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Under the Knife: When Does Surgical Bleeding Breach the Standard of Care?

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I. Introduction

336. A ten-year-old boy underwent orthopedic surgery, by two surgeons, on his thigh bone to correct a curvature that developed after he was hit by a car five years prior.[2] Neither of the two orthopedic surgeons had done that type of operation before. During surgery, one of the surgeons operating an electric saw to cut the bone severed the popliteal artery, which is the main artery to the leg. The other surgeon held clamps that were intended to protect the artery while the saw was in operation. Despite a vascular surgeon's repeated attempts to repair the artery throughout the night, blood flow could not be restored to the leg.[3] The artery was so badly destroyed that the vascular surgeon

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2 Pat Moore, Martin Jury Asked for $18 Million for Boy's Amputated Leg, THE PALM BEACH POST, Feb. 26, 1993, at 152.

3 *Haas v. Zaccaria*, 659 So.2d 1130, 1131 (Fla. 4th DCA 1995).

did not feel an amputation below the knee would heal. Michael Zaccaria ultimately required an amputation of the leg above the knee, significantly reducing his chances of ever having any function from the limb or ability to use a limb prosthesis.[4] He and his mother brought a medical malpractice action against the two orthopedic surgeons who performed the surgery. The jury returned a verdict finding that the main orthopedic surgeon 70% responsible and the assistant orthopedic surgeon 30% responsible, awarding substantial damages to the child and his mother.[5]

337. All invasive medical procedures carry some degree of risk of bleeding. Surgery-related death is the third leading cause of death worldwide.[6] In turn, major bleeding is one of the most common causes of death due to surgery.[7] Bleeding during surgery ranges from trivial to bleeding to death on the operating room table and is one of the most common serious complications of surgery. General rates of occurrence of major bleeding are reported in the medical literature for nearly all major surgical procedures. One review of 2,298,757 patients who underwent noncardiac surgery found that amongst those patients who experienced surgical bleeding, approximately one of every three patients died during the hospitalization or were readmitted to the hospital within six months.[8]

338. Bleeding can result in serious damage to other organs due to inadequate circulation, which leads to inadequate delivery of oxygen. When bleeding leads to inadequate oxygen delivery to the brain, this can cause stroke.[9] Bleeding can similarly lead to kidney failure requiring dialysis.[10]

339. Surgeons and the medical literature refer to these complications as major bleeding during surgery. Numerous searches of case law for major or massive bleeding and related search terms return few results. Inadvertent perforation of blood vessels is the far more common designation in case law. This is a valid designation because the underlying cause of massive bleeding during or immediately after surgery, is most often the unintentional perforation of blood vessels. Unlike other medical malpractice cases dealing with errors of omission, negligent perforation of a blood vessel involves an affirmative action on the part of the surgeon. Most often whether the inadvertent blood

4 Einar Hagberg, Örjan K. Berlin & Per Renström, *Function after through-knee compared with below-knee and above-knee amputation*, 16 PROSTHETICS & ORTHOTICS INT'L 168, 171 (1992).

5 *Haas v. Zaccaria*, 659 So.2d 1130, 1131 (Fla. 4th DCA 1995).

6 Karsten Bartels et al., *Perioperative Organ Injury*, 119 ANESTHESIOLOGY 1474, 1474–89 (2013).

7 Dmitri Nepogodiev et al., *Global Burden of Postoperative Death*, 393 LANCET 401 (2019).

8 P.J. Devereaux & Daniel Sessler, *Cardiac Complications in Patients Undergoing Major Noncardiac Surgery*, 373 N. ENGL. J. MED. 2258, 2259 (2015).

9 *Horst v. Shearburn*, 233 A.2d 236, 237 (Pa. 1967).

10 *Acute Kidney Injury (AKI)*, NATIONAL KIDNEY FOUNDATION (February 2024).

vessel perforation constituted a breach of the standard of care is at issue, because a surgeon's duty of care to the patient on whom he or she performed surgery is not usually in controversy, and causation and harm are easier to establish.

II. The Medical Negligence Statute

340. On May 30, 1985, the Florida Legislature passed the Comprehensive Medical Malpractice Reform Act of 1985, and the Florida Medical Negligence Statute, Florida Statute § 766.102,[11] was promulgated.[12] The Statute states that the existence alone of a medical injury does not create a presumption of negligence, and the claimant has the burden of proving that the injury was proximately caused by a breach of the prevailing professional standard of care.[13] It defines the standard of care as: "that level of care, skill, and treatment which, in light of all relevant surrounding circumstances, is recognized as acceptable and appropriate by reasonably prudent similar health care providers."[14] To determine the standard of care, courts and juries must generally weigh expert testimony in a highly sub-specialized area of knowledge and training.

341. Most medical malpractice claims are either settled out of court or the plaintiff withdraws.[15]

342. However, insurance carriers still rely on expert witnesses selected by them to determine whether the standard of care was met by their insured surgeon, using this determination in deciding whether to offer a settlement.

343. A rational approach to determining whether a surgeon met the standard of care in a particular surgery might include an examination of the other similar operations the surgeon has performed to determine whether there is a systematic pattern of errors in technique, knowledge, or judgment. In other words, an examination of the surgeon's competence.[16] However, a review of a surgeon's cases beyond the instant case may violate the prohibition of propensity evidence by the Federal Rules of Evidence and Florida Statutes: the use of other acts to show that on a particular occasion the person acted in accordance with their character, unless an exception applies.[17] The underlying issue

11 Fla. Stat. § 766.102 (2023).

12 F. T. Hawkes, *The Second Reformation: Florida's Medical Malpractice Law*, 13 FLA. STATE U. L. REV. 747 (1985).

13 Fla. Stat. § 766.102(3)(b) (2023).

14 Fla. Stat. § 766.102(1) (2023).

15 Ralph Peeples et al., *The Process of Managing Medical Malpractice Cases: The Role of Standard of Care*, 37 WAKE FOREST L. REV. 877, 887 (2002).

