Why Exempting Negligent Doctors May Reduce Suicide: An Empirical Analysis

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This Article is the first to empirically analyze the impact of tort liability on suicide. Counter-intuitively, our analysis shows that suicide rates increase when potential tort liability is expanded to include psychiatrists—the very defendants who would seem best able to prevent suicide. Using a fifty-state panel regression for 1981 to 2013, we find that states which allowed psychiatrists (but not other doctors) to be liable for malpractice resulting in suicide experienced a 9.3% increase in suicides. On the other hand, and more intuitively, holding non-psychiatrist doctors liable decreases suicide by 10.7%. These countervailing effects can be explained by psychiatrists facing liability choosing not to work with patients at high risk for suicide, whereas other doctors do not have that ability and instead avoid liability by providing better care.

The Article makes important contributions to the law of proximate cause and to the more general phenomenon of regulatory avoidance. Traditionally, one could not be liable for malpractice that caused another's suicide—the suicide was considered a superseding and intervening cause. About half of states retain the old common law rule. Others have created exceptions for psychiatrists only or for all doctors, and some have abandoned the old rule entirely. Our findings suggest that expanding liability for psychiatrists may have an adverse effect. Accordingly, this Article suggests that the best policy might be to retain or revive the traditional no-liability-for-suicide rule for mental health specialists. The implications are enormous: over 40,000 people in the United States die each year from suicide.

Keywords: *Regulatory Avoidance, Suicide, Screening, Actual Causation, Proximate Cause, Superseding Intervening Force, Activity Levels, Care Levels, Deterrence, Psychiatrists, Doctors, Mental Health Providers, Torts.*

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INTRODUCTION

Suicide is a large and growing public health problem in the United States. Over 42,000 people killed themselves in 2014, roughly one person every twelve minutes.[1] And since 1999, the suicide rate has been climbing.[2] Two leading theories for the increase are easier access to painkillers and weak family and social support, particularly among middle-aged whites.[3] As to the high rate generally, the availability of firearms is commonly cited.[4] Poor mental health care is another plausible candidate given the strong association between mental illness and suicide.[5]

This Article examines a new theory for why suicide rates rise and fall: allocation of the costs of suicide by the legal system—specifically, tort law. The traditional rule is that one cannot be liable for negligence that causes another's suicide.[6] Under this rule, a psychiatrist or non-psychiatrist doctor ("NPMD") who commits medical malpractice resulting in her patient's suicide is exempted from liability.[7] A leading case

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1. *10 Leading Causes of Death by Age Group, United States – 2014*, CTRS. FOR DISEASE CONTROL & PREVENTION, https://www.cdc.gov/injury/wisqars/pdf/leading_causes_of_death_by_age_group_2014-a.pdf [https://perma.cc/N2KY-33BW].

2. SALLY C. CURTIN, MARGARET WARNER & HOLLY HEDEGAARD, CTRS. FOR DISEASE CONTROL & PREVENTION, INCREASE IN SUICIDE IN THE UNITED STATES, 1999–2014, at 1 (2016), http://www.cdc.gov/nchs/data/databriefs/db241.pdf [https://perma.cc/9YXA-AX4R].

3. Mike Stobbe, *'Deaths of Despair' Drag Life Expectancy Lower for Whites*, U.S. NEWS & WORLD REP. (June 3, 2016, 12:55 PM), http://www.usnews.com/news/news/articles/2016-06-03/deaths-of-despair-overdoses-drinking-suicides-hit-whites [https://perma.cc/B5WR-NQ7E].

4. Matthew Miller, Deborah Azrael & Catherine Barber, *Suicide Mortality in the United States: The Importance of Attending to Method in Understanding Population-Level Disparities in the Burden of Suicide*, 33 ANN. REV. PUB. HEALTH 393, 401 (2012).

5. E. Clare Harris & Brian Barraclough, *Suicide as an Outcome for Mental Disorders: A Meta-Analysis*, 170 BRIT. J. PSYCHIATRY 205, 222–23 (1997).

6. Scheffer v. R.R. Co., 105 U.S. 249, 252 (1881).

7. Of course, psychiatrists are doctors, but are sometimes treated differently than other doctors for purposes of tort liability for suicide. Hence, this Article generally uses three terms:

explains that, as a general rule, "the act of suicide is considered a deliberate, intentional and intervening act which precludes a finding that a given defendant, in fact, is responsible for the harm."[8] Plaintiffs have sought exceptions to this general rule with varying success in different states over time.[9] Some states have gone so far as to abandon the traditional rule entirely.[10]

It is plausible to think that tort liability might affect suicide rates. Doctors, and psychiatrists in particular, are likely aware that post-suicide claims account for a large proportion of malpractice lawsuits and the highest settlement amounts.[11] Doctors may change their behavior in response to tort liability, and such changes matter for at least two reasons. First, doctors very often have contact with people at risk. About one in five of suicide victims had seen a mental health professional, and forty-five percent saw a primary care provider, *within a month* of dying by suicide.[12] Second, contacts with health providers can clearly make a difference. A recent comprehensive review concludes that the pharmacological treatment of psychiatric disorders contributes substantially to suicide prevention.[13] Psychotherapy and electroconvulsive therapy also appear to be effective.[14] "Education of primary care physicians targeting depression recognition and treatment was identified as one of the most effective interventions in lowering suicide rates."[15]

Expanding liability for suicide has at least two possible effects, both motivated by a desire to avoid that liability: (1) increasing the level of care exercised toward people at risk for suicide;[16] and (2) decreasing activity levels—that is, leading others to avoid, if possible, interacting with people at risk for suicide.[17] An example of the first might be a doctor prescribing fewer pills at a time to avoid intentional overdoses.[18]

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(1) psychiatrists, (2) non-psychiatrist doctors ("NPMDs"), and, together, (3) all doctors.

8. McLaughlin v. Sullivan, 461 A.2d 123, 124 (N.H. 1983).

9. *See* Patricia C. Kussman, Annotation, *Liability of Doctor, Psychiatrist, or Psychologist for Failure To Take Steps to Prevent Patient's Suicide*, 81 A.L.R. 5th 167, 180–81 (2000).

10. *E.g.*, Fuller v. Preis, 322 N.E.2d 263, 265–66 (N.Y. 1974).

11. Albert R. Roberts, Ianna Monferrari & Kenneth R. Yeager, *Avoiding Malpractice Lawsuits by Following Risk Assessment and Suicide Prevention Guidelines*, 8 BRIEF TREATMENT CRISIS INTERVENTION 5, 5 (2008).

12. Jason B. Luoma, Catherine E. Martin & Jane L. Pearson, *Contact with Mental Health and Primary Care Providers Before Suicide: A Review of the Evidence*, 159 AM. J. PSYCHIATRY 909, 912 (2002).

13. Gil Zalsman et al., *Suicide Prevention Strategies Revisited: 10-Year Systematic Review*, 3 LANCET PSYCHIATRY 646, 648 (2016), http://dx.doi.org/10.1016/S2215-0366(16)30030-X [https://perma.cc/R268-EN7G].

14. *Id.* at 649.

15. *Id.* at 651.

16. *See infra* Part II.B.

17. *See infra* Part II.B.

18. *See* Hobart v. Shin, 705 N.E.2d 907, 909 (Ill. 1998).

An example of the second might be a psychiatrist refusing to accept new patients who are at high risk for suicide.[19] Which strategy practitioners employ will depend in part on their ability to effectively screen out high-risk individuals.[20]

The uneven evolution of tort law on suicide presents an ideal setting in which to test which of these two effects dominates. One of the authors of the present Article predicted that suicide rates would decrease in jurisdictions that expanded liability on the theory that the level of care would increase. Another of us hypothesized that the second (screening) effect would mitigate or even reverse that result, such that suicide rates could climb in jurisdictions after expansion. The third author, an empiricist who remained neutral, judged the contest by testing the predictions using panel regression techniques.

It is a split decision. We find some evidence that expanding liability to psychiatrists, who are in a relatively strong position to screen patients, was associated with an increase in suicide rates. It must be conceded that very few jurisdictions fall into this category. Most states that expanded liability did so for both psychiatrists and NPMDs. This shift in legal regime did not significantly affect suicide rates. Neither did eliminating completely the old no-liability-for-suicide rule. Evidence for the increased-care-decreased-suicide position was a significantly lower suicide rate associated with NPMD liability modeled separately. In other words, the data suggest that doctors who are less well positioned to screen high-risk patients respond to expanded liability by providing better care.

This Article sheds empirical light not only on fundamental questions in tort law, but also illustrates the broader phenomenon of regulatory avoidance. Take the Americans with Disabilities Act ("ADA"), which was intended to improve employment opportunities for people with disabilities.[21] It has been less successful than hoped and our theory may help explain why. The ADA prohibits discrimination against persons with disabilities and mandates reasonable accommodations in the workplace for such individuals.[22] Because a hiring claim is more difficult for a plaintiff to prove than a failure to provide accommodations or a discriminatory discharge claim, employers may avoid hiring persons with disabilities.[23] Some empirical studies suggest that employers may be acting this way, and the employment rate for

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19. *Id.* at 911. Some mental health care providers might even leave the field. Thomas L. Hafemeister, Leah G. McLaughlin & Jessica Smith, *Parity at a Price: The Emerging Professional Liability of Mental Health Providers*, 50 SAN DIEGO L. REV. 29, 87 (2013) ("To the extent that providers feel that the delivery of [mental health] care has become too onerous, it may drive them from the field and make critically needed services less available.").

20. Other commentators have noted these two competing effects, though not with respect to suicide specifically. *E.g.*, Joanna M. Shepherd, *Tort Reforms' Winners and Losers: The Competing Effects of Care and Activity Levels*, 55 UCLA L. REV. 905, 908 (2008) ("On the one hand, increased liability should increase doctors' incentives to take care, decreasing deaths from medical malpractice; on the other hand, increased liability should reduce doctors' willingness to supply their services, increasing death rates.").

21. 42 U.S.C. §§ 12101–12213 (2012).

22. *Id.* § 12112.

23. SAMUEL R. BAGENSTOS, DISABILITY RIGHTS LAW: CASES AND MATERIALS 171–72 (2d ed. 2014).

persons with disabilities has not increased since passage of the ADA.[24] Appreciating the potential for regulatory avoidance is absolutely essential in incentivizing behavior across all areas of law.

The rest of this Article proceeds as follows. Part I outlines the evolution of tort law on suicide. Part II first places this story in the context of literature on causation, then sets forth two competing hypotheses about how changes in tort law might impact the suicide rate. Part III tests the hypotheses with a broad set of panel data. Finally, we offer discussion and suggest directions for future research in a brief conclusion.

I. THE LAW

The starting point is the United States Supreme Court's 1881 decision in *Scheffer v. Railroad Company*.[25] In that case, the executors of decedent's estate alleged that his suicide was the direct result of injuries sustained earlier in a train accident.[26] The Court affirmed dismissal of the claim as a matter of law, explaining that "[t]he proximate cause of the death of Scheffer was his own act of self-destruction."[27] The suicide was a "new," "sufficient," and "intervening" cause of the harm.[28] *Scheffer* has been interpreted to mean that suicide always breaks the causal chain—that is, there can be no liability for negligence resulting in someone else's self-harm.[29]

Tort liability for suicide has expanded since *Scheffer*.[30] This Article focuses on three expansions.[31] Under the first expansion, a patient or the patient's family may sue a psychiatrist for negligence resulting in suicide in a non-custodial setting.[32] The second expansion applies this principle to all physicians, not just psychiatrists. The third expansion jettisons *Scheffer* completely and applies the usual foreseeability principles for every type of defendant. In every jurisdiction following the third approach, psychiatrists and NPMDs are potentially liable. What may be less apparent is that the second approach means both NPMDs *and* psychiatrists can be liable. No jurisdiction has extended liability to NPMDs and not psychiatrists.

A hypothetical illustrates. Suppose a person discusses severe depressive symptoms with their primary care physician. The doctor prescribes a low dose of antidepressant medication. After a near-lethal suicide attempt a month later, the person is seen in the hospital by a psychiatrist, who increases the dosage but declines to initiate civil commitment proceedings. A few days later, the person nervously

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24. *Id.* at 172–73.

