, sensitivity for stroke and ELVO, respectively, was 27% (95% CI 20-36%) and 42% (95% CI 30-55%). When a LAMS of 3 was used in concert with speech abnormality, sensitivity improved to 36% (95% CI 28-45%) and 61% (95% CI 48-73%). Specificity of this model was 70%, (95% CI 64-75%). Most striking was the negative predictive value of this model for ELVO: 90% (95% CI 85-93%). The LAMS or LAMS plus speech can be used to decrease the number of missed large vessel occlusions and to route suspected large vessel occlusions to thrombectomy-capable centers. Other, more complicated scales may have little additional benefit. This derivation data set is the first to use paramedics and EMTs as examiners prospectively and supports prehospital protocol change underway in New York City.

Do Patients Die With or From Metformin-associated Lactic Acidosis (MALA)? Systematic Review and Meta-analysis of pH and Lactate as Predictors of Mortality in MALA.

OBJECTIVES: Metformin-associated lactic acidosis (MALA) may occur after acute metformin overdose, or from therapeutic use in patients with renal compromise. The mortality is high, historically 50% and more recently 25%. In many disease states, lactate concentration is strongly associated with mortality. The aim of this systematic review and meta-analysis is to investigate the utility of pH and lactate concentration in predicting mortality in patients with MALA.

METHODS: We searched PubMed, EMBASE, and Web of Science from their inception to April 2019 for case reports, case series, prospective, and retrospective studies investigating mortality in patients with MALA. Cases and studies were reviewed by all authors and included if they reported data on pH, lactate, and outcome. Where necessary, authors of studies were contacted for patient-level data. Receiver operating characteristic (ROC) curves were generated for pH and lactate for predicting mortality in patients with MALA.

RESULTS: Forty-four studies were included encompassing 170 cases of MALA with median age of 68.5 years old. Median pH and lactate were 7.02 mmol/L and 14.45 mmol/L, respectively. Overall mortality was 36.2% (95% CI 29.6-43.94). Neither lactate nor pH for mortality in MALA. The area under the ROC curve for lactate and pH were 0.59 (0.51-0.68) and 0.43 (0.34-0.52), respectively.

CONCLUSION: Patients that were empirically transfused had similar presentations to patients meeting restrictive guidelines, based on review of triage data. Transfusions above restrictive thresholds occurred frequently in our population. Additional studies are required to clarify appropriate criteria to guide transfusions for GIB in the ED.

Squamous Epithelial Cell Presence Reduces Accuracy of Urinalysis for Prediction of Positive Urine Cultures.


BACKGROUND: Diagnostic value of urinalysis specimens contaminated with squamous epithelial cells (SEC) from the genital surfaces is assumed to be limited compared to clean-catch samples. However, no studies have quantified the change in predictive value in the presence of SECs for individual urinalysis markers.

METHODS: In a retrospective, single center cohort study, we analyzed all urine cultures sent from the ED over a 26-month period with corresponding urinalysis results. Cultures were classified as positive with growth of >104 colony forming units of pathogenic bacteria, negative if no growth, or contaminated for all other results. UA specimens were classified as contaminated or clean based on SEC presence. Accuracy of urinalysis markers for prediction of positive cultures was calculated as an area under the curve (AUC) and was compared between contaminated and clean UA specimens.

RESULTS: 6490 paired UA and urine cultures were analyzed, consisting of 3949 clean and 2541 contaminated samples. SEC presence was less common with male gender, older age, and smaller BMI. Urine cultures were 19.2% positive overall, and SECs were more common in contaminated cultures. AUCs for individual markers ranged from 0.557 to 0.796, with pyuria, bacteriuria, and...
leukocyte esterase having higher AUC in clean samples over contaminated.

**CONCLUSION:** Analysis of AUC for individual urinalysis markers showed reduced diagnostic accuracy in the presence of SECs. SEC presence also reflected much higher rates of contaminated cultures. These results support the reduced reliance on contaminated UA specimens for ruling in UTI in ED patients.

**Improving the Geographical Precision of Rural Chronic Disease Surveillance by Using Emergency Claims Data: A Cross-sectional Comparison of Survey Versus Claims Data in Sullivan County, New York.


**OBJECTIVES:** Some of the most pressing health problems are found in rural America. However, the surveillance needed to track and prevent disease in these regions is lacking. Our objective was to perform a comprehensive health survey of a single rural county to assess the validity of using emergency claims data to estimate rural disease prevalence at a sub-county level.

**DESIGN:** We performed a cross-sectional study of chronic disease prevalence estimates using emergency department (ED) claims data versus mailed health surveys designed to capture a substantial proportion of residents in New York’s rural Sullivan County.

**SETTING:** Sullivan County, a rural county ranked second-to-last for health outcomes in New York State.

**PARTICIPANTS:** Adult residents of Sullivan County aged 25 years and older who responded to the health survey in 2017-2018 or had at least one ED visit in 2011-2015.