16 Fla. Stat. § 395.0193 (2023).

17 Fed. R. Evid. 404(b)(1); Fla. Stat. § 90.404(1) (2023).

of the surgeon's overall competence is thus ideally addressed by the healthcare system overseeing the surgeon, rather than through a single medical malpractice action.[18]

A. The Prevailing Professional Standard of Care in Surgery

344. The Florida statutory language of the standard of care being that level "recognized as acceptable and appropriate by reasonably prudent similar health care providers" references acceptability by reasonable similar specialists.[19] This is an objective, reasonable physician standard given the particular facts: "in light of all surrounding circumstances." This standard of care will necessarily involve the continuum of surgical skill and knowledge across all surgeons, and a threshold must be determined, below which the standard of care is not met.

345. If this threshold was clearly demarcated, then there would be potential consequences for surgeons, depending on where this threshold was set. On the one hand, setting a high threshold could encourage surgeons to meet a high standard of care, elevating the overall level of care provided to patients across all surgical procedures. On the other hand, if the threshold is set too high, this could result in discouragement of medical students from choosing residency training and a career in a surgical specialty, and discouragement of surgeons already practicing from continuing to practice.

346. The prevailing professional standard of care would ideally be established such that a positive effect on outcomes would result. However, an observational study by the American College of Surgeons found that higher risk malpractice environments were not associated with a lower likelihood of surgical complications.[20]

B. Battle of the Medical Expert Witnesses

347. Stringent criteria for expert witnesses become critical because a medical malpractice case necessarily becomes a battle of the expert witnesses.[21] The relevant aspects of the case are often so highly technical that the layperson cannot determine for himself or herself whether the standard of care has been breached. Instead, the judge or juror must rely upon the opinions of expert witnesses. The outcome of the case may then hinge purely upon which expert witness appears more believable to the judge or jury, rather than the truth of the matters they assert.

18 Fla. Stat. § 766.110 (2023) (Hospitals have a duty to assure competence of their medical staff through careful selection and review, and are liable for a failure to exercise due care).

19 Fla. Stat. § 766.102(1) (2023).

20 Christina A. Minami et al., *Association Between State Medical Malpractice Environment and Postoperative Outcomes in the United States*, 223 J. AM. COLL. SURGEONS 310, 318 (March 2017).

21 *Olesky, Estate of Olesky v. Stapleton*, 123 So.3d 592, 595 (Fla. 2d DCA 2013).

348. Further adding to the layperson's difficulty ascertaining the truth of the matters asserted, medical experts are afforded broad exceptions by the Federal Rules of Evidence and Florida Statutes, which make it extremely difficult to recognize or hold them accountable for making inaccurate or untruthful statements. Medical experts are afforded a hearsay exception under the Federal Rules of Evidence if a statement is made for — and is reasonably pertinent to — a medical diagnosis or treatment.[22] Further, medical experts are permitted to base an opinion on inadmissible evidence if, "experts in the particular field would reasonably rely on those kinds of facts or data in forming an opinion on the subject."[23] Under the Florida Rules, medical experts are permitted to testify in the form of an opinion if they meet the requirements of Florida Statutes 90.702[24] which mirrors Federal Rule of Evidence Rule 702.[25] Both of these rules state that if scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or determine a factual issue, the expert may testify in the form of an opinion if: (1) the testimony is based on sufficient facts or data; (2) the testimony is the product of reliable principles and methods; and (3) the expert has reliably applied the principles and methods to the facts of the case. Whether the expert testimony meets these criteria is a highly technical and specialized determination, and the framework set forth in Part III of this Article will help both the trier of fact and law to evaluate whether these criteria are satisfied.[26]

349. Finally, both the Federal Rules of Evidence and Florida Statutes enable the expert medical witness to obfuscate the trier of fact and law by permitting the expert to testify in terms of opinion and inference and give reasons without even disclosing the underlying facts or data at all, unless the court demands it, or disclosure is sought on cross-examination.[27]

350. For lay jurors and judges who have no general knowledge of the field to inform their judgments about which expert's version seems correct, assessing the credibility of conflicting expert witness testimony may be extremely difficult.[28] Accordingly, it has been suggested that judges who handle medical malpractice cases should have substantial experience or expertise in cases involving medical issues.

22 Fed. R. Evid. 803(4)(A).

23 Fed. R. Evid. 703.

24 Fla. Stat. § 90.702 (2023).

25 Fed. R. Evid. 702.

26 Fla. Stat. § 90.702 (2023).

27 Fed. R. Evid. 705; Fla. Stat. § 90.705 (2023).

28 Jody Weisberg Menon, *Adversarial Medical and Scientific Testimony and Lay Jurors: A Proposal for Medical Malpractice Reform*, 21 Am. J. L. & Med. 281, 285 (1995).

C. A Qualified Florida Same Specialty Requirement

351. The Florida Medical Negligence Statute requires that an expert witness against a physician specialize in the same specialty as the defendant and have devoted professional time during the three years immediately preceding the cause of action to the active clinical practice, instruction of students, or clinical research program in this specialty.[29] However, the Florida Third District Court of Appeal held that under certain circumstances, an expert witness need not even have any experience performing the procedure in question.[30] It qualified, however, that the fact that the expert witness had not performed such an operation himself could have a bearing on the weight and credibility of his testimony. For novel or extremely rare procedures, there may not be other available expert witnesses.[31] For more common procedures, however, an expert witness with experience should be attainable, and the testimony of an expert with little experience should carry minimal weight as to what is "acceptable and appropriate," since he or she cannot be considered a "reasonably prudent similar health care provider."[32]

352. Even if an expert witness surgeon does not perform the type of surgery in question, he or she may recall observing it during residency training and read current literature about it. However, for more complex or high-risk procedures, if the expert witness does not regularly perform the type of surgery in question, he or she is less likely to appreciate the level of difficulty and skill required to perform the operation. Nor will the expert appreciate management of the inadvertent perforation when faced with ongoing massive bleeding with the possibility of the patient bleeding to death on the operating room table. Moreover, cases so difficult that vessel perforation and massive bleeding are more likely to occur are rare, and those surgeons that do very few of the operation in question are less likely to have encountered these cases.[33] However, the fact that a surgeon expert witness has done few or none of the specific type of operation at bar is difficult to ascertain as data on types and numbers of a given type of operation that a surgeon has performed are not normally provided by any hospital.

