# NOTE

# "Trust Me, I'm a Doctor": Medical Malpractice as a *Daubert*-Free Zone

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## INTRODUCTION

Imagine that you are a federal district judge determining the admissibility of an expert witness's testimony during a trial. You dutifully, almost mechanically, work through the factors set forth in *Daubert v. Merrell Dow Pharmaceuticals*,[1] asking yourself the four tried-and-true questions: Can the expert's theory be tested? Has her theory or technique been subjected to peer review or publication? Is there a rate of error? Are her methods generally accepted in her field?[2] So goes the same song and dance for a myriad of expert witnesses—federal- and state-court judges apply *Daubert* when assessing testimony from experts specializing in motor vehicles,[3] forensic toxicology,[4] accounting,[5] cell biology,[6] and nutrition,[7] to name a few. But one area of expertise that does not appear on the list of subject matter to which judges apply *Daubert* is medical expert testimony, a necessary component of every medical malpractice lawsuit in the United States.[8] Mysteriously, expert witnesses in medical malpractice lawsuits get a free pass.

State-court judges generally do not apply *Daubert* in medical malpractice cases in which experts testify to the applicable medical standard of care,[9] and attorneys do

1. 509 U.S. 579 (1993).
2. *Id.* at 593–94.
3. *See* Adams v. Toyota Motor Corp., 867 F.3d 903, 914–16 (8th Cir. 2017).
4. *See* Cooper v. Lab. Corp. of Am. Holdings, 150 F.3d 376, 380–81 (4th Cir. 1998).
5. *See In re* Bonham, 251 B.R. 113, 132–35 (Bankr. D. Alaska 2000).
6. *See* PharmaStem Therapeutics, Inc. v. ViaCell, Inc., 491 F.3d 1342, 1379 (Fed. Cir. 2007).
7. *See* Brandeis v. Keebler Co., No. 1:12-CV-01508, 2013 WL 5911233, at *1–3 (N.D. Ill. Jan. 18, 2013).
8. Michael Flynn, *The Unwritten Rules of Sports and Medical Malpractice*, 19 J. HEALTH CARE L. & POL'Y 73, 79 (2015).
9. *See* James C. Johnston & Thomas P. Sartwelle, *The Expert Witness in Medical Malpractice Litigation: Through the Looking Glass*, 28 J. CHILD NEUROLOGY 484, 490–91 (2013).

not use *Daubert* motions to challenge expert testimony in such cases.[10] I refer to this phenomenon as the "*Daubert*-free zone." The majority of state-court systems in the United States substitute doctors' industry custom, rather than the reliable data *Daubert* demands, for the standard of care in medical malpractice cases. Nothing in *Daubert* itself, nor its progeny, explicitly demands that expert witnesses in medical malpractice cases should receive special treatment[11]—so why do they receive it?

This Note analyzes why medical malpractice lawsuits are *Daubert*-free zones. Several factors, including state legislation regarding expert testimony, the laissez-faire approach of professional medical organizations when regulating physicians serving as expert witnesses, and the passiveness of attorneys, judges, and juries are responsible for perpetuating these zones. The Note posits that judges' uniform applicability of *Daubert* to expert witnesses testifying to the standard of care in medical malpractice cases is preferable to the status quo of using industry custom to determine the standard of care. It demonstrates that adherence to *Daubert*—rather than industry custom—would more effectively combat the problems of health-insurance market failure and medical uncertainty.

This Note fills a gap in legal scholarship by being the first to undertake a comprehensive, fifty-state analysis of *Daubert*'s application to medical malpractice litigation. Most of the recent legal literature on *Daubert* concentrates on its application to criminal cases, mass torts, and patent litigation.[12] Further, modern scholarship on medical malpractice focuses on damages caps and whether the standard of care should be local or national.[13] Although scholars have waded into the intersection of *Daubert* and medical malpractice expert witnesses,[14] no study has delved into why these experts get a free pass, and how we should react to this phenomenon.

This Note does not endeavor to prove that applying *Daubert* in the medical malpractice context would result in more just verdicts. But because the American judicial system strives for fair outcomes *and* fair process, admitting more reliable expert testimony should be a priority to help cultivate the latter. The admission and exclusion of expert testimony are central to whether there is fair process,[15] so our judicial system must prioritize the admission of reliable, empirical expert testimony. Although *Daubert* is a flexible inquiry, it still scrutinizes expert

10. *See* Daniel W. Shuman, *Expertise in Law, Medicine, and Health Care*, 26 J. HEALTH, POL., & POL'Y 267, 280 (2001).

11. *See* Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 593–94 (1993).

12. *See generally* Paul C. Giannelli, *The Supreme Court's Criminal* Daubert *Cases*, 33 SETON HALL L. REV. 1070 (2003); Joseph Sanders, *Scientific Validity, Admissibility, and Mass Torts After* Daubert, 78 MINN. L. REV. 1387 (1993); Douglas G. Smith, *The Increasing Use of Challenges to Expert Evidence Under* Daubert *and Rule 702 in Patent Litigation*, 22 J. INTELL. PROP. L. 345 (2015).

13. *See generally* John C. Drapp III, *The National Standard of Care in Medical Malpractice Actions: Does a Small Area Analysis Make It Another Legal Fiction*, 6 QUINNIPIAC HEALTH L. 95 (2002); Amanda Edwards, *Medical Malpractice Non-Economic Damages Caps*, 43 HARV. J. ON LEGIS. 213 (2006).

14. *See, e.g.*, Mary McElroy Leach, *Surgical Use of* Daubert *in the Defense of Medical Malpractice Actions*, 50 U.S. ATT'YS' BULL. 19 (2000).

15. Scott Brewer, *Scientific Expert Testimony and Intellectual Due Process*, 107 YALE L.J. 1535, 1672–74 (1998).

testimony for reliability and accuracy.[16] Because medical malpractice, first, is prevalent in the United States[17] and, second, wreaks unquantifiable emotional pain on victims and families, fair process and *Daubert* bear particular and immediate importance in this type of legal action.

Part I introduces key terms and the landscape of expert witnesses, *Daubert*, and medical malpractice litigation. Part II presents legal scholarship's first fifty-state survey of *Daubert*'s application to expert witnesses in medical malpractice cases. It concludes that a majority of state courts fail to apply *Daubert*, instead relying on state legislation governing expert testimony or claiming that *Daubert* is inapplicable to medical malpractice cases. Part III offers possible explanations for *Daubert*-free zones and argues that a *Daubert* framework is preferable for each party who perpetuates the zones. Part IV recommends that state-court judges apply *Daubert*—rather than industry custom—when determining the standard of care in the medical malpractice context. Finally, the Appendix contains a comprehensive fifty-state survey of the application of *Daubert* to experts in medical malpractice cases.

## I. BACKGROUND

To understand the game, we must first identify the players, the playing field, and the (purported) rules. This section provides a brief account of the past and present of expert-witness testimony in the United States, medical malpractice law, and the intersection of the two.

### A. EXPERT-WITNESS TESTIMONY

Understanding the landmark impact of *Daubert* on expert witness testimony requires explicating its history and trajectory. Until the Supreme Court handed down *Daubert* in 1993, the *Frye* standard was the governing rule for expert-witness testimony in most state and federal courts. In 1975, during *Frye*'s reign, the Federal Rules of Evidence (FRE) took effect.[18] The Advisory Committee then amended the FRE in response to *Daubert*. This section provides a chronological account of rules governing expert testimony in the United States.

#### 1. Pre-*Daubert*: The *Frye* Standard

Before *Daubert*, the "general-acceptance" rule articulated by the District of Columbia Court of Appeals in *Frye v. United States* was the standard in many state and federal courts for whether judges should admit expert testimony.[19] After being convicted of second-degree murder, James Alphonzo Frye appealed from the Supreme Court of the District of Columbia to the D.C. Court of Appeals.[20]

16. *Daubert*, 509 U.S. at 592, 594.

17. *See* discussion *infra* Section I.B.

18. Josh Camson, *The Federal Rules of Evidence: Half a Century in the Making*, 18 J. TRIAL EVIDENCE COMMITTEE 1, 1 (2010).

19. *See* David E. Bernstein, Frye, Frye, *Again: The Past, Present, and Future of the General Acceptance Test*, 41 JURIMETRICS 385, 388 (2001).

20. Frye v. United States, 293 F. 1013, 1013 (D.C. Cir. 1923). At the time of the *Frye* decision, the now-nonexistent Supreme Court of the District of Columbia was the District's trial court, and the D.C.

The only issue on appeal was the admissibility of an expert witness's testimony regarding a "systolic blood pressure deception test," the forerunner to the modern lie detector test.[21] In the trial court, Frye's defense counsel attempted to call as an expert witness the scientist who performed the deception test on Frye.[22] The trial court sustained the government's objection to exclude the testimony.[23] In 1923, the D.C. Court of Appeals affirmed, articulating the rule for expert testimony: "[T]he thing from which the deduction is made must be sufficiently established to have gained *general acceptance* in the particular field to which it belongs."[24] The court held that because the deception test had not acquired "general acceptance," the expert's testimony was inadmissible.[25]

In short, the *Frye* standard required some unspecified minimum number of experts to have examined and accepted a particular scientific theory or technique to render expert testimony admissible. The case was rarely cited or discussed during its first four decades of existence.[26] Then, it began drawing criticism during the 1960s for being both too vague and too strict in excluding evidence that had not become "generally accepted."[27] The standard led to conflicting decisions about the same testimony.[28]

The implementation of the FRE in 1975 obfuscated, rather than clarified, the meaning of the *Frye* standard. FRE 702 (Rule 702) states that an expert with "scientific, technical, or other specialized knowledge [that] will help the trier of fact to understand the evidence or to determine a fact in issue" could testify at trial.[29] Although it liberalized the restriction on who could give expert testimony, judges were confused as to how to reconcile *Frye* with Rule 702.[30] From the enactment of the FRE in 1975 to *Daubert*, state courts followed the *Frye* standard, a "reliability standard" (which asked whether other members of the scientific field used the method in question), or a "relevancy standard" (a broad test that admitted expert testimony as long as it was pertinent).[31] The enactment of the FRE expanded judges' discretion in admitting expert testimony, making admissibility

Court of Appeals was (and still is) the District's highest appellate court. *Supreme Court of the District of Columbia, 1863–1936*, FED. JUD. CTR., https://www.fjc.gov/history/courts/supreme-court-district-columbia-1863-1936 [https://perma.cc/D87K-9X2T] (last visited Apr. 8, 2020).

21. *Frye*, 293 F. at 1013.

22. *Id*. at 1014.

23. *Id*.

24. *Id*. (emphasis added).

25. *Id*.

26. Bernstein, *supra* note 19, at 388.

27. *See id*. at 389–91.

28. *See* Bert Black et al., *Science and the Law in the Wake of* Daubert*: A New Search for Scientific Knowledge*, 72 TEX. L. REV. 715, 739 (1994).

29. FED. R. EVID. 702. A short summary of the other rules governing expert testimony is as follows: Rule 703 provides that qualified witnesses can rely on otherwise inadmissible testimony if it is reasonable for experts in that field to so rely on it; Rule 704 establishes that an expert opinion is not automatically objectionable if it bears on an ultimate issue; Rule 705 states that an expert need not testify to the underlying facts or data prior to delivering his/her opinion, but opposing counsel can solicit such facts and data on cross examination. FED. R. EVID. 703–05.

30. *See* Bernstein, *supra* note 19, at 389–90.

31. *See id*. at 390–91.

decisions more dependent on judicial philosophies rather than empirical testimony.[32] This led to widespread disillusionment with courts' handling of "junk science" that set the stage for the Supreme Court to clarify the standard in *Daubert*.[33]

2. *Daubert v. Merrell Dow Pharmaceuticals*

*Daubert* halted the era of expert testimony based on "an expert's bare *ipse dixit*—trust me, I'm a doctor."[34] Its landmark status derives from two holdings: first, *Daubert* explicitly held that Rule 702 displaced *Frye*; second, it tasked judges with the role of "gatekeeping," or critically assessing the accuracy, verifiability, and trustworthiness of expert testimony.[35]

Jason Daubert[36] and Eric Schuller were minor children born with serious birth defects.[37] Alleging that their mothers' ingestion of Benedectin, a morning-sickness drug, caused their birth defects, they and their parents sued Merrell Dow Pharmaceuticals, the company that marketed the drug.[38] Both sides presented expert witnesses at the summary judgment phase: Merrell Dow submitted an affidavit from a witness claiming that he had reviewed all of the studies on Benedectin, none of which found that the drug caused birth defects; Daubert submitted eight expert-witness reports purporting to find a link between Benedectin and malformed fetuses.[39] The district court granted Merrell Dow's motion for summary judgment and held that Daubert's expert-witness testimony was inadmissible on two grounds: first, because it was not based on epidemiological evidence like that of Merrell Dow's expert, and second, because it did not meet the *Frye* "general-acceptance" standard.[40] The Court of Appeals for the Ninth Circuit affirmed, reasoning that Daubert's experts did not meet the *Frye* standard because the relevant scientific community had not "generally accepted" the method underlying the testimony as reliable given the lack of verification and scrutiny by others in the field.[41]

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32. Johnston & Sartwelle, *supra* note 9, at 487.

33. Bernstein, *supra* note 19, at 391; Johnston & Sartwelle, *supra* note 9, at 486. *See generally* PETER HUBER, GALILEO'S REVENGE: JUNK SCIENCE IN THE COURTROOM (1991) (discussing the pre-*Daubert* problem of expert witnesses falsifying data and disregarding scientific evidence).

34. Johnston & Sartwelle, *supra* note 9, at 486.

35. Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 580, 597 (1993). Not all of the Justices envisioned such a gatekeeping role. In his concurrence, Chief Justice Rehnquist referred to judges applying the *Daubert* factors as "amateur scientists," lacking the technical literacy to perform the gatekeeping task. *Id*. at 601 (Rehnquist, C.J., concurring in part and dissenting in part). In his view, the Federal Rules do not mention reliability, and the test would only confuse generalist judges. *Id*. at 600–01.

36. "Daubert" is pronounced "Dow-burt," not "Dough-bear." Daubert and Schuller's attorney, Michael Gottesman, explained that the erroneous but widely used pronunciation "dough-bear" may have resulted from his desire not to "spend [his] precious time (and all hope of kindly reception) correcting this judicial mispronunciation." Michael H. Gottesman, *Admissibility of Expert Testimony After* Daubert*: The "Prestige" Factor*, 43 EMORY L.J. 867, 867–68 (1994).

37. *Daubert*, 509 U.S. at 582.

38. *Id*.

