Florida State University Law Review

Volume 48 | Issue 3 Article 6

Spring 2021

Insuring Apologies

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INSURING APOLOGIES

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ABSTRACT

Based on evidence demonstrating that an apology from a wrongdoer to a victim can assuage the victim's anger, reduce the likelihood that the victim seeks legal redress, and facilitate settlement, state legislatures have passed apology laws to encourage the delivery of more apologies. Aimed primarily at medical malpractice litigation—a traditional locus of the tort reform effort—apology laws render apologies from physicians to patients inadmissible in subsequent legal proceedings. In theory, privileging apologies will encourage their use and reduce malpractice liability risk as patients assert fewer claims and settle those claims that are asserted.

However, if apology laws encourage the delivery of insincere or disingenuous apologies, liability risk may increase, as such apologies exacerbate, rather than assuage, patient anger. Similarly, if apology laws encourage physicians to offer apologies that signal the occurrence of malpractice that otherwise would have gone undiscovered, physician liability risk may increase. Thus, apology laws may increase or decrease medical malpractice liability risk, and the nature of their ultimate effect has sparked an intense debate among scholars, policymakers, and physicians. This Article shows that apology laws have the counterintuitive effect of increasing liability risk.

To evaluate whether apology laws work as intended, I examine a novel dataset of medical malpractice insurance premiums charged to physicians over nineteen years. This dataset provides a better measure of liability risk than publicly available—but incomplete—) data on malpractice claims used in prior work. Across three separate specialties (general surgery, internal medicine, and obstetrics/gynecology), my analysis demonstrates that apology laws increase the premiums charged to physicians by between 10 and 16 percent. These increases translate into substantial additional costs for individual physicians, with surgeons, internists, and obstetricians paying $5,000, $1,700, and $7,200 more in annual premiums, respectively. Based on strong and consistent evidence that apology laws increase, not decrease, malpractice liability risk, I argue that these laws fail to achieve their stated goal. Also on the basis of this evidence, I propose several alternative legal strategies for legislatures to accomplish their goals.

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INTRODUCTION

At first glance, the professional lives of an Uber driver and CEO of a multinational oil company appear to have little in common. One represents the archetypal example of the new gig economy, while the other arguably represents the pinnacle of achievement in traditional corporate America. Despite their obvious differences, however, these two professions share an important commonality with one another. When something goes wrong, the driver and CEO, alike, are expected to apologize for their mistakes. In the case of the Uber driver, a rude word or a longer-than-anticipated trip may occasion an apology.[1] In the case of the CEO, an apology may follow a much larger transgression, such as corporate activities damaging the environment.[2] Indeed, apologies are expected not only in the professional realm but in nearly all aspects of everyday life.

While apologies may be expected from and encouraged of almost every person who injures or offends another, this valuable form of

1. *See* Basil Halperin et al., *Toward an Understanding of the Economics of Apologies: Evidence from a Large-scale Natural Field Experiment* 2-5 (Natural Field Experiments Working Paper No. 00644, 2018), https://ideas.repec.org/p/feb/natura/00644.html [https://perma.cc/Z2JQ-L2GT] (describing an experiment involving Uber drivers and apologies).

2. *See* Ben Gilbert, Alexander James, & Jason F. Shogren, *Corporate Apology for Environmental Damage*, 56 J. RISK UNCERTAINTY 51, 56-58 (2018) (describing an experiment involving an apology from a corporate CEO following an oil spill).

social interaction has been conspicuously absent from where it may matter most—transgressions serious enough to involve the legal system.[3] This trend against apologies has begun to shift, however, in both the criminal and civil contexts. In the criminal context, the restorative justice movement "emphasizes . . . making amends"[4] and encourages those convicted of a crime to engage with victims through "formal and informal settings, including community-based circles, conferences and dialogues, reparative sentencing and probation structures, victim-offender mediation, [and] prison-based processes."[5] On the civil side, the apology and disclosure movement has emerged to encourage the disclosure of harm to victims along with an offer of apology.[6] This movement emphasizes individual programs and legal interventions to encourage disclosure and apologies from wrongdoers to victims—often in a tort context.

While the restorative justice and apology and disclosure movements have much in common, they are sufficiently distinct to warrant separate treatment. This Article focuses squarely on apologies in the civil system. More specifically, it evaluates the role of apology laws. Designed to encourage apologies, these laws grew out of research demonstrating the value of apologizing in a civil context. In general, prior research has found evidence demonstrating that apologies can repair relationships, restore dignity, assuage anger, and heal humiliations following the injury caused by the wrongdoer.[7] Research has also shown that the wrongdoer can benefit from apologizing, as victims who receive an apology are often less likely to assert a legal claim and are more likely to settle if a claim is asserted.[8]

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3. *See* Benjamin J. McMichael, R. Lawrence Van Horn, & W. Kip Viscusi, *"Sorry" Is Never Enough: How State Apology Laws Fail to Reduce Medical Malpractice Liability Risk*, 71 STAN. L. REV. 341, 344 (2019) ("Despite the prevalence of apologies, however, they have historically been largely absent from disputes severe enough to necessitate in-volving the legal system.").

4. *What is Restorative Justice*, CTR. FOR JUSTICE & RECONCILIATION, http://restorativejustice.org/#sthash.8E2J2UZQ.dpbs [https://perma.cc/U535-EB33] (last visited May 11, 2021).

5. Thalia Gonzalez, *The Legalization of Restorative Justice: A Fifty-State Empirical Analysis*, 2019 UTAH L. REV. 1027, 1029.

6. *See* Doug Wojcieszak, *Review of Disclosure and Apology Literature: Gaps and Needs*, 40 J. HEALTHCARE RISK MGMT. 8, 9 (2020) (discussing the apology and disclosure movement).

7. Ken'ichi Ohbuchi et al., *Apology as Aggression Control: Its Role in Mediating Appraisal of and Response to Harm*, 56 J. PERS. & SOC. PSYCHOL. 219, 221 (1989); *see* AARON LAZARE, ON APOLOGY 1 (2004) ("Apologies have the power to heal humiliations and grudges, remove the desire for vengeance, and generate forgiveness on the part of the offended parties."); *see also* Susan Daicoff, *Apology, Forgiveness, Reconciliation & Therapeutic Justice*, 13 PEPP. DISP. RESOL. L.J. 131, 143 (2013) (explaining that "[a]pology, forgiveness, and reconciliation can have great benefits by reducing . . . negative emotions and improving the potential for individual reform . . . [and] can maximize the therapeutic aspects of legal matters and minimize the anti-therapeutic ones for wrongdoers and affected persons alike").

8. Jennifer K. Robbennolt, *Apologies and Settlement Levers*, 3 J. EMPIRICAL L. STUD. 333, 367-68 (2006); Gerald B. Hickson et al., *Factors That Prompted Families to File Medical Malpractice Claims Following Prenatal Injuries*, 267 JAMA 1359, 1361 (1992).

Apology laws attempt to accomplish the goal of encouraging apologies by directly addressing a paradox faced by defendants. On one hand, attorneys often advise their clients to avoid apologizing, cognizant that these apologies may highlight the defendant's wrongdoing and provide evidence of that wrongdoing.[9] On the other hand, an effective apology may dissuade potential plaintiffs from asserting a claim by assuaging their anger and beginning important healing processes.[10] Apology laws, which are technically reforms to state evidentiary codes, resolve the defendant's paradox by rendering statements of apology, condolence, or sympathy inadmissible as evidence of liability in any subsequent trial.[11] In theory, defendants who are relieved of the potential legal consequences of apologies should apologize more.

Though some reformists within the apology and disclosure movement emphasize the healing capacity of apologies, state legislatures generally eschew this aspect of apologies. Instead, they enact apology laws based on the theory that, relieved of concerns about the use of apologies in future litigation, defendants will apologize more often, plaintiffs' anger will be assuaged, fewer claims will be filed, and litigation overall will decrease.[12] Passing apology laws primarily "to reduce lawsuits and encourage settlements" is not well aligned with the healing aspect of apology laws.[13] But it is consistent with the goals of another group which advocates in favor of apology laws—those in favor of tort reform. [14] Explaining that "tort reformers have . . . co-opt[ed] the rhetoric and discourse on apologies and the law—independently developed by ethicists, dispute resolution specialists, and legal theorists," Yonathan Arbel and Yotam Kaplan concluded

9. Jennifer K. Robbennolt, *Apologies and Legal Settlement: An Empirical Examination*, 102 MICH. L. REV. 460, 467 (2003) ("[A]ttorneys and others fear that any apology will be admitted into evidence as an admission of fault.–Consequently, some clients are hesitant to apologize. Likewise, lawyers and insurance companies may be unlikely to advise their clients to apologize or to make any statement that could be construed as an apology. In fact, they may actively discourage such statements."). *See* Benjamin Ho & Elaine Liu, *Does Sorry Work? The Impact of Apology Laws on Medical Malpractice*, 43 J. RISK & UNCERTAINTY 141, 150-51 (2011) (noting that, under certain circumstances, apologies may alert plaintiffs to wrongdoing they otherwise would not have recognized).

10. Robbennolt, *supra* note 8, at 367-68; Hickson, *supra* note 8, at 1361.

11. *See, e.g.*, MICH. COMP. LAWS ANN. § 600.2155 (2020) ("A statement, writing, or action that expresses sympathy, compassion, commiseration, or a general sense of benevolence relating to the pain, suffering, or death of an individual and that is made to that individual or to the individual's family is inadmissible as evidence of an admission of liability in an action for medical malpractice.").

12. *See* TENN. R. EVID. 409.1 (2019) (noting that apology laws are based on "[t]he underlying theory . . . that a settlement of a lawsuit is more likely if the defendant is free to express sympathy for the plaintiff's injuries without making a statement that would be admissible as an admission of a party opponent").

13. CAL. EVID. CODE § 1160 cmt. (2018).

14. *See* Benjamin Ho and Elaine Liu, *What's an Apology Worth? Decomposing the Effect of Apologies on Medical Malpractice Payments Using State Apology Laws*, 8 J. EMPIRICAL L. STUD. 179, 186 (2011) (treating apology laws as tort reforms).

that "despite appearances, apology laws *are* de-facto tort reform."[15] Other factors also suggest that apology laws may be primarily designed as a new generation of tort reform, including the fact that many of these laws are limited to one area that has traditionally been the locus of litigation reduction—medical malpractice.[16]

This Article takes states at their word—that they have enacted apology laws to reduce litigation—and provides new empirical evidence on whether apology laws accomplish this goal. The evidence developed in this Article is critically important for several reasons. First, although thirty-nine states have enacted apology laws—more than have adopted more familiar tort reforms like noneconomic damages caps—evidence on the role of apology laws remains limited.[17] Second, unlike other tort reforms, apology laws have attracted attention at the federal level, adding greater urgency for developing a large evidence base on their effect.[18] Third, extrapolating the effect of apology laws from the effect of other tort reforms is generally not possible because they operate quite differently from these other reforms.[19] Fourth, the limited evidence developed on apology laws to date has been mixed, with some studies showing they accomplish their purpose and some finding that they actually increase claim rates and settlement amounts in certain contexts,[20] such as when apologies are incomplete or insincere.[21]

In examining whether apology laws accomplish their stated goals or have other, unintended effects, I focus on medical malpractice because many apology laws are limited to this legal context and because claims against physicians have traditionally been the focus of

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15. Yonathan A. Arbel & Yotam Kaplan, *Tort Reform through the Backdoor: A Critique of Law and Apologies*, 90 S. CAL. L. REV. 1199, 1201 (2017).

16. Ho & Liu, supra note 9, at 144 n.4 ("California, Massachusetts, Florida, Tennessee, Texas, and Washington have general apology statutes that apply across all industries while the other 30 States have specific laws that only protect the statements of apology made by health care providers.").

17. MICHELLE M. MELLO & ALLEN KACHALIA, MEDICAL MALPRACTICE: EVIDENCE ON REFORM ALTERNATIVES AND CLAIMS INVOLVING ELDERLY PATIENTS 93 (2016).

18. *See* Hillary Rodham Clinton & Barrack Obama, *Making Patient Safety the Centerpiece of Medical Liability Reform*, 354 N. ENGL. J. MED. 2205, 2206 (2006) (discussing their federal apology-law proposal).

19. Instead of simply curtailing damages awards, and by extension settlement amounts, apology laws facilitate communication between potential litigants to both decrease the probability of a claim being asserted and facilitate the settlement process for those claims that are asserted. CAL. EVID. CODE § 1160 cmt. (2018).

20. *Compare* Ho & Liu, *supra* note 16, at 141 (finding apology laws work as intended), *with* McMichael, Van Horn & Viscusi, *supra* note 3, at 341 (finding apology laws fail to work as intended).

21. *See, e.g.*, Anna C. Mastroianni et al., *The Flaws in State 'Apology' and 'Disclosure' Laws Dilute Their Intended Impact on Malpractice Suits*, 29 HEALTH AFF. 1611, 1616 (2010) ("Merely expressing sympathy without sharing information about an injury's cause and prevention or accepting responsibility may strike patients as insincere, provoking rather than appeasing a potential plaintiff.").

litigation reforms with goals similar to apology laws.[22] To evaluate the impact of apology laws, I analyze the effect of these laws on the medical malpractice insurance premiums paid by physicians. These premiums provide a useful proxy for the medical malpractice litigation risk faced by physicians and are thus a useful outcome measure to examine in the context of apology laws.[23] The malpractice insurance data I examine come from a series of surveys of malpractice insurers and include information on the premiums charged to three different specialties—general surgery, internal medicine, and obstetrics/gynecology—between 1998 and 2016.[24]

In general, the results of my analysis demonstrate that apology laws fail to have their intended effect. I find no evidence that they reduce the malpractice premiums charged to physicians. Instead, I find consistent evidence that they increase malpractice insurance premiums. For example, apology laws increase the average premium paid across all specialties by about 13 percent, with general surgeons, internists, and obstetrician/gynecologists seeing increases of 13 percent, 15 percent, and 12 percent, respectively. While this evidence may seem counterintuitive based on the theory on which states enacted apology laws, it is consistent with two competing theories of these laws. First, prior experimental work has demonstrated that insincere or incomplete apologies can exacerbate, as opposed to limit, the factors that lead to injured parties asserting claims.[25] Second, even effectively delivered apologies can serve to increase the frequency of legal claims if the potential litigants possess different information.[26]

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22. Ho & Liu, supra note 9 at 144 n.4.

23. More specifically, the data analyzed here offer two important advantages: (1) malpractice premiums represent an amalgamation of the factors that influence malpractice liability risk compiled by insurance companies, whose profitability depends on accurately capturing this risk, and (2) these data are not subject to the substantial problem of missing information that affects publicly available malpractice claims data. *See* Ho & Liu, *supra* note 9, at 143 ("Given that the [National Practitioner Data Bank (NPDB)] data set only consists of claims with positive payouts, it does not contain information on open claims nor closed claims without payments."); *see also* Amitabh Chandra et al., *The Growth of Physician Medical Malpractice Payments: Evidence from the National Practitioner Data Bank*, 24 HEALTH AFF. W5-240, W5-241-42 (2005), https://perma.cc/43CD-FWB4 (estimating that the NPDB excludes 20 percent of otherwise reportable information based on several reporting loopholes).

24. Bernard Black et al., *Medical Liability Insurance Premia: 1990–2016 Dataset, with Literature Review and Summary Information*1-5, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3607356 [https://perma.cc/QPC2-GBCZ] [hereinafter Black et. al., *Medical Malpractice Liability Insurance Dataset*]. *See* Bernard Black et al., *Medical Liability Insurance Premia: 1990-2016 Dataset, with Literature Review and Summary Information*, 14 J. EMPIRICAL L. STUD. 238, 238-49 (2017) [hereinafter Black et al., *Medical Liability Insurance Premia*] (describing the dataset used here in detail).

25. *See, e.g.*, Robbennolt, *supra* note 9, at 488 (finding that incomplete apologies are not as effective at inducing settlement as are complete apologies); Robbennolt, *supra* note 8, at 359-360 tbl.1 (2006) (same).

26. *See* McMichael, Van Horn, & Viscusi, *supra* note 3 at 376-84 (discussing evidence that suggests that an apology offered to a patient who possesses relatively less information may increase malpractice liability risk).

In general, apologies may alert patients that their injuries stem from malpractice and not from an underlying condition or an unavoidable consequence of treatment.[27] So informed, the patient may be more likely to assert a claim against the physician, increasing malpractice liability risk and malpractice premiums.[28]

The empirical evidence developed in this Article demonstrates that apology laws not only fail to have their intended effect but have a perverse effect on malpractice liability risk. Based on the evidence that apology laws increase, not decrease, medical malpractice liability risk, I recommend that states abandon apology laws as a means to lower liability risk. Instead, states should focus on promoting apologies through specific apology and disclosure programs—assuming that states maintain their desire to reduce malpractice liability risk in general.[29]

This Article proceeds in four parts. Part I engages with the evidence on apologies as important mediators of social relationships and their benefits in the legal context. Part II details the form and function of apology laws, including their status as "stealth" tort reforms. Part III offers a comprehensive empirical analysis of the effect of apology laws on medical malpractice liability risk. Part IV addresses the policy implications of the empirical analysis, including the perverse effects of apology laws and alternatives that may better achieve the stated goals of these laws.

I. WHY APOLOGIES

Though definitions vary somewhat, an apology generally includes an expression of remorse and regret and an acknowledgement of blame or responsibility.[30] Prior work has demonstrated that these simple communications play important roles in interpersonal relationships. Among other benefits, apologies can assuage anger following a transgression, begin important healing processes, and foster a sense

27. *Id.*

28. *See* Ho & Liu, *supra* note 9, at 150-51 (discussing economic models in which patients are more likely to assert a claim against physicians following an apology).

29. *See* Allen Kachalia et al., *Effects of a Communication-and-Resolution Program on Hospitals' Malpractice Claims and Costs*, 37 HEALTH AFF. 1836, 1836-37 (2018) ("We found that [implementing a communication program, which involved apologies] was associated with some improvements in the rates of new claims and defense costs, and no implementing institution experienced any worsening of liability trends."); Michell M. Mello et al., *Communication-and-Resolution Programs: The Challenges and Lessons Learned from Six Early Adopters*, 33 HEALTH AFF. 20, 21-27 (2014) (discussing communication and resolution programs developed by both hospitals and malpractice insurers).

30. *See* Aaron Lazare, *The Healing Forces of Apology in Medical Practice and Beyond*, 57 DEPAUL L. REV. 251, 255 (2008) ("An apology, in its simplest terms, is an acknowledgement of responsibility for an offense coupled with an expression of remorse."); Erin Ann O'Hara & Douglas Yarn, *On Apology and Consilience*, 77 WASH. L. REV. 1121, 1131-32 (2002) ("[A]pologies are described generally as admissions of blameworthiness and regret for doing harm.").

of inclusiveness for both the wrongdoer and victim. This Section begins by reviewing the existing psychological and legal research on the benefits apologies can generate within interpersonal relationships. It then delves into a related, but separate, line of research that examines how apologies—by repairing and improving interpersonal relationships—can generate more tangible benefits. Specifically, it details a number of psychological experiments that have demonstrated how apologies can facilitate the amicable resolution of problems between wrongdoers and victims without resorting to litigation or other forms of formal dispute resolution. It is important to note that this Section deals with *apologies*, not *apology laws*. The following Section addresses the legalization of apologies.

A. Psychological and Social Benefits

Perhaps the most obvious benefit of apologies is their ability to nearly instantaneously assuage a victim's pain and anger following a transgression.[31] Following "a heartfelt apology, victims . . . report feeling a near instantaneous erosion of anger and pain."[32] By apologizing, the wrongdoer recognizes his or her fault, signals this recognition to the victim, and acknowledges the victim's agency.[33] This allows the victim to address anger in a healthy manner, move through the grief process, and regain what was taken away by the wrongdoer.[34] In addition to the victim, apologies may also benefit the wrongdoer and society more generally. With respect to social benefits, an apology can acknowledge the violation of a social rule, legitimize "the wider social web in which the participants are enmeshed," and confirm the victim's place within that social web.[35] As to the wrongdoer, Susan Daicoff has explained that apologizing can foster therapeutic guilt within the wrongdoer, which can, in turn, encourage changes in future behavior, that is, avoiding the type of transgression which necessitated the apology in the first place.[36]

While the evidence is clear that an apology "*can* almost instantaneously erode the anger and pain associated with transgressions," whether they *do* in a given circumstance depends on

31. O'Hara & Yarn, *supra* note 30, at 1124; Ken'ichi Ohbuchi et al., *Apology as Aggression Control: Its Role in Mediating Appraisal of and Response to Harm*, 56 J. PERS. & SOC. PSYCHOL. 219, 222 (1989).

