New York American College of Emergency Physicians

FEATURES

INSIGHTS

EVENTS

Empire State EPIC

VOL 39-02:21 EMERGENCY PHYSICIANS' INTERIM COMMUNIQUE

PRESIDENT'S MESSAGE

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The Only Constant is Change

Emergency medicine (EM) is always in flux, with the constant need to change and adapt. Despite all we have seen before, there will always be something new around the corner. This is especially true as we continually negotiate our way through the pandemic, facing each surprise. Though stepping back and taking a broader look, this has always been present in emergency medicine – a constant perpetual change.

Over the years, our practice has essentially been trickling out the front door. Some saw this faster than others and you may still be on the scale. In our local area, it started as the need to provide care when all our beds filled – hallway care invented (and lots of it). Next challenge came when all the "standard" hallway spots were filled – egress corridor utilization ensued. Now we commonly see every patient location occupied, but there are even more patients – direct waiting room and waiting room hallway care resulted. After the need to place chairs in external vestibules, we then moved to building an external annex (aka tent) to be able to care for patients.

To add to the "fun", this new reality couples with a severe staffing shortage – worse than we have ever seen. This shortage, coupled with the patient volumes started to result in a number of safety concerns – both general and patient direct. No one was happy about the situation – patients or staff – but this is EM and this is just the next challenge. As we started to talk about solutions, we relied heavily on our greatest strength. EM is a team sport. We need to work collectively as a team to communicate and plan to the best extent possible. In conversing with colleagues across the state, I know many have already done similar exercises. For those that have not started yet, this may provide ideas for consideration. As a disclaimer, some of these ideas are a bit crazy or frankly insane. However, we needed to pull a MacGyver and try something different.

First approach was to address specific tasks that could shift most easily. Working with our nursing team, we started with some of the basics. We worked with the provider team to manage their own discharges as much as able. A bit more work for them, but that helped free up some resources. Relatively quickly afterward came initial and repeat lab draws. Never imagined we would get to that point, but yet another help to the team.

Next step was to revamp our triage process. By getting creative, we could shift some nursing resources closer to the bedside. Rather than follow the traditional triage, we migrated to provider patient intake. The provider completes the chief complaint, a brief note, some basic screens, ESI and then enters orders to initiate patient care. Although this helped get the process started and provide orders for patients, this resulted in many waiting room hallway patients without the ability to complete any orders.

The following layer got interesting. We tried for a while to have the EM providers draw their own labs and place IVs but that created many challenges. Essentially this resulted in too many balls to juggle and was not sustainable. What has worked was the creation of dedicated shifts for placing IVs and drawing labs. We then added some additional direct patient care shifts. These included the tasks of administering IV fluids, basic medications and repeat/additional labs. Our initial workforce to fill these shifts was EM providers looking for some overtime but that quickly tapped out. We then moved to a pool of local APPs that had some bandwidth for various reasons. By expanding our provider pool, we were able to get a large number of these covered. Not perfect, but much better than prior.

Now for the truly "fun" part – how to finance. Putting all the quality concerns to the side, we had to justify the expense. With the local, state and national pressures, we have seen the agency nurse rates continually climbing. Current agency rates are well above our APP per diem rates and are even higher than physician rates at times. End result, we are currently saving staffing expense. With the initial alterations, there was a modest reduction in patients who left without being seen contributing to the bottom line. We were able to drive these even lower by adding some space via the use of an external tent (yes, we are now caring for patients in campgrounds). What would have been unimaginable a couple of years ago has truly turned some our operations around. As a last thought on finances, I suggest we need to look at things differently moving forward. Classically, we staff professional resources via the use of professional revenue. However, these new models require covering "facility" staffing vacancies with "professional" staffing resources. As we blur that classic division, we will need to look at ways to finance via facility means.

Overall, this was a list of successive changes to meet some monumental challenges – some worked while others failed. Nevertheless, we are seeing forward progress and better patient care. To emphasis, we relied on the innate strength of the EM team with each change vetted by the team to minimize disruption as able. It will come as no surprise we keep finding new opportunities as we go, but that is what makes this interesting – the ironic, constant change in EM.

SOUND ROUNDS

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Getting to the Heart of Acalculous Cholecystitis

Case Presentation

A 28-year-old female patient, postpartum day six following an uncomplicated normal spontaneous vaginal delivery with a remote history of appendectomy presented to the Emergency Department (ED) with three days of upper abdominal pain, nausea and diarrhea. Pain was rated 8 out of 10, constant in nature, localized along the epigastrium and right upper quadrant (RUQ) of the abdomen. No appreciable provoking or alleviating factors were noted. Pain was unrelieved with acetaminophen. The patient denied fevers or chills, chest pain, dyspnea, dyspnea on exertion and orthopnea.

Upon ED arrival, her blood pressure was 111/63 mmHg, heart rate 54, SpO2 98% on room air and afebrile. The physical exam was notable for tenderness along the epigastric region and RUQ with a positive Murphy's sign. Bedside biliary point-of-care ultrasound (POCUS) was performed of the gallbladder in two planes demonstrating a thickened gallbladder wall of 10mm with gallbladder wall edema with trace pericholecystic fluid, without gallstones (Figure 1). The common bile duct (CBD) measured 3mm (Figure 2). With the POCUS findings, there was concern for acalculous cholecystitis or other pathology contributing to the patient's symptoms (Table 1). Due to these findings, additional laboratory studies were ordered. POCUS cardiac imaging performed confirmed the patient's diagnosis below.

The lab results were relatively unremarkable, aside from a slightly elevated alkaline phosphatase of 163 U/L (reference 40-129 U/L) and elevated B-type natriuretic peptide (BNP) 662 pg/ml (reference 0-178pg/ml). The high sensitivity troponin was negative. Radiology performed ultrasound confirmed the POCUS findings of thickened gallbladder wall and pericholecystic fluid, without gallstones, but additionally noted to have increased pulsatility of the portal venous waveform, as can be seen in the setting of elevated right heart pressures. The CT scan was negative for pulmonary embolism, but demonstrated cardiomegaly with marked right atrial enlargement and with reflux of contrast into the intrahepatic IVC.

The patient was admitted to cardiology and underwent a transthoracic echocardiogram that demonstrated an EF 50% without segmental wall motion abnormalities and mildly dilated left and right atrium with a diagnosis of postpartum cardiomyopathy.

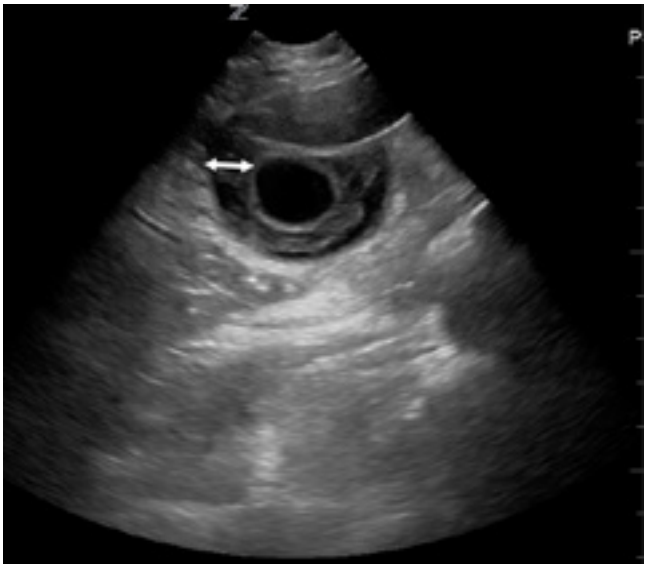

Figure 1. Short axis view of the gallbladder with thickened anterior wall measuring 10 mm with noted pericholecystic fluid.

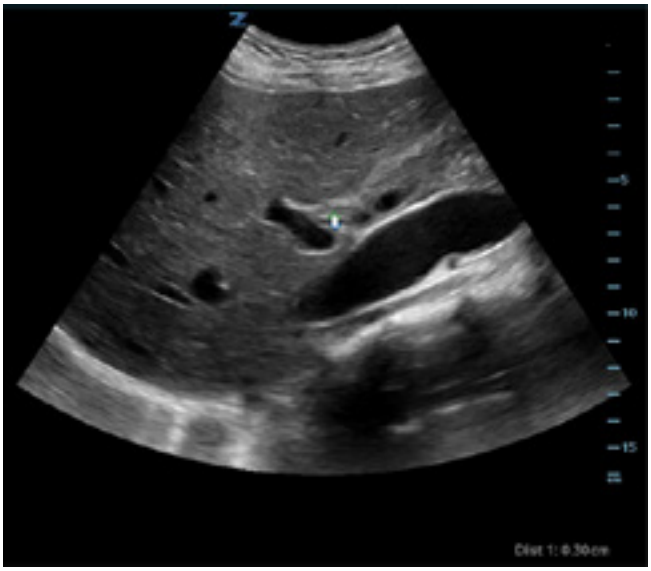

Figure 2. Ultrasound of the common bile duct measured to be 0.3cm (normal).