25. 105 U.S. 249 (1881).

26. *Id.* at 250.

27. *Id.* at 252.

28. *Id.*

29. Allen C. Schlinsog, Jr., *The Suicidal Decedent: Culpable Wrongdoer, or Wrongfully Deceased?*, 24 J. MARSHALL L. REV. 463, 471–73 (1991). Other cases reached the same result on the ground that suicide is wrongful. *Id.* at 471.

30. Victor E. Schwartz, *Civil Liability for Causing Suicide: A Synthesis of Law and Psychiatry*, 24 VAND. L. REV. 217, 226 (1971).

31. *See infra* Table A2.

32. A custodial relationship—medical or nonmedical—is always "special" for this purpose.

purchases a handgun at a gun shop and shoots herself to death while still at the counter. Traditionally, and in many states today (those not listed in Table 1), the family could not bring a wrongful death action against anyone. A few jurisdictions allow a claim only against the psychiatrist; more against both the psychiatrist and the doctor; and some against the gun seller too (Table 1).

TABLE 1: CHANGES TO TORT LIABILITY BY GROUP[33]

STATE	Only Psychiatrists Liable	All Doctors Liable	General Foreseeability Test
CA	1978	1978	
CT	1997	1997	2011
DC	2005	2005	
FL	1988	1988	1988
GA	2001	2001	2013
IA	2000	2000	2011
ID	1995	1995	1995
IL	1998	1998	
KS	1988	1988	1988
KY	2009	2009	2009
LA	1985	1985	
MD	1990	1990	
ME	2012	2012	
MO	2011	2011	2011
ND	1994	1994	
NJ	1968	1968	1974
NM	2014	2014	
NY	1974	1974	1974
OH	1987	1987	1987
OK	1973		

33. Coding changes from case law was (no surprise) difficult. Though not every jurisdiction explicitly endorsed *Scheffer*, we assumed it to be the starting point everywhere. Many cases were unclear as to which rule they followed. On the theory that doctors and insurance companies would err on the side of caution, we interpreted ambiguities in favor of a law change. One very close case illustrates: in *Frizzell v. Town of Little Compton*, the court denied summary judgment to a police defendant because a "qualified mental health professional or police officer" could have initiated civil commitment and failed to do so. No. 98-0252, 2000 WL 33159170, at *4 (R.I. Super. Ct. Jan. 28, 2000). Because this theory could apply to a psychiatrist but not a general practitioner, we coded this case as a switch to psychiatrist liability. The citation for each state is found in Table A2.

RI	2000		
TN	1998	1998	1998
TX	1987	1987	
UT	1979	2015	
VT	2005	2011	

The reasons for these shifts may help clarify. The first two derive from the same "special relationship" exception to the *Scheffer* rationale. Expanding liability to psychiatrists is premised on the elevated duty of medical specialists and the recognition that the psychiatrist's actions or inactions can be a cause of the suicide.[34] In other words, suicide is a type of harm that psychiatrists should be acting to and can prevent. A few jurisdictions stopped there, but most took the next step and held or implied that NPMDs can also be liable. Under this broader view, all doctors are in a "special relationship" with their patients and have a duty to and can actually prevent suicide—the suicidal act itself does not cut the causal chain.[35] These two steps expanded liability for suicide, but did not eliminate the old *Scheffer* rule outside the doctor-patient context. In contrast, the third step overturned *Scheffer*: "the act of suicide, as a matter of law, is not a superseding cause in negligence law precluding liability."[36] One commentator argues that this reversal reflects a shift in the psychiatric community.[37] The old view was that the person who died by suicide was a culpable wrongdoer.[38] The modern view is that "all persons who commit suicide do so because they cannot appreciate the nature of their act" and are therefore not responsible.[39]

But responsibility is not the only possible justification for retaining *Scheffer*. If doctors are no longer immune from liability for suicide, they may refuse to treat patients at high risk.[40] Of course, one could argue that increased liability would increase the level of care (at least with respect to current patients) and thereby reduce suicide. The next section sets forth more systematically relevant tort theory and our hypotheses regarding the impact each expansion might have on suicide rates.

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34. Schwartz, *supra* note 30, at 245.

35. Phyllis Coleman & Ronald A. Shellow, *Suicide: Unpredictable and Unavoidable—Proposed Guidelines Provide Rational Test for Physician's Liability*, 71 NEB. L. REV. 643, 672 (1992) ("[B]ecause of the nature of the doctor-patient relationship and the illness for which treatment is sought, the duty of the physician to use reasonable care to protect his patient encompasses the patient's duty to care for himself.").

36. Fuller v. Preis, 322 N.E.2d 263, 265 (N.Y. 1974).

37. Schlinsog, *supra* note 29, at 477.

38. *Id.*

39. *Id.* at 477–79; *see also* SUSAN STEFAN, RATIONAL SUICIDE, IRRATIONAL LAWS: EXAMINING CURRENT APPROACHES TO SUICIDE IN POLICY AND LAW 13 (2016) ("The law has always started with the assumption that suicidal people are competent, in the sense of being responsible for their actions.").

40. Hobart v. Shin, 705 N.E.2d 907, 911 (Ill. 1998).

II. PROXIMATE CAUSE AND SUICIDE LEVELS

In economic terms, the change in the law of proximate cause means higher expected cost to doctors. We hypothesize that the increased liability impacts doctors' behavior in two possible ways. Professor Vars hypothesizes that the expected increase in liability will result in a *positive* increase in the level of care (i.e., higher quality of service). In contrast, Professor Dillbary hypothesizes that the higher expected liability could *negatively* impact care and activity levels (i.e., the result could be poorer quality and less services offered). Part II.A. below discusses the literature on the economic function of the law of causation. This literature focuses on the role of proximate cause on parties' activity and care levels. Part II.B. discusses the Vars and Dillbary hypotheses in light of the theory. Part III tests the hypotheses.

A. The Economic Function of Causation

The economic role of the causation analysis has been the subject of an ongoing debate. Some, like Landes, Posner, and Calabresi, thought that "the idea of causation can largely be dispensed with."[41] For them, an injurer should be considered a "cause" of the accident if she is "the lower-cost avoider of it but not otherwise."[42] Others have recognized that limiting the scope of liability is important to achieve optimal care and activity levels.[43]

1. Actual Causation

To understand the effect of proximate cause on the parties' behavior and why only a subset of actual causes can give rise to liability, we need to first understand the economic role of actual causation. Actual causation determines whether the act in question was a necessary link in a set of events that resulted in an injury.[44] In the simple one-injurer-one-victim setting, courts often use the but-for test to determine

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41. WILLIAM M. LANDES & RICHARD A. POSNER, THE ECONOMIC STRUCTURE OF TORT LAW 229 (1987); *see* MICHAEL FAURE, TORT LAW AND ECONOMICS 84 (2009) ("The original economic theory of tort law deliberately rejected an explicit role for a causation doctrine in determining liability."); Guido Calabresi, *Concerning Cause and the Law of Torts: An Essay for Harry Kalven, Jr.*, 43 U. CHI. L. REV. 69, 85 (1975) ("One could do away with the *but for* test and employ other methods" to determine "whether avoidance is worthwhile."); Richard A. Epstein, *A Theory of Strict Liability*, 2 J. LEGAL STUD. 151, 165 (1973) ("Both Calabresi and Coase, then, share the belief that the concept of causation should not, because it cannot, play any role in the determination of liability for harms that have occurred."); William M. Landes & Richard A. Posner, *Causation in Tort Law: An Economic Approach*, 12 J. LEGAL STUD. 109, 124–25 (1983) (discussing the rationale for alternative liability and noting that "we can analyze this type of case using a modified Hand formula without explicitly discussing causation").

42. LANDES & POSNER, *supra* note 41.

43. *See infra* notes 47, 50, 60 and *infra* note 69 and accompanying text.

44. W. PAGE KEETON, DAN B. DOBBS, ROBERT E. KEETON & DAVID G. OWEN., PROSSER AND KEETON ON THE LAW OF TORTS § 41, at 263–64 (5th ed. 1984) [hereinafter PROSSER AND KEETON]; *see also* DAN B. DOBBS, THE LAW OF TORTS § 167, at 407–09, § 178, at 409 (2000).

whether the defendant's behavior was the actual cause of the harm.[45] The test asks whether but-for the defendant's tortious behavior the victim would not have been harmed.[46] Shavell explains that this test incentivizes actors to take the optimal level of care.[47] Suppose, for example, driving carefully comes with an expected liability of $60, but that driving carelessly increases the expected liability to $100. Taking care (e.g., slowing down) would reduce the expected cost of the accident by $40 (100-60). Thus, if the cost of taking care is less than $40, for example if it is $10, taking care is socially desirable. It will reduce the expected cost of driving from $100 if the driver fails to take care to $70 (60+10) if she does. If the driver is liable for the harm she will invest $10 to reduce her expected cost by $30 (100-70). On the other hand, if the driver is not liable for the cost of the accident she will not take care.[48] Why invest $10 to avoid an accident for which she is not liable? Holding an injurer liable for the accident she *actually caused* thus incentivizes her to take the right level of care.

Interestingly, holding the driver liable for losses she did *not* actually cause does not impact care levels negatively. To illustrate this point, suppose that in the case of a car accident the driver is liable for the losses she inflicted and, in addition, for a $200 loss that has nothing to do with the accident. If the driver takes care, she can expect to pay $270 (60+10+200). If she does not take care, she will pay more: $300 (200+100). Taking care will thus reduce the driver's expected cost by $30 (300-270)—the same amount that would be reduced if she were not liable for the arbitrary loss. The conclusion is that actors will take optimal care even if they are subject to excessive liability—that is, even if they are liable for harms they did not actually cause.[49]

This last insight is important to understanding the impact of excessive liability on activity levels. In a perfectly operating negligence system, imposing "too much" liability should *not* impact activity levels. Because the actors will take the optimal level of care, they will avoid liability altogether. They will thus be indifferent as to the "crushing liability" imposed on those who act negligently. The tort system, however, is far from perfect. Its application is subject to errors and mistakes. This means that an actor who took the proper level of care may nevertheless be held liable. The literature refers to such mistakes as "pockets" of strict liability.[50] In an imperfect system,

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45. DOBBS, *supra* note 44, § 168, at 400–10; PROSSER AND KEETON, *supra* note 44, § 41, at 265–66. For an analysis of actual causation doctrines in cases involving multiple tortfeasors, see J. Shahar Dillbary, *Causation Actually*, 51 GA. L. REV. 1 (2016).

46. DOBBS, *supra* note 44; PROSSER AND KEETON, *supra* note 44; Dillbary, *supra* note 45, at 30.

47. STEVEN SHAVELL, ECONOMIC ANALYSIS OF ACCIDENT LAW 108 (1987).

48. For simplicity, this and the following examples ignore other-regarding-preferences or other factors that may influence the actors' decisions.

49. LANDES & POSNER, *supra* note 41, at 236. The authors explain, however, that under certain conditions holding one liable for an accident she cannot prevent may result in excessive use of care. *Id.*; *see also* FAURE, *supra* note 41, at 89 ("Whether the scope of liability is optimally restricted . . . or whether the scope of liability is too broad or unrestricted, the injurer will take the due level of care (assumed to be set optimally).").

50. *See, e.g.*, LANDES & POSNER, *supra* note 41, at 128 (noting that in certain contexts, the "reasonable-man rule constitutes a pocket of strict liability . . . in negligence law"); *see*

excessive liability may adversely impact activity levels.[51] To see why, suppose that in the previous example the driver benefits $90 from the activity. If the driver is liable only for the losses actually caused by her accident, she will engage in the activity and carefully so. The reason is that driving with care comes at a cost of $70 (60+10), which means that the driver can expect a net gain of $20 (90-70). But if the driver is liable for losses she did not actually cause (e.g., because of an error), she may quit driving. With an expected loss of $180 (90-270) if she takes care or worse if she does not (90-300), forgoing the activity becomes the preferable option. The result is suboptimal activity levels.

