New York American College of Emergency Physicians

ADVANCING EMERGENCY CARE

Spotlight on Sepsis: Sepsis Becomes Regulated

page 14

Prehospital and Public Access Use of Intranasal Naloxone

page 22

Feature Articles: Education, Ethics Pediatrics, Research Toxicology and Ultrasound

Empire State EPIC

VOL 31-03:14 EMERGENCY PHYSICIANS' INTERIM COMMUNIQUE

President's Message

Art, Science or Protocol?

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When I work a shift, I love cases that are relatively quick, exciting and rewarding. I know I'm not the only emergency physician who feels this way.

When the triage nurse lets you know about the patient with chest pain, and you see those elevated and contiguous ST segments on an EKG that was done right away, you know it will be a quick and hopefully rewarding case.

The team knows the drill. Often, very few words need to be said.

It's crucial that you do your history and physical quickly and accurately. After all, you don't want to send a patient with an acute aortic dissection or pericarditis to the cath lab.

And you won't. You're good, your team is good, and in a short period of time the critically ill patient ends up in the hands of an interventional cardiologist or surgeon after being whisked away from your emergency department by gurney or transfer ambulance. You are working with a number of energized staff to get the job done.

Those are great cases. You chat with the staff as you finish the documentation, feeling that you participated in something excellent. You enjoy knowing that you quickly recognized and provided what the patient needed. You enjoy the patient's rapid departure. You enjoy being an important cog in a standardized and protocol driven team effort.

Acute ischemic stroke patients are gradually moving into this category. They are often not nearly as straight forward, but an increasing percentage of stroke cases are protocol driven with much better outcomes than 30 years ago. Indeed, we didn't do much for them at all even 20 years ago.

When the stroke protocols and standardized assessments were emerging, I remember feeling frustrated that they might be applied to too many atypical 'non-stroke' patients. I thought that we'd be running stroke alerts on every weak and dizzy elder and that false alarms would harm the effectiveness of the organized effort. Years later, we've all gotten better at our screening procedures and yes, a very significant percentage of real cases are 'atypical', and they are now better cared for.

The trauma that I learned in the 1980's at Cook County Hospital was high volume and disproportionately penetrating. Today I deal with blunt trauma most of the time. I would never have thought 30 years ago that my trauma practice in 2014 would be comprised of so many elders on platelet inhibiting and anticoagulant medications who fall or crash a car.

Protocols for massive transfusion protocols, platelets and anticoagulant reversal are now paramount. Our hospitals in New York have built or are building trauma programs that meet and exceed the criteria of the American College of Surgeons. Again, we see education, standardization and protocols as the greatest opportunity for improvement.

I'll be darned, but sepsis is the next big thing. Many of us are only months into our DOH mandated protocols, but I'm already sensing improved awareness, recognition and earlier treatment. I hope that the measurable outcomes will improve as well. I sense that they will.

Whether its MI, CVA, traumatic ICH or gram negative sepsis, the 'art' of emergency medicine, requiring an astute, well trained emergency physician to see through the fog, past the interruptions and crowding, to individually recognize and act upon atypical presentations of high acuity, should be retired wherever possible.

Give me a team – assertive paramedics, opinionated nurses, PAs, NPs, and techs, and eager and engaged medical staff – empowered with standardized criteria and a protocol, any day!

The diagnostics and interventions delivered should be evidence-based, effective and appropriate, but that's a different discussion.

Give me an empowered team working towards a common goal! ⌘

. . . features
Ask the Experts: Promotion for Junior Attending • 4
Education: Teaching the Intangibles • 19
Ethics: Prosecuted EMTALA Cases • 11
New York State of Mind • 16
Pediatrics: Colic in the Infant • 20
President's Message: Art, Science or Protocol? • 3
Toxicology: Baclofen in the Treatment of Intractable Hiccups? • 8
Ultrasound Guided Peripheral IV Insertion • 5

. . . insights
Albany Update • 28
Intranasal Naloxone • 22
Spotlight on Sepsis • 14
Strong Memorial Hosts Congressional Visit • 29

. . . events
ACEP Leadership & Advocacy Conference • 25
Calendar • 30
ED Leadership Forum • 7
LLSA Review • 13

. . . opportunities
Call for Abstracts • 9
Call for Board & Councillor Nominations • 25
New Speaker Forum • 24

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EMERGENCY PHYSICIANS' INTERIM COMMUNIQUE

Ask the Experts

Promotion for Junior Attendings

When choosing a job, new physicians should consider what directions to take their career. There are many opportunities available and many types of practices but one has to consider future goals. The type of practice setting and the type of physician you want to be or become may be based on the opportunities and promotions at particular facilities. Knowing what is available as well as how to best obtain desired goals and positions is important.

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Opportunities for your career in emergency medicine are bountiful.

In years past, certain areas had a paucity of residency-trained, board certified emergency physicians which allowed people to gain access to administrative positions early in their career. This is no longer the case in many geographic areas. Obtaining a fellowship certainly sets you up for further career opportunities but the real secret in preparing yourself for promotion lies within you and how you approach your profession.

The following are the characteristics of young physicians who have the desire to advance in their career:

- They expect to make themselves available to do more than just shift work.
- They do not have an hourly employee mentality.
- They make themselves available to participate and contribute to departmental projects and initiatives whether they are being reimbursed for them or not.
- They are eager, motivated and interested in departmental well-being.
- They have a global picture of their practice, which includes how the emergency department interacts with the community, a patient-centered approach with patient satisfaction in mind and the concept of the need to perform relative to contract stability (or departmental recognition in the academic setting).
- They are able to see other perspectives for the good of patient-focused care and the organization in which they work.

In academics, all of the above characteristics still apply. The young faculty member is eager to do more than their share. They may volunteer to be involved with more research activity than what is expected with their students and/or residents.

In addition to all of the above, the practice setting certainly plays a role in the opportunities that might be available. In a smaller, single contract group, there may be little room for promotion.

In a larger, multi-contract group, promotions are more available but perhaps at a different location. Even if there is not a formal administrative position available, many directors will work with young physicians who have the professional goal of moving into a formal administrative role in the future. For example, titles can be assigned to an individual even if there is not budgetary availability for reimbursement. Such activity strongly contributes to the resume and experience of a young physician and sets them up for a future promotion.

In summary, the young physician has opportunities to build their professional experience and resume if they are motivated to do so to set the foundation for a promotion after a few years of experience. The rapidity with which promotion will occur will depend upon several factors, including practice setting, size of the group and/or organization they are working within, and flexibility of the candidate relative to changing practice venues. ⌘

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Ultrasound Guided Peripheral IV Insertion

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Indications

- Failed attempts with traditional technique
- Patients with difficult access due to:
  - Burns.
  - Extremes of age.
  - Dehydration.
  - Diabetes.
  - Intravenous drug use.
  - Obesity.
  - Peripheral edema.
  - Recurrent venous access due to chronic illness.
  - Sickle cell anemia.

Benefits

- Allows cannulation of veins that are neither visible nor palpable.
- Decreased time to cannulation.
- Fewer percutaneous punctures.
- Improved patient satisfaction.
- Avoids central line placement and its potential complications.

Technique

- Select a high frequency linear probe and sanitize it.
- Place the ultrasound machine in a direct line of view. (Figure 1)

Figure 1: The ultrasound machine is placed in the sonologist's direct line of view.

- Assemble the equipment (Figure 2).

Figure 2: Assemble all necessary equipment for peripheral intravenous access: including tourniquet, cleaning swab, needle and ultrasound probe. For a more sterile procedure, apply a Tegaderm™ to the probe footprint and sterile lubricating gel.

- Clean the skin, apply a tourniquet and identify a vessel for cannulation.
- Abduct and externally rotate the upper extremity to fully expose the anteromedial aspect.
- Locate the brachial or basilic veins, which are often larger proximally.
- Choose a vessel and follow its path. Identify where it is most superficial, and where its diameter is the largest.
- Ensure that the vessel is a vein. Veins are compressible and lack arterial pulsations with partial compression.
- Confirm successful cannulation with flashback of blood and direct visualization of the catheter tip within the lumen of the vessel-target sign.
- Hypoechoic microbubbles will fill the vein with flushing of the catheter.

Out-of-Plane (Short Axis)

- Align the probe marker to the patient's right with the marker on the screen. (Figure 3)

Figure 3: Out-of-Plane: Probe positioned with the probe marker to the patient's right.

- Center the catheter with the probe.
- Hold the catheter in the dominant hand and the probe in the non-dominant hand.
- Using a 30-45 degree angle, the point of skin insertion should be the same distance in front of the transducer as the depth of the vein.
- Locate the tip by gently bouncing the needle within the soft tissue to look for tenting of the vessel. (Figures 4A and 4B)

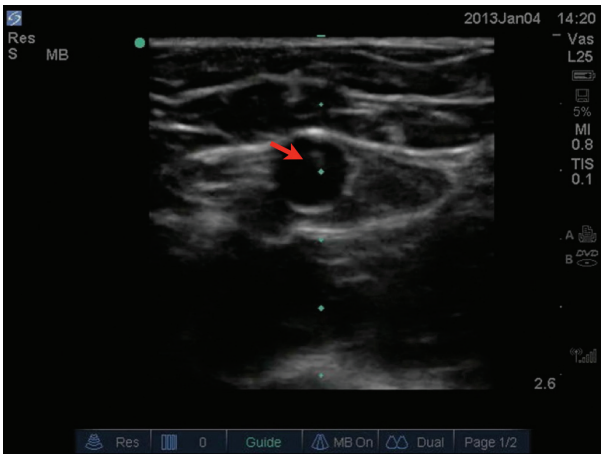

Figure 4A: Normal vessel in Short Axis.

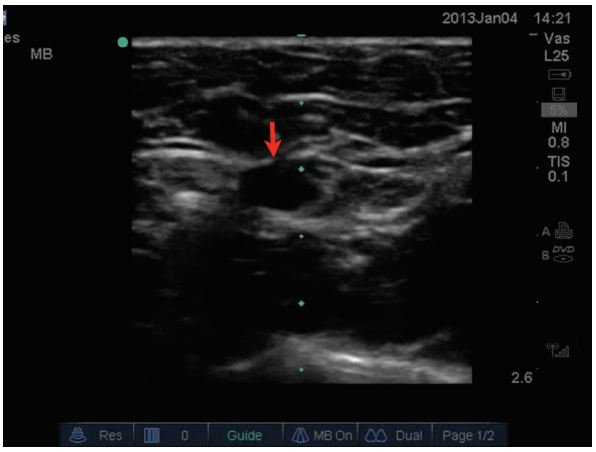

Figure 4B: Tenting of anterior vessel wall. Tenting of the vessel is observed in the out-of-plane technique. Note the needle itself may not be visualized.

- Ring-down artifact from the needle may be visible. (Figure 5)

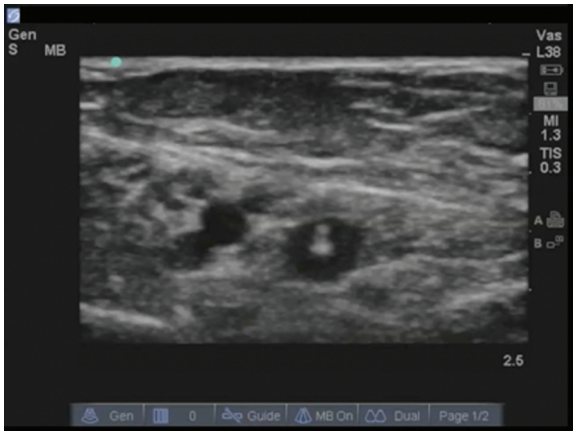

Figure 5: Ring down artifact out-of-plane technique. Although the needle itself is not visualized, reverberations caused by the ultrasound waves bouncing between the needle tip and the vessel wall may be seen as a "ring down artifact."

In-Plane (Long Axis)

- Align the probe marker towards the patient's head. (Figure 6)

Figure 6: In-plane: Probe positioned with the probe marker to the patient's head.

