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VOL 35:04:18

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Emergency Medicine
Staten Island, NY

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PRESIDENT'S MESSAGE

Brahim Ardolic, MD FACEP
Chair, Department of Emergency Medicine
Vice President, Department of Research
Staten Island University Hospital

What's Your Passion?

As I sit here to write my last president's message, I have to start by just saying thank you. I have had the pleasure of serving this chapter for over a decade. We have worked together on issues that range from balance billing to patient access to drug abuse. During that time, I have met and worked with some of the most amazing clinicians one could ever hope to meet.

They are all so different in so many ways and yet they have certain common traits. Perhaps the most common of those traits is true passion for what they do. What has never ceased to amaze me about emergency physicians, is how many of them love going to work every single day and are truly passionate about what they do. As such, my last president's message will be about passion and about having a passion for what I still believe to be the greatest job in the world.

> ***"I can't imagine the last decade of my career without those individuals and without the New York American College of Emergency Physicians."***

Perhaps my favorite part of serving on your board, was educating our politicians on what you all do every single day. Sometimes seeing the recognition on their face for the great work that you do, was worth so much. Seeing that sometimes, our public servants can be shown that we can provide an even better service to our patients, given the right circumstances, was truly gratifying. It is a role that I hope to continue to be involved in, even after my time on the board is completed. I tell you this because as multiple members of our board have seen, it is the topic that I'm most passionate about. We have all chosen careers helping people, sometimes at their worst possible moment. And for each one of us the thing that we like most about this job might be somewhat different.

I would ask you all what is it about this job that you're truly passionate about. There are many possible answers. Is it about taking care of people who have nowhere else to go? Is it about training the next generation of emergency medicine physicians? Is it just about seeing how well you can do your job every single day and make sure that you go home knowing it was a job well done? It's also OK to have more than one answer! I would love if you all would tweet us your answers @NYACEP. If you're not sure that you found the answer yet, I would ask you to keep looking and to consider that it is possible the answer lies somewhere in service to your college or to your chapter. It certainly did for me.

I can honestly say that I have gotten just as much out of being on your board and being your president that I have put into being on your board and being your president. I have gotten to work with and meet some of the most exceptional emergency physicians that exist on the planet Earth and have learned so much from them. I can't imagine the last decade of my career without those individuals and without the New York American College of Emergency Physicians.

Thank you for the opportunity to serve you.

"What is it about this job that you're truly passionate about. There are many possible answers. Tweet your response to @NYACEP."

WHAT'S INSIDE?

SOUND ROUNDS

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A (line) is for Air in the Belly

Case

A 58 year-old female with a past medical history significant for chondral sarcoma with lung metastases presented to an outside hospital with upper respiratory symptoms and trouble breathing. On direct questioning, she endorsed mild intermittent abdominal pain, but no severe pain was noted. She denied nausea, vomiting or diarrhea. Patient was transferred to our facility for higher level of care. Her vital signs upon arrival to our facility showed temperature of 36.5 orally, respirations of 17, pulse rate of 104, a blood pressure of 130/80 and Sp02 of 95% on RA. Physical exam revealed a frail woman who appeared much older than her stated age. Lung sounds were clear and equal bilaterally. Abdominal exam revealed mild distension with positive bowel sounds. There was no notable tenderness to palpation. There was no rebound or guarding.

Transabdominal point-of-care ultrasound (POCUS) was performed using a Zonare Z.One Pro 4-1 MHz curved array transducer as well as a 10-1 MHz linear transducer (Mountain View, CA). POCUS revealed diffuse A-lines throughout all quadrants of the abdomen. The sonographer was unable to visualize any of the expected intra -abdominal organs. Furthermore, ultrasound with a high frequency linear probe demonstrated the enhanced peritoneal stripe sign. A chest x-ray showed free air in the abdomen. The patient also underwent a CT scan, which showed a massive amount of free air under the diaphragm (Figures 1 and 2).

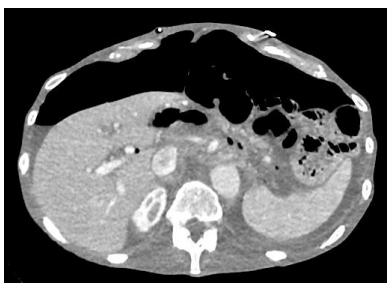

Figure 1.
An axial CT showing the significant amount of free air.

Figure 2.
Sagittal CT showing free air in abdomen.

Discussion

To appreciate free air in the abdomen, the sonographer must be able to identify what air normally looks like in the bowel and in the chest. Air associated with the bowel should be in close proximity to the bowel and should cast dirty shadows given the mixed air/liquid and solid contents of the bowel. Air in the chest should appear above the diaphragm and normal visceral on parietal parenchyma will produce a lung-slide image in real-time. Any time air is seen within the abdomen, the sonographer should be questioning if the air is due to the GI tract or the nearby thoracic cavity.

Pneumoperitoneum is represented on ultrasound by the Enhanced Peritoneal Stripe Sign (EPSS) which consists of a superficial double or single echogenic line that demarcates the abdominal wall with the peritoneal contents (Figure 3, white arrow). This sign is usually accompanied by reverberation artifacts seen as repeating horizontal linear lines (A-lines) that occur because ultrasound is a strong reflector of air due to air in the peritoneum (Figures 3 & 4).[1]

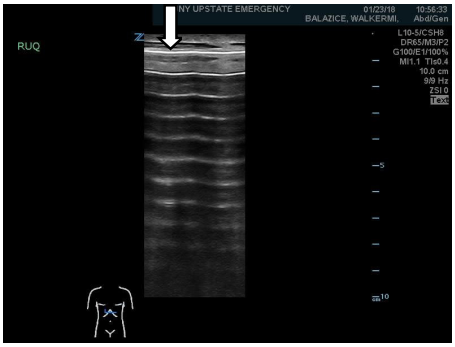

Figure 3.
Transabdominal ultrasound of the right upper quadrant using a linear probe which shows an Enhanced Peritoneal Stripe Sign (EPSS, white arrow).

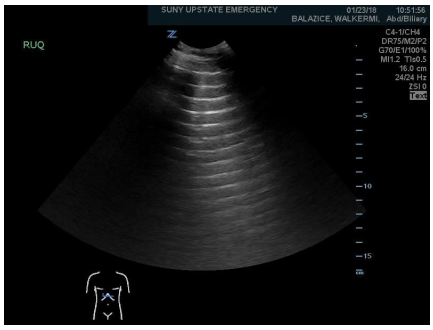

Figure 4.
Transabdominal ultrasound of the right upper quadrant of the abdomen using a curvilinear probe demonstrating diffuse A-lines. This image was obtained with the probe directly over the liver.

The accuracy of ultrasound for detecting pneumoperitoneum is high. A study by Seitz and Reising showed a sensitivity of 90% and a specificity of 100% when evaluating 4,000 consecutive patients with non-traumatic abdominal pain.[2]

Indications

- Suspected pneumoperitoneum
- Abdominal distension
- Abdominal pain

Technique

- Most authors recommend using a high frequency linear probe to visualize the superficial peritoneal layer. Although the use of curvilinear and phased array probes has also been described.[3]
- Look initially in the right hypochondrium, superficial to the liver, with the patient in the supine position in a semilateral decubitus position with the right upper quadrant facing up.[4]
- When the patient is positioned in the semilateral decubitus position to the left, air often accumulates in the right hepatoperitoneal space, and conversely when patient is in semilateral decubitus position to the right, air often accumulates at the lower pole of the spleen.[2,4-8]
- Air pockets will be seen but will be present independent of breathing movements.
- Karahan et al describes the "scissors" phenomenon, which occurs when pressure from the ultrasound transducer shifts air pockets. This sign may increase the sensitivity of detecting pneumoperitoneum (Not depicted here in our case. We hypothesize that this was because there was too much free air in this case to elicit it).[9]

Pitfalls and Limitations

- Shadows from bowel gas or intra-thoracic air can easily be misconstrued as free air in the abdomen.
- Sometimes trauma or critical illness will prevent you from repositioning the patient in the semi-lateral decubitus position, so it will be harder to detect a smaller amount of air and may decrease exam sensitivity when small amounts of air are present.
- Large body habitus may prevent use of the high frequency probe.

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PRACTICE MANAGEMENT

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Outside the Box: Work-Study Scribes?

Reality check: Baby boomers are aging, our Emergency Departments (ED) are full (especially these days—thanks, influenza!) and ED clinician shortages abound. These contribute to ED crowding which in turn exacerbates inefficiency and has an adverse effect on throughput. Poor throughput results in a vicious cycle of more crowding and worse throughput, not to mention increasing the potential for poor patient outcomes and patient satisfaction. In the meantime, pressures on the ED that impede flow have come from multiple directions. Those baby boomers have more (and more complex) medical conditions as they age. There has been a proliferation of documentation requirements related to all aspects of the ED visit from ordering (you may now be required to enter a specific indication for certain orders) to procedures (documentation of consent, time out, pre- and post-anesthesia assessments, among others) and everything in between. Increasing payment denials for inpatient care have caused case managers to push against our admissions, necessitating more intensive (and lengthier) ED workups and detailed written defenses of severity of illness to justify inpatient status. Meanwhile both the Centers for Medicare and Medicaid Services (CMS) and your local patient satisfaction champions are also actively pushing for shorter times to provider (TTP) and ED length of stay (LOS). Given widespread dissatisfaction with these conditions and with the amount of time we spend clicking away at a computer, not surprisingly, many of our EDs are experiencing increased absenteeism and low retention, which in turn further feed into the vicious cycle of dysfunctional throughput.

Something's Got to Give

In view of an unsatisfactory, unsustainable and potentially unsafe environment, some EDs have turned to scribes. Scribes shadow the provider for real-time documentation of the history and physical, interact with the medical record to aid the provider in concurrent and retrospective chart review and alert the clinical team when pending studies are resulted. Since their single focus is documentation, contrary to the chaotic multitasking required of clinicians, scribes also potentially improve overall documentation with resulting positive clinical, financial and medicolegal implications. Utilizing scribes impacts efficiency by allowing for the bulk of the provider's tasks to be performed in parallel rather than in series. Considering that up to one third of a physician's shift will be spent on documentation, this carries a significant gain in a physician's ability to move on to the next patient and decrease the TTP and overall LOS. In some EDs with a high left-without-being-seen rate, the introduction of scribes may allow for an increased volume of patients to actually be seen, potentially paying for their own services. While perhaps less measurable, there is overwhelming anecdotal evidence that scribes also boost staff morale and contribute to their feeling more supported, which in turn should translate into improved retention and decreased costs related to constantly on-boarding and training new staff.

In the last two decades, dozens of companies have emerged which specialize in recruiting, training and deploying scribes to EDs that contract with them. Typically, the companies oversee and direct their own quality assurance activities, as well as providing liability insurance for their scribe employees. These businesses tend to recruit college students, especially pre-medical or other pre-health professional students, who are proficient in English and have strong writing and computer skills. The companies have developed their own implementation, training and quality control; they employ the scribes and are responsible for recruiting, vetting and training them. For their efforts, they typically will charge $20-$30 per hour, of which the scribe may receive $10-$15 per hour. The price tag is offset by the potential gains, as studies suggest that introducing scribes into an ED may increase attending productivity. One study by Arya et al. showed that attendings saw an additional 0.8 patients per hour when utilizing scribes. Another described a 17% increase in productivity, associated with a decrease in ED LOS by 20 minutes. Depending on the provider's baseline documentation, scribes may augment RVU capture for coding purposes as well (2.4 RVU's per hour according to the Arya study).

Contracting with a scribe company may not work for all, though. Leadership at some institutions or departments may not understand or agree with the potential benefits, and may view paying for these services simply as an additional cost. They may think they are already paying you well, you are getting the work done, and it is not in their interest to dole out more money to another individual just to help you do your job. Some hospital leaders may not understand what the big deal is about ED documentation, since clinicians from the other departments manage to document just fine. Some emergency physicians have opted to train and employ their own scribes, but in the absence of hospital-sanctioned procedures and IT systems reflecting scribe utilization in a transparent way, the legal and liability panorama surrounding the documentation may become complicated. But, thinking outside the box, there may be another option.

The Federal Work-Study Program

The Federal Work-Study (FWS) Program provides part-time employment for undergraduate and graduate students to help pay for their tuition and related expenses. It is designed to encourage community-service work, as well as work related to the student's

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selected course of study or major. The program is administered locally by the participating schools, and is available to any full-time or part-time student with financial need. Typically, work-study jobs are available both on- and off-campus. In order to qualify, off-campus work-study employers must be a nonprofit organization or public entity. The educational institution then uses federal funds to reimburse the student for time worked, even when that work is off-campus. As of 2011, the federal government spent upwards of $1 billion on FWS. So why not consider approaching a local college in regards to establishing a partnership to allow FWS eligible students to work as scribes in your ED?

