ED Legal Letter™

The Essential Monthly Guide to Emergency Medicine Malpractice Prevention and Risk Management

From the publishers of *Emergency Medicine Reports* and *ED Management*

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March 2012
Vol. 23 • No. 3• Pages 25-36

Drug Misadventures: Medical-Legal Cases and Caveats for the Emergency Physician

*By **John F. Luerssen**, BA, Indiana University, and **Gregory P. Moore**, MD, JD, Emergency Medicine Residency, Madigan Army Medical Center, Tacoma, WA.*

In the emergency department (ED), a central component of a physician's daily care and job performance is to administer or prescribe drugs. The improper use of these drugs, however, can lead to a multitude of harmful outcomes if attention is not paid to detail. This can place the ED physician in a position of liability. This paper will share actual recent legal cases and the pitfalls that may occur when dispensing medications.

Narcotics

Narcotics are a frequent source of respiratory arrest and are often at the center of successful malpractice claims. In *Trustee for Decedent's Heir v. Medical Provider, Hospital and Doctor,* the case highlights the importance of knowing the proper dosages and the necessity to monitor the patient once drugs have been given. A patient was brought into the ED complaining of severe abdominal pain after having spent the day drinking alcohol. After the patient stated that his pain level was a 10 out of 10, the physician directed that he be given 1-2 mg of hydromorphone (Dilaudid) every 20 minutes. It was later revealed in court that the physician did not know about the patient's high blood alcohol level and had assumed that the nurses would monitor the response of the patient to the drug. Records showed that, over the course of an hour, 6 mg of hydromorphone was administered. Two hours after arrival in the ED, the patient was found to be in cardiopulmonary arrest, and resuscitation efforts failed. The defendant claimed that the patient was given an appropriate dosage due to the fact that the patient was obese, in severe pain, and, thus, didn't require monitoring. The defendant also claimed that the death was caused by severe hemorrhagic pancreatitis. A settlement of $500,000 was reached.[1]

It's important to note that hydromorphone (Dilaudid) is a narcotic that

is roughly 10 times as potent as morphine. The initial dosage for IV administration is 0.2-0.6 mg every 2-3 hours as needed. There have been a multitude of recent cases successfully litigated due to respiratory arrest from this drug.

A second case, *Renee Hurtado, Jose Hurtado, deceased, et al. v. County of Los Angeles, Harbor-UCLA Medical Center,* involved a patient who was seen in the ED following a paragliding accident. The patient arrived in the ED suspected of having a broken pelvis and internal bleeding. He was conscious, breathing, and complained of severe pain, which prompted the use of fentanyl. An hour and a half later, the patient experienced respiratory depression and died soon after a failed intubation. The plaintiff contended that a fentanyl overdose was the cause of death and that the drug's administration was not monitored. The case was settled for $305,000.[2]

In contrast to hydromorphone potency, fentanyl is estimated to be up to 100 times as potent as morphine. The recommended dosage for intravenous administration is 1-2 mcg/kg, and the effect usually lasts 30-60 minutes.

These two cases are but a few of the many cases that involve excessive narcotic administration, inadequate monitoring, and respiratory arrest. Multiple actions could have been done differently that could have resulted in better outcomes. When a narcotic is initially given, it should be given slowly. If the patient doesn't obtain optimal response, then more can be given. Secondly, monitoring a patient after narcotics have been delivered is highly recommended, as any possible problems will be discovered sooner rather than later. In both cases, signs consistent with an overdose were discovered after 90 minutes, at the earliest. Had the patients been monitored, then their condition could have been reversed. Providers need to be aware of, and respect, the potency of both hydromorphone (Dilaudid) and fentanyl compared to morphine. Hydromorphone is currently a very popular and commonly administered drug in the ED. As noted earlier, hydromorphone is about 10 times as potent as morphine, whereas fentanyl is about 100 times as potent. Lastly, if the provider is unsure of the dosage, then he or she should review the indications, contraindications, and the proper dosage prior to administration. These suggestions will go a long way toward alleviating the type of poor outcome illustrated by these cases.

In *Beatty v. Oro Valley Hospital,* a man was seen in the ED complaining of vomiting, bloody urine, and abdominal pain and was diagnosed as having kidney stones. The patient was given 4 mg of IV morphine as well as ketorolac (Toradol) and was discharged two hours later. His wife was on the way back to pick up her husband after he was discharged. However, the patient, believing he saw his wife outside the hospital, attempted to cross an elevated road with a lane divider to get to her vehicle. He ended up falling about 30 feet and, as a result, became a paraplegic. The plaintiff brought suit for negligence, asserting he was still under the influence of the pain medications when discharged before his transportation had arrived. The defendant argued that the morphine had already been metabolized and that the physician's only responsibility was to have a discharge plan, not the actual compliance of the said plan. A verdict was reached in favor of the plaintiff.[3]

ED Legal Letter™, ISSN 1087-7347, is published monthly by AHC Media, 3525 Piedmont Road N.E., Bldg. 6, Suite 400, Atlanta, GA 30305. Periodicals Postage Paid at Atlanta, GA 30304 and at additional mailing offices.