**OUTCOME MEASURES:** We compared age and gender-adjusted prevalence of hypertension, hyperlipidaemia, diabetes, cancer, asthma and chronic obstructive pulmonary disease/ emphysema among nine sub-county areas.

**RESULTS:** Our county-wide mailed survey obtained 6,675 completed responses for a response rate of 30.4%. This sample represented more than 12% of the estimated 53,020 adults in Sullivan County. Using emergency claims data, we identified 34,576 adults from Sullivan County who visited an ED at least once during 2011-2015. At a sub-county level, prevalence estimates from mailed surveys and emergency claims data correlated especially well for diabetes (r=0.90) and asthma (r=0.85). Other conditions were not well correlated (range: 0.23-0.46). Using emergency claims data, we created more more geographically detailed maps of disease prevalence using geocoded addresses.

**CONCLUSIONS:** For select conditions, emergency claims data may be useful for tracking disease prevalence in rural areas and providing more geographically detailed estimates. For rural regions lacking robust health surveillance, emergency claims data can inform how to geographically target efforts to prevent chronic disease.

**Incidence of Clostridium Difficile Infection After Sepsis Protocol Antibiotics.**

LaFave J, Levy D, Gekle R, Bramante R; Good Samaritan Hospital Medical Center, West Islip; West J Emerg Med; 2019 Oct;24(20):977-981.

**INTRODUCTION:** The management of sepsis includes the prompt administration of intravenous antibiotics. There is concern that sepsis treatment protocols may be inaccurate in identifying true sepsis and exposing patients to potentially harmful antibiotics, sometimes unnecessarily. This study was designed to investigate those concerns by focusing on in-hospital Clostridium difficile infection (CDI), which is a known complication of exposure to antibiotics.

**METHODS:** Our emergency department (ED) recently implemented a protocol to help combat sepsis and increase compliance with the 2017 Sepsis CMS Core Measures (SEP-1) guidelines. In this single-center, retrospective cohort analysis we queried the electronic health record to gather data on nosocomial CDI and antibiotics prescribed over a five-year period to analyze the effect of the introduction of a sepsis protocol order set. The primary goal of this study was to measure the hospital-wide CDI rate for three years prior to implementation of the sepsis bundle, and then compare this to the hospital-wide CDI rate two years post-implementation. As a secondary outcome, we compared the number of antibiotics prescribed in the ED 12 months prior to administration of the sepsis protocol vs 12 months post-initiation.

**RESULTS:** Over the course of five years, the hospital averaged 9.4 nosocomial CDIs per 10,000 patient hours. Prior to implementation of the sepsis bundle, the average CDI rate was 11.6 (±1.11, 95%) and after implementation the average rate dropped to 6.2 (±1.27, 95%, p<0.01). The mean number of antibiotics ordered per patient visit was 0.33 (±0.015, 95%) prior to bundle activation, and, following sepsis bundle activation, the rate was 0.38 (±0.019, 95%, p<0.01). This accounted for 38% of all ED patient visits receiving antibiotics, a 5% increase after the sepsis bundle was introduced.

**CONCLUSION:** In this study, we found that CDI infections declined after implementation of a sepsis bundle. There was, however an increase in the number of patients being exposed to antibiotics after this hospital policy change. There are more risks than just CDI with antibiotic exposure, and these were not measured in this study. Subsequent studies should focus on the ongoing effects of timed, protocolized care and the associated risks.

**An Academic Relative Value Unit System: Do Transparency, Consensus, and Accountability Work?**

Carmony KA; New York University School of Medicine, New York; West J Emerg Med; 2019 Oct 14;20:939-947.

**INTRODUCTION:** Academic medicine continues to struggle in its efforts to compensate scholarly productivity. Academic achievements receive less recognition compared to clinical work, evidenced by a lack of reduced clinical hours or financial incentive. Core departmental education responsibilities are often distributed inequitably across academic departments. An approach using an incentive program, which emphasizes transparency, equity, and consensus may help academic departments share core education responsibilities and reward scholarly activity.

**METHODS:** We launched a two-stage approach to confront the inequitable distribution of educational responsibilities and to recognize the scholarly work among our faculty. In the first stage, baseline education expectations were implemented for all faculty members, which included accountability procedures tied to a financial incentive. The second stage involved the creation of an Academic relative value unit (ARVU) system which contained additional activities that were derived and weighted based on stakeholder consensus. The points earned in the ARVU system were applied towards additional financial incentive at academic year-end. We compared education...
RESULTS: In the first year of implementing education expectations, 87% of faculty fulfilled requirements. Those with a heavier clinical load made up the majority of deficient faculty. Those who did not meet education expectations were notified and had their year-end incentive reduced to reflect this. Faculty conference attendance increased by 21% (P<.001) and the number of resident assessments completed increased by 30% (P<.001) compared to the previous year. To date, faculty across the department have logged a total of 1,240 academic activities in the database, which will be converted into financial bonus amounts at year-end.