- Directly visualize the path of the needle as it enters the vessel. (Figure 7)

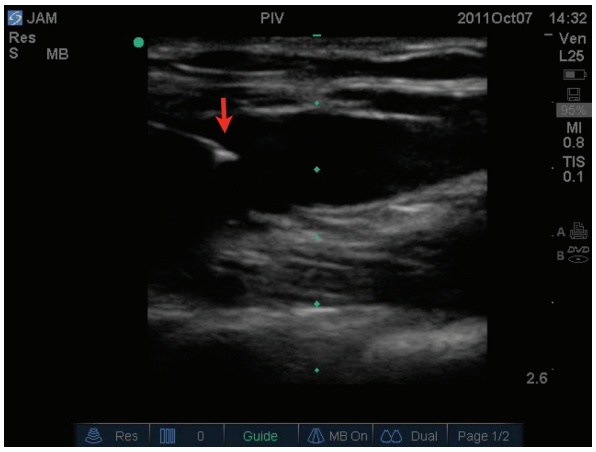

Figure 7: The path of the needle can be visualized with the in-plane technique (left side of image).
- Image Courtesy of Jennifer A. Martin, MD

Benefits and Pitfalls

Out-of-Plane (Short Axis)

- Can determine spatial relationships in the area of the vein.
- Visualize tenting of the vessel by the needle and the needle tip in the center of vein or "target sign."
- Greater success rate for novice sonographers.
- Shorter time to cannulation.
- Posterior wall penetration is possible.

In-Plane (Long Axis)

- Can follow the entire needle path.
- Posterior wall penetration less common.
- Due to poor lateral resolution, a needle lying just to the side of a vessel can appear in the same plane. Any slight movement off the correct axis may result in penetrating an artery instead of vein.
- More technically challenging.

Tips

- Do not rely on flash alone- this can occur with posterior wall penetration. Must be able to flush saline and withdraw blood smoothly.
- Use longer intravenous catheters e.g. 1.75-2 inch or an arterial line kit for deeper veins.
- Thick, superficial, distal vessels are associated with increased catheter longevity.
- This real-time imaging works better with a single operator technique. ⌘

Toxicology

What is the Role of Baclofen in the Treatment of Intractable Hiccups?

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Hiccup is the sudden onset of erratic diaphragmatic and intercostal muscle contraction and immediately followed by laryngeal closure. The abrupt air rush into lungs elicits a "hic" sound. Hiccup is usually a self-limited disorder; however, when it is prolonged beyond 48 hours, it is considered persistent whereas episodes longer than two months are called intractable. A reflex arc involving peripheral phrenic, vagal and sympathetic pathways and central midbrain modulation is likely responsible for hiccup. The hiccup reflex is complex and composed of the following: on the afferent limb: the vagus nerve, the pharyngeal branch of the glossopharyngeal nerve, the pharyngeal nerve plexus of C2-C4, the sympathetic nerve of T6-T12; and on the efferent limb: the phrenic nerve, the inspiratory accessory muscle, and efferent nerve fibers leading to the expiratory muscle.[1, 2]

Irritation of the vagus and phrenic nerve are common causes of persistent or intractable hiccups.[3] Examples include pharyngitis, laryngitis, or tumors of the neck that stimulate the recurrent laryngeal nerve (a branch of the vagus nerve). Goiters, tumors, or cysts in the neck, mediastinal masses, and abnormalities of the diaphragm that irritate the phrenic nerve. Foreign bodies in contact with the tympanic membrane that irritate the auricular branch of the vagus. Gastrointestinal disorders include gastric distention, gastritis, gastroesophageal reflux, diaphragmatic protrusion, peptic ulcer disease, pancreatitis, pancreatic cancer, gastric carcinoma, abdominal abscesses, gallbladder disease, inflammatory bowel disease, hepatitis, aerophagia, esophageal distention, and esophagitis.[4] Thoracic disorders associated with hiccups include enlarged lymph nodes secondary to infection or neoplasm, pneumonia, empyema, bronchitis, asthma, pleuritis, aortic aneurysm, mediastinitis, mediastinal tumors and chest trauma.[5]

Chlorpromazine is the only drug approved by the US Food and Drug Administration to treat hiccup.[6] Several other agents have been used to cure hiccups. Metoclopramide accelerates gastric emptying and increases the resting tone of lower esophageal sphincter through antagonism of the gastroenteric inhibitory effect of the dopamine receptor on the gastric smooth muscle, while decreasing the secretion of gastric juice.[7] Chlorpromazine, also a dopamine antagonist, has an inhibitory effect at the hypothalamus. Other pharmacologic agents used off label include valproic acid, amitriptyline and haloperidol.

Baclofen is primarily used to treat spastic movement, particularly in instances of spinal cord injury, spastic paralysis, multiple sclerosis, amyotrophic lateral sclerosis. Baclofen is a GABAB agonist. The GABAB receptor is a heterodimer of the $GABAB^1$ and $GABAB^2$ receptors.[8] Unlike GABAA, the GABAB receptor couples to various effector systems through a signal-transducing G protein.[9] GABAB receptors mediate presynaptic inhibition (by preventing Ca2+ influx) and postsynaptic inhibition (by increasing K+ efflux).[10] The postsynaptic receptors appear to have an inhibitory effect similar to that of the GABAA receptors, though the mechanism differs. The presynaptic receptors provide feedback inhibition of GABA release.

The effective action of baclofen in hiccups is due to the fact that baclofen, an analog of GABA, decreases the excitability and inhibits the hiccup reflex, which reduces synaptic transmission at the spinal cord by increasing the threshold of its excitement and producing an anti-spastic effect.[11]

Several case reports show successful cessation of hiccups with baclofen refractory to chlorpromazine and/or metoclopramide use.[12-16] One prospective cohort study evaluated 37 patients who had a bout or recurring bouts of hiccups for at least seven days; baclofen was given as initial treatment in those without evidence of gastroesophageal disease (n = 17) and in those who had hiccups despite treatment for a gastroesophageal disorder (n = 20).[17] Baclofen produced long-term complete resolution (18 cases) or a reduction (10 cases) of hiccups. The most common adverse effects are drowsiness and lightheadedness.

In conclusion, though baclofen is not FDA approved for the treatment of hiccups, case reports and one prospective trial, although not randomized, reveals there is a role for its use for intractable hiccups not alleviated with conventional therapy.

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Ethics

Do Prosecuted EMTALA Cases Actually Reflect Our Duty to Care?

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The duty to care begins with a patient in need of care and finishes with a provider who gives care. Historical accounts of breeches of this duty led to congressional action to pass the Emergency Medical Treatment and Active Labor Act (EMTALA) in 1986. The initial intent of EMTALA was to prevent patient dumping, whereby hospitals leave patients with no other option but to seek treatment elsewhere. How the bill became a law is already documented elsewhere,[1] but how the law is applied has been left up to interpretation. Anyone who works in a hospital from registration clerk to on-call physician should know how EMTALA is interpreted.

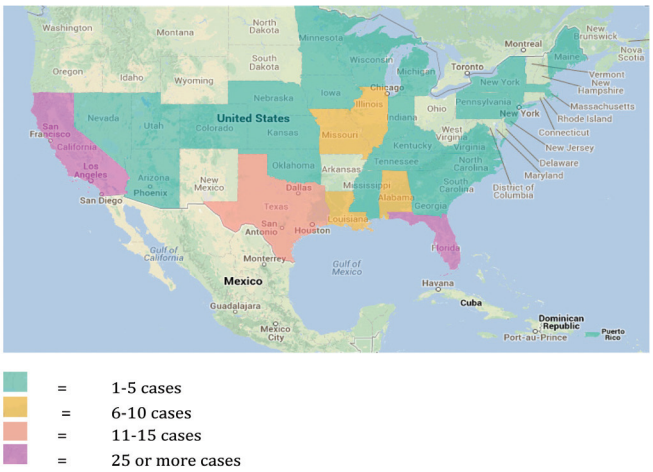
EMTALA mandates five services of hospitals:

1. medical screening of patients presenting to the emergency department;
2. stabilization of their medical conditions;
3. arranging appropriate transfers;
4. accepting patient transfers from other hospitals; and
5. providing physician on-call services to the emergency department.[2]

Since its inception, this law has been amended twice and undergone at least six rule revisions to clarify its scope (Table 1); however the basic premises remain the same.3 Too often, compliance with these obligations is driven by fear of charges of alleged violations. Greater clarity of what constitutes an EMTALA violation is needed. This article reviews the specific cases where the Health and Human Services (HHS) Office of the Inspector General (OIG) received a monetary penalty from a physician or hospital to settle an alleged violation.

A research associate and I accessed the HHS website database of settled violations from 2002-2012 and the first seven months of 2013.[4] We reviewed the cases to identify which of the five provisions of EMTALA were violated. We discussed our initial thoughts and then reached consensus on which category or categories were appropriate for each case. We reviewed one hundred and seventy cases in total. One was excluded from analysis, because it referred to another law other than the EMTALA-related patient dumping prohibition, possibly erroneously listed on the HHS website. Regional variances were also extracted to plot on a map of the United States (Figure 1). New York cases were surprisingly rare.

Figure 1: CMP cases re: patient dumping 2002-2013



In 133 of 169 cases (78.7%) the physician or hospital allegedly failed to provide an appropriate medical screening exam. In 87 cases (51.5%) the physician or hospital allegedly failed to provide sufficient stabilizing treatment. In 31 cases (18.3%) the physician or hospital allegedly failed to provide an appropriate transfer. In 22 cases (13.0%) the physician or hospital allegedly refused to accept an appropriate transfer. In nine cases (5.3%), an on-call physician allegedly failed to respond to a request to come to the emergency department to treat the patient (Table 2).

continued on next page

Table 1: EMTALA Amendments and Rule Revisions

Year	Amendment	Rule Revision	Specifics
1988	X		More stringent provisions regulating on-call physicians
1989	X		More stringent provisions regulating on-call physicians
1994		X	Established stricter standards than state specific laws
1998		X	Prevents hospitals from making preauthorization calls prior to medical screening
1999		X	Prohibited PRN orders for restraints
2000		X	Established 250 yard radius of hospital campus as area responsible for delivering emergency care
2003		X	Defined dedicated ED as treatment area that accepts greater than 33.3% unscheduled visits
2009		X	Protects hospitals receiving unstable patient transfers in good faith

Table 2: Type of EMTALA violations 2002-2013

Type of violation	# of cases	%
Failure to provide appropriate medical screening exam or stabilizing treatment	147/166	88.5
Refusal to accept an appropriate transfer	20/166	12.0
On-call physician failed to respond to request to come to ED to treat patient	8/166	4.8

Do Prosecuted EMTALA Cases Actually Reflect Our Duty to Care?

continued from page 11

One of the 169 cases (0.6%) was too difficult to classify because the HHS website did not include enough details about the case. The total number of alleged violations adds up to more than 100% because 89 of 169 cases (52.7%) involved multiple alleged EMTALA violations. Interestingly, only 7 of the reviewed cases (4.1%) were lodged against an individual physician as opposed to the hospital. Importantly, only 32 cases (18.9%) demonstrated blatant patient dumping. This included cases where a patient's insurance status or inability to pay was the given reason that the hospital or physician did not provide a medical screening exam.

The HHS database may have been a comprehensive listing of cases of EMTALA violations settled by monetary penalties, but it lacked details about the specific patients in many of the cases. It also does not include the alleged EMTALA violations that were either closed without penalty or dropped. Archived data was not available prior to 2002.

Critics of EMTALA have pointed out that violations have veered from the original intent of the law to prevent patient dumping.[5] Reviewing the HHS database corroborates this, where only 32 of the 169 cases (18.9%) demonstrated blatant patient dumping. Many other cases revealed practices that may have obstructed a patient's access to emergency medical care. For example, in 12 cases (7.1%) the hospital required payment before treatment. In 4 cases (2.4%) the physicians incorrectly thought they could not take care of a minor without parental consent. Eleven of the all reviewed cases (6.5%) had a long delay to see a provider followed by the demise of the patient (Table 3).

Table 3: Examples of long delays

Chief Complaint	Time to Be Seen	Outcome
Abnormal hemoglobin	7 hrs	Died in ED
Chest pain	3 hrs	Died outside ED
Shortness of breath	40 min	Left against medical advice
Acute appendicitis	1.5 hrs	Surgery at another hospital

Overall, a majority of the cases represented situations where the physician or hospital failed to provide an appropriate medical exam or stabilizing treatment. Some of these cases strongly suggested substandard medical care, such as discharging a deaf, nonverbal, developmentally disabled patient complaining of abdominal pain with a diagnosis of hunger pains; asking security to escort out a patient who could not walk after a motor vehicle collision; discharging a patient three hours after receiving a narcotic antagonist; refusing to reassess a patient complaining of feeling ill after receiving morphine for knee pain following a fall; or not realizing that a scapula fracture after a bicycle trauma can be a harbinger of serious underlying injuries (Table 4). It can be argued that such cases of substandard medical care should be handled in a tort law case rather than as an EMTALA violation. Some of these cases proceed as EMTALA violations rather than solely as tort law cases because the current approach to adjudicating EMTALA violations allows expert witnesses to give testimony regarding the hospital's medical judgment. Cohen (2007) argues that this precedent set by *Power vs. Arlington Hospital Association* should be replaced by a hearing of expert witness testimony only as it pertains to a hospital's medical judgment influenced by discriminatory practices, much as Civil Right Act violations are prosecuted.[6] This change would theoretically prevent cases being brought under EMTALA that seem more properly prosecuted as malpractice.