POSTMASTER: Send address changes to ED Legal Letter, P.O. Box 105109, Atlanta, GA 30348.

Subscriber Information: Customer Service: (800) 688-2421. Customer Service E-Mail Address: customerservice@ahcmedia.com. Editorial E-Mail Address: leslie.hamlin@ahcmedia.com. World Wide Web: http://www.ahcmedia.com. Subscription Prices: United States: $499 per year. Add $17.95 for shipping & handling. Multiple Copies: Discounts are available for group subscriptions, multiple copies, site-licenses or electronic distribution. For pricing information, call Tria Kreutzer at 404-262-5482. Canada: $529 per year plus GST. Elsewhere: $529 per year. Back issues: $83. Missing issues will be fulfilled by customer service free of charge when contacted within one month of the missing issue's date. GST Registration Number: R128870672.

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In this case, the correct treatment was given for this particular patient; however, the hospital failed to ensure a safe discharge after narcotics were given. The physician or nursing staff need to note that a patient has a safe discharge when given narcotics or other sedating drugs. Most often, the staff and/or hospital are liable for this action. A physician can minimize his or her personal liability by documenting on the chart "patient with safe ride home" or writing an order stating "discharge to a safe ride home."

Drug Allergies

The proper use of antibiotics, whether given after diagnosis or for prophylaxis, can effectively treat or prevent infections in patients. However, when antibiotics are given without diligently noting a patient's past history, the risk of future litigation increases. Two recent cases follow.

In *Fisher v. Desai,* an 18-month-old was seen in the ED, found to have otitis media, and was given amoxicillin/clavulanic acid (Augmentin). The following day in the ED, she was given azithromycin (Zithromax) and diphenhydramine (Benadryl) after she developed an allergic reaction causing both of her eyes to become swollen. The next day, the patient arrived in the ED again, this time with only one eye still swollen shut. The physician made the diagnosis of orbital cellulitis and prescribed IV ceftriaxone (Rocephin). Despite a known penicillin allergy documented in the patient's records, the nurses gave the ceftriaxone. The patient, a few minutes later, became apneic, cyanotic, and unresponsive, and the ensuing resuscitation efforts failed. It was later discovered that the ED physician who had prescribed the ceftriaxone had not reviewed the patient's medical records. The plaintiff argued that a cephalosporin should not have been given to a patient with a known penicillin allergy. The case was settled for $3 million.[4]

An additional case involving a known antibiotic allergy occurred with a 79-year-old man who was planning to have knee replacement surgery. In *George Martin, deceased, and Dorothy Martin v. John W. Zimmer, MD, and Coastal Orthopedics Associates*, the defendant, Dr. John Zimmer, suggested that vancomycin and oxacillin be given prophylactically prior to the surgery. The plaintiff stated that he had been given vancomycin before and had almost died from the reaction. The plaintiff also noted that the reaction could be found in his medical records. However, Dr. Zimmer believed that the reaction was simply a common one and proceeded with the administration of the antibiotic. The resulting reaction caused the patient to spend a majority of the year in the ICU on a ventilator, suffering from multi-organ system failure. In court, the plaintiff asserted that the use of vancomycin was negligent and also unnecessary, as he did not have an infection at the time of surgery. Had there been an infection, then the surgery would not have taken place. The defendant maintained that the original reaction was due to the oxacillin and not the vancomycin and that there was insufficient evidence to tie the first reaction to the use of those antibiotics. The judgment against the defendant totaled $1.6 million.[5]

Some have claimed that among patients who report having a penicillin allergy, 0.17% to 8.4 % will have an allergic reaction if given a cephalosporin. These reports often include prior preparations of cephalosporins that contained trace amounts of actual penicillin. Thus, naturally, if a cephalosporin containing penicillin is administered, an allergic reaction might ensue.[6-10] Also, the study doesn't acknowledge the severity of the reaction. In contrast to those who report a penicillin reaction, a study was done showing that those with confirmed reactions are only expected to react negatively to cephalosporins 2% of the time. There is less risk of reaction with newer generation of cephalosporins.

In light of the low statistical chance of having a reaction to a cephalosporin with a known penicillin allergy, had the physicians in these two cases explored the past history better, they could have opted to use alternative antibiotics. In the vancomycin case, it appears as if only a cursory review was performed on the patient's records. In the first case, it wasn't done at all. It is important to ask whether or not the use of an antibiotic that has the potential to induce a reaction is even necessary at all, especially prophylactically. Safer alternatives, if they're available, could alleviate any potential complications.