32. O'Hara & Yarn, *supra* note 30, at 1124.

33. *See* LAZARE, *supra* note 7, at 107 (explaining the important role of acknowledgment and recognition in apologies).

34. *See* Susan Daicoff, *Apology, Forgiveness, Reconciliation & Therapeutic Jurisprudence*, 13 PEPP. DISP. RESOL. L.J. 131, 149 (2013) (noting that an apology can "begin to restore to the harmed person what was taken away by the apologizer's acts").

35. Nicholas Tavuchis, MEA CULPA: A SOCIOLOGY OF APOLOGY AND RECONCILIATION 13 (1991); Barry R. Schlenker & Bruce W. Darby, *The Use of Apologies in Social Predicaments*, 44 SOCIAL PSYCHOL. Q. 271, 275-77 (1981).

36. Daicoff, *supra* note 34, at 144-49

several factors.[37] Tracing the evolution of apologies through primate studies to humans, Erin O'Hara O'Connor concluded that "[r]econciliation . . . involves one party to the conflict placing itself in a position of clear powerlessness relative to the other and performing an act that represents a plea for future conflict to subside," which in humans generally "take[s] the form of [an] apology."[38] However, not all apologies place the wrongdoer in a position of powerlessness or effectively plea for future conflict to subside, and O'Hara O'Connor identified four key components of effective apologies. These include: (1) "the identification of a wrongful act," (2) "an expression of remorse," (3) "a promise to forbear future transgressions," and (4) "an offer to repair the damage in some way."[39] The absence of any one of these components often indicates insincerity on the part of the apologizer, which can undermine the ability of the apology to assuage anger.[40] An apology that fails to convey remorse or avoids an offer to avoid future wrongdoing can appear to victims as strategic and may have the opposite of its intended effect—exacerbating instead of mollifying anger.[41]

Recent examples illustrate the ability of apologies to diffuse difficult situations as well as amplify small mistakes into bigger problems. At the 89th Academy Awards in 2017, the accounting firm charged with counting the votes and providing the award presenters with information on winners mistakenly identified the wrong winner for the Best Picture Award.[42] Instead of attempting to excuse its behavior, the firm explained what happened and offered a clear apology.[43] Similarly, when a JetBlue aircraft stranded passengers for eleven hours with little explanation, the company's CEO offered a clear apology, accompanied by specific promises as to how the company would avoid similar problems in the future.[44] On the other hand, the apology offered by United Airlines following the forcible removal of a passenger from one of its flights exemplifies the problems that ineffective apologies can create.[45] The company initially commented on

37. Erin O'Hara O'Connor, *Organizational Apologies: BP as a Case Study*, 64 VAND. L. REV. 1959, 1965 (2011) (emphasis added).

38. *Id.*

39. *Id.*

40. *Id.* at 1968 ("The absence of one or more of the elements of an effective apology often indicates such a lack of sincerity.").

41. *See id.* at 1965-69 (providing a series of examples of insincere and ineffective apologies).

42. Blake Morgan, *10 Powerful Examples of Corporate Apologies*, FORBES (Oct. 24, 2018, 1:46 PM), https://www.forbes.com/sites/blakemorgan/2018/10/24/10-powerful-examples-of-corporate-apologies/#6dcd7f9840de [https://perma.cc/6US9-Y2UU].

43. *Id.*

44. *Id.*

45. *See* Erin McCann, *United's Apologies: A Timeline*, N.Y. TIMES (April 14, 2017), https://www.nytimes.com/2017/04/14/business/united-airlines-passenger-doctor.html

the removal, which resulted in physical injuries to the passenger, apologizing only for the "overbook situation," which ostensibly necessitated the removal of the passenger in the first place.[46] This first apology made no mention of the forcible removal or the passenger's injuries. It was followed by a second apology from United's CEO which only acknowledged an "upsetting event."[47] Following several other missteps, United faced a "public relations crisis" and threats of boycott.[48] The CEO eventually issued a more effective apology, which included an acknowledgement of responsibility, an offer to repair the damage done to both the removed passenger and others on the plane, and a promise to avoid similar transgressions in the future.[49]

As these examples illustrate, effective (ineffective) apologies can prove invaluable (disastrous) in a variety of situations, but effective apologies are particularly important in the context of medical malpractice because "there is so much at stake—such as the patient's functioning and survival—[and] time is precious."[50] An apology from a physician can allow the patient to "[f]eel[] cared for," facilitate the "[r]estoration of self-respect and dignity," encourage the "[r]estoration of power," acknowledge the "[s]uffering in the offender" (i.e., the physician), and "[a]ssure[] shared values."[51] In addition to facilitating the healing process for patients, apologies following instances of medical malpractice may also create important benefits for physicians. However, these are often economic and legal in nature, and the next Section provides a detailed overview of the ability of apologies to generate such benefits.

B. Legal and Economic Benefits

Because apologies can directly impact the anger felt by victims following a transgression, they have the potential to alter how those victims respond following their injuries, including whether they pursue legal redress. Multiple experimental, observational, and survey-based studies have investigated the role of apologies in promoting economic benefits generally and avoiding legal costs specifically. Based on the relevance of apologies in the medical malpractice context, the robust literature on apologies can be broadly divided into research focusing on this context and research examining other contexts. Beginning with the latter category first, two recent studies investigated individual responses to real and hypothetical

[https://perma.cc/2VK9-ZR36] (detailing the sequence of events surrounding United Airlines' apology to a passenger injured during his forcible removal from an aircraft).

46. The company later explained that the flight was not actually overbooked. *Id.*

47. *Id.*

48. *Id.*

49. *Id.*

50. Lazare, *supra* note 30, at 264.

51. *Id.* at 263.

harms. They found that apologies can improve victims' perceptions of the wrongdoer, depending on the nature of the apology delivered.

The first study examined individuals' responses to hypothetical environmental damage caused by corporate action.[52] Its analysis revealed "the importance of both firm reputation and a genuine apology in the aftermath of a major man-made environmental disaster."[53] The second study involved a national field experiment with 1.5 million Uber customers who experienced late rides.[54] Comparing Uber customers whose rides took longer than estimated to those whose rides arrived on time,[55] the study concluded that an "apology by itself (without a promotion[al coupon]) has no statistically significant effect" on future trips or future spending.[56] Indeed, "if anything the presence of the apology in and of itself has a negative effect."[57] Interestingly, however, the authors concluded that "apologies are more effective when the cost associated with the apology is higher" based on the inclusion of a promotional coupon which required the firm to incur some expense.[58] This suggests that apologies involving no cost to the wrongdoer—involving no "position of clear powerlessness"[59] in the language of O'Hara O'Connor—are particularly ineffective.[60]

Collectively, these studies present a complicated picture of apologies. While they find that apologies can be effective under certain conditions, apologies are not invariably effective at improving future economic outcomes and may, in some situations, result in worse outcomes. These results are somewhat at odds with prior research, which has found more consistently positive results—in terms of apologies having their intended and expected effects—though many of these studies focused explicitly on the dispute-resolution and litigation contexts. Within these realms, evidence from experimental studies and surveys support the theories that individuals are less angry and more willing to settle claims following an apology. In early work, Russell Korobkin and Chris Guthrie found that survey participants, who took on the hypothetical role of tenant, were more likely to accept a settlement from their landlord following a dispute when the landlord apologized and excused his behavior by noting he had "been under a great deal of pressure lately."[61]

52. Gilbert, James, & Shogren, *supra* note 2, at 56-58.

53. *Id.* at 72.

54. Halperin et al., *supra* note 1, at 1.

55. *Id.* at 11.

56. *Id.* at 16.

57. *Id.*

58. *Id.* at 20.

59. O'Hara O'Connor, *supra* note 37, at 1965.

60. Halperin et al., *supra* note 1, at 19-20.

61. Russell Korobkin & Chris Guthrie, *Psychological Barriers to Litigation Settlement: An Experimental Approach*, 93 MICH. L. REV. 107, 148 (1994).

Two separate studies conducted by Jennifer Robbennolt revealed similar effects of apologies. In the first, she found that participants who received a full apology[62] from the injurer viewed the injurer more favorably, believed the injurer was more likely to be careful, were less angry at the injurer, and were more likely to accept the settlement offer.[63] Participants who received only a partial apology—an expression of sympathy without an acceptance of responsibility—were less certain about whether to accept the settlement offer than those who received a full apology.[64] In the second study, Robbennolt similarly found that the nature of the apology, that is whether it included an acknowledgement of responsibility in addition to an expression of sympathy, influenced participants' perceptions and their willingness to settle.[65]

Turning to the medical malpractice context, the literature on apologies and communication following incidents more generally can be traced back to a 1989 study by Gerald Hickson and colleagues.[66] Theirs was the first study to find that anger, as much as the desire for compensation, motivated individuals to pursue claims against their physicians.[67] In fact, the same percentage of respondents they surveyed indicated that they filed a claim based on their physicians' lack of honesty as indicated they filed a claim seeking compensation for their medically induced injuries.[68] Later work extended the Hickson group's results by focusing on the first group of respondents—those who indicated anger as their motivation—and examining whether apologies could effectively assuage this anger and reduce the claims filed against physicians.

For example, one study found evidence that more than one-third of individuals would not sue their physician following a medical error if the physician offered an apology and explanation.[69] Similarly, another investigation found that "[p]atients were significantly more likely to either report or sue the physician when he or she failed to acknowledge the mistake."[70] A third study revealed that 90 percent of participants

62. Here, a full apology satisfies the elements laid out by O'Hara O'Connor. O'Hara O'Connor, *supra* note 37, at 1965.

63. Robbennolt, *supra* note 9, at 485-500.

64. *Id.* at 497.

65. Robbennolt, *supra* note 8, at 359.

66. *See* Hickson et al., *supra* note 8, at 1361.

67. *Id.*

68. *Id.*

69. Charles Vincent et al., *Why Do People Sue Doctors? A Study of Patients and Relatives Taking Legal Action*, 343 LANCET 1609, 1612 (1994).

70. Amy B. Witman et al., *How Do Patients Want Physicians to Handle Mistakes? A Survey of Internal Medicine Patients in an Academic Setting*, 156 ARCHIVES OF INTERNAL MED. 2565, 2566 (1996); *see also* Marlynn L. May & Daniel B. Stengel, *Who Sues Their Doctors? How Patients Handle Medical Grievances*, 24 L. & SOC'Y REV. 105 (1990) (reporting similar findings).

preferred that the physician say he or she was "sincerely sorry."[71] Study participants also indicated that they were less likely to seek legal advice when they received an apology.[72] Overall, the experimental and survey-based evidence in the context of medical malpractice is generally more supportive of the intended and expected effect of apologies than the evidence uncovered in other contexts.

Studies of specific communication and resolution programs generally reveal similar evidence. Communication and resolution programs, which have been implemented by various hospitals, insurers, and other health care firms, almost always include apologies as a key feature, enabling researchers to analyze how apologies affect real-world disputes.[73] The first study of such a program found that, "[d]espite following a policy that seems to be designed to maximize malpractice claims," a Veterans Affairs hospital that implemented a communication and resolution program saw financial savings as a result of the program.[74] Programs at several Pennsylvania hospitals yielded similar results.[75] Perhaps no apology and disclosure program has been as extensively evaluated as that at the University of Michigan Health Service. Early work found that the program decreased claim payments by nearly half and decreased the average time required to settle a claim by 75 percent.[76] Later work determined that the number of lawsuits declined by 65 percent and the number of monthly claims for compensation (not involving formal suits) fell by 36 percent.[77] For those claims and lawsuits that were still asserted, the hospital saved almost 60 percent in compensation costs and nearly 70 percent in lawsuit costs.[78]

More recently, a team led by Michelle Mello evaluated the implementation of communication and resolution programs at five New York City hospitals, finding that hospitals generally supported

71. Kathleen M. Mazor et al., *Health Plan Members' Views about Disclosure of Medical Errors*, 140 ANNALS INTERNAL MED. 409, 415 (2004).

72. *Id.*

73. *See, e.g.*, Kachalia et al., *supra* note 29, at 1837 ("The resolution elements offered were determined by the CARe protocol and known needs or desires of the family, and could include compensation offers, waiver of medical bills, an apology, an explanation of what occurred, or some combination of these elements.").

74. Steve S. Kraman & Ginny Hamm, *Risk Management: Extreme Honesty May be the Best Policy*, 131 ANNALS INTERNAL MED. 963, 965-66 (1999).

75. Carol B. Liebman & Chris Stern Hyman, *Medical Error Disclosure, Mediation Skills, and Malpractice Litigation: A Demonstration Project in Pennsylvania*, PEW PROJECT ON MED. LIAB. 52 (2005); *see also* Carol B. Liebman & Chris Stern Hyman, *A Mediation Skills Model to Manage Disclosure of Errors and Adverse Events to Patients*, 23 HEALTH AFF. 22, 22-26 (2004).

76. Richard C. Boothman et al., *A Better Approach to Medical Malpractice Claims? The University of Michigan Experience*, 2 J. HEALTH & LIFE SCI. L. 125, 144 (2009).

77. Allen Kachalia et al., *Liability Claims and Costs Before and After Implementation of a Medical Error Disclosure Program*, 153 ANNALS INTERNAL MED. 213, 215 (2010). Michigan did not pass an apology law until 2011—one year after this study was published.

78. *Id.*

the implementation of these programs.[79] A team led by Allen Kachalia conducted an even more extensive evaluation of a communication and resolution program implemented at several hospitals in Massachusetts.[80] The researchers concluded that their "results strengthen[ed] the growing evidence base indicating that implementing a communication-and-resolution program does not expand liability risk and may, in fact, improve some liability outcomes."[81]

While much of the work evaluating communication and resolution programs has been conducted at hospitals, malpractice insurers, too, have seen benefits from adopting similar programs. For example, three insurers—COPIC Insurance Company, the West Virginia Mutual Insurance Company, and Coverys—implemented communication and resolution programs.[82] While implementing these programs created some challenges, adopters were generally positive about the long-term effects of these programs.[83]

Overall, the evidence derived from communication and resolution programs supports the evidence developed through surveys and experiments. Increased communication generally—and apologies specifically—can reduce the costs associated with liability and lower liability risk more generally. However, as noted by Mello and others, implementing communication and resolution programs is resource-intensive,[84] which may explain why adopters tend to be insurance companies and well-resourced academic medical centers.[85] In an attempt to spread the benefits of these programs across a larger population, states have attempted to facilitate communication and encourage apologies through the adoption of apology laws.[86] The next Section details the form, function, and history of these laws.

II. LEGALIZING APOLOGIES

Legally, apology laws are simply reforms to state evidentiary codes to prohibit the admission of apologies into evidence. These apologies

79. Michell M. Mello et al., *Implementing Hospital-Based Communication-and-Resolution Programs: Lessons Learned In New York City*, 33 HEALTH AFF. 30, 30 (2014).

80. Kachalia et al., *supra* note 29, at 1837.

81. *Id.* at 1843.

82. Mello et al., *supra* note 29, at 22.

83. *Id.* at 27-29.

84. *Id.*

85. *See* Kachalia et al., *supra* note 29, at 1837 (noting that well-resourced hospitals tend to adopt communication and resolution programs).

86. Benjamin J. McMichael, *The Failure of "Sorry": An Empirical Evaluation of Apology Laws, Health Care, and Medical Malpractice*, 22 LEWIS & CLARK L. REV. 1199, 1212 (2019) ("Apology laws are states' attempts to generate the benefits of apologies across their entire health care systems.").

would otherwise be admissible as admissions of party opponents.[87] States enact apology laws under the assumption that, by rendering statements of apology inadmissible, wrongdoers will offer more apologies and thereby generate many of the legal and economic benefits described in the previous Section.[88] Based on this stated goal of apology laws, prior work has suggested that these laws—despite their status as straightforward amendments to evidentiary codes—function more like tort reforms.[89] This Section traces the development of apology laws, including their status as a new generation of tort reform. It then engages with the theories underlying apology laws—the theory upon which states relied in enacting these laws, as well as other theories that suggest apology laws may not work as intended and even have perverse effects on liability risk.

A. Form and Function of Apology Laws

Massachusetts enacted the first apology law in 1986,[90] and Texas followed suit in 1999.[91] Between Texas's enactment and the most recent enactment—Alaska in 2015—the number of states with some form of an apology law increased from two to thirty-nine.[92] The push to enact apology laws has generally been bipartisan,[93] receiving substantial support from activists that Arbel and Kaplan label "Legal Apologists."[94] The Technical Appendix provides a complete overview of state apology laws, including the year in which different states adopted their laws.[95]

While all apology laws are designed to increase apologies by offering them legal protection, the extent of that protection is not equal across all laws. In general, states have enacted two different types of apology laws. Partial apology laws protect statements of sympathy, condolence, commiseration, and the like, but these laws do not protect

87. *See, e.g.*, TENN. R. EVID. 409.1 cmt. (2019) (noting that, absent an apology law, apologies would be admissible as an admission of a party opponent).

88. *See, e.g.*, CAL. EVID. CODE § 1160 cmt. (2018) (noting in reference to California's apology law that "[t]he author introduced this bill in an attempt to reduce lawsuits and encourage settlements by fostering the use of apologies in connection with accident-related injuries or death").

89. Arbel & Kaplan, *supra* note 15, at 1201.

90. MASS. GEN. LAWS ANN. ch. 233, § 23D (2021).

91. TEX. CIV. PRAC. & REM. CODE ANN. § 18.061 (2019).

92. Table A1 in the Technical Appendix provides a complete list of all apology laws and the dates of their enactment.

93. *See* Ho & Liu, *supra* note 9, at 144 ("Unlike other tort reforms, which have predominantly been a Republican issue . . . , apology laws are not disproportionately supported by any particular political party.").

94. *See* Arbel & Kaplan, *supra* note 15, at 1211 ("With the rhetoric of the Legal Apologists and the lobby efforts of tort reformers, the movement struck a chord with legislators and judges across the country, prompting them to reform the law to accommodate the use of apologies.").

95. Table A1 on page A9 of the Technical Appendix provides this information.

statements of fault, error, or liability.[96] Thirty-four states have a partial apology law in place.[97] On the other hand, full apology laws protect all statements that fall within the ambit of partial laws as well as outright admissions of fault or error.[98] Five states have a full apology law in place.[99]

Historically, the division between partial and full apology laws has been rather stark.[100] However, a recent decision by the Supreme Court of Ohio suggests that this division may be more fluid. Ohio passed a partial apology law in 2004, offering protection to statements of "apology, sympathy, commiseration," etc.[101] When interpreting this law, the Court of Appeals of Ohio explicitly recognized the distinction between full and partial apology laws and acknowledged that Ohio's law was more accurately characterized as the latter.[102] In a subsequent case, however, the Supreme Court of Ohio overruled the Court of Appeals.[103] In *Stewart v. Vivian*, the court looked to the definition of "apology" and concluded that an apology is "a statement that expresses a feeling of regret for an unanticipated outcome of the patient's medical care and may include an acknowledgment that the patient's medical care fell below the standard of care."[104] Accordingly, the court held that Ohio's apology law protects admissions of liability in certain contexts.[105] With this holding, the Supreme Court of Ohio effectively

96. *See, e.g.*, MICH. COMP. LAWS ANN. § 600.2155 (2020) ("A statement, writing, or action that expresses sympathy, compassion, commiseration, or a general sense of benevolence relating to the pain, suffering, or death of an individual and that is made to that individual or to the individual's family is inadmissible as evidence of an admission of liability in an action for medical malpractice . . . . This section does not apply to a statement of fault, negligence, or culpable conduct that is part of or made in addition to a statement, writing, or action . . . .").

97. See Table A1 in the Technical Appendix for a complete list of apology laws.

98. *See, e.g.*, GA. CODE ANN. § 24-4-416 (2020) ("In any claim or civil proceeding brought by or on behalf of a patient allegedly experiencing an unanticipated outcome of medical care, any and all statements, affirmations, gestures, activities, or conduct expressing regret, apology, sympathy, commiseration, condolence, compassion, mistake, error, or a general sense of benevolence which is made by a health care provider or an employee or agent of a health care provider to the patient, a relative of the patient, or a representative of the patient and which relates to the unanticipated outcome shall be inadmissible as evidence and shall not constitute an admission of liability or an admission against interest.").