Clearly, scribing in the ED is "related to the course of study" of any pre-health student. It also undoubtedly qualifies as community service-related as it is in the public interest and constitutes a service to patients in the student's community. Students are guaranteed a wage no less than the federal minimum wage, but may be paid more; the students' wages would be determined within the parameters of the individual partnership. Since the funds come through the school, a formal arrangement would be required between your department or institution and the school. It will be important to track the students' hours to report back to the school; policies in regards to sick calls or no-shows should be set up in conjunction with the school. Costs to the department or hospital would be limited to supporting protected time for an ED clinician (or small team) to implement and run the program, absorbing the cost of utilizing Human Resources (HR), Information Technology (IT) and employee health to set up related systems and onboard the individual scribes, and possibly providing liability or other insurance for the individuals to function within the hospital. For most institutions, since they are already set up to have these services for the rest of their employees, these costs would be nominal.

Win, Win, Win, Win, Win

Despite the low cost, in order to set up a homegrown scribe program, you may have some selling to do. The biggest obstacles will likely be in your own department or hospital, or possibly you will find hesitancy on the part of leadership at the educational institution. At your shop, start at the departmental level and have a discussion with ED colleagues about the idea of scribes. If there is enthusiasm, recruit some help and arrange for a discussion of the matter with hospital leadership. Identify the appropriate stakeholders at your institution; try to anticipate the barriers that will be offered and be prepared to counter them. As for the college you may be partnering with, consider reaching out to pre-health faculty or counselors and determining who the key players will be at the school. A presentation to the Dean with participation from pre-health faculty (preferably some of whom have already bought into the idea) may be required. The key for all involved should be that everyone wins, including the patient:

ED Wins: ED providers work more efficiently and at the top of their license by minimizing their clerical activities. ED gains operational efficiency, increased patient safety and satisfaction, and a more satisfied staff that shows up to work and is retained.

Patient Wins: The ED patients win when they are seen sooner and wait less, and when their clinical interactions are accurately captured for future chart review.

Hospital Wins: The hospital improves flow and delivers more efficient care, leading to both appropriate reimbursement and increased patient satisfaction. They simultaneously obtain medicolegal protection via enhanced documentation.

Student Wins: The scribe wins by obtaining knowledge and experience to which they would otherwise have little or no access, and by potentially obtaining letters of recommendation authored by the EM physicians alongside whom they work, all while getting paid to help afford their education. Assuming they are bound for a career in a health profession, they will also get to know medical terminology, clinical management and medicolegal issues that will be crucial to their future careers.

School Wins: The school wins by placing more of their students in better graduate schools with an indirect effect on their own reputation and the quality of their future applicants and students.

Structuring A Program

Prepare the Field: Determine whether there is buy-in at the departmental level for scribes. Some of your colleagues may have worked with them in the past and have input. If there is consensus to go forward within the department, meet with hospital leadership to introduce the concept of scribes, emphasizing the potential gains and being careful to outline the policies that would accompany such an implementation. Stakeholders may include the hospital's Medical Director, HR, Legal Department, IT, Corporate Compliance, Risk Management and representation from Operations (COO, ED Administration or equivalent).

You will also need to utilize a Project Management Team (or clinician) to oversee the implementation and maintenance of the program including conducting interviews, training or quality assurance (QA) activities related to the scribes. The team (or individual) would be responsible for monitoring scribe activities including attendance, job performance, productivity and accuracy and quality of scribing. They would also develop a job description for the ED scribe, policies and procedures for utilizing scribes and author contracts for the scribes to sign.

HR will be needed for onboarding activities such as institution-specific training, health clearance and background checks. The scribe policies should address HR-related issues, such as counseling and disciplinary action, so the HR department should be involved in developing those policies. They will ensure that HIPAA and Fraud training occur in a timely manner and document such in the scribes' employment records.

IT will be needed to create scribe-level access to the emergency medical record (EMR) (for safety reasons, the clearance should allow read and write access only, with no ordering functions available), and date/time stamps that identify the author/user as a scribe, as well as scribe-specific documentation templates or macros (e.g. "This documentation was authored by Jane Doe, ED Scribe, and represents accurately the patient encounter as performed and dictated by Dr. Bob N. Weave.") They may also need to create a macro for the providers to use when a scribed note is reviewed, and set up a way for the individual to co-sign the note as an author. One example: "I performed the history and physical exam of the patient, developed a summary assessment of the presentation and the plan of care and dictated the scribe's documentation. I have reviewed the note as written and

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confirmed that it is accurate." You may also consider having IT create securities that suppress or hide the scribe's documentation until co-signature has occurred. Some EMRs have a functionality that allows for a note to be shared with a single individual for co-signature while it is otherwise hidden from view; just bear in mind that this workflow may keep key individuals (the patient's nurse, the inpatient team admitting the patient) from being able to view said documentation in a timely manner. The IT team may also be needed to create reports to identify scribed charts for chart review and QA purposes.

Determine Need

Different types of patient encounters may necessitate different applications of scribing. In the fast track/urgent care population, the encounter tends to be brief and the intensity of service low, but the documentation requirements may not differ much from the higher acuity patient. Outsourcing chart documentation to the scribe allows for the physician to cycle from patient to patient more rapidly. Some settings utilize a two-room, two-scribe set up per provider. Conversely, the critical care population requires that the provider spend more time at the bedside monitoring the patient or performing procedures; a dedicated scribe allows for concurrent documentation of the interventions as well as capturing a more complete record of what is usually a complex encounter. In those areas of the ED serving the acute but not critical population (think ESI Level 3), it may even be feasible and preferable to have multiple providers share a single scribe to reduce scribe idle time. Provider A sees a patient with abdominal pain with the scribe, who documents the encounter. Then he/she goes to the computer to enter orders and review the scribe note for co-signature. During this time, the scribe is free to see another patient with Provider B and perform the real-time documentation of that encounter, such that when Provider B is done, the scribe can return to Provider A in time to help with their patient.

Depending on the workflow and practice setting, including volumes and proportion of patients according to ESI level, and according to desired scribe coverage (e.g. 24/7 one scribe per attending vs. two scribes in fast track eight hours a day, etc.) you can extrapolate what your need will be. It may be best to determine scribe-hours (rather than FTEs or similar) since individual candidates may be able to dedicate more or less time to this activity. Also you should determine the approach to no-shows or sick calls in terms of alternative coverage, as well as in terms of disciplinary action if the no-show becomes a pattern. We suggest this also be discussed and vetted by HR.

Recruitment

Developing a scribe program provides an opportunity to partner with local institutions of higher learning for recruitment purposes. Candidate requirements should be developed working with university leaders; college juniors and seniors have already proven themselves as students, and will generally be more mature and have a better idea of their professional intentions. Pre-health students will generally have a greater incentive to work to impress, and will typically have greater baseline science-related literacy through their coursework. In some settings, second language proficiency may be preferred, since a properly certified foreign-language-speaking scribe may be able to serve as an interpreter as well (two birds, one stone). You may want to preferentially on-board juniors, who at least theoretically are able to offer a two-year commitment, reducing your future training needs. Consider a minimum GPA to apply, and perhaps requiring a personal statement to learn more about the candidates.

Once the optimal audience is identified among the student body, an application process should be developed. This should be developed with the hospital's HR department, who may be able to aid in securing background checks, as well as provide health screening and onboarding services to the scribes. It is advisable to have the scribe candidates provide their school transcripts as well as letters of recommendation that may speak to the candidate's overall performance or even comment on their proficiency at specific tasks involved. The first level of selection would include review of written materials for application and identifying the best-suited candidates. Those candidates would then be interviewed and subjected to typing proficiency testing (to include speed and accuracy). If second-language fluency is one of the deliverables, it should be tested for and confirmed during this process.

Training

After the candidates are selected and the best are hired, a two-part training period will be needed. Scribes will need hands-off training to include EMR training, orientation to the unit and hospital, as well as mandatory training to cover hospital policies, HIPAA, fraud and compliance. Most importantly, they will need didactic time to cover principles of charting and documentation, as well as specific medical terminology and etymology. Following the didactic process, hands-on training will follow. This involves placing the scribe at the bedside with supervision to ensure that all the appropriate information is being captured during the patient interview and exam. The process serves also as training for the providers who will be working with the scribes—they will need to learn to voice their physical exam findings out loud for the scribe to hear, and to quickly dictate the assessment or medical decision-making portion of the chart.

To enhance the self-sustainability of the program, consider a Train the Trainer scheme, where "chief" or "head" scribes are trained to train future hires. As with any other employment, a degree of attrition is expected and there will need to be ongoing training activities post implementation. If students are utilized, anticipate that you will need to prepare new scribes each summer or fall as students graduate. You may also consider contingency planning for school breaks and vacations, as well as for sick calls or no-shows.

Implementation

Scribes are scheduled according to departmental need and personnel availability. Attendance must be documented and tracked for payment. Their assignment is defined according to departmental needs, maximizing coverage during high-volume (or relative low staffing) times and areas. At least initially, the scribes should keep track of every chart they document during a shift, allowing for simplification of productivity assessments and QA activities. Consider requiring the scribes to ensure that the clinician reviews and signs off on their documentation in real time; co-signature could be a column on their shift log such that they confirm that the scribed notes are signed by the end of their shift. These concurrent reminders will minimize co-signature delays or delinquencies.

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Post-Implementation: QA and CE

Once the program is implemented, it is important to have QA processes and metrics to understand how it is working. Retrospective chart review/ sampling should be performed by a clinician on the project to ensure that scribes are not making errors and that providers are reviewing the documentation accurately and signing off on it promptly. Related continuing education activities may utilize case-based presentations to the group as well as individual feedback mechanisms.

Pitfalls

Glossing over the scribe's note: Clinicians may love scribes and their contribution to increased efficiency, but there are grave risks associated with cutting corners once this workflow is established. The biggest concern is that inaccurate document ation ends up in the patient's chart due to a failure to properly review and vet the note on the part of the clinician. From a patient safety and medicolegal standpoint, it is imperative that all of the scribes' documentation be thoroughly reviewed, vetted and corrected as necessary.

Allowing scribes to place your orders: NEVER allow scribes to author orders. Certainly their EMR clearance should not allow it, nor should an individual provider be tempted to sign in under their own credentials in order to allow the scribe to enter orders. This practice would be indefensible to many, and any error would probably jeopardize the success and continuation of any scribe program.

Giving scribes to attendings only: Having a scribe shadow an attending may not be the best utilization of their services. The benefit of having scribes work alongside attendings functioning in a primarily supervisory capacity is limited. When resources are scarce, scribes are best deployed to shadow the most productive primary providers in your environment, usually residents or advanced practice providers, as they will be the ones with the most onerous documentation burden, and therefore stand to gain the most from having that burden lifted by someone else. You may want to incorporate scribe usage into the graduated responsibility scheme of an academic program, such that interns or junior residents must author their own notes to hone their documentation expertise, but more senior residents may utilize scribes.

While scribes are not the panacea to solve all of your ED's problems, there is little doubt that they lighten the documentation load and are able to assist with some of the providers' non-clinical activities, thereby freeing them up to spend additional time at the patient's bedside or on crucial medical decision-making. Utilizing the existing infrastructure of the Federal Work Study program may allow for EDs, even those with poor payor mixes and scarce funds, to simultaneously improve both their efficiency and the quality of their documentation. A measured plan of implementation that considers potential pitfalls and anticipates stumbling blocks is crucial to increase the chance of success and long term sustainability.

"But, but, but… The Joint Commission!!"

You've heard it before: "The Joint Commission (TJC) won't go for that!" The reality is that TJC defines scribes as unlicensed persons who "enter information into the EMR at the direction of a provider, assist…in navigating the EMR, [and] support workflow and documentation" and specifies that it "does not endorse nor prohibit the use of scribes." TJC standards state that the following are expected when scribes are utilized:

- Job description outlining qualifications and extent of responsibilities
- Orientation and training specific to the institution and role
- Competency assessment and performance evaluation
- Meet information management, HIPAA, confidentiality standards as all hospital personnel
- Signature (clearly noting role) of all EMR entries
- Real time authentication by provider
- PI process

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Board of Directors Election

This June, New York ACEP members will receive the 2018 Candidate Profile. Through this proxy, members will elect four board candidates to serve three-year terms on the New York ACEP Board of Directors.

Members can cast their vote on board positions by proxy no later than July 6. Proxies will be sent by email to all New York ACEP member in June. Members may cast a proxy in person at the New York ACEP Annual Meeting Wednesday, July 11 at 12:45 pm at The Sagamore Resort on Lake George in Bolton Landing.

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Department of Emergency Medicine
Staten Island University Hospital

Bringing A National Initiative To Your Department

According to the U.S. Census Bureau, New York is the third largest state in population. It is estimated that 70% of the state's population is white, 16% black, 7% Asian and 7% other races. Hispanics and Latinos of all races make up almost 18% of the state's population, with non-Hispanic whites making up 58%. As a state, we are 51% female.[1]

The diversity of our state and nation puts us in an interesting and unique time to be practicing emergency medicine. This was reflected in Dr. Rebecca Parker's Presidential Inauguration Speech in October 2016. Her vision to promote diversity and inclusion for our parent organization was clear.