2. Proximate Cause

The proximate cause analysis recognizes that not all but-for acts should give rise to liability.[52] Only types of harm that were foreseeable from the defendant's conduct can give rise to liability.[53] Shavell and his followers explain that the foreseeability requirement in the proximate cause analysis serves a similar function as actual causation.[54] It imposes enough liability to incentivize the actors to take the appropriate level of care, but not too much liability that would drive them away from beneficial activities. Consider, for example, the mechanic who failed to properly service the brakes of the plaintiff's car. Suppose that because of the mechanic's failure the car sped up and reached a point at the road where it was struck by lightning. One could argue that the mechanic is the but-for reason of the victim's harm. Indeed, but-for the mechanic's failure the victim would not have been injured. But the law exempts the mechanic from liability. The reason is that holding the mechanic liable for harms she cannot foresee will not incentivize her

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also infra notes 62–64. Under a strict liability regime, a nonnegligent actor will be held liable for harms she actually caused. *See* THOMAS J. MICELI, THE ECONOMICS APPROACH OF LAW 59–61 (2004); Marcel Kahan, *Causation and Incentives To Take Care Under the Negligence Rule*, 18 J. LEGAL STUD. 427, 428 n.4 (1989).

51. LANDES & POSNER, *supra* note 41, at 237.

52. DOBBS, *supra* note 44, § 180, at 443; RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 213 (9th ed. 2014); SHAVELL, *supra* note 47, at 110–114; Landes & Posner, *supra* note 41, at 119.

53. SHAVELL, *supra* note 47, at 110–114 (referring to unforeseeable occurrences as "co-incidental accidents"); Landes & Posner, *supra* note 41, at 120 (noting that "there is no need to invoke concepts of foreseeability to explain the result; [such cases] could just as easily [be] decided on the ground that the . . . wrongful conduct . . . did not increase the probability of injury"); Steven Shavell, *An Analysis of Causation and the Scope of Liability in the Law of Torts*, 9 J. LEGAL STUD. 463, 464 (1980).

54. SHAVELL, *supra* note 47, at 112 (explaining that both cause in fact and proximate cause restrict the scope of liability and help incentivize actors to take the optimal level of care); Landes & Posner, *supra* note 41, at 120, 134 (concluding that the cause-in-fact and proximate cause doctrines serve a similar economic function); Shavell, *supra* note 53, 465–66 ("[T]he principles of causation in fact, of harm occurring within the normal risk created by an act, etc. implicitly serve to maximize social welfare and thus *ought* to be employed to limit the scope of liability."). *Compare supra* note 49 and accompanying text *with infra* notes 56–63 and accompanying text (discussing the role of causation doctrines in curbing excessive liability).

to take additional care.[55] There is simply nothing the mechanic can do to *reduce the risk of a lightning strike*. By definition, only foreseeable harms can enter the mechanic's cost-benefit calculus.[56]

For these reasons, the law of proximate cause holds a defendant liable only for the type of harms the defendant could have reasonably foreseen as a risk of her conduct.[57] The law of proximate cause exempts from liability actors like the mechanic whose breaching behavior was superseded by an unforeseeable force such as lightning.[58] It holds liable only those whose acts or omissions increased the probability of an injury. That reasoning also underlies the "superseding intervening force" doctrine.[59]

Professor Mark Grady provides a different economic theory of proximate cause.[60] For Grady, the goal of the foreseeability requirement is to reduce the liability faced by injurers who may have been "efficiently negligent."[61] The idea here is that even when one takes the optimal level of care she may engage in an accident due to an "inadvertent lapse."[62] Imposing additional liability on such actors will be futile. It will not incentivize them to take more care (lapses aside, they already take the correct level of care).

However, excessive liability may cause actors to reduce their activity levels. The foreseeability requirement mitigates the suboptimal activity levels concern by exempting actors from "coincidental" harms. To see how, consider with Grady[63]

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55. *See* POSNER, *supra* note 52.

56. To illustrate, suppose that in the case of a brake failure the plaintiff will incur $100 in damage. Assume also that by investing $5 the mechanic can *reduce* the chance of brake failure from 12% to 2%. The mechanic will take care because at a cost of $5 she can reduce her expected liability by $10 ([12%–2%]x100). If the mechanic who fails to take proper care will also be liable for accidents due to lightning, the mechanic will take the same level of care. Taking care still reduces the expected cost of a foreseeable harm by $10 (from $12 to $2).

57. DOBBS, *supra* note 44, § 180, at 444.

58. LANDES & POSNER, *supra* note 41, at 237–39; SHAVELL, *supra* note 47, at 110–12; Shavell, *supra* note 53, at 464, 482.

59. The mechanic example implies that to understand the incentive effects of liability one should consider the ability of actors to foresee harms. The incentive question hinges on whether the mechanic who failed to take care could foresee the type of harm that would result from a failure to properly service the brakes. After all, if the mechanic could not, a higher liability for such unforeseen harm would not deter her. Neither can she be considered the "best cost avoider." Even if she could avoid the harm at the lowest cost compared to others, she would not if she believes that the event she can avoid at a low cost will never materialize. *See* LANDES & POSNER, *supra* note 41, at 246–47; POSNER, *supra* note 52; Calabresi, *supra* note 41, at 93–100. For a summary of the literature, see FAURE, *supra* note 41, at 100–02. The imposition of liability may still be useful, for example, to *incentivize the actor to invest in information that would calibrate her beliefs*.

60. Mark F. Grady, *Proximate Cause Decoded*, 50 UCLA L. REV. 293, 298–300 (2002) [hereinafter Grady, *Proximate Cause*].

61. Mark F. Grady, *Efficient Negligence*, 87 GEO. L.J. 397, 400–02 (1998) [hereinafter Grady, *Efficient Negligence*].

62. *Id.*; Grady, *Proximate Cause*, *supra* note 60, at 294–95, 300.

63. Grady, *Efficient Negligence*, *supra* note 61, at 413.

cases where the same precaution can reduce foreseeable ("primary") and unforeseeable ("ancillary") risks. Assume that taking care to avoid the foreseeable risk was cost-justified. Suppose that the defendant did not take care and the foreseeable risk did not materialize, but the unforeseeable risk did. If the defendant had taken care—as she should—the accident would not have happened. Yet, the injurer will not be held liable for harms caused by an unforeseeable risk if the relationship between the breach and the harm is coincidental. The reason is that when an actor makes a spur-of-the-moment decision she may be efficiently negligent. After all, it would be impossible to avoid misjudgments even when one is taking the optimal level of care. Grady uses *Palsgraf* as an example to demonstrate this point.[64] In *Palsgraf*, even in retrospect, there is no connection between using additional care to help a passenger board a moving train and injuries caused by an explosion that caused a scale to fall and harm the victim. Conversely, the actor will be held liable if there was a systematic relationship between the untaken precaution and the type of harm (even if the harm was very unlikely).[65] Thus, when the defendant's failure to clean a barge that was used to carry oil allowed combustible gas to develop, the defendant was held liable although lightning caused the explosion.[66] The reason is that the actor was inefficiently negligent.

Grady explains that the superseding intervening factor (SIF) doctrine serves a similar function. It incentivizes a later wrongdoer to take cost-justified precautions to remedy a risk created by an earlier wrongdoer.[67] Consider, for example, a case in which Owen, the original wrongdoer, in breach of his duty, created a risk that the plaintiff will incur an expected harm of $100. Suppose that after Owen created the risk Laura, the last wrongdoer, can reduce it to $10 if she takes care at a cost of $60. Efficiency requires that Laura takes care (60<[100-10]), but Laura will not take care if she knows that liability will be split evenly between the wrongdoers (100/2<60). The law of proximate cause remedies this dilution problem[68] by exempting the original wrongdoer "in circumstances when it is desirable to prevent an erosion of the [last wrongdoer's] incentive to take precaution."[69] Thus, when a company left blasting caps that were later found by a boy who showed the caps to his mother, the

64. *Id.*

65. *Id.*

66. Johnson v. Kosmos Portland Cement Co., 64 F.2d 193, 195–96 (6th Cir. 1933); *see also* Grady, *Proximate Cause*, *supra* note 60, at 299 ("Whether the lightning was or was not likely made no difference. The issue was whether a systematic relationship existed between the explosion [i.e., the type of harm] and the defendant's allowing combustible gases to form [i.e., the untaken precaution].").

67. Mark F. Grady, *Proximate Cause and the Law of Negligence*, 69 IOWA L. REV. 363, 416–17 (1984) [hereinafter Grady, *Law of Negligence*] (explaining that the purpose of the SIF doctrine is "to increase the pecuniary incentive of persons other than the original wrongdoer, such as the last wrongdoer, to take precautions that compensate for the original wrongdoer's lack of care"); *see also* Grady, *Efficient Negligence*, *supra* note 61, at 409 (explaining that SIF incentivizes the last wrongdoer to correct a risky condition created by the original wrongdoers).

68. On the importance of dilution and anti-dilution mechanisms, see generally J. Shahar Dillbary, *Tortfest*, 80 U. CHI. L. REV. 953 (2013); Dillbary, *supra* note 45.

69. Grady, *Law of Negligence*, *supra* note 67, at 416.

company was exempted from liability.[70] The parent had an opportunity to remedy the risk by taking the caps from her son. Her failure was therefore considered a superseding intervening factor that broke the company's chain of causation.[71] By holding the parent liable for the entire amount, the SIF doctrine incentivizes her to invest more care (here, simply take the caps from her son).

The SIF doctrine could also *reduce* incentives to take care. Consider again the blasting caps case and assume now that it is foreseeable that an accident would occur if parents fail to take away the caps from their kids. Assume also that the factory can avoid the harm at a cost of $1 and that a parent at a cost of $10. Now, the factory is the lowest-cost avoider. Efficiency thus requires that the factory takes care, but the factory will not if it expects to be immune from liability. SIF mitigates this concern by refusing to cut off the original wrongdoer's liability when a subsequent intervening force is foreseeable. To use Grady's terminology, SIF relieves the original wrongdoer from liability when her negligence was efficient, but SIF holds the original wrongdoer liable if her negligence was inefficient. By doing so, the SIF doctrine "encourage[s the] original wrongdoer[] to continue their efficient activities."[72] In the above example, the factory will be held liable because the parent's negligence is foreseeable. The factory will thus invest $1 to avoid the $100, which is the efficient result.

Grady explains that courts will be inclined to determine that an intervening force was superseding if (a) the cost of care to the intervening force is cheaper than the original wrongdoer; (b) the original wrongdoer was less negligent; or (c) the intervening force was able to estimate that a risk arose from the original wrongdoer's negligence.[73] Conversely, courts will be inclined to hold the original wrongdoer liable if an intervening force will fail to take care against the risk the original wrongdoer created.[74] Liability will also be imposed on the original wrongdoer in cases where she can be deterred and avoid the mishap but the last wrongdoer cannot.[75] Examples are when the last wrongdoer is insolvent or does not have the capacity to take care (e.g., children or the mentally ill). The classic example is a negligent entrustment case. Grady calls such individuals "free radicals."[76] Liability will accrue if ex ante, before the accident occurred, the original wrongdoer would have been able to foresee that her actions would encourage a free radical.[77]

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70. Pittsburg Reduction Co. v. Horton, 113 S.W. 647, 647–649 (Ark. 1908).

71. *Id.* at 649.

72. Grady, *Efficient Negligence*, *supra* note 61, at 410; *see also* Grady, *Proximate Cause*, *supra* note 60, at 314 (explaining that an intervening factor is not superseding if "there was no systematic relationship between the second actor's negligence and the first actor's negligence").

73. Grady, *Law of Negligence*, *supra* note 67, at 422–31.

74. *Id.* at 431.

75. *Id.* at 432–34.

76. Grady, *Proximate Cause*, *supra* note 60, at 306–08.

77. *Id.* at 309; *see, e.g.*, Dixon v. Bell (1816) 105 Eng. Rep. 1023 (KB) (defendant was held liable for a shooting that occurred when a thirteen or fourteen-year-old kid who was sent by the defendant to pick up a gun accidently killed another kid).

