

 American College of Emergency Physicians ADVANCING EMERGENCY CARE	
<h1>Annals of Emergency Medicine</h1> <p><i>An International Journal</i></p>	
VOLUME 63 NUMBER 6 JUNE 2014	
PEDIATRICS	THE PRACTICE OF EMERGENCY MEDICINE
657 Association of Traumatic Brain Injuries With Vomiting in Children With Blunt Head Trauma <i>PS Dayan, et al</i>	713 Reported Emergency Department Avoidance, Use, and Experiences of Transgender Persons in Ontario, Canada: Results From a Respondent-Driven Sampling Survey <i>GR Bauer, et al</i>
666 Clinical Utility of Screening Laboratory Tests in Pediatric Psychiatric Patients Presenting to the Emergency Department for Medical Clearance <i>JJ Donofrio, et al</i>	723 The Effect of Electronic Health Record Implementation on Community Emergency Department Operational Measures of Performance <i>MJ Ward, et al</i>
678 The FLUSH Study—Flush the Line and Ultrasound the Heart: Ultrasonographic Confirmation of Central Femoral Venous Line Placement <i>R Horowitz, et al</i>	731 The Expert Witness in Emergency Medicine (Concepts) <i>JL Stankus, DP Sklar</i>
684 Association of Unintentional Pediatric Exposures With Decriminalization of Marijuana in the United States <i>GS Wang, et al</i>	GENERAL MEDICINE
PAIN MANAGEMENT AND SEDATION	736 Incidence of Clinically Important Biphasic Reactions in Emergency Department Patients With Allergic Reactions or Anaphylaxis <i>BE Granata, et al</i>
692 Does Initial Hydromorphone Relieve Pain Best if Dosing Is Fixed or Weight Based? <i>S Xia, et al</i>	745 Trial to Examine Text Message–Based mHealth in Emergency Department Patients With Diabetes (TEXT-MED): A Randomized Controlled Trial <i>S Arora, et al</i>
699 Safety of Intranasal Fentanyl in the Out-of-Hospital Setting: A Prospective Observational Study <i>APH Karlens, et al</i>	NEWS AND PERSPECTIVE
704 A Non-Inferiority Randomized Controlled Trial Comparing the Clinical Effectiveness of Anesthesia Obtained by Application of a Novel Topical Anesthetic Putty With the Infiltration of Lidocaine for the Treatment of Lacerations in the Emergency Department <i>MG Jenkins, et al</i>	19A GSK Nixing Physician Dollars: Other Companies Not to Follow Suit <i>E Berger</i>
	21A In Sepsis, a Report of No Difference May Make a Lot of Difference <i>WB Millard</i>
www.annemergmed.com	Full Table of Contents starts on page 3A

This article appeared in a journal published by Elsevier. The attached copy is furnished to the author for internal non-commercial research and education use, including for instruction at the authors institution and sharing with colleagues.

Other uses, including reproduction and distribution, or selling or licensing copies, or posting to personal, institutional or third party websites are prohibited.

In most cases authors are permitted to post their version of the article (e.g. in Word or Tex form) to their personal website or institutional repository. Authors requiring further information regarding Elsevier's archiving and manuscript policies are encouraged to visit:

<http://www.elsevier.com/authorsrights>

The Expert Witness in Emergency Medicine

Jennifer L'Hommedieu Stankus, MD, JD*; David P. Sklar, MD

*Corresponding Author. E-mail: jenniferlhs@me.com.

0196-0644/\$-see front matter

Copyright © 2014 by the American College of Emergency Physicians.

<http://dx.doi.org/10.1016/j.annemergmed.2014.01.002>

A **podcast** for this article is available at www.annemergmed.com.

[Ann Emerg Med. 2014;63:731-735.]