> "The U.S. population is diversifying quickly. Just over half of America's population are women, and 38% are minorities… We definitely do not reflect the diversity of our patient population… We have seen an uptick of minority emergency medicine residents in the last 20 years, currently at 34%, although we still have a need to attract underrepresented minorities."[2]

Dr. Parker noted that our medical school workforce is diversifying. This is notable regarding the gender gap, whereby only 10% of first year medical students were women in 1968, 44% in 1999, and almost 50% today.[3,4] In New York State approximately 38% of physicians are women.[6] With respect to emergency medicine across the United States, the active physician work force is represented by 3.1% of physicians being Black or African American, 3.9% Hispanic or Latino, 12.1% Asian, 78.3% White,and 3% other.[5] Similarly, in recent years 35-38% of emergency medicine residents nationally, are women.[7]

I am compelled to entertain if my perception of emergency medicine practice is in line with these statistics. Working in a department that reflects the general demographics of New York state, the reality is clear: It is unlikely that the backgrounds of physicians will complement their patients in most emergency departments.

In the same way, I reflect on my perception of our organization. As an enthusiastic supporter of ACEP and a habitual attendee and participant in the ACEP council, I have been concerned about the composition of our leadership. Looking out on the council floor year after year I have been troubled, asking myself how well this group represents and reflects emergency physicians. For at face value the group does not characterize the residents I trained with; the physicians of my department; nor the patients I care for. This begs us to determine how we can do better.

My perception of this matter was realized in an editorial by current ACEP leadership. They noted, "Women are substantially underrepresented, composing only 26% of the regular ACEP membership, 28% of committee members, 26% of committee chairs and 27% of council members. The division is even greater in senior leadership positions...Blacks account for just 1% of our members and Hispanics 1.5%".[8]

As emergency medicine providers we pride ourselves on our open door policy; serving all comers of all backgrounds. However, our providers and leaders do not reflect those we routinely care for. It has been shown that there are numerous benefits when healthcare providers reflect the diversity of the populations they serve. From hospital issues of length of stay and unnecessary readmissions, to treatment adherence and patient satisfaction.

I applaud ACEP for acting on this important and topical issue. It is encouraging that our organization has prioritized the creation of a strategic plan focused on making the necessary changes to meet the needs of our physicians and patients. I look forward to watching us provide not just better, but more mindful care as our organization takes a fresh look at ourselves and the environment in which we practice.

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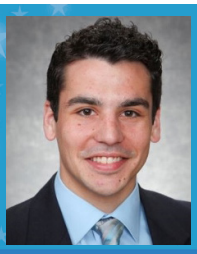

Matthew P. Camara, MD

Emergency Medicine Resident (PGY-2)
SUNY Upstate Medical University

I am originally from Massachusetts, and have finally accepted that not everyone likes the New England Patriots. My interests include emergency ultrasound, patient advocacy and playing drums at local Syracuse music venues.

New York ACEP offers the opportunity to get involved in the legislative process, and have a direct impact on the state of healthcare on behalf of our patients.

Kaushal H. Shah, MD FACEP

Residency Director & Vice Chair of Education, Emergency Medicine
Icahn School of Medicine at Mt. Sinai

Dr. Shah is presently the Residency Director and Vice Chair of Education for Emergency Medicine at Mount Sinai Hospital. He is also on the National ACEP Clinical Policies Committee and oversees the NFL Airway Physicians. He served on the New York ACEP Board for two terms and as chair of the Education Committee for many years; he continues to be active on the Education and Research committees.

It is incredibly impressive what New York ACEP does behind the scenes for emergency physicians in New York state, from legislative advocacy to medical education to career development and so much more. No joke -- I get a lot of satisfaction being part of the mission to serve emergency physicians.

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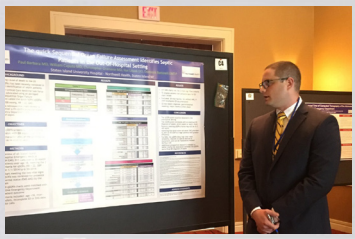

EDUCATION

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Associate Program Director
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Uncertainty and the Doctor

It happens on a daily basis in the Emergency Department (ED)—the patient comes in with a complaint, you perform the history and physical exam, may order ancillary testing and come to conclusions as to whether this patient is having an emergent process or not. More likely than not, he or she is safe to go home to follow up with his or her own primary doctor. Case closed and disposition rendered, you feel you've "done your job" and ruled out disaster. As you are wrapping up the patient's care, you are approached with the often asked question, "But why do I have the pain/dizziness/cough/etc?" and answer with a slippery reassurance that you've made sure the patient is safe to go home. You may or may not give the patient a host of possibilities of what may be happening, but in either case, the patient goes home and you move on. Your "diagnosis" of the patient's encounter in the discharge papers sounds oddly similar to the original complaint: pain/dizziness/cough.

Multiply the above scenario by years and you now realize that we work in a sometimes frustratingly inconclusive discipline. It's interesting that our training equips us with skills and a knowledge base in order to reach conclusions about what ails our patients, yet we rarely get to enjoy any fruit from our labors. In fact, the number of patients who remain without a diagnosis vastly outweighs the number of patients for whom we do have a diagnosis.

I wouldn't characterize the general personality traits of physicians as such that willingly accommodate the unknowingness of medicine. How can we work with such uncertainty? And how is it possible to instill in our patients any sense of confidence that we know what we're doing?

As it turns out, uncertainty is no stranger to medicine. In fact, there are numerous physicians who've written about grappling with the unknown, despite the technologically-driven practices of the modern day. Jerome Groopman, an oncologist, has talked extensively about how uncertainty is perpetuated by cognitive errors.[1] Oliver Sacks was a neurologist whose writing describes the wonder and mystery at the center of not knowing the underpinnings of the neuropathology he saw as a clinician.[2]

In fact, uncertainty lingers at the edges of much of what we do as doctors. There are relatively few scenarios of great certainty when something is true and based on strong evidence (e.g. oxygen is crucial to cell respiration or that beta-agonists improve asthma symptoms). In the world of emergency medicine (EM), we love presentations in which we see well-described pathology—whether it be diabetic ketoacidosis or a shoulder dislocation—because those have very clear pathways of care.[3] I mean, who doesn't love reducing the nursemaid's elbow and feeling like a rock star in front of the patient's parents?

However, it is far more common that medicine determines its practices based on incomplete information, cultural practice and a misappropriation of care that form the universe of uncertainty in which we work. By far, we contend with incomplete information more frequently than anything else, especially because many of our patients in the emergency department are undifferentiated. The clinical stakes are no higher than when we decide to call the end of a code, particularly with younger patients. Yes, most of us can identify medical futility, but our decisions are often not grounded in science. To wit, the last time I coded a child, we did not stop for an hour and a half.

In addition to incomplete information, we pander to the forces of uncertainty by practicing within institutional rules. We see this all the time. It took me years to realize that Kayexalate does not have data to support a clear benefit to its use, yet that's the way I was trained and the drug is used routinely in our hospital for hyperkalemia. Medicine is steeped in lore and grounded in mentorship and it is no wonder that we follow the cultural norms of where we practice. The problem is that we often are not aware of our promotion of uncertainty, unless we are vigilant in self-assessment of our work practice.

We tend to be control freaks when managing issues at work, particularly when we feel we have the moral imperative of "managing emergencies." Thus, we can fall into traps of thinking we're doing good when we may in fact be doing harm. For example, getting that CT scan to confirm a renal calculus, when in fact that same 30-year-old patient has already had three CT scans in the last year in various EDs. Or prescribing antibiotics for a patient with urinary symptoms who has a clean urinalysis. "Oh, what's the harm?" we think. Well, likely little in the near future, but how many CT scans will that patient with the kidney stone have by age 50 or what if the patient with the UTI develops C. difficile colitis?

EDUCATION

We can safely say that uncertainty is part of our work. We contend with it on a daily basis, with the management of routine presentations, as well as when addressing the most impactful questions of our practice. If we assume that our work is fundamentally flawed in all that we can know, then we must act on recognizing how to mitigate it.

But how? We are not exactly a group self-selected to be comfortable with the limits of our scope of knowledge. And to exacerbate the tension, society demands us to be near flawless in our diagnostic capability. The best approach requires both introspection and a careful look at our discipline.

I believe the two steps go hand in hand: the first is recognition that uncertainty is everywhere; followed by the more difficult step of acceptance. Many doctors are very good at knowing their limits and, on many of such occasions, will call a consult or order ancillary tests. But I think it's still difficult to say the words, "I don't know" when we don't have solid conclusions at the end of a workup. Every EM physician should have a descriptive paragraph in their head that they can access comfortably when patients need answers to the nature of their complaints Mine is, "Despite me not knowing exactly why you have that chronic abdominal pain, I can say that you have no dangerous findings given my workup, so I can give you some medications for your symptoms and have you follow up as an outpatient."

And if you're really not sure whether a patient requires further work-up, be honest with your patient and say so. This can be risky territory for the self-assured doctor who likes to act authoritatively. However, this strategy is effective for a couple of reasons. First, it opens the door for shared decision-making between patient and physician. It never hurts to impart your medical reasoning to the patient; it is inclusive and respectful because it gives the patient a voice in his or her management. Secondly, it reflects well on the physician. I think it has been pounded into our heads since medical school that it is a show of weakness to state your limits. On the contrary, it shows insight and confidence and you will make great strides in gaining the patient's trust.

Uncertainty will not be going away, no matter how precise our testing becomes or how well-developed our treatment protocols are. We should not fall into the trap of thinking that technology or experience will increase certainty. Instead, we must manage it as we manage our patients—with individualized focus, compassion, and honesty.

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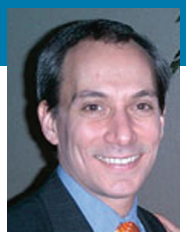
NEW YORK STATE OF MIND



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Association of Whole-Body Computed Tomography with Mortality Risk in Children with Blunt Trauma.

Meltzer JA, Stone ME Jr, Reddy SH, Silver EJ; Jacobi Medical Center, Albert Einstein College of Medicine, Bronx; JAMA Pediatr. 2018 Apr 9.

INTRODUCTION: Although several studies have demonstrated an improvement in mortality for injured adults who receive whole-body computed tomography (WBCT), it is unclear whether children experience the same benefit.

OBJECTIVE: To determine whether emergent WBCT is associated with lower mortality among children with blunt trauma compared with a selective CT approach.

DESIGN, SETTING and PARTICIPANTS: A retrospective, multicenter cohort study was conducted from January 1, 2010, to December 31, 2014, using data from the National Trauma Data Bank on children aged six months to 14 years with blunt trauma who received an emergent CT scan in the first two hours after emergency department arrival. Data analysis was conducted from February 2 to December 29, 2017.

EXPOSURES: Patients were classified as having WBCT if they received CT head, CT chest and CT abdomen/pelvis scans in the first two hours and as having a selective CT if they did not receive all three scans.

MAIN OUTCOMES and MEASURES: The primary outcome was in-hospital mortality in the seven days after ED arrival. To adjust for potential confounding, propensity score weighting was used. Subgroup analyses were performed for those with the highest mortality risk (ie, occupants and pedestrians involved in motor vehicle crashes, children with a Glasgow Coma Scale score lower than nine, children with hypotension and those admitted to the intensive care unit).

RESULTS: Of the 42,912 children included in the study (median age [interquartile range], 9 [5-12] years; 27,861 [64.9%] boys), 8,757 (20.4%) received a WBCT. Overall, 405 (0.9%) children died within seven days. After adjusting for the propensity score, children who received WBCT had no significant difference in mortality compared with those who received selective CT (absolute risk difference, -0.2%; 95% CI, -0.6% to 0.1%). All subgroup analyses similarly showed no significant association between WBCT and mortality.

CONCLUSIONS and RELEVANCE: Among children with blunt trauma, WBCT, compared with a selective CT approach, was not associated with lower mortality. These findings do not support the routine use of WBCT for children with blunt trauma.

Prognostic Utility of Initial Lactate in Patients with Acute Drug Overdose: A Validation Cohort.

Cheung R, Hoffman RS, Vlahov D, Manini AF; Jacobs School of Medicine and Biomedical Sciences, State University of New York at Buffalo; Ann Emerg Med. 2018 Apr 6.

STUDY OBJECTIVE: Previous studies have suggested that the initial emergency department (ED) lactate concentration may be an important prognostic indicator for in-hospital mortality from acute drug poisoning. We conduct this cohort study to formally validate the prognostic utility of the initial lactate concentration in a larger, distinct patient population with acute drug overdose.

METHODS: This observational, prospective, cohort study was conducted during five years at two urban teaching hospitals. Consecutive adult emergency department (ED) patients with acute drug overdose had serum lactate levels tested as part of clinical care. The primary outcome was inpatient fatality. Receiver operating characteristics were plotted to determine optimal cut points, test characteristics, area under the curve, odds ratios and 95% confidence intervals (CIs).