CONCLUSION: We have seen significant increases in faculty participation in educational activities and learner assessments as well as documentation of activities in the ARVU system. A similar system using specialty-specific activities may be generalizable and employed at other institutions.

**Risk Stratification of Older Adults Who Present to the Emergency Department With Syncope: The FAINT Score.**


**STUDY OBJECTIVE:** Older adults with syncope are commonly treated in the emergency department (ED). We seek to derive a novel risk-stratification tool to predict 30-day serious cardiac outcomes.

**METHODS:** We performed a prospective, observational study of older adults (≥60 years) with unexplained syncope or near syncope who presented to 11 EDs in the United States. Patients with a serious diagnosis identified in the ED were excluded. We collected clinical and laboratory data on all patients. Our primary outcome was 30-day all-cause mortality or serious cardiac outcome.

**RESULTS:** We enrolled 3,177 older adults with unexplained syncope or near syncope between April 2013 and September 2016. Mean age was 73 years (SD 9.0 years). The incidence of the primary outcome was 5.7% (95% confidence interval [CI] 4.9% to 6.5%). Using Bayesian logistic regression, we derived the FAINT score: history of heart failure, history of cardiac arrhythmia, initial abnormal ECG result, elevated pro B-type natriuretic peptide, and elevated high-sensitivity troponin T. A FAINT score of 0 versus greater than or equal to 1 had sensitivity of 96.7% (95% CI 92.9% to 98.8%) and specificity 22.2% (95% CI 20.7% to 23.8%), respectively. The FAINT score tended to be more accurate than unstructured physician judgment: area under the curve 0.704 (95% CI 0.669 to 0.739) versus 0.630 (95% CI 0.589 to 0.670).

**CONCLUSION:** Among older adults with syncope or near syncope of potential cardiac cause, a FAINT score of zero had a reasonably high sensitivity for excluding death and serious cardiac outcomes at 30 days. If externally validated, this tool could improve resource use for this common condition.
Pediatric Metabolic Emergencies

Imagine

You walk to your shift on a busy Saturday night, the next patient to pick up on the board is a 4 day-old infant with a chief complaint “fussy”. Could be anything . . .

You go into the room to find a four day-old boy born at term with no complications, his parents say that he has just been crying nonstop for the past four or five hours, refusing to feed, and began vomiting. You quickly note a lethargic appearing neonate with a sunken fontanelle, dry membranes, motting of the extremities and delayed capillary refill. Though he is afebrile, you immediately begin treatment for neonatal sepsis but wonder if there are other things you should be thinking about.

While it is appropriate to assume that any newborn patient who looks at you funny is septic until proven otherwise, the differential for the crashing unit is quite broad, we commonly consider congenital cardiac abnormalities, toxicologic complications and non-accidental trauma, but it is also important to consider inborn errors of metabolism (IEM). With the advent of routine newborn screening, most IEM are diagnosed before the child reaches the emergency room in the state of metabolic decompensation. However, some children may present before the newborn screen results are known potentially or have missed screening.

A host of different conditions fall under the umbrella of IEM; many of these will present with insidious symptoms and are less relevant to the emergency clinician. Disorders of carbohydrate and fatty acid metabolism, organic acidemias and urea cycle defects may all present with metabolic crises requiring emergent intervention to avoid morbidity and mortality. While any single individual disorder is rare, considered collectively however, IEM may occur in as many as 1 of 800 live births.

Most children with diagnosed IEM will attend specialty centers where metabolic experts are available to guide treatment of their condition, but some may present to your emergency department either out of convenience or need for expedient care in the face of critical illness. Having a functional knowledge of the concepts involved in recognizing and managing the resuscitation of these conditions will allow you to provide optimal care when one of these patients shows up on your doorstep at 2 AM on a Sunday morning.

Diagnosis

The critical step in making a diagnosis of an IEM is suspicion, says metabolic disease expert Dr. Kimihiko Oishi, MD assistant professor of pediatrics and genetics and genomic sciences at Mount Sinai Hospital. If the diagnosis is not on your radar it will be impossible to recognize.

Signs and symptoms of IEM are nonspecific. According to Dr. Oishi, vomiting, lethargy and poor feeding are the most common presentations. However, a provider may reasonably attribute these findings to more common conditions if not keen to the possibility of IEM. Most children will have had an apparently uncomplicated parturition and transition to extraterine life, as the maternal circulation is able to provide necessary metabolic substrates and process the fetal toxic metabolites. The disease processes will generally not declare themselves until the child begins feeding, so a normal birth history should not be reassuring.