INTRODUCTION

In medical liability, experts play a critical role in educating juries, judges, and attorneys about standard of care and whether failure to meet the standard caused harm to patients. Not only must experts be familiar with the medical practice and science in a particular case but also they must skillfully convey their opinion in both legal and medical terms, using reasoning that is not necessarily the same in law and medicine. Both the delivery of the opinion and the overall impression of the expert can and do significantly influence the outcome of malpractice cases.¹

Plaintiff and defense attorneys each retain such medical experts when presenting their cases, and these experts often differ in their opinions about essential features of negligence and injury, and whether the negligence caused the injury (proximate causation). Theoretically, experts are presented with the same facts and have access to the same medical literature, so the difference in approach and interpretation of these facts has raised concerns that an expert may be serving as an advocate, rather than as an impartial evaluator.² This has led some medical societies to sanction members for alleged misleading and false testimony under its bylaws for ethical violations.³

This article reviews the experience of the American College of Emergency Physicians (ACEP) in expert witness monitoring as an example of how one specialty organization has created and implemented expert witness review policies, and the ethical pitfalls that medical experts face. Furthermore, it analyzes the differences between legal and medical reasoning and language, and future directions for expert testimony and review.

Background

Standard of care in medical malpractice cases used to be governed by a "community standard," requiring experts to be from the same community as the defendant physician because standards of practice could differ significantly, depending on community values, training, and resources. This standard has gradually evolved to a national standard. However, the current application of a national standard still allows for differences in experience and practice type, recognizing that a physician from a rural practice with limited resources cannot practice in the same

way that a physician working in a tertiary care center would. However, the physician will be expected to meet the standard of a physician of like or similar training under similar circumstances, regardless of geographic location. State law determines who can testify as an expert and what their qualifications must be. For example, some states require that the expert be licensed in that state, whereas many do not. Less than half the states require that the expert be within the same specialty as the defending physician. Consequently, specialists from other areas of medicine, such as cardiology or neurology, may opine on the standard of care of an emergency physician, even though they may not have knowledge about the training and skills of emergency physicians, or the unique environment of the emergency department.⁴

Once statutory requirements are met, a judge then determines whether the testimony meets the legal test of scientific scrutiny under one of 2 standards. The oldest is the Frye standard, which requires the expert opinion to be based on scientific method or technique that is "generally accepted in the scientific community." The Frye case involved polygraph testing, which was new at the time and not yet accepted as valid by the entire scientific community. The court declined to admit the testimony because of this.⁵ The second is the Daubert standard, which was adopted in 1993 by the federal court system and is followed by many states. It is codified in Federal Rules of Evidence, Rule 702, and states that a qualified expert's testimony must meet the following tests: (1) it will help the trier of fact to understand the evidence or determine a fact in issue; (2) it is based on sufficient facts or data; (3) it is the product of reliable principles and methods; and (4) it is applied appropriately to the facts of the case.⁶ Under the Daubert standard, the judge is the gatekeeper for admission of expert testimony. Although these standards would appear to differ substantially, outcomes in admissibility of expert opinions under the 2 tests may be insignificant.⁷

Nineteen medical societies, including ACEP, have developed peer review processes for investigating complaints about expert witness testimony.⁸ This process is somewhat limited because only an ACEP member, chapter section, or the ACEP board can bring a complaint against another ACEP member. ACEP cannot discipline someone who is not a member of the College. Therefore, if an expert providing testimony is from another specialty or is not a member of ACEP, the College can take no action. If someone who is not a member of ACEP wishes to file

an ethical complaint against an ACEP member, any ACEP member can act as a sponsor, thus providing an avenue of redress in those cases. After a complaint is filed, it is reviewed by ACEP's executive director, general counsel, ACEP president, and the Ethics Committee chair to ensure that it meets the procedural requirements outlined by College bylaws. Once that hurdle is cleared, it goes to the Ethics Committee. At that point, a subcommittee thoroughly reviews the testimony and supporting documents, focusing on the expert's opinions relating to their interpretation of the facts, the standard of care, and conclusions on proximate causation. Ultimately, a determination is made about whether the testimony constitutes an ethical breach under ACEP policy. A recommendation is sent to the ACEP Board of Directors, the ultimate authority, which may or may not follow that recommendation. Findings of an ethical violation can result in a variety of penalties, from private censure to expulsion from the College.⁹