RESULTS: Of 3,739 patients screened, 1,406 were analyzed (56% women; mean age 43.1 years) and 24 died (1.7%). The difference in mean initial lactate concentration was 5.9 mmol/L (95% CI 3.4 to 8.1 mmol/L) higher in patients who died compared with survivors. The area under the curve for prediction of fatality was 0.85 (95% CI 0.73 to 0.95). The optimal lactate cut point for fatality was greater than or equal to 5.0 (odds ratio 34.2; 95% CI 13.7 to 84.2; 94.7% specificity). Drug classes for which lactate had the highest utility were salicylates, sympathomimetics, acetaminophen and opioids (all area under the curve $\geq$ 0.97); lowest utility was for diuretics and angiotensin-converting enzyme inhibitors.

CONCLUSION: Initial lactate concentration is a useful biomarker for early clinical decision making in ED patients with acute drug overdose. Studies of lactate-tailored management for these patient populations are warranted.

Pediatric Hoverboard and Skateboard Injuries.

Bandzar S, Funsch DG, Hermansen R, Gupta S, Bandzar A; Department of Emergency Medicine, New York-Presbyterian Hospital, New York; Pediatrics. 2018 Apr;141(4).

OBJECTIVES: To investigate the characteristics of hoverboard injuries compared with skateboard injuries in children presenting to US emergency departments (EDs).

METHODS: Data regarding hoverboard and skateboard injuries in children <18 years of age were obtained from the National Electronic Injury Surveillance System for calendar years 2015 and 2016. Data included demographics, body regions injured and ED disposition.

RESULTS: There were an estimated 26,854 hoverboard and 121,398 skateboard injuries treated in US EDs between 2015 and 2016. The mean and median ages for hoverboard and skateboard injuries were 11 and 13 years, respectively. In both groups, boys were more commonly injured. The majority of hoverboard injuries occurred at home, whereas skateboard injuries occurred on the street. The wrists were the most common injured body part, and fractures were the most common diagnosis in both groups. The majority of patients in both groups were discharged from the hospital. Approximately 3% of the patients with skateboard injuries and hoverboard injuries were admitted to the hospital.

CONCLUSIONS: The distribution of injuries among hoverboard riders and skateboarders was similar. Fractures, contusions and sprains and/or strains were the most common types of injuries in both riders. However, there was

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a higher number of sprains and/or strains in skateboarders when compared with hoverboard users. This difference may be attributed to the way users ride these boards. Fractures were the most common reason for hospital admission for both toys. By elucidating the characteristics of hoverboard injuries, preventive measures can be implemented to decrease the incidence of these injuries as well as ED visits.

Hospital Admissions, Mortality and Comorbidities Among New York State Sickle Cell Patients, 2005-2013.

Linton E, Langer AL, Glassberg J; Department of Emergency Medicine, Icahn School of Medicine at Mount Sinai, New York; J Natl Med Assoc. 2018 Apr;110(2):149-156.

Analyses of administrative and large data sources in Sickle Cell Disease (SCD) can answer questions not suitable for prospective study but have been hampered by lack of validated methods to adjust for individual comorbidities and lack of baseline utilization data over time. We sought to develop a database to characterize inpatient SCD care across New York State and generate a re-weighted sickle-cell specific Charlson Comorbidity index (S-CCI) for use in future large data SCD research. We identified 18,541 individual SCD patients admitted to New York State hospitals between 2005 and 2013 from the SPARCS database. We present data from both a randomly selected derivation cohort, used to develop the S-CCI and a validation cohort, The S-CCI resulted in small improvements in model fit and discrimination while using fewer covariates, allowing a more parsimonious model. Despite being the most common comorbidity, chronic pulmonary disease was not predictive of mortality. Mortality per hospitalization was 0.61%. Many patients (32%) were admitted only once during the nine-year period. However, the majority was admitted more frequently with over 15% of patients being admitted more than once per year.

A Novel Approach to Addressing an Unintended Consequence of Direct to Room: The Delay of Initial Vital Signs.

Basile J, Youssef E, Cambria B, Chacko J, Treval K, Hahn B, Ardolic B; Northwell Health, Staten Island University Hospital, Staten Island; West J Emerg Med. 2018 Mar;19(2):254-258.

INTRODUCTION: The concept of "direct to room" (DTR) and "immediate bedding" has been described in the literature as a mechanism to improve front-end, emergency department (ED) processing. The process allows for an expedited clinician-patient encounter. An unintended consequence of DTR was a time delay in obtaining the initial set of vital signs upon patient arrival.

METHODS: This retrospective cohort study was conducted at a single, academic, tertiary-care facility with an annual census of 94,000 patient visits. Inclusion criteria were all patients who entered the ED from 11/1/15 to 5/1/16 and between the hours of 7 am to 11 pm. During the implementation period, a vital signs station was created, and a personal care assistant was assigned to the waiting area with the designated job of obtaining vital signs on all patients upon arrival to the ED and prior to leaving the waiting area. Time to first vital sign documented (TTVS) was defined as the time from quick registration to first vital sign documented.

RESULTS: The pre-implementation period, mean TTVS was 15.3 minutes (N= 37,900). The post-implementation period, mean TTVS was 9.8 minutes (N= 39,392). The implementation yielded a 35% decrease and an absolute reduction in the average TTVS of 5.5 minutes ($p<0.0001$).

CONCLUSION: This study demonstrated that the coupling of registration and a vital signs station was successful at overcoming delays in obtaining the time to initial vital signs.

Relocation of Blood Gas Laboratory to the Emergency Department Helps Decrease Lactic Acid Values.

Brazg J, Huang P, Weiner C, Singh G, Likourezos A, Salem L, Dickman E, Marshall J; Department of Emergency Medicine, Maimonides Medical Center, Brooklyn; Am J Emerg Med. 2018 Mar 12.

IMPORTANCE: Emergency physicians often rely on Lactic Acid (LA) values to make important clinical decisions. Accuracy of LA values improve when blood gas analysis is performed in the emergency department (ED) as opposed to a satellite laboratory (SL).

OBJECTIVE: To investigate an association between blood gas laboratory location and accuracy of ED lactic acid samples.

METHODS: The study team evaluated lactic acid values from venous and arterial blood gas samples drawn between June 1, 2015 and September 30, 2016. The study was exempt from institutional review board approval. Samples were separated into two groups: those which were drawn prior to and after relocation of the blood gas laboratory to the ED. The data, including patient demographic characteristics, acute illness severity indices and blood gas results were compared within and between each group using t-test for continuous variables and chi-square test for categorical variables. The primary outcome was the mean lactate value measured in the SL group in 2015 compared to the ED group in 2016. Potassium and creatinine values were measured between the two groups as secondary outcomes.

RESULTS: Of the 21,595 consecutive samples drawn, 10,363 samples were from the SL group and 11,232 from the ED group. The SL group included 5,458 (52.7%) women; mean (SD) age was 61.8 (21.0). The ED group contained 5,860 (52.2%) women; mean (SD) age was 61.7 (20.5). Mean Emergency Severity Index (ESI) were the same in each group at 2.31 and rates of Systemic Inflammatory Response Syndrome (SIRS) were also equivalent in each group at 22.2%. Significant differences were found between LA values in the SL group (mean 2.21mmol/L) and in the ED group (mean 1.99mmol/L) with a p value of <0.0001. There was a small statistical significance between the difference in potassium values in the SL group (mean 3.98meq/L) compared to the ED Group (mean 3.96meq/L) with a p value of 0.022. No significant difference was found between the creatinine values.

CONCLUSIONS AND RELEVANCE: These results suggest that mean lactate values decreased when measured in an ED blood gas laboratory and may provide more accurate LA results than blood gas samples analyzed at an SL blood gas laboratory within the same institution. Hospitals may consider moving blood gas laboratories to the ED to improve accuracy of one of the most important early blood markers used in the definition of sepsis and in the identification of the critically ill.

Battlefield Acupuncture to Treat Low Back Pain in the Emergency Department.

Fox LM, Murakami M, Danesh H, Manini AF; Department of Emergency Medicine, Icahn School of Medicine at Mount Sinai, New York; Am J Emerg Med. 2018 Feb 27.

INTRODUCTION: Battlefield acupuncture (BFA) is an ear acupuncture protocol used

by the military for immediate pain relief. This is a pilot feasibility study of BFA as a treatment for acute low back pain (LBP) in the emergency department (ED).

METHODS: Thirty acute LBP patients that presented to ED were randomized to standard care plus BFA or standard care alone. In the BFA group, outcomes were assessed at the time of randomization, five minutes after intervention, and again within one hour after intervention. In the standard care group outcomes were assessed at the time of randomization and again an hour later. Primary outcomes included post-intervention LBP on a 10-point numeric pain rating scale (NRS) and the timed get-up-and-go test (GUGT). t-Test and chi squared tests were used to compare differences between groups demographics to evaluate randomization, and Analysis of Covariance (ANCOVA) was used to assess differences in primary/secondary outcomes.

RESULTS: We randomized 15 patients to BFA plus standard care, and 15 patients to standard care alone. Demographics were similar between groups. Post-intervention LBP NRS was significantly lower in the BFA group compared with the standard care group (5.2 vs. 6.9, ANCOVA p=0.04). GUGT was similar between groups (21.3 vs. 19.0, ANCOVA p=0.327). No adverse events from acupuncture were reported.

DISCUSSION: This pilot study demonstrates that BFA is feasible as a therapy for LBP in the ED. Furthermore, our data suggest that BFA may be efficacious to improve LBP symptoms, and thus further efficacy studies are warranted.

Evaluating the Emergency Department Observation Unit for the Management of Hyperglycemia in Adults.

Crilly CJ, Allen AJ, Amato TM, Tiberio A, Schulman RC, Silverman RA; Donald and Barbara Zucker School of Medicine at Hofstra/ Northwell, Hempstead.

OBJECTIVE: To determine whether hyperglycemic patients can be successfully managed in the Emergency Department Observation Unit (EDOU), as determined by the frequency of inpatient admission following their EDOU stay.

METHODS: This was a retrospective chart review of patients ≥ 18 years presenting to an academic tertiary care ED between May 1, 2014 and May 31, 2016, found to have a glucose ≥ 300mg/dL, and selected for EDOU admission. Patient demographic information, lab results including an HbA1c, disposition, and hospital revisits within 30 days of discharge were recorded.

RESULTS: There were 124 EDOU patients meeting criteria. A total of 98/124 (79.0%) had a history of type 1 or 2 diabetes, and 26/124 (21.0%) were newly diagnosed with diabetes in the EDOU. The mean initial ED serum glucose was 467±126mg/dL. Of the 119 patients with HbA1c analyzed, the mean value was 12.1±2.2% (109±24mmol/mol) and in 112/119 (94.1%) the level was 9.0% (75mmol/mol). Overall, 104/124 (83.9%) were discharged from the EDOU, 18/124 (14.5%) were admitted to the inpatient service and 2/124 (1.6%) left the EDOU against medical advice. A total of 7/124 (5.6%) patients returned to the ED within 30 days of discharge with hypoglycemia, hyperglycemia or diabetic ketoacidosis, 6/7 (85.7%) of whom had been discharged from the EDOU.

CONCLUSIONS: Results suggest hyperglycemic patients selected by ED physicians can be managed in the EDOU setting. Nearly all patients managed in the EDOU for hyperglycemia had an HbA1c, 9.0%, suggesting unrecognized or poorly controlled chronic diabetes as the basis for hyperglycemia.

Low Dose Intramuscular Methadone for Acute Mild to Moderate Opioid Withdrawal Syndrome.

Su MK, Lopez JH, Crossa A, Hoffman RS; Ronald O. Perelman Department of Emergency Medicine, NYU School of Medicine, New York; Am J Emerg Med. 2018 Mar 2.

STUDY OBJECTIVE: To assess the efficacy of 10mg intramuscular (IM) methadone in patients with opioid withdrawal syndrome (OWS).

METHODS: This was a prospective observational, convenience sample of patients presenting to the ED with mild to moderate OWS. Evaluations included the Clinical Opiate Withdrawal Scale (COWS), Withdrawal Symptoms Scale (WSS), Altered Mental Status Scale (AMSS) and a physician assessment of the patient's WSS (MDWSS). After enrollment, 10mg of IM methadone was administered and patients were reassessed at 30 minutes post-methadone administration. The primary outcome was the change in COWS at baseline and after methadone administration. Secondary outcomes were the differences between AMSS, and WSS post-methadone.

RESULTS: Fifty-seven patients had COWS scores recorded at baseline and 30 minutes. Fifty-six had mild to moderate OWS. The COWS improved a mean of 7.6 after methadone administration (P<0.001). The improvement was greater among patients presenting with moderate versus mild withdrawal (mean decrease = -9.1 vs. -5.5, P<0.001). Patients were more likely to self-score themselves as having withdrawal compared to MDs (93.6% vs. 76.6% respectively, P=0.027). Of the 62 patients with baseline and follow-up WSS by self-assessments, 69% improved post-methadone administration. In addition, the AMSS score remained the same or improved among 86% of cases with measurements at baseline and follow-up.