Recognizing suspicious lab abnormalities is also critical to making the diagnosis. Typical studies obtained in the evaluation of neonatal sepsis including a venous blood gas, basic chemistry panel, and liver function tests may reveal characteristic abnormalities including a high anion-gap metabolic acidosis, elevated lactate or hypoglycemia. However, urea cycle defects leading to hyperammonemia may not be recognized on these studies, so a low threshold for obtaining a serum ammonia level should also be had.

Multiple types of metabolic stressors may precipitate decompensation of an IEM. This may be as simple as initiation of normal feeding for those with severe defects. Glycogen stores disorders may become apparent only as the child begins going for longer periods between feeds, characteristically as they begin sleeping longer periods at night. Additional dietary changes - particularly an increase in protein intake such as introduction to meat products - may precipitate decompensation in children with urea cycle defects.

Some children with mild cases may tolerate normal feeding well, but become profoundly affected during intercurrent viral illnesses. Respiratory and gastrointestinal diseases can both unmask typically well compensated IEM; children may present with severe lethargy or acidosis out of proportion to the degree of their illness. A history of requiring recurrent hospitalizations for relatively benign illnesses may prompt you to consider an IEM.

Some patients with milder disease may not present until later in life. Consider this case: a young adult suffers a trauma and undergoes surgery. Following the operation the patient is started on a high protein diet but then becomes comatose. The patient’s spouse recalls that a relative died under similar circumstances and suggests checking an ammonia level. It is markedly elevated and appropriate therapy is provided. The patient recovers. This, says Dr. Oishi, is an example of a patient with a relatively mild urea cycle defect who had compensated well throughout life in part due to an aversion to protein. However, after multiple physiologic stressors and increased protein load the patient developed dangerous hyperammonemia.

Confirmation and identification of an exact IEM is not likely to be possible in the emergency department. However collecting and setting aside extra blood and urine for analysis of particular metabolites may facilitate making the diagnosis down the road. It is important to obtain samples prior to or as soon as possible after the initiation of treatment; once therapy is begun, levels of diagnostic metabolites or byproducts should fall. Obtaining as much blood as possible in EDTA (lavender top) and heparin (green top) tubes is useful. Send these along with a pre-treatment urine sample to the lab to freeze for further analysis.
Management

Morbidity associated with IEM occurs secondary to either inadequate energy supply to cells, accumulation of toxic metabolites, or both. Physiologic stressors put the patient into a catabolic state. The initial stabilization of any patient with known or suspected IEM focuses on stopping catabolism, general supportive care and treatment of the underlying physiologic insult.

Stopping catabolism can be done by the provision of glucose such that gluconeogenesis and protein catabolism are halted and cells are provided with adequate metabolic substrates. In the patient who is euaglycemic, this can be accomplished by initiating maintenance fluids containing D10 at about 1.5 times maintenance rate says Dr. Oishi.

If the patient is hypoglycemic, then treatment with a bolus dose of dextrose is indicated. For pediatric patients, recall the rule of 50: the dose of the dextrose continue solution - in milliliters per kilogram - multiplied by the D number should equal 50. For example 10 mL/kg of D5, 5 mL/kg of D10, 2 mL/kg of D25, and 1 mL/Kg of D50. In general, consider D10 for infants and young children and D25 for older children.

Early involvement of a metabolic disease specialist is critical to optimal care for these patients. Children with an established diagnosis of an IEM generally carry with them a treatment letter from their metabolic specialist. These will contain detailed instructions for the emergency management of the child’s specific condition, such as information on how to contact their team 24 hours a day. If you suspect a new diagnosis of IEM then begin supportive therapy with dextrose, address any known or suspected the physiologic stressors such as dehydration or sepsis and contact the closest center with a metabolic disease expert.

There are a few specific therapies for IEM that will be initiated in the emergency department, with the exception of patients with urea cycle defects. Treatment with sodium phenylacetate-sodium benzoate (Ammunol) may lower ammonia levels. Dialysis is also effective at reducing ammonia load and should be considered in patients whose levels are rapidly rising or fail to respond to medical therapy.

Ammonia sampling is notoriously sensitive to technique, and falsely elevated levels may occur. Samples should be drawn through a free flowing IV line or via arterial puncture. They must be handled with care, as agitation or any heating that may result will raise the level. Adequate laboratory technique such as spinning the sample in an unchilled centrifuge may lead to false positives.

The Child with an Abnormal Newborn Screen

Newborn screening is mandatory in New York State. Results, if abnormal, are reported to pediatric practices, and if significantly abnormal, are reported directly to regional metabolic specialty centers. Familiarity with your regional center will assist you in caring for any child of the potential or diagnosed IEM. A list of regional centers can be found here.