Discussion

Postpartum cardiomyopathy, also known as peripartum cardiomyopathy (PPCM), is a relatively uncommon cause of heart failure in otherwise healthy peripartum females. PPCM is defined as new onset heart failure in the last month of pregnancy and five months post-delivery without determinable cause.[1] In the United States, the incidence of PPCM is 10.3 per 10,000 live births, increasing with age with a maximum incidence 40-54 years.[2] The etiology of PPCM is generally unrecognized; however, there are several presumable causes for PPCM, including viral myocarditis, autoimmune disorders, circulatory overload accompanied by pregnancy, endocrine disorders and nutritional deficiencies.[3]

Biliary disease, on the contrary, is prevalent and affects over 20 million Americans annually.[4] Acalculous cholecystitis is a form of cholecystitis caused by dysfunction or hypokinesis of gallbladder emptying in the absence of an obstructive gallstone.[4] Although presentations can vary, acalculous cholecystitis typically has a more insidious onset and is commonly seen in critically ill patients. The diagnosis of acalculous cholecystitis can often be made with an ultrasound of the abdomen. The gallbladder will have a thickened anterior wall, > 3mm, with edema and without any appreciable gallstones. POCUS in the emergency department is an integral step to expediting the patient's diagnosis. Clinicians utilizing POCUS have demonstrated sensitivity and specificity of 87% and 82% respectively when diagnosing acute cholecystitis.[5]

Potential confounding factors in the diagnosis of acalculous cholecystitis are the other possible causes of gallbladder wall thickening (Table 2). These include, but are not limited to nephrotic syndrome, ascites, hepatitis, pancreatitis, congestive heart failure, pericardial effusions or other causes of increased right sided heart pressure such as pulmonary embolism.[6,7] Our patient's upper abdominal pain at the time of presentation was likely due to congestive cholestasis from underlying PPCM. The mechanism of upper abdominal pain is mainly from the expansion of hepatic cells by elevated pressure caused by cholestasis.

Point-of-Care Biliary Ultrasound

Indications

- Abdominal Pain
- Fever
- Jaundice
- Vomiting

Technique

- Use a low frequency probe; either curvilinear (preferred) or phased array.
- With the patient in the supine position, place the probe in the transverse position adjacent to the xiphoid process.
- Sweep the transducer slowly along the subcostal margin until the gallbladder and the portal triad (portal vein, hepatic artery, and the common bile duct) are identified.
- An alternative method is to visualize the gallbladder through the intercostal window fanning through the liver parenchyma.
- Obtain images of the gallbladder and portal triad in both the longitudinal and transverse planes.
- Evaluate the gallbladder for stones, scan through the entire length of the gallbladder, including the neck.
- Assess the anterior gallbladder wall for thickening >3mm and the presence of pericholecystic fluid.
- Measure the common bile duct (CBD) from inner wall to inner wall.

Sonographic Diagnosis of Cholecystitis
Gallstones
Gallbladder wall >3mm
Sonographic murphy's sign
Pericholecystic fluid
+/- Gallbladder hydrops

Table 1. Sonographic criteria for cholecystitis. CBD size is not a criteria.

Tips

To improve the image, ask the patient to take a deep breath and hold it transiently or place the patient in the left lateral decubitus position in order to displace the liver caudally and shift the gallbladder away from the rib cage.

Placing the patient in the left lateral decubitus position may help prevent missing obstructing stones in the neck of the gallbladder.

The contracted gallbladder will commonly have three distinct layers that are not considered pathologic

Pitfalls and Limitations

Failing to visualize the gallbladder neck may result in failure to diagnose impacted stones in the gallbladder neck.

As in our case, not all gallbladder wall thickening is indicative of cholecystitis (Tables 1 and 2). Think of congestive heart failure, ascites or other causes of right heart strain such as a large pulmonary embolus or pericardial effusion.

Causes of Thickened Gallbladder Wall[7]
Ascites
Cholecystitis
Congestive Heart Failure or Right Heart Strain (i.e. PE, pulmonary HTN) or Pericardial Effusion
Hepatitis
HIV/AIDS
Malignancy
Multiple Myeloma
Nephrotic Syndrome
Postprandial

Table 2. Differential diagnosis of thickened gallbladder wall visualized on POCUS.

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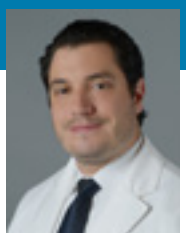

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The Other Workforce Crisis

As many of us experience higher than pre-pandemic emergency department (ED) volumes of late, we are in the midst of multiple workforce challenges. Nursing vacancy rates at levels never seen before, a shortage of mental health and crisis counselors, recent emergency medicine graduates unable to find jobs, even the retail and service industries unable to meet demand due to a lack of individuals willing to work.

Add to it another workforce crisis: Our EMS colleagues face the same national workforce shortages at levels never seen before. The EMS system before COVID was on the edge of survivability, primarily because of how EMS is financed, but now every state in the country is experiencing workforce shortages. Not only does that impact the ability to respond to 9-1-1 calls for service, but it has significantly affected the transport of patients between facilities. Thus, the lack of human resources is even making interfacility transport difficult which can compound treatment delays for specialty care transfers or worsen boarding when patients cannot be moved from one ED or facility without beds, to one with.

EMS has always been a high-turnover business at baseline and it's much worse now. Many training programs went dormant or had significantly reduced class size due to COVID, thus there are few in the "pipeline" to account for the normally high levels of attrition. Add to that, many are leaving the industry for non-healthcare positions due to the work environment, impact of the job on their mental health, the occupational exposure risks and the physical demands of the job. Not to mention the most important factor: a paltry salary often barely above minimum wage or at par with the service industry making it much more attractive to work in other business with far less risk, better work environments and even better pay.

The inadequate funding of the EMS system drives wages down well below all other healthcare providers and public servants, despite an EMT or Paramedic's ability to significantly alter the patient's trajectory through the healthcare system. Think about the field diagnosis and management of stroke, STEMI, controlling bleeding in major trauma or administering epinephrine for anaphylaxis – more and more we are recognizing the profound impact EMS can have on healthcare quality and ultimate hospital resource needs, yet they remain the lowest paid providers of healthcare.

Such low pay is certainly not because ambulance services want to abuse their employees, it's all related to the reimbursement structure for ambulance services. EMS is only reimbursed for transporting patients to an ED. Although there is now a federal pilot program to reimburse for treatment in place, that only pertains to a small subset of Medicare patients. In the city of Rochester, more than 50% of EMS transports are Medicaid, who offers the lowest reimbursement of all which is not even enough to cover the cost of the service (sound familiar to ED reimbursement?). In most systems, about 70-80% of calls for service result in no transport, thus in many cases, no ability to bill for service. Insurers often mirror Medicare rates which are also extremely low. The move to high-deductible health plans has resulted in collection rates of 30-40% in some areas and in New York, reimbursement is sent to the insured individual, who is then expected to pay the ambulance service provider – yet the reality is that kept checks are common.

Unlike other public safety entities (police and fire), the vast majority of independent ambulance services receive no tax or other subsidy to assure a certain level of readiness capacity, meaning the system must run extremely lean. We are seeing the effects of such a lean industry in vacancy rates never seen before in the industry.

What does this mean for us in the ED? Our EMS colleagues are also stressed and burned out and there are delays in both transfers and even 9-1-1 response in some areas. A little compassion goes a long way, and this highly important, yet undervalued part of our response community is struggling to meet the demand. Meaningful change is hard to come by, as no insurer or state or federal program wants to reimburse emergency services (ambulance or ED) at the true cost to provide services. Even "essential service" classification may not provide the financial support our system needs to keep from collapsing. So for now, we can only be empathetic and when the time comes, advocate for those battling in the trenches with us.

PRACTICE MANAGEMENT

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Recruitment and Retention in Emergency Medicine

The tight job market and decreasing patient volumes caused by the COVID-19 pandemic are slowly disappearing. As volume returns, emergency department medical directors may need to work quickly to recruit new providers and retain the ones currently on staff; especially as many may be getting more lucrative deals as the job market rebounds or may decide to leave the workforce due to pandemic related stress. Research in this area and specifically within emergency medicine (EM) is limited. A recent scoping review on retention strategies in EM broke down the common themes into the ABC's: Autonomy, Belonging, and Control.[1] More broadly this meant focusing on compensation in both monetary and non-monetary forms, an optimal clinical environment and understanding competing players. Emergency medicine physicians and advanced practice providers are a diverse group and finding a unilateral approach to recruitment and retention is not possible; however, there are general strategies that can be tailored to individual regions and practice environments. We present some of the insight gained from the literature as well as multiple emergency medicine clinical leaders with extensive physician leadership experience in various regions of New York State.

Each physician leader we spoke to employed different strategies to recruit qualified physicians and advanced practice providers (APPs) to their team. While some went to regional job fairs or ACEP, others tried to host dinners for local residencies. However, they all stated their most successful method was through word of mouth. Most leaders found job fairs and paid advertisements yielded limited results. While they require a significant investment, future outreach through social media groups presents a potential free marketing opportunity that has yet to be fully leveraged. Most leaders also described partnering with an in-house or local residency, which produced a steady pipeline of applicants who know the culture and fit in well with the team. Additionally, those who did residency in the area often have ties that will keep them there longer term. Key strategies to improve recruitment include making offers early to good candidates and understanding younger grads have different financial expectations than experienced hires. For example, creating flexible deals that involve less than a full FTE or including other benefits such as loan repayment or signing bonuses may improve recruitment of younger physicians.

Recruitment and retention of providers within an emergency department exists on a continuum and tie into each other. Recruiting and retaining physicians and APPs requires one to have insight into their environment. Each physician leader we spoke with emphasized assessing candidates for fit during the recruitment process. This ranges from knowing the candidate has experience with handling the type of clinical environment they are going to work in to having regional ties and roots in the area to know they can live there. Additionally, while there are slight differences in compensation, most regions find overall compensation tends to match as everyone tries to stay competitive and most physicians and APPs do not leave due to compensation. Recruiting also requires understanding the department's needs. Bringing in physicians to fill a specific role such as with-in education or ultrasound or simply to boost productivity allows for better fit on both the department and candidate side. The department gets the services they need, while the provider can utilize their strengths and become a valued member of the team. Lastly, most of the leaders we spoke with shared the main reason for leaving was for a promotion (e.g. APD to PD) or due to family relocation. Therefore, while salary is important, it often does not factor significantly into retention, especially when generally competitive with other departments in the area.