99. Table A1 in the Technical Appendix lists all states with a full apology law in place.

100. *See, e.g.*, Ho & Liu, *supra* note 9, at 145 (separating partial apology laws from full apology laws).

101. OHIO REV. CODE ANN. § 2317.43 (2019).

102. *See* Davis v. Wooster Orthopaedics & Sports Med., Inc., 952 N.E.2d 1216, 1219 ("Among the 36 states that have adopted similar laws, the majority explicitly distinguish between statements of sympathy and admissions of fault or liability.").

103. Stewart v. Vivian, 91 N.E.3d 716, 722 (2017).

104. *Id.* at 721.

105. *Id.* at 722.

converted Ohio's partial apology law into a full apology law and opened the door for other courts to do so in the future.[106]

To date, Ohio is the only state that has converted its apology law from partial to full or vice versa. The Ohio court's decision, however, highlights the importance of accounting for the possibility that one type of law may be interpreted as another type. To address this possibility, the analysis reported below examines both a general category of all apology laws and separately examines full apology laws and partial apology laws.[107] In doing so, both sets of analyses treat apology laws as a new generation of tort reform because, as discussed in the next Section, these laws share many attributes of more traditional tort reforms.

B. Apology Laws: The Stealth Tort Reforms

At first glance, apology laws appear to have little in common with traditional tort reforms, such as caps on noneconomic and punitive damages or changes to the traditional rule of joint and several liability. As modifications to state evidentiary codes, apology laws do not share the command and control attributes of more familiar tort reforms, which often directly limit how courts may award damages at trial.[108] Though they work through a different mechanism—facilitating additional communication—apology laws nevertheless seek to achieve the traditional tort-reform goals of reducing litigation rates, settlement amounts, and damages awards.[109] And tracing the

106. The state legislature subsequently updated the text of Ohio's apology law to complete the conversion from a partial apology law to a full apology law. *See* OHIO REV. CODE ANN. § 2317.43 (2019) ("In any civil action brought by an alleged victim of an unanticipated outcome of medical care or in any arbitration proceeding related to such a civil action, any and all statements, affirmations, gestures, or conduct expressing apology, sympathy, commiseration, condolence, compassion, error, fault, or a general sense of benevolence that are made by a health care provider, an employee of a health care provider, or a representative of a health care provider to the alleged victim, a relative of the alleged victim, or a representative of the alleged victim, and that relate to the discomfort, pain, suffering, injury, or death of the alleged victim as the result of the unanticipated outcome of medical care are inadmissible as evidence of an admission of liability or as evidence of an admission against interest.").

107. When separating apology laws into partial and full, I categorize Ohio's law as partial throughout the analysis because the supreme court decision interpreting that law as a full apology law occurred in 2017—after the end of the period covered by my data—and the court of appeals decision interpreting it occurred in 2011—in the middle of the period covered by my data. Additionally, the language of the Ohio statute more closely matches that of other partial apology laws.

108. *See, e.g.*, TEX. CIV. PRAC. & REM. CODE ANN. § 74.301 (2019) ("[T]he limit of civil liability for noneconomic damages of the physician or health care provider other than a health care institution, inclusive of all persons and entities for which vicarious liability theories may apply, shall be limited to an amount not to exceed $250,000 for each claimant . . . .").

109. *See, e.g.*, TENN. R. EVID. 409.1 cmt. (2019) (noting that apology laws are based on "[t]he underlying theory . . . that a settlement of a lawsuit is more likely if the defendant is free to express sympathy for the plaintiff's injuries without making a statement that would be admissible as an admission of a party opponent").

development of apology laws over time elucidates their nature as stealth tort reforms.

Arbel and Kaplan explained that, in promoting the spread of apologies as a dispute resolution mechanism, the Legal Apologists emphasized apologies' ability to "defus[e] victims' desire for vindication, . . . avoid disputes and encourage settlements, thus saving protracted legal proceedings with their emotional and pecuniary costs."[110] Indeed, "apologies [quickly] bec[ame] the main item on the agenda for advocates of 'restorative justice,' 'therapeutic jurisprudence,' and alternative dispute resolution . . . ."[111] While these goals are not generally associated with advocates of tort reform, Arbel and Kaplan explained that the legal apologists "found surprising support from the pragmatic and well-funded tort reform advocates."[112] With the combined efforts of the legal apologists and tort reform advocates, the apology law movement became quite successful.[113]

Though "[t]ort reformers borrowed from Legal Apologists both the means and the rhetoric to advance their goals,"[114] state legislatures have clearly stated that apology laws seek to achieve the goals of tort reform and not the more socially oriented goals of the Legal Apologists. For example, the architect of California's apology law explicitly stated that he "introduced [the apology law] bill in an attempt to reduce lawsuits and encourage settlements by fostering the use of apologies in connection with accident-related injuries or death."[115] These effects may be relevant byproducts of the restorative justice and therapeutic jurisprudence promoted by the Legal Apologists, but reducing lawsuits is one of the core goals of tort reform advocates.[116]

Apology laws exhibit other features that suggest they function more as tort reforms than as evidentiary reforms designed to promote better communication in society. For example, apology laws have received support from traditional advocates of tort reform, including medical associations and insurance companies.[117] Additionally, most states do not enact general apology laws and, instead, limit the effect of these laws to medical malpractice, which has traditionally been a focal point

110. Arbel & Kaplan, *supra* note 15, at 1205-06.

111. *Id.* at 1207.

112. *Id.* at 1211.

113. *Id.*

114. *Id.* at 1212.

115. CAL. EVID. CODE § 1160 cmt. (2018).

116. Arbel & Kaplan, *supra* note 15, at 1211-15.

117. *See id.* at 1211 ("Among those lobbying for apology laws, we find the same actors supporting tort reform: insurance companies, medical associations, and large companies in diverse industries.").

for tort reform advocates.[118] Perhaps the role of apology laws as tort reform is best illustrated in the effort to enact a federal apology law.

In 2005, then-Senators Hillary Clinton and Barrack Obama included a federal apology law as part of their National Medical Error Disclosure and Compensation (MEDiC) Bill.[119] In the discussion surrounding this bill, Clinton and Obama acknowledged problems with the current state of the medical malpractice system, including that "in some specialties, high premiums [were] forcing physicians to give up performing certain high-risk procedures [and] leaving patients without access to a full range of medical services."[120] These are exactly the concerns that have motivated traditional tort reforms, such as caps on noneconomic damages.[121] Recognizing this, the Senators argued that, "[i]nstead of focusing on the few areas of intense disagreement, such as the possibility of mandating caps on the financial damages awarded to patients," a better approach was available.[122] That approach, instantiated in their MEDiC Bill, included a federal apology law, which provided that "[a]ny apology offered by a health care provider during negotiations shall be kept confidential and could not be used in any subsequent legal proceedings as an admission of guilt if those negotiations ended without mutually acceptable compensation."[123] Thus, in promoting their bill, Clinton and Obama not only motivated the need for their apology law with the same concerns that animate traditional tort reforms, they explicitly juxtaposed their apology law with traditional tort reforms in its ability to address those concerns. Similar rhetoric has accompanied the passage of apology laws at the state level, and with fourteen states passing apology laws since the failure of the MEDiC Bill, this rhetoric appears to have been more successful at the state level.

Overall, the language surrounding apology laws emphasizing reduction in malpractice liability risk and comparing them with traditional tort reforms demonstrates that, while apology laws may not appear to be tort reforms at first glance, they are best understood as a new generation of tort reform.[124] Indeed, recent work has distinguished between "traditional remedy-centric tort reforms," such as caps on noneconomic or punitive damages, and other reforms that alter medical malpractice litigation without directly impacting how

118. Ho & Liu, *supra* note 9, at 144 n.4 (noting that most states have limited their apology laws to statements made by health care providers).

119. National MEDiC Act, S. 1784, 109th Cong. (2005).

120. Clinton & Obama, *supra* note 18, at 2205.

121. *See* Arbel & Kaplan, *supra* note 15, at 1208-10 (discussing the motivations behind traditional tort reform).

122. Clinton & Obama, *supra* note 18, at 2205.

123. *Id.* at 2206.

124. *See* Arbel & Kaplan, *supra* note 15, at 1211-15 (reviewing the rhetoric around apology laws); *see also id.* at 1201 (arguing that "despite appearances, apology laws are de-facto tort reform" (emphasis omitted)").

damages are awarded.[125] Apology laws clearly fall into this latter category because, unlike statutes that either limit the imposition of damages or alter the distribution of damages among defendants, apology laws simply facilitate additional communication.[126]

The fact that apology laws operate differently from other tort reforms has likely contributed to their popularity.[127] However, this different mechanism of effect means that evidence on the impact of traditional tort reforms is of little use in the context of apology laws.[128] Other tort reforms, such as noneconomic damages caps, rely on mechanisms that only work once a trial begins or after a trial concludes, as opposed to apology laws which rely primarily on pre-litigation actions by the defendant.[129] Thus, empirical evidence specific to apology laws is necessary to understand their effect. Before developing that evidence, however, the next Section engages with the existing theories and explanations of apology laws to provide a context in which to evaluate that evidence.

C. Apology Laws: Effects, Explanations, and (Limited) Evidence

As apology laws, and apologies more generally, have increased in popularity, scholars have advanced a number of hypotheses that suggest apologies and apology laws may have drastically different effects. Some hypotheses suggest apology laws will reduce malpractice liability risk as intended. Some suggest that apology laws will, in contrast to their stated goals, increase this risk. Still others suggest that apology laws will simply have no discernible effect. This Section reviews each of these sets of hypotheses in turn as well as the limited evidence that supports each.

Beginning with the hypothesis that apology laws will have their intended effect, the causal chain is straightforward. Physicians could avoid some malpractice disputes and reduce their risk of malpractice liability generally by apologizing. However, physicians do not apologize because they believe—or have been advised—that doing so could increase their risk of liability since apologies are admissible as evidence of liability.[130] Apology laws reduce or eliminate this risk by

125. Michael Frakes & Anupam B. Jena, *Does Medical Malpractice Law Improve Health Care Quality?*, 143 J. PUB. ECON. 142, 158 (2016).

126. *See, e.g.*, TEX. CIV. PRAC. & REM. CODE ANN. § 74.301 (2019) ("[T]he limit of civil liability for noneconomic damages of the physician or health care provider other than a health care institution, inclusive of all persons and entities for which vicarious liability theories may apply, shall be limited to an amount not to exceed $250,000 for each claimant.").

127. McMichael, Van Horn, & Viscusi, *supra* note 3, at 346.

128. *Id.* at 359.

129. *Id.* at 360.

130. *See* Robin E. Ebert, Note, *Attorneys, Tell Your Clients to Say They're Sorry: Apologies in the Health Care Industry*, 5 IND. HEALTH L. REV. 337, 338 (2008) ("Apologizing

rendering a physician's apology inadmissible as evidence in any subsequent malpractice proceeding.[131] In so doing, apology laws increase the frequency of physician apologies, which assuage the anger of patients and thereby reduce the malpractice liability risk of physicians.[132] If this hypothesis represents an accurate description of reality, then the passage of an apology law would reduce medical malpractice liability risk as measured by the number of claims asserted against physicians and by the magnitude, that is the size of the settlement or verdict, of those claims that are asserted. An apology law may also reduce the time to settlement, as less angry patients may be more willing to settle quickly.[133]

This hypothesis finds some support in the existing empirical evidence. With respect to the role of apologies within the causal chain, prior research has demonstrated that patients' desire to pursue legal redress decreases when they receive an apology as discussed above.[134] Along the same lines, research into the effect of individual apology and disclosure programs has generally uncovered evidence consistent with apologies having their intended effect. These programs reduce the frequency of claims, the magnitude of claims filed, and the time between the initiation and resolution of claims.[135]

Though research on *apologies* supports the "intended effect" hypothesis, research on *apology laws* offers more mixed evidence. Benjamin Ho and Elaine Liu conducted a series of rigorous empirical analyses, reporting their results in two separate, but related, studies.[136] In both studies, Ho and Liu analyzed publicly available data on malpractice claims contained in the National Practitioner Data Bank ("NPDB") but found somewhat conflicting results on the effect of

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in the wake of a medical error, however, is not a common practice among physicians."); *see also* Phinney v. Vinson, 605 A.2d 849, 850 (Vt. 1992) (finding the defendant physician's apology to be admissible as an admission against interest).

131. *See* TENN. R. EVID. 409.1 cmt. (2019) ("The underlying theory of Rule 409.1 is that a settlement of a lawsuit is more likely if the defendant is free to express sympathy for the plaintiff's injuries without making a statement that would be admissible as an admission of a party opponent. Without this rule, a defendant's statement such is 'I am sorry that you have suffered so much from the accident' might well be admissible as an admission of a party opponent. Accordingly, defense counsel may advise against making such statements in order to avoid the creation of harmful evidence. Yet a simple apology may go a long way toward making an injured party feel more comfortable with a nonjudicial settlement of the matter.").

132. *Id.*

133. *See generally* Boothman et al., *supra* note 76.

134. Thomas H. Gallagher et al., *Patients' and Physicians' Attitudes Regarding the Disclosure of Medical Errors*, 289 JAMA 1001, 1002 (2003); Vincent et al., *supra* note 69, at 1612; Witman et al., *supra* note 70, at 2566; May & Stengel, '*supra* note 70 at 116.

135. *See generally* Boothman et al., *supra* note 76; Megan A. Adams et al., *Effect of a Health System's Medical Error Disclosure Program on Gastroenterology-Related Claims Rates and Costs*, 109 AM. J. GASTROENTEROLOGY 460, 460 (2014); Kachalia et al., *supra* note 77 at 215.

136. Ho & Liu, *supra* note 9, at 144; Ho & Liu, supra note 14, at 185.

apology laws.[137] In the first study, they found that apology laws increase the frequency of malpractice claims, which suggests that apology laws may not have their intended effect. [138] However, they uncovered further evidence that this increase dissipates over time, which "suggests that the apology laws' net effect is zero (or possibly negative) in the long run."[139] Relatedly, they found that, consistent with their intended effects, apology laws reduce the delay between a malpractice event and the resolution of a claim.[140] With respect to the effect of apology laws on the magnitude of claims, Ho and Liu's results were clearer. They found that apology laws reduce average payments by about $32,000 but have a stronger effect on certain types of cases, such as those involving anesthesia or obstetrics.[141] Overall, while the results of Ho and Liu's analyses were not entirely consistent with apology laws having their intended effects, the weight of the evidence developed in these analyses generally supports this conclusion.

Turning next to the hypothesis that apology laws will have unintended consequences, there are two general reasons why apology laws may have the unintended consequence of increasing malpractice liability risk. Both of these reasons rely on a similar causal chain—at least initially—to that of the intended effects hypothesis: Physicians offer too few apologies according to state legislatures, and apology laws encourage physicians to offer more apologies.[142] At this point, two separate hypotheses may explain why apology laws have unintended consequences. First, under what may be called the "botched apology" hypothesis, physicians fail to offer sincere or genuine apologies, and these insincere apologies have the opposite of their intended effect—they exacerbate patient anger and encourage the filing of more claims.[143] Second, under the "asymmetric information" hypothesis, apologies from physicians (either sincere or insincere) alert injured patients that malpractice has occurred. These patients thereby learn of malpractice that they otherwise would not have realized had occurred. Both hypotheses find some support in existing evidence.

Under the botched apology hypothesis, a botched apology may take different forms. For example, it may omit a critical component of an effective apology as defined by O'Hara O'Connor, such as failing to identify the wrongful act or failing to offer to repair any damage that occurred.[144] And experimental studies have found evidence that

137. Ho & Liu, *supra* note 9, at 151; Ho & Liu, *supra* note 14, at 185.

138. Ho & Liu, *supra* note 9, at 156-59.

139. *Id.* at 157.

140. *Id.* at 159-62.

141. Ho & Liu, *supra* note 14, at 180.

142. *See supra* Section II.A.

143. *See* Robbennolt, *supra* note 9, at 497 (noting that certain types of apologies are less effective).

144. O'Hara O'Connor, *supra* note 37, at 1965.

insincere or poorly executed apologies can have the opposite of their intended effect by angering patients. Robbennolt explained, based on the results of one study, that apologies which omit certain information or are otherwise ineffective may not assuage anger.[145]

The asymmetric information hypothesis similarly predicts that apology laws will fail to have their intended effect, but this prediction stems from different reasons than those that animate the botched apology hypothesis. Whether an apology itself is effective or botched, it may signal the occurrence of malpractice to a patient when that patient may otherwise remained oblivious to this occurrence.[146] Physicians possess more information about medical care than patients, and can therefore better recognize when malpractice has occurred.[147] When an injury occurs, the patient may be unsure whether that injury was the result of the physician's malpractice or stemmed from some other cause, such as an underlying condition. The physician, however, will better recognize whether malpractice has occurred. In this situation, an apology from the physician may alert the patient to malpractice he or she otherwise would not have discovered or confirm suspicions that malpractice has occurred. Though the apologies themselves may not be admissible evidence in states with apology laws, the patient remains free to seek other admissible evidence.[148]

Relatedly, a patient who has received an apology from a physician may have an easier time finding an attorney willing to take his or her case. Prior work has found that attorneys are only willing to pursue cases that involve a certain level of damages,[149] and an apology can provide important information to an attorney indicating damages will be available because malpractice has occurred. An apology may also encourage attorneys to seek higher settlements or pursue cases more vigorously in general because they are more confident that malpractice has occurred. By having these effects on attorneys, apologies can induce an increase in lawsuits and settlement amounts.[150] And existing evidence supports this effect of apologies. McMichael, Van Horn, and Viscusi tested the asymmetric information hypothesis and found evidence that, when asymmetric information is more likely to be

145. Robbennolt, *supra* note 9, at 497.

146. *See* Ho & Liu, *supra* note 9, at 150-51 (developing a formal model of the role of asymmetric information in the physician-patient apology context).

147. *See* McMichael, Van Horn, & Viscusi, *supra* note 3, at 361 (discussing asymmetric information in the context of medical malpractice claims).

148. *Id.*

149. Joanna Shepherd, *Uncovering the Silent Victims of the American Medical Liability System*, 67 VAND. L. REV. 151, 171-75 (2014) (noting that attorneys generally require a minimum level of damages before pursuing a case).

150. *See* McMichael, Van Horn, & Viscusi, *supra* note 3, at 361 ("Therefore, patients may sue more often and demand higher settlements when they receive apologies, as they learn of malpractice they otherwise would not have recognized.").

present, apology laws increase the number of lawsuits faced by physicians and the payouts associated with malpractice claims.[151]

Finally, with respect to the hypothesis that apology laws have no effect, this could be true for at least two separate reasons: (1) apology laws may fail to encourage apologies, and (2) apology laws may encourage apologies but the apologies themselves have no effect on patient behavior. This hypothesis finds little support within existing evidence. Although that evidence is mixed, with some studies finding that apology laws have their intended effect and others finding they have unintended effects, no study has found that apology laws have no effect.[152]

Overall, past work has offered compelling explanations for why apology laws may have their intended effect of reducing medical malpractice liability risk or the perverse effect of increasing this risk. And while existing empirical evidence on apology laws is scant relative to other tort reforms (despite the fact that apology laws have proven more popular than other reforms),[153] that evidence fails to clearly demonstrate whether apology laws have their intended effect or lead to unintended consequences. To address this discrepancy and provide new empirical evidence on whether apology laws function as intended or exacerbate the issue they are designed to resolve, I conduct a thorough empirical analysis using a novel dataset that offers important insight into the role of apology laws. As discussed in detail in the next Section, the dataset analyzed here offers advantages over prior work and can elucidate the effects of apology laws in ways that past research has been unable to do.

III. EMPIRICAL ANALYSIS

To analyze the effect of apology laws and whether they work as intended by state legislatures, I estimate a series of regression models. The purpose of these models is to determine the causal effect of apology laws. To measure malpractice liability risk, I take a different approach than the other studies that have examined the role of apology laws and examine the premiums paid by physicians across three separate specialties. I discuss the data on these premiums in detail, including the advantages of examining these data instead of the data that prior studies have analyzed, before delving into the empirical methodology and the results of the analysis. Additional details on the empirical

151. *Id.* at 376-84.