353. Given the high degree of specialization in surgery, finding an expert witness in a given area can be difficult, and lawyers and parties often go to the same experts directly or through an expert witness broker, even if the case does not align perfectly with the specialization of the expert. Although a surgeon may have completed a residency training program and become board certified in the specialty, the surgeon may never practice a major area within that specialty, even though they may continue to maintain board certification that includes that area. For instance, thoracic surgery includes

29 Fla. Stat. § 766.102(5)(a) (2023).

30 *Hawkins v. Schofman*, 204 So.2d 336, 339 (Fla. 3d DCA 1967).

31 *Hawkins v. Schofman*, 46 A.L.R. 3d 270 (1967).

32 Fla. Stat. § 766.102(1) (2023).

33 Bernard Park et al., *Video-assisted thoracoscopic surgery (VATS) lobectomy: Catastrophic intraoperative complications*, 142 J. THORACIC & CARDIOVASC. SURGERY 1412, 1417 (2011).

cardiac surgery and noncardiac thoracic surgery, which consists mainly of lung surgery, esophageal surgery, and surgery of tumors of the chest. Although a noncardiac thoracic surgeon continues to be board certified in this broader specialty, he or she may never perform cardiac surgery during independent practice. While such surgeons have knowledge of the aspect of thoracic surgery they do not practice, such knowledge is equivalent only to that of a surgical trainee, and far from that of a true expert.

D. Standard of Care for Inadvertent Blood Vessel Perforation During Surgery

354. Florida case law for medical malpractice involving inadvertent injuries to blood vessels during surgery does not clearly define a standard of care. Furthermore, there is a lack of consistent legal doctrine governing the determination of the standard of care regarding inadvertent perforation of blood vessels across these cases. Because this standard of care is poorly defined, patients, their loved ones, and attorneys do not know under what circumstances an inadvertent injury to a blood vessel might constitute a prima facie cause of action for medical malpractice. Moreover, surgeons do not know the standard to which they are held when performing surgeries in which inadvertent blood vessel injury may occur, and what steps they should take to avoid falling short of the standard of care should they cause such injury.

355. This Article will not provide an opinion as to where the bar for the prevailing professional medical standard of care should be set from a policy standpoint, nor will it advocate for a complete revamping of the adversarial process for medical malpractice lawsuits. Instead, it will set forth and explain relevant principles and factors to be considered such that advocates, judges, and finders of fact will be better able to evaluate for themselves the standard of care and expert witness testimony in cases of inadvertent blood vessel perforation. And it will explain how medical specialty certification boards can ensure that expert witnesses in these cases truly possess requisite expertise and objectivity. The objective of this Article is thus to aid courts in establishing a more consistent prevailing professional standard of care that would then have a positive impact on surgical outcomes.

III. Whether the Standard of Care Was Met in Cases of Inadvertent Blood Vessel Perforation During Surgery

356. While the standard of care is determined "in light of all surrounding circumstances,"[34] for each individual medical malpractice case, those cases involving inadvertent injury to blood vessels have common factual elements and considerations that must be examined in order to determine the standard of care. Part III of this Article provides a framework for evaluating medical expert testimony regarding the standard of care, based not purely on the credibility of the medical expert, but the framework will provide a basis of understanding upon which the finder of fact and finder of law can evaluate the actual truth of the matters asserted by the expert. Even when attempting to explain technical concepts to lay people, physicians often use technical jargon unintelligible to judges and jurors.[35] Analogies and metaphors intended to clarify by relating these concepts to familiar and everyday situations also often fail because situations that seem thus to the physician are completely foreign to the lay person.[36] This framework provides a system for the analysis of medical malpractice cases involving inadvertent blood vessel injury that avoids technical jargon and incomprehensible analogies and metaphors. Beyond considerations covered by surgeon expert witnesses, the framework will allow lawyers, judges, and jurors to raise and examine for themselves factors the expert witnesses fail to consider that may be critical to determining whether a breach of the standard of care occurred. The focus of this framework is on inadvertent injury to blood vessels during surgery; however, many of the factors discussed apply far more broadly across surgery, and even all of medicine.

357. The intent of this framework is to enumerate the factors most relevant to determining whether a surgeon who inadvertently perforated a blood vessel during surgery with resultant harm to the patient breached the standard of care. Analysis of each factor will include considerations for each factor that weigh toward or against the surgeon having breached the standard of care.

A. Decision to Perform Surgery and Choice of Operation

358. If the surgeon should not have performed the specific surgery in question, then the surgeon may have violated the standard of care by even performing the operation during which the inadvertent blood vessel injury occurred. If the decision to perform

34 Fla. Stat. § 766.102(1) (2023).

35 *Austin v. Am. Ass'n of Neurological Surgeons*, 253 F.3d 967, 973 (7th Cir. 2001).

36 David Casarett et al., *Can Metaphors and Analogies Improve Communication with Seriously Ill Patients?*, 13 J. Palliative Medicine, 255, 259 (2010).

the surgery was a clear violation of the standard of care, the inadvertent blood vessel injury is also thus more likely to have constituted a breach of the standard of care, because the operation and each of its steps should never have occurred. In *Ruiz v. Tenet Hialeah Healthsystem*, the patient presented with a tumor growing on the back of her head and invading her skull.[37] The Supreme Court of Florida held that the anesthesiologist who failed to review or report an abnormal lab result which hinted the tumor was one that should have been treated with radiation or chemotherapy rather than with removal by surgery could have proximately caused the patient's bleeding to death during attempted surgical removal of the tumor. Though the plaintiff sued all physicians involved in the patient's care, whether the skill and decision making of the neurosurgeon who performed the surgery met the standard of care was not ultimately at issue. Instead, it was an anesthesiologist's failure to recognize and report that the surgery itself was not indicated that the Florida Supreme Court deemed a possible breach of the standard of care.