39. *Id*. at 582–83.

40. *Id*. at 583–84.

41. *See id*. at 584–85.

The Supreme Court vacated the Ninth Circuit's decision and held that the "general-acceptance" standard was no longer good law.[42] The principal doctrinal achievement of *Daubert* was holding that Rule 702 superseded the *Frye* "general-acceptance" standard.[43] Because Rule 702 and its drafting history made no mention of *Frye* or "general acceptance" as a prerequisite for admissibility, the Court rejected Merrell Dow's argument that Rule 702 codified *Frye*.[44] It reasoned that, instead of "general acceptance," the loci of Rule 702 were reliability and relevance: under the Rule, "[p]roposed testimony must be supported by appropriate validation" and "a valid scientific connection to the pertinent inquiry as a precondition to admissibility."[45] It also rejected Merrell Dow's argument that abandoning the *Frye* test would produce "befuddled juries . . . confounded by absurd and irrational pseudoscientific assertions."[46] The Court emphasized that cross-examination, rebuttal evidence, and careful jury instructions regarding the burden of proof would adequately safeguard against this danger.[47]

The Court proceeded to outline the four *Daubert* factors, framing them as "flexible" considerations in a balancing test, rather than an exhaustive checklist.[48] When determining whether expert testimony is "scientific knowledge that will assist the trier of fact" under Rule 702, courts should consider:

(1) Whether the theory or technique "can be (and has been) tested."[49]
(2) Whether the theory or technique "has been subjected to peer review and publication."[50]
(3) The theory or technique's "known or potential rate of error" and "the existence and maintenance of standards controlling the technique's operation."[51]
(4) The theory or technique's "general acceptance," though this is not a "necessary precondition" to admissibility.[52]

42. *Id*. at 587, 597–98.
43. *See id*. at 587.
44. *Id*. at 588.
45. *Id*. at 590–92. The Court also held that trial judges must make the initial determination under FRE 104(a) that: (1) the expert witness will testify to scientific knowledge, and (2) the testimony will be material to a fact at issue in the case. *Id*. at 592. Although the Supreme Court conflates the two terms, it is worth noting that, in the scientific community, reliability is distinct from validity: reliability is the degree to which repeating an experiment yields the same finding, whereas validity indicates how well a test measures what it is supposed to measure. *See* Colin Phelan & Julie Whren, *Exploring Reliability in Academic Assessment*, UNIV. N. IOWA (2005), https://chfasoa.uni.edu/reliabilityandvalidity.htm [https://perma.cc/AK7U-PDH2].
46. *Daubert*, 509 U.S. at 595–96.
47. *Id*. at 596.
48. *Id*. at 593–94.
49. *Id*. at 593.
50. *Id*. at 593–94. The Court made the disclaimer that neither peer review nor publication is a "*sine qua non* of admissibility" because they do not necessarily indicate reliability. *Id*.
51. *Id*. at 594.
52. *Id*. at 594, 597.

These factors, although informative, are "neither exclusive nor dispositive . . . [and] not all of the specific *Daubert* factors can apply to every type of expert testimony."[53] The Court identified the focus of the inquiry as "solely on principles and methodology, not on the conclusions that [the expert witnesses] generate."[54] It explained that "there are important differences between the quest for truth in the courtroom and the quest for truth in the laboratory. Scientific conclusions are subject to perpetual revision. Law, on the other hand, must resolve disputes finally and quickly."[55]

3. *Daubert*'s Impact: The Trilogy and the FRE 702 Amendment

*Daubert*, and the two later rulings that refined its standard, are known as the "*Daubert* trilogy."[56] In *General Electric Co. v. Joiner*, the second case in the trilogy, the Supreme Court held that an appellate court's standard of review for a trial court's decision to admit or exclude expert testimony under *Daubert* is "abuse of discretion."[57] This is a particularly deferential appellate standard of review, reflecting the Court's effort to preserve trial-court judges' *Daubert* discretion. In *Joiner*, the Court upheld a district court's exclusion of expert testimony that was based solely on "the *ipse dixit* of the expert" because "there [was] simply too great an analytical gap between the data and the opinion proffered."[58] This was not an abuse of discretion, the Court held, and was consistent with the court's gatekeeper role.[59] In so doing, the Court added another factor to the *Daubert* analysis: courts should consider whether the expert has unjustifiably extrapolated from an accepted premise to an unfounded conclusion.[60]

In 1999, the Supreme Court handed down the third and final case in the *Daubert* trilogy, *Kumho Tire Co. v. Carmichael*. Its most significant impact was expanding the applicability of *Daubert* from only scientific testimony to other types of expert testimony.[61] The Advisory Committee recognized that *Kumho* expanded the trial judge's gatekeeper function to "*all* expert testimony."[62]

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53. FED. R. EVID. 702 advisory committee's note to 2000 amendment; *see also* Kannanerkil v. Terminix Int'l, Inc., 128 F.3d 802, 809 (3d Cir. 1997) (holding that scientific community's support of expert's opinion meant that lack of peer review and publication were not dispositive); Tyus v. Urban Search Mgmt., 102 F.3d 256, 263 (7th Cir. 1996) (reasoning that *Daubert* factors do not neatly apply to every expert's testimony).

54. *Daubert*, 509 U.S. at 595.

55. *Id.* at 596–97.

56. B. Sonny Bal, *The Expert Witness in Medical Malpractice Litigation*, 467 CLINTON ORTHOPEDICS & RELATED RES. 383, 386 (2008).

57. 522 U.S. 136, 139 (1999).

58. *Id.* at 146.

59. *Id.* at 146–48.

60. FED. R. EVID. 702 advisory committee's note to 2000 amendment (citing *Joiner*, 522 U.S. at 146).

61. Thomas Burg, *The Impact of the* Daubert*,* Joiner*, and* Kumho Tire *Decisions on the Admissibility of Expert Opinion Evidence*, VT. J. ENVTL. L. (1999).

62. FED. R. EVID. 702 advisory committee's note to 2000 amendment (emphasis added).

*Kumho* also held that the expert witness may "employ[] in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field."[63] The ultimate impact of the *Daubert* trilogy, then, was to expand trial judges' latitude in applying the *Daubert* factors, both in terms of discretion and subject matter.

The Advisory Committee, whose purpose is to draft and revise the Federal Rules of Evidence, amended Rule 702 to its current form in response to the *Daubert* trilogy in 2000[64]: "The amendment affirms the trial court's role as gatekeeper . . . [T]he Rule as amended provides that all types of expert testimony present questions of admissibility for the trial court in deciding whether the evidence is reliable and helpful."[65] The Committee explicitly declined to state that the Rule codified *Daubert*.[66] However, Rule 702 as amended incorporated the *Daubert* tenets of reliability and testability. Rule 702 as it stands now reads as follows:

> Rule 702. Testimony by an Expert Witness
>
> A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:
>
> (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
>
> (b) the testimony is based on sufficient facts or data;
>
> (c) the testimony is the product of reliable principles and methods; and
>
> (d) the expert has reliably applied the principles and methods to the facts of the case.[67]

Thirty-eight states, plus the District of Columbia, have incorporated the Federal Rules of Evidence into their own state codes, meaning that Rule 702 is

63. Kumho Tire Co. v. Carmichael, 522 U.S. 136, 152 (1999); *see also* Sheehan v. Daily Racing Form, Inc., 104 F.3d 940, 942 (7th Cir. 1997) (holding that an expert must "be[] as careful as he would be in his regular professional work outside his paid litigation consulting").

64. FED. R. EVID. 702 advisory committee's note to 2000 amendment. The Committee also amended Rule 701 in 2011, but it only intended the amendment to be stylistic, not to change any ruling on admissibility. FED. R. EVID. 701 advisory committee's note to 2011 amendment.

65. FED. R. EVID. 702 advisory committee's note to 2000 amendment. The Advisory Committee reasoned that, in light of *Daubert* and its progeny, the rejection of expert testimony "is the exception rather than the rule." *Id.*

66. *Id.* The 2000 Amendments also declined to set forth procedural requirements for admitting expert witness testimony. *Id.*; *see also* Daniel J. Capra, *The* Daubert *Puzzle*, 38 GA. L. REV. 699, 766 (1998) ("Trial courts should be allowed substantial discretion in dealing with *Daubert* questions; any attempt to codify procedures will likely give rise to unnecessary changes in practice and create difficult questions for appellate review.").

67. FED. R. EVID. 702.

binding law in those states.[68] The remaining twelve states have similar-enough analogues to Rule 702 to treat them as indistinguishable for purposes of this Note.[69]

### B. MEDICAL MALPRACTICE LAW

As its name suggests, medical malpractice is "a doctor's failure to exercise the degree of care and skill that a physician or surgeon of the same medical specialty would use under similar circumstances."[70] Because medical malpractice is a subset of negligence, its four elements are a variation of the standard duty, breach, damages, and proximate-cause framework. First, the plaintiff must establish that the physician owed a duty of care to the patient. Second, he must show that the physician breached the appropriate standard of care. Third, he must demonstrate an injury. Fourth and finally, he must establish causation between the alleged breach of duty and his injury ("medical causation").[71] Although medical experts testify to each of these elements, their testimony is particularly important—and contentious—in establishing the standard of care.[72] State law governs medical malpractice claims by furnishing liability standards, malpractice insurance regulations, victim compensation rules, and courtroom procedures.[73]

A few key medical malpractice statistics are illustrative in introducing this area of law. Recent data reveals that, on average, 250,000 deaths per year result from medical error in the United States.[74] Medical negligence error, however, is severely under-litigated: although percentages vary, studies estimate that as low as one percent of medical errors results in a claim.[75] The type of physician most

68. *Uniform Rules of Evidence*, CORNELL L. SCH. LEGAL INFO. INST., https://www.law.cornell.edu/uniform/evidence [https://perma.cc/2C9A-W3UD] (last visited May 6, 2019); *Motorola Inc. v. Murray*, 147 A.3d 751, 756–57 (D.C. 2016).

69. Although these twelve states have not formally adopted *Daubert*, their expert witness rules still mandate that judges consider sufficiency of an expert's data and reliability of his principles. *See* ALA. R. EVID. 702; CAL. EVID. CODE § 801; CONN. CODE EVID. § 7-2; GA. CODE § 24-7-705; ILL. R. EVID. 702; KAN. R. EVID. 60-456; MASS. GUIDE TO EVID. § 702; MD. R. REV. § 5-702; MO. REV. STAT. § 490.065; GUIDE TO N.Y. EVID. § 7.01; PA. R. EVID. 702; VA. SUP. CT. R. 2:702.

70. *Malpractice*, BLACK'S LAW DICTIONARY (10th ed. 2014).

71. *Negligence*, BLACK'S LAW DICTIONARY (10th ed. 2014) (listing types of negligence, including professional negligence, which redirects to the malpractice definition).

72. Bal, *supra* note 56, at 384.

73. *See generally* Heather Morton, *Medical Liability | Medical Malpractice 2013 Legislation*, NAT'L CONF. ST. LEGISLATURES (Jan. 13, 2014), http://www.ncsl.org/research/financial-services-and-commerce/medical-liability-medical-malpractice-2013-legislation.aspx [https://perma.cc/NBW7-FF6E] (listing pending legislation in each state regarding medical liability issues). For the purposes of this Note, I assume that state medical malpractice law applies, whether a state court or a federal court applies it.

74. Martin Makarey & Michael Daniel, *Medical Error—The Third Leading Cause of Death in the US*, BMJ (2016), https://www.bmj.com/content/353/bmj.i2139. To arrive at this figure, Johns Hopkins patient safety experts examined hospital admission rates from 2013 and data from the Institute of Medicine. *Id.*

75. A. Russell Localio et al., *Relation Between Malpractice Claims and Adverse Events Due to Negligence*, 325 NEW ENG. J. MED. 245, 245 (1991) (detailing the Harvard Medical Practice Study, which arrived at 1% by comparing New York hospitalization rates to statewide data on medical malpractice claims). There are several reasons why medical malpractice is under-litigated: victims may

likely to be sued is an OB/GYN practitioner, closely followed by surgeons, and then general practitioners.[76] All but five percent of medical malpractice cases are settled out of court, with an average settlement of $353,000.[77] Out of the cases going to trial, ninety-nine percent are decided by a jury, with an average jury award of $400,000.[78]

The array of errors for which patients can sue doctors ranges far beyond the stereotypical example of a doctor leaving a sponge in a patient's body after surgery.[79] Medical malpractice claims generally fall into three categories: diagnosis, treatment, and surgical procedure.

Errors in diagnosis occur when the doctor examines a patient and reaches an inaccurate conclusion about whether the patient suffers from a particular illness. The leading type of physician error is misdiagnosis, which occurs when the physician either incorrectly says that the patient has no discernable illness or diagnoses the patient with the wrong illness.[80] Delayed diagnosis is also actionable, occurring when the physician makes the correct diagnosis only after the patient has gone untreated or mistreated for some time.[81]

Second, medical malpractice manifests itself in faulty patient treatment. A physician's errors in prescribing too much or too little medication, the wrong medication, or no medication, are actionable in medical malpractice.[82] Failure to treat also occurs when a doctor reaches an accurate diagnosis but makes a mistake in recommending the wrong treatment.[83] Treatment errors also happen when a doctor releases a patient too soon, fails to sufficiently supervise follow-up care, or neglects to refer the patient to a specialist.[84] These errors often occur when

receive compensation through insurance, consider their injuries too minor to sue, want to avoid spoiling their relationship with their physician, or believe that they will lose in court. *Id.* at 249.

76. David M. Studdert et al., *Claims, Errors, and Compensation Payments in Medical Malpractice Litigation*, 354 NEW ENG. J. MED. 2024, 2026 (2006).

77. Amy Norton, *Docs Win Most Malpractice Suits, but Road Is Long*, REUTERS (May 23, 2012, 12:30 PM), https://www.reuters.com/article/us-docs-win-most-idUSBRE84M11N20120523 [https://perma.cc/MLM5-7W7B]; Dennis Thompson, *Fewer Medical Malpractice Lawsuits Succeed, but Payouts Are Up*, CBS NEWS (Mar. 28, 2017, 11:09 AM), https://www.cbsnews.com/news/medical-malpractice-lawsuits-fewer-claims-succeed-payouts-rise/ [https://perma.cc/BG8S-QNUR].

78. *Medical Malpractice Trials*, BUREAU JUST. STAT., https://www.bjs.gov/index.cfm?ty=tp&tid=4511 [https://perma.cc/C7LK-4WSM] (last visited May 6, 2019) (explaining that the vast majority of patients never recover at this level because they settle for less, rather than waiting out years of appeals).