152. *Compare* Ho & Liu, *supra* note 14, at 188-94 (finding results generally consistent with the intended effects of apology laws), *with* McMichael, Van Horn, & Viscusi, *supra* note 3, at 376-84 (finding results consistent with apology laws having unintended consequences).

153. *See* MELLO & KACHALIA, *supra* note 17, at 32-61 (discussing the numerous studies on traditional tort reforms); *see also id.* at 93 (noting the need for more evidence on apology laws).

analysis are provided in the Technical Appendix along with supplementary analyses and results.

A. Data and Medico-Legal Landscape

The empirical analysis focuses on the malpractice insurance premiums paid by three different specialties: general surgery, internal medicine, and obstetrics/gynecology ("OB/GYN").[154] These three specialties are well suited to an analysis of the impact of apology laws on malpractice liability risk for several reasons. First, each specialty provides different types of care,[155] which allows the analysis to uncover the effect of apology laws generally and not the effect on a specific modality of care. Second, each of these specialties includes a large number of physicians, meaning that the effects examined here are not unique to only a few medical practitioners across the country.[156] Third, according to recent research by David Studdert and colleagues, these three specialties generated substantial numbers of malpractice claims.[157] Thus, these specialties should be sensitive to malpractice liability risk and changes to that risk.

Data on the malpractice premiums paid by physicians in each of these three specialties comes from a series of surveys conducted by the *Medical Liability Monitor* ("MLM")—a trade publication among malpractice insurers—beginning in the 1990s.[158] In each year, the MLM surveyed malpractice insurers in each state and obtained information on the premiums charged to physicians practicing in general surgery, internal medicine, and OB/GYN.[159] Using the raw survey responses, a team of researchers led by Bernard Black

154. Medical malpractice liability insurance is sometimes referred to as medical professional liability insurance. In the interest of succinctness and to be consistent with prior work, I refer to this insurance as malpractice insurance. *See, e.g.*, Black et al., *Medical Liability Insurance Premia*, at 239 (using malpractice insurance or a shortened form of this phrase).

155. *See* AMERICAN COLLEGE OF PHYSICIANS, *About Internal Medicine*, https://www.acponline.org/about-acp/about-internal-medicine (last visited March 29, 2019) (detailing the care provided by internists); Katy B. Kozhimannil et al., *Trends in Hospital-Based Childbirth Care: The Role of Health Insurance*, 19 AM. J. MANAGED CARE e125, e125-26 (2013) (explaining that "[c]hildbirth is the leading reason for hospitalization of women in the United States," and "[m]aternity and newborn care is the top expenditure category for hospital payments by Medicaid and private insurers alike").

156. Approximately 178,000 internists, 39,000 general surgeons, and 39,000 OB/GYNs were practicing in 2016. HEALTH RESOURCES & SERVICES ADMINISTRATION, *Area Health Resource Files*, https://data.hrsa.gov/topics/health-workforce/ahrf [https://perma.cc/VHC8-DZ49] (last visited Aug. 8, 2021) (Enter "2018–2019" in the "AHRF Release Year" field; then enter the appropriate specialty in the "Health Profession Subcategory" field (internal medicine, general surgery, or obstetrics and gynecology); then click submit).

157. David M. Studdert et al., *Prevalence and Characteristics of Physicians Prone to Malpractice Claims*, 374 N. ENG. J. MED. 354, 355 (2016).

158. Black et al., *Medical Liability Insurance Premia*, *supra* note 24, at 239.

159. *Id.*

organized a dataset[160] containing consistent information on the malpractice premiums charged to the three specialties from the early 1990s through 2016.[161] This organization included, among other activities, aligning the data by county and year.[162] The MLM dataset represents the "only national, longitudinal source of data on med[ical] mal[practice] insurance rates," and I rely on the dataset as cleaned and organized by the Black group.[163]

Each observation in the MLM dataset represents the premium charged to a given specialty by a given malpractice insurer in a particular county and year.[164] All premiums in the dataset are inflation-adjusted to 2016 dollars. Because of some data issues in the early 1990s identified by the Black group,[165] I limit my analysis to 1998 through 2016.[166] The primary analysis focuses on the full MLM dataset, which includes information from multiple insurers across all available counties and years. In a series of secondary analyses, I also examine the effect of apology laws on malpractice premiums defined at the state level. As the Black group notes, insurers may not report premiums for individual counties.[167] Instead, they may report premiums for rate areas, which can include multiple counties.[168] The state-level analysis can account for this fact and corroborate the county-level analysis.[169]

The MLM dataset includes surveys of insurers offering several different types of malpractice insurance, but to maintain consistency, I concentrate on the premiums charged for a single insurance policy type—$1 million/$3 million claims-made policies. This type of policy provides coverage for individual incidents up to $1 million, with an overall cap of $3 million (over multiple incidents) for the policy period.

160. Black et. al., *Medical Malpractice Liability Insurance Dataset*, *supra* note 24.

161. *Id.*

162. Black et al., *Medical Liability Insurance Premia*, *supra* note 24, at 241.

163. *Id.* at 238.

164. *See id.* at 239 ("Beginning in 1991, *MLM* has conducted and published annual surveys of medical liability insurance premia for physicians in three specialties: ob-gyn (OB), internal medicine (IM), and general surgery (GS), generally in October, for rates effective as of July 1 of the year of publication.").

165. *Id.* at 241 ("Especially for earlier years, the *MLM* data are quite messy.").

166. While this omits several years of data, it nonetheless provides information before and after the adoption of every apology law except Massachusetts' 1986 law. Thus, omitting the early 1990s data conservatively removes data that may suffer from problems while preserving all of the state variation in the adoption of apology laws, which is critical to the analysis.

167. Black et al., *Medical Liability Insurance Premia*, *supra* note 24, at 241.

168. *Id.*

169. The state-level dataset includes one observation for each specialty in each state and year, and the premiums are weighted averages (based on the number of physicians) of the premiums reported at the county-level. *See id.* ("We compute a county-average rate using weights based on the number of physicians in the three specialties for which MLM reports rates.").

By limiting my analysis to a single type of policy, I can focus on a standardized measure of malpractice liability risk and avoid the problem that apology laws may appear to have an effect on malpractice liability risk based on the prevalence of different policy types. The $1 million/$3 million claims-made policies are, by far, the most common type of policy in the MLM dataset, consistent with anecdotal evidence that they are the most common type of malpractice insurance policy in general.

The analysis reported here is the first to consider the effect of apology laws on malpractice premiums. While prior work has concentrated on individual malpractice claims,[170] examining the premiums paid to insure against these claims offers several advantages. First, the premiums they must pay are arguably the most salient measure of malpractice liability risk for physicians—the intended beneficiaries of apology laws. Second, malpractice premiums offer a clear measure of malpractice liability risk that accounts for both the probability that a physician is subject to a claim and the size of claims. Because the profitability of malpractice insurers depends on their ability to accurately price malpractice liability risk, the premiums they charge offer one of the best measures of that risk available. Third, the price and availability of malpractice insurance has been a driving force behind several of the so-called medical malpractice liability crises,[171] so examining malpractice insurance information directly may provide a better picture of whether apology laws effectively address the underlying liability risk.

In addition to these general advantages, examining malpractice premium data offers several specific advantages over analyzing malpractice claims as has been done in prior work. For example, Ho and Liu examined claims data from the NPDB, which is a publicly available dataset containing de-identified malpractice claims.[172] As McMichael, Van Horn, and Viscusi noted, however, this dataset excludes malpractice claims that resulted in no payment, either as a result of a verdict for the defendant or the plaintiff dropping his or her claim.[173] This could induce bias in the analysis, as claims that result in no payment nonetheless impose direct costs on malpractice insurers and physicians.[174] Additionally, among the malpractice claims that are

170. Ho & Liu, *supra* note 9, at 144; Ho & Liu, supra note 14, at 184-85.

171. *See generally* MEDICAL MALPRACTICE AND THE U.S. HEALTH CARE SYSTEM (William M. Sage & Rogan Kersh, eds., 2006).

172. Ho & Liu, *supra* note 9, at 151-54; Ho & Liu, *supra* note 14, at 185.

173. McMichael, Van Horn, & Viscusi, *supra* note 3, at 365.

174. *See, e.g.*, David Dranove et al., *Delivering Bad News: Market Responses to Negligence*, 55 J.L. & ECON. 1, 22 (2012) (explaining that physicians lose practice time, and thus income, as result of lawsuits); Eric Helland & Gia Lee, *Bargaining in the Shadow of the Website: Disclosure's Impact on Medical Malpractice Litigation*, 12 AM. L. & ECON. REV. 462, 466 (2010) (noting that physicians seek to avoid "reputational penalties" that are commensurate with malpractice litigation).

reportable to the NPDB, Ho and Liu noted that approximately 20 percent of these claims may be excluded.[175] Finally, while Ho and Liu analyzed different types of injuries that may be unique to some specialties, they lacked information on physician specialty.[176] This could be problematic as prior work suggests the malpractice risk faced by different specialties varies substantially.[177]

McMichael, Van Horn, and Viscusi analyzed a dataset of malpractice claims that came directly from a large, national malpractice insurer and thereby avoided the problems of the NPDB.[178] Their proprietary information included claims that resulted in a positive payment to a patient (as does the NPDB) and claims that resulted in no payment.[179] They also had access to all claims reported to the insurer, which is almost certainly the full universe of claims, as reporting a claim to an insurer is necessary to receive a defense and indemnification.[180] While these attributes of their dataset addressed many of the shortcomings of the NPDB, they were only able to analyze a single specialty and were not able to disclose that specialty for confidentiality reasons.[181] The analysis reported here addresses the shortcomings of the NPDB as analyzed by Ho and Liu and extends the analysis of McMichael, Van Horn, and Viscusi by examining multiple specialties.

To use the MLM dataset in my analysis of apology laws, I code each state as having a full apology law or partial apology law, consistent with the dates of enactment reported in the Technical Appendix.[182] In addition to categorizing observations by full apology law or partial apology law status, I also consider a general apology law status which encompasses both full and partial apology laws.[183] Table 1 provides a general overview of the data, reporting the average premium charged across states with different types of apology laws for all specialties in the dataset.[184] Across all specialties, the average premium (in 2016 dollars) was $40,685, but this differed substantially for each specialty.

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175. Ho & Liu, *supra* note 14, at 185 (noting that "approximately 20 percent of cases are excluded from the NPDB"); *see* Amitabh Chandra et al., *The Growth of Physician Medical Malpractice Payments: Evidence from the National Practitioner Data Bank*, W5 HEALTH AFF. 240, 241-42 (2005) (discussing reporting loopholes for the National Practitioner Data Bank).

176. *See* Ho & Liu, *supra* note 14, at 187.

177. *See* Studdert et al., *supra* note 157, at 355 (highlighting the difference in malpractice risk faced by different specialties).

178. McMichael, Van Horn, & Viscusi, *supra* note 3, at 363-68.

179. *Id.* at 365.

180. *Id.* at 363.

181. *Id.* at 363 n.112.

182. *See supra* Section II.A.

183. *See supra* note 16 and accompanying text.

184. The averages reported in Table 1 are derived from the county-level MLM dataset. Averages derived from the state-level dataset differ slightly but are qualitatively the same in terms of the relationships between specialties and between apology law regimes.

OB/GYNs pay more in premiums than general surgeons, and general surgeons, in turn, pay more than internists. Across all specialties and within each specialty, physicians practicing in states with any apology law averaged higher premiums than physicians practicing in states without an apology law. On average across all specialties, physicians in states with an apology law paid 121 percent of the premium paid by physicians in states without an apology law. With the exception of internists, physicians practicing in states with full apology laws paid more in premiums, on average, than physicians in states with partial apology laws. In general, the patterns in premiums reported in Table 1 suggest that apology laws may increase, rather than decrease malpractice liability risk, which is not consistent with their intended effect.[185] To develop more compelling evidence, I conduct a thorough empirical analysis, the details of which are provided in the next Section.

Table 1: Average Premium by Specialty and Apology Law

	All Specialties	General Surgery	Internal Medicine	OB/GYN
All States	$40,685	$44,046	$12,972	$64,968
No Apology Law	37,419	38,989	11,333	61,820
Any Apology Law	45,245	51,096	15,256	69,376
Full Apology Law	45,728	52,385	14,971	69,829
Partial Apology Law	45,170	50,894	15,301	69,305

Notes: Each cell reports the mean premium paid across all counties and insurers for the specialty listed above and the apology law regime listed to the left. All data come from the county-level MLM dataset. All premiums are inflation-adjusted to 2016 dollars.

B. Empirical Methodology

The purpose of the empirical analysis is to identify a causal relationship—not merely an association—between apology laws and medical malpractice liability risk, as measured by malpractice premiums. Ideally, establishing such a causal relationship would involve comparing the malpractice premiums of identical physicians in two identical environments with the physicians in one environment receiving the protection of an apology law and the physicians in the other environment practicing without an apology law in place.[186] For a

185. *See supra* Part II.

186. *See* Michael D. Frakes, *The Surprising Relevance of Medical Malpractice Law*, 82 CHI. L. REV. 317, 364 (2015) (discussing an ideal situation for comparing changes in liability regimes).

variety of ethical, political, legal, and financial reasons, randomly assigning actual physicians to different legal regimes for many years is not possible. However, the empirical models I estimate here are designed to mimic this laboratory-like setting to the greatest extent possible.

In general, the problem with examining the effect of apology laws on malpractice premiums outside of a real-world laboratory is the absence of a valid counterfactual. Once an apology law is passed, it is possible to observe how malpractice premiums change, but to assess the impact of these laws, it is necessary to know what would have happened had an apology law not been implemented, i.e., the counterfactual. To create a valid counterfactual and estimate the causal effect of apology laws, I rely on a "difference-in-differences" methodology.[187] In general, this methodology involves comparing malpractice premiums over time in states that adopted apology laws with those that did not adopt apology laws. In doing so, it compares the "treated" group (states with apology laws) to the "control" group (states without apology laws) over time to estimate the effect of apology laws. It uses the control group of states as a comparator group to determine what would have happened in the treated states absent an apology law. By doing so, difference-in-differences models can isolate the role of apology laws from other confounding factors and thereby produce estimates of the causal effect of these laws on malpractice premiums.[188] To effectively net out the effect of other factors, difference-in-differences models rely on several assumptions, and the validity of these assumptions is discussed and verified in the Technical Appendix.

Employing difference-in-differences models throughout, the empirical analysis proceeds in two parts. The first part focuses on the county-level version of the MLM dataset, and the second part considers the state-level version. Because the county-level analysis draws on richer data, it is the primary analysis. The state-level analysis serves to confirm that reporting issues do not create problems in the county-level results and to extend those results with additional models.

Beginning with the county-level analysis, I estimate a series of difference-in-differences models via ordinary least squares regressions. These models include, as the dependent variable, the natural logarithm of the malpractice premium charged to

187. *Id.* at 365 (2015) (discussing difference-in-differences models).

188. *See* Benjamin J. McMichael, *Healthcare Licensing and Liability*, 95 IND. L.J. 859-62 (2020) (detailing the ability of difference-in-differences models to isolate causal effects).

physicians.[189] With respect to the independent variable of interest—apology laws—I estimate two separate sets of models. The first set includes, as the independent variable of interest, an indicator variable for whether a state had enacted any apology law (full or partial).[190] These models provide estimates of the effect of apology laws generally on malpractice premiums.[191] Models that do not distinguish between full and partial apology laws may be preferable from a legal standpoint.[192] As discussed above, the Ohio Supreme Court effectively transformed Ohio's partial apology law into a full apology law, suggesting that the division between these two types of laws may not be as stark as previously believed.[193] The second set of models includes separate indicator variables for full apology laws and partial apology laws and thus provides separate estimates for the effect of each type of law.[194]

189. For each specialty, the malpractice premium variable exhibits a substantial right skew. This means that while many premiums were clustered around low values, several premiums were substantially larger. "It is standard practice in the literature to take the natural logarithm of a variable to transform a skewed distribution to a distribution that is closer to normal." McMichael, Van Horn, & Viscusi, *supra* note 3, at 375 n.155; *see also* J. Shahar Dillbary et al., *Why Exempting Negligent Doctors May Reduce Suicide: An Empirical Analysis*, 93 IND. L.J. 457, 484 n.148 (2018) ("A standard practice in the literature, taking the log of the outcome, especially when it is a rate of the population, transforms the data from a skewed distribution to a more normal distribution set of data.").

190. An indicator variable equals one when the specific outcome occurs and zero otherwise. Here, the indicator variable equals one when a state has enacted any apology law and zero when no apology law is in place.

191. *See* Ho & Liu, *supra* note 9, at 155 (including a single apology law variable).

192. Importantly, the inclusion of apology law variables—either a single variable or separate variables for full and partial laws—allows me to test the effect of apology laws, not apologies themselves. Consistent with prior work, I assume that apology laws encourage the delivery of more apologies. *See* McMichael, Van Horn, & Viscusi, *supra* note 3, at 370 ("We assume, however, consistent with prior work based on large datasets, that these laws do in fact facilitate apologies."); Ho & Liu, *supra* note 9, at 142 ("Although we do not observe actual apologies, the maintained assumption of this paper is that by reducing the consequences of apologies, doctors would apologize more frequently."). This assumption is supported by evidence that state medical societies and the media more generally alert physicians to the passage of an apology law. *See* Pa. Med. Soc'y, *Lawyers and Doctors Come Together and Agree It's OK to Say 'I'M Sorry,'* NEWSWISE (Oct. 23, 2013, 1:55 PM), https://www.newswise.com/articles/lawyers-and-doctors-come-together-and-agree-it-s-ok-to-say-i-m-sorry [https://perma.cc/2PVZ-MKQL] (announcing the passage of Pennsylvania's apology law); Andis Robeznieks, *New Pa. Law Encourages Doc Apologies*, MODERN HEALTHCARE (Oct. 23, 2013, 1:00 AM), www.modernhealthcare.com/article/20131023/MODERNPHYSICIAN/310239974 [https://perma.cc/V7WP-FDQ7] (same). Though the models do not provide estimates of the effect of apologies, the policies under investigation are apology laws. Thus, focusing the analysis on these laws, and not on individual apologies, will provide policymakers with the direct evidence they need on these policies.

193. *See supra* Section II.A.

194. These models may not be legally preferable, but they do suggest that the difference in the effect of full apology laws is statistically significantly different from that of partial apology laws. Thus, econometrically, these models are preferable.

Both sets of models include a full set of indicator variables for individual years, counties, and insurance companies.[195] The inclusion of year and county indicator variables is the key to estimating difference-in-differences models as discussed above. These variables allow all models to control for fixed, unobserved characteristics of individual counties and unobserved trends over time. Including indicators for separate insurance companies—many of which offer policies in many different counties over many different years—further allows the models to "net out" the idiosyncratic effects of individual companies. For example, if a particular company has a unique underwriting process or pricing strategy, including individual company indicator variables allows the models to net out these factors and isolate the effect of apology laws. Finally, the models include a series of control variables for several "key" tort reforms to ensure that the apology-law variables represent the effect of apology laws and not these other tort reforms.[196] These reforms include noneconomic damages caps, punitive damages caps, collateral source reform, and joint and several liability reform.[197]

The state-level analysis closely mirrors the county-level analysis. I estimate a series of regression models with the same dependent and independent variables. However, instead of including a full set of year, county, and insurance company indicator variables, the state-level models include a full set of year and state indicator variables.[198] The inclusion of the year and state variables is the key to estimating difference-in-differences models. Each model also includes control variables for the four "key" tort reforms mentioned above.[199] The Technical Appendix further reports models with additional control variables, though including these does not meaningfully alter the results reported below.

In addition to estimating the same models as in the county-level analysis, the state-level analysis also includes a series of quantile

195. Throughout the county-level analysis, I calculate two-way clustered standard errors with clustering at the state and insurance company levels. *See* A. Colin Cameron, Jonah B. Gelbach, & Douglas L. Miller, *Robust Inference with Multiway Clustering*, 29 J. BUS. & ECON. STAT. 238, 238 (2011) (describing the importance of clustering). This calculation accounts for the possibility of correlation across counties within the same state over time and (separately) across insurance companies spanning multiple states.