CONCLUSION: A single IM dose of 10mg methadone in the ED reduces the severity of acute mild to moderate OWS by 30 minutes. Larger prospective, randomized controlled and blinded studies would be needed to confirm these results.

The Impact of Hospital and Patient Factors on the Emergency Department Decision to Admit.

Warner LSH, Galarraga JE, Litvak O, Davis S, Granovsky M, Pines JM; Department of Emergency Medicine, Northwell Health, Long Island Jewish Medical Center, New Hyde Park; J Emerg Med. 2018 Feb;54(2):249-257.e1.

BACKGROUND: Substantial variation exists in rates of emergency department (ED) admission. We examine this variation after accounting for local and community characteristics.

OBJECTIVES: Elucidate the factors that contribute to admission variation that are amenable to intervention with the goal of reducing variation and health care costs.

METHODS: We conducted a retrospective cross-sectional study of 1,412,340 patient encounters across 18 sites from 2012-2013. We calculated the adjusted hospital-level admission rates using multivariate logistic regression. We adjusted for patient, provider, hospital and community factors to compare admission rate variation and determine the influence of these characteristics on admission rates.

NEW YORK STATE OF MIND

RESULTS: The average adjusted admission rate was 22.9%, ranging from 16.1% (95% confidence interval [CI] 11.5-22%) to 32% (95% CI 26.0-38.8). There were higher odds of hospital admission with advancing age, male sex (odds ratio [OR] 1.20, 95% CI 1.91-1.21), and patients seen by a physician vs. mid-level provider (OR 2.26, 95% CI 2.23-2.30). There were increased odds of admission with rising ED volume, at academic institutions (OR 2.23, 95% CI 2.20-2.26) and at for-profit hospitals (OR 1.15, 95% CI 1.12-1.18). Admission rates were lower in communities with a higher per capita income, a higher rate of uninsured patients and in more urban hospitals. In communities with the most primary providers, there were lower odds of admission (OR 0.60, 95% CI 0.57-0.68).

CONCLUSION: Variation in hospital-level admission rates is associated with a number of local and community characteristics. However, the presence of persistent variation after adjustment suggests there are other unmeasured variables that also affect admission rates that deserve further study, particularly in an era of cost containment.

A Randomized Trial of SMART Goal Enhanced Debriefing after Simulation to Promote Educational Actions.

Aghera A, Emery M, Bounds R, Bush C, Stansfield RB, Gillett B, Santen SA; Department of Emergency Medicine, Brooklyn Maimonides Medical Center; West J Emerg Med. 2018 Jan;19(1):112-120.

INTRODUCTION: Goal setting is used in education to promote learning and performance. Debriefing after clinical scenario-based simulation is a well-established practice that provides learners a defined structure to review and improve performance. Our objective was to integrate formal learning goal generation, using the SMART framework (Specific, Measurable, Attainable, Realistic, and Time-bound), into standard debriefing processes (i.e., "SMART Goal Enhanced Debriefing") and subsequently measure the impact on the development of learning goals and execution of educational actions.

METHODS: This was a prospective multicenter randomized controlled study of 80 emergency medicine residents at three academic hospitals comparing the effectiveness of SMART Goal Enhanced Debriefing to a standard debriefing. Residents were block randomized on a rolling basis following a simulation case. SMART Goal Enhanced Debriefing included five minutes of formal instruction on the development of SMART learning goals during the summary/application phase of the debrief. Outcome measures included the number of recalled learning goals, self-reported executed educational actions, and quality of each learning goal and educational action after a two-week follow-up period.

RESULTS: The mean number of reported learning goals was similar in the standard debriefing group (mean 2.05 goals, SD 1.13, n=37 residents), and in the SMART Goal Enhanced Debriefing group (mean 1.93, SD 0.96, n=43), with no difference in learning goal quality. Residents receiving SMART Goal Enhanced Debriefing completed more educational actions on average (Control group actions completed 0.97 (SD 0.87), SMART debrief group 1.44 (SD 1.03) p=0.03).

CONCLUSION: The number and quality of learning goals reported by residents was not improved as a result of SMART Goal Enhanced Debriefing. Residents did, however, execute more educational actions, which is consistent with the overarching intent of any educational intervention.

Accuracy of Computed Tomography in Diagnosis of Intra-Abdominal Injuries in Stable Patients with Anterior Abdominal Stab Wounds: A Systematic Review and Meta-Analysis.

Baron BJ, Benabbas R, Kohler C, Biggs C, Roudnitsky V, Paladino L, Sinert R; Department of Emergency Medicine, State University of New York Downstate Medical Center, Brooklyn; Acad Emerg Med. 2018 Jan 25.

BACKGROUND: Workup for patients presenting to the emergency department (ED) following an anterior abdominal stab wound (AASW) has been debated since the 1960s. Experts agree that patients with peritonitis, evisceration, or hemodynamic instability should undergo immediate laparotomy (LAP); however, workup of stable, asymptomatic or nonperitoneal patients is not clearly defined.

OBJECTIVES: The objective was to evaluate the accuracy of computed tomography of abdomen and pelvis (CTAP) for diagnosis of intraabdominal injuries requiring therapeutic laparotomy (THER-LAP) in ED patients with AASW. Is a negative CT scan without a period of observation sufficient to safely discharge a hemodynamically stable, asymptomatic AASW patient?

METHODS: We searched PubMed, Embase and Scopus from their inception until May 2017 for studies on ED patients with AASW. We defined the reference standard test as LAP for patients who were managed surgically and inpatient observation in those who were managed nonoperatively. In those who underwent LAP, THER-LAP was considered as disease positive. We used the Quality Assessment Tool for Diagnostic Accuracy Studies (QUADAS-2) to evaluate the risk of bias and assess the applicability of the included studies. We attempted to compute the pooled sensitivity, specificity, positive likelihood ratio (LR+) and negative likelihood ratio (LR-) using a random-effects model with MetaDiSc software and calculate testing and treatment thresholds for CT scan applying the Pauker and Kassirer model.

RESULTS: Seven studies were included encompassing 575 patients. The weighted prevalence of THER-LAP was 34.3% (95% confidence interval [CI]= 30.5%-38.2%). Studies had variable quality and the inclusion criteria were not uniform. The operating characteristics of CT scan were as follows: sensitivity = 50% to 100%, specificity = 39% to 97%, LR+= 1.0 to 15.7, and LR-0.07 to 1.0. The high heterogeneity (I2 >75%) of the operating characteristics of CT scan prevented pooling of the data and therefore the testing and treatment thresholds could not be estimated.

DISCUSSION: The articles revealed a high prevalence (8.7%, 95% CI= 6.1%-12.2%) of injuries requiring THER-LAP in patients with a negative CT scan and almost half (47%, 95% CI= 30%-64%) of those injuries involved the small bowel.

CONCLUSIONS: In stable AASW patients, a negative CT scan alone without an observation period is inadequate to exclude significant intraabdominal injuries.

Pediatric Patients Discharged from the Emergency Department with Abnormal Vital Signs.

Winter J, Waxman MJ, Waterman G, Ata A, Frisch A, Collins KP, King C; Department of Emergency Medicine, Albany Medical College, Albany; West J Emerg Med. 2017 Aug;18(5):878-883.

NEW YORK STATE OF MIND

INTRODUCTION: Children often present to the emergency department (ED) with minor conditions such as fever and have persistently abnormal vital signs. We hypothesized that a significant portion of children discharged from the ED would have abnormal vital signs and that those discharged with abnormal vital signs would experience very few adverse events.

METHODS: We performed a retrospective chart review encompassing a 44-month period of all pediatric patients (aged two months to 17 years) who were discharged from the ED with an abnormal pulse rate, respiratory rate, temperature, or oxygen saturation. We used a local quality assurance database to identify pre-defined adverse events after discharge in this population. Our primary aim was to determine the proportion of children discharged with abnormal vital signs and the frequency and nature of adverse events. Additionally, we performed a sub-analysis comparing the rate of adverse events in children discharged with normal vs. abnormal vital signs, as well as a standardized review of the nature of each adverse event.

RESULTS: Of 33,185 children discharged during the study period, 5,540 (17%) of these patients had at least one abnormal vital sign. There were 24/5,540 (0.43%) adverse events in the children with at least one abnormal vital sign vs. 47/27,645 (0.17%) adverse events in the children with normal vital signs [relative risk = 2.5 (95% confidence interval, 1.6 to 2.4)]. However, upon review of each adverse event we found only one case that was related to the index visit was potentially preventable by a 23-hour hospital observation, and caused permanent disability.

CONCLUSION: In our study population, 17% of the children were discharged with at least one abnormal vital sign, and there were very few adverse (0.43%) events associated with this practice. Heart rate was the most common abnormal vital sign leading to an adverse event. Severe adverse events that were potentially related to the abnormal vital sign(s) were exceedingly rare. Additional research is needed in broader populations to better determine the rate of adverse events and possible methods of avoiding them.

Rapid Primary Care Follow-up from the ED to Reduce Avoidable Hospital Admissions.

Carmel AS, Steel P, Tanouye R, Novikov A, Clark S, Sinha S, Tung J; Department of Medicine, Weill Cornell Medical College, New York; West J Emerg Med. 2017 Aug;18(5):870-877.

INTRODUCTION: Hospital admissions from the emergency department (ED) now account for approximately 50% of all admissions. Some patients admitted from the ED may not require inpatient care if outpatient care could be optimized. However, access to primary care especially immediately after ED discharge is challenging. Studies have not addressed the extent to which hospital admissions from the ED may be averted with access to rapid (next business day) primary care follow-up. We evaluated the impact of an ED-to-rapid-primary-care protocol on avoidance of hospitalizations in a large, urban medical center.

METHODS: We conducted a retrospective review of patients referred from the ED to primary care (Weill Cornell Internal Medicine Associates - WCIMA) through a rapid-access-to-primary-care program developed at New York-Presbyterian/Weill Cornell Medical Center. Referrals were classified as either an avoided admission or not, and classifications were performed by both emergency physician (EP) and internal medicine physician reviewers. We also collected outcome data on rapid visit completion, ED revisits, hospitalizations and primary care engagement.

RESULTS: EPs classified 26 (16%) of referrals for rapid primary care follow-up as avoided admissions. Of the 162 patients referred for rapid follow-up, 118 (73%) arrived for their rapid appointment. There were no differences in rates of ED revisits or subsequent hospitalizations between those who attended the rapid follow-up and those who did not attend. Patients who attended the rapid appointment were significantly more likely to attend at least one subsequent appointment at WCIMA during the six months after the index ED visit [N=55 (47%) vs. N=8 (18%), P=0.001].

CONCLUSION: A rapid-ED-to-primary-care-access program may allow EPs to avoid admitting patients to the hospital without risking ED revisits or subsequent hospitalizations. This protocol has the potential to save costs over time. A program such as this can also provide a safe and reliable ED discharge option that is also an effective mechanism for engaging patients in primary care.

Head CT for Minor Head Injury Presenting to the Emergency Department in the Era of Choosing Wisely.

DeAngelis J, Lou V, Li T, Tran H, Bremjit P, McCann M, Crane P, Jones CMC; Department of Emergency Medicine, University of Rochester Medical Center, Rochester, NY; West J Emerg Med. 2017 Aug;18(5):821-829.

INTRODUCTION: The Choosing Wisely campaign currently recommends avoiding computed tomography (CT) of the head in low-risk emergency department (ED) patients with minor head injury, based on validated decision rules. However, the degree of adherence to this guideline in clinical practice is unknown. The objective of this study was to evaluate adherence to the Choosing Wisely campaign's recommendations regarding head CT imaging of patients with minor head injury in the ED.

METHODS: We conducted a retrospective cohort study of adult ED patients at a Level I trauma center. Patients aged ≥ 18 years who presented to the ED with minor head injury were identified via International Classification of Diseases, 9th Revision, Clinical Modification codes. Medical record abstraction was conducted to determine the presence of clinical symptoms of the NEXUS II criteria, medical resource use and head CT findings. We used descriptive statistics to characterize the study sample, and proportions were used to quantify guidelines adherence.

RESULTS: A total of 489 subjects met inclusion criteria. ED providers appropriately applied the Choosing Wisely criteria for 75.5% of patients, obtaining head CTs when indicated by the NEXUS II rule (41.5%), and not obtaining head CTs when the NEXUS II criteria were not met (34.0%). However, ED providers obtained non-indicated CTs in 23.1% of patients. Less than 2% of the sample did not receive a head CT when imaging was indicated by NEXUS II.

CONCLUSION: ED providers in our sample had variable adherence to the Choosing Wisely head-CT recommendation, especially for patients who did not meet the NEXUS II criteria.