79. Lenny Bernstein, *When Your Surgeon Accidentally Leaves Something Inside You*, WASH. POST (Sept. 5, 2014), https://www.washingtonpost.com/news/to-your-health/wp/2014/09/04/when-your-surgeon-accidentally-leaves-something-inside-you/?noredirect=on&utm_term=.b23c4b8b9d53.

80. *Types of Medical Malpractice Claims*, ALLLAW, https://www.alllaw.com/articles/nolo/medical-malpractice/types-claims.html [https://perma.cc/PD28-E8X9] (last visited May 6, 2019).

81. *Six Common Types of Medical Malpractice*, SNYDER & WENNER, PC (Oct. 28, 2015), https://snyderwenner.com/six-common-types-of-medical-malpractice/ [https://perma.cc/47PS-H3MT]. Patients may also name doctors as defendants in medical products liability cases, claiming that the physician negligently employed a faulty medical device during surgery or treatment. *Id.*

82. *Types of Medical Malpractice Claims*, *supra* note 80.

83. *Six Common Types of Medical Malpractice*, *supra* note 81.

84. *Id.*

doctors have too many patients to adequately supervise each patient's treatment plan.[85]

Third is the category of medical malpractice that most readily comes to mind upon hearing the term "medical malpractice"—surgical error, or any mistake a physician makes during a surgical procedure. Surgical errors vary, and include performing the wrong surgery or unnecessary surgery, making an anesthesiologic error, damaging organs during surgery, leaving medical equipment inside the patient, or, in extreme cases, performing surgery on the wrong body part or wrong patient.[86]

### C. EXPERT TESTIMONY IN MEDICAL MALPRACTICE CASES

Expert testimony in medical malpractice lawsuits has been a staple for centuries; the concept of judging physician performance via other physicians' testimony originated in English common law.[87] The 1767 case of *Slater v. Baker & Stapleton* marks the inception of expert witness testimony in medical malpractice cases.[88] The plaintiff in *Slater* employed two doctors to remove the bandage from his partially healed fractured leg; instead, the doctors refractured his leg while trying to achieve proper limb alignment.[89] In support of the plaintiff's claim for medical malpractice, he presented expert witnesses who testified that the defendants failed to follow standard medical procedure.[90] The United States has since enshrined the fundamental principle of proffering expert testimony to evaluate medical malpractice in Rule 702.[91]

Medical malpractice lawsuits were virtually unheard of in the United States prior to the 1830s.[92] From the 1850s until the present day, as the number of medical malpractice suits has steadily increased, so too has the use of expert witnesses.[93] Today, expert witnesses are nearly always necessary to assist juries in evaluating whether a physician erred,[94] creating the public perception of medical malpractice lawsuits as a "battle of the experts."[95] They are also indispensable for plaintiffs in proving their cases, and frequently used by physician–defendants in

85. *Id.*
86. *Types of Medical Malpractice Claims*, *supra* note 80.
87. Bal, *supra* note 56, at 384.
88. *Id.*; *Slater v. Baker & Stapleton*, 95 Eng. Rep. 860, 860 (K.B. 1767).
89. Bal, *supra* note 56, at 384.
90. Johnston & Sartwelle, *supra* note 9, at 484.
91. *See* FED. R. EVID. 702.
92. Johnston & Sartwelle, *supra* note 9, at 485.
93. *Id.*
94. Bal, *supra* note 56, at 383. Recall that juries decide ninety-nine percent of medical malpractice lawsuits that go to trial. *See supra* Section I.B.
95. S.Y. Tan, *The Evolving Role of Expert Testimony*, CLINICAL NEUROLOGY NEWS (Aug. 22, 2018), https://www.mdedge.com/clinicalneurologynews/article/173206/business-medicine/evolving-role-expert-testimony.

defending those cases.[96] Expert testimony can manifest itself at almost any stage of the medical malpractice lawsuit: an affidavit to support a motion to dismiss, motion for summary judgment, settlement negotiations, or testimony during trial.[97] Expert testimony in medical malpractice lawsuits usually bears on the applicable standard of care—the requisite level of care for the physician–defendant and whether it was breached.[98]

## II. THE *DAUBERT*-FREE ZONE: A FIFTY-STATE SURVEY

Research on admissibility of expert testimony generally, and the medical malpractice context in particular, reveals a paradox. As aforementioned, most states have adopted *Daubert* as the governing standard for expert-witness testimony. But a majority of states (thirty-eight) fail to apply *Daubert* to expert witnesses in medical malpractice cases, even if the state has legislatively or judicially adopted *Daubert* as its general standard. This Note's fifty-state study lays the groundwork to explain this paradox. It ultimately finds that state courts rarely apply *Daubert* when litigants call expert witnesses in medical malpractice cases to testify to the applicable standard of care.[99] Instead, several states assess admissibility of expert testimony using factors like geography and medical specialty.

In the pages that follow, I introduce legal scholarship's first fifty-state survey of *Daubert*'s application in medical malpractice lawsuits. First, I describe my methodology and terminology. Then, I provide tables summarizing the results of my research. (The Appendix provides the full dataset of all fifty states.) Finally, I unpack the results of the survey and furnish some notable examples of *Daubert*-free zones and effective applications of *Daubert*.

### A. METHODOLOGY

I undertook a comprehensive assessment of each state's (1) judicial and/or legislative standard for assessing expert-witness testimony in general (*Frye*, *Daubert*, or "other"), (2) its judicial standard for evaluating expert-witness testimony in medical malpractice cases, and (3) what, if any, statutes serve the "gatekeeper" function in addition to or in lieu of *Daubert*. These three items correspond to the three columns of the full dataset in Appendix 1.

I collected the information for items (1) and (3) from statutory, judicial, and secondary sources. To research item (2), I constructed an original dataset assessing whether state courts apply *Daubert* to expert testimony in medical malpractice

96. Flynn, *supra* note 8, at 78–79.

97. FED. R. CIV. P. 26. Experts can testify at these phases, provided that they meet the procedural requirements. Some expert witnesses must submit a written report. *See* FED. R. CIV. P. 26(a)(2)(B). Expert witnesses testifying at trial must be available for a deposition. *See* FED. R. CIV. P. 26(b)(4)(A).

98. Bal, *supra* note 56, at 384.

99. *See infra* Appendix I; *see also* Bal, *supra* note 56, at 384.

cases. I examined post-1993 medical malpractice cases from each state's highest court.[100] To construct the table in the Appendix, I then selected the most recent case, ensured its consistency with other cases from the state, confirmed that it was a medical malpractice case involving expert witnesses,[101] and noted whether and why (or why not) the court applied (or did not apply) *Daubert* to the admissibility of expert-witness testimony.

### B. SUMMARY OF FINDINGS: STATE CLASSIFICATIONS

The following two tables serve a dual purpose. First, they synthesize the fifty-state survey's results by breaking down which states apply *Daubert* generally and which apply *Daubert* to experts in medical malpractice cases. Second, the tables delineate how the full fifty-state survey classifies types of states. Table 1 delineates the study's terminology for how states assess expert testimony *generally* and lists which states fall into each category; it corresponds to the first column of the full table in Appendix 1. Table 2 catalogs the study's definitions that signify whether and how each state applies *Daubert* in the medical malpractice context *only*; it corresponds to the second column of the full table in Appendix 1.

**Table 1: Fifty-State Survey on Expert Testimony Admissibility, Generally**

| Term | Description | States | State Count |
|---|---|---|---|
| *Daubert* state | State has adopted *Daubert* via statute or judicial decision as either binding or instructive. | Alaska, Arizona, Arkansas, Colorado, Connecticut, Delaware, District of Columbia, Georgia, Hawai'i, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Massachusetts, Michigan, Mississippi, Montana, Nebraska, New Hampshire, North Carolina, Ohio, Oklahoma, Oregon, Rhode Island, South Dakota, Tennessee, Texas, Vermont, West Virginia, Wisconsin, Wyoming. | 33* |
| *Frye* state | State has adopted *Frye* via statute or judicial decision. | Alabama, California, Florida, Illinois, Maryland, Minnesota, New Jersey, New York, Pennsylvania, Washington. | 10 |
| Other state | State uses neither the *Daubert* nor the *Frye* standard. | Maine, Missouri, Nevada, New Mexico, North Dakota, South Carolina, Utah, Virginia. | 8 |

*Includes District of Columbia

100. If there was no case on point from the state's highest court, I selected one from the highest appellate court available after ensuring that the courts in that state applied their standard consistently.

101. The search often presented cases involving causes of action other than medical malpractice that involved medical expert testimony (such as products liability and personal injury cases). Because that is beyond the scope of this Note, I manually screened out those cases and focused the inquiry only on cases wherein a patient (or, if deceased, the decedent's estate) sued a physician(s) or hospital for medical malpractice.

**Table 2: Fifty-State Survey on Expert Testimony Admissibility in Medical Malpractice Cases**

| Term | Description | States | State Count |
|---|---|---|---|
| *Daubert*-free zone | State does not apply *Daubert* to expert witnesses in medical malpractice lawsuits. | Alabama, Alaska, California, Connecticut, District of Columbia, Florida, Georgia, Hawai'i, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, South Carolina, Tennessee, Utah, Virginia, Washington, West Virginia, Wyoming. | 38* |
| *Daubert* zone | State applies *Daubert* to expert witnesses in medical malpractice lawsuits. | Arizona, Arkansas, Colorado, Delaware, Iowa, Michigan, Mississippi, Oklahoma, Rhode Island, South Dakota, Texas, Vermont, Wisconsin. | 13 |

*Includes District of Columbia

C. SUMMARY OF FINDINGS: UNCOVERING JUDICIAL RATIONALES FOR THE *DAUBERT*-FREE ZONE

The following table explains why the thirty-eight *Daubert*-free zones fail to apply the *Daubert* factors to experts in medical malpractice cases. The Appendix cites a case from each of these states illustrating its explanation.

**Table 3: States' Explanations for Maintaining *Daubert*-Free Zones**

| Explanation | States | State Count |
|---|---|---|
| State defers to expert's "learned experiences" and/or expertise. | Alaska, Connecticut, District of Columbia, Hawai'i, Idaho, Indiana, Massachusetts, Montana, Nebraska, New Hampshire, New Mexico, North Carolina, Ohio, Oregon, West Virginia. | 15* |
| State does not apply *Daubert* to any expert witness (*Frye* or "other" states). | Alabama, California, Florida, Illinois, Maine, Maryland, Missouri, New Jersey, New York, North Dakota, Pennsylvania, South Carolina, Utah, Virginia. | 14 |
| State uses statute mandating evidentiary standard (e.g., locality rule, specialty rule). | Georgia, Kansas, Nevada, Tennessee, Washington. | 5 |
| State claims that applying *Daubert* is instructive, not mandatory. | Kentucky, Louisiana, Minnesota, Wyoming. | 4 |
| **TOTAL** | | **38** |

*includes District of Columbia

As Table 3 demonstrates, fourteen out of the thirty-eight *Daubert*-free zones are *Frye* states or "other" states that do not apply *Daubert* to *any* type of expert-witness testimony, which explains why they do not apply the standard to medical malpractice cases.

But the remaining twenty-four *Daubert*-free zones are *Daubert* states—meaning the state adopted *Daubert* as the governing admissibility standard for expert witnesses but refuses to apply *Daubert* to experts in medical malpractice cases. What do we make of this discrepancy?

The research demonstrates that, even when states employ *Daubert*, they defer to physician–experts' industry custom when determining the standard of care in medical malpractice lawsuits.[102] In these twenty-four *Daubert*-free zones, admissibility turns on whether the expert has familiarity with industry custom, not whether her testimony is reliable or accurate under *Daubert*. The overarching justification of deference to industry custom underlies the four more specific explanations highlighted in Table 3.

The most common explanation for *Daubert*-free zones, used by fifteen states, is explicit deference to industry custom instead of applying *Daubert*. These states determine admissibility based on a physician–expert's "learned experiences" (or a similar term). If the physician is knowledgeable in the medical specialty at issue and can demonstrate familiarity with industry custom, then the physician is permitted to testify regardless of the reliability and accuracy of her testimony. Michael Gottesman, who argued *Daubert* at the Supreme Court for the plaintiff-petitioners, refers to this phenomenon as the "prestige factor," wherein a trial court heavily considers an expert witness's professional degrees, institutional affiliations, publications, and number of years of experience in a specialized field, *inter alia*.[103]

Courts using the "learned-experiences" or "prestige-factor" approach often claim that *Daubert* is only applicable when expert witnesses present novel scientific theories, so it need not apply when medical malpractice experts make conclusions based on their training, education, and practical experience.[104] *Daubert* itself, however, does not condition its applicability on whether an expert's testimony presents a novel or established scientific theory, meaning that these states' deference to experts' "learned experiences" is a euphemism for letting the doctor testify solely based on her professional credentials.[105]

Five states maintain *Daubert*-free zones via implicit deference to industry custom. These states deploy another evidentiary standard—mandated by statute—

102. M. Gregg Bloche, *The Emergent Logic of Health Law*, 82 S. CAL. L. REV. 389, 462 (2009).

103. *Cf.* Gottesman, *supra* note 36, at 878–82 (defining "the prestige factor" as "whether the expert is not merely minimally credentialed, but instead a highly-placed, highly-regarded specialist in the field about which he or she is testifying").

104. *See, e.g.*, Gilkey v. Schweitzer, 983 P.2d 869, 872 (Mont. 1999).

105. *See, e.g.*, Ditto v. McCurdy, 947 P.2d 952, 957 (Haw. 1997) (upholding admission of expert testimony on grounds that he drew on his medical expertise); Palandjian v. Foster, 842 N.E.2d 916, 923 (Mass. 2006) (finding testimony on the standard of care not subject to *Daubert* because testimony was based on expert's knowledge about physician custom, not on scientific theory or research).

for assessing the admissibility of expert testimony in medical malpractice cases. Applying these state statutes is a manifestation of deference to industry custom; when these states' judges determine admissibility based on the expert's practice location or specialty, they are really asking whether the expert is familiar with industry custom.[106] Part III will discuss the effectiveness of such standards as compared to *Daubert*. In short, these states require the expert to have a superficial similarity—such as practice location or medical specialty—to the physician–defendant, instead of requiring the testimony's scientific reliability.

Finally, four states maintain *Daubert*-free zones on the grounds that *Daubert* itself is only persuasive, rather than mandatory, in state courts, so they do not have to apply it in the medical malpractice context. Keep in mind, however, that these states have adopted *Daubert* as the governing standard for expert-witness testimony in general. Therefore, the "persuasive, not mandatory" excuse is an escape hatch to allow judges to again defer to industry custom to formulate the standard of care in medical malpractice cases.