196. I include these four tort reforms, as opposed to others, because prior work has demonstrated that these reforms are more likely to impact medical malpractice liability than other reforms. Also, states changed their laws around these reforms during the study time period. *See* Ronen Avraham, Leemore S. Dafny, & Max M. Schanzenbach, *The Impact of Tort Reform on Employer-Sponsored Health Insurance Premiums*, 28 J.L. ECON. & ORG. 657, 667-69 (2012) (noting that these reforms are "key"). *See generally* MELLO & KACHALIA, *supra* note 17 (reviewing the impact of various tort reforms).

197. Because some states adopted these tort reforms over the relevant time period, 1998-2016, the county and year indicator variables will not necessarily net out their effects.

198. In the MLM dataset, average premiums are available for each specialty in each state and are *not* separately broken out by insurer.

199. The state-level models include standard errors clustered at the state level.

regression models.[200] Unlike the regression models described above, which focus on the conditional mean of the dependent variable, quantile regression models estimate the change in a particular quantile (e.g., the median, the 25th percentile, or others) of the dependent variable in response to the independent variables.[201] Because these models focus on quantiles, they can estimate the effect of apology laws on different points of the distribution of malpractice premiums.[202] In doing so, quantile regression models allow me to test whether apology laws have different effects at the low end of the distribution of malpractice premiums compared to the high end. The quantile regression models include the same independent variables as the above-described regression models, and each includes a full set of state and year indicator variables.[203] However, the dependent variable is simply the malpractice premium for a given state and year instead of the natural logarithm of the premium.[204]

C. *Results and Discussion*

This Section begins by presenting the primary results from the county-level difference-in-differences regression models. It then turns to the state-level analysis to demonstrate the robustness of the results. Finally, it presents a series of results from quantile regression models to provide a more complete picture of the role of apology laws in malpractice insurance premiums.

1. Primary Results

Here and throughout this Section, I present all regression results graphically to facilitate interpretation.[205] Beginning with the primary results, Figure 1 reports the results of four separate regression

200. As prior work has noted, it is not generally feasible to include a large number of variables in quantile regression models. *See* Joni Hersch & W. Kip Viscusi, *Punitive Damages: How Judges and Juries Perform*, 33 J. LEGAL STUD. 1, 28 (2004) ("Because quantile regressions focus on determinants of damages for particular quantiles, taking into account the likelihood of being in the quantile, there are severe limits to the number of variables that can be included in the specification when using a sample of the size available in this data set."). Accordingly, I estimate these models only the state-level analysis because there are many fewer states than counties and therefore many fewer state indicator variables than county indicator variables.

201. *Id.* ("The quantile regressions make it possible to analyze how the coefficients of [the independent variables of interest] differ across the distribution of [the dependent variable].").

202. *Id.* at 28 n.24.

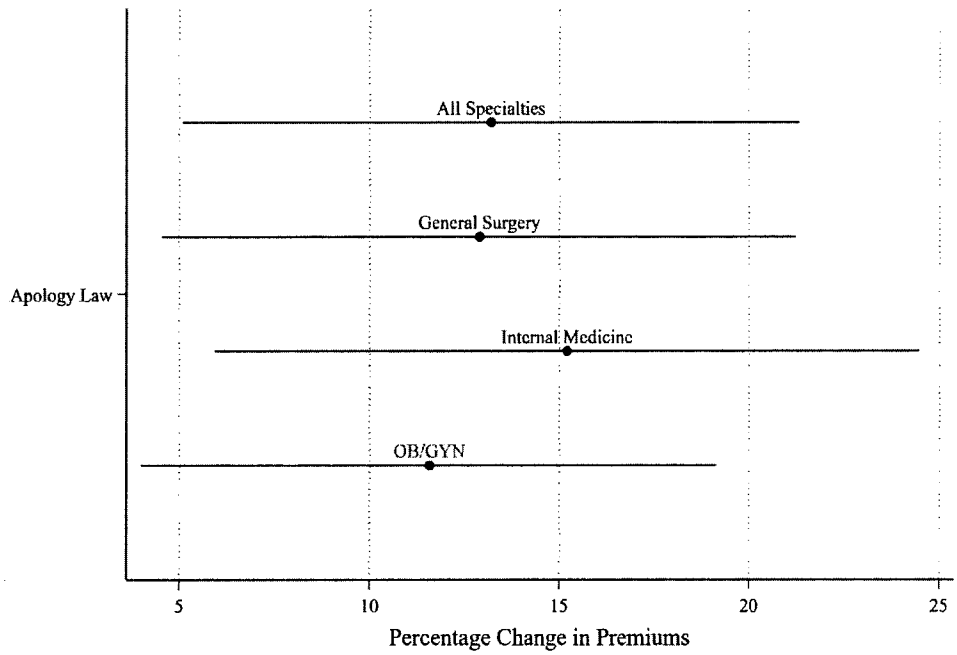
203. Standard errors in all of the quantile models are clustered at the state level.

204. Because quantile models examine changes in points in the distribution, they are not sensitive to skewed dependent variables in the way ordinary least squares models are. While estimating quantile models with a logarithmic dependent variable presents no econometric problems, omitting the logarithmic transformation facilitates the interpretation of these models.

205. The raw output from every regression model is available in the Technical Appendix.

models—one for all specialties combined and one for each specialty individually.[206] Each point in Figure 1 represents the effect of apology laws in terms of the percentage change in malpractice premiums for the indicated specialty or specialties.[207] The bars associated with each point represent the 95 percent confidence interval. If this confidence interval does not cross the line indicating zero, then a given effect is statistically significant.

Figure 1: Effect of Any Apology Law on Malpractice Premiums



Notes: Each point represents the marginal effect of apology laws on the malpractice premiums for the specialty reported above. Each set of bars represents the 95 percent confidence intervals. The full regression results underlying the reported effects are available in Table A2.

Focusing first on the results for all specialties grouped together, apology laws increase malpractice premiums by 13.2 percent. While apology laws do not have the same effect on each specialty, their effect

206. Because, as demonstrated in Table 2, each specialty pays substantially different premiums on average, I include indicator variables for separate specialties in the model that focuses on all specialties to account for this difference in average premiums. These specialty variables are included in addition to the other control variables discussed above.

207. Because each model is log-linear in form, the coefficients can be interpreted as the percent change in the dependent variable that results from enacting an apology law. The marginal effect of an indicator variable with coefficient β is approximately $((\exp(\beta) - 1)(100))$ percent. *See generally* Robert Halvorsen & Raymond Palmquist, *The Interpretation of Dummy Variables in Semilogarithmic Equations*, 70 AM. ECON. REV. 474 (1980).

is fairly consistent. These laws have the largest effect on internal medicine, increasing premiums for internists by 15.2 percent, and the smallest effect on OB/GYNs, increasing premiums for OB/GYNs by 11.6 percent. General surgeons see an intermediate increase of 12.9 percent.

These results imply that an internist practicing in a state with an apology law can expect to pay about 15 percent more than a similarly situated internist in a state without an apology law. Assuming that the internist in the state without an apology law pays $11,000 in malpractice premiums—which is consistent with the average amount reported in Table 1 above—apology laws increase the amount internists can expect to pay by about $1,700. The increases surgeons and OB/GYNs can expect are even more pronounced. Assuming (consistent with the averages reported in Table 1) that surgeons and OB/GYNs in states without apology laws pay $39,000 and $62,000, respectively, they can expect to pay approximately $5,000 and $7,200 more in premiums in states with apology laws. These represent meaningful increases in the expenses associated with practicing medicine. And they may be particularly problematic in the face of an ongoing physician shortage, as practicing medicine may be less attractive given the higher cost of insurance in the presence of apology laws. [208]

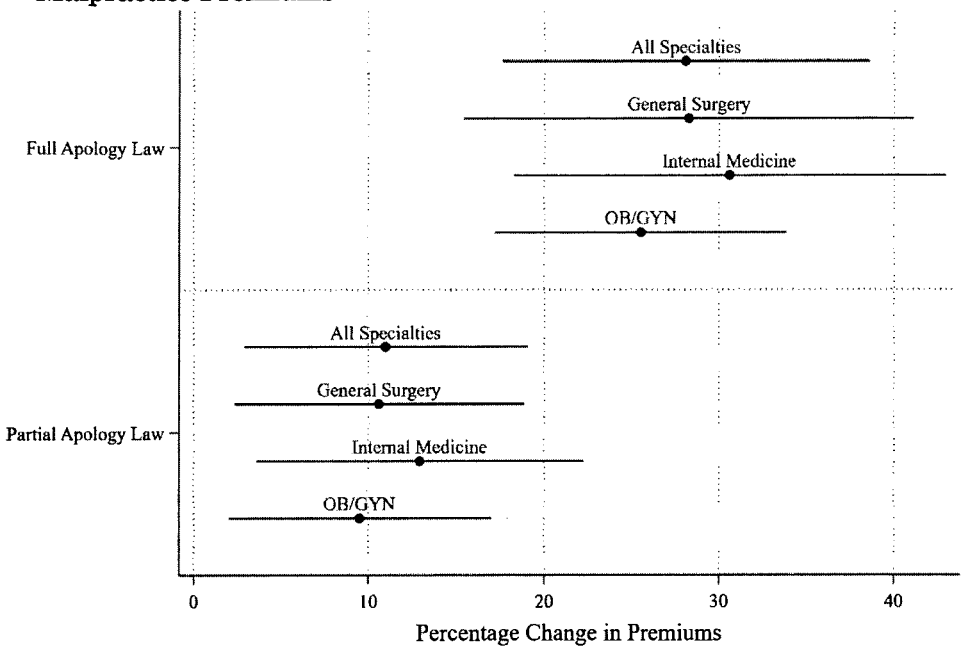
In general, Figure 1 provides no support for the conclusion that apology laws have their intended effect of lowering malpractice liability risk. Instead, they offer consistent, statistically significant evidence that apology laws have the unintended consequence of increasing this risk. Decomposing apology laws into full and partial types yields similar evidence.

Figure 2 essentially repeats Figure 1 but replaces the single apology law variable with separate indicator variables for full apology laws and partial apology laws. Except for this difference, the models reported in Figure 2 are identical to those in Figure 1. Across all four models reported in Figure 2, both full and partial apology laws have positive and statistically significant effects on malpractice premiums, suggesting that apology laws of all types increase malpractice liability risk. Interestingly, full apology laws have a stronger positive effect on

208. *See* ASS'N OF AM. MED. COLLS., THE COMPLEXITIES OF PHYSICIAN SUPPLY AND DEMAND: PROJECTIONS FROM 2018 TO 2033 4 (2020), https://aamc-black.global.ssl.fastly.net/production/media/filer_public/85/d7/85d7b689-f417-4ef0-97fb-ecc129836829/aamc_2018_workforce_projections_update_april_11_2018.pdf [https://perma.cc/8QZC-KRTK] (estimating a shortfall of between 54,100 and 139,000 physicians by 2033). While prior work has generally found that physician supply is not particularly sensitive to tort reform, that work was in the context of reforms that, if anything, generally reduce malpractice liability costs. *See* Eric Helland & Seth A. Seabury, *Tort Reform and Physician Labor Supply: A Review of the Evidence*, 42 INT'L REV. L. & ECON. 192, 194 (2015) (reviewing the evidence). Future work may investigate whether apology laws impact physician supply differently.

malpractice premiums than do partial apology laws—the effect of full apology laws is roughly twice as large as the effect of partial apology laws in each model.

Figure 2: Effect of Full and Partial Apology Laws on Malpractice Premiums



Notes: Each point represents the marginal effect of apology laws on the malpractice premiums for the specialty reported above. Each set of bars represents the 95 percent confidence intervals. The full regression results underlying the reported effects are available in Table A3.

In particular, full apology laws increase malpractice premiums by between 25 and 30 percent, while partial apology laws increase premiums by between 9 and 13 percent. Focusing on all specialties, full apology laws increase premiums by 28.2 percent, and partial apology laws increase them by 11 percent. At a 30.6 percent increase, full apology laws have the strongest effect on the premiums paid by internists and, at a 25.5 percent increase, the weakest effect on OB/GYNs. Similarly, partial apology laws have the strongest effect on internists, increasing premiums by 13 percent, and the weakest effect on OB/GYNs, increasing premiums by 9.5 percent.

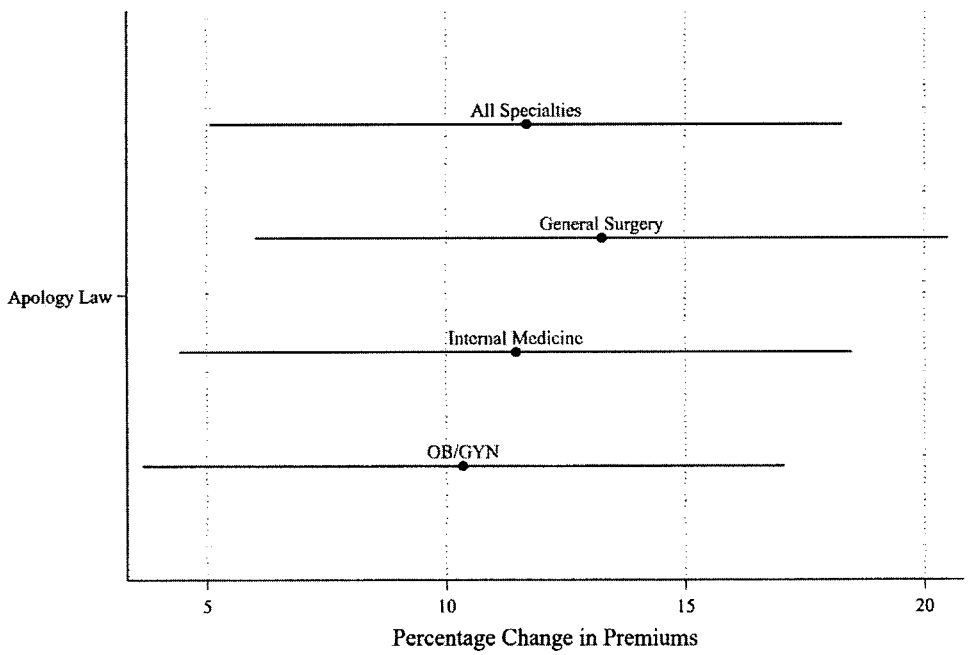
Again, assuming that a surgeon, internist, and OB/GYN pay $39,000, $11,000, and $62,000 in states without an apology law, these physicians can expect to see their premiums increase by approximately $4,100, $1,400, and $5,900, respectively, in the presence of a partial apology law. The increases caused by full apology laws—

approximately $11,000, $3,400, and $15,800, respectively—are even more substantial. In general, the evidence reported in Figure 2 demonstrates that apology laws have the unintended effect of increasing malpractice liability risk as measured by malpractice premiums. And none of the evidence from the county-level analysis supports the conclusion that apology laws have their intended effect.

2. State-Level Models

To confirm the robustness of the county-level results, I conduct a similar analysis at the state level. This analysis largely mirrors that at the county level, and in general, I find consistent results. Beginning with all apology laws, Figure 3 mirrors Figure 1 above but presents state-level results instead of county-level results. While the estimated effects in Figure 3 are slightly smaller than those reported in Figure 1, they are consistent with the county-level results—all remain positive and statistically significant. Thus, the results in Figure 3 support the conclusion that apology laws have the unintended effect of increasing malpractice premiums paid by physicians.

Figure 3: Effect of Any Apology Law on Malpractice Premiums (State Level)

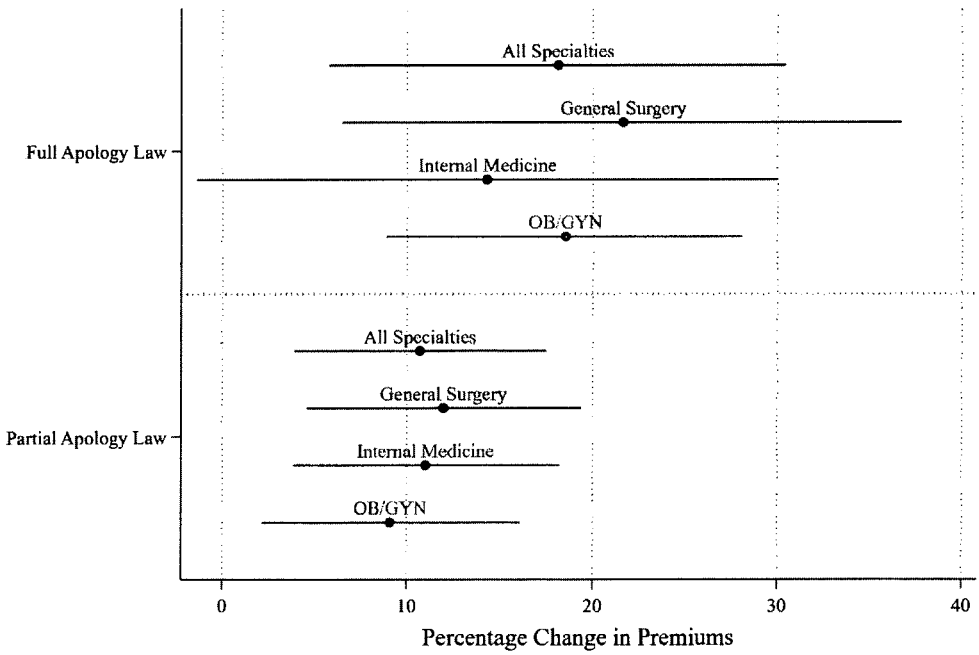


Notes: Each point represents the marginal effect of apology laws on the malpractice premiums for the specialty reported above. Each set of bars represents the 95 percent confidence intervals. The full

regression results underlying the reported effects are available in Table A4.

Figure 4 is the state-level version of Figure 2 and reports the results for full and partial apology laws separately. The results reported in Figure 4 are consistent with the county-level results above, but several differences are notable. The estimated effects are somewhat smaller than those reported above. The difference in the magnitude of the effect of full and partial apology laws is smaller—i.e., full apology laws have an effect more similar in size to partial apology laws. And the effect of partial apology laws on internists is not statistically significant. Despite these differences between the county- and state-level results, however, there is no ambiguity in the evidence that apology laws fail to have their intended effect and, instead, increase the premiums paid by physicians.

Figure 4: Effect of Full and Partial Apology Laws on Malpractice Premiums (State Level)



Notes: Each point represents the marginal effect of apology laws on the malpractice premiums for the specialty reported above. Each set of bars represents the 95 percent confidence intervals. The full regression results underlying the reported effects are available in Table A5.

3. Quantile Models

To further explore the effects of apology laws, I estimate a series of quantile regression models. The evidence reported above clearly suggests that apology laws increase malpractice premiums paid by physicians. If this (perverse) effect stems from inappropriately delivered apologies—either in the form of botched apologies or apologies that signal the occurrence of malpractice—then I would expect that these laws would have a stronger effect on physicians who pay relatively higher premiums. These physicians would have more to gain by delivering apologies, should therefore deliver more apologies, and should suffer the consequences of higher malpractice premiums to a greater degree than physicians who pay relatively low premiums. Quantile regressions can elucidate whether this pattern of effects is present and thereby provide additional insight into the perverse effect of apology laws. Instead of focusing on the change in the mean level of premiums, these models estimate the change in a particular quantile, such as the median or 25th percentile. Estimating quantile regression models therefore allows me to examine whether the effect of apology laws differs when malpractice premiums are low relative to when they are high.

To examine the effect of apology laws across the distribution of malpractice premiums, I estimate a series of quantile regression models at the 5th percentile, the 10th percentile, and so on through the 95th percentile. Each model estimates the change in the relevant percentile in response to an apology law. For example, a coefficient of 2,000 on the apology law variable in the quantile regression at the median implies that the median malpractice premium increases by $2,000 in response to an apology law.