Recruiting and retaining APPs presents a significantly different challenge. While similar methods of obtaining candidates exist, retaining talent is often more difficult due to competing opportunities. While emergency physicians may have alternatives such as working at an urgent care, telemedicine service, or another emergency department; APPs can completely switch specialties, thereby increasing their pay as well as decreasing their work hours. As more APP residencies are started, recruiting from this pool may show better retention due to a higher commitment to a career in emergency medicine. Additionally, emergency medicine residency-trained APPs are more skilled when they start working and require less on-the-job training. Similar patterns exist in physician retention, as faculty with fellowship training tend to experience less burnout.[1]

Retention of physicians also involves creating an ideal working environment. Unfortunately, many factors are outside the control of the medical director especially around compensation, interactions with other services and

nursing and ancillary staff culture. However, these are all key to retaining and recruiting providers. Every leader we talked to focused on utilizing effective communication to tackle the factors they did not have control over. Doctors are highly educated and skilled and need to be treated in a fair and non-patronizing manner. Ensuring clear communication and listening to front line frustrations shows commitment to front line providers and respect. Additionally, ensuring fair treatment of all providers by avoiding "special deals" or treatment prevents the eventual negative fallout when other team members find out. Along with communicating with ED providers on staff, maintaining visibility and communication with other hospital services will help enhance the ED clinical environment. Strong relationships with hospitalists and consultants to create a team culture that prevents work avoidance improves both patient care and physician well-being. Maintaining these relationships is paramount to creating an environment others want to work in and your own physicians will recruit for you if they believe in the culture you create.

A key factor many departments will have to grapple with as we emerge from the pandemic is burnout. Our specialty was known for burnout pre-pandemic, but after almost two years in the trenches many are feeling it even more. Multiple studies have shown burnout correlates strongly with retention. People will either leave for better opportunities or leave medicine completely as a result of burnout. Having an effective way to monitor staff for signs and symptoms of burnout and also ways to address it will be paramount to any effective retention strategy. Some groups have utilized regular burnout indexes to measure their teams' temperature over time and have actively begun addressing burnout systematically.[2]

Overall, speaking with physician leaders throughout the state revealed that while each region and practice setting is different, there are some key commonalities to recruiting providers. Understanding the department's needs and the candidates' needs ensures a new hire will fit into the team. Having regional ties to the area through family or training significantly improves the chances the candidate will be successfully recruited and retained. Additionally, creating a clinical environment through active listening and partnering with other services will entice those already there to recruit for you. Lastly, despite numerous costly efforts to recruit providers, the best strategy remains word of mouth. While much has changed during the pandemic, it is likely many of these key tenets will continue to be the backbone to provider recruiting in the emergency department.

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EDUCATION

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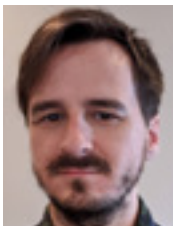

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Milestones 2.0: The EM Resident Evaluation System Gets Overhauled

Resident assessment is a crucial part of any residency program. Delivering feedback in a clear, concise and concrete manner allows residents to reflect on their strengths and weaknesses and results in their growth as clinicians. In July 2021, the American Council for Graduate Medical Education (ACGME) implemented notable changes to its framework of resident assessment. Collectively named "Milestones 2.0," these revisions sought to simplify and streamline the milestone system, which had been put into place previously as a way of giving residency programs clearly-defined metrics for assessing resident performance. **This new framework represents the most significant change to resident assessment in the last decade**. In this article we lay out a brief history of the ACGME residency educational framework, examine the first Milestone iteration and its criticisms, highlight the changes introduced by this new system and touch on some of the challenges it has faced so far.

In 1999, the ACGME and the American Board of Medical Specialties (ABMS) adopted Competency-Based Medical Education (CBME), a framework for resident education aimed to shift from a process-oriented to an outcome-oriented paradigm. Prior to its implementation, residency programs relied on process-driven measurements of resident performance, such as number of hours spent in training, number of patients seen and number of rotations completed.[1] The CBME was designed to measure resident progress based instead on the attainment of specific competencies rather than whether a resident had spent a certain number of hours in the hospital. Outcome-based education emphasized individualized education highlighting the areas in which a resident had sufficient (or exceptional) skills as well as those in which they needed improvement.[2] The ACGME named six core competencies in which a trainee must demonstrate competence to progress to independent practice: patient care (PC), medical knowledge (MK), systems-based practice (SBP), practice-based learning and improvement (PBLI), professionalism (PROF) and interpersonal and communication skills (ICS).[3]

This system, however, was imperfect. Many programs rated residents on a Likert scale of 1 (poor) to 9 (outstanding) within each of these competencies with no further context, leading to inconsistent feedback.[1] The outcome-based philosophy of the CBME was better defined in 2012 when the ACGME introduced milestones. These were piloted in seven specialties initially — emergency medicine, internal medicine, pediatrics, diagnostic radiology, orthopedic surgery, neurosurgery and urology — in conjunction with the specialties' governing bodies.[4] For emergency medicine, the ACGME worked with ABEM to divide the six core competencies further into a total of 23 subcompetencies. Within each of these subcompetencies were defined specific observable skills – such as "recognizes abnormal vital signs" – which correspond to a level of 1 to 5, which serve to define a progression in the training process from 1 (a new intern) to 4 (a graduating resident) and 5 (an independent physician who has been in practice for five years). One of the goals of this scale of progression was to define learning as a lifelong process that extends beyond residency training.

For each subcompetency, multiple milestones may be associated within each level. As they advanced, residents were expected to achieve the milestones associated with higher levels within a subcompetency. It was argued the milestone system allowed for more clearly defined goals and improved accountability. They provided residents with explicit benchmarks for what they were expected to know at a given level of training. Residency programs had a better ability to measure residency performance. The ACGME could better measure the effectiveness of a residency program in training its residents.[1]

However, in the years following the implementation of the milestones, challenges arose. Critics opined they were overly complex. They argued the number of milestones per subcompetency and the number of subcompetencies per competency were overwhelming to educators. They also argued the milestone language was couched in too much educational jargon and difficult to understand.[5] Further, critics noted a lack of consistency of subcompetencies across different specialties. Although it was to be expected subcompetencies related to patient care (PC) or medical knowledge (MK) would differ among specialties, it was pointed out certain subcompetencies, such as those related to accountability, were present for certain specialties but not for others. It was also noted that even among the same subcompetencies, the wording of the milestones differed greatly from specialty to specialty.[5]

The ACGME itself acknowledged some of these issues. In terms of the milestone verbiage, they cited "orphan milestones" (milestones with no milestones at previous or subsequent levels) and "descriptive adjectives" as possible sources of confusion. They also noted the discrepancies between similar milestones and subcompetencies in different specialties, stating, for example, that "among 26 specialties, professionalism was described in 230 ways." They also, however, noted residency programs would, at times, use the milestones in inappropriate manners. Examples included "straight line scoring," in which a resident would be rated at the same level across each subcompetency, and, relatedly, using

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subcompetency scores as global ratings.[6]

In 2018 the ACGME began drafting revisions to these milestones, a project they referred to as "Milestones 2.0." A working group with ABEM, CORD, EMRA and AOA was created to address these criticisms as they pertained specifically to Emergency Medicine. To address the issue of complexity, milestones were streamlined. Each subcompetency would contain no more than three "developmental trajectories" (related milestones with a specific subcompetency) in order to track progression in a logical manner and each milestone would progress through at least four levels. Consequently, orphan milestones were eliminated. Moreover, the total number of subcompetencies was reduced. In Emergency Medicine, the number went from 23 to 21. Finally, potentially ambiguous descriptors were removed from milestones.

To address inconsistencies between specialties for the non-patient care/medical knowledge categories (systems-based practice, practice-based learning and improvement, professionalism, and interpersonal and communication skills), the ACGME worked with representatives across all specialties to develop "harmonized milestones." In these, each of these four competencies would contain two to three subcompetencies that would be uniform across all specialties. Additional subcompetencies would be added after this that were specialty-specific.

Perhaps more controversial were the changes made to the Patient Care (PC) competency. In Milestones 1.0, in addition to a general procedures subcompetency (PC9), there were five specific procedural subcompetencies (PC10 - 14): airway management, anesthesia and pain management, goal-directed ultrasound, wound management and vascular access. These were eliminated in Milestones 2.0. The ACGME working group cited multiple reasons for this. One was that these subcompetencies contained too many orphan milestones and were not streamlined. A second was there were many procedures important to the practice of Emergency Medicine that were not included as subcompetencies, including (but not limited to) lumbar punctures, chest tubes, paracentesis and emergent delivery. Instead of adding additional subcompetencies, these were removed, likely again in order to address the concern of there being too many subcompetencies.

There has been notable pushback against the removal of specific procedural subcompetencies. Since the implementation of Milestones 2.0, a task force of leaders from the ultrasound community submitted a proposal to the ACGME requesting point-of-care ultrasound be reinstated as its own subcompetency or be integrated into the wording of Patient Care milestones. They claim its removal serves to diminish its importance to resident training.[7] A related argument is that by decreasing the number of procedural subcompetencies, the overall importance of procedural skill to resident performance is implicitly decreased as well.

1. Emergency Stabilization (PC1) Prioritizes critical initial stabilization action and mobilizes hospital support services in the resuscitation of a critically ill or injured patient and reassesses after stabilizing intervention.

Has not Achieved Level 1	Level 1	Level 2	Level 3	Level 4	Level 5
	Recognizes abnormal vital signs	Recognizes when a patient is unstable requiring immediate intervention Performs a primary assessment on a critically ill or injured patient Discerns relevant data to formulate a diagnostic impression and plan	Manages and prioritizes critically ill or injured patients Prioritizes critical initial stabilization actions in the resuscitation of a critically ill or injured patient Reassesses after implementing a stabilizing intervention Evaluates the validity of a DNR order	Recognizes in a timely fashion when further clinical intervention is futile Integrates hospital support services into a management strategy for a problematic stabilization situation	Develops policies and protocols for the management and/or transfer of critically ill or injured patients

Patient Care 1: Emergency Stabilization

Level 1	Level 2	Level 3	Level 4	Level 5
Detects when a patient's vital signs are abnormal	Identifies a patient who is unstable and requires immediate intervention	Identifies a patient with occult presentation that is at risk for instability or deterioration	Ascertains, in a timely fashion, when further clinical intervention for a patient is futile	
Assesses a patient's ABCs and performs basic interventions	Addresses the unstable vital signs and initiates advanced resuscitation procedures and protocols	Reassesses the patient's status after implementing a stabilizing intervention	Integrates hospital support services into the management of critically-ill or -injured patients	Manages patients with rare or complex presentations requiring emergency stabilization

Figure 1: From the ACGME Milestones 2.0 Working Group Paper (Cooney, et al). At the top is the original "Emergency Stabilization" subcompetency within the "Patient Care" competency (PC1). At the bottom is the revised subcompetency. Note that each developmental trajectory now has four or five milestones, the number of trajectories was decreased, and the orphan milestone in level three was removed. Also note the removal of vague phrases from milestones ("problematic stabilization situation" in level four, for instance).