Table 4: Substandard Care

Discharge Diagnosis	Ultimate Diagnosis	Outcome
Hunger pains	Gastric hemorrhage	Death
Inability to walk	Acetabular fracture	Surgery
Mild heroin overdose	Severe heroin overdose	Death
Knee pain	Respiratory failure	Death
Scapula fracture	Rib and back fractures	Surgery

Some cases revealed pitfalls in EMTALA compliance with nursing and other emergency department staff. Examples include nurses telling the patient to go elsewhere because: the hospital could not accommodate the weight of the patient, the patient's doctor had privileges at another hospital, or the hospital was on diversion. Even placing a hospital on diversion, which has been successfully outlawed in Massachusetts,[7, 8] is not an acceptable reason to turn away a patient from a hospital's grounds. Registration clerks were found in violation on two occasions for telling patients that they would have a long wait to sign in and to be seen.

Somewhat unavoidable for the emergency physician, but perhaps not for the hospital, are violations where the on-call specialists were not providing adequate care. The following cases were frustrating for the emergency physician, but devastating for the patients: a neurosurgeon refused to perform a ventricular shunt for a patient with an intracranial hemorrhage; an ophthalmologist told an emergency department physician to send home an 11-year-old boy with an eye injury without seeing him; and a cardiac surgeon refused a transfer because the "patient would die anyway." The last patient was transferred to another hospital where he was treated and survived (Table 5).

Table 5: Examples of Consultant Not Providing Adequate Care

Subspecialist	Failure to Perform	Result
Neurosurgeon	Ventricular shunt	Death
Ophthalmologist	Consult	Admission to another hospital
Cardiac surgeon	Coronary artery bypass surgery	Survival at another hospital

When transferring patients, it is easy to avoid pitfalls that others have not avoided. For example, one should not transfer suicidal, depressed patients via taxi as two physicians found in violation of EMTALA did. One should not transfer patients to another hospital for a Sexual Assault Nurse Examiner (SANE) exam without performing a medical screening exam first. The examples of physicians transferring patients inappropriately, well intentioned or not, seem numerous.

The annual number of cases where penalties were charged has trended down over the last decade, while complaint investigations of EMTALA violations have risen over the same time period.[9] We speculate these trends can be explained by the evolution of EMTALA in this time period. Patients and their representatives complain more due to their greater awareness of the law, but hospitals have become more compliant as well. It is surprising that hospitals have not had more penalties given that

EMTALA has been so variably enforced, making it difficult to consistently follow the law. Even more variable is the regionalization of claims as shown in Table 1, and previously shown in Mariani (1997).[10] This variability is probably attributable to regional offices of the Centers for Medicare and Medicaid Services (CMS) practicing more or less aggressively rather than the actual differences in compliance.

In conclusion, our research reveals that the EMTALA law has been enforced inconsistently over the last decade to penalize physicians and hospitals for not following its tenets of providing a medical screening exam, giving stabilizing treatment, offering appropriate transfers, accepting appropriate transfers, and having on-call specialists. The pitfalls of compliance are many and require education of physicians, nurses, and staff alike. The best way to comply with EMTALA is to provide good medical care to anyone for anything at anytime.

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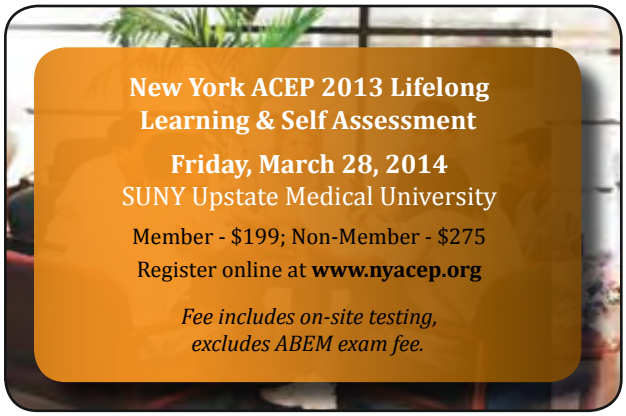

Spotlight on Sepsis:

Sepsis Becomes Regulated

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Hospitals are now required in New York State to implement evidence-based treatment algorithms for adult and children with severe sepsis and septic shock. They are also mandated to report protocol adherence and outcomes to the Department of Health (DOH). Emergency physicians should understand the evidence outlined below in support of these requirements, in order to improve adherence to these protocols and significantly improve sepsis morbidity and mortality.

Sepsis is a systemic inflammatory response to infection that can lead to severe sepsis and septic shock. This disease is a significant cause of morbidity and mortality worldwide, devastating the lives of millions each year. In the United States alone, sepsis, severe sepsis, and septic shock affect over 750,000 patients annually, and kill an alarming 28 to 50% of these patients. Sepsis is the 10th leading cause of death in the United States, and is the leading cause of death in non-coronary intensive care units (ICUs).

For the past decade, the Surviving Sepsis Campaign (SCC) has been amongst the leaders in spearheading efforts to reduce the sepsis burden worldwide. The Campaign has worked internationally to increase awareness of sepsis, improve diagnosis, encourage appropriate treatment, educate healthcare professionals and implement performance improvement programs. Most recently, the SCC published the 2012 International Guidelines for the Management of Severe Sepsis and Septic Shock. These guidelines, revised from the 2008 guidelines, compiled the most current literature and expert opinion into best practice recommendations for the care of severe sepsis and septic shock patients. Key recommendations included:

a. Early quantitative resuscitation during the first 6 hours after recognition
b. Blood cultures before antibiotic therapy
c. Administration of broad-spectrum antibiotics within 1 hour of recognition of severe sepsis and septic shock as the goal of therapy
d. Initial fluid resuscitation with crystalloid (minimum 30ml/kg), and consideration of the addition of albumin, to maintain an adequate mean arterial pressure (MAP)
e. Norepinephrine as first choice vasopressor to maintain MAP≥ 65mmHg; epinephrine as second-line when an additional agent is needed, or vasopressin as an adjunct to norepinephrine
f. Dobutamine infusion if myocardial dysfunction exists or with ongoing signs of hypoperfusion despite vasopressors

The National Quality Forum (NQF) is a public service organization that reviews, endorses and recommends the use of standardized healthcare performance measures. In October 2012, the NQF endorsed management bundles for the treatment of patients with severe sepsis and septic shock (NQF#0500) consistent with the 2012 SSC recommendations. This marked the first ever-national practice guidelines for the management of sepsis in the United States, and would serve as the benchmark for health care quality measurement by heath care providers, the federal government and private sector entities. Although not yet adopted by the Centers for Medicare and Medicaid (CMS), these measures will be considered by CMS for public reporting and payment programs in the near future. The NQF endorsed both a 3-hour management bundle (elements a-c) for severe sepsis and a 6-hour management bundle (elements a-g) for septic shock, to be completed within 3 and 6 hours of time of presentation (defined as time of triage in the emergency department). Bundle elements included:

a. Measure lactate level
b. Obtain blood cultures prior to administration of antibiotics
c. Administer broad-spectrum antibiotics
d. Administer 30mL/kg crystalloid
e. Apply vasopressors (for refractory hypotension) to maintain MAP ≥65
f. Measure CVP and central venous oxygen saturation (ScvO2)
g. Re-measure lactate if initial lactate was elevated

In January 2013, during his State of the State Address, New York's Governor Andrew M. Cuomo detailed precedent-setting plans for New York State to require hospitals to apply evidence-based protocols for the early identification, management and treatment of sepsis, as well as to publicly report protocol adherence rates, sepsis rates, and risk-adjusted mortality. In April 2013, New York State's Public Health and Health Planning Council set these plans into motion and approved regulations requiring all hospitals in New York State (NYS) to develop and submit to the Department of Health (DOH) "Hospital Sepsis Protocols." These

would be evidence-based protocols for the early recognition and treatment of patients with severe sepsis and septic shock, based on generally accepted standards of care. These protocols would need to specifically outline:

a. A process for the screening and early recognition of patients with sepsis, severe sepsis and septic shock
b. A process to identify and document individuals appropriate for treatment through severe sepsis and septic shock protocols
c. Guidelines for hemodynamic support
d. A procedure for identification of infectious source and delivery of early antibiotics with timeframe goals
e. Criteria for use, where appropriate, of an invasive protocol (using a central venous catheter) and for use of vasoactive agents

In June 2013, the NYS DOH released a formal Guidance Document further detailing the required components of the hospital protocols for severe sepsis and septic shock for adults and children. Proposed sepsis protocols must:

a. Outline explicit algorithms and/or alert systems stratifying patients into sepsis, severe sepsis, and septic shock based on a constellation of appropriate clinical and laboratory findings
b. Be consistent with the National Quality Forum-approved severe sepsis and septic shock management bundles (NQF #0500)
c. Require at a minimum:
    - Measurement of lactate level
    - Obtaining blood cultures prior to antibiotic administration
    - Other infectious source identification and control efforts as appropriate
    - Initiation of appropriate broad-spectrum antibiotics within one hour of identification of severe sepsis or septic shock
    - The delivery of appropriate crystalloid infusion with or without vasopressors
d. Specify a minimum amount for an initial fluid bolus and timeframe goals to complete administration of interventions consistent with current evidence-based recommendations
e. Outline an explicit and quantitative approach to guide resuscitation, including the following:
    - Physiologic measurements used to guide resuscitation interventions and monitor adequate perfusion and oxygenation
    - Physiologic thresholds and/or clinical conditions requiring insertion of a central venous catheter with or without central venous pressure and central venous oxygen saturation monitoring
    - Physiologic thresholds and/or clinical conditions requiring use of vasopressors

Protocols for infants and children would have to additionally address age-specific values for clinical and laboratory measurements pertinent to recognition of severe sepsis and septic shock and early intravenous (IV) and intraosseous (IO) access. Additionally, fluid resuscitation amounts, antibiotic administration, cardiovascular drug therapy support in septic shock, and physiologic goals to be reached within 60 minutes of initial resuscitation for children and infants must be consistent with American College of Critical Care Medicine (ACCM) guidelines.

In September 2013, all hospitals in NYS were required to submit their sepsis protocols to the DOH for review. The NYS DOH worked with IPRO to review the proposed sepsis protocols and grant approval to hospitals determined to be compliant with the criteria established. Hospitals were required to provide initial and ongoing training to all staff responsible for execution of sepsis protocols and implement their sepsis protocols by December 31, 2013.

Once every two years, at the request of the DOH, hospitals will be required to update these sepsis protocols based on newly emerging evidence-based standards. Hospitals will also be required to report to the Department annually on quality measures relating to the recognition and treatment of severe sepsis and septic shock. Adherence measures for adults will be based on the NQF-approved measures (NQF #0500), with the following exceptions:

Components that assume use of central venous pressure and central venous oxygen saturation shall not be reported if not relevant for hospitals using a "non-invasive" (no central venous access) protocol.

Multiple definitions of "time zero" shall be used for purposes of quality improvement and to recognize differences between characteristics of care delivered in the emergency department compared to hospital inpatient units. These definitions will include: (a) earliest time recorded (time of arrival); (b) time of triage; (c) time at which signs, symptoms, and laboratory findings are first consistent with definitions of severe sepsis or septic shock (time of meeting definitional criteria); and (d) time at which the severe sepsis or septic shock protocol was initiated.

Beginning April 2014, hospitals will also report specifically on their sepsis protocol adherence rate, including adherence to timeframes and implementation of all protocol components for adults and children. Additionally, hospitals will report on clinical variables that will permit the Department to try and calculate risk-adjusted severe sepsis and septic shock mortality rates.

With many committed to improving hospital sepsis care and preventing the serious and significant patient consequences from this devastating disease, sepsis has become a healthcare and regulatory priority. National, state, and hospital-wide efforts have set in place significant regulatory changes over this past year, which will hopefully make an impactful positive difference in the future of sepsis.

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New York State of Mind

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Point-of-Care Ultrasound Education: The Increasing Role of Simulation and Multimedia Resources.

Lewiss RE, Hoffmann B, Beaulieu Y, Phelan MB, Department of Emergency Medicine, St. Luke's-Roosevelt Hospital Center, 1111 Amsterdam Ave, New York, NY 10025 USA; J Ultrasound Med. 2014 Jan;33(1):27-32

This article reviews the current technology, literature, teaching models, and methods associated with simulation-based point-of-care ultrasound training. Patient simulation appears particularly well suited for learning point-of-care ultrasound, which is a required core competency for emergency medicine and other specialties. Work hour limitations have reduced the opportunities for clinical practice, and simulation enables practicing a skill multiple times before it may be used on patients. Ultrasound simulators can be categorized into two groups: low and high fidelity. Low-fidelity simulators are usually static simulators, meaning that they have nonchanging anatomic examples for sonographic practice. Advantages are that the model may be reused over time, and some simulators can be homemade.