359. However, the decision to perform surgery, and which specific surgeries are indicated for a given patient, can be extremely difficult to determine. There are a wide range of indications and contraindications to surgery, and each patient has a specific set of factors which will influence whether surgery is indicated, and which specific surgery should be performed. Additionally, reasonable, prudent, similarly trained surgeons may disagree about whether a particular patient should be offered surgery.

B. Technical Difficulty of the Operation

360. The complexity of the surgical procedure itself is a factor that must be considered when determining the prevailing professional standard of care. An extremely complex surgery will create differing considerations from more simple procedures. However, the elite surgeons trained and licensed to perform these complex procedures must still be held to a high professional standard of care with regard to prevention and management of inadvertent blood vessel injury during surgery.

361. Patient factors increasing the difficulty of the operation include prior surgeries in the same operative field, which can create scarring and adherence of the blood vessel to surrounding structures. This in turn makes dissection of structures far more likely to result in inadvertent injury to these blood vessels. Prior chemotherapy or radiation therapy can also create tremendous adherence of structures to blood vessels.[38] If the patient was taking a blood thinning medication prior to surgery, this may make a surgery significantly more technically difficult if the effect of the blood thinner was still present during surgery, leading to easy bleeding.

37 *Ruiz v. Tenet Hialeah Healthsystem, Inc.*, 260 So.3d 977, 981 (Fla. 2018).

38 Irina Tokareva & Patrick Romano, *Failure to Rescue*, AGENCY FOR HEALTHCARE RESEARCH & QUALITY (January 29, 2025).

362. Blood vessels can become hardened and narrowed due to cholesterol build up, and this process can be so extreme that the blood vessels become filled with calcium and as hard as rock. When this occurs extensively in the aorta, the aorta is called a porcelain aorta because it is extremely hard and fragile.[39] A porcelain aorta is both more difficult to dissect and perform procedures on, and inadvertent injuries to such an aorta are dramatically more difficult to repair because needles used to perform suture repair may not be capable of penetrating the rock-like wall of the aorta, and its fragility makes rupture during manipulation more likely. Bleeding from inadvertent injury to the porcelain aorta may thus be difficult or impossible to control.

363. Patient anatomy and body habitus may be a significant factor in determining the standard of care. Visualization and the performance of a surgery can be dramatically more difficult due an operative field that is extremely deep and narrow. Visualization is more difficult due to the inability to obtain adequate lighting of distant structures as well as the difficulty preventing objects or structures from obstructing the view of distant structures. The very instruments or hands used to retract obstructions themselves cause some degree of obstruction of the surgeon's line of sight. Even when visualization is not compromised, maneuvering and using instruments properly in deep and narrow spaces can be extremely difficult.

364. The specific blood vessel that was inadvertently injured is relevant to the standard of care because different blood vessels have different characteristics and anatomy, and the skill required to recognize and avoid injury to these vessels during a surgery can vary widely. Determining the difficulty level of a given operation "in light of all relevant surrounding circumstances" is best done by a surgeon who has undergone similar training and regularly performs that particular operation.[40] However, the both the trier of fact and trier of law can use the aforementioned factors to form an independent assessment of the difficulty level of the operation at bar. Rates of major bleeding in the medical literature for those cases done under similar circumstances are most relevant to making this determination of difficulty level because they reflect how often inadvertent blood vessel injury occurs. The reported rates of reoperation due to surgical bleeding caused by an initial operation are also sometimes reported for specific major operations.[41]

C. Timely Recognition of Major Bleeding During Surgery

365. Timely recognition of, and appropriate response to, inadvertent blood vessel injury is a factor to be weighed in determining the standard of care in these cases. It is

39 Shaina Sedighim et al., *A Systematic Review of Short-Term Outcomes of Minimally Invasive Thoracoscopic Surgery for Lung Cancer after Neoadjuvant Systemic Therapy*, 15 CANCERS 3908 (2023).

40 Anan A. Abu Rmilah et al., *Porcelain Aorta*, STATPEARLS (Feburary 2024) (The aorta arises from the heart and is the largest artery in the human body).

41 Fla. Stat. § 766.102(1) (2023).

not uncommon for inadvertent blood vessel injuries to go unnoticed during an initial operation, only to be recognized when serious bleeding is evidenced after surgery.[42] However, when inadvertent blood vessel injury is recognized during surgery, measures to staunch the bleeding and repair the blood vessels can be more easily performed, and the amount of bleeding can be kept to a minimum.

366. Prompt recognition of the injury may difficult due to the location and nature of the injury, as well as the patient's anatomy and other factors affecting visualization of the specific area of bleeding, such as those discussed in Part III.C. of this Article. Immediate recognition of inadvertent blood vessel injury may weigh in favor of the standard of care having been met, particularly if such recognition was difficult due to the aforementioned or other factors. Conversely, if the surgeon does not identify, or even look for, inadvertent vessel injury in the face of clear evidence of bleeding, such as severely low blood pressure, this may weigh toward the standard of care having been violated.

D. Conversion from Minimally Invasive to Open Surgery

367. Conversion of a minimally invasive surgery to a traditional, open surgery, is a safe method of increasing the likelihood of recognizing and controlling inadvertent blood vessel injury and major bleeding.[43] Given advances in technology, minimally invasive surgeries performed with smaller incisions using scopes for visualization, or a surgical robotic system, are becoming commonplace because the smaller incisions used often provide patients less surgical pain and faster recovery times.[44] Many minimally invasive video systems employ scopes which magnify the image, which can aid surgeons in recognizing anatomic detail. However, this magnification can also cause "tunnel vision," making it more difficult for a surgeon to be recognize larger or more peripheral anatomic details or complications during minimally invasive surgery.