Anticipating Side Effects/Contraindications

The next two cases illustrate how a physician can treat the primary presenting symptoms correctly but overlook other side effects of certain drugs. Take, for example, *Anonymous Patient v. Anonymous Hospital and Physicians*, a case in which a 52-year-old man was brought into the ED after having syncope (during which he suffered a head injury). It was revealed by an EKG that the patient was in the midst of a myocardial infarction. He was moved to the catheterization

lab and given anticoagulants. Afterward, the patient experienced an intraparenchymal hemorrhage. The plaintiff claimed he had informed the physician of the head injury and, thus, a CT scan should have been ordered. Additionally, he claimed that his brain hemorrhage was a result of being over-prescribed anticoagulants. The defendant contended that treatment of the myocardial infarction took precedence and there was not enough time to have a CT performed. The case was settled for $1,540,000.[11]

It is important when administering any potentially harmful medication that contraindications have been reviewed and don't exist.

Another case, *Campbell v. DeAngelis,* again highlights the failure to anticipate a drug's side effects. Upon arrival at the ED, the patient, who was a known diabetic, had a blood sugar level of 74, which rose to 118 three hours after being given glucagon and glucopaste. Seeing no further reason for the patient to stay in the hospital, the physician discharged the man, who went home and fell asleep. The next morning, he was found unresponsive after having suffered brain damage caused by metabolic encephalopathy. The plaintiff believed that he should have been admitted to the hospital after he had come into the ED two days earlier with severe hypoglycemia. Admittance would have been needed to further determine the cause of multiple and frequent bouts of hypoglycemia. The plaintiff also claimed that he was taking Lantus (insulin glargine), which is a long-acting insulin. The defendant explained that the patient had a history of depression, schizophrenia, and alcohol abuse and had been seen in the ED 11 times in the past five years for blood sugar issues. The defendant alleged that the patient's noncompliance made care difficult. It was decided that 90% of the fault lay with the defendant and 10% with the plaintiff. A $21.4 million verdict was returned.[12]

Cases in which side effects are overlooked are not uncommon. In the first case, the physician should have assessed the head trauma associated with a syncopal episode. The saying "be on guard" is certainly pertinent here. The physician could have simply ordered a CT scan to rule out any intracranial hemorrhage on the way to the catheterization lab and most likely avoided a lawsuit in the process. The physicians who treated the diabetic patient should have recognized first that the number of repeated visits to the ED was a sign of poor patient compliance. Secondly, the physician should have considered the dangers of long-acting sugar medications and presumed that the patient would go to sleep and, thus, not be able to recognize the recurrence of hypoglycemic symptoms.

When a patient is discharged, a physician should feel certain that critical medications will be administered properly and also that the patient understands the pharmacologic actions and length of effects.

Mixed Meds Beware

In some instances, a combination drug is prescribed where one of the substituent drug's effects is desired and the other drug's effects may be overlooked or even contraindicated for the specific treatment. In the case *Anonymous Woman v. Anonymous Optometrist*, a patient was diagnosed with a corneal ulcer by her optometrist and prescribed Tobradex eye drops, which contain the antibiotic tobramycin and dexamethasone, a steroid. Her condition continued to deteriorate and she was then seen by an ophthalmologist, who discontinued the Tobradex due to the fact that steroids are contraindicated in the treatment of a corneal ulcer. Although the patient's ulcer resolved, she ended up with 20/400 vision in the affected eye, which was later corrected surgically to 20/30 vision with glasses. She also suffered from an enlarged iris and ptosis. The plaintiff was awarded an $825,000 settlement against the optometrist.[13]

In *Bryn v. Kaiser & Blau*, the plaintiff was given acetaminophen and hydrocodone (Vicodin) for 16 years for pain stemming from an orthopedic surgery that required the patient to wear a prosthesis. The plaintiff presented to the Kaiser facility to have his prescription refilled frequently enough to warrant the pharmacist to tell him that they couldn't refill it that often. As a result, the plaintiff proceeded to go to an outside pharmacy for the medication. Thus, the patient was receiving Vicodin from both the Kaiser pharmacy and an outside one at the same time. The plaintiff eventually developed liver failure and underwent a liver transplant, which was due to excessive use of the acetaminophen component. This was estimated to be an astounding 10,000 pills per year. In arbitration, the defendant stated that the plaintiff had refused their recommended pain management therapy and had also been told by both the Kaiser pharmacist and an outside pharmacist of the dangers of overusing the drug. An award of $1,425,000 was given in arbitration.[14]

The lesson to take away from both of these

cases is that the providers focused only on one of the active ingredients of the combination drugs. When the optometrist prescribed the tobramycin/dexamethasone combination, he or she presumably was thinking about the antibiotic quality and not the steroid component. The same holds true for the man who was given hydrocodone/acetominophen for 16 years. The focus was on the pain-relieving aspect of the hydrocodone, while the toxicity of acetaminophen was overlooked.