SBH Health System
BRONX

The Department of Emergency Medicine at St. Barnabas Hospital is dedicated to our Bronx community and has a strong, established teaching tradition.

Our inner-city, academic emergency department, is seeking an accomplished and dedicated teacher-clinician to fill the following position:

Associate Director of Emergency Ultrasound

St. Barnabas Hospital is a 461-bed, not-for-profit, nonsectarian, acute care community hospital located on a beautiful campus. We are a NY State-designated Stroke Center, AIDS Center and Level I Trauma Center. St. Barnabas Hospital is the primary teaching hospital of CUNY's Sophie Davis Medical School, and is also affiliated with Albert Einstein and New York College of Osteopathic Medicine.

Our Emergency Department sees over 92,000 patients a year providing vital access to crucial services in our diverse community. We are privileged to serve one of New York City's most challenged communities with high rates of asthma, trauma, diabetes, infectious disease, and other chronic illnesses.

We are home to a 4-year Emergency Medicine residency program with over 60 residents.

This position includes clinical, administrative and teaching responsibilities. The ideal candidate enjoys teaching residents, has completed a fellowship in emergency ultrasound, and is eager to work in both the Adult and Pediatric areas of the department.

We have 2 Philips Sparq ultrasound machines, a Sonosite M-turbo, and are in the process of upgrading our Qpath workflow manager to Qpath E. The department is seeking a second ultrasound fellowship trained physician to grow the program.

Pursuit of academic and departmental projects is expected. We seek teachers and leaders who are dedicated to advancing the specialty and practice of emergency medicine. We offer a competitive salary and the opportunity to join a Department that is in an exciting phase of growth and improvement: academically, clinically and operationally.

Interested physician candidates who are board eligible/certified in emergency medicine should contact Maria Ferraro at 718.960.6103 or mferraro@sbhny.org.

St. Barnabas Hospital has changed its name to SBH Health System. As a leader in the transformation of healthcare, SBH Health System brings you a new model of care that focuses on health and wellness, prevention of illness and caring for the whole you.

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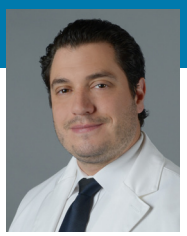

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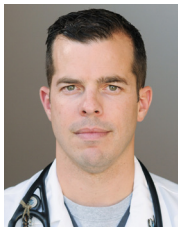

Paul Barbara, MD FACEP FAEMS
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Staten Island University Hospital
Associate Medical Director
Northwell Health Center for Emergency Medical Services

The ED Faculty's Secret "Pocket Survival Tool"

We're out there right under your nose. Every practicing emergency physician out there knows one of us. You've switched shifts with us, worked a night alongside one of our members and have even sat next to one of our colleagues in a meeting. We are all members of a semi-secret, heterogenous, coed fraternity known as EMS Physicians. We generally enjoy what goes with the job, which usually includes a wider scope than the confines of the 'simple' Emergency Department (ED).

A colleague of mine recently asked me "what is the value of an EMS physician on a department faculty?" Having had my career focused on reaching this pinnacle for most of my adult life, the answer is inherently palpable ... yet still nebulous. Rather than muttering out a poorly composed answer including the all-too-necessary catchphrases of "ambulance", "911", "medic" and "red phone", I decided to allow for more consideration before formalizing an answer. After all, he is also an EMS physician as well, one with more years of service than me; if he is asking, the answer is still unclear to those longer in the game than me.

The academic importance of EMS physicians has been internationally recognized in the House of Medicine. National accreditation by the ACGME of our EMS fellowship programs with concurrent board certification pathways through ABEM, to become one of the subspecialties within Emergency Medicine was a difficult road for EMS physicians but provided a quantum leap for the field of prehospital care. What was initiated in the 1960s, essentially out of necessity, has become a worthwhile complement to the likewise evolving emergency department system.

It would be stereotypical to simply refer to EMS physicians as The Designated Ambulance Person of the Faculty. We have unique characteristics extending beyond our innate ability to discern a responding vehicle's location, speed and direction by the varying Doppler effect intonations of a nearby siren. Some of us can even identify the agency type too. A bit of brainstorming and personal reflection on the various EMS physician colleagues I know led me to identify five common traits to our group. Maybe there are some readers out there who didn't realize they were EMS physicians at heart and would even seek to join our ranks.

We Are at Our Core, Resuscitationists. We Just Resuscitate in Different Spots Than the ED

The vast majority of resuscitations start outside the hospital. Cardiac arrests, chokes, trauma, status everything-icus, massive cardiopulmonary events and so on. Every EMS physician feels the desire to do more for patients BEFORE they get to the hospital. Whether an idea sparked during a primordial layperson CPR class or during their umpteenth ACLS recertification, there are always ways of improving the provision of critical care to the patients in the field. We strive to bring the ED outside the hospital in the most safe and efficient manner possible.

We are the conduits providing cross-pollination of ideas across the boundary of the hospital walls. Good ED management gets taken out to the field; likewise the ED adopts prehospital care ideals. Some examples of this are:

- Point-of-care ultrasound for trauma was pioneered in military triage for battlefield injuries.
- Intraosseous devices, once thought to be only an EMS intervention, are now a commonly used tool in the ED.
- Continuous CPR compression devices such as the LUCAS simultaneously shares roles in the prehospital and ED arenas.
- EMS medication choices more closely mirror ED standard of care vs. the past, i.e. vasopressor / antidysrhythmic / crystalloid choice.
- Continuous waveform capnography was used as an endotracheal tube confirmation method; now it is known as the only vital sign simultaneously measuring ventilation, circulation and metabolism at once.
- Non-invasive Positive Pressure Ventilation, once only an ED modality, is now a common therapy available to many EMS providers.
- Carbon monoxide co-oximeters, devices for objectively assessing firefighters are also used for triaging a mass presentation of suspected carbon monoxide poisonings.

EMS

EMS systems benchmark themselves with metrics in cardiac arrest, trauma, stroke, myocardial infarction and so on. EMS physicians both know this out-of-hospital literature as well as how the findings pertain to their upcoming patients in the ED. We push the research that changes the way patients are cared for. The future will tell us how REBOA, ECMO, LVADs and so many other modalities of care integrates into upcoming EMS practice.

We Seem to Enjoy the Weird Stuff

The EMS core curriculum involves wilderness medicine, toxicology (we call it haz-mat), public health laws, biological dangers, environmental emergencies, fireground rehab, international deployments, mass gatherings, urban search and rescue, and many others. Chances are we're that person in your faculty who likes to go see volcanoes on their family vacation, partly for the altitude considerations and also for the intrigue of a change in natural ambient air composition.

We are well versed in EMTALA and other public health requirements. When you need to transfer or receive a patient between two hospital facilities, your EMS physician will understand which patients should be transferred by which level of inter-facility EMS care and at which response speed. We know when to, and when not to, call 911.

In regards to cases in the ED, we want all the unique ones. You've got a military cadet who you think has decompression sickness? *Put them in our area!* A suicidal patient who inhaled a variety of paint thinners and ingested several over the counter cold meds? *Yes, please.* Chest pain patient being medevac'd off a cruise ship? *Man I wish I was working tonight!* You got bit by your own gaboon viper? *Please make your way to our facility promptly.* Oh it's just a guy with several foot fractures, admit to the hospital? *Except he has crush syndrome, just as he would if he was trapped under rubble from a USAR environment.* Will an N95 keep me safe from this patient who carried organophosphates in with them? *No, only a purified air powered respirator (PAPR) will because they're off-gassing the vapors of pesticides.*

In addition to desiring to care for the obscure patient complaints, our training has led us to have special knowledge in these cases. EMS involves everything that happens before the patient comes to the hospital. While we might not be experts in every aspect outside the hospital, chances are we have some understanding of the most uncommon complaints who come into the ED. Nothing improves a rough shift for us better than getting a patient with a particularly intractable ring constriction/fish hook impalement/power tool mishap/ etc. to allow our brains to run outside the box a bit, forming the optimal patient care solution with our available resources.

We Are Educators

We evolved from the primordial ditch docs and ambulance jockeys who wanted to deal with the high risk / reward patient, but had limited training and ability to modify their care based on available resources. We all owe a debt of gratitude to our forefathers and foremothers who carved this path for us. But now, we are the wardens of these educational tenets, ultimately responsible to pass it on to the next generations of healthcare providers. We are usually active in our residency programs, providing the necessary subject matter expert lectures to complete the core curriculum. We are also involved in formal EMS education with trainees riding prehospital apparatus and/or participating in emergency management exercises and drills. At my facility, we have integrated field care into hands-on management for our residents and physician assistants through hospital drills, wilderness experience days, and environmental cross-training with the local zoo. We run the resource-limited procedure labs to improve our trainee's abilities should they not have a well-lit video laryngoscope and a bougie-bearing assistant on a crash airway.

Since EMS and cardiopulmonary resuscitation have been intertwined since inception, you will also find your EMS physicians spearheading the various resuscitation "merit badge" classes as instructors. These guideline-based classes are admittedly not the cutting edge material that emergency physicians love to profess. Instead they represent a baseline of what the lay public and non-resuscitationists are expected to uphold. Understanding what is taught in these classes helps emergency physicians know what should happen to their critically ill patient who is en route. More on the impact of EMS medicine in the community later, however.

We Network. We Actually Network a Lot

The provincial breakdown of EMS systems across the country leads to a myriad of regional meetings between like-minded individuals. By the very nature of these meetings, we get to know our colleagues in various nearby locations. Whether at the region or the State, all EMS physicians share common meeting ground on regular intervals. Unique agendas will crop up from time to time, but in truth there are more common goals than the many attendees would admit to. Knowing your like-minded colleague at the local institutions has many advantages, whether it be to advocate for a potential job applicant or to obtain follow up on a patient transferred for further care. We are fighting the same fight, albeit with different standards and banners, but all the while endeavoring to improve our combined EMS care with each arduous convocation. Also, being the unique person in our respective faculty, even the most acrimonious adversaries know they share common ground because of our EMS background.

We Are Advocates for the Community

My mentor and fellowship director was a strong proponent of EMS physicians obtaining a Masters in Public Health. I inherently respected his judgment but it took me additional years of experience to understand how much EMS can intercede in public health. We are the first line in the multidisciplinary healthcare provider for their emergency. We are the disease surveillance and emergency response network that so many others depend on. When a receiving facility needs our pre-notifications about fires, radiation or chemical releases, communicable disease potential, or just a severely agitated person with public safety personnel accompanying them, we are the ones to bridge that gap. We are the guardians and proponents of public access to lifesaving interventions, more than just 'bystander CPR' from the layperson guidelines. Whether it be the automated external defibrillator from years ago, the current intranasal naloxone devices, or upcoming tourniquet and epinephrine auto-injector deployment, EMS physicians were at the medical decision making forefront to identify the various device's importance in saving the lives of the public.

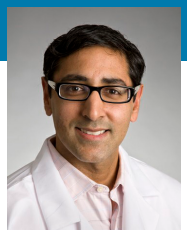
Not all EMS measures include life-saving interventions. As our nation continues to age, novel initiatives such as Mobile Integrated Healthcare/ Community Paramedicine represent a sizable amount of EMS' future. By identifying subsets of patients who can be cared for at home through allied health professionals and limiting ED & inpatient visits, EMS is

EMS

again meeting the needs of the community and the hospital systems. The addition of MIHC-CP to the care EMS can provide, which has classically been to mandate transport of said patient to a destination facility, demonstrates just how useful EMS providers and their oversight physicians can be.

So the next time you find yourself needing that gadget-y person with arcane knowledge, or maybe need to brush up on either the basic resuscitation guidelines or discuss the emerging critical care literature, or are a graduating resident who wants to work in a specific facility, turn to no one else except your friendly neighborhood EMS physician. Chances are we'll be able to find a tool in our armamentarium to assist you.

PS: All of those cases were real. I'm also still the only person I know who had a legitimate methylene chloride case, with rising carbon monoxide levels during admission while on a ventilator at 100% FiO_2.



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Clinical Update: Drowning

As the summer months approach, many of us will begin hearing reports of unintentional drowning leading to death and we will be evaluating more cases of drowning in the emergency department.(ED) It is important for emergency department physicians and pre-hospital providers to understand the scope of the unintentional drowning, management principles and factors leading to disposition decision.

The standard definition of drowning was elucidated by the World Congress on Drowning in 2002 as "the process of experiencing respiratory impairment due to submersion or immersion in liquid." This definition of drowning essentially discards the use of older terms to describe drowning, e.g. wet drowning, near drowning, dry drowning, etc. Outcomes implicit in the new definition include delayed or immediate death, morbidity or no morbidity.