High-fidelity simulators are usually high-tech and frequently consist of many computer-generated cases of virtual sonographic anatomy that can be scanned with a mock probe. This type of equipment is produced commercially and is more expensive. High-fidelity simulators provide students with an active and safe learning environment and make a reproducible standardized assessment of many different ultrasound cases possible. The advantages and disadvantages of using low- versus high-fidelity simulators are reviewed. An additional concept used in simulation-based ultrasound training is blended learning. Blended learning may include face-to-face or online learning often in combination with a learning management system. Increasingly, with simulation and Web-based learning technologies, tools are now available to medical educators for the standardization of both ultrasound skills training and competency assessment.

A Survey of Academic Emergency Medicine Department Chairs on Hiring New Attending Physicians.

Aycock RD, Weizberg M, Hahn B, Weiserbs KF, Ardolic B, Department of Emergency Medicine, Staten Island University Hospital, Staten Island, New York; J Emerg Med. 2013 Dec 17. pii: S0736-4679(13)01098-6

BACKGROUND: For graduating emergency medicine (EM) residents, little information exists as to what attributes department chairs are seeking in hiring new attendings.

OBJECTIVES: To determine which qualities academic EM department chairs are looking for when hiring a new physician directly out of residency or fellowship.

METHODS: An anonymous 15-item web-based survey was sent to the department chairs of all accredited civilian EM residency programs in March of 2011. The questions assessed the desirability of different candidate attributes and the difficulty in recruiting EM-trained physicians. Respondents were also asked to give the current number of available job openings.

RESULTS: Fifty-five percent of eligible department chairs responded. On a 5-point scale, the most important parts of a candidate's application were the interview (4.8 ± 0.4), another employee's recommendation (4.7 ± 0.5), and the program director's recommendation (4.5 ± 0.7). The single most important attribute possessed by a candidate was identified as "Ability to work in a team," with 58% of respondents listing it as their top choice. Advanced training in ultrasound was listed as the most sought-after fellowship by 55% of the chairs. Overall, department chairs did not have a difficult time in recruiting EM-trained physicians, with 56% of respondents stating that they had no current job openings.

CONCLUSION: How a physician relates to others was consistently rated as the most important part of the candidate's application. However, finding a job in academic EM is difficult, with graduates having limited job prospects.

The Neglected Lead on Electrocardiogram: T Wave Inversion in Lead aVL, Nonspecific Finding or a Sign for Left Anterior Descending Artery Lesion?

Hassen GW, Costea A, Smith T, Carrazco C, Hussein H, Soroori-Rad B, Vaidian S, Seashore J, Alderwish E, Sun W, Chen A, Simmons B, Usmani S, Kalantari H, Fernaine G, Department of Emergency Medicine, New York Medical College, Metropolitan Hospital Center, New York, New York; Department of Emergency Medicine, Mount Sinai School of Medicine, Lutheran Medical Center, Brooklyn, New York; Department of Emergency Medicine, St. George's School of Medicine, St. George, Grenada, West Indies.; J Emerg Med. 2013 Nov 25. pii: S0736-4679(13)01070-6

BACKGROUND: The electrocardiogram (ECG) is the most important diagnostic tool for acute myocardial infarction (AMI). T wave inversion (TWI) in lead aVL has not been emphasized or well recognized.

OBJECTIVE: This study examined the relationship between the presence of TWI before the event and mid-segment left anterior descending (MLAD) artery lesion in patients with AMI.

METHODS: Retrospective charts of patients with acute coronary syndrome between the months of January 2009 and December 2011 were reviewed. All patients with MLAD lesion were identified and their ECG reviewed for TWI in lead aVL.

RESULTS: Coronary angiography was done on 431 patients. Of these, 125 (29%) had an MLAD lesion. One hundred and six patients (84.8%) had a lesion >50% and 19 patients (15.2%) had a lesion <50%. Of the 106 patients who had a MLAD lesion > 50%, 90 patients (84.9%) had TWI in lead aVL and one additional lead. Of the

19 patients who had an MLAD lesion < 50%, 8 patients (42.1%) had TWI in lead aVL and one additional lead. Isolated TWI in lead aVL had an overall sensitivity of 76.7% (95% confidence interval [CI] 0.65-0.86), a specificity of 71.4% (95% CI 0.45-0.88), a positive predictive value of 92%, a negative predictive value of 41.7%, a positive likelihood ratio of 2.7 (95% CI 1.16-6.22), and negative likelihood ratio of 0.32 (95% CI 0.19-0.58) for predicting a MLAD lesion of >50% (p=0.0011).

CONCLUSIONS: TWI in lead aVL might signify a mid-segment LAD lesion. Recognition of this finding and early appropriate referral to a cardiologist might be beneficial. Additional studies are needed to validate this finding.

Analysis of Weight Change and Borg Rating of Perceived Exertion as Measurements of Runner Health and Safety During a 6-Day, Multistage, Remote Ultramarathon.

Joslin J, Worthing R, Black T, Grant WD, Kotlyar T, Wojcik SM, Department of Emergency Medicine, Upstate Medical University, Syracuse, New York; Clin J Sport Med. 2013 Nov 26

OBJECTIVES: To determine the feasibility of using weight change and Borg score as tools for monitoring runner health and safety during a multistage, remote ultramarathon.

DESIGN: Observational cohort study of feasibility on nonblinded event participants.

SETTING: Six-day, multistage, remote ultramarathon in Utah.

PARTICIPANTS: Twenty-seven athletes in the 2012 Desert R.A.T.S. (Race Across the Sand) ultramarathon.

ASSESSMENT OF RISK FACTORS: Participant weight, health conditions that limited race participation, such as fatigue or exhaustion, and Borg score were reviewed.

MAIN OUTCOME MEASURES: Inability to complete a stage of the race (Did Not Finish status) or development of a clinically significant health condition during the race. Potential prognostic risk factors, such as a high Borg score and weight loss, were analyzed.

RESULTS: An overall decrease in weight was observed over the course of the event. Median percent weight changes were losses of 2.96% (day 1), 7.42% (day 2), 2.21% (day 4), and 3.35% (day 6). There was no statistically significant difference in percent weight change between the 14 runners who finished the race and the 13 runners who did not finish the race (U = 73; z = 0.189; P = 0.85). Runners' ability to complete the race was related to the development of adverse health conditions (P = 0.004). Median Borg scores reported were 15 (day 1), 17 (day 2), 13 (day 3), 16 (day 4), and 15 (day 6). Only 2 racers who finished the entire event without adverse events ever gave a Borg score of ≥18.

CONCLUSIONS: The feasibility of weight change as a tool for monitoring runner health and safety in this setting is limited, but the Borg rating of perceived exertion warrants further study as a potential field expedient tool for monitoring runner health and safety during a multiday, remote ultramarathon.

Uncontrolled Organ Donation After Circulatory Determination of Death: US Policy Failures and Call to Action.

Wall SP, Munjal KG, Dubler NN, Goldfrank LR; NYC uDCDD Study Group, Department of Emergency Medicine, Bellevue Hospital Center, NYU School of Medicine, New York, NY; Ann Emerg Med. 2013 Nov 18. pii: S0196-0644(13)01488-1

In the United States, more than 115,000 patients are wait-listed for organ transplants despite that there are 12,000 patients each year who die or become too ill for transplantation. One reason for the organ shortage is that candidates for donation must die in the hospital, not the emergency department (ED), either from neurologic or circulatory-respiratory death under controlled circumstances. Evidence from Spain and France suggests that a substantial number of deaths from cardiac arrest may qualify for organ donation using uncontrolled donation after circulatory determination of death (uDCDD) protocols that rapidly initiate organ preservation in out-of-hospital and ED settings. Despite its potential, uDCDD has been criticized by panels of experts that included neurologists, intensivists, attorneys, and ethicists who suggest that organ preservation strategies that reestablish oxygenated circulation to the brain retroactively negate previous death determination based on circulatory-respiratory criteria and hence violate the dead donor rule. In this article, we assert that in uDCDD, all efforts at saving lives are exhausted before organ donation is considered, and death is determined according to "irreversible cessation of circulatory and respiratory functions" evidenced by "persistent cessation of functions during an appropriate period of observation and/or trial of therapy." Therefore, postmortem in vivo organ preservation with chest compressions, mechanical ventilation, and extracorporeal membrane oxygenation is legally and ethically appropriate. As frontline providers for patients presenting with unexpected cardiac arrest, emergency medicine practitioners need be included in the uDCDD debate to advocate for patients and honor the wishes of the deceased.

Antibiotics for Methicillin-Resistant Staphylococcus Aureus Skin and Soft Tissue Infections: The Challenge Of Outpatient Therapy.

Pate AJ, Terribilini RG, Ghobadi F, Azhir A, Barber A, Pearson JM, Kalantari H, Hassen GW, Department of Emergency Medicine, Metropolitan Hospital Center, New York, NY, USA; Am J Emerg Med. 2013 Oct 16. pii: S0735-6757(13)00697-9

PURPOSE: Methicillin-resistant Staphylococcus aureus (MRSA) infections are becoming increasingly prevalent in both community and hospital settings. Certain strains are notorious for causing skin and soft tissue infections in patients with no established risk factors. In this article, we report our findings on the dynamic antibiotic resistance pattern of MRSA and outpatient prescription trend for skin and soft tissue infections within our community.

METHODS: We conducted a retrospective medical record review of 1,876 patients evaluated in the emergency department of an urban community hospital from 2003 to 2012. Data regarding culture isolates and associated antimicrobial resistance, antibiotic treatment, site of specimen collection, age, race, and sex were collected and analyzed.

RESULTS: Analysis of 1,879 culture specimens yielded 2,193 isolates. In some cases, a single specimen yielded polymicrobial growth. Staphylococcus aureus represented 996 isolates (45.4%); 463 were methicillin-susceptible (21.1%) and 533 (24.3%) were methicillin-resistant. Most patients were prescribed a single- or poly-drug regimen of trimethoprim/sulfamethoxazole, cephalexin, and clindamycin. Antimicrobial resistance analysis indicated that MRSA became increasingly resistant to the aforementioned antibiotics over time: 10% and 6% in 2012 vs 3.5% and 3.4% in 2007 for clindamycin and trimethoprim/sulfamethoxazole, respectively.

CONCLUSION: Methicillin-resistant Staphylococcus aureus is a particularly virulent, rapidly adaptive pathogen that is becoming increasingly difficult to combat with existing antibiotics. Care must be taken to ensure appropriate treatment and follow-up of patients with known MRSA infections.

continued on page 18

New York State of Mind

continued from page 17

Is Fever Treated More Promptly Than Pain in the Pediatric Emergency Department?

Dvorkin R, Bair J, Patel H, Glantz S, Yens DP, Rosalia A Jr, Marguilies J, Good Samaritan Hospital Medical Center, West Islip, New York; J Emerg Med. 2013 Nov 4. pii: S0736-4679(13)01054-8

BACKGROUND: Fever can be treated with a higher priority than pain in the pediatric emergency department (ED) population.

OBJECTIVE: The primary objective was to assess whether patients with a fever are treated with acetaminophen or ibuprofen more promptly than they are treated for pain.

METHODS: A retrospective descriptive study was performed on all patients between the ages of 3 and 19 years who received acetaminophen or ibuprofen in the pediatric ED from February 1, 2010 to January 31, 2011. The time interval from arrival to treatment with acetaminophen or ibuprofen was compared for those patients with a fever (≥100.4°F) and those without a fever and had reported pain. Other measurable points (time of vital signs, bed assignment, and medication order) on the medical record were compared to further describe any differences.

RESULTS: Pediatric patients with fever (n = 1097) received ibuprofen or acetaminophen a median of 54.0 min (interquartile range [IQR], 35.4-89.3 min) after arrival. The corresponding median time for afebrile patients (n = 1861) that received the same medications was 83.2 min (IQR, 52.7-136.1). The difference between medians was 24.6 min (95% confidence interval 21.3-27.9 min).

CONCLUSIONS: Fever is treated more promptly than pain in the pediatric ED. This difference is associated with prevailing and largely unfounded concerns about fever and the undertreatment of pain (oligoanalgesia).

Pediatric Lumbar Puncture and Cerebrospinal Fluid Analysis.