Uncommonly Used Medications

Occasionally in the ED, patients require a drug that is not frequently given and, thus, unfamiliar to the providers. *Anonymous 21-Year-Old Woman v. Anonymous Emergency Room Physician, Anonymous Pharmacist* is a case in which that unfamiliarity led to a disastrous outcome for the patient and a $15.5 million settlement against the physician and pharmacist. A 21-year-old female was seen in the ED after she took too much acetaminophen (Tylenol) trying to mitigate menstrual pain. The physician gave her IV acetylcysteine (NAC), a drug that the physician had never administered and the pharmacist had never dispensed before. When the pharmacist wrote the prescription, he or she wrote that the drug should be given in three stages, with the second stage given "times" four hours and the final stage "times" 16 hours. What the pharmacist meant, however, was that it should be given over the course of four hours and 16 hours. Unfortunately, the physician didn't review the drug dosing and administered it as directed by the pharmacist. This led to the second stage being overdosed by four and a staggering dosage 16 times what is required for the final stage. After the infusion, lab results showed that the acetaminophen toxicity had been corrected. However, after the original order had expired, another physician, who was also unfamiliar with this drug, directed that NAC continue to be given at 16 times the normal rate. The patient then became agitated, sluggish, and even pulled out her IV. The nurse called the physician on duty, who, without actually evaluating the patient, instructed them to give her haloperidol (Haldol), an antipsychotic. Five minutes later, she was seizing and transferred to the ICU. It was five hours before a physician physically checked on the patient, despite the frequent seizing. The ICU physician, who also was unfamiliar with NAC, again ordered that she receive the IV acetylcysteine at 16 times the normal dose. The patient suffered brain herniation, with a resultant persistant vegetative state. The plaintiff brought suit, claiming the patient received 180,000 milligrams of NAC despite the maximum dosage being 14,600 milligrams. On top of the exorbitant amount of drug given, approximately 6,000 milliliters of fluid was infused (proper volume of the medication should have been 160 mL). As noted earlier, a $15.5 million settlement was reached.[15]

The easiest way to avoid such a disastrous chain of events would be to simply look up the dosing information for a drug if one is not familiar with it. Had one physician double checked the dose, then the patient might not have suffered. Unfortunately, it's easy and common to give either too much or too little medication. A simple movement of a decimal point when calculating doses, rates, and concentrations can be disastrous. This can occur when using medication that is uncommon or with other medications that are given via drip administration (pressors) or via protocols (heparin).

Summary

Improper use of medication can lead to significant exposure and liability of the ED physician. There are frequent successful court cases that can easily be avoided with basic and diligent prescribing practices. Common sources of litigation include allergic reactions, anticipated side effects, dosing errors, and failing to recognize severity/potency of medications.

Attention to past medical history, recent events, and appropriate monitoring can also be invaluable. ■

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False "Expert" Statements Shouldn't Go Unchallenged

"Everyone knows that a patient with a heart rate higher than 90 should be admitted to the hospital."

"The patient had *S. aureus* in her bloodstream for at least three months. The emergency physicians (EPs) should have noticed."

"The doctor should have been able to stitch the wound so that there was no scar."

"It is the standard to get a CT of the head within 30 minutes in any patient with trauma to the head."

All of these are examples of inaccurate statements made by expert witnesses in malpractice lawsuits involving EPs — and these are often wrongly viewed as facts by the jury, says **Peter Viccellio**, MD, FACEP, vice chairman of the Department of Emergency Medicine at State University of New York, Stony Brook.

"A fundamental problem in the courtroom is that fact-finding in malpractice cases is largely in the hands of experts, biased either for or against the issue at hand," says Viccellio. "Absurd statements by experts can only be challenged by other experts, not by empiric facts."

If an expert witness testifies that performing a head CT within 30 minutes of arrival is standard of care in the ED, one approach would be to pull the expert's personal cases to see if each one met this standard. "However, nothing like this is ever done in court," says Viccellio. "Sure, you could ask the question, but the experts can say whatever they want to. The rules in court are quite different than the rules at the bedside."

Viccellio says that in his own discussions with the New York State Department of Health Office of Professional Medical Conduct, the staff welcomed the referral of cases involving egregious testimony by a physician, and stated that they would consider inappropriate testimony a breach of professional conduct.

"There have been scattered cases of this through the country, sometimes with grave consequences to the 'expert,'" Viccellio says. "Perhaps this venue should be considered more frequently. It might reduce the amount of inappropriate testimony."