The estimated worldwide annual incidence of drowning fatalities is 370-400K deaths a year. From 2005-2014, the U.S. averaged 3,536 fatal, unintentional and non-boating related drownings annually. An additional 332 people died of boating related incidents each year. From 1987-2009 in New York State, there were 3,146 incidents of drowning reported, with most drownings occurring during the summer months. The highest risk age group for drowning is 1-4 year olds within residential pools. In 2014, in children 1-4 who died from an unintentional injury, 1/3 died from drowning. The next highest risk group is adolescents and young adults in natural bodies of water. About 20% of drowning fatalities are in children 14 and younger, and for every one drowning death, another five receive emergency department treatment. Among those 1-14, fatal drowning remains the second leading cause of unintentional injury related deaths behind MVAs. Overall, about 80% of drowning fatalities are male.

In 2010, there were 12,900 ED visits related to drowning nationwide. More than 50% of drowning victims treated in emergency departments required hospitalization or transfer for further care.

The primary physiologic insult in a drowning victim is cerebral hypoxia. The primary goal of care in drowning resuscitation is the rapid reversal of hypoxia.

In the pre-hospital setting, in-water resuscitation should only be attempted by trained rescuers with the ability to check a pulse and to safely perform the skill. To benefit from rescue breathing, the patient must be unconscious, have a pulse and have inadequate or absent respirations. Traditional CPR cannot be performed in the water. If the patient is pulseless, or if conditions are too hazardous, the patient should rapidly be removed from the water for ventilation and chest compressions.

Early bystander CPR has been shown to save lives and improve outcomes in drowning victims. Contrary to the current dogma of bystander CPR focusing on rapid initiation of chest compressions prior to airway maneuvers, initial resuscitation of the drowning patient should focus on establishing and maintaining an airway with oxygen administration due to the central role of hypoxemia in drowning. Providing breaths at specified time intervals while administering continuous compressions is the recommended course of resuscitation for drowning patients.

Ventricular fibrillation (v-fib) is reported in < 10% of drowning patients. Airway maneuvers, oxygenation and compressions should not be delayed to apply an AED. Early application of an AED once resuscitation is initiated may be beneficial in the cases where v-fib may have caused or resulted from the drowning incident.

Retrospective data reveals that the incidence of cervical spine injury in drowning patients is low (0.5%-5%). Routine cervical spine immobilization should be limited to cases with obvious signs of trauma or associated with a fall/diving event. Unnecessary placement of cervical immobilization may delay rescuers from performing the critical actions of oxygenation and ventilation.

Further, consider initiating treatment for hypothermia if the patient had a cold water immersion.

In a drowning patient, lung injury patterns are a result of the disruption of surfactant associated with aspiration and could lead to non-cardiogenic pulmonary edema and an ARDS pattern. Levels of hypoxemia are variable. If mechanical ventilation is necessary for the drowned patient, the strategy employed for the ventilation of patients with ARDS should be utilized due to a similarity in the clinical picture. For the awake patient with mild to moderate respiratory symptoms, NIPPV may be used. Oxygen therapy is recommended in cases with hypoxia, and inhaled beta-agonists can be utilized to help manage bronchospasm and wheezing. Empiric use of antibiotics or corticosteroids is not recommended.

In the hospital setting, initial work up may include radiography and laboratory testing. Multiple retrospective ED studies of drowned patients reveal that initial chest x-ray results do not correlate with initial arterial blood gas or outcomes. For patients who proceeded to exhibit ARDS or acute lung injury, abnormalities appeared on chest x-ray within the first few hours after the drowning incident. In laboratory testing, no specific laboratory test finding provides prognostic information. Blood gas testing in symptomatic may help to guide ventilatory management.

Asymptomatic drowning patients with normal lung sounds and vital signs may be discharged from the emergency department as long as a competent party can observe the patient for 4-6 hours after discharge. For awake patients with mild symptoms, an observation period of 4-6 hours is warranted. The patient may be discharged if the clinical symptoms normalize with normal vital signs and the patient has no episodes of deterioration during the observation period. Any drowning patient with moderate to severe symptoms, e.g. abnormal lung sounds, severe cough, hypoxia, frothy sputum, depressed mentation hypotension should be admitted.

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New York City's Efforts to Improve Pre-hospital Communication During Mass Casualty Incidents

New York City has one of the world's largest 911 systems, with 1.7 million emergency medical response calls received in 2017. For a jurisdiction of New York City's size, complexity, and risk profile, strong pre-hospital to hospital communication is critical—especially during a Mass Casualty Incident (MCI), which is an event that has the potential to produce five or more patients. On average, New York City experiences seven such events per day.

To improve pre-hospital to hospital coordination related to MCI response, the Fire Department of the City of New York (FDNY) and the Greater New York Hospital Association (GNYHA) formed a workgroup in the spring of 2016 to review and potentially revise existing MCI communication protocols. This article describes the workgroup process that led to the August 2016 introduction of new EMS-to-hospital protocols in New York City, and ongoing efforts to monitor and continuously improve pre-hospital to hospital communication during MCIs.

Previous Process for Assessing Hospital Bed Availability

Once an MCI was declared, FDNY Emergency Medical Dispatch (EMD) contacted the emergency departments (ED) of the three closest hospitals. If none of those hospitals was a Level 1 or Level 2 trauma center, then the closest trauma center was also contacted.

Upon an ED staff person receiving the MCI notification by phone, EMD asked him or her how many critical and non-critical patients the facility could accept at that time. For large or complex MCIs, EMD might contact additional hospitals about their ability to receive patients. Which hospital staff member answered the EMD assessment call, and how each staff person determined the number of patients their facility could receive varied by location. Ideal calculations would consider current ED patient volume, available staffing, operating room availability and many other factors. However, because many of these factors were difficult to assess in real time, the numbers provided were often felt to be unreliable. FDNY and GNYHA convened a workgroup to examine this issue and develop recommendations.

FDNY-GNYHA Hospital Bed Availability Workgroup

Meeting regularly since March 2016, the *Hospital Bed Availability during MCIs* workgroup includes representatives from FDNY, GNYHA, the Regional EMS Council of New York City (REMSCO), NYC Emergency Management (NYCEM), the NYC Department of Health and Mental Hygiene (DOHMH) and hospital and health system staff with emergency department and EMS experience.

Workgroup members explored existing NYC MCI response processes, identified areas for improvement and reviewed information FDNY collected regarding systems and methods used in other major US cities. Workgroup discussions resulted in two recommendations:

- Creation of four MCI levels (Level A for Minimal to Moderate, Level B for Significant, Level C for Major, and Level D for Catastrophic) to reflect the severity and stability of the incident, the total number of expected patients and a minimum number of hospitals to be notified regarding receipt of patients.
- Use of a Fixed Allotment Model, whereby FDNY and each 911-receiving hospital agree on the maximum number of critical and non-critical patients to be transported to the hospital by EMS at each MCI level.

Launch of New Protocols

GNYHA and FDNY met with NYC hospital representatives in July 2016 to introduce the draft protocols and elicit feedback. The finalized protocols were communicated via a letter from FDNY's Chief Medical Officer to hospital Chief Executive Officers for all NYC hospitals in the 911-receiving system. Hospitals were also given a fixed allotment poster specific to their hospital, as well as a hospital guidance document developed by the workgroup. The new process went into effect August 1, 2016. The following sections describe in detail the four MCI levels and the hospital fixed allotments.

FDNY MCI Levels Under New Protocols

Under the protocols developed by the workgroup, FDNY's EMD staff quickly gathers information about the nature and severity of the incident from various sources, including 911 calls, reports from responding agencies and EMS officers and providers on the scene. EMD then makes an initial determination regarding the MCI level and begins making notifications to hospitals. The incident level can be modified as additional information and more precise patient numbers are received.

Level A (Minimal to Moderate)	The vast majority of New York City MCIs are classified as Level A (Minimal to Moderate MCI). This denotes a relatively static incident that produces, or has the potential to produce, a small number of critical patients. EMD contacts hospitals near the MCI (a minimum of two, including the closest Level 1 or 2 trauma center) and tells them to prepare to accept patients up to the hospital's Level A fixed allotment. *Examples of Level A MCIs: motor vehicle accident or residential fire with a small number of potential patients.*
Level B (Significant)	This is a relatively static incident that produces, or has the potential to produce, significant numbers of critical patients. EMD contacts hospitals in a broader vicinity of the MCI (a minimum of three) and tells them to prepare to accept patients up to the hospital's Level B fixed allotment. *Examples of Level B MCIs: bus accident, small residential building explosion/collapse.*
Level C (Major)	This is a dynamic incident producing, or with the potential to produce, a substantial number of critical patients. Hospitals in a still broader vicinity of the MCI (a minimum of five) are called by EMD and told to prepare to accept patients up to the hospital's Level C fixed allotment. *Examples of Level C MCIs: mass shooting, medium to large building explosion/collapse.*
Level D (Catastrophic)	This is a catastrophic event that will likely overwhelm the health care system. Hospitals are expected to redirect all efforts to MCI response. Rather than rely solely upon the EMD's notification call, hospitals should also rely on notification sources such as NYCEM Watch Command hospital radio transmittals, NYCEM All Call e-mail notifications and information from credible media outlets. All hospitals should prepare to receive patients above their Level C fixed allotment. *Examples of Level D MCIs: World Trade Center attack, intentional release of poison gas in subway system.*

Hospital Fixed Allotments Under New Protocols

Based on similar systems in other large jurisdictions—including both Houston, Texas, and Anaheim, California—the workgroup recommended defining a maximum number of critical and non-critical patients a hospital should anticipate for each MCI level.

After significant discussion, the workgroup determined that the fixed allotments should be based on a small number of hospital-specific variables, including average daily ED visits and trauma center designation. The numbers were developed first via two "bands" based on average daily ED visits (≤200 and >200). Within each band, a separate, slightly higher patient count was developed for Level 1 and Level 2 trauma centers. In addition, different allotments were identified for critical and non-critical patients, with the number of critical patients within each band lower given the intensity of potentially needed resources. Conversely, the number of non-critical, less resource-intensive patients is higher.

Average Daily ED Visits	Critical Patients		Non-Critical Patients	
	Non-Trauma Hospital	Trauma Hospital (Level 1 or 2)	Non-Trauma Hospital	Trauma Hospital (Level 1 or 2)
Level A (Minimal to Moderate)				
≤200	1	NA	20	NA
>200	2	3	30	30
Level B (Significant)				
≤200	4	NA	30	NA
>200	6	9	70	70
Level C (Major)				
≤200	4	NA	40	NA
>200	6	9	70	70

LEVEL D–greater numbers

The numbers above reflect EMS transport expectations and do not take into account patients who arrive on their own. Based on the above calculations, all 911-receiving hospitals were assigned hospital-specific patient fixed allotments for Level A, Level B and Level C MCIs.

EMD Notification Calls to Hospital Emergency Departments

When FDNY EMD calls a hospital ED to make a notification, the EMD staff person provides the following: the MCI level; the location of the incident; the nature of the incident (whether it's a fire or a motor vehicle crash, for example); and what kind of patients are involved, if known (whether they are adults or pediatrics, for example). As the EMD staff gets more information, they can upgrade or downgrade the MCI level. If the change in MCI level is expected to alter the estimated number of patients sent to a particular hospital, then that hospital will receive another call to indicate the level change. If two MCIs occur in proximity to a single hospital that is likely to receive patients from both incidents, then that hospital will receive separate calls, one for each incident.

The hospital receives a "stand-down" call from EMD when no additional patients are expected from an MCI. If the hospital has received patients from more than one MCI in the vicinity, then the stand-down call would occur when no additional patients are expected from the final incident.

Ambulance crews are expected to follow current hospital notification protocols when transporting critical patients. The crews provide notifications for critical patients associated with an MCI, as well as for critical patients not associated with an MCI.

Monitoring and Continuous Improvement of MCI Communication Protocols

The FDNY-GNYHA workgroup has continued to meet since these protocols went into effect. At each quarterly meeting, workgroup participants review recent MCIs of relevance due to size, complexity, or novelty. These reviews have resulted in additions and adjustments to the protocols for stand-alone pediatric facilities and free-standing EDs, among others.

Ongoing discussions also stimulated additional activities to increase internal hospital capabilities related to MCI response.

- Through its federal Hospital Preparedness Program (HPP) funding, DOHMH worked with many NYC 911-receiving hospitals to update their internal surge plans to take into account these new EMS-to-hospital notification protocols.
- In May 2017, GNYHA hosted an ED Frontline Staff Training focused on MCI response, including a segment on notification.
- In December 2017, FDNY began offering NYC hospitals tours of the Citywide Dispatch Center. The goal of the tours is to educate key staff within 911-receiving hospitals about pre-hospital operations, with an emphasis on MCI protocols.
- Workgroup members are currently creating a comprehensive MCI Response Toolkit that will be completed later in 2018.

Early Benefits of New Protocols

These new protocols have increased meaningful communication between FDNY and EDs in the NYC 911 system. The introduction of fixed allotments has strengthened hospital surge planning, enabling ED leadership and emergency managers to develop specific protocols for varying MCI levels, as well as develop corresponding exercises and drills. Most importantly, the workgroup process has created an environment of trust and collaboration that will enable the health and medical community to continue to make critical advances in this area.