### D. NOTABLE EXAMPLES: THE DANGER OF *DAUBERT*-FREE ZONES

Although looking at the big picture is helpful, real examples of each type of *Daubert*-free zone bring the numbers to life. Several experts who are objectively unqualified under *Daubert* have been allowed to testify in medical malpractice cases. Using the "learned-experience" approach identified above, the Massachusetts Supreme Judicial Court held that expert testimony was admissible based on the expert's familiarity with local custom, even though the testimony lacked proof of effectiveness and scientific testing.[107] The Alabama Supreme Court, consistent with the state's adherence to *Frye*, reasoned that applying *Daubert* in medical malpractice cases was too "extreme" and refused to entertain the parties' *Daubert*-based arguments.[108] Using the statutory-evidentiary-standard approach, the Supreme Court of Kansas held that its specialty rule, mandating that an expert can testify if she spends at least fifty percent of her professional time practicing medicine in the same specialty as the defendant, applied to a physician testifying as an expert in a medical malpractice case.[109]

Other courts have excluded testimony because the expert does not say the "magic" statutory phrases of "reasonable medical probability" or "reasonable medical certainty."[110] In addition, applying the "instructive, not mandatory," approach, the Supreme Court of Kentucky held that the trial court "relie[d] too heavily on the factors . . . in *Daubert*" when assessing an expert's testimony on

106. *See, e.g.*, Dubois v. Brantley, 775 S.E.2d 512, 520–22 (Ga. 2015) (citing *Daubert*, but holding that expert could testify because he had enough medical experience and was similarly specialized as the physician–defendant).

107. *Palandjian*, 842 N.E.2d at 925–26.

108. Martin v. Dyas, 896 So. 2d 436, 441 (Ala. 2004).

109. Schlaikjer v. Kaplan, 293 P.3d 155, 166 (Kan. 2013).

110. *See, e.g.*, Bertram v. Wunning, 385 S.W.2d 803, 807 (Mo. Ct. App. 1965); Griffen v. Univ. of Pittsburgh Med. Ctr., 950 A.2d 996, 1005 (Pa. Super. Ct. 2008); Beard v. K-Mart Corp., 12 P.3d 1015, 1021 (Utah Ct. App. 2000).

the medical standard of care.[111] In cases like these, admissibility determinations turn on who the experts are—their experiences, knowledge of industry custom, and similarity to the defendant—rather than the substance of their testimony.

## III. EXPLAINING THE EXISTENCE AND PERSISTENCE OF *DAUBERT*-FREE ZONES

Now that the data has mapped out where the *Daubert*-free zones are, it is imperative to discuss *why* they exist. Although, as discussed above, judges are sometimes explicit in avoiding *Daubert* and explaining why, I hypothesize that there are deep-rooted, institutional reasons for why this free pass exists and persists. State courts' failure to apply *Daubert* and deference to industry custom in medical malpractice cases is likely a product of pressure from all players involved in this space. This Part will address how the following factors perpetuate *Daubert*-free zones and the reasons why *Daubert* is more effective than industry custom in each context: (A) state legislation, (B) attorneys, (C) judges, and (D) juries.

### A. STATE LEGISLATION

A majority of states have at least one statute on the books mandating an evidentiary standard for the admissibility of expert testimony in medical malpractice cases.[112] Nothing in these statutes prohibits courts from applying the *Daubert* factors in addition to the standards imposed by the statutes. Nevertheless, these laws provide major cause for courts to avoid *Daubert*, because state-court judges adhere to these statutory standards instead of *Daubert*. This legislation gives judges a legal mechanism by which they can determine the standard of care using industry custom rather than reliable, empirical testimony.

This section assesses the three major categories of state statutes governing admissibility: (1) locality rules, (2) specialty rules, and (3) affidavit rules. It explains why courts use statutes in lieu of *Daubert*, and argues that *Daubert* is preferential to courts' use of superficial indicators of expert-testimony accuracy.

#### 1. Locality Rules

This statutory explanation of why *Daubert*-free zones exist is the most obvious manifestation of deference to industry custom. Locality rules appeared in the United States as early as 1870, and six states have them today.[113] The strictest version of these statutes mandates that expert witnesses may only testify in cases in which they practice in the same state or community as the physician–defendant.[114] More lenient locality rules allow expert witnesses to testify if they can demonstrate familiarity with the physician–defendant's community's standard of care.[115] States' justification for requiring such experience or familiarity is that the

111. Miller v. Eldridge, 146 S.W.3d 909, 918 (Ky. 2004).

112. *See infra* Appendix I (third column in table, "Statutory Alternatives or Additions to *Daubert*").

113. Arizona, California, Idaho, Illinois, Louisiana, Tennessee. *See infra* Appendix I (third column in table, "Statutory Alternatives or Additions to *Daubert*").

114. Johnston & Sartwelle, *supra* note 9, at 495.

115. *Id.*

local standard of care should determine the second element of a medical malpractice claim.[116] In other words, an expert witness should not be permitted to testify to the national standard of care when the jury must decide liability based on a local standard of care.

Although Part IV discusses why deference to expert testimony on industry custom, whether local or national, is fundamentally problematic, this section warrants a brief explanation of why *Daubert* is superior to locality rules in particular. Familiarity with a local industry custom is a surface-level indicator that has little bearing on the empirical accuracy of expert testimony, whereas *Daubert* requires a judge to assess whether an expert's methodologies and the application thereof are reliable, testable, and error-prone. For example, the Supreme Court of North Carolina held that an expert could testify based on "sufficient familiarity with the community at issue," in place of a *Daubert*-based inquiry assessing the testimony's reliability or accuracy.[117]

The logic behind the locality rule, however, is not pointless, and *Daubert* recognizes that. Whether other physicians in the relevant community or state follow an expert's theory or methodology is certainly one indicator of whether it is reliable. By incorporating *Frye*'s "general-acceptance" standard as one of its weighing factors, *Daubert* still takes into account whether expert testimony represents medical-industry custom.

2. Specialty Rules

Twenty-two states have specialty rules.[118] Similarly to locality rules, these rules vary in strength: some specialty rules require that the expert witness actively practice in the "same specialty" as the physician–defendant, whereas others only mandate that the expert have experience in the "same or similar specialty" as the physician–defendant.[119] To illustrate the difference, consider a hypothetical oral surgeon testifying in a malpractice action against an otolaryngologic surgeon (ENT—or ear, nose, and throat surgeon). The ENT could testify in a "same-or similar-specialty" jurisdiction, given the similarity between the practice areas, but could not testify in a "same-specialty" jurisdiction.

The specialty rule is another means by which judges defer to expert testimony about industry custom.[120] Again, *Daubert* is superior to the specialty rule, which, like the locality rule, is a surface-level indicator. In other words, whether an expert is the same type of doctor does not bear on whether her testimony is accurate or reliable. The justification for specialty rules is that the expert's knowledge

116. *See, e.g.*, Gambill v. Straud, 531 S.W.2d 945, 948 (Ark. 1976).

117. Crocker v. Roethling, 675 S.E.2d 625, 632 (N.C. 2009) (internal quotation marks omitted).

118. Alabama, Alaska, Arizona, Colorado, Connecticut, Florida, Georgia, Hawai'i, Illinois, Kansas, Maryland, Michigan, Montana, Nevada, New Jersey, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Virginia. *See infra* Appendix 1 (third column in table, "Statutory Alternatives or Additions to *Daubert*").

119. *See id.* (third column in table, "Statutory Alternatives or Additions to *Daubert*").

120. *See* Schlaikjer v. Kaplan, 293 P.3d 155, 163 (Kan. 2013) (upholding testimony as admissible under specialty statute because expert spent more than 50% of professional time practicing medicine).

of industry custom in a particular specialization of medicine qualifies her to testify about the applicable standard of care.

The underlying rationale for specialty rules—that experts should only testify when they have experience or familiarity with the error for which the physician–defendant is being sued—is legitimate. But an expert who knows nothing about the physician–defendant's specialty would not even meet the baseline 702 requirement that his testimony "help the trier of fact."[121] Additionally, there are other safeguards for disqualifying testimony from an expert unfamiliar with the subject matter of the medical malpractice case: the 400 series in the Federal Rules of Evidence (and each state's analogue) bars irrelevant evidence,[122] and discovery rules in each state's civil procedure code keep out irrelevant expert reports.[123] Because there are already mechanisms to keep out testimony wherein the expert has little to no relevant knowledge or experience in the physician-defendant's field, specialty rules serve no other effective purpose besides allowing judges to admit evidence about industry custom to formulate the standard of care.

3. Affidavit Rules

Twenty-four states have rules requiring that experts submit an affidavit verifying that their testimony is accurate.[124] Many of these states require plaintiffs' medical malpractice complaints to include an expert affidavit certifying that their claim is meritorious, and use this requirement, rather than *Daubert*, to determine admissibility of expert testimony.[125] For example, the Supreme Court of Nevada denied an expert witness the ability to testify based on failure to satisfy the affidavit statute, with no analysis regarding the testimony's reliability or accuracy.[126]

These statutes embody extreme deference to experts: as long as the expert submits a sworn affidavit, she can testify. There is no other discernable purpose to these statutes other than giving judges and jurors hearing the testimony peace of mind that it is truthful. However, experts submitting reports must already sign them to certify that the information within is truthful, and experts testifying on the stand are sworn in. Therefore, the affidavit rule is another superficial mechanism that begs the question of the testimony's reliability.

As the fifty-state survey reveals, courts use the specialty, locality, and affidavit rules in lieu of applying the *Daubert* factors, focusing on surface-level characteristics rather than the actual substance of an expert witness's testimony. This opens the admissibility door to testimony that is not verifiable or lacks

121. *See* FED. R. EVID. 702.

122. *See* FED. R. EVID. 401–07.

123. *See* FED. R. CIV. P. 26.

124. Arizona, Delaware, Georgia, Hawai'i, Illinois, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nevada, New Jersey, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, West Virginia, Wyoming. *See infra* Appendix 1 (third column in table, "Statutory Alternatives or Additions to *Daubert*").

125. *See id.* (third column of table, "Statutory Alternatives or Additions to *Daubert*").

126. Washoe Med. Ctr. v. Second Judicial Dist. Court, 148 P.3d 790, 795 (Nev. 2006).

demonstrated support from other specialists—testimony against which a principled *Daubert* application would protect.

### B. ATTORNEYS' FURTHERANCE OF *DAUBERT*-FREE ZONES

Attorneys also preserve *Daubert*-free zones by rarely objecting to admission of an opposing side's expert testimony in medical malpractice cases.[127] Although attorneys have the option to object to an expert's testimony under *Daubert* or to make a *Daubert* motion requesting that the other side produce information to support the four factors, they instead use cross-examination and present their own expert witnesses to counteract those of the other side.[128] Attorneys hesitate to challenge expert witnesses in medical malpractice cases using the *Daubert*-motion tool because of the difficulty of challenging technical medical testimony—it is much easier for an attorney to present his own expert witness than to challenge the reliability of the other side's expert's testimony.[129]

Because judges usually defer to industry custom to determine the standard of care, all opposing counsel must do to counter an expert witness is present another expert witness who will testify that an alternate treatment or procedure also constitutes industry custom.[130] This leads to the admission of even more *Daubert*-free expert testimony and exacerbates the problem. Again, using the *Daubert* standard in the medical malpractice context would mitigate the problem of attorneys perpetuating the "battle of the experts." Fewer expert witnesses would deliver testimony meeting the *Daubert* reliability standard than can testify to industry custom, and the *Daubert*-proof testimony that remains would be more empirical and reliable.

### C. JUDGES' FURTHERANCE OF *DAUBERT*-FREE ZONES

Fact finders' acceptance of *Daubert*-free zones has helped solidify the status quo. In states that have other evidentiary standards for admissibility of expert testimony, such as the "customary-practice rule" or the "reasonable-certainty rule," judges often use those standards over *Daubert*.[131] Judges are generalist actors who are usually more comfortable and skilled at applying nonmathematical, nontechnical standards like custom and probability, rather than the data-driven *Daubert* factors, when determining admissibility.[132] I discuss the fundamental issue with using "customary practice" as the standard of care in depth in Part IV; for now, it is sufficient to mention that custom is problematic because physicians

127. Shuman, *supra* note 10, at 273.

128. Johnston & Sartwelle, *supra* note 9, at 491.

129. *Id*.

130. Bloche, *supra* note 102, at 465.

131. *See* Nichole Hines, *Why Technology Provides Compelling Reasons to Apply a* Daubert *Analysis to the Legal Standard of Care in Medical Malpractice Cases*, 18 DUKE L. & TECH. REV. 1, 1–2 (2006).

132. *See* Jason Tashea, *Courts Need Help When It Comes to Science and Tech*, ABA J. (Nov. 2, 2017, 8:30 AM), http://www.abajournal.com/lawscribbler/article/courts_need_help_when_it_comes_to_science_and_tech [https://perma.cc/85TY-CM57].

themselves disagree on what custom is, even within medical communities,[133] and the custom itself could be negligent.[134]

In practice, when judges use standards like the "reasonable-certainty rule," the expert witness need only say whatever "magic words" are required for the judge to accept her testimony. Depending on the jurisdiction, "magic words" indicating the degree to which the expert's testimony is accurate include: "most probably,"[135] "reasonable degree of medical probability,"[136] and "reasonable degree of medical certainty."[137] Absent other evidentiary issues in jurisdictions using these standards, expert witnesses in medical malpractice cases can present their conclusions as long as they utter the magic words. The same problem that existed with the affidavit rules rears its head again—the judiciary invests its faith in procedural mechanisms that supposedly certify the veracity of expert testimony but have no bearing on its substance.

Applying *Daubert* in this context would decrease the risk of experts delivering inflated testimony under the guise of magic words like "reasonable medical certainty." Experts subject to *Daubert* must present scientific, reliable evidence to testify. It is preferable to determine whether a physician–defendant breached the standard of care based on empirical data, rather than an expert's probabilistic assessment, because the latter is arbitrary and usually unsupported by science.