While the implementation of a new evaluation system after nine years will surely take some time for residency programs and clinical competency committees to acclimate to, the ACGME has provided a supplemental guide containing concrete clinical examples for each milestone to ease the transition. As the rollout continues, further feedback, like that of the POCUS community, will likely be provided, and unforeseen challenges with the system will be confronted. **Regardless, Milestones 2.0 is here to stay and its implementation will affect every emergency medicine residency program in the country.** Whether it achieves its objective of streamlining and simplifying the process of residency evaluation remains to be seen.

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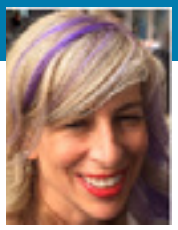
RESEARCH



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Keeping Hindsight 20/20: Methodologic Improvements for Retrospective Studies

When you conduct a retrospective study, you can face many pitfalls. Looking back in time at an outcome and what may have influenced it can lead to confounding factors and bias. The inherent dilemma is that retrospective studies are built on analysis of preexisting data and most often, on chart review and abstraction. Medical charts are an imperfect record: prone to differences in documentation style between emergency providers and often have missing or incomplete data. Therefore, in order to lend credibility to your analysis, you must have robust methodology that is clearly explained.

Before you embark upon conducting a retrospective study, you should lay out the standard components of your study. The first steps, of course, include developing your hypothesis and conducting a literature review. Building from a solid research question, you can then develop the best methodology to suit your needs. Along the way, consider these sometimes forgotten but important methodologic elements that will increase the chance of acceptance for your abstract and manuscript.

Methodologic components can be subcategorized into design, procedure, and data processing.[1] Building from these categories, here are some high-yield points to consider for your study.[2]

Design

How was the study population selected? Make sure to explain the protocol by which you selected or excluded cases. This step will inform the question of whether your data is generalizable or not. Make sure to clearly define your important variables. This will come in handy when you consider the question: Can you trust your basic data? You should account for the fact that data recorded by clinical staff can differ based on wording, interpretation and recording of facts.

Procedure

Who will be handling the data? Make sure to describe how the chart abstractors were both selected and trained. Explain how the abstractors were taught to handle ambiguous data. If your abstractors can be blinded to the hypothesis being tested, that is the highest standard. Including quality checks and monitoring procedures for your chart abstractors is important, as well as including interrater agreement testing (kappa), if possible.

Additionally, make sure you track which charts have incomplete, unusable or conflicting data, particularly if they were removed from your analysis. Similarly, account for deaths or those who were lost to follow up.

Data Processing

What platform was used to record the abstracted data? If uploading or transferring data was a process relying on humans, make sure to account for the possibility of error. Explain in detail the process by which data was analyzed, including what type of statistical analysis was performed. If you used software, explain how and for what it was specifically used.

In summary, if you include the above elements in your research process and describe them in your methods, the chance of acceptance of your manuscript goes up exponentially. We must accept that hindsight isn't 20/20, but improving your methodology will certainly improve the clarity and reliability of what you see.

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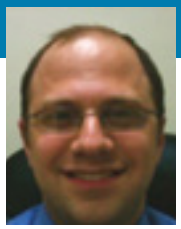

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EMS AS A CAREER AND A PATH TO EDUCATION AND COMMUNITY INVOLVEMENT

I had the pleasure of speaking with Dr. Maia Dorsett, MD PhD about her role in Emergency Medicine (EM) and Emergency Medical Services (EMS). Dr. Dorsett completed her PhD, MD, EM residency and EMS fellowship at Washington University in St. Louis, MO. Dr. Dorsett is currently a practicing EM physician at the University of Rochester, Strong Memorial Hospital. She is highly involved in EMS education, president-elect of the New York Chapter of NAEMSP and is the member-at-large for ACEP's EMS Prehospital Care Section. In 2021, Dr. Dorsett received the Keith Neely Award from NAEMSP, which is awarded to an active or past NAEMSP member who has provided significant leadership to the organization. Aside from her academic interests in EMS education and quality improvement, she also enjoys spending time with her husband and three children, a menagerie of animals (including chickens) and baking.

What initially sparked your interest in emergency medicine?

Very simple: The people and the patients.

Emergency medicine is about the privilege of caring for patients with a diversity of backgrounds, variety of pathophysiology and undifferentiated presentations. The people who provide that care are flexible, team-focused and compassionate individuals and I wanted them to be my work family.

How did you define your focus onto EMS specifically?

I took a circuitous route to EMS. When starting residency, I did not think this would be my career choice. I have a basic science PhD and I always thought I would pursue a research route. But when I began practicing emergency medicine, I became frustrated with a medical system that was not meeting the needs of patients and often repeating the same thing over and over with increased cost of care but little difference to patients. When I did my EMS rotation in my second year of residency, I saw EMS medicine for what it is: a community-based health care service and critical component of the system of care. I saw that as an EMS medical director, I could institute change to improve patient outcomes - not one patient at a time but for the entire community. I made a big change in my career trajectory and decided to pursue a fellowship in EMS, which was the best possible decision I could have made.

What changes have you seen in your years in practice thus far?

The biggest thing in emergency medicine, in general, is how we access and communicate about medical education. I first became aware of FOAMed early in residency and it has completely transformed how I both use and share educational material.

In terms of EMS, there have been advancements in building out the role of EMS as a community-based health care system. Areas of focus, such as mobile integrated health/community paramedicine are enabling EMS to provide better care aligned with patient needs, including to our most vulnerable populations. COVID-19 has accelerated this process, allowing more consideration for alternative destinations and utilization of EMS to provide non-emergent but necessary home base care or public health response such as vaccination efforts.

Are there developments in EMS and EMS education you foresee in the future?

I foresee future developments focused on professionalization of the specialty of EMS. There are multiple components to this. One of the biggest challenges is work force retention. There are limits to people seeing this as a career. A lot of this is due to the pay; many good providers cannot remain due to poor reimbursement. The other side, however, is ensuring that people are prepared for the job they are actually going to do. Many enter EMS because they are focused on management of medical emergencies. However, a lot of what EMS does, as a community-based health care service, is management of low acuity conditions and issues of lack of healthcare access or poor health care navigation. Our education systems need to adapt to ensure EMS professionals are prepared for (and welcome to) these expanded roles.

Obviously, we all know COVID has impacted everyone. Can you shed further light on its impact on EMS providers?

On one side, COVID brought to light how much EMS clinicians do for the community and the system of care. On the other, COVID negatively impacted already poor work force retention. While there was more recognition of what EMS does for the community, EMS

was often still excluded from the "healthcare" bubble. For example, when tiered vaccination proposals first came out, EMS clinicians fell below ED staff and physicians despite becoming sick at incredibly high rates. The dichotomy between what the EMS clinicians do and how they are treated in terms of recognition, value and appropriate pay remains a significant issue that threatens our ability to provide quality care to our communities.

What advice do you have for residents?

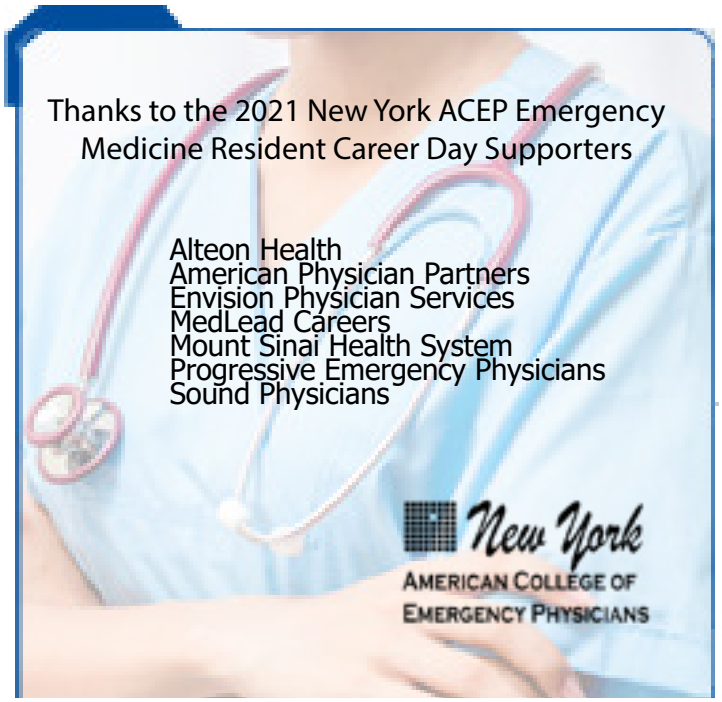
Go to work every single day with the goal of doing one good thing for one person. EM can be challenging to do over the long term if you only value the big wins, which are very rare. But if you go into your shifts with the goal of doing one good thing for one person – whether it is a patient or a co-worker – you can continue to find joy in the specialty. The thing that makes emergency medicine beautiful is the humanity in it. You have the ability to connect with people in their time of need. Unfortunately, the thing that makes it beautiful is also easily lost if not consciously pursued.

Also, never waste a mistake. The more you can learn to lean into errors or mistakes, the more you will find those are your greatest opportunities to learn and improve the system. This can also give you the tools to forgive yourself for the inevitable lack of perfection associated with being a human, taking care of undifferentiated patients in a time-limited environment.