Here are some factors that can result in misleading or false testimony by experts in ED malpractice litigation:

• The expert may wrongly claim that something is standard of care in the ED.

A plaintiff's expert may insist that the EP should have done a specific intervention, for example, when the intervention is typically done only on inpatient units. "The attorney can ask me as an expert witness to comment on practicing in the ED — not just what we wouldn't do, but why *not* doing something is acceptable contemporary practice," says **Jonnathan Busko**, MD, an EP at Eastern Maine Medical Center in Bangor and medical director of Maine EMS Region IV.

• An expert's statements about clinical practice may be outdated.

If the plaintiff's expert hasn't worked in an ED for many years, his or her responses may not reflect current practice.

Busko suggests this response for the defense

expert: "Historically, this approach was used. However, new research has come out that has demonstrated that to *not* be the optimal approach. Here are my references for that."

"Opinions need to be grounded in something," says Busko. "Oftentimes, I can look at an opinion and, based on references that identify current practice, I can say, 'There is no basis for this. This is not how we do things now.'"

Part of the expert's job is to identify errors in the positions of opposing witnesses, says Busko, so the defense attorney can pose specific questions that need to be answered. "This gives the attorney the ability to intelligently question that opinion and make the other expert defend their position," he says. "It doesn't happen frequently, but there are times when someone may change their opinion based on that."

• The expert's opinion may be outside the mainstream.

It's possible that experts on both sides have reasonable medical opinions and simply disagree because they are looking at things differently, says **Michael M. Wilson,** MD, JD, a health care attorney with Michael M. Wilson & Associates in Washington, DC, but in some situations, an expert's opinion may be unreasonable.

"In some ways, that can be helpful, because you can martial medical literature to show it's not valid," Wilson says. "If the jury thinks that the expert is giving an opinion that is way outside the mainstream, they will probably penalize that side severely at trial."

Expert opinions need to be based on best practices, according to national standards. "Just as medicine has become evidence-based, so has expert witnessing," says Busko. "An opinion can't be based on 'This is the way I've always done it.' That is a change over the last decade or so. The opinion has to have a solid basis. If it doesn't, then it's very vulnerable."

• The expert may have failed to review all the relevant information.

To avoid this scenario, Wilson says that he typically gives experts "everything — all the depositions, all the medical records." If the expert is given only a subset of materials to review, he or she might be challenged with additional facts in front of a jury.

"The expert can be attacked on the grounds that he isn't familiar with something that goes against the facts that he is setting forth," says Wilson. "You want him to be fully familiar with the facts of the case." ■

Sources

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Experts on *Either* Side May Mislead Jury

Ken Zafren, MD, FAAEM, FACEP, FAWM, EMS medical director for the state of Alaska and clinical associate professor in the Division of Emergency Medicine at Stanford (CA) University Medical Center, says that while much attention has been paid to the problem of plaintiff experts making false statements about ED care, he's also experienced defense experts making false statements. "It's possible to be a hired gun for the defense, too," he says.

Zafren reviewed one case involving a missed diagnosis of an infected prosthetic joint, in which the patient presented to the ED with fever and hip pain.

The defense expert said this wasn't something an EP should be able to recognize because it's so rare, and, therefore, not within the purview of emergency medicine.

"I thought his testimony was disingenuous, because he said it couldn't happen," he says. "That, to me, is being pretty arrogant. There are many things I've read about in emergency medicine that I've never seen. I should still be able to recognize them, even if they are uncommon."

The plaintiff's orthopedic expert countered that, in fact, he regularly saw a few of these cases a month, year after year. In Zafren's own testimony,

he told the jury that, in his opinion, the presentation of this case was such that a third-year medical student could have made the diagnosis, and that he had seen and diagnosed a similar case within the previous year.

Zafren occasionally reviews egregious cases in which the diagnosis should have been obvious and the patient was sent home from the ED. "I have testified in court against other emergency physicians," he says, adding that while he would prefer to review cases for the defense, it happens that much of his expert witness work is done for plaintiff attorneys.

"I have probably helped more cases not go forward by reviewing cases for plaintiff's attorneys than for defense attorneys," says Zafren. "Your own experts cannot get the case dismissed, but the plaintiff's experts can. If the expert reviewing the case says it looks like there is no case, that is usually the end of it." ■

Source

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Sued EP May Wait to Learn What Opposing Experts Say

At what point after a lawsuit alleging ED malpractice is filed will a sued EP learn what the opposing experts say about the case? This depends on the legal strategy being used by the plaintiff's attorneys and state laws, says **Jonnathan Busko**, MD, an EP at Eastern Maine Medical Center in Bangor and medical director of Maine EMS Region IV.