B. The Hypotheses

Armed with these insights, we can now turn to analyze the possible impact of the change in the law of proximate causation on suicide rates and formulate our hypotheses.

1. The Vars Hypothesis: Suicide Rates Decrease as Liability Increases

One of us, Professor Vars, hypothesizes that the increased liability will increase the quality of health care services and thereby reduce the suicide rate (everything else being equal).[78] The Vars hypothesis thus assumes that in jurisdictions which exempt doctors from liability for a patient's suicide the level of care is suboptimal. It also assumes that unlike the mechanic—who cannot reduce the risk that lightning will hit a car—health care providers *can* and *should* reduce the risk that a patient will die by suicide (i.e., taking care is possible and cost-justified). In legal terms, the claim is that, with some exceptions (see below), suicide should sometimes be deemed a foreseeable type of harm from a doctor's failure to furnish a proper treatment.[79]

The Vars hypothesis is consistent with the economic theories discussed above. If current levels of care are indeed suboptimal as Vars hypothesizes, increasing doctors' liability would result in better care. This is exactly Shavell's insight. Those who already took the appropriate level of care should be indifferent to the increased liability imposed on negligent doctors. The result should not change even if some doctors who took proper care believe that they face a higher expected liability due to possible error or mistake. So long as the extended liability under the new regime does not have a "crushing" effect—that is, so long as it does not result in a reduction in activity levels—one would expect to see a reduction in suicide rates.

The Vars hypothesis may also be consistent with Grady's view of SIF. Under this view, a suicide should only be deemed an "intervening force" (i.e., foreseeable) if one believes that those who die by suicide are "free radicals"—that is, they cannot be deterred. In such cases, imposing liability on the initial wrongdoer, the doctors, may be the only way to break the chain of events that results in a suicide. Recall that a mentally ill person is one typical example of a free radical.[80] This observation has a special importance in suicide cases. Some psychiatric literature concludes that "*all* suicides result from mental illness" and should thus be deemed foreseeable.[81] If those

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78. *See generally* Jennifer Arlen, *Economic Analysis of Medical Malpractice Liability and Its Reform*, *in* RESEARCH HANDBOOK ON THE ECONOMICS OF TORTS 37 (Jennifer Arlen ed., 2013) ("Negligence liability is needed to induce optimal treatment.").

79. Some have advocated an even stronger result. An early comment, for example, notes that, although most courts deem some types of suicides (but not others) as foreseeable, "[p]sychiatric scholars believe that *all* suicides . . . are equally foreseeable." Schlinsog, *supra* note 29, at 467–68, 479 (emphasis added); *see also* Kivland v. Columbia Orthopaedic Grp., LLP, 331 S.W.3d 299, 308 (Mo. 2011) (en banc) ("Modern psychiatry supports the idea that suicide sometimes is a foreseeable result of traumatic injuries.") (citing Schlinsog, *supra* note 29, at 479 n.76); *infra* note 87 and accompanying text (discussing dictum in *Fuller*).

80. Grady, *Proximate Cause*, *supra* note 60, at 306.

81. *See, e.g.*, Schlinsog, *supra* note 29, at 467–68 (emphasis added) (explaining that when the defendant inflicts a personal injury that results in mental illness that induces a suicide, the

who commit suicide are perceived as free radicals, one would expect courts to impose liability on doctors to deter them (assuming the patient cannot be deterred) from providing sub-standard care.

There is some evidence that courts which adopted the broader foreseeability approach were motivated by such considerations. *Fuller v. Preis*[82] is an example. In *Fuller*, the defendant collided with the victim's car, causing him physical injury.[83] The victim, who happened to be a surgeon, consciously declined to get any help, believing he was uninjured.[84] Two days later he suffered seizures and gradually had to give up his practice and other activities. Seven months later he died by suicide. In the suicide notes the victim stated that he was "perfectly sane" and that he "kn[e]w exactly what [he was] doing."[85] Despite the premortem testimony, the court found that the victim's premeditated and conscious act was neither superseding nor could it be characterized as a sane act. In the eyes of the court, it was an "irresistible impulse" caused by the brain damage.[86] More broadly, the court held that an "involuntary suicidal act" is not a superseding cause if it was a foreseeable consequence of the antecedent malpractice.[87]

A broader foreseeability test is also justified if one believes that doctors are, for the most part, "negligently inefficient." That is, doctors systematically fail to take reasonable care to avoid primary risks, which may give rise to an ancillary risk: suicide. Consider, for example, a case like *Dux v. United States*, where the court refused to hold a NPMD liable for medical malpractice that resulted in the patient's suicide.[88] In *Dux*, a doctor performed a redundant surgical procedure after the patient's biopsy was negligently switched with another patient.[89] As a result of the unnecessary procedure (the primary negligence), the patient suffered from "sexual dysfunction" and depression (an ancillary risk) and later died by suicide.[90] If one believes that the failure to take care was not a matter of an "inadvertent lapse" (in Grady's terms) but

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suicide is considered "reasonably foreseeable" and the original wrongdoer is held liable). A more recent review of the evidence concluded that over ninety percent, but not all, of those who commit suicide suffer from mental illness. José Manoel Bertolote, Alexandra Fleischmann, Diego De Leo & Danuta Wasserman, *Psychiatric Diagnoses and Suicide: Revisiting the Evidence*, 25 CRISIS 147, 147 (2004).

82. 322 N.E.2d 263 (N.Y. 1974). New York switched to a foreseeability paradigm in 1974. *See supra* Table 1.

83. *Id.* at 264–65.

84. *Id.* at 265.

85. *Id.* (internal quotation marks omitted).

86. *Id.* at 265–66 (explaining that "public policy permits negligent tort-feasors to be held liable for the suicide of persons who, as the result of their negligence, suffer mental disturbance destroying the will to survive" and positing that such mental disturbance may be proved, in some circumstances, even "absent proof of a specific mental disease or even an irresistible impulse").

87. *Id.* at 266, 268 (internal quotation marks omitted) (noting also that "[a] suicide is a strange act and no rationalistic approach can fit the act into neat categories of rationality or irrationality").

88. 69 F. Supp. 3d 781, 789 (N.D. Ill. 2014).

89. *Id.* at 783.

90. *Id.*

rather systemic, then increasing the doctor's liability could reduce suicide rates.[91] It would have incentivized the doctors to take additional care to avoid the unnecessary procedure that led to the patient's suicide.[92]

Jurisdictions that adopted the broader foreseeability test could still carve out exceptions. For example, a patient's suicide may be deemed superseding (i.e., unforeseeable) in cases where it can be proved that the victim was not a free radical, or that she was the lowest cost avoider, or that she could estimate that her condition arose from the doctor's negligence and take action.[93] Consider, for example, a situation in which a doctor failed to diagnose the patient's illness although a reasonable doctor would. Assume further that as a result of the ensuing unnecessary treatment the patient suffered certain dysfunction that led to depression and later suicide. Here, the patient could be considered a SIF if she was aware of her condition before becoming depressed and could have simply alerted the doctor who could have remedied her condition (e.g., by changing medication). Exempting the doctor in such a case (e.g., by treating the suicide as a superseding force)[94] would incentivize the patient to seek care.

2. The Dillbary Hypothesis: Suicide Rates Could Increase with Liability

Professor Vars hypothesizes that the increased expected liability will incentivize doctors to take more care, increase the quality of services, and result in *lower* suicide rates. By contrast, Professor Dillbary hypothesizes that the additional liability could reduce both the quality and the quantity of services offered. Accordingly, Professor Dillbary theorizes that the increase in liability could be accompanied by an *increase* in suicide rates.

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91. *See supra* notes 60–66 and *infra* note 99 and accompanying text. The following analogy is illustrative. Consider a careful driver (doctor) who takes the optimal level of care and purposefully so. Even such a driver (doctor) may fail, for a moment, to pay attention—simply because humans cannot always pay attention. Assume that because of such an unavoidable and inadvertent lapse an accident occurs. Here, the driver (doctor) is negligent (she failed to take care for that one second). But she is efficiently negligent. It is negligence due to a non-systemic lapse. Imposing on the driver (doctor) additional liability will not incentivize her to take additional care. It may, however, incentivize her to reduce activity levels (perhaps avoid driving or refuse to treat certain patients). By contrast, a driver (doctor) who systemically fails to take care (e.g., a driver who always speeds up) is inefficiently negligent. In the face of increased liability, such an actor may be induced to take more care and as a result the level of accidents (suicide rate) will go down.

92. The *Dux* court held that the suicide was a superseding force and thus unforeseeable. *See Dux*, 69 F. Supp. 3d at 789.

93. The *Fuller* court itself alluded to such an exception when it noted that the liability will arise only if the suicide was an "irresistible impulse" caused by the brain damage. Fuller v. Preis, 322 N.E.2d 263, 266 (N.Y. 1974).

94. *See* Grady, *Efficient Negligence*, *supra* note 61, at 417 (noting that "[t]he doctrine of assumption of the risk . . . would be difficult to explain were it not for the possibility that some negligent behavior [i.e., that of the original wrongdoer] is efficient"); *see also* Hobart v. Shin, 705 N.E.2d 907, 909 (Ill. 1998) (holding that "a decedent's contributory negligence may be raised as a defense in a wrongful death suit brought against a physician whose patient commits suicide while under mental health treatment").

Professor Dillbary's grim hypothesis envisions a screening effect. The motivating concern is that the higher expected liability would cause some doctors to refuse treating patients at high risk of suicide. The reasoning is simple. Under the old (limited) foreseeability rule, a doctor expects to face the same liability for her medical malpractice regardless of whether her patient died by suicide. The new (broader) foreseeability rule, however, changes things dramatically. It creates two types of patients: (a) patients with a high risk of committing suicide who come with a higher expected liability and (b) patients with a low risk of committing suicide who come with a lower expected cost. As a result, doctors may engage in strategic screening. They will try to distinguish the high-risk from the low-risk patients to lower their expected liability. This is especially true if the doctor's compensation is independent of the patient's type. For example, if they charge the same amount on an hourly basis for all patients. In such a case, treating a high-risk patient comes with no additional monetary benefits. It only imposes more costs.

In a perfect legal system, under a negligence regime, there would be a "safe-harbor." A doctor who takes the proper level of care should be indifferent between the two types of patients. But the system is imperfect. First, there is no clear standard of care to which a physician must adhere.[95] And according to some there cannot be one. As Coleman and Shellow explain, "[i]t is virtually impossible to establish whether the reasonable physician could have prevented suicide because, using even the best indicators, physicians' predictions are correct in only one in twenty-five cases"—a success rate of four percent.[96] In their view, the medical research is incapable of determining whether "a specific individual will commit suicide."[97] A psychiatrist who must decide whether to accept a patient with suicide tendencies would thus refuse the patient out of fear that she will be held liable for not foreseeing an unforeseeable suicide. The fear of litigation is justified. "Suits for a patient's suicide represent a high percentage of malpractice claims against psychiatrists . . . [that] could subject [a psychiatrist] to years of litigation, loss of his professional license, substantial attorneys' fees, and a large malpractice verdict."[98] Second, even if a clear standard existed, in a litigious society where juries and courts make mistakes, a doctor can be held liable even when she took the proper level of care.[99] The screening effect is

95. Coleman & Shellow, *supra* note 35, at 657–58 (offering guidelines which will serve as a safe harbor and replace the nebulous standard of care); Hafemeister et al., *supra* note 19, at 43 ("Establishing the standard of care is challenging . . . .").

96. Coleman & Shellow, *supra* note 35, at 657 (footnote omitted). Not only may doctors be held liable for taking too little care, but they may also be liable for taking too much care, as in the case where the doctor decides to admit a patient involuntarily.

97. *Id.* at 644. *But see* Schuster v. Altenberg, 424 N.W.2d 159, 169 (Wis. 1988) ("To hold that evaluation of a patient by a psychotherapist [to determine 'dangerousness'] is so plagued with uncertainty as to be without value would raise 'serious questions . . . as to the entire present basis for commitment procedures.'").