What advice do you have for early career emergency physicians or those who are EMS in particular?

If you are interested in exploring EMS the most important thing you can do is spend time in the field with EMS clinicians and understand what they do. Spending time with EMS clinicians gave me admiration for their clinical practice and how they serve their communities.

Choosing your specialty in medicine is about finding your tribe. My professional tribes are emergency physicians and staff, EMS clinicians and fellow EMS educators. Remember, you will spend as much time with your co-workers as you will with your family.



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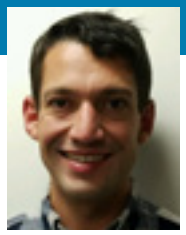

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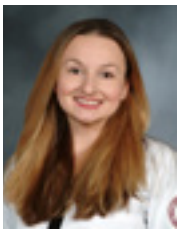

Guest Author
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Pediatric Diabetic Ketoacidosis

A 5-year-old male presents to the emergency room with non-bloody non-bilious emesis for the past 24 hours. It is associated with diffuse abdominal pain. He has been drinking well between episodes of emesis and there is no diarrhea. On exam, he is afebrile but tachycardic. He appears tired and weak but awake and able to answer questions. His lips and mucus membranes are dry and cracked. He is tachypneic but clear to auscultation. His abdomen is soft and nontender. You are concerned about his degree of dehydration and obtain a fingerstick. The glucose reads 500. A blood gas reveals a pH of 7.21 HCO3 12. You make the diagnosis of diabetic ketoacidosis.

Diagnosis

Diabetic ketoacidosis (DKA) is defined as hyperglycemia (glucose >200), metabolic acidosis with pH < 7.3, bicarbonate < 15 mmol/L and with the presence of ketonemia/ ketonuria.[1] Children with undiagnosed diabetes mellitus may present in DKA as their initial presentation. In those with known diabetes, DKA may present due to non-compliance of medication, mechanical malfunction of medical equipment or increase need for insulin due to an acute illness.

DKA can present at any age and can be difficult to diagnose, especially in the younger population. Patients commonly present with polyuria, polydipsia, nausea, vomiting and dehydration. Parents will often say their child has been drinking well but asking if the child is drinking more than usual may get you to your diagnosis faster.

Keep a high suspicion in patients who are tachypneic but clear to auscultation. This might be your first clue on your physical exam. Patients are tachypneic to compensate for the metabolic acidosis. Infants and toddlers may be mistakenly diagnosed with bronchiolitis or lower respiratory tract infections.

When DKA is suspected, a fingerstick glucose and blood gas is imperative. In addition, a complete blood count, basic metabolic profile, magnesium, phosphorous, urinalysis and electrocardiogram should be obtained as soon as possible.

Management

The goal of treatment is fluid resuscitation followed by gradual rehydration, electrolyte repletion and correction of acidosis. Glucose should be checked hourly, with BMP and blood gas repeated every 2-4 hours.

Fluid resuscitation

Osmotic diuresis leads to significant water loss with most patients being moderate to severely dehydrated. Begin with volume expansion of 10-20ml/kg bolus of isotonic crystalloid fluid, such as normal saline (NS). Fluids should be given slowly, over 60 minutes, unless shock is present. Repeated fluid boluses should be avoided unless there is concern for shock. Aggressive fluid hydration has been avoided in the past due to concern of cerebral edema. However, more recent studies suggest rapid fluid delivery may not change the incidence of cerebral edema.[2]

Insulin

Insulin infusion should be initiated after the patient has received initial volume expansion. Insulin bolus should be avoided in pediatric patients with DKA. Patients should be started on an insulin infusion (1 unit/mL) of 0.1 units/kg/hr.[3] A lower dose of 0.05 units/kg/hr may be used in toddlers or those found to be extremely sensitive to insulin. Do not titrate the insulin infusion based on glucose. Maintenance fluids should be titrated to match glucose levels but insulin infusion should be maintained until acidosis is completely resolved and the anion gap is closed.

Maintenance Fluid Therapy

Fluid hydration with normal saline should be initiated after the fluid bolus is complete. The goal is to replace the remaining deficit gradually over the next 24-48 hours. Due to high serum osmolality and fluid shift to extracellular space, serum sodium is typically low. Sodium is reduced by 1.6mEq/L for each 100 mg/dL rise in blood glucose.[4]

Begin with NS at 1.5-2 times maintenance.[1] Glucose should be checked every hour with the goal of decreasing glucose by no more than 100 dl every hour. Dextrose should be added to the fluids when glucose falls under 250- 300 or if glucose is dropping at a rate faster than 100 dl per hour.

An alternative method for fluids is using the “two-bag method”. Two bags of IV fluids are prepared and titrated to desired amount. One bag has NS, without dextrose, while the second bag has D10W + NS. Both bags should have identical sodium and potassium concentrations. Initially, only the bag with NS is started. As the patient’s glucose slowly falls, the bag with D10+ NS can be initiated. When increasing concentrations of dextrose is required, the rate of the bag containing dextrose is increased at the same rate the bag containing no dextrose is decreased. The total infusion rate between both IV fluid bags should be equal to 1.5 to 2 times maintenance.

Electrolytes

Potassium: Patients may have normal to high serum potassium, however, they are total body potassium depleted. Hyperosmolality leads to

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water and potassium cellular exit, leading to a potassium that cannot be utilized by the body. 40 mEq/L of potassium should be added to the maintenance fluids once the patient has urinated and the potassium level is less than 5.5 mmol/L. Half of the total potassium can be added in the form of potassium phosphate, in addition to potassium acetate, to alleviate the expected fall of phosphate that will ensue treatment.[5] This will also decrease the hyperchloremic metabolic acidosis that occurs.

Bicarbonate: Despite having an anion gap metabolic acidosis, bicarbonate should not be given. Bicarbonate can cause paradoxical CNS acidosis, worsening of ketosis and increase risk of cerebral edema.[6] In addition, rapid correction of acidosis may cause hypokalemia.

Complication: Cerebral Edema

Cerebral edema is the leading cause of morbidity and mortality in DKA.[7] It is thought to be caused by fluid shifts resulting in cerebral hypoperfusion and ischemia. Younger children and those who are more severely ill at presentation have a higher incidence of cerebral edema. Early identification and treatment are imperative. All patients with DKA must be monitored closely with frequent reassessment of viral signs and neurological status.

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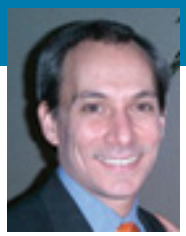

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Association Between COVID-19 Diagnosis and Presenting Chief Complaint From New York City Triage Data.

Clifford CT, Pour TR, Freeman R, Reich DL, Glicksberg BS, Levin MA, Klang E; Department of Emergency Medicine, Icahn School of Medicine at Mount Sinai, New York; Am J Emerg Med; 2021 Aug; 46:520-524.

BACKGROUND AND AIM: New York City (NYC) is an epicenter of the COVID-19 pandemic in the United States. Proper triage of patients with possible COVID-19 via chief complaint is critical but not fully optimized. This study aimed to investigate the association between presentation by chief complaints and COVID-19 status.

METHODS: We retrospectively analyzed adult emergency department (ED) patient visits from five different NYC hospital campuses from March 1, 2020 to May 13, 2020 of patients who underwent nasopharyngeal COVID-19 RT-PCR testing. The positive and negative COVID-19 cohorts were then assessed for different chief complaints obtained from structured triage data. Sub-analysis was performed for patients older than 65 and within chief complaints with high mortality.

RESULTS: Of 11,992 ED patient visits who received COVID-19 testing, 6,524/11,992 (54.4%) were COVID-19 positive. 73.5% of fever, 67.7% of shortness of breath, and 65% of cough had COVID-19, but others included 57.5% of weakness/fall/altered mental status, 55.5% of glycemic control, and 51.4% of gastrointestinal symptoms. In patients over 65, 76.7% of diarrhea, 73.7% of fatigue, and 69.3% of weakness had COVID-19. 45.5% of dehydration, 40.5% of altered mental status, 27% of fall, and 24.6% of hyperglycemia patients experienced mortality.

CONCLUSION: A novel high risk COVID-19 patient population was identified from chief complaint data, which is different from current suggested CDC guidelines, and may help triage systems to better isolate COVID-19 patients. Older patients with COVID-19 infection presented with more atypical complaints warranting special consideration. COVID-19 was associated with higher mortality in a unique group of complaints also warranting special consideration.

Differences in Antibiotic Prescriptions Between Direct-to-Consumer Telehealth and Telehealth in the Emergency Department.

Yao P, Gogia K, Clark S, Hsu H, Sharma R, Greenwald P; Weill Cornell Medical College, New York; J Telemed Telecare; 2021 Sep 13.

BACKGROUND: Telemedicine, which allows physicians to assess and treat patients via real-time audiovisual conferencing, is a rapidly growing modality for providing medical care. Antibiotic stewardship is one important measure of care quality, and research on antibiotic prescribing for acute respiratory infections in direct-to-consumer telemedicine has yielded mixed results. We compared antibiotic prescription rates for acute respiratory infections in two groups treated by telemedicine: (1) patients treated via a direct-to-consumer telemedicine application and (2) patients treated via telemedicine while physically inside the emergency department.

METHODS: We included direct-to-consumer telemedicine and emergency department telemedicine visits for patients 18 years and older with physician-coded International Classification of Diseases, Tenth Revision acute respiratory infection diagnoses between November 2016 and December 2018. Patients in both groups were seen by the same emergency department faculty working dedicated telemedicine shifts. We compared antibiotic prescribing rates for direct-to-consumer telemedicine and emergency department telemedicine visits before and after adjustment for age, sex, and diagnosis.