Bonadio W, Pediatric Emergency Medicine, Maimonides Medical Center, Brooklyn, New York; J Emerg Med. 2014 Jan;46(1):141-50

BACKGROUND: Lumbar puncture (LP) is a commonly performed procedure in pediatrics. Accurate analysis of cerebrospinal fluid (CSF) profile is essential in diagnosing and managing a variety of infectious and inflammatory conditions involving the brain, meninges, and spinal cord. It can also provide useful diagnostic information in the evaluation of possible subarachnoid hemorrhage and demyelinating syndromes, and aid in the diagnosis and management of pseudotumor cerebri.

OBJECTIVES: To review anatomic, physiologic, and pathologic aspects of performing pediatric lumbar puncture and CSF analysis.

DISCUSSION: Although still a commonly performed procedure in the outpatient setting, effective vaccines to prevent invasive infection due to Streptococcus pneumoniae and Haemophilus influenzae type b have greatly reduced pediatric bacterial meningitis rates due to these pathogens, resulting in decreased opportunity for physician-trainees to perfect this important skill (among nonneonates) during the 3 years of supervised residency training. Success in performing pediatric LP is augmented by a thorough understanding of medical aspects related to this procedure. This article discusses technical aspects involved in successfully performing a lumbar puncture to obtain CSF, and interpreting a CSF profile in children.

CONCLUSION: A thorough understanding of anatomic, physiologic, and pathologic considerations regarding performing lumbar puncture and CSF analysis can augment success in diagnosing a variety of potentially serious pediatric conditions.

Resource-Limited, Collaborative Pilot Intervention for Chronically Homeless, Alcohol-Dependent Frequent Emergency Department Users.

McCormack RP, Hoffman LF, Wall SP, Goldfrank LR, Department of Emergency Medicine, New York University School of Medicine, New York, NY; Am J Public Health. 2013 Dec;103 Suppl 2:S221-4

We introduced case management and homeless outreach to chronically homeless, alcohol-dependent, frequent emergency department (ED) visitors using existing resources. We assessed the difference in differences of ED visits 6 months pre- and postintervention using a prospective, nonequivalent control group trial. Secondary outcomes included changes in hospitalizations and housing. The differences in differences between intervention and prospective patients and retrospective controls were -12.1 (95% CI = -22.1, -2.0) and -12.8 (95% CI = -26.1, 0.6) for ED visits and -8.5 (95% CI = -22.8, 5.8) and -19.0 (95% CI = -34.3, -3.6) for inpatient days, respectively. Eighteen participants accepted shelter; no controls were housed. Through intervention, ED use decreased and housing was achieved.

Jolt Accentuation of Headache and Other Clinical Signs: Poor Predictors of Meningitis in Adults.

Nakao JH, Jafri FN, Shah K, Newman D, Department of Emergency Medicine, St Luke's-Roosevelt Hospital Center, New York, NY, USA; Am J Emerg Med. 2014 Jan;32(1):24-8

Jolt accentuation or exacerbation of a baseline headache with horizontal rotation of the neck is a physical finding believed to assess for meningeal irritation. We conducted a prospective observational study of neurologically intact emergency department (ED) patients undergoing lumbar puncture in 2 inner city academic EDs to validate the sensitivity and specificity of jolt accentuation and to assess the sensitivity and specificity of Kernig sign, Brudzinski sign, and nuchal rigidity, in predicting cerebrospinal fluid (CSF) pleocytosis in individuals being assessed for meningitis. Adult patients 18 years and older undergoing lumbar puncture between 2006 and 2009 were approached for consent. Exclusions included inability to consent and altered mental status. Physicians were asked to answer a questionnaire of physical examination findings before receiving CSF results. The primary outcome was the presence or absence of pleocytosis, defined as greater than or equal to 5 cells/high-power field in the fourth CSF tube. We calculated descriptive statistics and tests of diagnostic accuracy. A total of 230 patients consented for participation and had CSF white blood cell counts recorded. Forty-seven individuals (20%) had pleocytosis. A total of 197 patients had headache and were, hence, eligible for jolt accentuation assessment. For pleocytosis, the sensitivity of jolt accentuation was 21%, Kernig sign was 2%, Brudzinski sign was 2%, and nuchal rigidity was 13%. The specificity of jolt accentuation was 82%, Kernig sign was 97%, Brudzinski sign was 98%, and nuchal rigidity was 80%. Jolt accentuation in our cohort was poorly predictive of pleocytosis and insensitive. The presence of Kernig sign, Brudzinski sign, or nuchal rigidity has moderate positive but no negative predictive value for pleocytosis.

continued on page 26

Education

Teaching the Intangibles

Dedicated to Neill Oster, MD (1958-2008), who taught me many intangibles during my junior attending years

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Throughout the course of residency training and even into the early attending years, there are many facts, concepts and practices physicians need to master. Proficiency in these areas distinguishes those with an excellent fund of knowledge from those with an average fund of knowledge. However, in my experience, it is the mastery of these areas coupled with the intangibles that make for a truly exceptional emergency physician.

There are many intangibles that we can impart to our residents and junior attendings. This is often done by example rather than through a formal teaching model. Physician behavior is constantly under the microscope. How we carry ourselves during every shift, every lecture, every meeting and every social event is analyzed by those who observe us. And while there are numerous intangibles, this article will focus on three:

1. Patient/Staff Advocacy
2. Character
3. Communications

Patient and staff advocacy are intangibles that every physician imparts in different ways. Patient advocacy is demonstrated by how we advocate for those who are too ill or otherwise unable to advocate for themselves and it involves more than the emergency physician providing excellent clinical care. Teaching residents to be true patient advocates means they must often go above and beyond for their patients. This could be going toe-to-toe with stubborn consultants, providing a safe harbor for the patient pending an appropriate out-patient disposition, or even how we sign-out a difficult disposition to the on-coming team.

This is not to be misconstrued with infantilizing patients or enabling their negative behaviors. In fact, a good model of patient advocacy accomplishes teaching this intangible by doing the opposite. It is dealing with a confirmed drug-seeker in a firm but constructive manner, or taking the few minutes to discuss 'detox' with the patient with chronic alcoholism, despite it being the patient's fifth visit to the emergency department in 48 hours.

Governmental regulations have put the emergency physician in the unenviable position of being responsible for the well-being of a patient for whom there is no easy disposition. As such, teaching patient advocacy is more important than ever, as future generations of emergency physicians will have to continue to deal with ever more pressure from utilization managers and the like. A resident who has learned true patient advocacy understands that while the care of a patient no longer in our charge may be beyond our control, it should not be beyond our concern.

Staff advocacy is a less obvious, but important intangible. It is critical to teach residents that being a team leader also means advocating for your team. Whether it is the inappropriate behavior of a consultant or a belligerent patient, residents must learn that the well-being of their team is the responsibility of the leader. This is best accomplished by teaching de-escalation techniques or situational awareness. The concept of the leader putting themselves in harm's way is not staff advocacy, rather residents should recognize that alerting security or the police early keeps everyone safe and is not a sign of weakness.

By far, character is the most difficult intangible to define. Certainly, most physicians believe themselves to be of high character, and comments made in the following paragraph are not meant to suggest the contrary.

Character is exemplified by how we interact with others. How we behave when we think no one else is looking, or at least no one of 'consequence.' True character is defined by our behavior under duress. On many days life in the emergency department exceeds our daily recommended allowance of duress, thereby constantly testing our character.

Good character allows physicians to be demanding without being disrespectful. This demonstrates to residents that a kind word or firmly stated request is often more effective than a loud voice.

Teaching residents character will allow them to become effective team leaders who engage their team and lead from the front. Character is not only about a strong work ethic, but also about delegating responsibilities to support staff in a respectful manner. You may have observed that support staff seem to work better with some physicians when compared to others. This is usually a reflection of a physician's character. Learning this intangible will serve residents well as they progress in their careers.

Communication skills are at the heart of many of the intangibles and it is one of the intangibles that can actually be taught and learned as a new skill set. Residents need to learn to rely on communication skills not only as a means of information transfer, but also as an important skill for negotiations with other providers, support staff and administrators. Whether a patient encounter is successful or a failure can largely be the result of effective or ineffective communication with the patient, the patient's care givers, or with providers involved with the transfer of care.

Discharge instructions are an important patient communication. Residents should be taught to use lay terms, and to encourage open-ended questions from their patients. Ensuring that their communication is clear and understood is also important.

Residents also need to learn to communicate information quickly and intelligently when dealing with other physicians. Teaching residents the art of persuasion is a communication skill that can get the consultant to the bedside in the middle of the night.

In short, we are always teaching, even when we may be unaware of it. How we carry ourselves in our profession serves as a model for those in training. Awareness of this can impact the unwritten messages we send and hopefully enhance the intangibles. ⌘

Pediatrics

Colic in the Infant: When is it an Emergency?

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"During the second century BC, the Greek physician Galen prescribed opium to calm fussy babies, and during the Middle Ages in Europe, mothers and wet nurses smeared their nipples with opium lotions before each feeding. Alcohol was also commonly given to infants."[1]

- A three month old presents with intermittent crying over the past five days. He was born full term and has no significant past medical history. He has been seen twice by the primary care doctor and diagnosed with colic and reflux. Upon arrival to the ED, he is afebrile with normal vital signs. Physical exam does not reveal anything. He is sent home with a diagnosis of colic. He returns three days later with intermittent episodes of apnea. He is emergently intubated. Bruises are found on his neck and chest wall.

  He is subsequently diagnosed with abusive head trauma.

- A two-month-old girl is brought into the ED with "worsening colic." She is full term and has recently been diagnosed with reflux. The parents state she has been crying more and "appears uncomfortable." There are no fevers or vomiting. She is afebrile with normal vital signs. Careful examination of her ears, oropharynx, lungs, heart, abdomen, skin and neurologic system are normal. She is diagnosed with colic and sent home.

  Two years later you are named in a lawsuit because she has lost her sight. You missed a diagnosis of glaucoma.

- A four-month-old boy is brought into the ED for poor weight gain, failure to thrive, and more crying. He was seen in the ED two weeks ago and again four days ago and both times diagnosed with colic. His primary care doctor saw him yesterday and told the parents it is colic, and he "will grow out of it." Upon arrival, he is uncomfortable in appearance. His weight is the same from 21 days ago. He appears weak. Work up includes a chest x-ray that reveals cardiomegaly. He is admitted to the hospital and subsequently diagnosed with ALCPA, anomalous left coronary artery from the pulmonary artery.

  His previous diagnosis of "colic" was actually pain from a myocardial infarction.

Colic is something we see commonly in the emergency department. But when is it an emergency? When do we have to worry about the crying infant? All of the above cases were diagnosed with colic. What could we have done to make the appropriate diagnosis?

The key to not missing a "real" cause of colic, involves a simple stepwise approach.

1. A complete history, careful review of the vitals, then performing a head to toe physical exam.
2. Assessing the caregiver, as increased/persistent crying is a risk factor for non accidental trauma.
3. Order appropriate tests (if needed) and offer support for caregiver/soothing remedies for the infant.

The history can give specific clues. Some questions to ask include; What is the pattern of crying, and how long has it been going on? Does it only happen during certain periods of the day? Have there been any fevers, trauma, or (bilious) vomiting? Any new medications or herbal supplements the baby is exposed to? Has there been adequate weight gain? Any diaphoresis or cyanosis or fatigue with feeds?

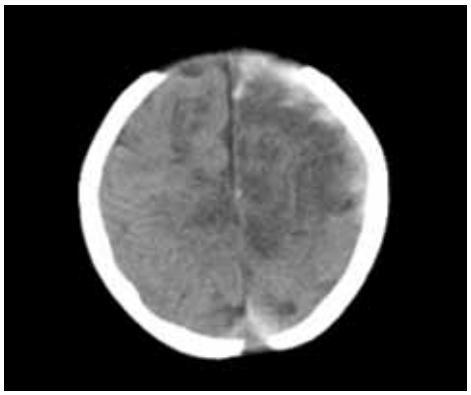

Figure 1. Infant diagnosed with abusive head trauma

Vital signs and a thorough physical exam are next, and can often time help narrow down the diagnosis and rule out significant pathology.

Head: Abusive head trauma (AHT) is a diagnosis we do not want to miss (see Figure 1. Abusive Head Trauma). Jenny and colleagues retrospectively looked at 173 children diagnosed with abusive head trauma, and looked back at their medical record to see if they were previously seen by a health care provider and was the diagnosis missed?[2] They found that almost 1/3 of infants diagnosed with AHT were previously seen by a provider and were misdiagnosed. Erroneous diagnosis made

are found in Table 1 (right). This table supports how infants with AHT can present in a variety of ways, thus making the diagnosis very challenging.