"Some states want the expert opinion written down in letter form, and as soon as it's written, typically it becomes discoverable," he says. "In others, it can remain at a conversational level until the deposition is taken."

There are advantages and disadvantages to the EP's defense with each approach. "The big advantage to having something written is that oftentimes it's clearer to the attorney what the witness is thinking," says Busko. "The flip side is it's much easier for the opposing witness to say 'I disagree. This does not reflect the standard of care' by having more time to prepare."

The advantage of waiting until the deposition to divulge the expert's position is that the opposing attorney lacks the opportunity to fully address any issues that come up during the deposition. "The downside is, it can be a real surprise for the attorney when they actually hear the opinion articulated and realize it's not what they expect," Busko says.

In some cases, there may be previous medical records available that weren't reviewed by the plaintiff's expert. If experts review only the events around whatever the suit is about, they may incorrectly establish a connection between the bad outcome and whatever happened in the ED encounter.

They may fail to identify that the patient had a history of similar events happening, or a major health issue that would have clearly led to this type of event occurring, says Busko.

"The other area with a lot of shades of gray involves what the expectations for an outcome are. We particularly see these in cardiac arrests," says Busko.

A defense expert may point out to the attorney, for instance, that the patient's chart indicates that ED staff interrupted chest compressions for 70% of the time, which indicates that the compressions were only done 30% of the time. "Clearly, that is not going to lead to a good outcome," says Busko. "The other expert may say, 'They did everything they needed to do, they gave chest compressions.' You can pull out [American Heart Association] guidelines and say, 'Look at this. They didn't do the most important thing correctly. They did it wrong.'"

Some states require a plaintiff's attorney to have a certificate of merit signed by a physician, stating that the case has been reviewed and has merit. "Sometimes the defense attorney thinks it's advantageous to do an early interview of the plaintiff's certifying expert to see if he backs away from his opinion or is not qualified," says **Michael M. Wilson,** MD, JD, a health care attorney with Michael M. Wilson & Associates in Washington, DC.

In most, but not all cases, the attorney would

be allowed to substitute an unqualified expert with another expert, adds Wilson, so it doesn't necessarily mean the end of the case.

"In other jurisdictions, you don't find out who the experts are until much later down the road," Wilson says. "But the defense attorney doesn't just sit around waiting for the plaintiff's attorney to tell them whether it's a good case or not."

The defense will have the case reviewed as early as possible, to learn the strengths and weaknesses of the case. If the case appears very strong and settlement is likely, says Wilson, the defense attorney may offer to discuss the case and ask to be sent the plaintiff experts' comments on the case.

The plaintiff's attorney will determine if there is sufficient interest in settling the case to make it worthwhile to send these expert statements or not, says Wilson. Discussions with the defense attorney may have convinced the plaintiff's attorney that there is a good faith interest in settling the case at an early stage.

"On the other hand, the plaintiff may prefer to hold onto the facts as long as possible," says Wilson. "Otherwise, the defense attorney can shape their own witness testimony to respond to the plaintiff's argument." ■

Heart Attack Delays Still High-risk for ED

Delays for treatment for heart attack patients will continue to be a high-risk area for EDs legally, predicts **Robert L. Norton**, MD, a professor in the Department of Emergency Medicine at Oregon Health & Science University in Portland.

From 1997 to 2004, waits increased for heart attack victims from eight to 20 minutes, according to a study done by Harvard Medical School researchers that looked at 90,000 ED visits.[1]

"These findings surprised me," says **Andrew Wilper**, MD, the study's lead author and Assistant Professor of Medicine at University of Washington School of Medicine. "Given the emphasis on timeliness of care for patients suffering from an acute myocardial infarction, I did not suspect such dramatic increases in waits."

In some cases, an appropriately triaged patient's EKG doesn't meet criteria for an ST-wave elevation myocardial infarction (STEMI), but subsequent EKGs for the same patient later show a STEMI. This can lead to a malpractice lawsuit alleging delay in treatment, says Norton, even when care was appropriate.

The door-to-balloon time interval begins at the patient's arrival, he explains, but some time may have passed before the EKG shows diagnostic findings for STEMI.

"This leads to the door-to-balloon time interval exceeding the goal when, in fact, there was no delay in the diagnosis," says Norton. "The process of myocardial infarction is dynamic."

Non-English-speaking patients and cultural differences in expressing symptom complaints contribute to some delays in ED heart attack care, says Norton, as well as daily and hourly variations and surges in the number of patients presenting to the ED.

"Our efforts are directed toward improvements in processes so that we provide high-quality, evidence-based treatment for patients with heart attacks," says Norton. "We believe that this will also reduce our legal risk."