### D. JURIES' FURTHERANCE OF *DAUBERT*-FREE ZONES

Finally, juries allow *Daubert*-free zones to thrive for two reasons. First, jurors have trouble understanding scientific or technical evidence, which is essential in medical malpractice trials.[138] The *Daubert*-free zone is perpetuated by juries continuing to hand down verdicts in medical malpractice trials replete with *Daubert*-free, expert-witness testimony. Although there is a legitimate concern that inundating jurors with technical testimony will hinder their decisionmaking abilities, which the Supreme Court addressed in *Daubert* itself, jurors effectively handle *Daubert*-approved testimony in many other contexts besides medical malpractice.[139] The advent of technology has made expert-witness testimony

133. *See* John W. Ely et al., *Determining the Standard of Care in Medical Malpractice: The Physician's Perspective*, 37 WAKE FOREST L. REV. 861, 864–65 (2002). When surveyed, doctors themselves revealed that they would rather a jury assess their conduct based on a customary standard of care than a reasonable standard of care, because the doctors worried that the jury would interpret "reasonable" as "ideal." *Id.* at 869, 873.

134. *See* Paula Sweeney, *Medical Malpractice Expert Testimony in Texas*, 41 S. TEX. L. REV. 517, 525 (2000).

135. Payton v. Kearse, 495 S.E.2d 205, 211 (S.C. 1998).

136. Gardner v. Pawliw, 666 A.2d 592, 598 (N.J. Super. Ct. App. Div. 1995), *rev'd on other grounds*, 696 A.2d 599 (N.J. 1997).

137. Zwiren v. Thompson, 578. S.E.2d 862, 864 (Ga. 2003); Cates v. Woods, 169 So. 3d 902, 909 (Miss. Ct. App. 2014).

138. *See* Sanja Kutnjak Ivkovic & Valerie P. Hans, *Jurors' Evaluation of Expert Testimony: Judging the Messenger and the Message*, 228 L. & SOC. INQUIRY 441, 444 (2003).

139. *See* Adams v. Toyota Motor Corp., 867 F.3d 903, 914–16 (8th Cir. 2017); PharmaStem Therapeutics, Inc. v. ViaCell, Inc., 491 F.3d 1342, 1379 (Fed. Cir. 2007); Cooper v. Lab. Corp. of Am. Holdings, Inc., 150 F.3d. 376, 380–81 (4th Cir. 1998); Brandeis v. Keebler Co., No. 1:12-CV-01508,

more accessible for juries; through the use of electronic visuals like charts, diagrams, photos, and slideshows, expert witnesses can synthesize complicated data into a digestible format that jurors can better understand.[140] *Daubert* is ultimately preferable to an industry-custom standard in the jury context because it makes it more likely that jurors will base their verdicts on reliable, scientific data. Applying *Daubert* in medical malpractice cases would encourage innovation in the presentation of expert-witness testimony. Further, if courts require expert witnesses in medical malpractice cases to pass the *Daubert* test, it will incentivize experts and their counsel to deliver succinct, accessible testimony.

Second, society's trust in the medical profession manifests itself in the American jury. Faith in the Western medical system is a significant psychological factor in why factfinders defer to physician–expert testimony about industry custom rather than demand reliable, scientific evidence. Although trust in the medical profession has declined in recent decades, the general public views physicians as an honest group with strong ethical standards.[141] This perception leads factfinders to put just as much stock, if not more, in a physician–expert's credentials, appearance, delivery, and professionalism rather than the reliability of his testimony.[142] Recall the "prestige factor" that judges often consider—this is the analogue to which juries fall victim.[143] To achieve fair process, juries must make decisions based on accurate information, not the unrelated characteristics of the witnesses delivering it. By placing the focus on empirical, testable data, implementing *Daubert* in medical malpractice cases would focus expert testimony on reliability and lessen the influence of other factors on jurors' and judges' decisionmaking.

## IV. WHY *DAUBERT* IS THE SOLUTION

As the fifty-state survey reveals, state-court judges—as a matter of statute[144] and as a matter of their own discretion—defer to industry custom to determine the standard of care in medical malpractice cases, rather than use the empirical, reliable research that *Daubert* demands from expert witnesses. When explaining their refusal to apply *Daubert* to expert witnesses in the medical malpractice context, many state-court judges opine that *Daubert* is unnecessary when an expert testifies to knowledge gleaned from her "learned experience," or training,

2013 WL 5911233, at *1–3 (N.D. Ill. Jan. 18, 2013); *In re* Bonham, 251 B.R. 113, 132–35 (Bankr. D. Alaska 2000).

140. *See* Ann Greeley, *Psychology, Technology, and the Art of Expert Witness Persuasion in the Internet Age*, INSIGHTS, Summer 2011, at 75–76, http://www.willamette.com/insights_journal/11/summer_2011_8.pdf [https://perma.cc/35TV-WHZ6].

141. In a 2013 Gallup poll, 69% of adults rated the honesty and integrity of physicians, as a group, as "high" or "very high." Robert J. Blendon et al., *Public Trust in Physicians—U.S. Medicine in International Perspective*, 371 NEW ENG. J. MED. 1570, 1570 (2014).

142. Sanja K. Ivković & Valerie P. Hans, *Jurors' Evaluation of Expert Testimony: Judging the Messenger and the Message*, 28 L. & SOC. INQUIRY 441, 468–72 (2003).

143. Gottesman, *supra* note 36, at 878–80.

144. *See infra* Appendix 1 (third column of table, "Statutory Alternatives or Additions to *Daubert*").

education, and practice.[145] In other words, judges often let an expert's "prestige factor" cloud their perception of the substance of her testimony.[146] Furthermore, locality-rule statutes allow judges to accept expert-witness testimony about local-industry custom as determinative of the standard of care. In turn, judges direct juries in medical malpractice cases to assess whether a breach of duty has occurred pursuant to a standard of care based on industry custom, rather than reliable expert testimony.

To understand why this is problematic, we must accept the premise that the standard of care in a negligence action should be reasonableness.[147] Determining the standard of care via industry custom, therefore, contravenes the purpose of negligence law—to judge a defendant's actions based on whether they constituted reasonable conduct.[148] In deferring to industry custom and refusing a reliability-based *Daubert* inquiry, judges substitute industry custom—at face value—as a surrogate for reasonableness, without testing its reliability.

Of course, state courts have long used industry custom as a means for ascertaining the standard of care in negligence cases.[149] Particularly in cases where negligence arises in a specialized or technical industry, judges admit both evidence of industry custom, and whether the defendant failed to follow it, to help themselves and the jury determine whether the defendant acted with due care.[150] Importantly, however, industry custom is but a factor (rather than a conclusive indication) of the standard of care.[151] The reason is simple: "[E]ven a custom can be negligent, and to allow a negligent way of doing things to define due care would result in the creation of a false standard of care."[152]

Consider an example to illustrate this proposition: a doctor serving as an expert witness in the 1750s could testify that the industry custom in New York City hospitals was to use a particular species of Cambodian leeches for bloodletting. This testimony on industry custom begs the question of whether the use of leeches in bloodletting was reasonable in the first place.[153] Thus, the ghost of *Frye* rides

145. *See* discussion *supra* Section II.C.

146. Gottesman, *supra* note 36, at 878–80.

147. *See Negligence*, *supra* note 71.

148. Bloche, *supra* note 102, at 462.

149. *Cf.* T.J. Hooper v. N. Barge Corp., 60 F.2d 737, 740 (2d Cir. 1932) (reasoning that adherence to industry custom of having radios on tugboats is a factor—but not determinative—in determining whether a defendant breached the standard of care).

150. *See* Ellis v. Louisville & Nashville R.R., 251 S.W.2d 577, 579 (Ky. 1952) (factoring railroad custom into assessment of standard of care); MacDougall v. Penn. Power & Light Co., 166 A. 589, 592–93 (Pa. 1933) (factoring roof-building custom into assessment of standard of care). *But see* Rodi Yachts, Inc. v. Nat'l Marine, Inc., 984 F.2d 880, 888–89 (7th Cir. 1993) (finding custom determinative in contract context to protect customers' reasonable expectations).

151. 57A AM. JUR. 2D *Negligence* § 162 (2019).

152. *Id.* (providing the example of not wearing a seatbelt as an action that is both customary and unreasonable).

153. Conversation with M. Gregg Bloche, Professor of Law, Georgetown Univ. Law Ctr., in Wash., D.C. (Apr. 16, 2019) (on file with author).

again[154]: the Court handed down *Daubert* precisely to avoid the problem of admitting expert testimony on the grounds that it tells judges what professionals in certain fields do, rather than what they should *reasonably* do.

However, there is a crucial caveat: local industry custom is not entirely useless in determining the standard of care, and *Daubert* recognizes this. Because the socioeconomic landscape of communities is a significant determinant of the quality of hospitals and physicians, the standard of care must take locality into account.[155] *Daubert* preserves this necessary consideration in its fourth factor, which inquires whether there is "general acceptance" of a theory or technique.[156]

In determining the standard of care in a medical malpractice action, judges should only use surrogates if they are true stand-ins for reasonableness. In the status quo, judges ask simply whether an expert witness can testify to industry custom, which avoids the question of whether the standard of care is reliable and testable, and thus reasonable. This practice contravenes a basic tenet of negligence law—to function as a means of compensating the harmed, because it assesses conduct based on what other doctors do (a function of the *Frye* standard), not what other doctors *should* do to provide reasonable care.

The *Daubert* standard is preferable to industry custom in assessing the standard of care in medical malpractice actions for two reasons. First, medical insurance has caused a market failure that artificially represents the standard of care, rendering industry custom incapable of representing the standard. Second, *Daubert* is better equipped than industry custom to assess the standard of care amid the problem of medical uncertainty.

### A. THE INSURANCE PROBLEM

The existence of the health insurance market makes industry custom an inaccurate representation of the standard of care. Because insurance companies foot patients' bills, healthcare consumers choose more expensive services than they would have chosen if they were paying out of pocket.[157] Professor M. Gregg Bloche poses this as a "moral hazard" problem, wherein healthcare consumers take increased spending risks, to be assumed by medical insurance companies.[158] One justification for deference to industry custom—in medical malpractice lawsuits and other negligence actions—is that the market accurately represents a reasonable standard of care.[159] This justification assumes that there is an efficient

154. I owe this turn of phrase to Professor Charles Abernathy (Professor of Law, Georgetown Univ. Law Ctr.), who used it in connection with *Swift v. Tyson*, 41 U.S. 1 (1842). The "ghost" of a precedent "rides again" when courts employ reasoning from a since-overruled case.

155. *See, e.g.*, Gambill v. Straud, 531 S.W.2d 945, 948 (Ark. 1976) (reasoning that locality is important to determining standard of care in medical malpractice cases because geography, size, financial health, and character of community bear on care reasonably available).

156. Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 594 (1993). Although "generally accepted" and "industry custom" are distinct concepts, the latter is one manifestation of the former.

157. Bloche, *supra* note 102, at 463 n.318.

158. *Id.*

159. *Cf.* T.J. Hooper v. N. Barge Corp., 60 F.2d 737, 740 (2d Cir. 1932) (acknowledging that "in most cases reasonable prudence is in fact common prudence").

market. However, health insurance creates a market failure because healthcare consumers are not paying for services themselves. Lacking that fundamental assumption, the justification for deference to industry custom fails. With the security blanket of insurance, consumers purchase more expensive, higher quality services. On the other hand, because insurance increases the number of patients, it encourages doctors to administer care without regard to the efficacy of treatments or evidence-based clinical protocols, providing care "with few benefits relative to cost."[160] If the costs of care outweigh the benefits, treatment is unreasonable.[161] Looking to the insurance market and, in turn, industry custom, therefore formulates what is supposed to be a "reasonable" standard of care by using unreasonable practices. Using industry custom assumes that what doctors do in practice is per se reasonable and "locks in extant clinical practice norms that are products of these market failures."[162]

*Daubert* would be more effective at dealing with the insurance problem by demanding a scientific basis—rather than professional custom—to establish the standard of care. Because *Daubert* requires experts to disclose evidence supporting a theory or technique's testability and reliability, if testimony passes the *Daubert* test, the theory or technique's benefits outweigh its costs. A positive benefit–cost ratio is the hallmark of reasonableness;[163] therefore, *Daubert*'s call for reliability will bring to light techniques that fulfill the reasonableness standard. Further, *Daubert*'s codification of the *Frye* "general-acceptance" test as its fourth factor preserves negligence law's tradition of looking to custom in devising a standard of care. The other three factors, however, safeguard against validating a medical theory or technique solely on the basis of custom. *Daubert* thereby fulfills tort law's ultimate purpose of judging conduct based on reasonableness by using beneficial, reliable, accurate, and accepted techniques.

### B. THE MEDICAL UNCERTAINTY PROBLEM

Medical practice does not offer black-and-white answers to most of its questions. Rather, the field of medicine is replete with uncertainty—physicians frequently use guesswork, doctors vary in their treatment of similarly situated patients, and different professional organizations publish conflicting guidelines.[164] This is not the fault of physicians, but rather a product of the limits on scientific and personal knowledge.[165] In light of this reality, the judicial system

160. Bloche, *supra* note 102, at 463.

161. *See* RESTATEMENT (SECOND) OF TORTS §§ 291–93 (AM. LAW INST. 1965) (reasonableness measured by a balance of risk and utility, or in other words, cost and benefit).

162. Bloche, *supra* note 102, at 463.

163. *See* RESTATEMENT (SECOND) OF TORTS §§ 291–93.

164. *See* M. Gregg Bloche, *The Invention of Health Law*, 91 CALIF. L. REV. 247, 289 (2003); Steven Hatch, *Uncertainty in Medicine*, 357 BMJ 2180, 2180 (2017). *See generally* DARTMOUTH-HITCHCOCK DEP'T OF SURGERY ET AL., VARIATION IN THE CARE OF SURGICAL CONDITIONS (2014) (describing differences in how physicians treat diseases like obesity, diabetes, and cancer).

165. Kangmoon Kim & Young-Mee Lee, *Understanding Uncertainty in Medicine: Concepts and Implications in Medical Education*, 30 KOREAN J. MED. EDUC. 181, 182 (2018).

needs a standard that will best deal with medical uncertainty when evaluating physicians' conduct. Again, *Daubert* is a more formidable match to wrestle with medical uncertainty than is industry custom.

Because there are innumerable styles of medical practice, courts' adjudication based on a standard of industry custom results in inconsistent, unpredictable outcomes.[166] Custom is also inconclusive in assessing the standard of care because there can be more than one reasonable—or unreasonable—custom.[167] Allowing industry custom to govern the standard of care creates a breeding ground for the cliché term, "battle of experts." Both sides can introduce testimony that the judge will admit, so long as the expert testifies to its widespread use.[168] This further obfuscates medical uncertainty and diverts the standard of care from reasonableness—the inquiry focuses on what physicians do, not what they *ought* to do.[169] Thus, when both the patient–plaintiff and physician–defendant introduce experts whose testimony is admitted based on how physicians commonly act, the jury is ill-equipped to answer the fundamental negligence law question of how the physician-defendant *should* have acted.