History of ACEP's Ethical Review of Expert Testimony

There are 2 pathways within ACEP by which to approach expert witness complaints. The first is a standard of care review panel, which examines specific statements and conclusions of standard of care, reviews the accuracy of those statements, and then develops an article for an ACEP publication, the purpose of which is to provide guidance and clarification in future similar cases. There is no mention of the case, facts of the case, or any identifying data with respect to parties involved. The second pathway is a formal ethics complaint that investigates testimony by a specific individual and seeks redress through disciplinary action. The latter is the focus of this article.

ACEP's Board of Directors originally developed expert witness guidelines for the specialty of emergency medicine in 1995 (revised June 2010), which contains a code of ethics, outlining procedures for addressing ethical violations. All ACEP members have, by obtaining or renewing their membership, agreed to be bound by the code of ethics and its policies through a reaffirmation statement that all members sign. This statement may be read to testifying experts, whether they are ACEP members or not, before depositions and court testimony, reminding them of their duty to testify ethically.¹⁰ The specific guidelines are addressed later in this article.

The first ethics case brought to ACEP under the current guidelines and processes occurred in 1998. Since then, there have been a total of 34 complaints. Of those, 14 failed to meet procedural requirements and were not forwarded for review, 7 were withdrawn, 6 were dismissed, and 7 resulted in censure. One review in 2012 resulted in the expulsion of the member from the college and a resultant stripping of fellowship status.

ACEP recognizes the importance of having experts on both sides of a legal dispute and takes a fair and balanced approach. Patients harmed by negligence enjoy the same right to excellent legal representation, including a medical expert, as does a defendant physician. Therefore, ACEP investigates allegations against both defense and plaintiff experts. There has been some concern that the review process was used primarily to discourage

expert testimony for plaintiffs. For example, a review of neurosurgical expert witness testimony by the American Association of Neurological Surgeons from 1992 to 2006 revealed that there were 59 complaints of inappropriate expert witness testimony. Of these, 57 involved the plaintiff's expert, and 40 (68%) resulted in sanctions ranging from censure to expulsion, suggesting a need for more equitable review of expert testimony.¹¹ Some societies have abandoned this type of review process entirely under threat of legal action for engaging in a process meant to discourage expert plaintiff testimony.¹²

Problems in Analysis by the Expert Witness

Expert testimony may take several forms, including affidavits, depositions, written opinions, and court testimony. In an attempt to limit frivolous lawsuits, many states require an affidavit of merit, attesting that the plaintiff's attorney has secured an expert opinion supporting the plaintiff's allegations, before the court will allow the case to move forward. The affidavit is supported by a written opinion from the physician expert. When writing this initial opinion, physician experts may lack access to information that becomes available during the discovery or trial phases of litigation and are thus developing an opinion based on the limited materials presented by the attorney for whom they work, which may be biased. As more facts emerge, experts may alter their original opinion. When an ethics review is conducted, letters of merit must be judged on the information that was available to the expert at the time.

Experts base their opinions on available information, their education, training and experience, and review of the medical literature. They piece together an understanding of what happened (making documentation in the record very important) and draw conclusions on standard of care and whether a failure to provide the standard of care caused harm to the patient. Previous studies have shown that knowledge of a bad outcome can affect judgment about the quality of care provided, but experts are expected to disregard outcomes in their evaluation of the case.^{13,14}

Determining standard of care can be quite challenging. Few cases exactly match written or generally accepted standards of care, and there may be more than 1 accepted standard. Therefore, many medical societies are publishing practice guidelines. Each case in medicine is unique, and although these guidelines ought to provide some protection if followed, they are not meant to be representative of an inflexible requirement that, if not followed, is prima facie evidence of a breach of standard of care. A recent case before the Supreme Court of Michigan affirmed that guidelines could not be substituted for the opinions of experts.¹⁵ However, guidelines will continue to inform expert opinion and may be useful in providing evidence about whether an expert is following the opinions that are generally accepted in the medical community.¹⁶ When multiple published standards differ, experts on opposing sides may pick the standard that supports their opinion, thus leaving it to the jury to decide which standard is correct. An example of this is the divergent standards put forth by ACEP versus the American Heart Association with respect to the use of tissue plasminogen activator in acute ischemic

stroke. The expert's conclusions about negligence are further complicated by limitations of the medical record, accuracy of witness statements.