Key point: When evaluating infants for colic, it is important to perform a thorough exam of the head and neck looking for any signs of trauma, such as bruises, hematomas or scalp injuries. Inspection of the ear and oropharynx for trauma is also important.

Eyes: Corneal abrasion, foreign body and glaucoma can cause eye pain, thus resulting in a crying infant. These injuries can be easily overlooked. Neonates may have long fingernails and scratching their face and eyes can be common. Additionally, although incredibly rare (1/10,000) glaucoma can be seen in this age group. Physical exam findings may include tearing, photophobia, corneal enlargement or a cloudy cornea.

Key point: Eye pathology may cause crying and may be mistaken for colic. A careful exam of the eye, including flouroscein staining, is important.

Heart: The differential includes Supraventricular tachycardia (SVT), heart failure, ALCAPA, and coarctation of the aorta. Assessing the heart rate can rule out SVT, although some cases of SVT can be intermittent in nature. Heart failure can be diagnosed via history (difficulty with feeds, fatigue with feeds, etc.) in conjunction with classic physical exam findings looking for signs of heart failure. Coarctation of the aorta can be assessed by looking for diminished lower extremity pulses, blood pressure differential and/or a radial-femoral pulse delay.

GI/GU: Careful examination of the abdomen and diaper area is crucial. The differential includes incarcerated hernia, intussusception, significant constipation, testicular/ovarian torsion, severe diaper rash and anal fissures. Volvulus also must be considered and ruled out.

Skin: Tourniquets of the fingers, toes, and genitalia are possible and may cause crying in the infant. Finger tourniquets can be seen in the younger infant, especially if they wear mittens to help avoid scratching the face. At right, Figure 2. Neonatal Arm Ischemia, is from a neonate who kept scratching their face, so the parents put mittens on. The mittens were secured with rubber bands that were too tight, and subsequently caused ischemia of the arm. Toe tourniquets can also be seen as in Figure 3. Toe Tourniquet (below). Tourniquets of the genitalia have been also described.

Erroneous Diagnosis Made in Infants Diagnosed with Abusive Head Trauma	From Jenny et al. Analysis of Missed Cases of abusive head trauma. JAMA 1999
Viral Gastroenteritis	Colic
Influenza	Reflux
Accidental Head Injury	Apnea
Rule out sepsis	URI
Otitis Media	Bruising unknown origin
Seizure disorder	Milk allergy

Table 1. A partial list of erroneous diagnosis made in infants with AHT. Please see article for a complete list. (Reference 2).

Differential Diagnosis of the Crying Infant-some things to consider
Meningitis
Sepsis
Abusive Head Trauma
Corneal abrasion, foreign body, glaucoma
Cardiac pathology: SVT, Coarct, Heart Failure
Incarcerated hernia, testicular /ovarian torsion, severe diaper rash, anal fissure, intussusception, volvulus, reflux
Tourniquet
Metabolic abnormality
Fracture
Ingestions: OTC medications, herbal supplements etc.

Table 2

Fracture: Infants may also have a broken bone, from nonaccidental trauma or from an organic pathology. Careful exam of the extremities looking for bruising or swelling is important.

Figure 2. Neonatal Arm Ischemia. This infant came in with ischemic hands. Because of persistent scratching of the face, mittens were placed. They were secured with a rubber band, that became too tight.

Figure 3. Toe Tourniquet

Once a thorough H&P has been performed, it is important to assess the parent/guardian. Persistent crying is a risk factor for nonaccidental trauma. Parents need to know that crying is normal and will go away, and it is not because they are doing something wrong. Additionally, parents/caregiver may need a break from a crying child, and it is okay for them to "walk away" from a screaming infant. Additional resources can be found at National Center on Shaken Baby Syndrome (www.dontshake.org).

Testing is based upon H&P findings. Some also recommend a urinalysis to rule out urinary tract infection.

In addition to the classic and commonly considered "rule out sepsis" and "rule out meningitis," a thorough history and careful physical exam can rule out many additional causes of crying in an infant. Colic is common presentation – it is our role to make sure there is no serious underlying pathology.

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3. National Center on Shaken Baby Syndrome (www.dontshake.org). ⌘

Prehospital and Public Access Use of Intranasal Naloxone

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Naloxone is a drug that is not just being given by paramedics and emergency departments any more. Since 1996, public access naloxone programs have been in place,[1] distributing naloxone to users of opioids, as well as to their friends and family for the treatment of possible overdose. These programs are usually administered in conjunction with AIDS prevention drug abuse and addiction programs often through needle exchange programs.

Opioid overdoses have been increasing throughout the nation as well as within New York State. This increase has occurred every year since 1979.[1] Subsequently, many more of these public-access naloxone programs exist than is normally expected. The results have been remarkably successful. By some estimations there have been thousands of layperson reversals of opioid overdose within the nation. The concomitant education regarding overdose, which is a part of these programs, seems to drastically reduce the incidence of death by overdose as well.

Naloxone has recently been added to the scope of prehospital practice for the Basic Life Support providers in New York State, so EMTs and other Certified First Responders can carry and administer naloxone as part of a regional program. There are many reasons why these programs are growing, but are they safe? Training and education discrepancies exist between an Advanced Life Support (ALS) paramedic and Basic Life Support (BLS) EMT provider. Should we as a medical community question the concept of officially putting naloxone into less experienced hands? Is this a problem, or a potential boon to survival for these overdoses?

Prehospital Use by Laypersons / Public Safety

The Public Safety model has been studied as well, and in 2012 a pilot program was initiated through the New York State Department of Health, Albany Medical College, the Harm Reduction Coalition and the Regional EMS Organization (REMO). Many counties within New York participated in the program, including Albany, Monroe, Suffolk, and others. The additional training and education the providers received was integral to the program's success. Inclusion and exclusion criteria allowed providers to focus on the ideal candidate for public-safety administered intranasal naloxone: the recreational drug user with an opiate overdose. Participating agencies included fire departments, EMS agencies and law enforcement.

Police officers who are also EMTs in Suffolk County have been administering naloxone for opioid overdose for nearly two years though this highly successful pilot project. In my home borough of Staten Island, a pilot program to augment NYPD officers with intranasal naloxone was announced in 2013. Police officers in New Mexico and Massachusetts have had active overdose treatment programs for many years, and more programs are starting all across the country. Currently there are programs in at least 15 states that specifically allow law enforcement or other first responders to provide naloxone to overdose victims, and many more states may allow this through other existing community access regulations. Most of these programs use intranasal naloxone, both for ease of administration as well as safety for the officers involved.

Prehospital Use by EMS

As Dr. Jeremy Cushman discussed so well in a November *EPIC* article, the nose offers many advantages for drug delivery. In particular this is of benefit for an overdose, where a contaminated needlestick for a Public Safety Provider is a significant hazard and the patient is critically ill because of hypoxia. Any complicated patient interaction in an austere environment can lead to unintended error or injury, mitigation of provider injury is paramount. In the emergency department we can facilitate the safe usage of needles to administer medications in these cases. We are lucky enough to have other healthcare providers who can perform task assistance. Even so, we should do what we can to minimize risk to our team and assure adequate outcomes for our patients.

Emergency Department Use

Can intranasal naloxone benefit the patient treated in the emergency department as well? In most cases naloxone is reserved for the patient with profound respiratory depression. Conveniently, opioids have a relatively well-prescribed toxidrome, so if there is the combination of pinpoint pupils and respiratory depression, there is an easily identified likely cause. Of course, there are other causes of pinpoint pupils – but I doubt anyone has seen more pontine hemorrhages than an opiate overdose.

Despite the fact that it is simple to administer, the thought process behind using naloxone is anything but easy. What should be done about co-ingestions? What if the pupils are not pinpoint? The thought of "I don't want to wake them up TOO much" has run through each of our minds.

continued on next page

continued from page 22

Each of us has a specific threshold for these complicated cases. Emergency physicians usually avoid using high dose naloxone for fear of its complications: acute lung injury (ALI), non-cardiogenic pulmonary edema, agitation, etc. The result is the common practice of administering very small doses such as 0.01 mg intravenously and titrating up to desired efficacy. The alternative ranges from intubation or letting them "sleep it off" with capnography or other monitoring devices in place. Using these noninvasive measures to determine hypoventilation, which borrows from the procedural sedation literature, has distinct benefits. These monitoring modalities allow the provider to titrate interventions such as naloxone, assessing responsiveness or airway adjuncts without having to remain at the bedside continuously.

Why Intranasal Naloxone?

An argument can be made that intranasal naloxone should be considered in all cases of clearly defined opioid overdose. The experience from many public programs, some in existence since 2006, is that the intranasal route does not seem to generate the adverse effects seen with intravenous administration. The city of Boston, Massachusetts started a layperson-driven naloxone administration project in 2006 and reported 74 reversals in the first 15 months [AND no adverse events]. Since then these programs have expanded, so now there are over 10,000 reversals recorded. When naloxone is being given without a healthcare provider present by a layperson or family member, usually in a 2 mg/ 2mL dose, 1 mL in each nostril, there are no case reports of adverse effects. In fact, there are no case reports of the acute lung injury associated with intranasal naloxone.

In the first 18 months of the Regional Emergency Medical Organization (REMO) program in New York State, over 200 reversals were achieved.

An Australian group headed by Kelly and Kerr have published multiple studies on intranasal naloxone use dating back to 2005. Their results have demonstrated the efficacy for single intranasal use, causing reversal in 73 and 74% of patients in differing studies. These reversals, when compared to intramuscular treatment arms, demonstrated a slower onset. An interesting concept is the lack of adverse effects seen in the intranasal treatment arms when compared to the intramuscular route.[4,5] Most notable for those of us in the US though, is that this study was completed with a 0.4 mg/mL dose. The intranasal formulation used in the US is 1mg/mL. This coincides with the data published by Robertson which demonstrated a longer clinical response time by 4 minutes.[5] The Robertson study also demonstrated the ease of intranasal administration mitigated this delay in clinical response time, both the intravenous and intranasal arms had the same clinical response time from patient contact.

The delay in clinical response time seen with intranasal naloxone administration, in addition to other measures of supportive care, may mitigate the adverse effects of naloxone use in the emergency department. Granted, a 74% success rate is not sustainable in an emergency department setting, so alternative measures of achieving good ventilation must be considered if the intranasal dose is not efficacious. However, it's certainly worth considering a squirt in place of endotracheal intubation. Community access programs are also dispensing a barrier mask with the naloxone bristojet and recommending ventilatory support and "preoxygenation" prior to administration, but there is no way of knowing when this is being performed.

Also notable is that there is no FDA approval for the intranasal route of administration. This does not seem to be a hindrance to most programs that are participating in these programs, and there is clearly a huge dataset of successful administrations. The reason there is no approval is because there is no pharmacokinetic data for the intranasal administration – no comparison of the bioavailability of the medication delivered this way to standard IV or IM. Because the medication is generic, it is unlikely this data will be created unless there is a new formulation that would be brought to market and tested.

Refusals of Care After Reversal

Both community access programs and EMS programs may treat patients who receive naloxone for overdose and do not ultimately come to the emergency department. We sign-off diabetics after improving their hypoglycemia, so can we sign-off addicts after improving their hypoventilation? We have long promulgated the idea that patients that get naloxone and awaken must be watched in the emergency department. After all, physiologically this makes sense – naloxone has a 30-45 minute half-life and heroin has a 2-4 hour half-life. But in the grand scheme of things, we are inquisitive, and what is the evidence? There are three studies, each of which asked the most important question, if we sign people off Against Medical Advice after reversing a respiratory arrest with naloxone will they die or encounter EMS again. Each resoundingly says no. A Danish study of 2,241 patients demonstrated 0.13% (3) deaths in 48 hours after release,[7] and studies in San Diego, 998, and San Antonio, 552, of a total of 1,550 patients both demonstrated 0 deaths in 48 hours.[8, 9] So, can someone sign-off after a reversal? The literature suggests that they can, but general concepts like remaining with a responsible person [to recontact 911] and avoiding the offending behavior are imperative for patient safety.

Community Access Naloxone and the Emergency Department

The emergency department may be a good place to train and equip overdose survivors and their families to treat overdose, but it is vital for us to first examine the attitudes of the emergency department staff.

Currently the emergency department at Albany Medical Center is researching the attitudes of emergency department physicians and nurses towards community access naloxone. We hope to share the results of this study at the New York ACEP Research Forum in July. If you have not participated in the survey, please complete it at https://www.surveymonkey.com/s/NYSCommunityNaloxoneSurveyED.

So what does the emergency medicine physician in New York need to know about these programs?