Although *Daubert* will not solve the problem of medical uncertainty, it is better suited to deal with it. Because of medical uncertainty, a standard demanding reliability and accuracy allows courts to see what conduct is reasonable if there is no black-and-white answer to the medical question. If the case presents a gray area, judges and juries can make more informed decisions regarding what constitutes reasonable conduct if they know what a doctor should have done, not what doctors frequently do. Of course, using *Daubert* will likely result in multiple experts with varying opinions (that, of course, depend on the side for which they are testifying). However, at least the "battle of experts" will give the judge or jury reliable data on which to base their decisions, instead of leaving them to decide which expert's résumé better enables them to recite industry custom on the stand. By demanding science-based testimony detailing methods that have been subject to testing or peer review, the standard of care will come to reflect consistent, reliable theories and techniques.

Because reasonableness equals a positive cost–benefit ratio, an expert witness can demonstrate that a theory or technique is reasonable by testifying that it reliably produces accurate results. By presenting a *Daubert*-approved theory or technique that has been tested, subjected to peer review, published, and found to have

166. *See* Bloche, *supra* note 164, at 290.

167. Doctors themselves disagree on how to define industry custom. Although some doctors believe industry custom is a procedure or technique they themselves would find reasonable, other doctors believe industry custom means the procedure or technique is widely used. Ely et al., *supra* note 133, at 871–73.

168. *See* Bloche, *supra* note 102, at 465.

169. Kenneth S. Abram, *Custom, Noncustomary Practice, and Negligence*, 109 COLUM. L. REV. 1784, 1797 (2009).

low error rate,[170] an expert proves its reasonableness. If costs of a method severely outweigh its benefits, the method could not survive the *Daubert* standard. Therefore, *Daubert* is a more effective judge of reasonableness than industry custom.

An example of a case in which a state court judge applied *Daubert* to an expert witness in a medical malpractice case displays why this standard is preferable to industry custom when dealing with medical uncertainty. In *Williams v. Hedican*, a mother was exposed to a virus during her pregnancy, developed a severe case of chicken pox, and gave birth to a blind infant with skin lesions.[171] On behalf of the child, his parents sued in Iowa state court the physician who provided prenatal care for medical malpractice on the grounds that the physician's failure to provide the mother with antiviral therapy caused the infant's birth defects.[172] In a prime example of medical uncertainty, the plaintiffs' and defendant's expert witnesses disagreed as to whether a certain antiviral medication could prevent or diminish the effects of chicken pox on a fetus.[173] The plaintiffs pursued an interlocutory appeal of the trial court's exclusion of their expert witness's testimony.[174]

Iowa is one of the few states that is home to a *Daubert* zone for medical malpractice cases. The Iowa Supreme Court applied the four *Daubert* factors to assess the validity of the plaintiffs' expert witness's technique: the use of a certain antiviral medication to treat a mother who has been exposed to the chicken pox virus. First, the expert's theory had been tested: the expert testified that his hospital oversaw the delivery of thousands of babies, none of whom were born with defects when the mother received a timely dose of the medication.[175] Second, the expert presented several peer-reviewed studies and publications to support the validity of administering this medication.[176] Third, the expert presented evidence that the relevant scientific community also relied on these studies.[177] The Iowa Supreme Court ruled that the expert's testimony passed the *Daubert* test, even though it did not have a rate of error, because the presence of the other *Daubert* factors was enough to convince the court that the technique was scientifically reliable.[178]

The Iowa Supreme Court reasoned that a doctor facing the medical uncertainty of treatment in a case of prenatal chicken pox would be reasonable in his decision to administer the medication, because its use was scientifically reliable.[179] This

170. As discussed above, the lack of a *Daubert* factor is not dispositive. This is an example of an ideal theory or technique that would have the highest chance of meeting the *Daubert* threshold. *See supra* note 53 and accompanying text.

171. 561 N.W.2d 817, 819 (Iowa 1997).

172. *Id.*

173. *Id.* at 820.

174. *Id.* at 819.

175. *Id.* at 828.

176. *Id.* at 829.

177. *Id.* at 830–31 (fulfilling the general-acceptance prong).

178. *Id.*

179. *See id.* at 831 (expert witness's "reasoning and methodology . . . [were] based on scientifically valid principles and [were] therefore sound and reliable for evidentiary purposes").

demonstrates that scientific reliability can be an effective measure of reasonableness when assessing a physician whose conduct fell into a gray area. If the court solicited testimony on industry custom, that would not have answered the question of whether the physician faced with medical uncertainty acted reasonably, but rather what other physicians do in the same situation, regardless of reasonableness.

Each of the four *Daubert* factors is particularly well-suited to assessing medical malpractice expert testimony. First, the testimony's testability is important in medical malpractice cases—if a medical procedure is usually successful, it is better-suited to confront the problem of medical uncertainty.[180] Second, peer-review and publication are especially important in the medical community and indicative of whether an expert and her method are well-regarded and trustworthy.[181] Third, error rates demonstrate how reasonable the doctor's calculus was in deciding to act because those error rates indicate how often a type of treatment or procedure succeeds.[182] Finally, because industry custom helps elucidate how a particular medical community functions, the "generally-accepted" prong remains relevant in assessing overall reliability of a theory or technique.[183]

## CONCLUSION

*Daubert*'s requirement of scientific reliability is a more effective surrogate for reasonableness than industry custom. The majority of state-court systems, which refuse to apply *Daubert* in medical malpractice cases, should abandon the status quo. *Daubert* is better equipped to meet two of the most fundamental problems that medical malpractice presents: failure of the insurance market and medical uncertainty.

One of the biggest obstacles to implementing this recommendation is a federalism concern: *Daubert* is a federal standard that state courts are not required to adopt, let alone in a certain type of case. For the states that have already adopted *Daubert* generally, this excuse for keeping medical malpractice a *Daubert*-free zone disappears. States remaining on the *Frye* standard face the initial issue of adopting *Daubert* in the first place, and states that apply their statutory evidentiary standards for medical expert testimony face the preliminary problem of either reconciling those statutes with *Daubert* or repealing them. It is beyond my scope here to make these recommendations.

If state courts accept the recommendation to apply *Daubert* in the medical malpractice context, I predict that, first, there would be less expert testimony overall, because physicians would have to overcome *Daubert*'s reliability hurdles in order

180. *See id*. at 828.

181. Johnston & Sartwelle, *supra* note 9, at 491.

182. *See* Dinah Wisenberg Brin, *The Best Response to Medical Errors? Transparency*, ASS'N AM. MED. CS. (Jan. 15, 2018), https://www.aamc.org/news-insights/best-response-medical-errors-transparency [https://perma.cc/6CAZ-5A4B].

183. *See, e.g*., Gambill v. Straud, 531 S.W.2d 945, 948 (Ark. 1976) (discussing the malleability of industry customs in different localities).

to testify. Justice Ginsburg observed: "It is implausible to suggest, post-*Daubert*, that parties will initially present less than their best expert evidence in the expectation of a second chance should their first try fail."[184] If *Daubert* applied in medical malpractice cases, parties would be aware of—and adapt to—*Daubert*'s demanding reliability requirements by proffering experts who could plausibly meet the standard. This result would help temper the pejorative perception of medical malpractice cases as "battles of the experts" whose outcome depends on the experts' prestige, rather than their testimony's substance.

Second, I predict that the expert witnesses who survive *Daubert* would deliver more scientifically sound testimony in medical malpractice cases. Thus, applying *Daubert* here would decrease the admission of "junk science" based on the doctor's surface-level credentials or knowledge of industry custom. Third, applying *Daubert* would encourage scientific innovation in the expert-witness community. Experts are virtually required for both sides in a medical malpractice action. If experts cannot get away with regurgitating industry custom on the stand, then the *Daubert* standard would force them to deliver reliable testimony on testable methods—or, if no method exists, to develop the scientific research and literature themselves. Relying on industry custom results in a "cultural lag": because the courts must wait for the practice to become accepted, the focus is on cementing old research rather than innovating new research.[185]

Finally, my recommendation represents a step toward fairer process. Fair process requires the inclusion of relevant evidence. Relevant evidence makes a fact at issue more or less true. One fact at issue in a medical malpractice case is whether the physician breached the standard of care. The fact finder assesses the standard of care based on reasonableness. *Daubert*'s loci of scientific reliability and verifiability are indicators of reasonableness. Therefore, evidence regarding a doctor's pursuit of a scientifically reliable course of action makes that doctor's actions either more or less reasonable, which determines whether she breached the standard of care. Such evidence is certainly relevant, and thus its admission makes for fairer process. Therefore, state-court judges should make medical malpractice a *Daubert* zone.

184. Weisgram v. Marley Co., 528 U.S. 440, 455 (2000).

185. Paul C. Giannelli, *The Admissibility of Novel Scientific Evidence*: Frye v. United States*, A Half-Century Later*, 80 COLUM. L. REV. 1197, 1223 (1980).

APPENDIX 1: A FIFTY-STATE SURVEY OF *DAUBERT*'S APPLICATION IN MEDICAL MALPRACTICE LITIGATION[186]

| State | General Standard for Expert-Witness Testimony[187] | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert*[188] |
|---|---|---|---|
| Alabama | *Frye* state<br>• Applies the *Frye* standard and held that *Daubert* standard only applied to "scientific" testimony. Mazda Motor Corps. v. Hurst, 261 So. 3d 167, 184–85 (Ala. 2017).<br>• Adopted Rule 702, but not *Daubert*, by statute. ALA. CODE § 12-21-160 (2019). | *Daubert*-free zone<br>• Explicitly refused to apply *Daubert* in medical malpractice cases. Martin v. Dyas, 896 So. 2d 436, 441 (Ala. 2004) (after court reasoned that adopting *Daubert* to medical malpractice cases was too "extreme," allowed expert to testify to standard of care because he practiced in a similar specialty to the physician–defendant). | • Specialty rule: ALA. CODE § 6-5-548(a) (2019) (expert witness must be a "similarly situated" healthcare provider as defendant). |
| Alaska | *Daubert* state<br>• Adopted *Daubert* by judicial decision. State v. Coon, 974 P.2d 386, 402 (Alaska 1999). | *Daubert*-free zone<br>• Explicitly refused to adopt *Daubert* in medical malpractice cases. Marsingill v. O'Malley, 128 P.3d 151, 160 (Alaska 2006) (*Daubert* only applies to novel scientific theories, not to expert testimony based on personal experience in the field). | • Specialty rule: ALASKA STAT. § 09.20.185(a)(2) (2019) (expert witness must have experience in same discipline or school of practice as defendant). |

186. Grey shading indicates a *Daubert*-free zone. No shading indicates a *Daubert* zone.

187. Michael Morgenstern, Daubert v. Frye*: A State-by-State Comparison*, EXPERT INST. (Aug. 9, 2018), https://www.theexpertinstitute.com/daubert-v-frye-a-state-by-state-comparison/ [https://perma.cc/BE6G-HTXV].