Evaluating a claim of negligence often occurs in an environment of uncertainty surrounding facts, medical standards, and connection to an injury. When such uncertainty is present, yet a definitive conclusion of standard of care and proximate causation is made, the validity of the opinion must be questioned. The expert witness has an ethical obligation to express these uncertainties despite of the pressures of the legal system to do otherwise.¹⁷

Problems With Impartiality of the Expert Witnesses

Although courts require that experts be impartial educators to the judge and jury, they are hired by either the plaintiff or the defense to support that attorney's case. The lawyer's job is to argue his or her case, and this process begins when recruiting experts. Typical expert fees are lucrative, ranging from \$300 per hour to more than \$1,000 per hour, and some physicians have found themselves in a quandary because they assumed certain facts were true, reached a determination about negligence, for which they have billed a significant amount of money, but then realized that the case was not exactly as presented, and their opinion changed. However, they already signed their name to a written opinion or gave a deposition and, despite their doubts, now feel locked into that position. Unfortunately, the legal system does not provide an easy avenue for experts to modify their initial opinions. Some physician experts may also be influenced by the desire to please the employing attorney so that more work will be forthcoming. The expert may not even be conscious of these factors that can influence thinking and opinions.

Difference Between Legal and Medical Thinking

Another issue, rarely discussed, is the difference between how the legal system and the medical system determine standard of care. Medical liability falls under the tort law. A tort (from Latin, meaning "wrong") is some sort of injury experienced by one person and caused by another. The person committing the tort is liable to the other for monetary damages to compensate them for the harm suffered. An example is a slip-and-fall on a wet floor, causing a broken hip. In the legal system, truth of a claim is derived through the presentation of both sides of an argument. Here, the plaintiff would emphasize all the information supporting the view that the slip was caused by the wet floor and that the floor was wet because of negligence on the part of the premises owner, who is thus responsible for damages relating to a broken hip. The defense would take the opposite view, perhaps suggesting that the plaintiff was running, caused the spill, or some other reason, thereby removing blame from the storeowner. A jury would hear both arguments and decide which was true. Medical liability cases use similar logic but require an expert to provide an opinion about the standard of care (ie, negligence). However, medical malpractice still follows a system that presents

2 different versions of the truth for a jury to consider, and experts may perceive their role to support this approach through emphasizing those facts and opinions that best support either the plaintiff or defense.

On the other hand, medicine follows the scientific method that assumes only 1 truth, which is derived by careful study, experimentation, testing of theories, and gradual approximation of that truth through modeling and adjustment. Evidence is developed through studies that initially assume the null hypothesis that there is no difference between various treatments or outcomes. This is proven or disproven with valid methodology and statistical analysis. Under this process, outcomes are repeatable to further demonstrate validity. A scientific opinion should be evidence based and include all evidence, regardless of whether it supports the plaintiff or defense.

When experts provide differing opinions about the standard of care, are they speaking like lawyers or physicians? The ethical standards of medical societies judge "false or misleading" testimony according to a model using scientific thinking, but the scientific standard is constantly shifting and is inherently uncertain. At what point is a new procedure the standard of care? At what level of probability is an incorrect diagnosis bad luck versus negligence? Thus, when ethics review panels examine testimony, they are usually comparing the testimony with their own understanding of the "truth." When the testimony varies substantially from the truth as perceived by the panel, it will likely be considered egregious testimony and a violation of the ethics standard.