RESULTS: We identified a total of 468 acute respiratory infection visits: 191 direct-to-consumer telemedicine visits and 277 emergency department telemedicine visits. Overall, antibiotics were prescribed for 47% of visits (59% of direct-to-consumer telemedicine visits vs 39% of emergency department telemedicine visits; odds ratio 2.23; 95% confidence interval 1.53-3.25; $P<0.001$). The difference in antibiotic prescribing rates remained significant after adjustment for age, sex, and diagnosis (odds ratio 2.49; 95% confidence interval 1.65-3.77; $P<0.001$).

CONCLUSION: Patients seen by the same group of physicians for acute respiratory infection were significantly more likely to be prescribed antibiotics by direct-to-consumer telemedicine care compared with telemedicine care in the emergency department. This work suggests that contextual factors rather than evaluation over video may contribute to differences in antibiotic stewardship for direct-to-consumer telemedicine encounters.

Emergency Medicine Resident Burnout and Examination Performance.

Vanyo LZ(1), Goyal DG(2), Dhaliwal RS(3), Sorge RM(4), Nelson LS(5), Beeson MS(6), Joldersma KB(7), Pai J(8), Reisdorff EJ(7); Mount Sinai Health System, New York; AEM Educ Train; 2020 Oct 11;5(3):e10527.

OBJECTIVES: Burnout afflicts emergency physicians (EPs) to a significant degree. The impact of burnout spans from decreased clinical efficiency to increased medical errors to heightened risk of physician suicide. This large-scale study captures responses from emergency medicine (EM) residents regarding two burnout items and examines the correlation between in-training examination (ITE) scores and burnout risk as well as that between residency year and burnout risk.

METHODS: This was a prospective, mixed-methods, cross-sectional cohort study. All residents in U.S. categorical EM residents who took the 2019 ITE were included. At the end of the ITE, residents were invited to complete a voluntary survey that included two items from the Maslach Burnout Inventory (MBI) that have been found to be strongly indicative of burnout: one about self-perception of being burned out and one about feelings of callousness. Responses were on a 7-level Likert scale (1-7), ranging from very low frequency (1) to very high frequency (7). Measurements included the number of residents in each year-level of training (EM1-EM4), the

MBI item ratings, and the ABEM ITE score. Performance, as measured by the scaled, equated score, was compared to the MBI item responses. A corrected Spearman's correlation coefficient (ρ) was used to compare continuous data (score) against a discrete ordinal variable (MBI Likert response).

RESULTS: There were 2,501 EM1 residents, 2,389 EM2 residents, 2,206 EM3 residents, and 616 EM4 residents in the study group. There were 7,206 (93.4%) physicians who completed the first MBI question about burnout; 7,172 (93%) completed the second MBI question about callousness. There was no statistically significant association between the burnout item response and ITE performance ($\rho = -0.03$; $p = 0.015$). There was a positive, statistically significant association between the callousness item response and higher ITE performance ($\rho = 0.07$; $p < 0.001$). There was a statistically significant association between the response to the burnout item and training level ($\rho = 0.07$; $p < 0.001$). There was also a statistically significant association between the response to the callousness item and training level ($\rho = 0.15$; $p < 0.001$). The overall prevalence of burnout risk in various training levels were EM1, 28.2%; EM2, 39%; EM3, 41.1%; and EM4, 43.3%.

CONCLUSIONS: Our study found no significant correlation between ITE score and burnout risk. There was a weakly positive correlation between ITE scores and callousness. Based on our study results, ITE scores may not be useful in prognosticating burnout risk for EM residents and, interestingly, higher ITE scores correlated to stronger feelings of callousness. Our study indicates that EM residents at higher levels of training reported stronger self-perceptions of burnout and callousness. Further investigation into why residents at higher levels of training may experience greater burnout risk is warranted.

Multisystem Inflammatory Syndrome in Children.

Waseem M, Shariff MA, Tay ET, Mortel D, Savadkar S, Lee H, Kondamudi N, Liang T; Department of Emergency Medicine, NYC Health + Hospitals/Lincoln, Bronxal Center, Brooklyn, New York; J Emerg Med; 2021 Sep 16:S0736-4679(21)00652-1.

BACKGROUND: Multisystem inflammatory syndrome in children (MIS-C) is a newly recognized condition affecting children with recent infection or exposure to coronavirus disease 2019 (COVID-19). MIS-C has symptoms that affect multiple organs systems, with some clinical features resembling Kawasaki disease (KD) and toxic shock syndrome (TSS).

OBJECTIVE OF THE REVIEW: Our goal was to review the current literature and describe the evaluation and treatment algorithms for children suspected of having MIS-C who present to the emergency department.

DISCUSSION: MIS-C has a wide clinical spectrum and diagnosis is based on a combination of both clinical and laboratory findings. The exact mechanism of immune dysregulation of MIS-C is not well understood. Physical findings may evolve and do not necessarily appear at the same time. Gastrointestinal, cardiac, inflammatory, and coagulopathy manifestations and dysfunction are seen frequently in MIS-C.

CONCLUSIONS: The diagnosis of MIS-C is based on clinical presentation and specific laboratory findings. In the emergency setting, a high level of suspicion for MIS-C is required in patients exposed to COVID-19. Early diagnosis and prompt initiation of therapy offer the best chance for optimal outcomes.

Addressing Moral Injury in Emergency Medicine.

Giwa A, Crutchfield D, Fletcher D, Gemmill J, Kindrat J, Smith A, Bayless P; Department of Emergency Medicine, Icahn School of Medicine at Mount Sinai, New York; J Emerg Med; 2021 Sep 16.

BACKGROUND: Moral injury, which is described as the psychological distress that results from actions, or lack of them, that go against one's beliefs or values, has become front and center among issues facing the practice of emergency medicine. Although it predates the COVID-19 outbreak, the pandemic has played a significant role in the increased rate of burnout, and even suicide, among emergency physicians.

CASE REPORTS: This paper includes several clinical vignettes to highlight incidents that may occur in the emergency department (ED) when physicians experience violations of their moral codes, leading to distress and moral injury. These scenarios explore the conflicts posed between competing bioethical principles such as beneficence, nonmaleficence, end-of-life decision-making, medical futility, respect for self-determination (autonomy), resource scarcity and triage, duty to care, and physician impairment.

DISCUSSION: There are significant similarities between moral injury and post-traumatic stress disorder (PTSD), with some authors describing moral injury as a subset of PTSD. We explore these commonalities to provide coping mechanisms and mitigation strategies for those suffering from moral injury.

CONCLUSION: Physicians experiencing moral injury may benefit from the many available evidence-based treatments for PTSD to identify and manage moral injury and to support patient care and personal well-being.

Acupuncture as a Nonpharmacologic Treatment for Pain in a Pediatric Emergency Department.

Tsai SL, Reynoso E, Shin DW, Tsung JW; Division of Pediatric Emergency Medicine, Columbia University College of Physicians and Surgeons; Pediatr Emerg Care; 2021 Jul 1;37(7):e360-e366.

OBJECTIVES: With epidemic opioid deaths and abuse in the United States, government agencies recommend nonpharmacological treatments for pain. However nonopioid treatment options for moderate to severe pain in the pediatric emergency department (PED) are limited. Acupuncture has been shown to be effective for pain. The objective of this study was to evaluate the feasibility of using traditional acupuncture (TA) and battlefield acupuncture (BFA) in the treatment of pain in the PED.

METHODS: A pediatric cohort treated with acupuncture for pain in an urban PED was assessed. All subjects received TA or BFA as treatment, and pre/postacupuncture pain scores, feedback, and adverse events were assessed. The primary outcome was a change in pain score.

RESULTS: Twelve patients received BFA, and 13 received TA for these pain conditions: headaches, sciatica, paraphimosis, torticollis, joint pains (knee, shoulder, jaw), sprains (foot, wrist, thumb), dysmenorrhea, otitis externa, sickle cell, and muscle knot. The mean ± SD pain score change, 5.8 ± 2.5 ($P < 0.05$; 95% confidence interval, 4.9-7.0), was clinically and statistically significant. Over 90% of subjects reported significant improvement or resolution of pain; 96% were satisfied with

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pain relief and would receive acupuncture again. Two adverse events were noted: one patient reported dizziness, and another, a tinge of blood at 1 of 90 needled points.

CONCLUSIONS: This study suggests that acupuncture is a potential nonpharmacologic therapeutic option for acute pain management in the PED.

Inflammatory Markers Are Poorly Predictive of Clinical Outcomes Among Hospitalized Patients With COVID-19.

Barrett B, Pamphile S, Yang F, Naeem F, Kim J, Annam J, Borczuk R, Yellin S, Bass C, Fowler S, Mosheyev M, Mayer YJ, Friedman BW; Department of Emergency Medicine, Montefiore Health System, Bronx; Am J Emerg Med; 2021 Aug;46:595-598.

BACKGROUND: Inflammatory markers are often elevated in patients with COVID-19. The objective of this study is to assess the prognostic capability of these tests in predicting clinical outcomes.

METHODS: This was a retrospective cohort study including all patients at least 16 years old with COVID-19 who were admitted from one of five Emergency Departments between March 6th and April 4th, 2020. We included 1,123 laboratory-confirmed cases of COVID-19. We analyzed white blood cell count (WBC), absolute lymphocyte count (ALC), lactate dehydrogenase (LDH), C-reactive protein (CRP), procalcitonin (PCT), D-dimer, ferritin, and erythrocyte sedimentation rate (ESR). We looked at clinical outcomes including death, the need for endotracheal intubation (ETT), the need for renal replacement therapy (RRT), and ICU admission. We report Spearman's ρ2 and statistical significance for each correlation with outcomes. We also report positive predictive value, negative predictive value, sensitivity, specificity, positive likelihood ratios, and negative likelihood ratios.

RESULTS: The mean age of our patient population was 62 (SD 16). Thirty-seven percent of patients self-reported Spanish/Hispanic/Latino ethnicity, 47% reported their race as Black or African-American, and 10% reported their race as non-Hispanic white. Inter-rater reliability was 96%. There was no laboratory value that had both sensitivity and specificity of at least 0.90, or that had a positive predictive value and negative predictive value of at least 0.90, or that had likelihood ratios that could reliably predict a severe course of disease.