1. More care may be delivered by laypersons than public safety and EMS
   a. Public Access Naloxone programs are active in most cities
   b. Hospitals can become Community Naloxone Sites
2. Community based naloxone programs are growing
   a. Boston 2006[2]
   b. Project Lazarus, North Carolina
   c. CDC states over 10,000 layperson reversals have been documented since 1996

continued on next page

Prehospital and Public Access Use of Intranasal Naloxone

continued from page 23

3. Basic Life Support Naloxone has been a huge success and law enforcement programs are increasing
   a. REMO / Suffolk PD / Rochester FD went live 7/1/2012
   b. NYPD pilot in Staten Island
   c. Probation officers in NYC
4. There is a paucity of literature for the pharmacokinetics of intranasal dosing, but there is a groundswell of anecdotal evidence and support.
   a. No FDA approval for this route
   b. Handling nasal anatomy variants / cocaine may be a problem
   c. The nose knows … IN is safer than IV, perhaps even in the ED
5. We are still responsible for the patient
   a. Monitor adverse effects
   b. Provider safety
   c. Inter-agency cooperation
   d. Avoiding abandonment

Conclusion

These Public Access Naloxone programs are worthwhile and have demonstrated life-saving capability. They are a political hotbed and are more likely to be expanded than diminished. In New York, BLS providers are now authorized to provide naloxone, and many basic life support agencies may become interested in providing this additional medication.

Don't be surprised if a patient on your next shift has received intranasal naloxone by either a layperson (including family!) or public safety provider prior to arrival. As with many other prehospital medications, its administration is meant to help every patient while harming none. Emergency physicians must continue to remain vigilant in these cases for the need for repeat doses of naloxone, unexpected adverse effects of naloxone, and the potential for harmful co-ingestions. As we always have, we should also try to use this teachable moment, and encourage the patient to seek rehab, and to teach friends and family to recognize overdose and understand what to do. Opioid overdose continues to grow, and we will always be on the front lines of this fight.

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Four directors will be elected by the membership through a proxy ballot distributed at least 30 days prior to the annual membership meeting. The annual membership meeting will be held Tuesday, July 8, 2014 at the Sagamore Resort on Lake George.

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Frederick M. Schiavone, MD FACEP
Todd Slesinger, MD FACEP
Peter Viccellio, MD FACEP

Councillors Completing Their Second Year

Brahim Ardolic, MD FACEP
Joel M. Bartfield, MD FACEP
Gerard X. Brogan, Jr., MD FACEP
Jeremy T. Cushman, MD MS FACEP
Theodore J. Gaeta, DO MPH FACEP
Keith E. Grams, MD FACEP
Sanjey Gupta, MD FACEP
David C. Lee, MD FACEP
Daniel G. Murphy, MD MBA FACEP
Gary R. Rudolph, MD FACEP
resident representative

The Board of Directors will elect 13 councillors at the Wednesday, July 9, 2014 Board meeting at the Sagamore Resort. Members interested in representing New York ACEP at the ACEP Annual Council Meeting, (October 25-26, 2014 in Chicago, IL), should submit a nomination form and their CV to New York ACEP. New York ACEP will be represented by 24 councillors at the 2014 ACEP Council meeting. ■

Deadline for nominations: April 1, 2014

New York State of Mind

continued from page 18

Prevalence of Non-Convulsive Seizure and Other Electroencephalographic Abnormalities in ED Patients with Altered Mental Status.

Zehtabchi S, Abdel Baki SG, Omurtag A, Sinert R, Chari G, Malhotra S, Weedon J, Fenton AA, Grant AC, Department of Emergency Medicine, State University of New York, Downstate Medical Center, Brooklyn, NY, USA; Am J Emerg Med. 2013 Nov;31(11):1578-82

Four to ten percent of patients evaluated in emergency departments (ED) present with altered mental status (AMS). The prevalence of non-convulsive seizure (NCS) and other electroencephalographic (EEG) abnormalities in this population is unknown.

OBJECTIVES: To identify the prevalence of NCS and other EEG abnormalities in ED patients with AMS.

METHODS: A prospective observational study at 2 urban ED. Inclusion: patients ≥ 13 years old with AMS. Exclusion: An easily correctable cause of AMS (e.g. hypoglycemia). A 30-minute standard 21-electrode EEG was performed on each subject upon presentation.

OUTCOME: Prevalence of EEG abnormalities interpreted by a board-certified epileptologist. EEGs were later reviewed by 2 blinded epileptologists. Inter-rater agreement (IRA) of the blinded EEG interpretations is summarized with κ. A multiple logistic regression model was constructed to identify variables that could predict the outcome.

RESULTS: Two hundred fifty-nine patients were enrolled (median age: 60, 54% female). Overall, 202/259 of EEGs were interpreted as abnormal (78%, 95% confidence interval [CI], 73-83%). The most common abnormality was background slowing (58%, 95% CI, 52-68%) indicating underlying encephalopathy. NCS (including non-convulsive status epilepticus [NCSE]) was detected in 5% (95% CI, 3-8%) of patients. The regression analysis predicting EEG abnormality showed a highly significant effect of age ($P < .001$, adjusted odds ratio 1.66 [95% CI, 1.36-2.02] per 10-year age increment). IRA for EEG interpretations was modest (κ: 0.45, 95% CI, 0.36-0.54).

CONCLUSIONS: The prevalence of EEG abnormalities in ED patients with undifferentiated AMS is significant. ED physicians should consider EEG in the evaluation of patients with AMS and a high suspicion of NCS/NCSE.

Patients Overwhelmingly Prefer Inpatient Boarding to Emergency Department Boarding.

Viccellio P, Zito JA, Sayage V, Chohan J, Garra G, Santora C, Singer AJ, Department of Emergency Medicine, Stony Brook University, Stony Brook, New York; J Emerg Med. 2013 Dec;45(6):942-6

BACKGROUND: Boarding of admitted patients in the emergency department (ED) is a major cause of crowding. One alternative to boarding in the ED, a full-capacity protocol where boarded patients are redeployed to inpatient units, can reduce crowding and improve overall flow.

OBJECTIVE: Our aim was to compare patient satisfaction with boarding in the ED vs. inpatient hallways.

METHODS: We performed a structured telephone survey regarding patient experiences and preferences for boarding among admitted ED patients who experienced boarding in the ED hallway and then were subsequently transferred to inpatient hallways. Demographic and clinical characteristics, as well as patient preferences, including items related to patient comfort and safety using a 5-point scale, were recorded and descriptive statistics were used to summarize the data.

RESULTS: Of 110 patients contacted, 105 consented to participate. Mean age was 57 ± 16 years and 52% were female. All patients were initially boarded in the ED in a hallway before their transfer to an inpatient hallway bed. The overall preferred location after admission was the inpatient hallway in 85% (95% confidence interval 75-90) of respondents. In comparing ED vs. inpatient hallway boarding, the following percentages of respondents preferred inpatient boarding with regard to the following 8 items: rest, 85%; safety, 83%; confidentiality, 82%; treatment, 78%; comfort, 79%; quiet, 84%; staff availability, 84%; and privacy, 84%. For no item was there a preference for boarding in the ED.

CONCLUSIONS: Patients overwhelmingly preferred the inpatient hallway rather than the ED hallway when admitted to the hospital.

Correlation of Optic Nerve Sheath Diameter Measurements by Computed Tomography and Magnetic Resonance Imaging.

Kalantari H, Jaiswal R, Bruck I, Matari H, Ghobadi F, Weedon J, Hassen GW, NYMC, Metropolitan Hospital Center, Department of Emergency Medicine, New York, NY; Am J Emerg Med. 2013 Nov;31(11):1595-7

BACKGROUND: Traditionally, intracranial pressure is measured by direct ventriculostomy, which is invasive. Noninvasive measures such as bedside ultrasound and magnetic resonance imaging have been advocated and utilized recently to assess the intracranial pressure. The role of this study is to determine the degree of agreement between measurements of the optic nerve sheath diameter by computed tomography (CT) and magnetic resonance imaging (MRI).

MATERIALS AND METHODS: Retrospective chart review of 100 consecutive patients who had both MRI and CT scan of the head from January 1, 2011, until March 31, 2013, at our center was performed. A discrepancy of 0.2 mm between the 2 measurements was set as acceptable difference. The measurements of optic nerve sheath diameter (ONSD) were compared for agreement between the 2 modalities using the method by Bland and Altman.

RESULTS: A total of 100 patients with both MRI and CT scan of the head were selected. Of these 100 patients, 24 were male and 76 were female. The average age was 63 years. No ONSD abnormality was detected in any of the patients. The discrepancy in measurements of the ONSD between CT and MRI in transverse plane was less than the predetermined cut-off value of 0.2 mm. Within-subject variance was estimated at 0.0058 for both CT and MRI.

CONCLUSION: Comparable results without significant discrepancy as predetermined by the study groups were obtained from CT scan. Measurement of ONSD by CT scan can be used to indirectly assess the intracranial pressure in addition to clinical assessment and other signs of increased intracranial pressure on CT scan.

Antidysrhythmic Drug Therapy for the Termination of Stable, Monomorphic Ventricular Tachycardia: A Systematic Review.

Desouza IS, Martindale JL, Sinert R, SUNY Downstate/Kings County Hospital, New York, USA; Emerg Med J. 2013 Sep 16

OBJECTIVE: We performed a systematic review of the literature to compare the efficacy of different drug therapies for the termination of stable, monomorphic ventricular tachycardia (VT).

METHODS: We searched EMBASE, MEDLINE and Cochrane for trials from 1965 through July 2013 using a search strategy derived from the following clinical question in PICO format: Patients: Adults

≥ 18 years) with stable monomorphic VT; Intervention: Intravenous antidysrhythmic drug; Comparator: Intravenous lidocaine or amiodarone; Outcome: Termination of VT. For all drug comparisons, we calculated relative risks (RR; 95% CI) and number needed to treat (NNT, 95% CI) between drugs. We also evaluated the methodological quality of the studies.

RESULTS: Our search yielded 219 articles by PubMed and 390 articles by EMBASE. 3 prospective studies (n=93 patients) and 2 retrospective studies (n=173 patients) met our inclusion and exclusion criteria. From the prospective studies, RR of VT termination of procainamide versus lidocaine was 3.7 (1.3-10.5); ajmaline versus lidocaine, RR=5.3 (1.4-20.5); and sotalol versus lidocaine, RR=3.9 (1.3-11.5). From the retrospective studies: procainamide versus lidocaine, RR=2.2 (1.2-4.0); and procainamide versus amiodarone RR=4.3 (0.8-23.6). All 5 reviewed studies had quality issues, including potential bias for randomisation and concealment.

CONCLUSIONS: Based on limited available evidence from small heterogeneous human studies, for the treatment of stable, monomorphic VT, procainamide, ajmaline and sotalol were all superior to lidocaine; amiodarone was not more effective than procainamide.

Favorable Trends in the Frequency of U.S. Emergency Department Visits for Food Allergy, 2001-2009.

Clark S, Espinola JA, Rudders SA, Banerji A, Camargo CA, Department of Emergency Medicine, Weill Cornell Medical College, New York, NY; Allergy Asthma Proc. 2013 Sep-Oct;34(5):439-45

Several studies suggest an increase in both the prevalence of food allergy and in the frequency of emergency department (ED) visits for food-related allergic reactions, including anaphylaxis. This study evaluates time trends in the frequency of ED visits for food allergy, with a focus on possible differences by age. Data from two multicenter ED-based studies were used to identify the proportion of patients assigned to the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes with actual food-related acute allergic reaction and the proportion of these patients with food-induced anaphylaxis. We multiplied these proportions against counts from nationally representative data (2001-2009) to estimate the number of U.S. ED visits for each ICD-9-CM code with likely food allergy. Over the 9-year study period, there were ~1,892,000 ED visits for food allergy. The number of ED visits for food allergy did not significantly change among children aged <18 years (77,000 visits in 2001 versus 92,000 visits in 2009; p = 0.85), but among adults aged ≥18 years, there was a decline (147,000 visits versus 97,000 visits; p = 0.046). Looking across all ED visits (any cause), the proportion of ED visits for food allergy was stable for children (0.29% versus 0.28%; p = 0.22) but decreased for adults (0.18% versus 0.09%; p = 0.01). The number of U.S. ED visits for food-related acute allergic reactions is significantly higher than prior reports. These results also suggest that the frequency of ED visits for food allergy were stable or decreased from 2001 to 2009, despite reports suggesting an ongoing rise in the prevalence of food allergy.

A Novel Comprehensive In-Training Examination Course Can Improve Residency-Wide Scores.