The problem with expert testimony is that it attempts to force the scientific method into legal thinking. Science and medicine recognize the ambiguity and uncertainty of the physical world and the imprecise tools available to measure it. Legal thinking recognizes the possibility of multiple truths that are resolved by analysis of the arguments by a judge or jury, in which the most convincing argument is selected as true.¹⁸ If one of 2 alternatives cannot be proven, the other is often chosen. This is a very different approach from the scientific method. Legal practice discourages ambiguity or uncertainty in the argument because this weakens the case.

Application of the ACEP Standard

ACEP policy states, "An expert witness clearly has an ethical responsibility to be objective, truthful, and impartial when evaluating a case on the basis of generally accepted standards of practice." ACEP uses a standard of "false, misleading or without medical foundation" when assessing whether testimony is unethical. ACEP policy further states that the expert witness should review the medical facts in a "thorough, fair, and objective manner and should not exclude any relevant information to create a view favoring either the plaintiff or the defendant."¹⁹

Review cannot commence without a full understanding of the medical facts and the pertinent literature as appropriate for the case, and must be made on a case-by-case basis. Just as the opinions of experts will differ when they look at the same facts and literature, so too will the opinions of those responsible for

determining whether testimony violates ACEP policy. Where there is lack of clarity about facts or in situations of disagreement among members, review boards will usually err on the side of interpretation favoring the physician against whom the complaint is filed. This tendency may explain why so few complaints have resulted in sanctions.

If an opinion or fact on which a case is decided turns out to be false, but a reasonable person might have anticipated it would have been true, is that a violation? The ethical review considers what a reasonable physician expert would think and do according to the facts. However, there is no clear demarcation about the extent of how false or misleading testimony must be to constitute an ethical violation. The multiple levels of review and appeal in the ethics process allow careful consideration of these questions. In general, for sanctions to be brought, there must be strong agreement that testimony clearly violated the standard. Intent on the part of the expert is not required.

Review of Medical Testimony as an Ethics Violation

One motivating factor for medical societies' use of ethics review of egregious testimony is a perception that "professional experts" travel the country giving unfounded medical opinions for the sole purpose of making money. There have been examples of physicians who no longer practice and derive significant income from legal testimony, although some states, such as Maryland, have enacted rules requiring that experts devote no more than a particular percentage of their professional time to providing expert witness testimony.²⁰ Through the unsubstantiated opinions of some professional medical experts, otherwise meritless cases go forward, which costs time and money and takes an emotional toll on all involved.²¹ If these professional experts are members of ACEP, they may be appropriate subjects for ethical review. In addition to ethical review, well-prepared attorneys can combat and discredit these professional witnesses by using their own well-qualified experts, who base their opinions on medical literature and appropriate current clinical experience. Still, experienced professional experts can provide a substantial challenge for other experts to overcome when the facts are unclear and the outcome is bad because they tend to be skilled in their abilities to persuade judges and juries.

Detecting and censuring unethical testimony by the well-published, national expert who slants facts and medical opinions beyond what an impartial expert would, intentionally or not, presents a great challenge. Because of his or her name or reputation, the opposing side may be intimidated into settlement or dropping the case, thus precluding review. Such experts are usually so skilled and subtle in their use of language that an analysis of their opinion may not rise to the ethical standards set forth by ACEP guidelines. Perhaps their thinking, although couched in scientific language, is actually more like advocacy, in which the motivating force is supporting a given position rather than an impartial discovery of truth.

Also difficult is the occasional inexperienced expert who becomes ensnared in hyperbolic misstatement. Such experts may not be familiar with legal thought processes or the presentation of

a case by an attorney. Should the same sanctions be applied to the first-time offender who has made a judgment error? The purpose of the policy is to prevent unethical testimony, to set forth very clear guidelines, and to apply sanctions befitting the case and the individual, considering all facts and circumstances. This is not a one-size-fits-all paradigm. Yet at the same time, the rules need to be applied fairly to all members of the College. In becoming an ACEP member, one agrees to abide by its policies and be subject to its disciplinary process if one fails to do so. The lesson here is that if a member of ACEP engages in this type of work, he or she needs to be very careful, thorough, objective, and fair in review of cases or face the consequences of peer review, which could include expulsion from the College or other censorship. One needs to know the legal landscape, as well as the ethical principles, before participating as an expert in a malpractice case.