188. Morton, *supra* note 73.

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
|---|---|---|---|
| **Arizona** | *Daubert* state<br>• Adopted *Daubert* by court rulemaking. ARIZ. R. EVID. 702. | *Daubert* zone<br>• Applies *Daubert* to admissibility of expert testimony regarding the standard of care. *See* Sandretto v. Payson Healthcare Mgmt., 322 P.3d 168, 174–76 (Ariz. Ct. App. 2014) (affirming lower court's denial of motion for new trial because expert met relevant and reasonable *Daubert* prongs). | • Affidavit rule: ARIZ. REV. STAT. ANN. § 12-2603(A) (2019) (expert witness must certify in affidavit whether testimony is necessary).<br>• Specialty rule: ARIZ. REV. STAT. ANN. § 12-2604(A)(2)(a) (2019) (expert witness must actively practice in same specialty as defendant).<br>• Locality rule: ARIZ. REV. STAT. ANN. § 12-563(1) (2019) (expert witness must practice in the same state as the defendant). |
| **Arkansas** | *Daubert* state<br>• Adopted *Daubert* by judicial decision. Farm Bureau Mut. Ins. Co. of Ark. v. Foote, 14 S.W.3d 512, 519 (Ark. 2000). | *Daubert* zone<br>• Applies *Daubert* to admissibility of expert testimony regarding the medical standard of care. Regions Bank *ex rel.* Estate of Harris v. Hagaman, 84 S.W.3d 66, 70 (Ark. Ct. App. 2002) (OB/GYN specialist allowed to testify to violation of standard of care based on adherence to *Daubert* factors). | • No statutes |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
|---|---|---|---|
| **California** | *Frye* state<br>• Rejected the *Daubert* standard. People v. Leahy, 882 P.2d 321, 331 (Cal. 1994).<br>• However, recognizes role of judges as gatekeepers in admitting expert testimony. Sargon Enters. v. Univ. of S. Cal., 288 P.3d 1237, 1251 (Cal. 2012). | *Daubert*-free zone<br>• Does not apply *Frye* or *Daubert* to expert medical opinion in malpractice cases. Roberti v. Andy's Termite & Pest Control, Inc., 6 Cal. Rptr. 3d 827, 833–34 (Cal. Ct. App. 2003) (holding that *Frye* still applied but only to testimony regarding novel devices or processes). | • Locality rule: CAL. HEALTH & SAFETY CODE § 1799.110(c) (West 2019) (duty of care determined by physicians in the same or similar locality). |
| **Colorado** | *Daubert* state<br>• Held that *Daubert* governs in relevant cases. People v. Shreck, 22 P.3d 68, 78 (Colo. 2001). | *Daubert* zone<br>• Applies *Daubert* to expert-witness testimony in medical malpractice cases. Estate of Ford v. Eicher, 250 P.3d 262, 266 (Colo. 2011) (holding that the trial court abused its discretion when it applied reasonable-medical-probability standard instead of *Daubert*). | • Specialty rule: COLO. REV. STAT. § 13-64-401 (2019) (expert witness can testify if she has the same specialty as physician–defendant). |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
|---|---|---|---|
| **Connecticut** | *Daubert* state<br>• Adopted *Daubert* by judicial decision. State v. Porter, 698 A.2d 739, 742 (Conn. 1997). | *Daubert*-free zone<br>• Refused to apply *Daubert–Porter* to medical-expert testimony. Hayes v. Decker, 822 A.2d 228, 235–37 (Conn. 2003) (trial court should have admitted expert testimony based on "well established principles of the scientific community"). | • Specialty rule: CONN. GEN. STAT. § 52-184c(c) (2019) (expert must practice in same or related specialty as defendant if defendant is certified as specialist, is trained and experienced in a medical specialty, or holds himself out as specialist). |
| **Delaware** | *Daubert* state<br>• Adopted *Daubert* and *Kumho Tire* by judicial decision. M.G. Bancorporation, Inc. v. Le Beau, 737 A.2d 513, 522 (Del. 1999). | *Daubert* zone<br>• Applies *Daubert* to expert testimony regarding the standard of care in medical malpractice cases. *See* Sturgis v. Bayside Health Ass'n, 942 A.2d 579, 588 (Del. 2007) (upholding a trial court's application of *Daubert* to expert testimony on standard of care and breach). | • Affidavit requirement: DEL. CODE ANN. tit. 18, § 6853 (a)(1) (2019) (plaintiff's expert must submit affidavit certifying that there are "reasonable grounds" to believe the defendant committed medical malpractice). |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
|---|---|---|---|
| **District of Columbia** | *Daubert* state<br>• Adopted *Daubert* by judicial decision. Motorola Inc. v. Murray, 147 A.3d 751, 756, 758 (D.C. 2016). | *Daubert*-free zone<br>• Does not apply *Daubert* or *Frye* to medical malpractice expert testimony. Drevenak v. Abendschein, 773 A.2d 396, 418 (D.C. 2001) (refusing to apply either standard to expert's testimony because it was not novel scientific evidence). | • No statutes |
| **Florida** | *Frye* state<br>• Rejected the *Daubert* standard. DeLisle v. Crane Co., 258 So. 3d 1219, 1229 (Fla. 2018). | *Daubert*-free zone<br>• Applies *Frye* to medical malpractice expert testimony. *See* Poulin v. Fleming, 782 So. 2d 452, 456–57 (Fla. Dist. Ct. App. 2001) (refusing to admit testimony on medical causation of schizophrenia diagnosis because theory was not generally accepted). | • Specialty rule: FLA. STAT. § 766.102(5)(a)(1) (2019) (expert must actively practice in the same specialty as the defendant). |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
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| **Georgia** | *Daubert* state<br>• Adopted *Daubert* by statute. GA. CODE ANN. § 24-7-702(f) (2019). | *Daubert*-free zone<br>• Refuses to apply *Daubert*, but finds its factors instructive. Dubois v. Brantley, 775 S.E.2d 512, 520, 522 (Ga. 2015) (citing *Daubert*, but holding that expert could testify because he had enough medical experience and was similarly specialized as the physician–defendant). | • Affidavit requirement: GA. CODE ANN. § 9-11-9.1(a) (2019) (plaintiff's expert must submit affidavit stating facts allegedly constituting negligence).<br>• Specialty rule: GA. CODE ANN. § 24-7-702(c)(2)(A) (2019) (expert must actively practice in the same specialty as the defendant). |
| **Hawai'i** | *Daubert* state<br>• *Daubert* instructive, but not binding. State v. Vliet, 19 P.3d. 42, 53 (Haw. 2001). | *Daubert*-free zone<br>• Does not apply *Daubert* in medical malpractice cases. Ditto v. McCurdy, 947 P.2d 952, 957 (Haw. 1997) (upholding admission of expert testimony on the grounds that the expert drew on his medical expertise). | • Affidavit requirement: HAW. REV. STAT. § 671-12.5(a)(1) (2019) (expert must submit affidavit certifying that there is "reasonable and meritorious cause" to file the claim).<br>• Specialty rule: HAW. REV. STAT. § 671-12.5(a)(1) (2019) (expert must have experience in the same specialty as the defendant). |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
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| **Idaho** | *Daubert* state<br>• *Daubert* instructive, but not binding. *See* Weeks v. E. Idaho Health Servs., 153 P.3d 1180, 1184 (Idaho 2007). | *Daubert*-free zone<br>• Explicitly rejected application of *Daubert* to experts in medical malpractice cases. Weeks v. E. Idaho Health Servs., 153 P.3d 1180, 1185–86 (Idaho 2007) (holding expert testimony admissibility because it was based on "sound scientific principles," rather than agreed-upon studies). | • Locality rule: *See* IDAHO CODE §§ 6-1012, 1013 (2019) (expert must demonstrate familiarity with the local standard of care). |
| **Illinois** | *Frye* state<br>• Adopted *Frye* by statute. ILL. R. EVID. 702.<br>• Only applies *Frye* to expert witnesses presenting new or novel theories or techniques. People v. Basler, 740 N.E.2d 1, 4 (Ill. 2000). | *Daubert*-free zone<br>• Applies *Frye* to expert testimony in medical malpractice cases. N. Trust Co. v. Burandt & Ambrust, LLP, 933 N.E.2d 432, 445–46 (Ill. App. Ct. 2010) (holding that *Frye* applied to expert's testimony on the standard of care). | • Affidavit requirement: 735 ILL. COMP. STAT. 5/2-622(a)(1) (2019) (plaintiff's expert must submit affidavit certifying "reasonable and meritorious cause" for a claim).<br>• Locality and specialty rule: 735 ILL. COMP. STAT. 5/8-2501(c)–(d) (2019) (expert must be licensed in same profession as defendant and have familiarity with the state standard of care). |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
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| **Indiana** | *Daubert* state<br>• *Daubert* instructive, but not binding. Alsheik v. Guerrero, 965 N.E.2d 1115, 1127 (Ind. Ct. App. 2011), *vacated in part on other grounds*, 979 N.E.2d 151 (Ind. 2012). | *Daubert*-free zone<br>• Explicitly rejected application of *Daubert* in medical malpractice cases. Akey v. Parkview Hosp., Inc., 941 N.E.2d 540, 545 (Ind. Ct. App. 2011) (instead applying the *Shults-Lewis* inquiry —from Doe v. Shults-Lewis Child & Family Servs., Inc., 718 N.E.2d 738 (Ind. 1999)—asking whether expert testimony is valid and trustworthy). | • No statutes |
| **Iowa** | *Daubert* state<br>• *Daubert* instructive, not binding. Leaf v. Goodyear Tire & Rubber Co., 590 N.W.2d 525, 532 (Iowa 1999). | *Daubert* zone<br>• Applies *Daubert* to expert witnesses in medical malpractice cases. Williams v. Hedican, 561 N.W.2d 817, 827–31 (Iowa 1997) (admitting expert testimony on virology based on its reliability as peer-reviewed and generally accepted). | • No statutes |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
|---|---|---|---|
| **Kansas** | *Daubert* state<br>• Adopted *Daubert* by statute. KAN. STAT. ANN. § 60-456(b) (2019). | *Daubert*-free zone<br>• Assesses expert testimony admissibility via specialty rule rather than *Daubert* factors. Schlaikjer v. Kaplan, 293 P.3d 155, 163 (Kan. 2013) (per curiam) (allowing testimony under specialty statute because expert spent more than 50% of professional time practicing medicine in same specialty as defendant). | • Specialty rule: KAN. STAT. ANN. § 60-3412 (2019) (expert witness must spend 50% of professional time practicing the same specialty as the physician–defendant). |
| **Kentucky** | *Daubert* state<br>• Adopted *Daubert* by judicial decision. Mitchell v. Commonwealth, 908 S.W.2d 100, 101 (Ky. 1995). | *Daubert*-free zone<br>• Applying *Daubert* is not necessary in medical malpractice cases, but the factors are instructive. Miller v. Eldridge, 146 S. W.3d 909, 918 (Ky. 2004) (holding that the court below relied "too heavily" on *Daubert* factors to exclude expert testimony). | • No statutes |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
|---|---|---|---|
| **Louisiana** | *Daubert* state<br>• Adopted *Daubert* by judicial decision. State v. Foret, 628 So. 2d 1116, 1123 (La. 1993). | *Daubert*-free zone<br>• Applying *Daubert* is not necessary in medical malpractice cases, but the factors are instructive. *See* Jones v. Black, 145 So. 3d 402, 414–15 (La. Ct. App. 2014) (trial court abused discretion in applying *Daubert* to expert testimony on medical causation). | • Locality rule: LA. STAT. ANN. § 9:2794 (D)(1)(b) (2019) (expert must have familiarity with the local standard of care). |
| **Maine** | Other state<br>• Declined to adopt *Daubert*. *See* State v. Bickart, 963 A.2d 183, 189 & n.4 (Me. 2009).<br>• Applies the two-part *State v. Williams* standard: relevance and helpfulness. 388 A.2d 500 (Me. 1978); *Bickart*, 963 A.2d at 187. | *Daubert*-free zone<br>• Does not apply *Daubert* to expert witnesses in medical malpractice cases. *See* Jacob v. Kippax, 10 A.3d 1159, 1163 (Me. 2011) (assessing testimony's relevance, rather than its reliability). | • No statutes |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
|---|---|---|---|
| **Maryland** | *Frye* test<br>• Adopted *Frye* by statute. MD. CODE ANN., CTS. & JUD. PROC. § 5-702 (West 2019). | *Daubert*-free zone<br>• Applies *Frye* to expert testimony in medical malpractice cases. *See* Montgomery Mut. Ins. Co. v. Chesson, 923 A.2d 939, 946 (Md. 2007) (applying the general-acceptance standard). | • Affidavit requirement: MD. CODE ANN., CTS. & JUD. PROC. § 3-2A-04(b)(1)(i) (West 2019) (expert must submit affidavit certifying grounds for claim or defense).<br>• Specialty rule: MD. CODE ANN., CTS. & JUD. PROC. § 3-2A-02(c)(2)(ii)(A) (West 2019) (for claims above the damages cap, expert must be in the same specialty as defendant). |
| **Massachusetts** | *Daubert* state<br>• Adopted *Daubert* by judicial decision. Commonwealth v. Lanigan, 641 N.E.2d 1342, 1349 (Mass. 1994) (emphasizing that *Frye*'s general-acceptance prong still factors in the admissibility analysis). | *Daubert*-free zone<br>• Explicitly held that *Daubert* did not apply in medical malpractice cases when expert witnesses testify to the standard of care. Palandjian v. Foster, 842 N.E.2d 916, 923 (Mass. 2006) (testimony not subject to *Daubert* because it was based on expert's knowledge of custom, not on scientific theory or research). | • No statutes |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
|---|---|---|---|
| **Michigan** | *Daubert* state<br>• Adopted *Daubert* by judicial decision pursuant to MICH. R. EVID. 702. Gilbert v. DaimlerChrysler Corp., 685 N.W.2d 391, 408–09 (Mich. 2004). | *Daubert* zone<br>• Applies *Daubert* to expert testimony on the standard of care in medical malpractice cases. *See* Edry v. Adelman, 786 N. W.2d 567, 570 (Mich. 2010) (rejecting expert-witness testimony because it was not based on "reliable principles or methods"). | • Affidavit requirement: MICH. COMP. LAWS § 600.2912d (1)(d) (2019) (plaintiff's expert must submit affidavit stating facts constituting alleged medical malpractice).<br>• Specialty rule: MICH. COMP. LAWS § 600.2169(1)(a) (2019) (expert must practice in the same specialty as defendant). |
| **Minnesota** | *Frye* state<br>• Rejected *Daubert* but maintains that the reliability factor is instructive. State v. MacLennan, 702 N. W.2d 219, 232–33, 232 n.5 (Minn. 2005). | *Daubert*-free zone<br>• Explicitly declined to adopt *Daubert* for expert testimony in medical malpractice cases. Ly v. North Mem'l Med. Ctr., No. 27-CV-15-3449, 2018 WL 1570150, at *6 (Minn. Ct. App. Apr. 2, 2018) (holding that neither *Daubert* nor *Frye* applied because the expert's testimony did not present novel scientific evidence). | • Affidavit rule: MINN. STAT. § 145.682 (2019) (plaintiff's expert must submit affidavit stating facts allegedly constituting negligence). |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
|---|---|---|---|
| **Mississippi** | *Daubert* state<br>• *Daubert* adopted by judicial decision. Miss. Transp. Comm'n v. McLemore, 863 So. 2d 31, 39 (Miss. 2003). | *Daubert* zone<br>• Applies *Daubert* to medical malpractice expert testimony on the standard of care. Worthy v. McNair, 37 So. 3d 609, 617 (Miss. 2010) (upholding exclusion of expert testimony that lacked sufficient data). | • Affidavit rule: MISS. CODE ANN. § 11-1-58 (1)(a) (2019) (plaintiff's expert must certify that there is a "reasonable basis" to bring the claim). |