Abnormal newborn screens may be handled in two ways. Findings that are less concerning will typically be referred to pediatricians with a recommendation to repeat the newborn screen. However, concerning abnormalities are typically referred to both the primary pediatrician and metabolic center once available. In potentially severe cases the metabolic specialists may reach out to patients’ families directly to have them come in for urgent or immediate evaluation and or treatment. These patients may sometimes end up in a local emergency department rather than the clinic or at the appropriate referral center.

If you are evaluating a patient with a chief complaint of having an abnormal newborn screen, and their initial history and physical is otherwise non-concerning, then calling the appropriate regional metabolic specialist to ask if they know of the patient or if they were trying to reach out to them is a reasonable first step. In general, these practices will have access to the New York State database, and so can identify the abnormality if discovered and make recommendations as to the appropriate next steps and treatment.

Summary

1) A high index of suspicion is key to making the diagnosis of an inborn error of metabolism. Keep it in mind in any ill-appearing neonate and have a low threshold to add on an ammonia level when working them up.

2) Early consultation with a metabolic disease specialist is critical for cases of known or suspected IEM. Familiarize yourself with your local or regional specialists. They may also help you when patients present due.

3) In cases of known or suspected IEM with metabolic decompensation, stop catabolism by administering dextrose containing maintenance fluids - D10 at 1.5 times maintenance.

Academic Promotion in the Age of Social Media

- continued from page 18

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- **Oneida** - Mohawk CF (Cooperstown, breweries)
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- **Seneca** - Five Points CF (heart of wine country)
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Thromboelastography (TEG) and the Bleeding Patient in the Emergency Department

Introduction

As a PGY-2 resident in my resus year, I have run into numerous situations where the unstable patient in front of me is bleeding, clotting or both, and the limitations of the International Normalized Ratio (INR) and other conventional coagulation tests became clear. Do I give pRBCs, FFP or platelets? Do I correct an elevated INR if the patient is not on anticoagulation? I have become intrigued by TEG as a way to further tailor resuscitative efforts to each patient’s coagulation status instead of relying on tests that only show one part of the coagulation process. This is especially relevant in some situations in the emergency department: traumas, cirrhotic GI bleeders and septic or obstetric DICers. For many of these patients, their blood pressure and volume status is quite delicate, and giving massive amounts of blood products can worsen the clinical picture.

What is TEG?

Thromboelastography (TEG) is a tool that measures clot formation, stability and lysis. First described in 1948, TEG became more widely used in the areas of cardiac surgery and liver transplant in the 1990s. Since the 2000s, increased interest in TEG began in the area of trauma-induced coagulopathy, which has led to further interest in other areas of the hospital including the emergency department and ICU, where there has been recent research into the applicability of TEG to guide resuscitation of medical and obstetric patients with massive bleeding.

Simply, TEG works by spinning a sample of whole blood in a cup and measuring the clot formation, strength and dissolution with an electrical transducer, as the spinning is affected by clot strength. The measurements are then converted into a graphical representation. There are four measurements which are most relevant: R value, in which a prolonged time demonstrates a decrease in clotting factors and requires FFP or PCC to reverse; K and alpha, which measure the time to clot and clot strength and can be treated with cryoprecipitate; MA (maximum amplitude), which measures the ultimate strength of the clot, is dependent on platelets and can be treated with platelet transfusion; and LY30, which measures fibrinolysis and if prolonged, should be treated with tranexamic acid (TXA).

In comparison to conventional coagulation measurements such as PT/INR, aPTT and platelet count, TEG not only measures the coagulation cascade, but also platelet function and degree of fibrinolysis. Therefore, TEG has the ability to measure the coagulation and anticoagulation status of a patient in real time and dynamically over time. In addition, TEG measures fibrinolysis, which conventional coagulation measurements cannot. This has the benefits of decreasing the amount of blood products transfused, which results in fewer transfusion related adverse events and also giving the added treatment of option of TXA, which is not included in the usual MTP.

TEG in Trauma and Trauma-induced Coagulopathy

Coagulation abnormalities in trauma patients have demonstrated a significant association with infection, multi-organ failure and death. These abnormalities, termed trauma-induced coagulopathy or acute coagulopathy of trauma, are not well measured by conventional coagulation measurements in the setting of an unstable trauma patient in the emergency department, as those tests lag well behind the patient’s actual coagulation status.

Trauma resuscitation has relied on a massive transfusion protocol of 1:1:1 of FFP:PLT:PRBC after the PROPR trial of 2015 showed that more patients achieved hemostasis and fewer deaths due to hemorrhage in 24 hours with this method. TEG has been well studied in the trauma literature in terms of its utility for guiding resuscitation, with the idea that TEG guided resuscitation may target specific coagulation parameters and reduce adverse events due to massive transfusion. In addition, blood products are a scarce resource and their use should be limited.