Future Directions in the Medicolegal System

This article discusses the role of the expert in medical malpractice litigation and the oversight processes by which professional medical societies monitor the testimony of their members. The goal of such processes is to encourage honest, well-researched, and appropriate expert testimony that reflects current medical standards. Physicians serving as experts must be aware of the potential pitfalls inherent in this work, as well as the potential consequences of running afoul of ethical rules. It is certainly within the scope of an emergency physician's practice to serve as an expert witness, assuming that he or she has expertise with the issue at hand, and experts are needed for both injured patients and defendant physicians in malpractice cases.

How can this process be made more amenable to scientific thinking, and how can unethical behavior be reduced or eliminated? One answer may be health courts that handle medical malpractice cases. These courts would use specially trained judges who are familiar with some of the subtleties of medical evidence, terminology, and practice. The idea of establishing health courts is gaining bipartisan political support.^{22,23} Furthermore, this type of compensation system has been successful in New Zealand and Scandinavia,²⁴ and a modified version is currently being used in Florida and Virginia for birth-related injuries.^{25,26} The advantage with respect to the expert witness is that it would theoretically promote objective expert opinions by taking the bias out of the case review because the reviewer is working for the court, not one side or the other. Some courts already use a panel of experts for initial case review. Such panels have no connection with either plaintiff or defendant. Like a health court would, this type of system also allows more independent and less biased judgment and can reduce frivolous claims and expedite cases with merit by encouraging settlement.

Another way to reduce unethical behavior from professional experts is by expanding the number of states that have specific requirements to qualify as an expert, such as requiring the expert to be in active clinical practice a certain percentage of professional time, be of the same specialty as the defendant physician,

have earnings from expert witness work be limited to a certain percentage, and be from the same state as the defendant physician. These types of laws increase the probability that experts will be up to date on clinical practices, will know what the current standards are, and will be held accountable in their community for their legal work, be it for the plaintiff or defense.

Physicians and medical societies can and should actively develop more evidence-based guidelines that can serve as the foundation for expert opinion about standard of care. As previously discussed, these are not punitive if not followed, necessarily, but they do provide guidance and protection if they are. One caveat is that if the expert physician is not of the same specialty as the defendant, there may be variation in these guidelines, which can influence the outcome of the case unfairly.

The ideal outcome of innovations in the way medical malpractice cases are conducted would be to encourage changes in state law about expert qualifications, and development of clinical guidelines that would provide protection from litigation when followed, leading to the gradual disappearance of the need for ethical review by professional organizations. The goal is to have an efficient, unbiased, fair process for all participants in the medical malpractice legal process, facilitated by the ethical and unbiased medical expert who brings high-quality medical reasoning to the courtroom.

Supervising editor: Donald M. Yealy, MD

Author affiliations: From Group Health Physicians, Seattle, WA (Stankus); and the Department of Emergency Medicine, University of New Mexico, Albuquerque, NM (Sklar).

Funding and support: By *Annals* policy, all authors are required to disclose any and all commercial, financial, and other relationships in any way related to the subject of this article as per ICMJE conflict of interest guidelines (see www.icmje.org). The authors have stated that no such relationships exist.

Publication dates: Received for publication September 6, 2013. Revisions received December 15, 2013, and January 2, 2014. Accepted for publication January 6, 2014. Available online January 31, 2014.