98. Coleman & Shellow, *supra* note 35, at 657–58 (footnotes omitted); *see also* Jon E. Grant, *Liability in Patient Suicide*, CURRENT PSYCHIATRY (Nov. 3, 2004), http://www.currentpsychiatry.com/home/article/liability-in-patient-suicide/0aca64944eb34e9314d1ee5300a3fe00.html [https://perma.cc/PYP2-5UUZ] (reporting that "post-suicide lawsuits account for the largest number of malpractice suits against psychiatrists" and that "[b]ecause patient suicide risk is real, psychiatrists often worry about malpractice claims").

99. BENJAMIN M. SCHUTZ, LEGAL LIABILITY IN PSYCHOTHERAPY 75 (1982) ("The painful

exacerbated even further by the fact that doctors, like the tort system, are also imperfect. Doctors may take on average proper care but could still, due to "inadvertent lapses," make an unavoidable mistake for which they will be held liable.

With no additional benefit and high expected cost accompanying the treatment of high-risk patients, one would expect doctors to try to distinguish between the two groups and treat only the low-risk individuals. To be clear, the claim is not that all doctors would engage in screening. Insurance and idealism may mitigate the concern. Some doctors may also be unable to engage in screening, perhaps because they are not aware of the law, because they are not privy to information that may reveal the patients' type, or because they have to assume a position that requires them to treat all patients (e.g., if they work at a state hospital). Still, the Dillbary hypothesis theorizes that a substantial enough number of doctors will actively engage in screening. All doctors, for example, are *required* to ask in the initial session about the patient's family and medical history[100] and may refuse to treat those who have suicidal thoughts, violent tendencies, or who otherwise revealed their high-risk type.[101]

The screening effect could result in a lower quality of care or a reduction of services (or both) and consequently a higher suicide rate. But it does not have to. Because the screening effect impacts the *supply* of services, there are two possible scenarios:

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reality is that one may be functioning as an ethical and competent therapist on a case and still face a lawsuit; that is, ethical and competent behavior is not an absolute bar to a legitimate suit."); Coleman & Shellow, *supra* note 35, at 645–46, 648 ("[E]ven careful, conscientious physician's treatment decisions are fraught with uncertainty.").

100. Coleman & Shellow, *supra* note 35, at 648 (explaining that a history of suicide in the family and certain illnesses and conditions are correlated with an increased risk of suicide); *see also Final Recommendation Statement: Suicide Risk in Adolescents, Adults and Older Adults*, U.S. PREVENTIVE SERV. TASK FORCE (May 2014), https://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/suicide-risk-in-adolescents-adults-and-older-adults-screening#consider [https://perma.cc/HNQ5-XZ4M] (reviewing risk factors for suicide).

101. The concern that doctors will engage in screening or other forms of defensive medicine is not new. For example, in *Hobart v. Shin*, the Supreme Court of Illinois allowed the defendant-physician to raise a contributory negligence defense of fear that unfettered liability would result in doctor denying treatment from those who need them most. 705 N.E.2d 907, 911 (Ill. 1998); *see also* Hafemeister et al., *supra* note 19, at 34 (explaining that "[t]o the extent that the costs of practicing a mental health specialty increase" less service would be offered). Another form of strategic behavior is to take excessive (defensive) care. *See, e.g.*, Almonte v. Kurl, 46 A.3d 1, 26 (R.I. 2012) (quoting Coleman & Shellow, *supra* note 35, at 646) ("[T]he spectre of legal liability for a patient's suicide may, consciously or unconsciously, influence a physician's decision, inappropriately clouding what should be solely a medical decision."); Maggie Murray, *Determining a Psychiatrist's Liability when a Patient Commits Suicide:* Haar v. Ulwelling, 39 N.M. L. REV. 641, 663 (2009) ("Imposing a duty upon psychiatrists to prevent or take reasonable steps to prevent the suicide of outpatients could encourage doctors to commit more patients in order to reduce their risk."). There is reason to believe that doctors, and especially psychiatrists, will be more inclined to reduce activity levels (e.g., refuse treating high-risk patients) than take excessive care (e.g., unnecessarily admit patients involuntarily). The reason is that (unless a special duty exists) refusing to treat a new patient does not come with liability.

1. *Screening Effect will either reduce or have no impact on suicide rates.* Under the first scenario, suicide rates would remain unchanged or would even be reduced. The reason is that the refusal of certain doctors to treat high-risk patients does not necessarily mean that less services will be offered (i.e., lower activity levels) or that doctors will take less care (i.e., lower quality).

Consider first a simple case in which doctors do not change their care levels. Rather, they either engage in screening (i.e., refuse to treat high-risk patients) or they treat patients indiscriminately. It could be that those doctors who do not engage in screening would provide more services and fill the gap (just like a municipal regulation may reduce the number of cab drivers, but the remaining drivers would drive more to meet the increased demand). In such a case, suicide rates would remain unchanged if both groups of doctors (those who refuse to give care and those who accept patients indiscriminately) exercise the *same* level of care. From the patient's perspective nothing changes, except the identity of the doctor. Suicide rates may even decrease if the quality of care provided by doctors who refuse to treat high-risk patients was on average lower compared to those doctors who do not engage in screening. Here, patients would experience an increase in care level.

Consider now a situation in which doctors take more care. For example, this can happen if the lower supply of services to high-risk patients results in higher prices. The additional revenues may allow doctors who treat patients indiscriminately to provide better services. So long as the price is not prohibitive—that is, so long as high-risk patients can receive treatment—suicide rates may even decline.[102]

In the above scenarios, suicide rates remained the same or decreased because of a care-level effect. Either doctors took more care or patients experienced an increase in care levels because they saw better doctors. For this reason, we treat this part of the Dillbary hypothesis as being absorbed by the Vars hypothesis.

2. *Screening Effect will be accompanied by an increase in suicide rates.* The second scenario posits that the screening effect will negatively impact suicide rates. This can happen if, for example, a large enough number of doctors would refuse to treat high-risk patients such that (a) the capacity of the remaining doctors cannot meet the

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102. Suicide rates may remain the same or decrease even if activity levels are reduced—that is, even if fewer services are provided. In such a case, some high-risk patients will not be treated. Still, it could be those fewer patients who do get treatment enjoy a very low suicide rate such that, in total, suicide rates are reduced. The following numerical example is illustrative. Consider a population of 100 high-risk patients. Each is facing a 20% risk of suicide that can be reduced to 18% with mediocre-quality treatment and to 4% with high-quality treatment. Assume also that initially all patients received mediocre care so the suicide rate was 18%. Suppose now that switching to a broader foreseeability rule will cause doctors who provide mediocre quality service to refuse treating high-risk patients. Even if only fifty patients (50% of the high-risk population) receive treatment suicide rates will nevertheless decline. It is true that the fifty individuals who cannot obtain care will face a higher risk of suicide (20%). But the entire high-risk patient population as a group will have a lower suicide rate of 12%. This is so because of the fifty patients who will not receive any care one can expect that ten patients (50×20%) will take their lives. Of those fifty individuals who did receive high-quality care the expected number of suicides would be two (50×4%). The suicide rate in the entire high-risk population will thus drop to 12% ([10+2]/100).

demand for healthcare services (e.g., in rural areas);[103] or (b) an increase in the price (e.g., due to the shrinking supply) of healthcare services will result in too many individuals forgoing treatment; or (c) the better doctors will leave the market (e.g., because they are more risk averse compared to their peers); or (d) the remaining doctors will compromise on quality (e.g., to meet the high demand for services).

Under the second Dillbary scenario, the result could be a reduction in activity levels (i.e., less healthcare services), accompanied by suboptimal care levels (i.e., poor quality) and accordingly a higher suicide rate.

Consistent with the claim that the common law tends to promote efficiency,[104] the rule barring liability for a suicide due to antecedent negligence can be explained as a way to mitigate the screening effect. Some, like the *Hobart* court, explicitly explain that unfettered liability could result in a screening effect.[105] In *Hobart*, the plaintiff, a patient with known "suicidal tendencies," committed suicide by ingesting an overdose of antidepressant pills after her physician provided her with a one-month supply. The question before the Illinois Supreme Court was whether a physician whose patient dies by suicide while under mental health treatment can raise a contributory negligence defense. Concerned with the result of a possible screening effect, the court answered affirmatively. It explained that:

> To rule otherwise would be to make the doctor the absolute insurer of any patient exhibiting suicidal tendencies. *The consequence of such a ruling would be that no health care provider would want to risk the liability exposure in treating such a patient, and, thus, suicidal persons would be denied necessary treatment.* Public policy cannot condone such a result.[106]

The concern that a screening effect would deny treatment to high-risk patients seems to also underlie decisions outside the psychiatrist-patient context. Recall that in *Dux* the court refused to hold liable a surgeon who in breach of her duty performed an unnecessary medical procedure that later led to Dux's depression and then suicide. Dux had a history of mental illness.[107] He suffered sexual abuse as a child and post-traumatic disorder after serving in Vietnam.[108] Even before the unnecessary surgery, he considered taking his life multiple times.[109] The expert psychologist described

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103. *See* Hafemeister et al., *supra* note 19, at 58 (footnote omitted) (explaining the "expanding role" of primary physicians in "today's health care landscape . . . is driven in part by the unavailability of psychiatrists and other mental health providers in many parts of the country").

104. *See generally* POSNER, *supra* note 52, at 315–16, 713–14.

105. *Hobart*, 705 N.E.2d at 911.

106. *Id.* (emphasis added); *see also* Mulhern v. Catholic Health Initiatives, 799 N.W.2d 104, 121 (Iowa 2011) (agreeing with *Hobart*'s public policy rationale); Maunz v. Perales, 76 P.3d 1027, 1033 (Kan. 2003) (calling *Hobart* "particularly persuasive"). On the strategic response of doctors to extended liability and other forms of defensive medicine, see also *supra* note 101.

107. Dux v. United States, 69 F. Supp. 3d 781 (N.D. Ill. 2014); *see supra* notes 88–92 and accompanying text.

108. *Dux*, 69 F. Supp. 3d at 784.

109. *Id.*

Dux as one who was "stably unstable" noting that "suicidal thinking [was] part of his psychological repertoire."[110] Yet, unlike New York's *Fuller*,[111] the *Dux* court dismissed the case against the doctor. It held that with two exceptions (neither of which applied in *Dux*) a suicide is considered "an independent [superseding] event that the tortfeasor cannot be expected to foresee" and which breaks the chain of causation.[112] For this very reason in *Crumpton v. Walgreen Company*, another Illinois law decision, the court exempted from liability a drugstore that failed to properly fill a prescription for an antipsychotic medication that led to the patient's suicide.[113] In both *Dux* and *Crumpton*, the defendants knew that the decedents suffered from a mental illness and in both neither was held liable.

The only two exceptions recognized by Illinois in nonmental healthcare settings are the insanity and the custodial exceptions.[114] Both can be explained as cases in which screening (and thus the denial of necessary treatment) is not a substantial concern. Under the insanity exception, a suicide is considered foreseeable if the decedent suffered a physical injury, especially a head injury (e.g., in a car accident), as a result of the defendant's conduct, and that injury left him so "bereft of reason" that he took his life as a result of that condition.[115] The custodial exception arises when the defendant fails to supervise a patient with suicidal tendencies who takes her life while under his supervision.[116] An example is a case like *Winger v. Franciscan Medical Center*, where the court held that a psychiatrist can be held liable when the decedent committed a suicide with his shoelaces while in the defendant's care for severe depression.[117]

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110. *Id.* (alteration in original).

111. Fuller v. Preis, 322 N.E.2d 263 (N.Y. 1974); *see supra* notes 82–87 and accompanying text.

112. *Dux*, 69 F. Supp. 3d at 787.

113. 871 N.E.2d 905, 907, 911–13 (Ill. App. Ct. 2007).