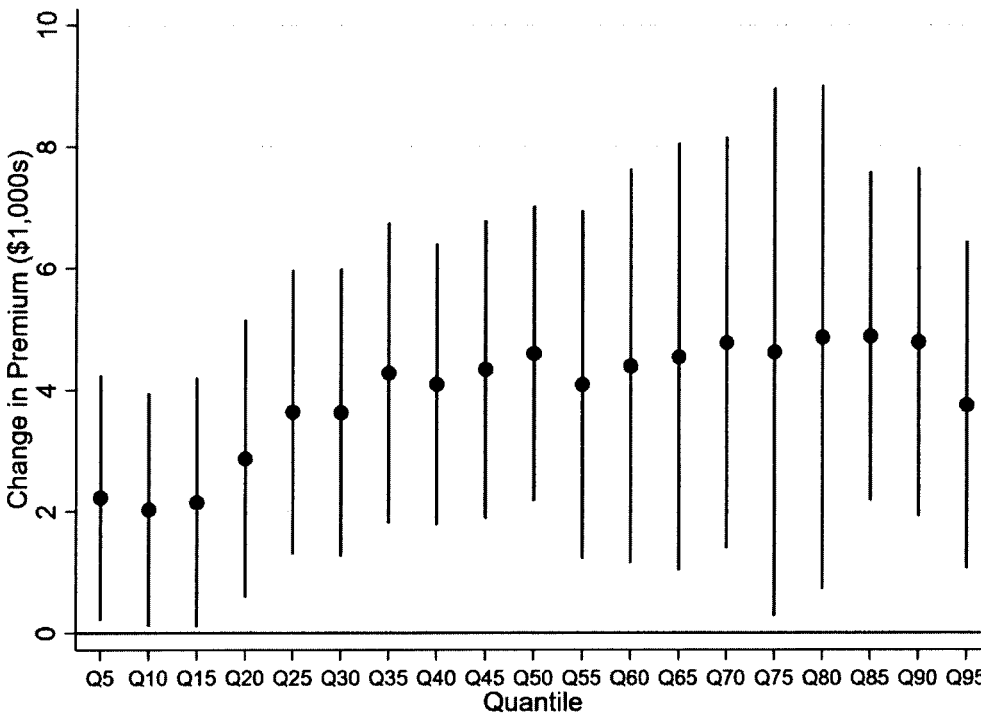
Figure 5 reports the results from a series of quantile models focusing on apology laws generally. In the interest of succinctness, Figure 5 reports only the results for all specialties. The Technical Appendix reports the results for individual specialties, which are consistent with those for all specialties. Each point in Figure 5 represents the estimated effect of an apology law,[209] and the bars represent the 95 percent confidence intervals.[210] In general, apology laws have a smaller effect on the lower end of the malpractice premium distribution than the higher end. For example, at the lower end, apology laws increase malpractice premiums by slightly more than $2,000. At the higher end of the distribution, this effect is closer to $5,000. This pattern of effects is consistent with apology laws having a larger (perverse) impact on malpractice premiums when those

209. Because the dependent variable is not in logarithmic form, the estimated coefficient and estimated effect are the same.

210. If the bars do not cross the zero-line, then the estimate is statistically significant at the 90% level.

premiums are high relative to when they are low. This pattern suggests that physicians who pay higher premiums may rely more on apology laws and therefore suffer the consequences of problematic apologies to a greater extent.

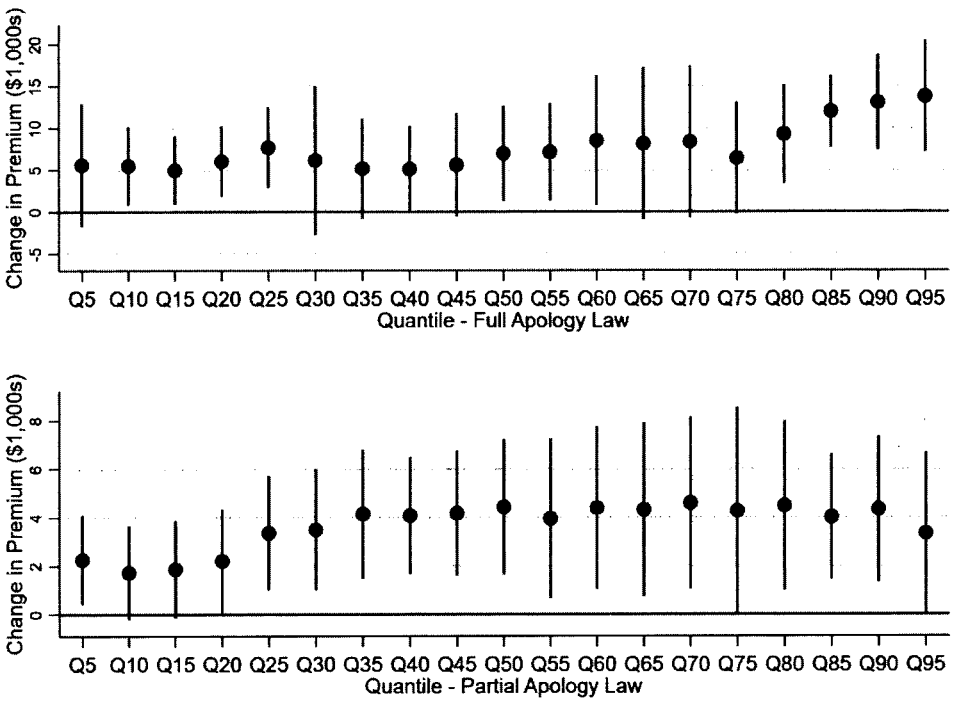
Figure 5: Quantile Regression Results for the Effect of Apology Laws on Malpractice Premiums



Notes: Each point represents the coefficient estimate for the effect of an apology law on malpractice premiums. Each coefficient is estimated in a separate quantile regression model at the quantile listed below. All results are reported as changes in malpractice premiums measured in thousands of 2016 dollars.

Figure 6 reports a similar set of models as Figure 5 but separates full and partial apology laws. As with the general category of apology laws, both full and partial apology laws have a larger effect at the higher end of the malpractice premium distribution. The pattern of effects revealed in Figures 5 and 6 is consistent with apology laws increasing physicians' malpractice liability risk.

Figure 6: Quantile Regression Results for the Effect of Full and Partial Apology Laws on Malpractice Premiums



Notes: Each point represents the coefficient estimate for the effect of an apology law on malpractice premiums. Each coefficient is estimated in a separate quantile regression model at the quantile listed below. All results are reported as changes in malpractice premiums measured in thousands of 2016 dollars.

Overall, the results reported here demonstrate that apology laws, in contrast to having their intended effect of lowering malpractice liability risk, have the unintended and perverse effect of increasing this risk. Both the county-level and state-level results demonstrate that apology laws increase the malpractice premiums paid by physicians across three specialties by between 10 and 16 percent. To test the robustness of these results, I conduct a series of supplementary analyses, which are reported in the Technical Appendix. These analyses demonstrate the validity of the results reported here. The next Section explores the policy implications of these results.

IV. POLICY IMPLICATIONS

Despite the intention of state legislatures in enacting apology laws, the evidence developed here demonstrates that these laws increase the malpractice liability risk faced by physicians. These results raise

important questions, such as why apology laws fail to have their intended effect and what other policy mechanisms could replace apology laws. In answering these questions, I first assume the perspective of state legislatures. After reviewing the implications of the evidence reported above from the perspective of state legislatures, I take a broader view to examine whether apology laws and the goals they seek to achieve are desirable from the perspective of society more generally.

A. The Perverse Effects of Apology Laws

In general, apology laws may have one of three effects on malpractice premiums. They may decrease them as intended, have no effect, or increase them in contravention of their intended effect. The evidence developed above demonstrates that apology laws increase malpractice premiums. This evidence parallels some of the existing evidence but contrasts with much of the research on apology laws.

In two separate studies, Ho and Liu found somewhat mixed evidence on the effect of these laws, though most of their results supported the intended effects hypothesis. They found that apology laws increase the frequency of malpractice claims with positive payouts by about 15 percent, which is consistent with the results here.[211] In fact, this increase in frequency is almost perfectly in line with the results above demonstrating that apology laws increase malpractice premiums by between 10 and 16 percent. However, Ho and Liu found evidence suggesting that apology laws have no effect in the long run.[212] I find no similar evidence here, and the Technical Appendix reports results directly contradict this finding—the perverse effect of apology laws becomes stronger over time.[213] Beyond the increase in the frequency of claims, Ho and Liu also found consistent evidence that apology laws reduce the size of claim payouts and that this reduction varies by the type of injury and the nature of the medical error.[214] However, none of the results reported here are consistent with this evidence, as a reduction in the size of claim payouts should reduce or have little effect on malpractice premiums.

While the results here contrast somewhat with Ho and Liu's results, they are more in line with the results of McMichael, Van Horn, and Viscusi, who found consistent evidence that apology laws increase the number of lawsuits faced by physicians and the size of the payouts associated with malpractice claims.[215] McMichael, Van Horn, and Viscusi explained that the difference between their results and those

211. Ho & Liu, *supra* note 9, at 156.

212. *Id.* at 157-59.

213. Figure A2 in the Technical Appendix contradicts this finding.

214. *Id.*; Ho & Liu, *supra* note 14, at 188-94.

215. McMichael, Van Horn, & Viscusi, *supra* note 3, at 368-84.

of Ho and Liu likely stem from the absence of important information in the dataset examined by Ho and Liu.[216] In particular, Ho and Liu lacked information on claims that were asserted but resulted in no payment to the patient. McMichael, Van Horn, and Viscusi noted that such claims could account for more than half of all claims asserted and that excluding them could change the results of any analysis.[217] Though the analysis here does not directly examine individual claims, malpractice insurers have information on claims that resulted in both zero and positive payments to claimants and can use this information in setting premiums. Thus, the type of claims that McMichael, Van Horn, and Viscusi explained were missing from Ho and Liu's analysis are included here, suggesting a possible explanation for the divergence in the results here from those of Ho and Liu and the consistency of these results with those of McMichael, Van Horn, and Viscusi.[218]

Overall, the results of the analysis reported here are consistent with prior work finding that apology laws have the unintended consequence of increasing malpractice liability risk. This unintended consequence may stem from at least two aspects of apology laws. First, these laws provide no training whatsoever to physicians or other providers who wish to offer apologies. This lack of training may facilitate the provision of botched apologies in which physicians offer insincere or disingenuous apologies that exacerbate rather than assuage patient anger. Second, effective or botched, apologies may signal the occurrence of malpractice to patients who otherwise would not have discovered it. If a patient is unsure if his or her injury stems from the effects of his or her underlying illness, an unavoidable but adverse effect of the treatment for that illness, or from malpractice, an apology from a physician can confirm that malpractice was the cause.

I cannot formally test which of these two unintended-consequence hypotheses may be at work behind the perverse effect of apology laws with the available data. However, it is worth noting that the results suggest that the presence of asymmetric information in the physician-patient relationship may be primarily responsible. For example, the relative effects of full and partial apology laws may suggest that asymmetric information, as opposed to botched apologies, offers a better explanation for the perverse effects of apology laws. Anna C. Mastroianni and colleagues have explained that partial apology laws fail to protect the type of information that patients desire and that O'Hara O'Connor has suggested is necessary to the delivery of an

216. *Id.* at 347, 371.

217. *Id.* at 371, 386.

218. The results reported here are also consistent with research outside of the context of malpractice litigation. McMichael found that apology laws increase treatment patterns that are consistent with the practice of defensive medicine. Given that defensive medicine is generally a response to an increase in liability risk, the results reported here parallel those of McMichael. *See* McMichael, *supra* note 86, at 1245-54.

effective apology—explanations as to what went wrong.[219] A partial apology law that merely protects statements of sympathy and condolence may not encourage physicians to offer this information and thereby facilitates the delivery of botched apologies. Full apology laws, on the other hand, protect more complete statements of responsibility, facilitating the delivery of more effective apologies.[220] Given these differences in protection, partial apology laws should encourage more botched apologies than full apology laws. Thus, if botched apologies are primarily responsible for the perverse effect of apology laws, partial apology laws should have a larger perverse effect than full apology laws.

However, exactly the opposite pattern of effects is present in the results, with full apology laws having stronger perverse effects than partial apology laws. These results are consistent with the asymmetric information hypothesis. If full apology laws induce the delivery of more robust apologies, then physicians may send stronger and clearer signals that malpractice has occurred when encouraged to do so by a full apology law. Accordingly, the results suggest that asymmetric information may better explain the perverse effects of apology laws on malpractice liability risk than the delivery of botched apologies. In either case, however, apology laws clearly have an unintended effect on malpractice liability risk. This raises an important question: if apology laws fail, what can states do to reduce liability risk?

B. Emphasizing "Apology" Over "Law"

In addition to contradicting some of the evidence on apology laws, the results of my analysis run counter to much of the evidence on apologies more generally. While recent research has found that apologies are not a panacea for all transgressions,[221] the majority of evidence developed on apologies in the health care context has demonstrated that they can effectively reduce both the frequency and severity of malpractice claims.[222] Because the results developed in my analysis are specific to *apology laws*, not *apologies*, the evidence reported above does not directly contradict the evidence that apologies offered as part of communication and resolution programs can effectively reduce malpractice liability risk. However, the results of my analysis do demonstrate that the effects of individual communication and resolution programs are not generalizable via the passage of apology laws.

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219. Mastroianni et al., *supra* note 21, at 1614; *see also* O'Hara O'Connor, *supra* note 37, at 1965 (noting that an effective apology requires "the identification of a wrongful act").

220. Mastroianni et al., *supra* note 21, at 1614.

221. Gilbert, James, & Shogren, *supra* note 2, at 56-58; Halperin et al., *supra* note 1, at 1.

222. *See, e.g.*, Allen Kachalia et al., *supra* note 29, at 1837 (finding that an apology and disclosure program can reduce malpractice liability risk).

The inability of apology laws to generalize the benefits observed in connection with communication and resolution programs likely stems from the lack of training associated with apology laws. As Mello, Studdert, and Kachalia explained, these programs are "typically implemented at well-resourced academic medical centers"[223] and become more effective "after clinicians [are] given disclosure training and risk managers [began] more closely monitoring whether and how disclosures [are] carried out."[224] These programs become even more effective when organizations expend more resources to, for example, "creat[e] rapid-response teams that help clinicians prepare for disclosure conversations immediately following an adverse event."[225] Apology laws neither mandate, nor facilitate, the implementation of these ancillary services and training regimes that may be key to achieving the benefits observed in the context of specific communication and resolution programs. Equally important is the fact that apology laws neither mandate, nor facilitate, early settlement offers, which prior work has demonstrated serve to increase the effectiveness of communication and resolution programs.[226]

Though the evidence developed in this Article demonstrates that state legislatures cannot rely on apology laws to achieve the benefits associated with hospital-specific communication and resolution programs, this evidence also suggests a path forward for legislatures. In particular, given the failure of apology laws and assuming that legislatures remain committed to achieving their goals, the most obvious approach is to repeal apology laws and replace them with laws designed to encourage the development of specific communication and resolution programs. None of the evidence presented here undermines the conclusions that these specific programs can effectively reduce malpractice liability risk, and state laws designed to encourage the adoption of such programs would be straightforward to implement. By replacing apology laws with laws designed to encourage the development of communication and resolution programs, state legislatures can emphasize the "apology" in apology laws and better encourage the delivery of effective apologies to mitigate malpractice liability risk.

An important impediment to the wider implementation of communication and resolution programs that future laws must address is the cost of these programs. However, while existing resolution programs may have incurred significant start-up costs, costs may be lower going forward. Indeed, the Agency for Healthcare Research and Quality ("AHRQ") has developed the Communication

223. Michelle M. Mello, David Studdert, & Allen Kachalia, *The Medical Liability Climate and Prospects for Reform*, 312 JAMA, 2146, 2149 (2014).

224. *Id.* at 2150-51.

225. *Id.* at 2151.

226. *Id.*

and Optimal Resolution ("CANDOR") Toolkit to aid organizations that wish to implement their own programs.[227] CANDOR offers organizations training to "[e]ngage patients and families in disclosure communication following adverse events" and was developed through expert analysis and a multi-million dollar grant initiative.[228] The CANDOR program would likely impose a relatively smaller financial burden on health care organizations, and state legislatures could use the program as the backbone of future laws that emphasize the delivery of effective apologies.

C. Apology Laws: The Broader Perspective

The primary purpose of this Article is to evaluate apology laws under the framework adopted by state legislatures. Accordingly, it has assumed that the goal of these laws is to reduce malpractice liability risk and that the reduction of this risk is a worthwhile goal to pursue. Based on this framework, the analysis presented here demonstrates that apology laws do not function as intended and ultimately exacerbate the very risk they were designed to mitigate. From the perspective of state legislatures, then, apology laws have clearly failed.

However, stepping back from the perspective of the legislatures that have passed apology laws, it is not clear that these laws benefit or harm society more generally. While these laws unintentionally increase litigation, this may ultimately inure to the benefit of society, particularly if apology laws increase litigation when malpractice has actually occurred. The ire directed at malpractice litigation is often focused on frivolous lawsuits. Indeed, the American Medical Association—a staunch proponent of malpractice liability reform—has argued that "most liability claims are without merit."[229]

To the extent that malpractice claims are asserted when no medical error has occurred, these claims can over-deter physicians, potentially induce the practice of defensive—and therefore wasteful—medicine, and waste judicial resources.[230] Legitimate malpractice claims, however, play an important role in deterring the provision of low-quality or unsafe medical care. For example, a recent empirical study found that "higher liability pressure reduces preventable medical complications."[231] Another study emphasized the deterrence role fulfilled by malpractice liability, concluding that "medical liability

227. *Communication and Optimal Resolution (CANDOR) Toolkit*, AHRQ, https://www.ahrq.gov/professionals/quality-patient-safety/patient-safety-resources/resources/candor/introduction.html [https://perma.cc/94W7-A4XN] (last visited May 11, 2021).

228. *Id.*

229. AM. MED. ASS'N, MEDICAL LIABILITY REFORM NOW 1 (2020).

230. *Id.* at 4-7. *See also* McMichael, *supra* note 86, at 1223-27 (discussing defensive medicine and other issues connected with frivolous lawsuits).

231. Toshiaki Iizuka, *Does Higher Malpractice Pressure Deter Medical Errors*, 56 J.L. & ECON. 161, 164 (2013).

forces . . . hold the potential to elevate the quality" of care.[232] Consistent with this conclusion, multiple studies found evidence that individual physicians change how they provide care after malpractice claims are filed against them.[233]

Apology laws may improve the ability of the tort system to encourage the provision of high-quality care by encouraging non-frivolous malpractice claims. As noted above, apology laws may incite physicians to apologize when they commit malpractice. These apologies, in turn, can alert patients to negligence they otherwise would not have discovered. Thus, apology laws may facilitate malpractice claims against truly negligent physicians—claims that do not raise concerns about frivolous litigation. If the uptick in malpractice premiums attributable to apology laws stems primarily from an increase in legitimate malpractice claims, then the unintended effect of apology laws may ultimately benefit patients everywhere in the form of increased deterrence of substandard medical care. While future work may investigate this possibility in more depth, the results presented above do not unambiguously demonstrate that the effect of apology laws is good or bad. The results clearly demonstrate that apology laws failed to have their intended effect, but they do not necessarily demonstrate that this unintended effect is harmful to society generally.

CONCLUSION

Over the past two decades, state legislatures have increasingly turned to apology laws in addition to traditional tort reforms as a mechanism to reduce the malpractice liability risk faced by health care providers. Relying on a large body of evidence demonstrating that apologies from tortfeasors to victims can assuage anger, promote healing, and thereby discourage the pursuit of legal redress, state legislatures have sought to encourage the use of apologies by rendering them inadmissible as evidence of liability. While based on a plausible theory of human behavior, apology laws may not have their intended effect if individuals deliver insincere apologies or signal their potential liability via apologies.

This Article examined whether apology laws accomplish their stated goals in the context of medical malpractice liability—the context towards which the majority of apology laws are aimed. Focusing on the malpractice insurance premiums paid by three separate medical specialties as the relevant measure of malpractice

232. Michael Frakes & Anupam B. Jena, *Does Medical Malpractice Law Improve Health Care Quality?*, 143 J. PUB. ECON. 142, 144 (2016).

233. Ity Shurtz, *The Impact of Medical Errors on Physician Behavior: Evidence from Malpractice Litigation*, 32 J. HEALTH ECON. 331, 332-35 (2013); David Dranove & Yasutora Watanabe, *Influence and Deterrence: How Obstetricians Respond to Litigation Against Themselves and their Colleagues*, 12 AM. L. ECON. REV. 69, 85-91 (2010).

liability risk, the analysis revealed that apology laws not only fail to have their intended effect but have the perverse effect of increasing premiums. Malpractice insurance premiums increase by between 10 and 16 percent, which translates into annual premium increases of between $1,500 and $7,500 for individual physicians. By demonstrating that apology laws have the unintended and perverse effect of increasing malpractice insurance premiums, this Article provides important new evidence on the efficacy of apology laws. This evidence will help resolve the ongoing dispute over whether these laws reduce malpractice liability risk. Overall, the evidence suggests that this dispute should be resolved against the efficacy of apology laws in reducing this risk.