CONCLUSION: Inflammatory markers drawn within 48 h of arrival, though often correlated with clinical outcomes, are not individually highly predictive of which patients in a predominantly older and minority population will die or require intubation, RRT, or ICU admission.

The Prevalence of Serious Bacterial Infections in Neutropenic Immunocompetent Febrile Children.

Hao R, Saleh M, Liang T, Molyneaux N, Gordon I, Anyachebelu C, Sinert R; Department of Emergency Medicine, Kings County Hospital, New York City Health & Hospitals; Am J Emerg Med; 2021 Jul;45:1-6.

CONTEXT: Febrile neutropenic immunocompromised children are at a high risk of Serious Bacterial Infections (SBI).

OBJECTIVE: This systematic review and meta-analysis report the prevalence of SBI in healthy children with febrile neutropenia.

DATA SOURCE: PubMed, EMBASE, and Web of Science from their inception to August 2020.

STUDY SELECTION: Patients with an Absolute Neutrophil Count (ANC) <1000 cells/mm3 up to 18 years of age presenting to the ED with a chief complaint of fever (temperature > 38°C) and who had a workup for SBI as defined by each study.

DATA ABSTRACTION: Data from individual studies was abstracted by a subset of the authors and checked independently by the senior author. Any discrepancies were adjudicated by the joint agreement of all the authors. We calculated the prevalence of SBI by using the number of SBI's as the numerator and the total number of febrile events in patients as the denominator. Bias in our studies was quantified by the Newcastle Ottawa Scale.

RESULTS: We identified 2,066 citations of which five studies (1,693 patients) our inclusion criteria. None of our reviewed studies consistently tested every included patient for SBI. Spectrum bias in every study resulted in a wide range of the SBI prevalence of 1.9% (<0.01% - 11%) similar to non-neutropenic children.

LIMITATIONS: All of our studies were retrospective and many did not consistently screen all subjects for SBI.

CONCLUSION: If the clinical suspicion is low, the risk for SBI is similar between febrile healthy neutropenic and non-neutropenic children.

Modified PRIEST Score for Identification of Very Low-Risk COVID Patients.

Suh EH, Lang KJ, Zerihun LM; Department of Emergency Medicine, Columbia University, New York; Am J Emerg Med; 2021 Sep;47:213-216.

BACKGROUND: COVID-19 transmission remains high around the world, and severe local outbreaks continue to occur. Prognostic tools may be useful in crisis conditions as risk stratification can help determine resource allocation. One published tool, the Pandemic Respiratory Infection Emergency System Triage Severity Score, seems particularly promising because of its predictive ability and ease of application at the bedside. We sought to understand the performance of a modified version of this score (mPRIEST) in our institution for identifying patients with a greater than minimal risk for adverse outcome (death or organ support) at 30 days after index visit.

METHODS: Consecutive visits at two northern Manhattan EDs with a new diagnosis of symptomatic COVID-19 were identified between November and December of 2020. Demographic variables and clinical characteristics were obtained from chart review. Outcomes were obtained from chart review and follow-up phone call.

RESULTS: Outcomes were available on 306 patients. The incidence of death or mechanical ventilation at 30 days for patients with mPRIEST above the threshold value was 43/181 (23.8%), and for patients below 1/125 (0.8%). The sensitivity of the score for adverse outcome was 97.7% (95% CI: 93.3% to 100%).

CONCLUSIONS: This data suggests the mPRIEST score, which can be calculated from clinical variables alone, has potential for use in EDs to identify patients at very low risk for adverse outcomes within 30 days of COVID diagnosis. This should be confirmed in larger formal validation studies in diverse settings.

Discharge in Pandemic: Suspected COVID-19 Patients Returning to the Emergency Department Within 72 Hours for Admission.

Margus C, Sondheim SE, Peck NM, Storch B, Ngai KM, Ho HE, She T; Department of Emergency Medicine, Icahn School of Medicine at

Mount Sinai, New York; Am J Emerg Med; 2021 Jul;45:185-191.

INTRODUCTION: Coronavirus disease 2019 (Covid-19) has led to unprecedented healthcare demand. This study seeks to characterize Emergency Department (ED) discharges suspected of Covid-19 that are admitted within 72 h.

METHODS: We abstracted all adult discharges with suspected Covid-19 from five New York City EDs between March 2nd and April 15th. Those admitted within 72 h were then compared against those who were not using descriptive and regression analysis of background and clinical characteristics.

RESULTS: Discharged ED patients returning within 72 h were more often admitted if suspected of Covid-19 (32.9% vs 12.1%, $p < .0001$). Of 7,433 suspected Covid-19 discharges, the 139 (1.9%) admitted within 72 h were older (55.4 vs. 45.6 years, OR 1.03) and more often male (1.32) or with a history of obstructive lung disease (2.77) or diabetes (1.58) than those who were not admitted ($p < .05$). Additional associations included non-English preference, cancer, heart failure, hypertension, renal disease, ambulance arrival, higher triage acuity, longer ED stay or time from symptom onset, fever, tachycardia, dyspnea, gastrointestinal symptoms, x-ray abnormalities, and decreased platelets and lymphocytes ($p < .05$ for all). On 72-h return, 91 (65.5%) subjects required oxygen, and 7 (5.0%) required mechanical ventilation in the ED. Twenty-two (15.8%) of the study group have since died.

CONCLUSION: Several factors emerge as associated with 72-h ED return admission in subjects suspected of Covid-19. These should be considered when assessing discharge risk in clinical practice.

Telemedicine Medical Screening Evaluation Expedites the Initiation of Emergency Care for Children.

Friedman J, Lame M, Clark S, Gogia K, Platt SL, Kim JW; Pediatric Emergency Medicine, Jacobi Medical Center, Bronx; Pediatr Emerg Care; 2021 Jul 1;37(7):e417-e420.

OBJECTIVE: Prior studies show that staffing a physician at triage expedites care in the emergency department. Our objective was to describe the novel application and effect of a telemedicine medical screening evaluation (Tele-MSE) at triage on quality metrics in the pediatric emergency department (PED).

METHODS: We conducted a retrospective quasi-experimental pre-post intervention study of patients presenting to an urban PED from December 2017 to November 2019 who received a Tele-MSE at triage. We analyzed four diagnostic cohorts: gastroenteritis, psychiatry evaluation, burn injury, and extremity fracture. We matched cases with controls who received standard triage, from December 2015 to November 2017, by age, diagnosis, weekday versus weekend, and season of presentation. Outcome measures included door-to-provider time, time-to-intervention order, and PED length of stay (LOS).

RESULTS: We included 557 patients who received Tele-MSE during the study period. Compared with controls, patients who received a Tele-MSE at triage had a shorter median door-to-provider time (median difference [MD], 8.4 minutes; 95% confidence interval [CI], 6.0-11.0), time-to-medication order (MD, 27.3 minutes; 95% CI, 22.9-35.2), time-to-consult order (MD, 10.0 minutes; 95% CI, 5.3-12.7), and PED LOS (MD, 0.4 hours; 95% CI, 0.3-0.6).

CONCLUSIONS: A Tele-MSE is an innovative modality to expedite the initiation of emergency care and reduce PED LOS for children. This novel intervention offers potential opportunities to optimize provider and patient satisfaction and safety during the COVID-19 pandemic.

Interphysician Weight Bias: A Cross-Sectional Observational Survey Study To Guide Implicit Bias Training in the Medical Workplace.

McLean ME, McLean LE, McLean-Holden AC, Campbell LF, Horner AM, Kulkarni ML, Melville LD, Fernandez EA; Department of Emergency Medicine, St. John's Riverside Hospital, Yonkers; Acad Emerg Med; 2021 Sep;28(9):1024-1034.

OBJECTIVES: Implicit bias contributes to both health care disparities and professional limitations, and it exists among physicians. Prior literature has described physician weight bias (WB) toward patients, but little research has investigated interphysician WB. This study describes the prevalence of interphysician implicit WB and investigates the relationships between implicit, explicit, and professional biases. The authors hypothesized that the majority of physicians possess interphysician implicit WB and that the degree of implicit bias has a direct relationship with explicit and professional WB.

METHODS: In this cross-sectional study, a survey was used to measure interphysician implicit, explicit, and professional WB. It included adaptations of two previously validated measures (the Implicit Association Test and the Crandall Anti-fat Attitudes Questionnaire) and an investigator developed and tested Professional Weight Bias Scale. The survey was distributed electronically via medical society message boards, email lists, and social media groups.

RESULTS: A total of 620 physicians and medical students participated. Fifty-eight percent were female, ages ranged from 22 to 83 years (mean = 44 years), and body mass index (BMI) ranged from 16 to 59 (mean = 26). Descriptive analyses revealed that 87% had some degree of implicit interphysician antifat bias, with 31% and 34% categorized as moderate and severe, respectively. Correlation and multiple regression analyses revealed that male sex, increased age, and decreased BMI were related to increased implicit bias, controlling for all other factors. Furthermore, implicit, explicit, and professional bias all had significant, direct relationships with each other.

CONCLUSIONS: Our findings highlight the prevalence of interphysician implicit WB; the strong correlations between implicit, explicit, and professional WB; and the potential disparities faced by physicians with obesity. These results may be used to guide implicit bias training for a more inclusive medical workplace.

Residents

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Transitioning to a Senior Resident

They're the same scrubs you've worn, the same mug you've poured your coffee into day after day. The routine is the same, but this particular day starts to feel different as you remember you can't use the excuse, "I'm sorry, I'm an intern" anymore. You've gone through a rollercoaster of days where you've felt you were never going to understand an EKG, to wondering how you're going to survive another day on four hours of sleep, to feeling like you finally have a grip on the workflow only to have another taxing day overshadow all those good days. But you're here, and you've made it.