114. *Dux*, 69 F. Supp. 3d at 787 ("Illinois courts appear to recognize two—and only two—exceptions . . . ."). As *Hobart* explains, a third exception applies when suicide is a foreseeable type of harm from a doctor's breach. Hobart v. Shin, 705 N.E.2d 907, 910 (Ill. 1998). The same three exceptions apply in other jurisdictions. *See* Rains v. Bend of the River, 124 S.W.3d 580, 593–94 (Tenn. Ct. App. 2003) ("Like courts in other jurisdictions, they have also recognized the following three exceptions to this general rule: (1) circumstances in which the defendant's negligence causes delirium or insanity that results in self-destructive acts; (2) custodial settings in which the custodian knew or had reason to know that the inmate or patient might engage in self-destructive acts; and (3) special relationships, such as a physician-patient relationship, when the caregiver knows or has reason to know that the patient might engage in self-destructive acts.").

115. Moss *ex rel.* Moss v. Meyer, 454 N.E.2d 48, 50 (Ill. App. Ct. 1983); Stasiof v. Chi. Hoist & Body Co., 200 N.E.2d 88, 92 (Ill. App. Ct. 1964), *aff'd sub nom.* Little v. Chi. Hoist & Body Co., 203 N.E.2d 902 (Ill. 1965).

116. Winger v. Franciscan Med. Ctr., 701 N.E.2d 813, 820 (Ill. App. Ct. 1998).

117. *Id.* at 814, 820 (holding that "that when the mental healthcare professional has assumed the custody or control of an individual . . . so that it is treating the individual and has knowledge of his suicidal tendencies, the defendant assumes the patient's duty of self-care and must act reasonably to prevent self-inflicted harm" and explaining that "[l]iability will not be absolved for the simple reason that the patient was not bereft of reason and could appreciate the severe consequences of his actions").

In both exceptions, the concern that doctors will engage strategically in screening is mitigated. The first exception arises in situations over which the doctor is not aware of the victim's type (i.e., whether she is high/low risk). Nor does the doctor act in his capacity as a healthcare provider. It is the negligent driving that gives rise to liability for the victim's suicide. The second exception—negligent supervision—is no different. It is not the *medical* malpractice that caused the injury. "[T]he negligence is not in the diagnosis or treatment but, rather, it is in the failure to carefully protect a patient from inflicting self-harm."[118] It is by providing the nonmedical service—supervision of another—that the doctors assumed potential liability.[119] Indeed, the same exception is used to hold liable nonmedical personnel, such as sheriffs and wardens who fail to monitor a person who commits suicide while under their supervision.[120] Moreover, in negligent supervision cases screening is *not* a concern for another reason. Proper supervision can be done easily and at a low cost (e.g., restricting access to shoelaces in *Winger*). The supervision (unlike mental health treatment) does not require the exercise of an impossible-to-determine standard of care.[121] In addition, custodians who agreed to supervise individuals with suicidal tendencies can likely self-insure at a low cost.[122]

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118. *Id.* at 818; *see also* Kent v. Whitaker, 364 P.2d 556, 557 (Wash. 1961) (a case identical to *Winger*) ("This is not a malpractice case. It does not rest upon either improper diagnosis or negligent treatment; but, on the other hand, the liability of the appellant hospital superintendent is based upon the failure of the specific duty of exercising reasonable care to safeguard and protect a patient with known suicidal tendencies from injuring herself.").

119. In contrast, this Article focuses solely on noncustodial settings. Tort liability rules for inpatient care are outside the scope of this Article.

120. In *Tomfohr v. Mayo Foundation*, a case similar to *Winger*, the court relied on the RESTATEMENT (SECOND) OF TORTS § 320 (AM. LAW INST. 1965) and analogized the supervision exception to other custody cases. 450 N.W.2d 121, 125 (Minn. 1990). It concluded that because the hospital voluntarily undertook the duty to protect the patient from self-inflicted injuries, it had assumed a duty to exercise reasonable care to prevent that very event. *Id.*; *see also* Joseph v. State, 26 P.3d 459, 462, 466 (Alaska 2001) (holding that "[a] jailer owes its prisoners the duty of reasonable care to protect them from reasonably foreseeable harm, including self-inflicted harm" and explaining that "the duty jailers owe prisoners is equivalent to the duty common carriers owe passengers"); Estate of Belden v. Brown Cty., 261 P.3d 943, 962 (Kan. Ct. App. 2011) ("[P]enal institutions . . . stand in a special relationship with the persons they detain . . . [a]nd having taken legal custody of those prisoners . . . [they have a duty to take steps to protect a self-destructing inmate from acting on those impulses].").

121. *See supra* notes 95–98 and accompanying text.

122. Recall that a third exception can give rise to liability in mental-healthcare settings. *See supra* note 114. Under *Hobart v. Shin*, discussed earlier, liability may be imposed on a physician whose patient commits suicide while under mental health treatment. 705 N.E.2d 907 (Ill. 1998); *see supra* notes 105–106 and accompanying text. The reasons for the *Hobart* oft called "special relationship exception" are explained in a dictum in *Winger v. Franciscan Medical Center*:

> [T]o absolve the caregiver of liability would be imprudent and would divest the profession of any standard of care. Rather than absolve the physician of liability when self-destructive conduct is reasonably foreseeable, the better approach is to require reasonable precautions in light of the special relationship between the physician and his patient. We find that the proper standard is most ably stated in Cowan v. Doering, 215 N.J. Super. 484, 494–95, 522 A.2d 444, 449–50 (1987),

TABLE 2: COMPETING HYPOTHESES SUMMARY

THE VARS HYPOTHESIS (VH)	The increase in expected liability will result in a positive increase in the level of care (i.e., higher quality of service) and accordingly lower suicide rates.
THE DILLBARY HYPOTHESIS (DH)	The higher expected liability will result in screening, which could reduce the quality (care levels) or the amount (activity levels) of services offered and result in higher suicide rates.

> aff'd, 111 N.J. 451, 545 A.2d 159 (1988): "Where it is reasonably foreseeable that a patient by reason of his mental or emotional illness may attempt to injure himself, those in charge of his care owe a duty to safeguard him from his self-damaging potential. This duty contemplates the reasonably foreseeable occurrence of self-inflicted injury regardless of whether it is the product of the patient's volitional or negligent act."

701 N.E.2d 813, 819–20 (Ill. App. Ct. 1998). The *Winger* dictum became law in *Hobart* where the Illinois Supreme Court recognized (implicitly) the special relationship exception. But it substantially limited its scope by allowing a psychiatrist to raise the decedent's contributory negligence as an affirmative defense, thus curbing the psychiatrists' expected liability. *See supra* notes 105–108 and accompanying text. *Hobart* recognized that in some cases, where the decedent was "completely devoid of reason," the defense would not apply. 705 N.E.2d at 911. In *Graham v. Northwestern Memorial Hospital*, the Illinois Supreme Court reaffirmed *Hobart* calling the exception "rare" and limiting it to custodial cases. 965 N.E.2d 611, 616, 619–20 (Ill. App. Ct. 2012) ("[T]he rare case where a contributory negligence instruction should not be given in a suicide case will almost certainly involve a 'custodial case' where the patient is incapable of exercising ordinary care for her or his own welfare."). By contrast, courts that have refused to recognize a defense emphasized that it would "render meaningless the duty of the hospital to act reasonably in protecting the patient against self-harm." McNamara v. Honeyman, 546 N.E.2d 139, 146–47 (Mass. 1989) (footnote omitted) (refusing to apply a comparative negligence defense). Other courts have taken an intermediary approach recognizing a defense, but holding the patient's duty to self-care commensurate with her capacity. *See, e.g.*, Champagne v. United States, 513 N.W.2d 75, 80 (N.D. 1994).

The developments in Tennessee law are also illuminating. *Weathers v. Pilkinton* exempted from liability, as a matter of law, a negligent psychiatrist whose patient committed a suicide. 754 S.W.2d 75 (Tenn. Ct. App. 1988). *Weathers* is a regular noncustodial medical malpractice case. The sole issue before the *Weathers* court was whether a psychiatrist who, in breach of his duty, failed to involuntarily commit a patient could be held liable for the latter's suicide. *Id.* at 77. The *Weathers* court was aware that "the fact that mentally ill persons might take their lives if adequate precautions are not taken to protect them from themselves is more foreseeable [when the defendant is a psychiatrist than other cases]." *Id.* at 78. Yet, it held that, as a matter of law, the psychiatrist could not be held liable unless the insanity exception applies. *Id.* at 78–79. *Weathers* was rejected by *Winger* and was also overruled a few months later by the Tennessee Supreme Court in *White v. Lawrence*. *See* White v. Lawrence, 975 S.W.2d 525, 530 (Tenn.) (adopting a special relationship exception), *reh'g denied*, 975 S.W.2d 525 (Tenn. 1998).

III. MEASUREMENT

The Vars and Dillbary hypotheses, summarized in Table 2 above, are contradictory but equally probable. The first hypothesizes that an increase in doctors' expected liability will decrease suicide rates. The other hypothesizes that it could increase suicide rates. This Part tests the hypotheses.

The empirical question has important implications to courts and policy makers. If the increased liability results in denial of treatment or other forms of defensive medicine practices, more jurisdictions would be inclined to reduce doctors' liability. Indeed, even jurisdictions that adopted the broad foreseeability view recognized the importance and potential adverse effects of defensive medicine. Wisconsin is such a jurisdiction. In *Schuster v. Altenberg*, the Supreme Court of Wisconsin held that a psychiatrist can be held liable for failure to diagnose and treat (e.g., involuntarily commit) a patient.[123] The court explicitly raised the Dillbary hypothesis as a possible reason to limit liability on public policy grounds, but rejected it for lack of empirical evidence:

> Additional public policy arguments propose that the imposition of liability upon a physician for failure to warn or failure to commit risks overcommitment and may discourage psychotherapists from treating dangerous patients. Similar concerns had been expressed by critics of *Tarasoff*. However, data collected in a survey of the impact of *Tarasoff* demonstrated that "*Tarasoff* has not discouraged therapists from treating dangerous patients, nor has it led to an increased use of involuntary commitment of patients perceived as dangerous."[124]

Since then, there has been some evidence presented that *Tarasoff v. Regents of the University of California*[125] may have had the adverse effect suggested above.[126] Similar to others,[127] we turn to the empirics to assess whether the imposition of liability on doctors may adversely impact suicide rates.

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123. 424 N.W.2d 159, 161–63 (Wis. 1988).

124. *Id.* at 174–75 (quoting Daniel J. Givelber, William J. Bowers & Carolyn L. Blitch, Tarasoff, *Myth and Reality: An Empirical Study of Private Law in Action*, 1984 WIS. L. REV. 443, 486).

125. 551 P.2d 334 (Ca. 1976).

126. Griffin Edwards, *Doing Their Duty: An Empirical Analysis of the Unintended Effect of* Tarasoff v. Regents *on Homicidal Activity*, 57 J.L. & ECON. 321, 322 (2014) [hereinafter Edwards, *Doing Their Duty*] (showing that the *Tarasoff* duty to warn caused an increase in the homicide rate of five percent); Griffin Edwards, Tarasoff, *Duty to Warn Laws, and Suicide*, 34 INT'L REV. L. & ECON. 1, 5 (2013) [hereinafter Edwards, *Duty to Warn Laws*] (estimating that states with laws requiring healthcare providers to warn others in breach of doctor-patient confidentiality experienced an increase in teen suicides of about 9%, but that no such effect exists among adult suicides).

127. *See, e.g.*, Edwards, *Doing Their Duty*, *supra* note 126; Edwards, *Duty To Warn Laws*, *supra* note 126; Stephen Rushin & Griffin Edwards, *De-Policing*, 102 CORNELL L. REV. 721 (2017); Karen M. Travis, *Physician Payment and Prenatal Care Access for Heterogeneous Patients*, 37 ECON. INQUIRY 86 (1999).

A. Data

The outcome we measure, suicides per 100,000 of the population, is recorded from the Centers for Disease Control and Prevention's (CDC) Web-based Injury Statistics Query and Reporting System (WISQARS) database.[128] Data for the WISQARS database are collected from data on each death certificate[129] and has been found to be reliable at the state/year level.[130] Data on doctor liability laws were collected by the authors and are summarized in Table 1.