REFERENCES

- Kesselheim AS, Studdert DM. Role of professional organizations in regulating physician expert witness testimony. *JAMA*. 2007;298:2907-2909.
- Gomez JC. Silencing the hired guns. *J Leg Med*. 2005;26:385-399.
- American Academy of Neurological Surgeons. Rules for neurosurgical medical/legal expert opinion services. Available at: <http://www.aans.org/en/About%20AANS/~media/A5BC91F9297D4AF98D31ABD48C42C076.ashx>. Accessed January 12, 2014.
- Stankus JL. How is admissibility of expert witness testimony decided? *ACEP News*. 2008;27. Available at: <http://www.acep.org/Clinical-Practice-Management/How-Is-Admissibility-of-Expert-Witness-Testimony-Decided/>. Accessed January 12, 2014.
- Frye v. United States, 293 F. 1013 (DC Cir. 1923).
- Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 593 (1993).
- Cheng EK, Yoon AH. Does Frye or Daubert matter? a study of scientific admissibility standards. *Virginia Law Rev*. 2005;91:471.
- Bal BS. The expert witness in medical malpractice litigation. *Clin Orthop Relat Res*. 2009;467:383-391.
- American College of Emergency Physicians. Procedures for addressing charges of ethical violations and other misconduct. Available at: <http://www.acep.org/content.aspx?id=33698>. Accessed January 12, 2014.
- Marco CA, Moskop JC. The EP in the courtroom: expert witness testimony. *ACEP News*. 2010.
- Kesselheim AS, Studdert DM. Professional oversight of physician expert witnesses: an analysis of complaints to the Professional Conduct Committee of the American Association of Neurological Surgeons, 1992-2006. *Ann Surg*. 2009;249:168-172.
- Walker JM. Fighting a muzzle. *Miami Daily Business Review*. August 8, 2005:1.
- Gupta M, Schrager DL, Tabas JA. The presence of outcome bias in emergency physician retrospective judgments of the quality of care. *Ann Emerg Med*. 2011;57:323-328.
- Posner KL, Caplan RA, Cheney FW. Variation in expert opinion in medical malpractice review. *Anesthesiology*. 1996;85:1049-1054.
- Jilek v. Stockson, 289 Mich.App 291; 796 NW2d 267 (2010).
- Jilek v. Stockson, 289 Mich.App 291; 796 NW2d 267 (2010).
- ACEP expert witness guidelines for the specialty of emergency medicine. Revised June 2010. Available at: <http://www.acep.org/Clinical-Practice-Management/Expert-Witness-Guidelines-for-the-Specialty-of-Emergency-Medicine/>. Accessed January 12, 2014.
- Foucar E. Pathology expert witness testimony and pathology practice: a tale of 2 standards. *Arch Pathol Lab Med*. 2005;129.
- ACEP Board of Directors. ACEP procedure for review of testimony regarding standard of care in emergency medicine. Available at: <http://www.acep.org/content.aspx?id=30090>. Accessed January 12, 2014.
- Gallegos A. Expert Witnesses on Trial. *Amednews.com*. Posted Aug. 1, 2011. Available at: <http://www.ama-assn.org/amednews/2011/08/01/prsa0801.htm>. Accessed January 12, 2014.
- Studdert DM, Mello MM, Gawande AA, et al. Claims, errors, and compensations payments in medical malpractice litigation. *N Engl J Med*. 2006;354:2024-2033.
- Alonso-Zaldivar R. Obama starts drive for medical malpractice reforms. Associated Press. February 15, 2011. Available at: <http://www.huffingtonpost.com/huff-wires/20110215/us-medical-malpractice/>. Accessed January 12, 2014.
- Center for Health Policy. Health courts: the next frontier in medical liability reform? Policy Snapshot, October 2013. Available at: <http://www.chanet.org/TheCenterForHealthAffairs/MediaCenter/Publications/PolicySnapshots/~media/CHA/Files/Publication%20PDFs/Policy%20Snapshots/Health-Courts.ashx>. Accessed January 12, 2014.
- Martin K. Can health courts cure the malpractice system? *Physicians Practice J*. 2010;20.
- Virginia Birth-Related Neurologic Injury Compensation Program. Available at: <http://www.vabirthinjury.com/why-the-birth-injury-program/>. Accessed January 12, 2014.
- NICA—Florida's innovative alternative to costly litigation. Available at: <https://www.nica.com/what-is-nica.html>. Accessed January 12, 2014.