As you head into your final year of residency as a senior resident, it comes with signs that may say "Enjoy your new role as a mentor to a new class," "You're ready for the increased responsibility," or "It's too late to turn back now." Responsibility comes with the territory. You now find yourself in a position to see more patients and be more aware of the department. It's common to struggle with prioritizing patient volume and acuity with documentation and increasingly feeling the pressure of those notes anxiously awaiting to be signed. The following is written to provide a balance of advice and navigating tips.

As an experienced member of the team, sign outs will be a daily part of the workflow and integrated with new patients. Learn the importance of reassessment and managing patients through different points in their workup. Become comfortable with being able to juggle seeing a new patient, updating a prior patient on their results, contacting a consultant and discharging a patient who's ready to go home. Efficiency will become important. Invest in creating a system to keep track of tasks. For example, having a sheet of paper with patient stickers and check boxes next to them.

At some point, self-doubt might set in. It might feel like you don't know enough, that you aren't progressing or you experience imposter syndrome. We're our own worst critics and, for the most part, everyone has these thoughts at some point. Realize that it's okay to have them, but also realize that you have come this far already and conquered similar moments of doubt and worry. You are capable. Trust in the process and your development.

On the other side of the spectrum, you'll grow in your confidence and knowledge. There's nothing like the confidence boost that comes with putting in orders without running every Tylenol and imaging scan by your attending. Similar to the frightening experience of seeing a dark figure at night only to realize that it's a coat draped across the door, complex cases will seem a little less frightening as more exposure and experience is shined on them. At home, take the time to review presentations that were challenging or where the diagnosis was uncertain. Longer term care and admission follow-ups are great to see how certain etiologies are treated and things that may have been missed.

It may not seem like it, but your clinical knowledge has already substantially grown since you began residency. Using a new intern as a reference point, you'll realize just how far you've come. However, there is a healthy balance between being confident and knowing when to ask for help. Ultimately, although you want to feel independent in your decisions, don't get caught in the trap of having sureness turn into recklessness. Though your knowledge base has exponentially increased, it is impossible to be fully omniscient. There will be humbling cases that turn out completely different than your initial suspicion or evaluation. This is a life-long learning process and even seasoned attendings still look up information and ask colleagues for help, so ask for help when it's needed. Continuous learning is crucial to reinforcing treatments and approaches to pathologies. When recently graduated residents were asked what things they wish they did more of in residency, the major consensus was to listen to podcasts on your commute about up-to-date evidence-based medicine and to look at as many EKGs as possible on shift.

Cultivate a learning environment for the new interns. It's rewarding to be a mentor and contribute to someone's learning process. Take advantage of those procedural skills you have developed. Share the wealth. You'll find you get just as much out of the experience as the person you are teaching. Remember the age-old quote, "You learn 95% of what you teach others." To further hone these skills, watching procedural videos can be a useful regimen to incorporate. Visualization techniques for procedures are a powerful method to train your mind for the actual performance.

Lastly, in the midst of all the turmoil and frustrating days, it's important to address burn out. Find what excites you and what your outlet is. Whether it's spending time outdoors, reading, exercising, spending time with friends or family, incorporate those things into your daily life. It'll save you from being in a bad mindset. It's easy to lose footing and harder to climb back up those stairs. Remember that we have colleagues that are going through those days with you. They are good resources for venting and for soliciting advice. A healthy mind off the pitch is just as important as a healthy mind on the pitch. Find coping mechanisms while at work as well. Take small breaks if needed, focus on some deep breathing or whatever activity re-centers you.

There is so much to look forward to and be excited about. Embrace the growth, the failures, the successes. "I've got this," you should think as a you take a sip of your coffee and walk through the door.

Calendar

December 2021

8 Education Committee Conference Call, 2:45 pm
8 Professional Development Conference Call, 3:30 pm
9 Practice Management Conference Call, 1:00 pm
15 Government Affairs Conference Call, 11:00 am
15 Emergency Medicine Resident Committee Conference Call, 2:00 pm
15 Research Committee Conference Call, 3:00 pm
16 EMS Committee Conference Call, 2:30 pm
17 Board of Directors Meeting, 12:00 pm - 1:30 pm
24-31 New York ACEP Office Closed

January 2022

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

February 2022

2 Professional Development Lecture Series, 7:00 - 8:00 pm
9 Education Committee Conference Call, 2:45 pm
9 Professional Development Conference Call, 3:30 pm
10 Practice Management Conference Call, 1:00 pm
16 Government Affairs Conference Call, 11:00 am
16 Emergency Medicine Resident Committee Conference Call, 2:00 pm
16 Research Committee Conference Call, 3:00 pm
17 EMS Committee Conference Call, 2:30 pm
25 Board of Directors Meeting, 12:00 pm - 1:30 pm

ALBANY UPDATE

Reid, McNally & Savage

New York ACEP Legislative & Regulatory Representatives

Kathy Hochul Sworn-In as Governor of New York State

Governor Kathleen (Kathy) Hochul, a native of Buffalo, was sworn in just after midnight Tuesday, August 24 as the 57th Governor of New York State and the first woman to hold the office. She replaces Andrew M. Cuomo who resigned.

Governor Hochul was first elected Lieutenant Governor in 2014 under then Governor Andrew Cuomo and won reelection in 2018. She started her career as a congressional staffer for Senator Daniel Patrick Moynihan. She was elected Erie County Clerk in 2007 and served one term in Congress after a special election in 2011 for the 26th district. From 2013 to 2014, Governor Hochul was Vice President for Government Affairs at M&T Bank.

Governor Hochul chose Brian A. Benjamin, a Democratic state senator from Harlem to be lieutenant governor. Senator Benjamin was the senior assistant majority leader in the State Senate, where he has been a vocal proponent of criminal justice reforms. He is a graduate of Brown University and Harvard Business School where he earned his MBA. Lieutenant Governor Benjamin worked at Morgan Stanley and was a managing partner at Genesis Companies, a real estate firm with a focus on affordable housing.

2022 New York Gubernatorial Election

Governor Kathy Hochul announced she plans to run for Governor in 2022. Possible Democratic challengers include New York City Public Advocate Jumaane Williams and Attorney General Letitia James.

On the Republican side, U.S. Representative Lee Zeldin from Long Island is running and received the support of the State's party leadership. Other Republicans including Andrew Giuliani and former Westchester County Executive Lee Zeldin have announced plans to run.

Mary Bassett, MD MPS, New State Department of Health Commissioner

Governor Hochul appointed Mary Bassett, MD MPH as the Commissioner of the New York State Department of Health. Her appointment is effective December 1, 2021.

Dr. Bassett currently serves as director of the Francois-Xavier Bagnoud (FXB) Center for Health and Human Rights at Harvard University and FXB Professor of the Practice of Health and Human Rights in the Department of Social and Behavioral Sciences at Harvard T.H. Chan School of Public Health. From 2014 to 2018 she was the Commissioner of the New York City Department of Health and Mental Hygiene.

State Budget Outlook 2022

Governor Kathy Hochul recently released the first quarter State Fiscal Update to the State Financial Plan. It shows the State in a strong fiscal position as economic growth beats expectations with revenues projected to be an additional $2.1 billion higher for the next four years.

The Governor cautioned that while the fiscal picture is strong, her administration will act with caution as the Delta variant of COVID-19 was spreading rapidly over the summer months, threatening the economy. Additional state funds will be put in reserve to protect against an economic downturn.

The Governor's 2022-23 proposed State Budget will be released in early January, 2022.

New York ACEP Lobby Day, Tuesday, March 8, 2022

The 2022 state Legislative Session will kick-off in January and run until the end of June. New York ACEP will hold a Lobby Day Tuesday, March 8, 2022. New York ACEP members will meet with legislators and staff as well as representatives of Governor Hochul's office. The agenda will focus on the State Budget and legislative proposals impacting the practice of emergency medicine and patients.

It is not known at this time whether the Lobby Day will be in person or virtual. We are waiting for a decision from leaders of the New York State Assembly and Senate about whether they will return to the Capitol and if members of the public will be allowed in State buildings.

Report of New York's Health Care Administration Simplification Workgroup

On October 3, 2021, the New York State Department of Financial Services (DFS), issued the Report of New York's Health Care Administration Simplification Workgroup. The Workgroup included representatives of physicians, hospitals, health care plans, behavioral health providers, patients and other consumers.

Items of greatest interest to New York ACEP are summarized below. The full report can be found at https://www.dfs.ny.gov/system/files/documents/2021/10/admin_simplification_workgroup_report_20211003.pdf

Uniform Hospital Billing

Workgroup members representing consumers raised concerns that hospital billing is confusing and consumers often receive multiple bills for a single hospital stay. They recommended hospitals send a single, consolidated bill that clearly explains the services and charges shortly after discharge. This recommendation is similar to legislation that has been pending for several years in the New York State Legislature.

New York ACEP has raised concerns with this legislation/concept because it would prohibit a physician or other provider with any financial or contractual relationship with a hospital from separately billing a patient. Prohibiting a private physician group from separately billing a patient for services provided at a hospital puts the physician group at a distinct financial disadvantage and will prevent timely and adequate

payments. Over the last several years, New York ACEP has sought a compromise solution to this proposed legislation.

Workgroup members representing hospitals indicated a single, consolidated bill inclusive of both hospital and physician services is not currently possible when physicians and independent practices are not employed by the hospital. In addition, hospital representatives stated hospitals are not privy to the terms of physician contractual agreements with health plans.

The Workgroup recommends the Department of Health continue discussions with stakeholders to explore ways to make billing easier for consumers to understand.

Clinical Review

The Workgroup recommends health plans post their clinical review criteria, including criteria used by delegated utilization review agents, in a centralized place on their websites that is readily available to the public.

Preauthorization

The Workgroup recommends health plans clearly identify the services that are subject to preauthorization. At least annually, health plans should review services that are generally approved through preauthorization to identify where preauthorization requirements may be removed. Health plans should review circumstances where repeat preauthorization requirements for the same patient/same treatment can be eliminated.