368. The decision to abandon a minimally invasive approach and instead make a larger, traditional incision, converting to open surgery, can feel like failure to the surgeon. However, a larger, traditional incision allows for direct visualization of anatomy, direct manipulation of structures rather than indirect manipulation with long or robotic instruments, and the exposure and space to allow other surgeons or assistants to see and assist in identifying and controlling the inadvertently punctured blood vessel. The advantages in identifying and controlling bleeding afforded by converting to an open surgery can mean the difference between whether a patient bleeds to death on the

42 Benjamin L. Shou et al., *Early Reexploration for Bleeding is Associated With Improved Outcome in Cardiac Surgery*, 115 ANNALS OF THORACIC SURGERY 232, 234 (2023).

43 Samith Sandadi et al., *Recognition and Management of Major Vessel Injury During Laparoscopy*, 17 J. MINIMALLY INVASIVE GYNECOLOGY 692 (2010).

44 *Greene v. U.S.*, 540 F. Supp.3d 467, 474 (M.D. Pa. 2021).

operating room table or not. Timely conversion to open surgery may thus weigh in a surgeon's favor with regard to meeting the standard of care when unintentional blood vessel injury occurs during surgery.

E. Unplanned Emergency Salvage Procedure

369. If recognized during the initial operation, emergency control of bleeding from an injured blood vessel may require an unplanned procedure — typically the unplanned removal of a different organ than that originally being operated upon. For instance, in one study, bleeding from inadvertent injury to blood vessels of the spleen required the unplanned removal of the spleen in 1.2% of the 23,727 patients who had surgery for colon cancer.[45] Such an unplanned procedure may also be removal of a larger portion of an organ than planned, including the entirety of the organ. The magnitude of such an unplanned procedure is relevant, particularly if it is much larger than the surgical procedure originally planned. The unplanned procedure may be the true ultimate cause of a serious adverse outcome or death.

370. In a review of 1,810 patients who underwent robotic removal of portions of the lung, two required unplanned removal of the entire lung, rather than the planned removal of a lesser division of the lung, due to inadvertent blood vessel injury.[46] Removal of an entire lung is a much larger surgery than removal of a division of one lung, and, on average, 1% or fewer patients die as a result of removal of a portion of one lung, whereas at least 2-11% of patients die as a result of removal of an entire lung.[47]

371. Factors to weigh when determining whether emergency performance of the unplanned procedure met the standard of care include:

> (1) whether the unplanned procedure has been reported in the medical literature as being performed in response to major blood vessel injury;[48] (2) whether a "reasonably prudent similar health care provider" was present or called in to help the defendant surgeon, and participated in the decision to

45 Diao Haixiao et al., *Comparison Results of Three-Port Robot-Assisted and Uniportal Video-Assisted Lobectomy for Functional Recovery Index in the Treatment of Early Stage Non-small Cell Lung Cancer: A Propensity Score-Matched Analysis*, 31 ANNALS OF SURGICAL ONCOLOGY 2470 (2024).

46 Ida Lolle et al., *Inadvertent Splenectomy During Resection for Colorectal Cancer Does not increase Long-term Mortality in a Propensity Score Model: A Nationwide Cohort Study*, 59 J. DISEASES COLON & RECTUM 1150 (2016).

47 Christopher Cao et al., *Incidence, Management, and Outcomes of Intraoperative Catastrophes During Robotic Pulmonary Resection*, 108 ANNALS OF THORACIC SURGERY 1498, 1504 (2019).

48 Scott Kopec & Richard Irwin, *Sequalae and Complications of Pneumonectomy*, UPTODATE (Mar. 3, 2025).

perform the unplanned procedure[49]; and (3) whether the unplanned procedure was included in the informed consent as a possible procedure that might be required in an emergency situation.[50]

IV. Unreliable Medical Expert Witnesses

372. Though Part III of this Article equips the finder of fact and law with factors to better assess evidence and expert witness testimony in a malpractice case involving inadvertent perforation of blood vessels, the Florida Medical Malpractice Statute defines the prevailing professional standard of care as "that level of care, skill, and treatment which, in light of all relevant surrounding circumstances, is recognized as acceptable and appropriate by reasonably prudent similar health care providers."[51] Because the standard of care is defined as that which is deemed acceptable and appropriate by similar health care providers, similar health care providers are used as expert witnesses to testify about they recognize as an acceptable and appropriate level of care, skill, and treatment for the case at bar. Though the ultimate issue of whether the standard of care was breached is for the trier of fact to decide, expert witnesses are permitted to state their opinion on this ultimate issue under both the Federal Rules of Evidence and Florida Statutes.[52] Thus, medical expert witnesses define the standard of care and have profound influence in determining whether it was breached.

373. The problem of financially motivated expert witnesses willing to make false, misleading, or deceptive statements to please the parties that have retained them is so prevalent that numerous medical professional organizations have issued statements condemning such behavior.[53] These organizations further provide guidelines for ethical and impartial behavior as an expert witness, and enforce disciplinary actions against those that have been found to violate them. For some medical professional organizations, disciplinary action such as probation, suspension, and expulsion, are reported to the National Practitioner Data Bank, the medical board of the expert witness's state(s) of licensure, and such other authorities as the organization deems appropriate.[54] The American Association of Neurological Surgeons ("AANS") was one of the first such organizations to have instituted standards to regulate members' work as expert witnesses

49 However, caution must be taken as not every acceptable procedure done for a major complication is reported upon in the medical literature.

50 Fla. Stat. § 766.102(1) (2023).

51 Fla. Stat. § 766.102(2)(a) (2023).

52 Fla. Stat. § 766.102(1) (2023).

53 Fed. R. Evid. 704; see also Fla. Stat. § 90.703 (2023).

54 Executive Committee of The Society of Thoracic Surgeons, *Statement on the Physician Acting as an Expert Witness*, SOCIETY OF THORACIC SURGEONS (June 15, 2011).

through formal disciplinary procedures.[55] The AANS Professional Conduct Committee membership is appointed by the AANS President and ratified by the Board of Directors.

374. In pursuing solutions for the issue of unreliable expert medical witnesses, two issues arise. One is the actual relevant expertise of the proposed expert witness and resultant ability to accurately assess what the prevailing standard of care is for surgery under the specific set of surrounding circumstances.[56] The other issue is the objectivity of the proposed expert witness despite the financial motivation of the expert to arrive at the conclusion desired by the party that is compensating the expert.