A 2016 randomized clinical trial showed that TEG-guided resuscitation resulted in reduced mortality at 28 days (19.6% vs 36.4%; P=0.032) versus usual MTP. Furthermore, in this trial, patients receiving TEG-guided resuscitation required fewer blood products overall and benefited from more intensive care unit-free and ventilator-free days. This suggests that more blood products do not necessarily lead to better hemostasis or survival.

Literature suggests that hyperfibrinolysis is an important cause of mortality in trauma patients, which is unable to be measured by conventional coagulation measurements. TEG measures this process through the LY30. This allows for the targeted use of TXA to treat hyperfibrinolysis and possibly prevent coagulopathy from this cause. This would be for patients beyond the one hour window proposed by CRASH-2. However, there is still much debate in the trauma literature regarding the use of TEG for trauma resuscitation and there remains much more research to be done in the emergency department.
Residents

TEG in Patients With Chronic Liver Disease

TEG in the emergency department is most well studied in the setting of trauma, although there is growing interest in the use of TEG-guided resuscitation in medical patients with coagulopathies as well. One particular area of interest has been in chronic liver disease patients, who at baseline have an elevated INR and are often assumed to be at risk of hemorrhagic events due to this measured coagulopathy. However, the INR reveals nothing about the coagulation status of a cirrhotic patient, as they are deficient in pro and anticoagulant proteins alike and these patients tend to experience a “re-balancing” or equilibrium. These patients are more likely to be hypercoagulable rather than hypocoagulable due to the proinflammatory state of chronic liver dysfunction. This explains why these patients tend to experience portal vein and catheter thrombosis at higher rates than would be expected given the elevated INR. Often, the elevated INR is treated with prophylactic transfusion of FFP to prevent risk of bleeding prior to an invasive procedure or at a consultant’s request. Prophylactic transfusions, however, may expose the patient to an increased risk of adverse events, such as TRALI or worsening of portal hypertension and do not actually treat any coagulopathy.

So what about the cirrhotic patient who is already bleeding? TEG can help to guide resuscitation with the aim of preventing over-resuscitation. Patients with cirrhosis are often hypotensive at baseline due to chronic vasodilation, which can lead to aggregative fluid resuscitation and blood transfusion, even if not that much blood has been lost. This population of patients is vulnerable to over-resuscitation due to increase of central venous pressure over their baseline, which directly increases the driving pressure of their variceal bleed. Furthermore, they are at baseline deficient in platelets and fibrinogen and if they are resuscitated with pRBCs and FFP to correct their elevated INR, they are at risk of developing a dilutional coagulopathy. Instead, consider platelets and TXA in these patients, attempt to limit large-volume resuscitation and consider using TEG to guide resuscitation. This is still an area under active research, and specific guidelines have not been established.

Other Uses of TEG in the Acute Setting

One of the most difficult to diagnose and treat conditions is disseminated intravascular coagulation (DIC), in which coagulation becomes dysregulated, causing widespread microvascular clots and at times, consumption of coagulation factors, leading to bleeding. DIC is often associated with sepsis, trauma or obstetric emergencies. There have been numerous small studies and case reports about the use of TEG to guide resuscitation in specific situations, including postpartum hemorrhage and septic shock. TEG has been used for many years to manage intra-operative DIC in surgical patients and would likely perform well among non-operative patients as well. The exact applications for use in the emergency department have not been established and there remains a need for further research in the emergency department setting.

Key Points

- TEG is not yet the gold standard for assessing coagulopathy, but it shows promise as a way to guide resuscitation in the emergency department in trauma as well as medical patients requiring emergent transfusion. TEG should only be used when considering an intervention such as massive transfusion or invasive procedure.
- TEG can help distinguish between different phases of trauma-induced coagulopathy, and can be used to guide the use of individual blood products as well as TXA.
- INR reveals nothing about the coagulation status of a cirrhotic patient, as they are deficient in pro and anticoagulant proteins alike and these patients are more likely to be hypercoagulable rather than hypocoagulable. Do not treat variceal or nonvariceal bleeding in these patients with FFP in order to correct the INR. Consider platelets or TXA instead.
- TEG guided resuscitation may help cirrhotic patients, not only in regard to customizing the blood products they receive, but also preventing over-resuscitation and subsequent worsening of bleeding, which is a danger in these chronically hypotensive patients.
- It is rare to see these cases in the emergency department, but we are prepared for anything and everything: TEG can also be used to guide resuscitation after postpartum hemorrhage and pregnancy-associated DIC.

References

2020-2021 State Budget Outlook

On Tuesday, January 21, 2020, Governor Cuomo released his 2020-21 Executive Budget totaling $178 billion. The State faces a $6.1 billion budget deficit. Rather than proposing specific cuts to the Medicaid program in his proposed budget, the Governor announced that he will reconvene the Medicaid Redesign Team (MRT) to be chaired by Michael Dowling, President & CEO of Northwell Health and Dennis Rivera, former President of SEIU 1199. The MRT II is charged with finding $2.5 billion in recurring savings by addressing industry inefficiencies and rooting out waste, fraud and abuse and reporting back by early March.