TECHNICAL APPENDIX

INTRODUCTION TO THE TECHNICAL APPENDIX

This Technical Appendix provides additional information that, in the interest of succinctness, was not included in the main text. For example, Table A1 provides an exhaustive list of state apology laws, citations, and years of enactment. Importantly, the main text stands alone in reporting and discussing the primary analysis. This appendix simply provides additional details of that analysis, as well as supplementary analyses to further support the conclusions of the Article. Section I begins by providing econometric details of the empirical analysis. Section II provides more details on the primary results that are discussed in the main text. Section III reports a series of robustness checks designed to test whether the effects of apology laws reported here represent true causal effects or spurious relationships—the robustness analysis demonstrates that the effects are, indeed, true causal effects.

I. ECONOMETRIC SPECIFICATION

To examine the effect of apology laws on malpractice premiums at the county level, I estimate a series of difference-in-differences models. These models control for fixed, unobserved characteristics of individual counties and insurance companies as well as linear and non-linear trends over time. Throughout the analysis, I estimate the following general ordinary least squares ("OLS") specification:

$$\ln(Premium_{csit}) = \beta(Apology\ Law_{st}) + (Tort\ Reforms_{st})\varphi' + \delta_i + \gamma_c + \tau_t + \varepsilon.$$

In this specification, the dependent variable is the natural logarithm of the malpractice premium charged by insurance company i in county c and year t. The variable of interest is an indicator for whether state s had an apology law in place in year t. The coefficient of interest, β, captures the causal effect of apology laws on malpractice premiums. The vector *Tort Reforms* includes indicator variables for the following tort reforms: noneconomic damages caps, punitive damages caps, collateral source reform, and joint and several liability reform. I include these indicator variables to separate their effects from that of apology laws. However, excluding them from the models results in little change in the estimated effects for apology laws. This is not surprising, given Ho and Liu's explanation that apology laws, unlike

traditional tort reforms, are passed in isolation (i.e., not as part of a bundle that includes other reforms).[234]

The vectors δ, γ, and τ include a series of insurance company-fixed effects, county-fixed effects, and year-fixed effects, respectively. Because these variables will absorb much of the heterogeneity at both the county and insurance company levels, the primary models do not include further control variables, which is consistent with prior work.[235] Throughout the analysis, standard errors are clustered at the county and insurance company levels to correct for serial autocorrelation, consistent with the two-way clustering approach described by Cameron, Gelbach, and Miller.[236]

The primary analysis includes several modifications to this general specification. Importantly, I estimate this model separately for each of the three specialties—general surgery, internal medicine, and obstetrics/gynecology. For the models that include all specialties, I include indicator variables for internal medicine and obstetrics/gynecology (with general surgery as the omitted category) because, as noted in Table 2 in the main text, the mean premiums differ substantially across specialties.

Next, in a second set of models, I replace the *Apology Law* variable with separate indicator variables for full and partial apology laws. These models allow me to isolate the impact of the different types of apology laws. However, separating apology laws into full and partial laws raises two important issues. First, states may change from one type of law to the other. To date, only one state—Ohio—has changed its apology law from one type to the other, and that change occurred after the end of the period examined here. Accordingly, I code Ohio as having a partial apology law throughout the analysis—consistent with the Court of Appeals of Ohio. Coding Ohio as having a full apology law does not meaningfully change the results, however.[237] Second, relatively few states have enacted full apology laws. Based on this paucity of states, the number of treated clusters for full apology laws is relatively small, which can induce problems in the standard errors

234. Benjamin Ho & Elaine Liu, *Does Sorry Work? The Impact of Apology Laws on Medical Malpractice*, 43 J. RISK & UNCERTAINTY 141, 144 (2011).

235. In particular, because counties are a more specific geographic unit, county indicators absorb much of the heterogeneity that the state-level control variables attempt to control for. County-level information on the economic and demographic factors included as controls in the state-level models is also not always available. Omitting control variables from the county-level models is consistent with the existing literature. *See, e.g.*, Michael Frakes, *The Surprising Relevance of Medical Malpractice Law*, 82 CHI. L. REV. 317, 391 (2015) (omitting control variables from a model that includes hospital referral region indicator variables—the number of hospital referral regions is similar to the number of US counties).

236. A. Colin Cameron, Jonah B. Gelbach, & Douglas L. Miller, *Robust Inference with Multiway Clustering*, 29 J. BUS. & ECON. STAT. 238, 240-49 (2011).

237. Davis v. Wooster Orthopaedics & Sports Medicine, Inc, 952 N.E.2d 1216, 1218 (Ohio Ct. App. 2011), *overruled on other grounds by* Stewart v. Vivian, 91 N.E.3d 716 (Ohio 2017).

associated with the full apology law indicator variable. To address this problem, I re-estimate the relevant models and calculate wild bootstrap clustered standard errors.[238] These models are reported below.

Turning to the state-level analysis, the general specification closely parallels that for the county-level analysis. For the first part of the analysis, I estimate a series of OLS models with the following general specification:

$$\ln(Premium_{st}) = \beta(Apology\ Law_{st}) + (Tort\ Reforms_{st})\varphi' + \sigma_s + \tau_t + \varepsilon.$$

The dependent variable and independent variable of interest are identical to those above—though, they are defined at the state level instead of the county and insurance company level. Similarly, the vector *Tort Reforms* includes the same controls for other tort reforms. The vectors σ and τ include a series of state and year fixed effects, respectively. Throughout the analysis, standard errors are clustered at the state level. As part of the state-level analysis, I modify this general specification in similar ways as described above—estimating separate models by specialty and replacing the *Apology Law* variable with separate indicators for full and partial apology laws.

In addition to these modifications, I also re-estimate all of the state-level OLS models with additional control variables because state fixed effects will not absorb heterogeneity to the same degree as county and insurance company fixed effects. In particular, I derive the following control variables at the state level from information in the Current Population Survey: unemployment rate, average income, percent female, percent white, percent black or African American, percent Hispanic, percent with high school education, percent with some college, percent with a college education, and percent with an advanced degree.[239]

Next, as part of the state-level analysis, I estimate a series of quantile regressions. These models employ the same general specification described above but include no control variables.[240]

238. For a discussion of the problem of too few treated clusters and the appropriateness of the bootstrapping procedure to address this problem, see generally, Matthew D. Webb, *Reworking Wild Bootstrap Based Inference For Clustered Errors* (Queen's Econ. Dep't Working Paper 1315), https://ideas.repec.org/p/qed/wpaper/1315.html [https://perma.cc/N47E-WAN2].

239. UNITED STATES CENSUS BUREAU, *Current Population Survey*, https://www.census.gov/programs-surveys/cps.html [https://perma.cc/GXB4-LYSP], (last visited Aug. 6, 2021).

240. *Cf.* Joni Hersch & W. Kip Viscusi, *Punitive Damages: How Judges and Juries Perform*, 33 J.L. STUD. 1, 28 (2004) ("Because quantile regressions focus on determinants of damages for particular quantiles, taking into account the likelihood of being in the quantile, there are severe limits to the number of variables that can be included in the specification . . . .").

Additionally, because quantile models are not sensitive to a skew in the outcome variable like OLS models are, I replace the natural logarithm of malpractice premiums with malpractice premiums. To obtain a complete picture of the effect of apology laws across the entire distribution of malpractice premiums, I estimate separate quantile models at the 5th percentile of the distribution, the 10th percentile, and so on through the 95th percentile. In the interest of succinctness, I report the results of the quantile models graphically.

II. ADDITIONAL RESULTS FROM THE PRIMARY ANALYSIS

The main text includes almost all of the results from the primary analysis, but in the interest of brevity, it does not report raw regression results. Those results are included here. Tables A2 and A3 report the regression results that underlie primary results reported in Figures 1 and 2 of the main text. Tables A4 and A5 report the regression results that underlie the state-level results reported in Figures 3 and 4 of the main text. Similarly, in the interest of succinctness, the main text does not include results from the specialty-specific quantile regression models. Those results are reported in Figure A1. The results for the individual specialties parallel those for the all-specialty models reported in the main text. In general, apology laws have smaller effects at the lower end of the premium distribution and larger effects at the higher end of the distribution.

III. ROBUSTNESS CHECKS

To test whether the results reported in the primary and supplementary analyses represent true causal effects, I conduct a series of robustness checks. First, I estimate a series of specifications to test the sensitivity of the results to the underlying econometric specification of the models. Beginning with the county-level models, Table A6 reports a series of models that include only county- and year-fixed effects (omitting insurance company-fixed effects). The standard errors in these models are clustered at the state level only. Next Table A7 reports a series of models that include year-fixed effects, county-fixed effects, insurance company-fixed effects, and a full set of interactions between the county- and insurance company-fixed effects. These models include two-way clustered standard errors at the county and insurance company levels. In general, while the point estimates differ somewhat from the primary county-level results reported in the main text, the coefficient estimates in Tables A6 and A7 are consistent with those in the primary analysis. Turning to the state-level models, Table A8 reports a series of models that add all of the control variables discussed above. Overall, while the coefficient estimates change

somewhat from those reported in the primary analysis, they are consistent in sign, significance, and magnitude.

Next, as noted above, the fact that only five states adopted full apology laws during the period of analysis means that the clustered standard errors associated with the full apology law coefficient estimates may not be reliable.[241] To address this potential issue, I re-estimate all of the primary models that include separate full and partial apology law variables and estimate wild cluster bootstrapped standard errors, with clustering at the same level as described in the main text. Table A9 reports the results of these models. In the interest of succinctness, Table A9 reports the coefficient estimate for the full apology law variable and the p-value that is calculated in the wild cluster bootstrapping procedure. In general, while the statistical significance reported in Table A9 differs somewhat from that reported in the main analysis, the effect of full apology laws is generally statistically significant in the preferred specifications—the county-level models.

Finally, throughout all parts of the analysis, I estimate difference-in-differences models. To test the appropriateness of these models to the apology law and malpractice premium context, I examine the key assumption underlying all difference-in-differences models—the trend in the outcome of interest is the same in the control group and treatment group. If the treatment group exhibits an increase in malpractice premiums prior to the adoption of an apology law, that could suggest that the results of my analysis simply reflect differences in the relevant underlying trends, as opposed to true effects of apology laws.

To address these concerns, I follow the econometric methodology outlined by de Chasiemartin and D'Haultfoeuille.[242] Their approach provides a specific test for whether the parallel trends assumption is valid and relaxes the assumption that apology laws have a constant effect across states and over time.[243] The results of the event-study models (following de Chasiemartin and D'Haultfoeuille) are reported in Figure A2. Panel A reports results for any apology law at the county level, and Panel B reports results for any apology law at the state

241. *See generally* Webb, *supra* note 238.

242. *See* Clément de Chasiemartin & Xavier D'Haultfoeuille, *Two-way Fixed Effects Estimators with Heterogeneous Treatment Effects,* 110 AM. ECON. REV. 2964, (2020) ("[W]e propose a new estimator . . . that is valid even if the treatment effect is heterogeneous over time or across groups. It estimates the average treatment effect across all the (g,t) cells whose treatment changes from t − 1 to t. It relies on common trends assumptions on both potential outcomes. Those conditions are partly testable, and we propose a test that amounts to looking at pretrends.").

243. *Id.*

level.[244] Each line represents the effect of an apology law at the given time before or after enactment, and each error bar represents the 95 percent confidence interval around each estimated effect. The focus of this analysis is not the statistical significance of any single point estimate but the overall trend of the effect of apology laws.[245] Across both panels, the line tracing the coefficient estimates for the years leading up to an apology law is clearly flat, suggesting that the trends in the treatment and control groups were parallel. Indeed, the coefficient estimates prior to the adoption of an apology law are remarkably stable. The flat line prior to the adoption of an apology law demonstrates that the parallel trends assumption is not violated and that the use of difference-in-differences models throughout my analysis is appropriate. Across both panels, the line tracing the coefficient estimates for the years leading up to an apology law is clearly flat, suggesting that the trends in the treatment and control groups were parallel. Indeed, the coefficient estimates prior to the adoption of an apology law are remarkably stable. The flat line prior to the adoption of an apology law demonstrates that the parallel trends assumption is not violated and that the use of difference-in-differences models throughout my analysis is appropriate.

In addition to demonstrating the validity of the primary empirical models, the event-study results also elucidate the "phasing in" of the effect of apology laws. In both panels, the effect of an apology law increases in the first two years and levels out around the third year, with physicians paying stable, but higher premiums from year three forward. This is not surprising, as one would expect that it would take providers time to begin offering apologies and for insurers to change their premiums accordingly.

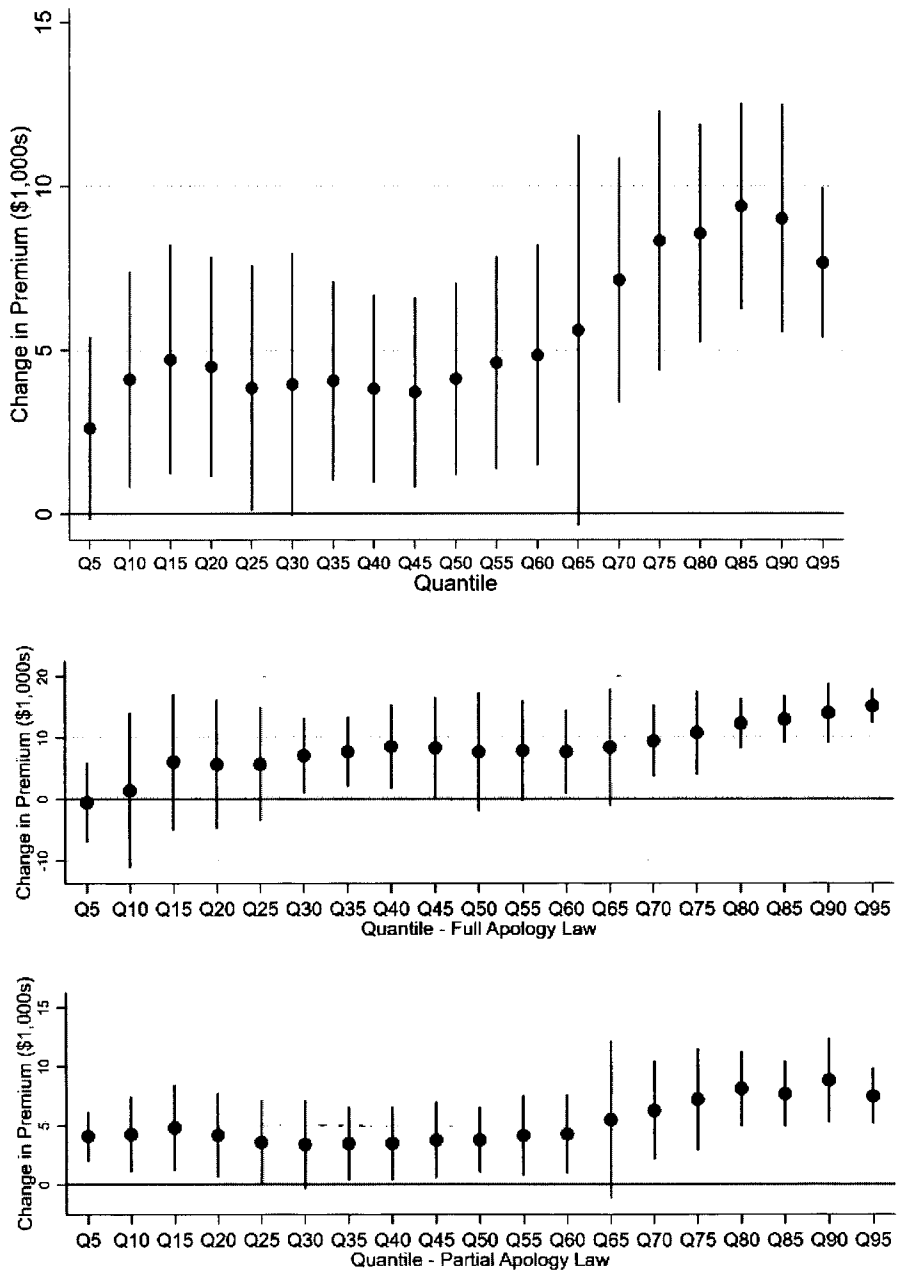
244. In the interest of succinctness, separate results for full and partial apology laws are not reported here. However, these results do not meaningfully differ or alter any of the conclusions discussed here. The models reported in Figure A2 are substantially more computationally intensive than the models reported in the main analysis. Accordingly, for computational feasibility reasons, the county-level models include only county-fixed effects (and not insurer-fixed effects) with standard errors clustered at the state level only. Importantly, earlier robustness checks demonstrate that removing complexity from the models does not meaningfully alter the results.

245. *See, e.g.*, Ronen Avraham & Max Schanzenbach, *The Impact of Tort Reform on Intensity of Treatment: Evidence from Heart Patients*, 39 J. HEALTH ECON. 273, 278-82 (2015) (focusing similarly on the nature of the trend in their event study models as opposed to the statistical significance of any single effect).

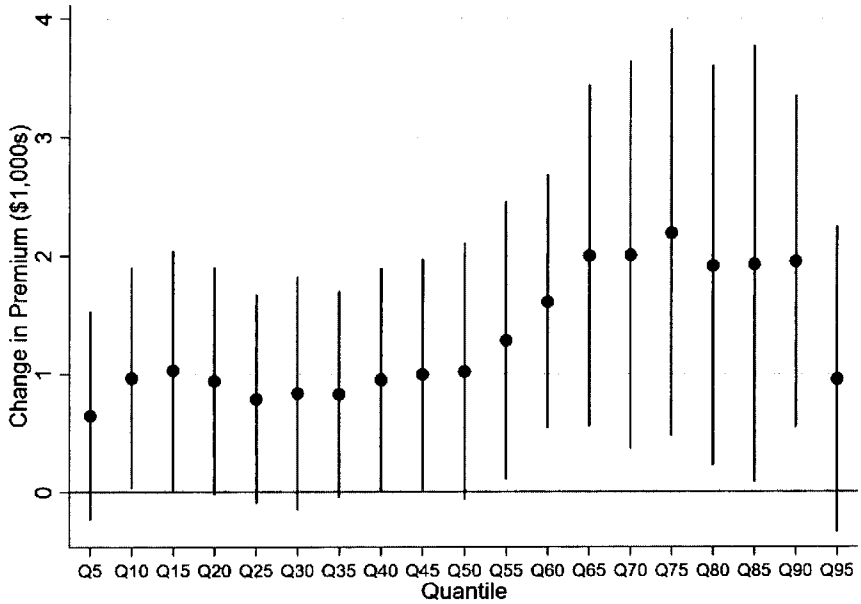
FIGURES AND TABLES

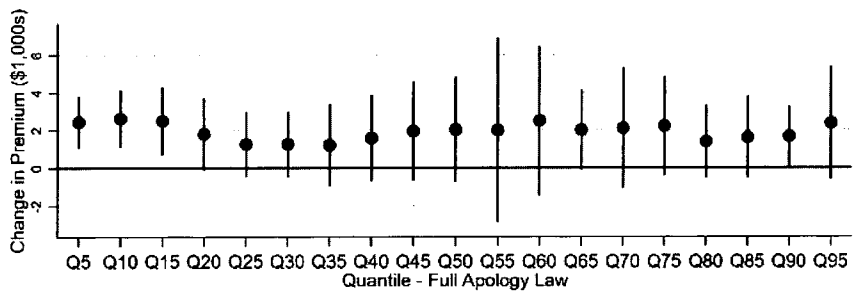
Figure A1: Specialty-Specific Quantile Regression Results