Crowding Adds to Legal Risks

John Tafuri, MD, FAAEM, regional director of TeamHealth Cleveland (OH) Clinic and chief of staff at Fairview Hospital in Cleveland, says that overcrowding and cost-cutting are "definitely playing a role in delaying treatment" in EDs, including care of heart attack patients.

"The attorneys are not focused on the reasons why. They are solely focused on the fact that the delay occurred," says Tafuri. "The trick for them is to demonstrate to the jury that the delay affected the outcome of their client's medical recovery."

Hospitals are not staffing EDs as generously as they have in the past because of decreased reimbursements and higher costs, he says, and more physician offices are referring patients to the ED.

Higher ED volumes are partly caused by private physicians booking their schedules more tightly, with less room to accommodate patients with emergent or semi-emergent problems, says Tafuri, and the fact that many patients are without primary care physicians.

"The more people you put through that system, the more likely it is that somebody who is critically ill will get delayed treatment," he says. Here are risk-reducing strategies to avoid delays in heart attack treatment:

- **Perform EKGs at triage.**

"Within 10 minutes of arrival, the ECG has to be done and shown to the ED attending, who has

60 seconds to decide STEMI or no STEMI," says **Kevin Brown**, MD, MPH, FACEP, FAAEM, principal with Brown Consulting Services in Armonk, NY, and former director of the department of emergency medicine at Greenwich (CT) Hospital.

Brown has reviewed lawsuits in which a markedly abnormal ECG was disregarded by the ED medical staff because it didn't fit the clinical picture, as in the case of what appears to be a back or shoulder strain but turns out to be a missed unstable angina or myocardial infarction, with the patient inadvertently discharged.

"The defense of 'I didn't order the ECG, the triage nurse did,' is not a sound argument," says Brown. "It will not engender empathy from a jury because it shows that the nurse was considering a cardiac issue but the physician wasn't, should an acute MI be delayed from being treated or, worse, be discharged."

If the EP is faced with an abnormal ECG and it doesn't fit the clinical picture, an explanation is needed for why it doesn't. "Don't just disregard the study," says Brown.

The EP should consider sending two troponins, at least four hours apart, he advises, to detect the case that presents before there is a bump in the cardiac marker, obtain an old ECG to compare it with, and look at the prehospital 12-lead.

"Above all, make sure to document your reasoning in the EMR for why you feel this isn't an acute coronary event," says Brown. "If absent, the opposing attorney will try to make it seem that you didn't appreciate the ECG's significance or failed to take it into your clinical decision making."

The ST elevations recorded on the prehospital 12-lead may have resolved with the oxygen, aspirin, and nitroglycerin given before the patient arrived, he explains.

It is commonplace for the initial ECG to be normal or nonspecific with mild ST-T wave abnormalities when first done, notes Brown. In patients at risk for an acute coronary syndrome with ongoing chest pain and an ECG that is normal or has nonspecific findings, he recommends doing serial ECGs at least every 30 minutes for the first hour and a half if the patient remains symptomatic so that labile T waves or transient ST segment changes can be detected.

Be sure that triage personnel, ED nurses, and physicians are aware that patients, particularly older women, may present with atypical symptoms.

Brown says that in any ED, patients with vague, atypical symptoms, such as a patient with vomiting and epigastric pain that appears to be just another gastroenteritis case, will "slip through the net" and remain in the waiting room or get sent to the ED's fast track.

"The worst combination is a patient who has an atypical presentation and a nonspecific ECG," says Brown. "Waiting for a positive troponin usually tacks on an additional 60 minutes, unless your ED does in-house stat troponins."

Tafuri says that most cases he's reviewed involving ED delays in heart attack care had plaintiffs who presented with atypical symptoms, such as an elderly woman with nausea experiencing a STEMI.

"Most frequently, it isn't a classic chest pain type of thing, and symptoms are relatively nonspecific," Tafuri says. "In those populations, you have to maintain an extra level of vigilance. Treat those patients very aggressively in terms of how you triage and reevaluate them."

The fact that a patient came in with very vague symptoms and didn't get immediate care "could mitigate it somewhat in the eyes of the jury," he says. "It all depends on how the attorneys present the case. Certainly, you are much worse off if someone comes in with classic heart attack symptoms and has a delay in treatment."

However, just because a patient has atypical symptoms doesn't mean a jury won't find against you, he warns, particularly if there were other indications that suggested the patient was seriously ill, such as abnormal vital signs.

"The public is more aware of atypical presentations, particularly in women," says Tafuri. "In general, the public expectation of medical care has been raised substantially. The expectation is much higher than it was 20 years ago."

Jurors aren't likely to be sympathetic to delays in care for a heart attack patient, he adds, regardless of the reason. "The perception is such delays should not occur," says Tafuri. "In certain cases, there may be a very sympathetic physician who could convince a jury that it was beyond his or her control. But such cases are rare."