If the Legislature fails to enact $2.5 billion in savings as proposed by MRT II, the Executive Budget authorizes the Director of the Division of Budget to impose across the board reductions to Medicaid.

Executive Budget Proposals Impacting Emergency Medicine

The Surprise Bill law is amended to:

- expand the Independent Dispute Resolution (IDR) process to all hospitals. A law passed last year adding hospitals to the IDR process but exempted those for which at least 60% of annual patient discharges are Medicaid patients, uninsured or dual eligible.
- provide that when a patient assigns benefits for emergency services, including inpatient services which follow an emergency room visit, to a non-participating physician or hospital that knows the insured is covered under a health care plan, the non-participating physician or hospital shall not bill the insured except for any applicable copayment, coinsurance or deductible that would be owed if the insured utilized a participating hospital or physician.

Sexual Assault Forensic Examiner (SAFE) Program Expansion

Currently, the SAFE program is limited to specialty-designated hospitals. The proposed budget requires all hospitals with emergency departments to establish SAFE programs. Hospitals without emergency departments are required to transport victims of sexual assault to a hospital with a SAFE program.

Hospitals operating a SAFE program are responsible for:

- maintaining sexual offense evidence and the chain of custody.
- contacting a rape crisis or victim assistance organization to establish coordination of non-medical services when requested by the victim.
- offering and making available HIV post-exposure treatments.
- ensuring sexual assault survivors are not billed for forensic exams and are notified orally and in writing of the option to provide private health insurance information and have the Office of Victims Services reimburse the hospital for the exam.
- ensuring that the victim, absent exigent circumstances, is met by a sexual assault forensic examiner who is a specially trained nurse, nurse practitioner, physician assistant or physician who shall be available on a 24 hour a day basis every day of year.
- ensuring that the victim, upon consent, is examined in a private room.
- designating a qualified staff person to exercise administrative and clinical oversight of the treatment of sexual assault patients and developing policies and procedures to guarantee sufficient staffing.
- ensuring that all emergency department personnel receive training for standards of care for assessment and treatment of victims of sexual assault. Such training must be provided by October 2020 and annually thereafter.
- beginning March 1, 2021 and annually thereafter, hospitals with an emergency department must provide an attestation to the hospital that lists the name and contact information of the staff person who has been designated by the hospital to oversee the treatment of sexual assault patients and affirms that the hospital has completed training for standards of care for assessment and treatment of victims of sexual assault.

Office of Professional Misconduct (OPMC)

The following changes are proposed:

- Making OPMC Investigations and Non-Disciplinary Actions Public: The New York State Department of Health (NYS DOH) would be authorized to immediately publish charges upon investigative requests, along with the immediate convening of an investigative committee, eliminating the current 90-day threshold. The proposal allows for the publication of Administrative Warnings and Consultations.
- Lifetime Licensure: If a licensee fails to register with NYS DOH for two consecutive registration periods, the license will be stricken.
- Fingerprint and Criminal Record Check Requirements: The bill would require fingerprinting prior to licensure.
- Professional Misconduct and OPMC Notification of a Crime or Misconduct: The definitions of professional medical misconduct and professional misconduct are revised. It requires licensees charged with a crime or misconduct in any...
jurisdiction to notify OPMC within 24 hours.
◦ Authorizes OPMC to issue administrative inspection warrants.
◦ Executive Secretary of OPMC would serve at the direction and appointment of the Commissioner of Health, instead of the Chairperson.
◦ Expands Delivery Methods for Notices of Hearing
◦ Allows NYS DOH to Summarily Suspend a Physician’s License if the Commissioner deems a physician to be at risk to the health of the people (current law requires that the individual be an imminent danger to do so).

Physician Excess Medical Malpractice program is extended through June 30, 2021

The appropriation is $105 million, consistent with the prior year payments.

Comprehensive Psychiatric Emergency Programs (CPEPs)

Amendments are made to the Mental Hygiene law with respect to CPEPs to:
◦ extend the time that facilities can operate for four years to July 2024.
◦ extend the time that an individual can be detained from 72 hours to 96 hours for observation and treatment when the person is determined to be a danger to themselves or others.
◦ require that triage and referral services be provided by a psychiatric nurse practitioner or physician as soon as a person is received into the comprehensive psychiatric emergency program.
◦ require that if a patient is not discharged within six hours, they must be examined by a physician.
◦ permit hospitals that operate CPEPs, upon approval of the Commissioner of OMH, to operate satellite facilities. A satellite facility is defined as a medical facility providing psychiatric emergency services that is managed and operated by a hospital who holds a valid operating certificate for a CPEP and is located away from the central campus of the general hospital.