A. Setting a Standard for Expertise

375. The Florida Statutes Chapter on Medical Practice states in its purpose that the legislature recognizes that the practice of medicine is potentially dangerous if conducted by unsafe and incompetent practitioners, and that it is difficult for the public to make an informed choice when selecting a physician.[57] It further states its legislative intent that physicians who fall below minimum competency be prohibited from practicing in the state. Since this standard is applied to physicians to determine whether to allow them to even practice medicine at all in Florida, the standard applied to medical expert witnesses, who determine the legal standard of care for medical malpractice in Florida, should be higher.

B. The Problem of Biased Expert Witnesses

376. Experts, "can be found to testify to almost any factual theory, no matter how frivolous."[58] Lawyers can shop for the expert of their choice through expert witness brokers. Many lawyers frankly admit they do not want an uncommitted, unbiased expert witness.[59] The fact that the same expert witnesses are often employed for large numbers of independent cases also highlights the reticence of many physicians to serve as expert witnesses.[60] These surgeons often seek to provide expert testimony in as many

55 *Procedural Guidelines for Handling Ethics Complaints against STS Members*, SOCIETY OF THORACIC SURGEONS (Last Visited Jan. 20, 2024).

56 Aaron Kesselheim & David Studdert, *Professional Oversight of Physician Expert Witnesses: An Analysis of Complaints to the Professional Conduct Committee of the American Association of Neurological Surgeons, 1992–2006*, 249 ANNALS OF SURGERY 168, 170 (2009).

57 Fla. Stat. § 766.102 (2023).

58 Fla. Stat. § 458.301 (2023).

59 David Bernstein, *Out of the Frying Pan and into the Fire: The Expert Witness Problem in Toxic Tort Litigation*, 10 REV. LITIG. 117, 120 (1990).

60 Eric G. Jensen, *When "Hired Guns" Backfire: The Witness Immunity Doctrine and the Negligent Expert Witness*, 62 UMKC L. REV. 185, 192 (1993).

cases as possible in order to maximize their financial gain, even if cases extend beyond the true scope of their clinical practice.

377. When such experts perform such large numbers of reviews, financial motivation is likely to be involved, and bias in favor of the party paying the expert is thus difficult to avoid. In Austin v. American Association of Neurological Surgeons, Judge Posner noted that the neurosurgeon who gave irresponsible expert witness testimony made more than $220,000 per year before 2001 providing expert witness testimony as "sideline" to his primary profession of neurosurgeon. He further concluded that "...common sense suggests that a financial stake can influence an expert's testimony, especially when the testimony technical and esoteric and hence difficult to refute in terms intelligible to judges and jurors. More policing of expert witnessing is required, not less."

378. The idea of a completely objective expert witness who will provide an unbiased assessment of whether the standard of care was breached seems at odds with the adversarial system in place for medical malpractice lawsuits. Medical malpractice insurers' approach to these cases referenced in Part II of this Article, in which expert witnesses provide confidential assessments, however, seems more likely to achieve this unbiased evaluation.[61] The insurers then determine based upon these assessments whether to settle the cases. Beyond these assessments made for insurers, however, the adverse legal system makes it difficult to envision a system that similarly employs such objective expert reviews extending to the medical malpractice lawsuit. As Judge Posner further stated in Austin, "Judges need the help of professional associations in screening experts...a judge is not a surgical expert and his ruling on the admissibility of an expert's witness may be in error."[62] Thus, medical professional societies should develop programs that will provide objective high quality expert medical witnesses.

V. Conclusion

379. The court is the ultimate arbiter of whether an expert witness is qualified under both the Federal Rules of Evidence and Florida Statues.[63] In fact, so expansive is this authority that the court may appoint any expert of its own choosing.

380. As detailed above, medical specialty organizations increasingly take disciplinary action against members who are found to have violated guidelines for ethical and impartial expert witness behavior.[64] While this negative reinforcement may serve as a warning for surgeons who would provide false or irresponsible expert witness testimony, this

61 *Austin v. Am. Ass'n of Neurological Surgeons*, 253 F.3d 967, 971 (7th Cir. 2001).

62 Ralph Peeples et al., *The Process of Managing Medical Malpractice Cases: The Role of Standard of Care*, 37 WAKE FOREST L. REV. 877, 887 (2002).

63 *Austin v. Am. Ass'n of Neurological Surgeons*, 253 F.3d 967, 971, 973 (7th Cir. 2001).

64 Fed. R. Evid. 104; see also Fla. Stat. § 90.105 (2023).

method effects quality control only after the fact. Moreover, these disciplinary procedures are only initiated when a formal complaint against the expert witness is made to the professional organization.

381. In addition, medical professional organizations may be limited in their ability to review testimony of an expert against whom a complaint has been made. The American Medical Association states its policy is that medical expert witness testimony is considered the practice of medicine, and expert witness testimony given by a physician should be subject to peer review.[65] However, in Florida, the First District Court of Appeal has held that a professional medical body is not empowered to review the quality of a nonmember physician's testimony in a medical malpractice proceeding.[66] It even took issue with the Seventh Circuit's comments in Austin, which implied that a professional medical body is authorized to review the quality of a member physician's testimony in a malpractice action. Hence, such ex post facto disciplinary procedures by professional medical organizations may not be upheld in Florida.[67]

A. Specialty Medical Organizations Should Oversee Expert Witnesses

382. Rather than employing only disciplinary procedures initiated after expert testimony has been completed, medical specialty societies should develop programs in partnership with state medical boards that proactively recruit and ensure the quality and objectivity of expert witnesses. These surgical professional societies are best positioned to proactively solicit and approve those members that have sufficient expertise for a given surgical procedure and are willing to serve as expert witnesses. Moreover, these medical specialty societies are best equipped to determine which potential surgeon expert witnesses have overall expertise relevant to a particular case. They could thus serve as expert witness brokers, providing qualified expert witnesses for specific malpractice cases.