• Implement standing orders at triage.

ED triage nurses at Oregon Health & Science University utilize nurse-initiated orders to obtain EKGs for patients with specific chief complaints more quickly. EKGs are completed within five minutes of the patient presenting to triage, and are immediately reviewed by an EP to determine whether criteria for a STEMI are met. "This has greatly reduced our time from triage to activation of the STEMI team," reports Norton.

• Have a well-coordinated STEMI team in place, with specific roles and responsibilities.

Once Oregon Health & Science University's

STEMI team is activated, a rapid response team nurse presents to the ED to assist with emergency care of the patient, adding nursing resources to the ED nursing team.

"The catheterization laboratory team is activated. The interventional cardiologist is notified and begins preparation for receiving the patient in the cath lab," says Norton.

• Ensure that EMS performs 12-lead EKGs in the prehospital setting.

"Our EMS has this capability," reports Norton. "With this system in place, we have significantly reduced our door-to-balloon time."

If the paramedic recognizes or suspects a STEMI, the EKG is transmitted to the receiving ED and the STEMI team is activated, all before the patient's arrival.

• Review all STEMI activations with the emergency medicine team, the cardiology team, and the EMS team.

The goal is to review what went well and what needs improvement. "If system obstacles are identified that may have led to delays, then action plans are initiated to address those system issues," says Norton. "Our STEMI team meets bimonthly to review all STEMI cases." ■

REFERENCE

1. Wilper AP, Woolhandler S, Lasser KE, et al. Waits to see an emergency department physician: U.S. trends and predictors, 1997-2004. *Health affairs* 2008;27(2):w84-w95.

Sources

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CNE/CME OBJECTIVES

After completing this activity, participants will be able to:

1. Identify legal issues related to emergency medicine practice;
2. Explain how the legal issues related to emergency medicine practice affect nurses, physicians, legal counsel, management, and patients; and
3. Integrate practical solutions to reduce risk into daily practice. ■

CNE/CME INSTRUCTIONS

HERE ARE THE STEPS YOU NEED TO TAKE TO EARN CREDIT FOR THIS ACTIVITY:

1. Read and study the activity, using the provided references for further research.

2. Log on to **www.cmecity.com** to take a post-test; tests can be taken after each issue or collectively at the end of the semester. *First-time users will have to register on the site using the 8-digit subscriber number printed on their mailing label, invoice, or renewal notice.*

3. Pass the online tests with a score of 100%; you will be allowed to answer the questions as many times as needed to achieve a score of 100%.

4. After successfully completing the last test of the semester, your browser will be automatically directed to the activity evaluation form, which you will submit online.

5. Once the evaluation is received, a credit letter will be sent to you. ■

CNE/CME QUESTIONS

1. Which is true regarding the use of expert witnesses in malpractice lawsuits against emergency physicians (EPs), according to **Michael M. Wilson,** MD, JD?
   A. Opinions based on the expert's own practice are perceived as more valid by a jury than those based on best practice according to national standards.
   B. It is inadvisable for experts to assist attorneys by identifying errors in the positions of opposing witnesses so that the attorney can pose specific questions that need to be answered.
   C. Experts should be given only a subset of materials to review, and not depositions or other materials that aren't directly related to the case.
   D. If the jury thinks that an expert is giving an opinion that is way outside the mainstream, they are likely to penalize that side severely at trial.

2. Which is true regarding the role of experts for the plaintiff's side in the event an EP is sued for malpractice, according to **Jonnathan Busko**, MD?
   A. The expert's opinion always remains at a conversational level until the deposition is taken, and is never discoverable beforehand, even if the opinion is in written form.
   B. There is no advantage to the plaintiff's attorney if he or she waits until the deposition to divulge the expert's position.
   C. If the expert reviews only the specific events involved in the lawsuit, he or she may incorrectly establish a connection between the bad outcome and whatever happened in the ED encounter.
   D. It is never advantageous for the defense attorney to do an early interview of the plaintiff's certifying expert to determine if he or she backs away from an opinion or is not qualified.

3. Which is recommended to reduce legal risks regarding delays in care of heart attack patients, according to **Robert L. Norton**, MD?
   A. Nurse-initiated orders should not be utilized to obtain EKGs for patients with specific chief complaints, as this results in delayed activation of the STEMI team.
   B. Once the STEMI team is activated, a rapid response team nurse should present to the ED to assist with emergency care of the patient.
   C. Emergency medical services should not perform 12-lead EKGs in the prehospital setting, as this increases door-to-balloon times.
   D. Only STEMI activations involving cases with identified delays due to system obstacles, and not STEMI activations which went well, should be reviewed by emergency medicine, cardiology, and EMS.