| **Missouri** | Other state<br>• "Reasonable foundation" standard adopted by statute and replaced *Frye* standard. MO. REV. STAT. § 490.065 (2019).<br>• Declined to adopt *Daubert*. State Bd. of Registration for Healing Arts v. McDonagh, 123 S. W.3d 146, 156 (Mo. 2003) (en banc). | *Daubert*-free zone<br>• Does not apply *Daubert* but rather the "reasonable foundation standard" in MO. REV. STAT. § 490.065, to expert testimony in medical malpractice cases. Koontz v. Ferber, 870 S.W.2d 885, 892–93 (Mo. Ct. App. 1993). | • Affidavit rule: MO. REV. STAT. § 538.225 (1) (2019) (plaintiff's expert must certify sufficient grounds to bring claim).<br>• Reasonable foundation rule: MO. REV. STAT. § 490.065 (2019) (expert testimony must have reasonable foundation). |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
|---|---|---|---|
| **Montana** | *Daubert* state<br>• Adopted *Daubert* by judicial decision; applies only to novel scientific evidence. State. v. Damon, 119 P.3d 1194, 1198 (Mont. 2005). | *Daubert*-free zone<br>• Explicitly rejected *Daubert*'s application to medical malpractice expert testimony. Gilkey v. Schweitzer, 983 P.2d 869, 872 (Mont. 1999) (*Daubert* only applied to novel scientific evidence, so it did not apply to expert's testimony based on "specialized knowledge"). | • Specialty rule: MONT. CODE ANN. § 26-2-601(3) (2019) (expert witness must be familiar with standards of care in same or similar specialty). |
| **Nebraska** | *Daubert* state<br>• Adopted *Daubert* by judicial decision. Schafersman v. Agland Coop, 631 N.W.2d 862, 876 (Neb. 2001). | *Daubert*-free zone<br>• Applying a "customary care" standard instead of *Daubert* is permissible. Hemsley v. Langdon, 909 N.W.2d 59, 72 (Neb. 2018) (trial court did not abuse discretion in reasoning that *Daubert* was unnecessary and applying the customary-care standard). | No statutes |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
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| **Nevada** | Other state<br>• Courts consider (1) qualifications, (2) assistance, and (3) limited-scope requirements. NEV. REV. STAT. § 50.275 (2019).<br>• *Daubert* remains instructive, not binding. Higgs v. State, 222 P.3d 648, 650 (Nev. 2010). | *Daubert*-free zone<br>• Does not apply *Daubert*; admissibility determined by whether there is a medical-expert affidavit. Washoe Med. Ctr. v. Second Judicial Dist. Court of Nev., 148 P.3d 790, 792 (Nev. 2006). | • Specialty rule NEV. REV. STAT. § 41A.100(2) (2019) (expert must practice in a "substantially similar" specialty as the defendant).<br>• Affidavit rule: NEV. REV. STAT. § 41A.071 (2019) (expert must submit affidavit supporting the allegations in the claim). |
| **New Hampshire** | *Daubert* state<br>• Adopted *Daubert* by judicial decision. Baker Valley Lumber, Inc. v. Ingersoll-Rand Co., 813 A.2d. 409, 415 (N.H. 2002). | *Daubert*-free zone<br>• Does not apply *Daubert* to medical malpractice expert testimony; admissibility determined by expert's learned experience. Goudreault v. Kleeman, 965 A.2d 1040, 1049 (N. H. 2009) (trial court did not abuse discretion by admitting testimony of expert who had not practiced medicine in twenty years). | • No statutes |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
|---|---|---|---|
| **New Jersey** | *Frye* state<br>• Declined to explicitly adopt *Daubert* but held factors instructive, despite maintaining *Frye* standard. *In re* Accutane Litig., 191 A.3d 560, 595 (N.J. 2018). | *Daubert*-free zone<br>• Applies *Frye* to expert testimony in medical malpractice cases. Duber v. Ctr. for Advanced Neurology, No. A-5194-13T3, 2015 WL 9694402, at *7 (N.J. Super. Ct. App. Div. Jan. 12, 2016) (upholding trial court's usage of general-acceptance standard). | • Specialty rule: N.J. STAT. ANN. § 2A:53A-41 (West 2019) (expert must practice in the same specialty or subspecialty as defendant).<br>• Affidavit rule: N.J. STAT. ANN. § 2A:53A-27 (West 2019) (plaintiff's expert must certify that there is "reasonable probability" of a claim). |
| **New Mexico** | Other state<br>• Applies "reliability" and "validity" standards. State v. Alberico, 861 P.2d 192, 203 (N.M. 1993). Finds *Daubert* factors instructive. *Id.* | *Daubert*-free zone<br>• Does not apply *Daubert–Alberico* standard to medical malpractice expert testimony regarding the standard of care. Quintana v. Acosta, 316 P.3d 912, 916–17 (N.M. Ct. App. 2013) (standard did not apply because expert based testimony on personal experience, rather than scientific theory). | • No statutes |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
|---|---|---|---|
| **New York** | *Frye* state<br>• Adopted the *Frye* standard by judicial decision. People v. Wesley, 633 N.E.2d 451, 454 (N.Y. 1994). | *Daubert*-free zone<br>• Applies *Frye* to expert testimony in medical malpractice cases when experts testify to novel theories. Lipschitz v. Stein, 884 N.Y.S.2d 442, 444–45 (N.Y. App. Div. 2009). | • No statutes |
| **North Carolina** | *Daubert* state<br>• *Daubert* adopted by judicial decision. State v. McGrady, 753 S.E.2d 361, 367 (N.C. Ct. App. 2014). | *Daubert*-free zone<br>• Explicitly declined to apply *Daubert* to medical malpractice expert testimony. Crocker v. Roethling, 675 S.E.2d 625, 632 (N.C. 2009) (judged expert testimony based on familiarity with local standard of care rather than reliability). | • No statutes |
| **North Dakota** | Other state<br>• Has not adopted *Frye* or *Daubert*. N.D. R. EVID. 702; State v. Hernandez, 707 N.W.2d 449, 453, 462 (N.D. 2005). | *Daubert*-free zone<br>• Does not apply *Daubert* or *Frye* to expert testimony in medical malpractice cases; applies statute mandating expert affidavit requirement. N.D. CENT. CODE § 28-01-46 (2019). | • Affidavit rule: N.D. CENT. CODE § 28-01-46 (2019) (plaintiff's expert must certify opinion supporting claim). |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
|---|---|---|---|
| **Ohio** | *Daubert* state<br>• Adopted *Daubert* by judicial decision. Terry v. Caputo, 875 N.E.2d. 72, 78 (Ohio 2007). | *Daubert*-free zone<br>• Only applies *Daubert* to medical malpractice experts when they present novel scientific theories. Theis v. Lane, No. WD-12-047, 2013 WL 791871, at *4 (Ohio Ct. App. Mar. 1, 2013) (holding that the medical-probability standard applies in testimony not regarding novel scientific theories). | • Affidavit rule: OHIO R. CIV. P. 10(D)(2)(a) (medical expert must submit affidavit certifying opinion on whether there was malpractice).<br>• Specialty rule: OHIO REV. CODE ANN. § 2743.43(3) (West 2019) (expert must practice in the "same or substantially similar" specialty as defendant). |
| **Oklahoma** | *Daubert* state<br>• Adopted *Daubert* by judicial decision. Christian v. Gray, 65 P.3d 591, 600 (Okla. 2003). | *Daubert* zone<br>• Applies *Daubert* to medical malpractice expert testimony regarding the standard of care. Winham v. Reese, 392 P.3d 715, 718 (Okla. Civ. App. 2017) (affirming rejection of expert testimony not based on reliable methods). | • Affidavit rule: OKLA. STAT. tit. 12 § 19.1(A)(1)(c) (2019) (plaintiff's expert must certify that claim is "meritorious"). |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
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| **Oregon** | *Daubert* state<br>• Adopted *Daubert* by judicial decision. State v. Southard, 218 P.3d 104, 108 (Or. 2009) (citing State v. O'Key, 899 P.2d 663, 680 (Or. 1995)). | *Daubert*-free zone<br>• Admissibility of testimony turns on the medical expert's knowledge of the standard of care, rather than reliability of the expert's methods. Trees v. Ordonez, 311 P.3d 848, 856 (Or. 2013) (holding an expert's testimony admissible because he had "knowledge" about the standard of care, even though he was not a medical doctor). | • No statutes |
| **Pennsylvania** | *Frye* state<br>• Adopted *Frye* by statute. PA. R. EVID. 702 (Historical Notes section). | *Daubert*-free zone<br>• Applies *Frye* to expert testimony on the standard of care in medical malpractice. Cummins v. Rose, 846 A.3d 148, 150–51 (Pa. Super. Ct. 2004) (applying the general-acceptance standard). | • Affidavit rule: PA. R. CIV. P. 1042.3(a)(1) (2019) (plaintiff's expert must certify "reasonable probability" that negligence occurred).<br>• Specialty rule: 40 PA. CONS. STAT. § 1303.512(c)(2) (2019) (expert must practice in same subspecialty as defendant or in a subspecialty with a "substantially similar" standard of care). |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
|---|---|---|---|
| **Rhode Island** | *Daubert* state<br>• *Daubert* instructive, but not binding. DiPetrillo v. Dow Chem. Co., 729 A.2d 677, 686 (R.I. 1999). | *Daubert* zone<br>• Applies *Daubert* to expert testimony in medical malpractice case testifying to the standard of care. Owens v. Silvia, 838 A.2d 881, 899–900 (R.I. 2003) (upholding expert testimony based on its reliability and witness's credibility). | • Specialty rule: 9 R.I. GEN. LAWS § 9-19-41 (2019) (expert must have experience in the same field as the alleged malpractice). |
| **South Carolina** | Other state<br>• Uses state evidence rules and the *Jones* factors to assess expert testimony admissibility. *In re* Robert R., 531 S.E.2d 301, 304 (S.C. 2000) (referencing State v. Jones, 259 S.E.2d 120, 125 (S.C. 1979)) (factors include acceptance by the medical community and ability of laymen to understand testimony). | *Daubert*-free zone<br>• Does not apply *Daubert* to expert-witness testimony in medical malpractice cases. Payton v. Kearse, 495 S.E.2d 205, 211 (S.C. 1998) (instead inquiring whether expert "most probably" believed malpractice had occurred). | • Specialty and affidavit rule: S.C. CODE ANN. § 15-36-100 (2019) (expert must practice in same specialty as defendant and submit affidavit stating facts alleging negligence). |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
|---|---|---|---|
| **South Dakota** | *Daubert* state<br>• Adopted *Daubert* by judicial decision. State v. Hofer, 512 N. W.2d 482, 484 (S.D. 1994). | *Daubert* zone<br>• Applies *Daubert* to medical malpractice expert testimony. Kostel v. Schwartz, 756 N.W.2d 363, 387–88 (S.D. 2008) (upholding trial court's inclusion of expert testimony based on reliability). | • No statutes |
| **Tennessee** | *Daubert* state<br>• *Daubert* instructive, but not binding. McDaniel v. CSX Transp., Inc., 955 S. W.2d 257, 265 (Tenn. 1997). | *Daubert*-free zone<br>• Finds *Daubert* factors persuasive but relies more on the locality rule than on expert reliability in medical malpractice cases. Pullum v. Robinette, 174 S.W.3d 124, 137–38 (Tenn. Ct. App. 2004) (citing *Daubert* but not using factors to assess expert-witness admissibility). | • Affidavit rule: TENN. CODE ANN. § 29-26-122 (2019) (plaintiff's expert must submit affidavit stating that there is a "good faith basis" to believe there was negligence).<br>• Locality and specialty rule: TENN. CODE ANN. § 29-26-115(b) (2019) (expert must practice in the same specialty and the same community as defendant). |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
|---|---|---|---|
| **Texas** | *Daubert* state<br>• *Daubert* instructive, but not binding. E.I. du Pont de Nemours & Co. v. Robinson, 923 S.W.2d 549, 556 (Tex. 1995). | *Daubert* zone<br>• Applied *Daubert* to medical malpractice expert testimony. Wiggs v. All Saints Health Sys., 124 S. W.3d 407, 414 (Tex. App. 2003) (upholding trial court's rejection of unreliable expert testimony). | • Affidavit and specialty rule: TEX. CIV. PRAC. & REM. CODE ANN. § 74.351 (West 2019) (expert practicing in the same specialty as defendant must submit affidavit stating opinion on whether there was negligence). |
| **Utah** | Other state<br>• Follows the *Rimmasch* reliability standard but finds the *Daubert* factors instructive. State v. Crosby, 927 P.2d 638, 641–42 (Utah 1996). | *Daubert*-free zone<br>• Does not apply *Daubert* in medical malpractice context; applies *Rimmasch* standard. Eskelson *ex rel.* Eskelson v. Davis Hosp. & Med. Ctr., 242 P.3d 762, 766 (Utah 2010) (assessing, under *Rimmasch*, the testimony's validity, reliability, and relevance). | • Affidavit rule: UTAH CODE ANN. § 78B-3-423(2)(b) (West 2018) (plaintiff's expert must submit affidavit stating that there are "reasonable grounds" to bring claim). |
| **Vermont** | *Daubert* state<br>• Adopted *Daubert* by judicial decision. State v. Brooks, 643 A.2d 226, 229 (Vt. 1993). | *Daubert* zone<br>• Applied *Daubert* to medical malpractice expert testimony. Pfeifer v. Blake, No. S0236-08CNC, 2009 WL 6465235, at *5 (Vt. Super. Ct. Oct. 15, 2009) (excluding expert testimony lacking reliable scientific support). | • Affidavit rule: VT. STAT. ANN. tit. 12, § 1042(a) (2019) (expert must submit affidavit certifying that there is a "reasonable likelihood" of malpractice). |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
|---|---|---|---|
| **Virginia** | Other state<br>• Expert testimony governed by statute that adopts neither *Frye* nor *Daubert*. VA. CODE ANN. § 8.01-401.1 (2019) (experts may testify to opinions and inferences, but does not specify admissibility standard). | *Daubert*-free zone<br>• *Daubert* does not apply to medical malpractice expert testimony. Richmond Police Dep't v. Bass, 493 S.E.2d 661, 667 (Va. Ct. App. 1997) (holding that courts must instead look to whether expert has "reasonable degree of medical certainty"), rev'd on other grounds, 515 S.E.2d 557 (Va. 1999). | • Affidavit rule: VA. CODE ANN. § 8.01-20.1 (2019) (expert must submit affidavit certifying expert opinion on whether malpractice occurred).<br>• Specialty rule: VA. CODE ANN. § 8.01-581.20 (2019) (expert must practice in same or similar specialty as defendant). |
| **Washington** | *Frye* test<br>• Adopted *Frye* by judicial decision. State v. Riker, 869 P.2d 43, 48 & n.1 (Wash. 1994). | *Daubert*-free zone<br>• Explicitly rejected *Daubert* application to medical malpractice expert testimony. Reese v. Stroh, 907 P.2d 282, 286 (Wash. 1995) (applying state analogue of FRE 702). | • No statutes |
| **West Virginia** | *Daubert* state<br>• Adopted *Daubert* by judicial decision. Wilt v. Buracker, 443 S.E.2d 196, 203 (W. Va. 1994). | *Daubert*-free zone<br>• Does not apply *Daubert* to expert witnesses in medical malpractice cases. Farley v. Shook, 629 S.E.2d 739, 746 (W. Va. 2006) (holding that admissibility of expert testimony turns on whether expert has "some experience or knowledge" on which to base opinion). | • Affidavit rule: W. VA. CODE § 55-7B-6 (2019) (plaintiff's expert must submit affidavit certifying facts that constitute alleged negligence). |

| State | General Standard for Expert-Witness Testimony | Standard for Expert-Witness Testimony in Medical Malpractice Cases | Statutory Alternatives or Additions to *Daubert* |
|---|---|---|---|
| **Wisconsin** | *Daubert* state<br>• Adopted *Daubert* by statute. WIS. STAT. § 907.02(1) (2018). | *Daubert* zone<br>• Applies *Daubert* to expert testimony in medical malpractice cases. *See* Seifert v. Balink, 888 N.W.2d 816, 824 (Wis. 2017) (upholding trial court's admission of expert testimony based on its reliability). | • No statutes |
| **Wyoming** | *Daubert* state<br>• Adopted *Daubert* by judicial decision. Bunting v. Jamieson, 984 P.2d 467, 471 (Wyo. 1999). | *Daubert*-free zone<br>• *Daubert* factors are instructive, not mandatory. Bunting v. Jamieson, 984 P.2d 467, 471, 474 (Wyo. 1999) (holding that lower court abused discretion in applying *Daubert* too strictly). | • Affidavit rule: WYO. STAT. ANN. § 9-2-1519(b) (2019) (plaintiff's expert must submit affidavit stating facts constituting alleged negligence). |