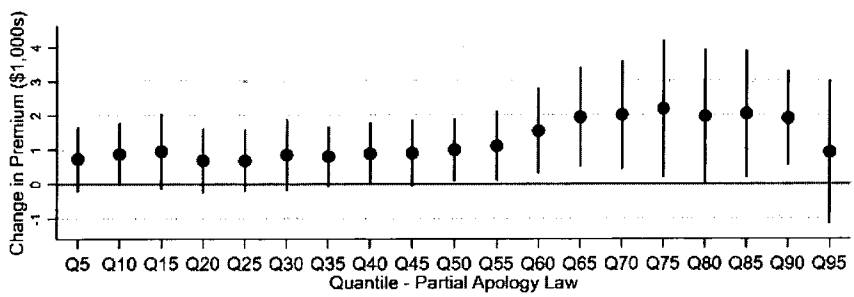
Panel A: General Surgery



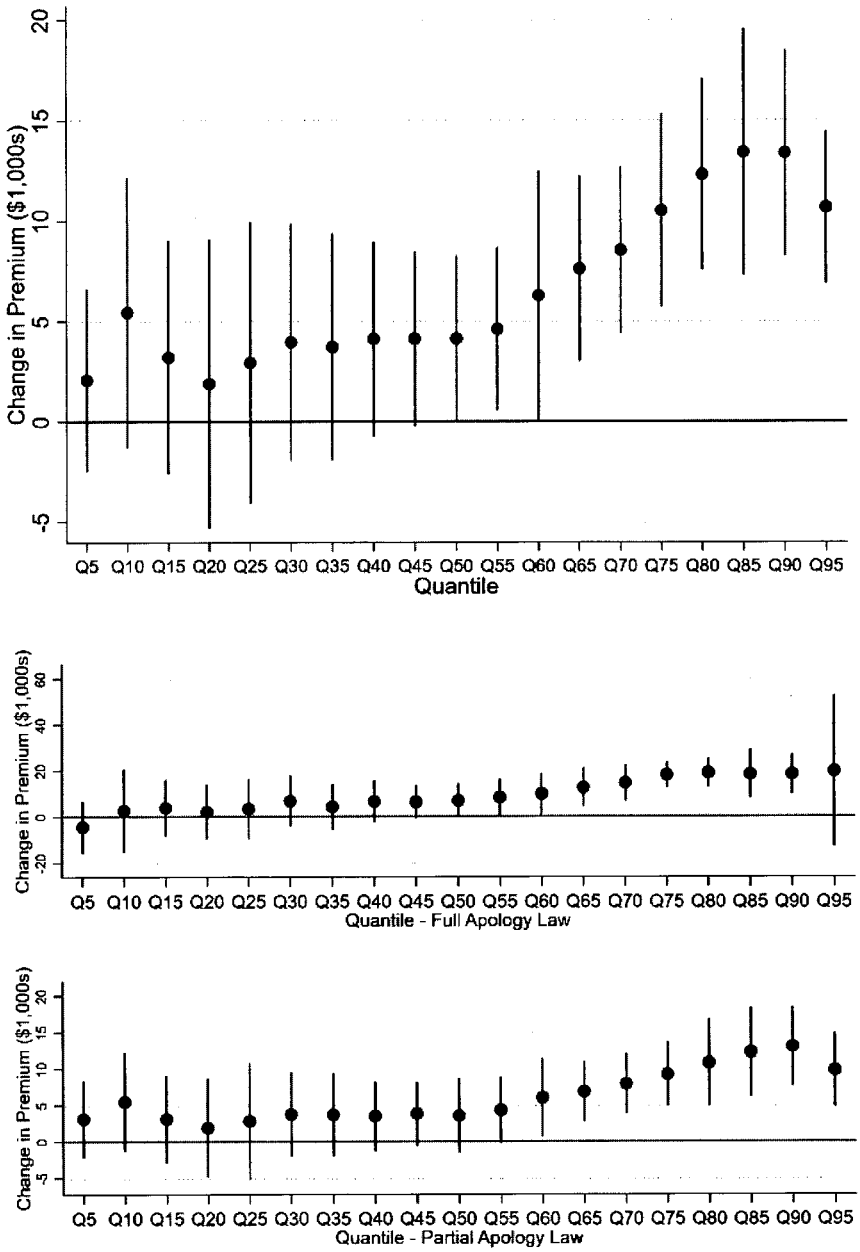
Panel B: Internal Medicine







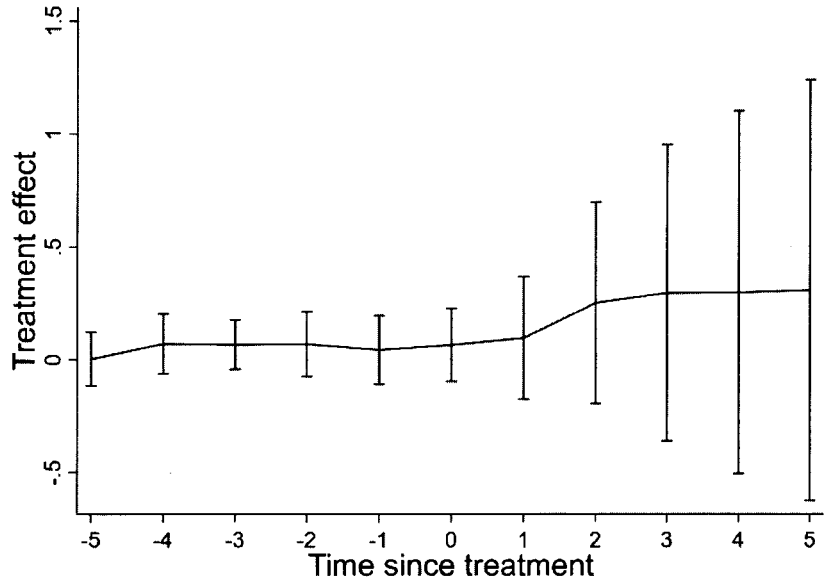
Panel C: OB/GYN



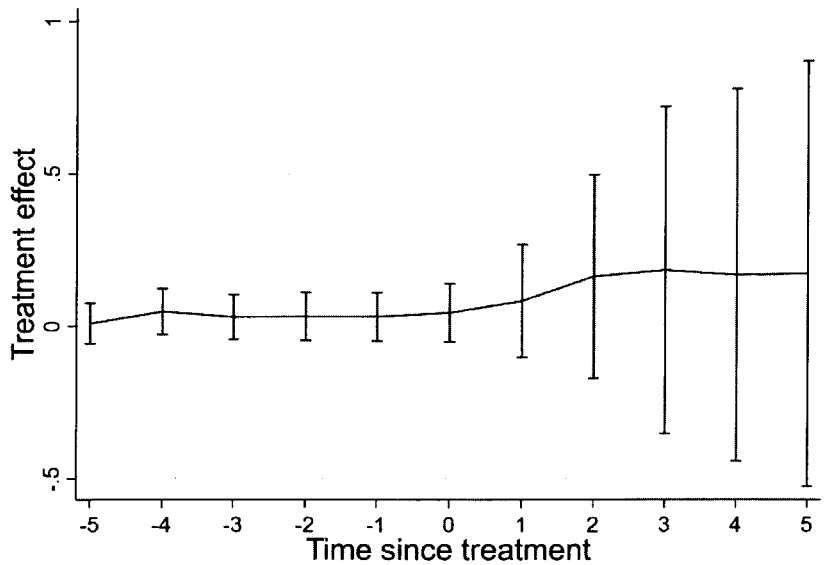
Notes: Each point represents the coefficient estimate for the effect of an apology law on malpractice premiums. Each coefficient is estimated in a separate quantile regression model at the quantile listed below. All results are reported as changes in malpractice premiums measured in thousands of 2016 dollars.

Figure A2: Event Study Models

Panel A: County Level



Panel B: State Level



Notes: Each panel reports the coefficients from a series of indicator variables around the timing of apology laws. Panel A reports coefficients around the effect of any apology law at the county level, and Panel B reports the same at the state level.

Table A1: Apology Laws

State	Year	Citation
PARTIAL APOLOGY LAWS		
Massachusetts	1986	MASS. GEN. LAWS ANN. ch. 233, § 23D
Texas	1999	TEX. CIV. PRAC. & REM. CODE ANN. § 18.061
California	2000	CAL. EVID. CODE § 1160
Florida	2001	FLA. STAT. ANN. § 90.4026
Washington	2002	WASH. REV. CODE ANN. § 5.66.010
Tennessee	2003	TENN. R. EVID. 409.1
Oregon	2003	OR. REV. STAT. ANN. § 677.082
Maryland	2004	MD. CODE ANN., CTS. & JUD. PROC. § 10-920
North Carolina	2004	N.C. GEN. STAT. ANN. 8C-1, 413
Ohio[246]	2004	OHIO REV. CODE ANN. § 2317.43
Oklahoma	2004	OKLA. STAT. ANN. TIT. 63, § 1-1708.1H
Wyoming	2004	WYO. STAT. ANN. § 1-1-130
Louisiana	2005	LA. STAT. ANN. § 13:3715.5
Maine	2005	ME. REV. STAT. TIT. 24, § 2907
Missouri	2005	MO. ANN. STAT. § 538.229
New Hampshire	2005	N.H. REV. STAT. ANN. § 507-E:4
South Dakota	2005	S.D. CODIFIED LAWS § 19-19-411.1
Virginia	2005	VA. CODE ANN. § 8.01-581.20:1
Illinois[247]	2005	735 ILL. COMP. STAT. ANN. 5/8-1901
Montana	2005	MONT. CODE ANN. § 26-1-814
West Virginia	2005	W. VA. CODE ANN. § 55-7-11A
Delaware	2006	DEL. CODE ANN. TIT. 10, § 4318
Idaho	2006	IDAHO CODE ANN. § 9-207
Indiana	2006	IND. CODE ANN. § 34-43.5-1-1 ET SEQ.
Iowa	2006	IOWA CODE ANN. § 622.31
Utah	2006	UTAH R. EVID. 409
Vermont	2006	VT. STAT. ANN. TIT. 12, § 1912
Hawaii	2007	HAW. REV. STAT. ANN. § 626-1, RULE 409.5

246. The Supreme Court of Ohio effectively transformed Ohio's partial apology law into a full apology law in 2017. *See infra* Part II.A.

247. Illinois first enacted an apology law in 2005. The Supreme Court of Illinois declared the law unconstitutional as part of a broader opinion in 2010. Lebron v. Gottlieb Mem'l Hosp., 930 N.E.2d 895, 914 (Ill. 2010). The legislature re-enacted Illinois's apology law in 2013. *See* 735 ILL. COMP. STAT. ANN. 5/8-1901.

Nebraska	2007	NEB. REV. STAT. ANN. § 27-1201
North Dakota	2007	N.D. CENT. CODE ANN. § 31-04-12
District of Columbia	2007	D.C. CODE ANN. § 16-2841
Michigan	2011	MICH. COMP. LAWS ANN. § 600.2155
Pennsylvania	2013	35 PA STAT. ANN. § 10228.3
Wisconsin	2014	WIS. STAT. § 904.14
Alaska	2015	ALASKA STAT. § 09.55.544

FULL APOLOGY LAWS

Colorado	2003	COLO. REV. STAT. ANN. § 13-25-135
Connecticut	2005	CONN. GEN. STAT. ANN. § 52-184D
Arizona	2005	ARIZ. REV. STAT. ANN. § 12-2605
Georgia	2005	GA. CODE ANN. § 24-4-416
South Carolina	2006	S.C. CODE ANN. § 19-1-190

Notes: The year indicates the first year an apology law is coded as taking effect. This may be the year after a given law was enacted if the law became effective in the second half of a given year.

Table A2: Effect of Any Apology Law on Malpractice Premiums

	(1) All Specialties	(2) General Surgery	(3) Internal Medicine	(4) OB/GYN
Apology Law	0.124***	0.121***	0.142***	0.110**
	(0.044)	(0.045)	(0.049)	(0.041)
Observations	436,020	145,451	145,077	145,211
R-squared	0.927	0.850	0.838	0.846

Notes: The dependent variable in all specifications is the natural logarithm of malpractice premium. Each regression includes only the specialty listed at the top of the column. All regressions include indicator variables for the following tort reforms: noneconomic damages caps, punitive damages caps, collateral source reform, and joint and several liability reform. The regression reported in column (1) additionally includes indicator variables for internal medicine and OB/GYN (with general surgery as the omitted category). All regressions include year, county, and insurance company fixed effects. Two-way clustered standard errors, with clustering at the state and insurance company levels, are reported in parentheses. * significant at the $p < 0.1$ level; ** significant at the $p < 0.05$ level; *** significant at the $p < 0.01$ level.

Table A3: Effect of Full and Partial Apology Laws on Malpractice Premiums

	(1) All Specialties	(2) General Surgery	(3) Internal Medicine	(4) OB/GYN
Full Apology Law	0.248***	0.249***	0.267***	0.227***
	(0.050)	(0.061)	(0.057)	(0.039)
Partial Apology Law	0.104**	0.101**	0.122**	0.091**
	(0.044)	(0.045)	(0.050)	(0.042)
Observations	436,020	145,451	145,077	145,211
R-squared	0.928	0.851	0.839	0.847

Notes: The dependent variable in all specifications is the natural logarithm of malpractice premium. Each regression includes only the specialty listed at the top of the column. All regressions include indicator variables for the following tort reforms: noneconomic damages caps, punitive damages caps, collateral source reform, and joint and several liability reform. The regression reported in column (1) additionally includes indicator variables for internal medicine and OB/GYN (with general surgery as the omitted category). All regressions include year, county, and insurance company fixed effects. Two-way clustered standard errors, with clustering at the state and insurance company levels, are reported in parentheses. * significant at the $p < 0.1$ level; ** significant at the $p < 0.05$ level; *** significant at the $p < 0.01$ level.

Table A4: Effect of Any Apology Law on Malpractice Premiums (State Level)

	(1) All Specialties	(2) General Surgery	(3) Internal Medicine	(4) OB/GYN
Apology Law	0.110***	0.119***	0.112**	0.099**
	(0.039)	(0.041)	(0.043)	(0.039)
Observations	2,493	831	831	831
R-squared	0.956	0.912	0.903	0.915

Notes: The dependent variable in all specifications is the natural logarithm of malpractice premium. Each regression includes only the specialty listed at the top of the column. All regressions include indicator variables for the following tort reforms: noneconomic damages caps, punitive damages caps, collateral source reform, and joint and several liability reform. The regression reported in column (1) additionally includes indicator variables for internal medicine and OB/GYN (with general surgery as the omitted category). All regressions include year and state fixed effects. Standard errors clustered at the state level are reported in parentheses. * significant at the $p < 0.1$ level; ** significant at the $p < 0.05$ level; *** significant at the $p < 0.01$ level.

Table A5: Effect of Full and Partial Apology Laws on Malpractice Premiums (State Level)

	(1) All Specialties	(2) General Surgery	(3) Internal Medicine	(4) OB/GYN
Full Apology Law	0.147**	0.165**	0.110	0.165***
	(0.067)	(0.075)	(0.088)	(0.058)
Partial Apology Law	0.106**	0.114***	0.112**	0.092**
	(0.040)	(0.042)	(0.044)	(0.040)
Observations	2,493	831	831	831
R-squared	0.957	0.912	0.903	0.916

Notes: The dependent variable in all specifications is the natural logarithm of malpractice premium. Each regression includes only the specialty listed at the top of the column. All regressions include indicator variables for the following tort reforms: noneconomic damages caps, punitive damages caps, collateral source reform, and joint and several liability reform. The regression reported in column (1) additionally includes indicator variables for internal medicine and OB/GYN (with general surgery as the omitted category). All regressions include year and state fixed effects. Standard errors clustered at the state level are reported in parentheses. * significant at the $p < 0.1$ level; ** significant at the $p < 0.05$ level; *** significant at the $p < 0.01$ level.

Table A6: Apology Law Models with Only County Fixed Effects

Panel A: Any Apology Law

	(1) All Specialties	(2) General Surgery	(3) Internal Medicine	(4) OB/GYN
Apology Law	0.117**	0.111**	0.149***	0.090**
	(0.046)	(0.048)	(0.050)	(0.045)
Observations	436,308	145,547	145,173	145,307
R-squared	0.910	0.787	0.783	0.780

Panel B: Full and Partial Apology Laws

	(1) All Specialties	(2) General Surgery	(3) Internal Medicine	(4) OB/GYN
Full Apology Law	0.269***	0.306***	0.242***	0.260***
	(0.075)	(0.083)	(0.087)	(0.059)
Partial Apology Law	0.114**	0.105*	0.146***	0.090*
	(0.051)	(0.055)	(0.053)	(0.049)
Observations	436,308	142,970	142,684	142,818
R-squared	0.901	0.768	0.763	0.755

Notes: The dependent variable in all specifications is the natural logarithm of malpractice premium. Each regression includes only the specialty listed at the top of the column. All regressions include indicator variables for the following tort reforms: noneconomic damages caps, punitive damages caps, collateral source reform, and joint and several liability reform. The regression reported in column (1) additionally includes indicator variables for internal medicine and OB/GYN (with general surgery as the omitted category). All regressions include year and county fixed effects. Standard errors clustered at the state level are reported in parentheses. * significant at the $p < 0.1$ level; ** significant at the $p < 0.05$ level; *** significant at the $p < 0.01$ level.

Table A7: Apology Law Models with Interacted Fixed Effects

Panel A: Any Apology Law

	(1) All Specialties	(2) General Surgery	(3) Internal Medicine	(4) OB/GYN
Apology Law	0.091**	0.092**	0.104**	0.079*
	(0.042)	(0.043)	(0.042)	(0.041)
Observations	436,308	142,970	142,684	142,818
R-squared	0.949	0.920	0.908	0.903

Panel B: Full and Partial Apology Laws

	(1) All Specialties	(2) General Surgery	(3) Internal Medicine	(4) OB/GYN
Full Apology Law	0.150***	0.158***	0.129***	0.164***
	(0.047)	(0.051)	(0.047)	(0.046)
Partial Apology Law	0.084**	0.083*	0.100**	0.068*
	(0.041)	(0.042)	(0.043)	(0.040)
Observations	436,308	142,970	142,684	142,818
R-squared	0.949	0.920	0.908	0.903

Notes: The dependent variable in all specifications is the natural logarithm of malpractice premium. Each regression includes only the specialty listed at the top of the column. All regressions include indicator variables for the following tort reforms: noneconomic damages caps, punitive damages caps, collateral source reform, and joint and several liability reform. The regression reported in column (1) additionally includes indicator variables for internal medicine and OB/GYN (with general surgery as the omitted category). All regressions include year, county, and insurance company fixed effects. All regressions also include a full set of interactions between the county and insurance company fixed effects. Two-way clustered standard errors, with clustering at the state and insurance company levels, are reported in parentheses. * significant at the $p < 0.1$ level; ** significant at the $p < 0.05$ level; *** significant at the $p < 0.01$ level.

Table A8: Apology Law Models with Additional Controls

Panel A: Any Apology Law

	(1) All Specialties	(2) General Surgery	(3) Internal Medicine	(4) OB/GYN
Apology Law	0.110***	0.123***	0.106***	0.101***
	(0.033)	(0.036)	(0.037)	(0.033)
Observations	2,493	831	831	831
R-squared	0.959	0.919	0.909	0.922

Panel B: Full and Partial Apology Laws

	(1) All Specialties	(2) General Surgery	(3) Internal Medicine	(4) OB/GYN
Full Apology Law	0.140**	0.151**	0.109	0.159***
	(0.066)	(0.074)	(0.090)	(0.052)
Partial Apology Law	0.105***	0.119***	0.106***	0.091**
	(0.034)	(0.037)	(0.038)	(0.035)
Observations	2,493	831	831	831
R-squared	0.959	0.919	0.909	0.923

Notes: The dependent variable in all specifications is the natural logarithm of malpractice premium. Each regression includes only the specialty listed at the top of the column. All regressions include indicator variables for the following tort reforms: noneconomic damages caps, punitive damages caps, collateral source reform, and joint and several liability reform. Each regression also includes the following control variables: unemployment rate, average income, percent female, percent white, percent black or African American, percent Hispanic, percent with high school education, percent with some college, percent with a college education, and percent with an advanced degree. The regression reported in column (1) additionally includes indicator variables for internal medicine and OB/GYN (with general surgery as the omitted category). All regressions include year and state fixed effects. Standard errors clustered at the state level are reported in parentheses. * significant at the $p < 0.1$ level; ** significant at the $p < 0.05$ level; *** significant at the $p < 0.01$ level.

Table A9: Bootstrapped Estimates for Full Apology Laws

	(1) All Specialties	(2) General Surgery	(3) Internal Medicine	(4) OB/GYN
County-Level Models				
Coefficient	0.248	0.249	0.267	0.227
P-value	0.056	0.056	0.067	0.042
State-Level Models				
Coefficient	0.147	0.165	0.110	0.165
P-Value	0.157	0.205	0.332	0.048

Notes: Each coefficient corresponds to the coefficient on the full apology law variable in the county-level and state-level models as reported in the main text. The associated p-values are calculated by following the wild cluster bootstrapping procedure.