While we anticipate that state and year fixed effects will capture much of the unobserved covariates that influence suicide rates, we also include other variables that have been shown to play an important role explaining the variation in suicide rates. As proxies for the mental health of the state, we include real mental health expenditures,[131] the institutionalization rate,[132] and each state's involuntary commitment minimum and maximum stay policy.[133] Additionally, we control for states that have passed any tort reform legislation that imposes any cap on damages,[134] the proportion of Democrats in each state house and senate,[135] the unemployment rate,[136] urbanization rate,[137] a dummy variable indicating state/year cells where the median age is over forty,[138] and the logged accidental poisoning rate.[139]

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128. *Welcome to WISQARS*, CTRS. FOR DISEASE CONTROL & PREVENTION (Feb. 5, 2018), https://www.cdc.gov/injury/wisqars/index.html [https://perma.cc/M4WT-MJF7].

129. *Web-based Injury Statistics Query and Reporting System (WISQARS) Fatal Injury Help Menu*, CTRS. FOR DISEASE CONTROL & PREVENTION (Sept. 2, 2014), https://www.cdc.gov/injury/wisqars/fatal_help/faq.html [https://perma.cc/LEV3-TKEF].

130. Edwards, *Doing Their Duty*, *supra* note 126, at 334.

131. *See* Justin M. Ross, Pavel A. Yakovlev & Fatima Carson, *Does State Spending on Mental Health Lower Suicide Rates?*, 41 J. SOCIO-ECON. 408, 408 (2012).

132. Calculated from U.S. Census group quarter-residence data available from Steven Ruggles, Katie Genadek, Ronald Goeken, Josiah Grover, and Matthew Sobek of the Integrated Public Use Microdata Series (IPUMS), a project of the Minnesota Population Center. *See U.S. Census Data for Social, Economic, and Health Research*, IPUMS USA, https://usa.ipums.org/usa/index.shtml [https://perma.cc/ART6-UMLE] (machine-readable database).

133. *See* Griffin Edwards, Involuntary Commitment Laws and Their Effect on Crime (July 1, 2014) (unpublished manuscript), https://ssrn.com/abstract=2467689 [https://perma.cc/VE8N-R3GL].

134. *See* Ronen Avraham, *Database of State Tort Law Reforms (5th)* (Univ. of Tex. Sch. of Law, Law & Econs. Research Paper No. e555, 2014), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=902711 [https://perma.cc/LWR6-A9BS].

135. *See* Joanna M. Shepherd, *The Influence of Retention Politics on Judges' Voting*, 38 J. LEGAL STUD. 169 (2009).

136. For information about the use of state unemployment rates as a control for economic conditions, see Griffin Edwards, Erik Nesson, Joshua J. Robinson & Fredrick Vars, *Looking Down the Barrel of a Loaded Gun: The Effect of Mandatory Handgun Purchase Delays on Homicide and Suicide*, ECON. J. (Mar. 22, 2018), https://doi.org/10.1111/ecoj.12567 [https://perma.cc/A6AE-Z2C7].

137. *See id.*

138. *See id.* at 10; Ross et al., *supra* note 131, at 410.

139. *See* Edwards et al., *supra* note 136, at 12; *Welcome to WISQARS*, *supra* note 128. While admittedly a less than perfect metric, we include this variable in an attempt to capture

B. Model

The preferred empirical technique to estimate the effect that changes to doctor liability may have on suicides would be akin to a laboratory experiment where there is a treatment and control group, and the treatment group experiences changes to liability.[140] In the laboratory setting, the researcher has complete control over which of the study's participants receive the treatment and the intensity and/or style of treatment. This ultimate authority in the lab setting allows for simple, clean statistical analyses between the treatment and control groups. The reality is that for empirical legal research, many important questions are complicated and fall outside the bounds of a randomized controlled trial. While it is impossible to mimic the lab setting, it is still the "gold standard" of statistical analyses, and the role of this analysis is to draw an analogy to the lab and mirror as closely as possible to a randomized laboratory experiment.

In our "experiment" the subjects are the states. Each subject (i.e., state) must choose a liability rule for malpractice resulting in suicide (e.g., no liability, holding only psychiatrists liable, etc.). We then test how the chosen rule impacts, all else equal, suicide rates. Our "experimental" design is crippled, however, by an important departure from a randomized controlled trial. In a randomized controlled trial, participants are randomly assigned into the treatment and control groups. This randomization ensures that any statistical difference between the treatment and control group can be attributed to the treatment received by the treatment group and not some unobserved characteristic specific to the treatment group since those who ended up in the treatment group arrived there by chance (i.e., random assignment).

By contrast, the participants (states) in our study were not randomly assigned into each group, but instead explicitly and intentionally sorted into either the treatment or control group.[141] This creates a concern—a concern not relevant in a randomized controlled trial—that a common factor may exist which drives each participant into, say, the treatment group. If this were the case, and we observe some statistical difference between the two groups, we could not be sure whether the difference was the result of the treatment or the common factor that motivated each group to form.

Stated another way, it is as if we are running a lab experiment in which participants know what the treatment will be and are allowed to decide for themselves

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some of the variation in suicide rates associated with changes in prescription mental health pharmaceutical usage. While we would have preferred a more direct measure of pyscho-pharmaceutical utilization, we figure that as prescription drug usage increases, so would the propensity to accidentally overdose, thus accidental poisoning rates should be correlated with prescription drug usage.

140. *See generally* Ian Ayres, Mahzarin Banaji & Christine Jolls, *Race Effects on eBay*, 46 RAND J. ECON. 891 (2015) (discussing the use and benefits of randomized, controlled trials in social science).

141. Carrying forward the analogy of a laboratory experiment, consider states that are "treated," or in the treatment group, as states that have expanded tort liability laws as seen in Table 1.

whether to receive treatment. To address the self-selection of our treatment and control groups, we employ a difference in differences modeling approach.

This method employs a two-phased process. The first phase—for states that passed a law—compares suicide rates before the law passed to its pre-treated self. That is, the control group is the state's pre-treated self. This would, as an example, compare the average suicide rate in all years in Connecticut after 1997 to the average suicide rate for all the years prior to 1997 when the law changed.[142] The second phase calculates that same difference for the group of states that never passed any law. Finally, the second-phase difference is subtracted from the first-phase difference.

The role of the first-phase difference is to capture any state-specific characteristics that may be influencing both the passage of the law and the state suicide rate. These are factors that do not vary within a state from year to year, but may contribute to suicide rates, like weather[143] or altitude.[144] The role of the second-phase difference is to capture any common factors that may be influencing all states similarly across time such as advances in pharmaceutical technology[145] or changes to federal gun control policies.[146] So while we are not able to achieve the gold standard of random assignment into each group, we are able to account for many of the nonrandom factors that could be influencing the results. Additionally, we are able to control for other observable characteristics associated with suicide.

Our study is further complicated since there is not one single treatment but rather a slurry of laws that apply to different tort defendants at different times. We address this in two ways.

1. Model 1

Our first approach is to attempt to measure the effect of the law on suicide rates as tort liability increases from no liability to imposing liability on (a) psychiatrists only, (b) all doctors, or (c) the general foreseeability test. The variation in these state laws correspond to Table 1 and can be seen in Figure 1.

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142. *See supra* Table 1.

143. Richard A. White, Deborah Azrael, Fotios C. Papadopoulos, Gavin W. Lambert & Matthew Miller, *Does Suicide Have a Stronger Association with Seasonality than Sunlight*, 5 BMJ OPEN 1, 1 (2015).

144. Namkug Kim, Jennie B. Mickelson, Barry E. Brenner, Charlotte A. Haws, Deborah A. Yurgelun-Todd & Perry F. Renshaw, *Altitude, Gun Ownership, Rural Areas, and Suicide*, 168 AM. J. PSYCHIATRY 49, 49 (2011).

145. Dave E. Marcotte & Sara Markowitz, *A Cure for Crime? Psycho-Pharmaceuticals and Crime Trends*, 30 J. POL'Y ANALYSIS & MGMT. 29, 30 (2011).

146. Jeffrey W. Swanson, E. Elizabeth McGinty, Seena Fazel & Vickie M. Mays, *Mental Illness and Reduction of Gun Violence and Suicide: Bringing Epidemiologic Research to Policy*, 25 ANNALS EPIDEMIOLOGY 366, 371–72 (2015).

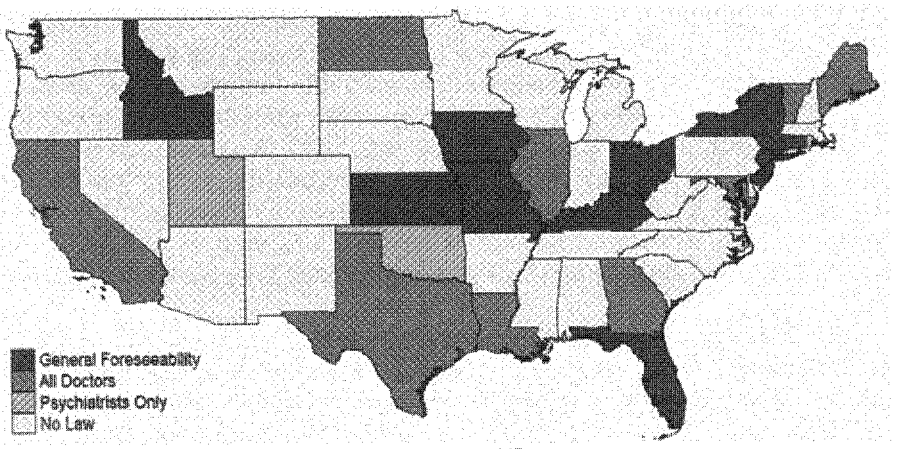


Figure 1: State Variation in Doctor Liability[147]

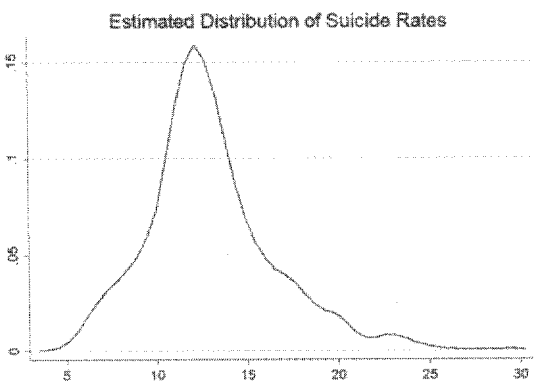
Formally, we estimate the following log-linear equation using least squares estimation techniques:

$$\ln(s_{it}) = \alpha Narrow_{it} + \beta Wider_{it} + \delta Widest_{it} + \Psi_{it} + \rho_t + \tau_i + \varepsilon_{it}$$

In this equation, $ln(s_{it})$ is the natural log[148] of the suicide rate in state i in time t, Ψ_{it} represents a vector of control variables explained further in the data section, ρ_t

147. This Figure represents the laws as they were in 2013.

148. 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. *E.g.*, Mark Duggan, *More Guns, More Crime*, 109 J. POL. ECON. 1086, 1095 (2001); Griffin Edwards, *State Right to Refuse Medication Laws and Procedures: Impact on Homicide and Suicide*, 19 J. MENTAL HEALTH POL'Y & ECON. 141, 144 (2016); Jens Ludwig & Philip J. Cook, *Homicide and Suicide Rates Associated with Implementation of the Brady Handgun Violence Prevention Act*, 284 JAMA 585, 587 (2000). For example, in our dataset, the distribution of suicide rates (before logging) looks like:



And after the log transformation:

represents the inclusion of year fixed effects,[149] τ_i the inclusion of state fixed effects,[150] and ε_{it} is the idiosyncratic error term. Functionally, the state fixed effects accomplish the first-phase difference and the year fixed effects the second-phase difference. Alternatively, the state fixed effects control for any state-specific, time-invariant factor that may influence suicide rates, and the year effects absorb any national trending factors that may be influencing suicide rates. The coefficients of interest in Model 1, α, β, and δ, estimate the effect of the scope of the law. That is, compared to states with no law passed, α tells us the effect of a narrow scope of the law that would just include psychiatrists, β the effect of defining the law more broadly to include psychiatrists and general practitioners, and δ the effect of the broadest scope of the law which would include all possible parties.