Sharma R, Sperling JD, Greenwald PW, Carter WA; J Grad Med Educ. 2012 Sep;4(3):378-80

INTRODUCTION: The annual American Board of Emergency Medicine (ABEM) in-training examination is a tool to assess resident progress and knowledge. We implemented a course at the New York-Presbyterian Emergency Medicine Residency Program to improve ABEM scores and evaluate its effect. Previously, the examination was not emphasized and resident performance was lower than expected.

METHODS: As an adjunct to required weekly residency conferences, an intensive 14-week in-training examination preparation program was developed that included lectures, pre-tests, high-yield study sheets, and a remediation program. We compared each residents in-training examination score to the postgraduate year-matched national mean. Scores before and after course implementation were evaluated by repeat measures regression modeling. Residency performance was evaluated by comparing residency average to the national average each year and by tracking ABEM national written examination pass rates.

RESULTS: Following the course's introduction, odds of a resident scoring higher than the national average increased by 3.9 (95% CI 1.9-7.3) and percentage of residents exceeding the national average increased by 37% (95% CI 23%-52%). In the time since the course was started the overall residency mean score has outperformed the national average and the first-time ABEM written examination board pass rate has been 100%.

CONCLUSION: A multifaceted residency-wide examination curriculum focused around an intensive 14-week course was associated with marked improvement on the in-training examination. ⌘

Albany Update

New York ACEP Legislative & Regulatory Representatives
Reid, McNally & Savage

2013-14 Proposed State Budget

On Tuesday, January 22, 2014, Governor Andrew Cuomo released his 2014-15 proposed State Budget. The plan provides All Funds spending of $137.2 billion, an increase of 1.3% from 2013-14. The proposal includes reducing property, business and other taxes by more than $2 billion and providing $1.2 billion in capital funding to help hospitals, nursing homes and long term care facilities restructure to provide quality community based care.

The Governor's Budget contains several proposals of interest to New York ACEP, including regulation of urgent care centers, establishment of limited service clinics, out-of-network health plan provisions and independent practice for nurse practitioners. These proposals are summarized below.

Out-of-Network (OON) Rates and Out-of-Network Pocket Costs

The Executive Budget includes a proposal to regulate billing, reimbursement, and physician, hospital, and health care plan disclosures to consumers for health care services provided to patients by "out-of-network" providers who do not participate in a patient's health insurance plan.

Usual and customary cost (UCR) is defined as the 80th percentile of all charges for health services performed by a provider in the same or similar specialty and provided in the same geographic area as reported by a benchmarking database maintained by a nonprofit organization specified by the DFS Superintendent (This is understood to mean FAIR Health).

Unlike a bill introduced by Senator Hannon last year (S2551) and supported by New York ACEP, the Governor's proposal does not require that a minimum payment for OON services be set as a percentage of UCR. Instead, **for emergency services**, an insurer must pay an amount that it determines is reasonable. Emergency services are defined in accordance with federal law. The patient can not incur greater out-of-pocket costs than they would have if the emergency services were provided by an in-network provider. The physician or plan can dispute the fee through an independent dispute resolution entity (IDRE) as described below.

A non-participating physician or a health care plan may submit a dispute regarding an OON fee for payment for **emergency services** to an IDRE. In determining a reasonable fee, the dispute resolution entity shall select either the health care plan's payment or the non-participating physician's fee based on specific criteria set forth in Section 604 of the Insurance Law including:

- whether there is a gross disparity between the fee charged by the physician for services rendered compared to fees paid to the involved physician for the same services rendered by the physician to other patients in health care plans in which the physician is not participating, and in the case of a dispute involving a health care plan, fees paid by the health plan to reimburse similarly qualified physicians for the same services in the same region who are not participating with the health care plan;
- the level of training, education and experience of the physician;
- the physician's usual charge for comparable services with regard to patients in health care plans in which the physician is not participating;
- the circumstances and complexity of the particular case, including time and place of service;
- individual patient characteristics; and
- the usual and customary cost of the service.

An uninsured patient or a patient's physician may also file a dispute regarding a fee for emergency services. The independent dispute entity is required to determine a reasonable fee based on the criteria in Section 604 of the Insurance Law noted above.

There is a separate IDR process for "surprise bills." Surprise bill means a bill for **non-emergency** health care services received by an insured for services rendered by a non-participating physician at a participating hospital or ambulatory surgical center where a participating physician is unavailable at the time the health care services are rendered, or for a patient who is not insured for services rendered by a physician at a hospital or ambulatory surgical center where the patient has not timely received all of the disclosures.

If an insured assigns benefits to a non-participating physician, the physician may bill the health care plan and the health care plan must pay the physician the billed amount or attempt to negotiate with the non-participating physician. If the negotiation between the two parties is not resolved, the health care plan must pay the physician an amount it determines reasonable. Either the health care plan or the physician may submit a dispute regarding the fee. The independent dispute resolution entity is required to determine a reasonable fee based on the criteria in Section 604 of the Insurance Law. If an insured patient has not assigned benefits to the non-participating provider, the patient may submit the surprise bill to IDRE for resolution.

New York ACEP will work to amend this proposal to protect patient interests and ensure fair payment to physicians.

Urgent Care

The Governor's proposed budget creates new regulations for urgent care centers. The use of the term "urgent care" is limited to Article 28 certified entities and fully accredited health care providers that meet specific criteria. The bill defines "urgent care" as the provision of treatment on an unscheduled basis to patients for acute episodic illness or minor traumas that are not life threatening or potentially disabling. An urgent care center cannot provide care for conditions that require monitoring and treatment over prolonged periods.

An urgent care center may not display signage, advertise or hold itself out as a provider of emergency medical services through the use of the term emergency, or through any other term or symbol that implies that is it is a provider of emergency medical care.

The Commissioner of the New York State Health Department (NYS DOH) is authorized to promulgate regulations governing urgent centers including but not limited to defining the scope of services to be provided, requiring providers to disclose to patients the scope of services provided, establishing standards for appropriate referral and continuity of care, staffing, equipment and maintenance and transmission of medical records.

Limited Services Clinics

The Governor's budget authorizes the establishment of "Limited Services Clinics" within retail establishments such as pharmacies, stores and shopping malls. These clinics are currently referred to as "retail clinics."

The Commissioner of the NYS DOH is required to promulgate regulations setting forth operational and physical plant requirements including but not limited to:

- accreditation;
- designating or limiting the treatments and services that may be provided;
- prohibiting the provision of services to patients younger than 18 years of age;
- prohibiting specific immunizations to patients younger than 18 years of age;
- requirements or guidelines for advertising and signage, disclosure of ownership interests, informed consent, record keeping, referral for treatment and continuity of care, case reporting to the patient's primary care or other health care providers; and
- design, construction, fixtures and equipment.

Nurse Practitioner Independent Practice

This Governor's proposal would authorize nurse practitioners to practice independently by eliminating the requirements for written collaboration agreements and practice protocols between nurse practitioners and physicians. New York ACEP will work to defeat this legislation.

New York ACEP Lobby Day, March 4, 2014

On Tuesday, March 4, members of the New York ACEP Board of Directors and Government Affairs Committee and some of their colleagues will travel to Albany for the annual lobby day to meet with key legislators and staff on New York ACEP's 2014 legislative priorities including: fair payment to emergency physicians; out of network rules; and opposition to independent practice for nurse practitioners. ⌘

Strong Memorial Hospital Hosts Congressional Visit

Jeffrey C. Moon, MD MPH, PGY-2, Department of Emergency Medicine, University of Rochester
Michael Kamali, MD FACEP, Chair, Department of Emergency Medicine, University of Rochester

Inspired by ACEP's national and local efforts to connect emergency physicians with their legislators, the Department of Emergency Medicine at the University of Rochester hosted a visit by the office of Congresswoman Louise Slaughter (D-NY) in August 2013. The visit, which lasted 90 minutes in the emergency department (ED), included Congresswoman Slaughter's chief of staff, and produced excellent discussion regarding ACEP and New York ACEP positions, as well as issues we face in emergency medicine.

During the visit, all areas of our department were toured, including our Pediatric ED where a patient with asthma was being treated. The patient was referred to the ED by their pediatrician for specialized and rapid care that could not be provided at the pediatrician's office or an urgent care center. The ensuing discussion centered on the important role of emergency medicine in acute care, helping stabilize patients before they become more ill and require more services. This was also seen in our critical care area, where a patient with bi-pap was being treated. It was discussed that this intervention can help avoid intubation and the associated consequences of intubation, leading to shorter hospital stays, improved outcomes and lower costs.

The emergency department at Strong Memorial Hospital has just over 100,000 patient visits per year. It serves an urban, suburban and rural population that lies in Congresswoman Slaughter's district. The visit further highlighted the efforts of emergency medicine to serve diverse populations with varieties of illness and injury, including those needing immediate life saving efforts.

Engaging our local and national legislators is a very effective means to explain the role of emergency medicine and what our departments do on a daily basis. It also opens dialogue and generates a better understanding of our needs and goals. ⌘

Calendar

March

4 New York ACEP Annual Lobby Day, 9:00 am-1:00 pm
4 Board of Directors Meeting , 1:30-4:30 pm
12 Education Committee Conference Call, 1:30 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 Research Committee Conference Call, 3:00 pm
20 EMS Committee Conference Call, 2:30 pm
28 LLSA Review, SUNY Upstate Medical University, 8:00 am-1:00 pm

April

9 Education Committee Conference Call, 1:30 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 Research Committee Conference Call, 3:00 pm
17 EMS Committee Conference Call, 2:30 pm
24 Medical Student Symposium and Residency Fair, St. Luke's-Roosevelt Hospital Center, 6:00-9:30 pm

May

1 Board of Directors Meeting, New York Academy of Medicine, 1:30-5:30 pm
2 ED Leadership Forum, New York Academy of Medicine, 8:00 am-4:00 pm
8 Practice Management Conference Call, 1:00 pm
14 Education Committee Conference Call, 1:30 pm
14 Professional Development Conference Call, 3:30 pm
15 EMS Committee Conference Call, 2:30 pm
18-21 ACEP Leadership & Advocacy Conference, Omni Shoreham Hotel, Washington, DC
21 Government Affairs Conference Call, 11:00 am
21 Research Committee Conference Call, 3:00 pm

June

11 Education Committee Conference Call, 1:30 pm
11 Professional Development Conference Call, 3:30 pm
12 Practice Management Conference Call, 1:00 pm
18 Government Affairs Conference Call, 11:00 am
18 Research Committee Conference Call, 3:00 pm
19 EMS Committee Conference Call, 2:30 pm

July

7 Board of Directors Meeting, Sagamore Resort, 11:00 am-12:30 pm
7-9 Scientific Assembly, Sagamore Resort
8 Annual Meeting and Legislative Update, Sagamore Resort, 12:45-1:45 pm
8 Committee Meetings, Sagamore Resort, 1:45-2:15 pm
9 Board of Directors Meeting, Sagamore Resort, 11:00 am-12:30 pm

Classified Ads

New Jersey

Immediate need for Emergency Medicine physicians for academic Level I Trauma Center in Northern New Jersey within an easy drive into Manhattan. This university health center has an Emergency Medicine residency program and fellowship program. The busy Emergency Department of this excellent comprehensive stroke center treats over 70,000 patients annually with separate Pediatric Emergency Care. The department has a growing toxicology service and an active clinical research program. New initiatives are currently being planned for an observation unit and an urgent care center. Responsibilities will include delivery of clinical services, research and teaching residents/PAs/medical students. Candidates must be board certified/board eligible in Emergency Medicine. This is an excellent opportunity with an Affirmative Action/Equal Opportunity employer offering great benefits and a very competitive compensation package. For full details, please contact Daniel Stern at Daniel Stern & Associates 800-438-2476 or sternd@danielstern.com

Pennsylvania

Chair needed for community hospital with academic affiliation in Pittsburgh, PA. This excellent hospital has been named one of the Top 100 Hospitals in the U.S. The busy state-of-the-art Emergency Department has an annual volume of 60,000 patient visits, a Fast Track and physician extenders.

As chair you will be responsible for Quality Assurance, human resource and hospital policies, attending staff and Medical Directors' meetings, evaluating and answering patient complaints, work schedules, monthly reporting, budgets, and other required administrative duties. This is an excellent opportunity with an Affirmative Action/Equal Opportunity employer offering great benefits, a very competitive compensation package and generous retirement contribution. Pittsburgh offers many cultural events, several outstanding museums and art galleries, great restaurants, professional sporting events as well as many outdoor recreational opportunities. For full details, please contact Daniel Stern at Daniel Stern & Associates 800-438-2476 or sternd@danielstern.com. ⌘

To submit a classified ad, contact New York ACEP by email at nyacep@nyacep.org, phone (585) 872-2417 or online at http://www.nyacep.org/support-exhibits/newsletter-advertising.

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