B. Medical Specialty Societies Already Set the Standard of Care

383. Medical specialty certification bodies are best able to determine whether a specialist has sufficient expertise because they determine the criteria for board certification.[68] These bodies are in many respects already the ultimate arbiters of the standard

65 Aaron Kesselheim & David Studdert, *Role of Professional Organizations in Regulating Physician Expert Witness Testimony*, 24 JAMA 2907 (2007).

66 American Medical Association, Peer Review of Medical Expert Testimony H–265.993 (2020).

67 *Fullerton v. Fla. Med. Ass'n, Inc.*, 938 So.2d 587, 594 (Fla. 1st DCA 2006).

68 *Austin v. Am. Ass'n of Neurological Surgeons*, 253 F.3d 967, 972 (7th Cir. 2001).

of care. Specialty board certification is voluntary and not usually required by law.[69] However, most hospitals and insurers require it, and patients are increasingly encouraged to choose only specialists who are certified. These specialty certification bodies determine multiple choice and oral board examination questions with consensus[70] as to the correct answers, demonstrating that they regularly determine a standard of care upon which the board certification of physicians in that specialty depends.[71]

384. Not only do medical specialty boards determine criteria for specialty board certification, but they also determine whether practice areas within specialties require sufficient knowledge and skill to justify lesser subspecialty certification or focused practice designations, which have significantly shorter training duration requirements and may have lesser or no certifying examination requirements.[72] Thus, specialty medical boards are ideally equipped to determine whether an expert medical witness possesses sufficient expertise in a particular area of surgery.

385. Since medical expert witnesses determine the legal standard of care for medical malpractice cases, they should be held to a higher standard as far as a requirement for specialty board certification, not a lower standard. Although those physicians who fail to meet the training requirements and lack sufficient specialty knowledge to pass board certification examinations are decreasingly permitted to practice in a specialty, they are not the ideal experts to determine its standard of care.[73]

386. Moreover, it is medical specialty societies that promulgate consensus expert guidelines for practice in their specialties.[74] The Federation of State Medical Boards (FSMB)

69 *What is ABMS Board Certification?*, AM. BD. OF MED. SPECIALTIES (March 29, 2024).

70 Joseph Lowy, *Board Certification as Prerequisite for Hospital Staff Privileges*, 7 AMA J. OF ETHICS 284 (2005).

71 Oral board examination questions are typically patient scenarios for which the examinee must describe diagnosis and treatment meeting the standard of the examiners.

72 *ABMS Member Board Requirements for Initial Certification in a Specialty*, AM. BD. OF MED. SPECIALTIES (2023).

73 *Differences Between Subspecialty Certification and Focused Practice Designation*, AM. BD. OF MED. SPECIALTIES (November 2024) (Subspecialty certification relates to a specific component of a specialty to which a practicing board certified physician may devote a significant portion of time. Practice in the subspecialty follows an Accreditation Council for Graduate Medical Education-accredited subspecialty training program of at least one year in duration, in addition to meeting the requirements for general specialty board certification. Focused practice designation recognizes areas of practice within existing specialties and subspecialties that either evolve as board certified physicians progress throughout their professional careers or emerge as medicine changes due to advances in medical knowledge. These areas are more limited in scope than those covered by subspecialty designation or may be based on new medical procedures, but without the extensive scientific, clinical, and organizational foundation of a separate subspecialty).

74 Joseph Lowy, *Board Certification as Prerequisite for Hospital Staff Privileges*, 7 AMA J. OF ETHICS 284 (2005).

recommends that state medical boards look to national standards of care. It also recommends that state medical boards consider externally published clinical practice guidelines in medical review decisions, which may decrease inappropriate variations in care and promote more uniform standards of physician conduct within and across states. These recommended clinical practice guidelines are "...documented standard of care guidelines published by medical specialty societies to develop the applicable standard of care." Thus, it is these medical specialty societies that the FSMB recommends set a written standard of care in publishing these clinical practice guidelines. Written guidelines, however, cannot be expected to encompass the nuances of each case's unique set of "all relevant surrounding circumstances..."[75] And as discussed in Part III.B. of this Article, clinical practice guidelines are plagued with issues such as variability, author bias, and reliance on expert opinion rather than scientific evidence.[76] Thus, these guidelines cannot obviate the need for expert medical witnesses in medical malpractice cases.

C. Certification of Surgical Specialty Expert Witnesses

387. Though clinical practice guidelines cannot supplant expert medical witnesses, these medical specialty societies which author them are also best equipped to determine uniform standards of expertise and objectivity for their specialty's expert witnesses. In particular, specialty certification boards can most reliably certify physicians to provide expert witness testimony in their specialty.

388. Florida already has a statutory process and requirement for a physician with an active and valid license to practice medicine in a different state to receive a two-year certification to provide testimony as an expert medical witness in Florida.[77] A certification by the relevant specialty medical board that the physician meets its standard to provide such testimony could be added to this statutory requirement. This certification would specify what areas within the specialty the physician actively practices, so that the physician could not provide expert testimony in areas not actively practiced.

389. A requirement for specialists to have specialty certification to provide expert witness testimony, however, might be onerous given that qualified medical expert witnesses are often difficult to recruit. Hence, as with specialty board certification, certification of medical expert witnesses by a specialty certification body need not be mandatory for a physician to serve as an expert witness, but such certification would be a factor considered by the judge when determining whether the expert witness is qualified, and it would lend significant weight to his or her testimony.

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75 *Considerations for Identifying Standards of Care: Report of the FSMB Ethics and Professionalism Committee, Adopted by the FSMB House of Delegates,* FED'N OF STATE MEDICAL BDS. (May 2023).

76 Fla. Stat. § 766.102 (2023).

77 Salomeh Keyhani et al., *A New Independent Authority Is Needed to Issue National Health Care Guidelines*, 30 HEALTH AFFAIRS 256, 259–60 (2011).