Antimicrobial Resistance Program

The Executive Budget would establish a requirement for all hospitals and nursing homes to establish a new antimicrobial resistance program. The programs are required to meet or exceed federal standards and include an annual evaluation of the program. In cases where utilization is high or increasing, facilities are required to establish a response plan. Facilities would be required to provide training in antimicrobial resistance and prevention and control. The new requirements are effective 180 days from the enactment of the State Budget.

Physician Profile Expansion

The Physician Profile is expanded to include office hours, availability of assistive technology, availability to take new patients and the names of other physicians in a group practice. The proposal provides that it is the responsibility of health plans, not physicians, to ensure accuracy of provider network participation information.

Cannabis Regulation

The Governor proposes to legalize adult-use cannabis and create the Office of Cannabis Management (OCM) within the Division of Alcohol Beverage Control. The OCM would consolidate governance of all forms of cannabis and create a regulatory structure overseeing the licensure, cultivation, production, distribution, sale and taxation of cannabis in New York State. The proposal includes $13 million in new funding to support the operations of the OCM.

Adult-Use of Cannabis (21 years of age and older)

The Governor proposes to legalize the use of cannabis for individuals 21 years of age and older. It utilizes a three-tier market structure, prohibiting vertical integration. It is intended that the OCM would use licensing limits and supply management to control market concentration. The program would promote social equity applicant participation by providing technical assistance, training, loans and mentoring to qualified social and economic equity applicants.

There are three proposed taxes for adult-use cannabis with revenue projections of $20 million in FY 2021, $63 million in FY 2022, $85 million in FY 2023, $141 million in FY 2024, and $188 million in FY 2025. Revenues from the State cannabis taxes will be deposited in the New York State Cannabis Revenue Fund.

New York ACEP Lobby Day, March 3, 2020

On Tuesday, March 3, New York ACEP leaders and members will travel to Albany to meet with key legislators and staff on the New York ACEP’s 2020 legislative and State Budget priorities. Following the lobby day, we will work with Executive Director JoAnne Tarantelli to continue to keep members apprised of activities in Albany as they relate to New York ACEP’s government affairs goals. You will soon be receiving Action Alerts and other calls for grassroots activities to advance your priorities. We greatly appreciate all of your local efforts which are critical to New York ACEP’s success.
**Announcing**  
**New York ACEP**  
**2020 Research Forum**  
**Call for Abstracts**

The New York American College of Emergency Physicians is now accepting abstracts for review for oral and poster presentation at the 2020 Scientific Assembly, July 7-9, at the Sagamore Resort on Lake George in Bolton Landing, New York.

The **Research Forum**, including both oral and poster presentations, will be held Tuesday, July 7 at 1:30 pm. This forum is designed to feature and foster resident and faculty research. Topics may address the broad range of emergency medicine practice and educational development. Preference will be given to work completed at the time of submission. **Authors and institutions should not be identified in any way on the page containing the abstract.**

Abstract submissions must be in electronic format (Microsoft Word) and must include the following subsections, Title, Objectives, Methods (include design, setting, type of participants), Results and Conclusion. The abstract should be written in complete sentences using grammatically correct English. Spell out all abbreviations on first usage. Abstracts are limited to 3,000 characters (excluding spaces). Accepted abstracts will be published as received; no copy editing will be done. Send abstracts by e-mail to nyacep@nyacep.org. Use abstract title in subject line.

Illustrations are discouraged; however, if critical, one (1) small table may be included. Figures, tables and photos must be black and white with a resolution of at least 300 dpi. Note: tables, figures and illustrations will be considerably reduced when published causing loss of detail. Please consider this when determining whether to include these.

Including the following information on the submission form for each abstract:
1. **title of the abstract;**
2. **author(s) and affiliations;**
3. **IRB approval or exemption;**
4. **contact person’s mailing address, phone/fax numbers and e-mail address;**
5. **information regarding previous presentations or publication;**
6. **potential conflicts by author;**
7. **if accepted, indicate who will present the abstract July 7, 2020 and their role in the project; and**
8. **state preference for oral or poster presentation (or no preference).**
9. **identification of resident if s/he will likely be first or second author on manuscript.**

Although we are interested in original work, consideration will be given to abstracts presented at other conferences (SAEM, ACEP).

Oral presentations will be allocated 10 minutes followed by 5 minutes of Q&A. Twenty-four poster presentations will be allocated 5 minutes followed by 3 minutes of Q&A. Other poster submissions will be selected for display. All presenters (oral or poster) are expected to have had a significant role in the execution and report preparation of the project being presented.

**About the Process:** There will be a blind review of all abstracts. Notification letters will be sent April 22, 2020. We regret we cannot give notification information by telephone.
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