Reference

1. Greater New York Hospital Association. "EMS-To-Hospital Response Process for Mass Casualty Incidents: Hospital Guidance Document". (May 2017). https://www.gnyha.org/tool/ems-to-hospital-response-process-for-mass-casualty-incidents/.

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of the New York American College of Emergency Physicians

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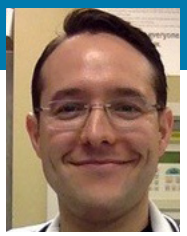

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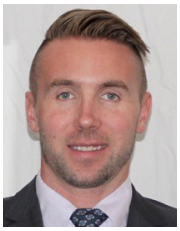

Guest Author:
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Ataxia & Numbness

Case

37-year-old man with no past medical history presents with a four-day history of loss of fine motor control, difficulty walking, writing and numbness extending from the xyphoid process down his feet. Vital signs were normal 36.9 C, 88 BPM, 115/87 mm Hg, 18 RPM, 97% on RA. His physical exam was significant for diminished sensation in the lower extremities, most notable for impaired proprioception in the legs and a wide ataxic gait. His labs were significant for a macrocytic anemia with a hemoglobin of 12.6 g/dL, MCV of 109.9fL. CT head & LP were unremarkable. Social history revealed a six-week history of daily nitrous oxide inhalation. The product was purchased on the street and he quickly became addicted; stopping only after the onset of his neurologic symptoms, which progressively worsened over the four days prior to emergency department (ED) presentation. He denied any changes to bowel or bladder function. Focused laboratory investigation revealed Vitamin B12 level of 874 pg/mL (ref: 243-894 pg/mL), a homocysteine level of 22.4 (ref: 5.0-15 umol/L) and a methylmalonic acid level of 1243 (ref: 0-378 nmol/L). He was administered high dose vitamin B12, 1mg, intramuscularly and folic acid 1mg. On hospital day two, an MRI of his spine confirmed an abnormal signal within the dorsal columns at C3-C5. He was diagnosed with nitrous-oxide induced subacute combined degeneration and was discharged on hospital day four with a plan to receive intramuscular B12 daily for the next three days, and then on a weekly basis until symptoms abated.

Discussion

Nitrous oxide is used both as an inhalational anesthetic and a food additive (e.g. whipping cream), but it also has potential for abuse. The cartridges are easily obtained via the internet and frequently purchased in bulk quantities. In acute overdoses, it can act as a simple asphyxiant. In chronic usage, it can exert a syndrome of hematologic and/or dorsal column pathology. The mechanism of toxicity occurs via direct oxidation of cobalt within the vitamin B12 moiety, which in turn renders it nonfunctional as a methionine synthase cofactor. Methionine synthase, in turn, is a ubiquitous cytosolic enzyme that plays a crucial role in the folate cycle, which ultimately plays a role in the maintenance of myelin sheaths and phospholipids.

It is important to note that Vitamin B12 levels in chronic abusers of nitrous oxide are frequently normal. The metabolic substrates of methionine synthase, homocysteine and methylmalonic acid, are the most sensitive markers for the diagnosis of a nitrous-oxide-induced functional vitamin B12 deficiency and are typically available as in-house laboratory tests. While the treatment of this syndrome with high dose vitamin B12 may improve neurologic symptoms, the damage can be permanent in some cases.

Conclusion

Nitrous oxide abuse is still prevalent today and frequently overlooked when obtaining a patient's social history in the ED. It is important to:

1. Consider nitrous oxide as a cause of unexplained dorsal column symptoms;
2. Recognize the poor sensitivity of a vitamin B12 level to diagnose this pathology;
3. Send homocysteine & methylmalonic acid levels, as they are more sensitive indicators of nitrous-oxide-induced functional vitamin B12 deficiency.

Calendar

June 2018

4 Lobby Day
6 Emergency Medicine Resident Committee Conference Call, 2:00 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 Research Committee Conference Call, 3:00 pm
21 EMS Committee Conference Call, 2:30 pm

July 2018

10-12 Scientific Assembly, The Sagamore Hotel
10 Board of Directors Meeting, The Sagamore Hotel 11:00 am-12:15 pm
11 Annual Meeting and Legislative Update, The Sagamore Hotel 12:45 pm-1:45 pm
11 New York ACEP Committee Meetings, The Sagamore Hotel 1:45 pm-2:15 pm
12 Board of Directors Meeting, The Sagamore Hotel 7:00 am-8:00 am

August 2018

1 Emergency Medicine Resident Committee Conference Call, 2:00 pm
22 Emergency Medicine Resident Career Day and Job Fair, The New York Academy of Medicine, 8:00 am-3:00 pm

September 2018

5 Emergency Medicine Resident Committee Conference Call, 2:00 pm
12 Education Committee Conference Call, 2:45 pm
12 Professional Development Conference Call, 3:30 pm
12-13 Strategic Planning Meeting, Mohonk Mountain House, 1:30-6:30 pm; 8:00 am-12:00 pm
13 Board of Directors Meeting, Mohonk Mountain House, 1:30-5:30 pm
13 Practice Management Conference Call, 1:00 pm
19 Government Affairs Conference Call, 11:00 am
19 Research Committee Conference Call, 3:00 pm
20 EMS Committee Conference Call, 2:30 pm

ALBANY UPDATE

Reid, McNally & Savage

New York ACEP Legislative & Regulatory Representatives

The 2018-19 State Budget passed March 30, 2018, two days ahead of the constitutional deadline. The $163.3 billion package holds growth at 2% for the eighth consecutive year. After passage of the State Budget, legislators took a two-week recess. They returned to Albany April 16 and will work to complete the business of the 2018 Legislative Session by June 20.

Provided below is a summary of final State Budget actions and other issues of interest to New York ACEP.

2018-19 State Budget

On March 13, New York ACEP Board, Government Affairs Committee members and residents from across the State traveled to Albany for a Lobby Day with their Senate and Assembly representatives on the Governor's proposed State Budget. Meetings were also held with the Chairman of the Senate Health Committee, Kemp Hannon, Assembly Health Committee Chairman, Richard Gottfried, and senior staff for Senate Majority Leader John Flanagan and Assembly Speaker Carl Heastie.

Hospital Penalties for "Preventable" Emergency Department Visits

In a victory for New York ACEP, the Governor's proposal to penalize hospitals for preventable emergency department visits was eliminated from the final State Budget. The proposal established a Statewide General Hospital Quality Pool and authorized the Department of Health (DOH) to create a penalty pool by establishing performance targets for hospitals to reduce potentially preventable emergency department visits and to reduce or eliminate reimbursement to hospitals based on their quality and safety scores as determined by DOH.

Senate Opioid Proposal Defeated

During State Budget negotiations, the Senate put forward a proposal to:

- require hospitals and emergency department personnel to notify a patient's prescriber that a patient is being treated for a controlled substance overdose; and
- change the exemption for emergency department personnel from checking the Prescription Monitoring Program (PMP) for controlled substance prescriptions written for a 5-day supply to a 3-day supply.

New York ACEP and contract lobbyists Reid, McNally & Savage worked to successfully eliminate this proposal from the final budget package. New York ACEP argued that a mandate to consult the PMP for every patient treated for an overdose and to contact the patient's prescriber of the overdose would be extremely difficult in the emergency department environment. It would interrupt clinical workflow and impair timeliness and access to patient care.

We noted that communication of the information sought by this proposal would be greatly enhanced if PMP information was integrated into patient electronic health records. Providing a single point of access for PMP and patient health data would greatly decrease the amount of time and resources required to access information and improve patient care.

Community Paramedicine Collaborative

Governor Cuomo put forward a State Budget proposal, supported by New York ACEP, to establish a Community Paramedicine Collaborative. Although this proposal was rejected by the Legislature in the final deal, both houses have stated their willingness to discuss a possible compromise before the June 20 recess.

In fact, legislation to authorize a Community Paramedicine program is currently pending in the State legislature (S5588 Hannon/A2733A Gottfried). The bill passed the Senate and is currently in the Assembly Health Committee.

The proposal would authorize emergency medical personnel to provide care in collaboration with hospitals, nursing homes, clinics and physicians to patients in the community. Under the direction of a physician, the program could provide: post-discharge care following

hospital admissions; evaluation, stabilization and treatment of nursing home residents to avoid preventable emergency transport to a hospital emergency department; and assistance to individuals in self-managing their health or behavioral health conditions.

Certified Peer Recovery Advocate Services Program

The final State Budget contains a new proposal to establish a program to support the recovery goals of individuals who use drugs and/or alcohol. Services may include but not be limited to:

- developing recovery plans;
- assisting with applying for benefits;
- accompanying clients to medical appointments; and
- peer engagement coordination with hospital emergency services to assist any patient that has been administered an opioid antagonist by a medical provider to establish connections to treatment after an opioid overdose reversal or after discharge

Excess Medical Malpractice Program

The final State Budget includes the Governor's proposal to extend the Excess Medical Malpractice Program until June 30, 2019 at level funding of $127.4 million.

Board of Medicine

The final State Budget includes the Governor's proposal to require that at least two physician appointees to the State Board of Medicine be experts in addressing women's health and reducing health disparities among demographic subgroups.

Pending Legislation

Members of New York ACEP's Board of Directors will travel to Albany June 4 to meet with legislators on proposed legislation affecting emergency medicine. Now that the State Budget is passed, legislators will focus on non-fiscal legislation. Pending proposals of interest to New York ACEP members are highlighted below.

Requirement for Prescribers to Consult the PMP in Emergency Departments

Governor Cuomo announced in his annual State of the State Address earlier this year that he plans to put forward amendments to the I-Stop Law, including the elimination of a provision of the original law that exempts prescriptions written in hospital emergency departments when the supply does not exceed 5 days. To date, the Governor has not submitted a proposal to the Legislature.

New York ACEP has developed a strong statement in opposition to the elimination of this exemption. It was enacted by the Legislature at New York ACEP's request in recognition of the very busy environment in emergency departments. Unlike other practitioners, emergency physicians don't have knowledge in advance of the patient's arrival as to whether a pain medication may be indicated during the visit. In addition, studies show that hospital emergency departments are not the source of opioids for patients and many have taken the lead in addressing inappropriate use.

Mandate to Consult the PMP and Notify Prescribers of Patient Overdose (S2639 Lanza/A1043 Cusick)

Separate legislation has been introduced, similar to the Senate budget proposal described above, to require "every emergency room or hospital practitioner to consult the PMP registry when treating a patient for a controlled substance overdose and to notify the patient's prescriber of such overdose." New York ACEP will vigorously lobby against this bill in Albany June 4.

Prohibition on Balance Billing (S6363 Hannon)

New York ACEP is strongly opposed to provisions of this bill to prohibit balance billing of emergency services when a patient elects to assign benefits to an out-of-network (OON) health care provider for emergency services. The unintentional consequence of this legislation will be to force providers of emergency services to accept extremely low fees dictated by insurance companies and to undermine the quality of the emergency safety network by discouraging physicians to practice in emergency departments. In most cases, out-of-network fees are substantially lower than the negotiated fees for in network providers.

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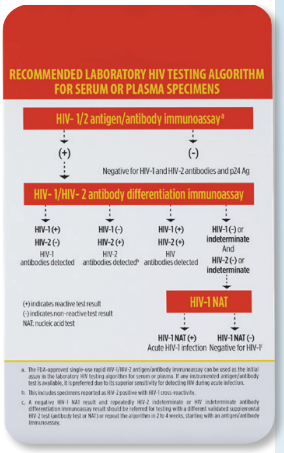

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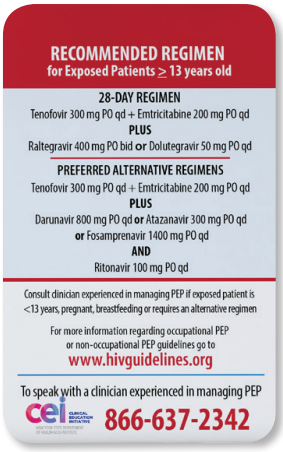

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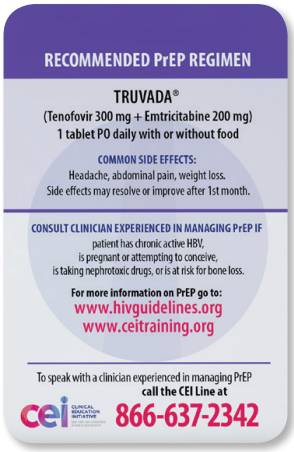

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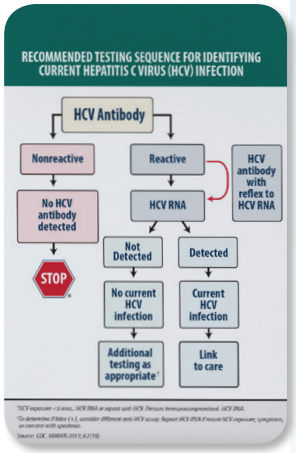

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