D. Medical Professional Organizations Should Create Processes to Minimize Bias

390. The issue of a medical professional organization's potential for a general bias against medical malpractice case plaintiffs bears consideration.[78] There is concern that an increased role for medical professional societies is tantamount to the proverbial fox guarding the henhouse. While medical professional organizations have an interest in assuring that the standard of care for their respective specialties is not set unrealistically high, advancing the highest standards for the specialty is central to their mission.[79] In fact, many physicians are concerned that medical professional societies would set the standard of care too high, insisting that all surgeons practice according to the biases of high-volume academic centers.[80] Processes and procedures could be developed, ideally in conjunction with attorneys, in order to ensure unbiased expert witness reviews. Moreover, lawmakers and courts could impose upon the societies a fiduciary duty for creating and implementing a reporting system to ensure the objectivity of expert witnesses, similar to the corresponding fiduciary duty of corporations.[81] As for corporations, the surgical professional organization would be required to regularly monitor this reporting system.

391. Beyond simply certifying expert witnesses, these surgical professional societies could provide an expert witness for a given malpractice lawsuit, acting as an expert witness broker. To assure objectivity, the organization could blind the expert witness to the party requesting the initial review, eliminating financial bias. In fact, both parties to the lawsuit could agree to submit the case to the organization's experts for a review, and the confidential result provided might help influence the party with the unfavorable result to settle the case and avoid costly litigation. As part of a reporting system referenced above, the organization could then conduct statistical analyses of the expert opinions provided in order to determine whether a pattern of bias exists for each expert witness. If permitted under state law, the medical professional organization could also conduct intermittent peer reviews of expert witness testimony to assure concordance that the standard of care was accurately determined, as well as to detect systematic bias.

78 Fla. Stat § 458.3175 (2023).

79 *Austin v. Am. Ass'n of Neurological Surgeons*, 253 F.3d 967, 973 (7th Cir. 2001).

80 See *STS Fact Sheet,* SOCIETY OF THORACIC SURGEONS (May 2024).

81 Maxwell J. Mehlman, *Professional Power and the Standard of Care in Medicine*, 44 ARIZ. ST. L.J. 1165, 1223 (2012).

E. Medical Specialty Societies Can Best Motivate Expert Witness Participation

392. The FSMB reports that state medical boards "...experience challenges in obtaining qualified medical experts due to the experts' availability, legislative restrictions on the board's ability to select an expert, and experts' reluctance to testify against their peers or be involved in a disciplinary hearing."[82] There is a general attitude of fear, distaste or apathy amongst physicians with respect to attorneys and lawsuits.[83] This general attitude extends to expert witness testimony, leading to difficulty in obtaining medical expert witnesses amongst the already limited number of surgeons who regularly perform the type of surgery at bar.[84] This leads to frequent use of medical expert witnesses who are not highly experienced at performing the specific surgery at issue.

393. Medical specialty societies have the best knowledge of the population of physicians in the specialty, and what specific inducements might be more effective at soliciting participation in expert witness testimony than general approaches used by state medical boards to solicit experts. Numerous incentives for surgeons to avail themselves can be created by these societies given their prestige and connections.

394. A common concern amongst surgeons asked to perform expert witness reviews of surgical complications is whether they will incur personal legal liability for having performed the review. This again highlights the fear physicians generally have of attorneys and lawsuits.[85] Even when asked to perform an expert review of a medical malpractice case, a physician often fears this will open him or her up to adverse legal consequences. However, the United States Supreme Court upheld the traditional doctrine of witness immunity in *Briscoe v. LaHue*, in which a convicted defendant brought a civil action against the police officers who testified against him.[86] The majority held that witness immunity is needed so that judges, advocates, and witnesses can perform their functions without fear, harassment, or intimidation. While seven state courts have held that expert witnesses malpractice is an actionable claim, Florida is not one of these states, none of these cases involved an adverse party's expert witness, and the majority of states have not addressed the issue.[87]

395. Recruitment, certification, and impartial distribution of specialty medical expert witnesses would require medical specialty societies to devote enormous amounts of time

82 *In re Caremark Intern. Inc. Derivative Litig.*, 698 A.2d 959 (Del. Ch. 1996).

83 *Considerations for Identifying Standards of Care: Report of the FSMB Ethics and Professionalism Committee, Adopted by the FSMB House of Delegates,* FED'N OF STATE MEDICAL BDS. (May 2023).

84 Christiane Tellefsen, *Commentary: Lawyer Phobia*, 37 J. AM. ACAD. PSYCHIATRY & L. 162, 163 (2009).

85 *Considerations for Identifying Standards of Care: Report of the FSMB Ethics and Professionalism Committee, Adopted by the FSMB House of Delegates*, FED'N OF STATE MEDICAL BDS. (May 2023).

86 Christiane Tellefsen, *Commentary: Lawyer Phobia*, 37 J. AM. ACAD. PSYCHIATRY & L. 162, 163 (2009).

87 *Briscoe v. LaHue*, 460 U.S. 325 (1983).

and resources, and partner with State Medical Boards and the legal community. The result, however, would be a more objective and accurate determination of the standard of care in each medical malpractice case. In turn, the standard of care across medical malpractice cases would be more consistent, and both physicians and potential plaintiffs would be better able to determine what the standard of care is since these societies promulgate guidelines, continuing medical education, and criteria for board certification. One study found that twenty-seven percent of medical malpractice cases that went to jury trial resulted in an incorrect verdict.[88] A proactive role by medical specialty societies in assuring the expertise and objectivity of specialty expert medical witnesses would aid the judge in determining whether a given physician is qualified as an expert witness, and aid both the judge and jury in determining the weight to give the testimony of an expert witness thus qualified. In cases of inadvertent blood vessel perforation, the factors set forth in part III of the Article will aid both the trier of law and fact to better evaluate the truth of the matters asserted by these expert witnesses. These tools can help forge a pathway toward eliminating these incorrect verdicts within the confines of our adversarial legal system in cases of inadvertent perforation of blood vessels.

88 Laurie Strauch Weiss, Expert Witness Malpractice Actions: Emerging Trend or Aberration?, 15 The Practical Litigator 27, 29 (2004).