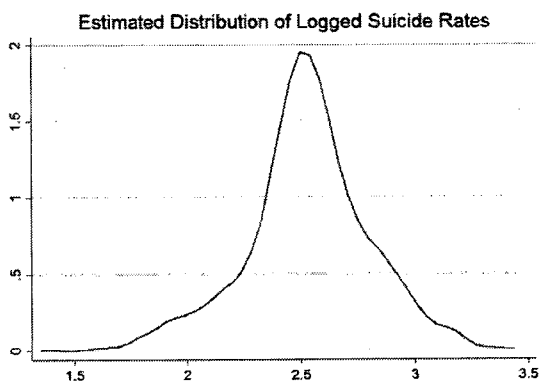
While this model addresses the effect of the scope of the law, it does not necessarily directly address the role increased liability plays to specific practitioners. To do this, we alter Model 1 to attempt to parse out the effect of increased liability to specifically liable practitioners.

2. Model 2

While we do not actually observe any state in the data that extends liability only to NPMDs (but not to psychiatrists), we are able to isolate individual effects for specific practitioners through a set of overlapping dummy variables modeled in the following fashion:

$$\ln(s_{it}) = aPsych_{it} + bNPMD_{it} + gAllOthers_{it} + \Psi_{it} + \rho_t + \tau_i + \varepsilon_{it}$$

Here, all parameters are the same as Model 1, except the variables of interest are recoded to isolate the effect of changes in liability to specific groups of practitioners. The coefficient a measures the effect of making psychiatrists liable, b NPMDs, and g all others. Again, while we do not observe any state in the data that applies a rule



149. This is a set of dummy variables—variables that only take the value zero or one—that indicate each year in the data set.

150. This includes a dummy variable for each state and DC.

of liability to NPMDs alone, we do observe states that first apply the rule to psychiatrists and later to psychiatrists and NPMDs, which allows us to disentangle the effect for each group.

C. Results

The estimated results of Model 1 are reported in Table 3. Recall that this model tests what effect the scope of liability laws have on suicides rates. Column 1 of Table 3 reports the estimates of coefficients α, β, and δ with the inclusion of state and year fixed effects but without any other controls, and column 2 of Table 3 replicates column 1 but with the inclusion of controls.

TABLE 3: EFFECT OF THE SCOPE TORT LIABILITY LAWS ON SUICIDE RATES

SCOPE OF LIABILITY	(1)	(2)
NARROW: PSYCH ONLY	0.128‡	0.161‡
	(0.023)	(0.026)
WIDE: ALL DOCTORS	-0.038	-0.030
	(0.038)	(0.024)
WIDEST: EVERYBODY	0.000	-0.003
	(0.038)	(0.025)
CONTROLS		X
SAMPLE SIZE[151]	1683	1683
R SQUARED[152]	0.891	0.917

Consistent with the Dillbary hypothesis, the findings suggest that laws that would hold psychiatrists (but not NPMDs) liable for malpractice resulting in a suicide were associated with a 12.8% increase in suicides. The effect is even stronger, 16.8%, if we include controls. These results are statistically significant. We find no evidence of any effect of broader laws—laws that impose liability on all physicians and laws that include all defendants—on suicide rates. When interpreting the results in Table 3, it is important to note that these results only provide information on the effect of narrowly defining the law, and not necessarily the effect of increasing liability to psychiatrists, since psychiatrists are also part of the group of liable defendants in the "wide" and "widest" set of laws.

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151. The sample size, reported in this and subsequent tables, reports the number of state year observations. We include in our dataset data on each state and DC, but we follow them over time which is why this number is greater than fifty-one.

152. The R Squared calculation, reported in this and subsequent tables, is a measure, albeit an imperfect one, of the "goodness of fit" of the model to the data. Interpreted as a percentage, an R Squared of 0.891 suggests that 89.1% of the variation in state suicide rates across the time of our dataset can be explained by our chosen model.

The specification in Model 1, reported in Table 3, most closely mirrors the codification of the laws as they naturally occur in society. Model 2, however, allows us to measure the effect of changes to liability by affected group and provides a more direct test of the competing Vars and Dillbary hypotheses. Those results are reported in Table 4.

TABLE 4: EFFECT OF TORT LIABILITY LAWS ON PROVIDERS

	(1)	(2)
NPMDS LIABLE	-0.075†	-0.107‡
	(0.037)	(0.041)
PSYCHIATRISTS LIABLE	0.058	0.093‡
	(0.042)	(0.037)
EVERYBODY ELSE LIABLE	0.034	0.035
	(0.029)	(0.020)
CONTROLS		X
SAMPLE SIZE	1683	1683
R SQUARED	0.890	0.917

As mentioned previously, Model 2 and its estimated effects represent an alternative codification of the law that allows us to isolate the effect of changes to tort liability by affected group. Similar to previous tables, column 1 reports the results without controls, and column 2 with controls. So, which effect prevails? As it turns out, there is evidence to support both the Vars and Dillbary hypotheses.

When NPMDs become potentially liable, we report a decrease in suicides by a magnitude of 7.5% to 10.7% depending on the specification, suggesting an increase in the quality of care provided by NPMDs. Interestingly though, we also find some evidence of the Dillbary effect when liability is isolated to only include psychiatrists. Specifically, suicide rates increase by between 5.8% and 9.3% when liability extends to psychiatrists.

While the results reported here paint a nuanced and interesting story that the effect of increasing liability for doctors depends on the doctors' discretion and screening capability, and to avoid jumping to hasty policy recommendations, it is important to remember that the codification in Model 2 and Table 4 do not reflect the laws actually in effect in the United States. We never actually observe, for instance, a state that makes only NPMDs liable. We are, however, because of the variation of the laws in the data, able to parse out each individual group's effect. This effect is further supported once we account for each state's negligence rule.

D. Robustness Checks

As the Dillbary effect suggests, we present some evidence that psychiatrists may respond to increased levels of liability by screening and avoiding the patients that are most at risk for committing suicide. If this were true, however, we would expect to see psychiatrists respond differently depending on the legal nature of the state's negligence laws. That is, the higher the expected liability a mental-healthcare provider faces, the

stronger will be the screening effect. The test is thus: if it is in fact true that changes in liability create a screening effect for psychologists, this effect should be less pronounced in states where avoiding liability is easier, like states with contributory negligence laws, and more pronounced in states where liability is harder to avoid, such as states with comparative negligence laws. After all, the victim of suicide will often be at least partially to blame. To test this theory, we estimate the following model:

$$\ln(s_{it}) = a_1 ContPsych_{it} + a_2 CompPsych_{it} + bNPMD_{it} + gAllOthers_{it} + \Psi_{it} + \rho_t + \tau_i + \varepsilon_{it}$$

The equation is a mirror image of Model 2 with one exception. The $aPysch_{it}$ variable, which captures the effect of increased liability for psychiatrists in Model 2, is split into two categories and sorted by states that have contributory negligence laws and passed a law that increased psychiatrist liability ($a_1 ContPsych_{it}$) and states that passed a law and operate under comparative negligence rules ($a_2 CompPsych_{it}$).[153] Again, the idea is that if these laws are affecting the way psychiatrists practice, the effect should be largest in circumstances where it is hard to avoid liability (comparative negligence states) and least obvious in states where it is relatively easier to avoid liability (contributory negligence states).[154] The results of this test are provided in Table 5.

TABLE 5: EFFECT OF TORT LIABILITY LAWS BY NEGLIGENCE STANDARD

	(1)	(2)
NPMD LIABLE	-0.068^	-0.090†
	(0.038)	(0.043)
CONTRIBUTORY NEGLIGENCE: PSYCH LIABLE	-0.022	0.020
	(0.051)	(0.055)
COMPARATIVE NEGLIGENCE: PSYCH LIABLE	0.058	0.091†
	(0.042)	(0.039)
EVERYBODY ELSE LIABLE	0.027	0.025
	(0.030)	(0.020)
CONTROLS		X
PSYCH LIABLE JOINT SIG	0.0045	0.0084
SAMPLE SIZE	1683	1683
R SQUARED	0.8908	0.9176

153. Alternative specifications that divided the data further by differentiating pure comparative negligence laws and modified comparative negligence laws resulted in statistically similar results.

154. One question that does arise in this exercise is the extent to which contributory/comparative negligence laws may actually apply to suicide cases. We found that contributory/comparative negligence laws have been applied to suicides in all but one state.

This table reads in a similar fashion to the previous table with one added statistic reported. First, consistent with the liability screening Dillbary hypothesis, we observe a statistically insignificant effect of making psychologists and psychiatrists liable in states with contributory negligence rules.[155] That is, laws holding psychiatrists liable for suicide resulting from malpractice do not seem to have an effect in states with contributory negligence laws. Conversely, the laws seem to be having the most bite and create the most screening in states with comparative negligence laws compared to contributory negligence laws. Lastly, to address the joint statistical significance of both psychologist variables, we include in both columns the results of a statistical test of joint significance and find that in both cases these two variables together are jointly significant.[156]

As another check to the robustness of the results, we try to identify if these laws have any effect on other types of mortality outcomes. It could be the case that the changes in these laws are associated with some sort of underlying trend in mortality generally. If this were the case, our reported results would erroneously associate changes in these laws to changes in suicide while the real cause of the effect could be due to the underlying changes in mortality. Stated another way, we want to ensure that the laws are affecting the outcomes we think they should, and not some seemingly unrelated factors they should not. To do this, we replicate the results above,[157] but in place of suicides we run four separate regressions where each regression has a different mortality outcome that should not be affected by changes to tort liability laws. Those results, displayed graphically, can be seen in Figure 2.

155. The flipping of the sign from negative to positive with the inclusion of controls provides further evidence of the absence of a relationship between psychologist liability laws and suicide rates in contributory negligence states.

156. These results are generally insensitive to alternative coding of the laws in states where reasonable people might disagree on the classification of the laws, including Rhode Island and Vermont.

157. Due to limitations in the data of our placebo mortality variables, we employ a slightly different regression technique that allows us to include zero counts of mortality for the various placebo laws. To do this, we run fixed effects Poisson regressions with the population as a constrained right-hand-side variable. This produces qualitatively similar regressions to that presented in the main results while allowing us to still include zero counts that otherwise would get lost when logging the outcome variables.

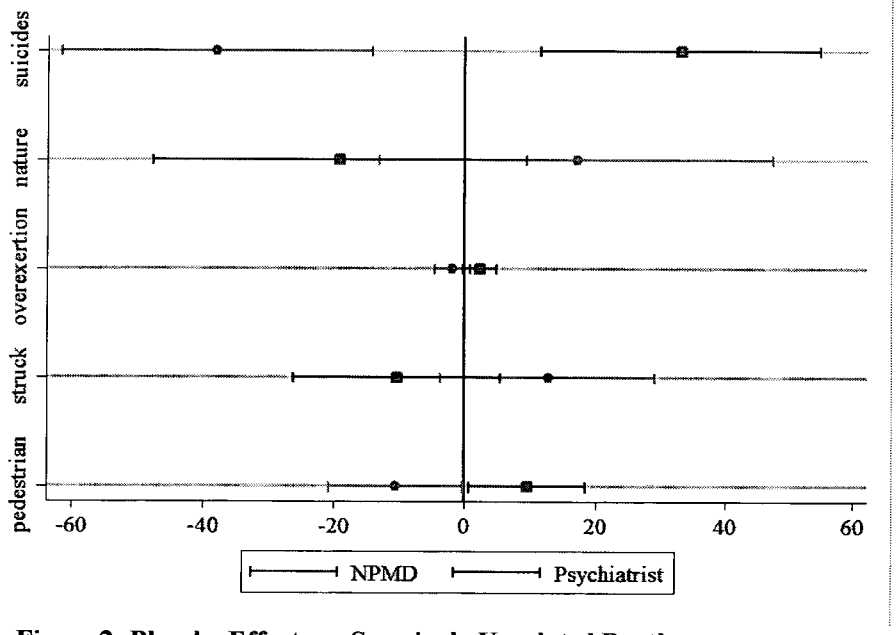


Figure 2: Placebo Effects on Seemingly Unrelated Deaths

Each row represents a unique regression, where the outcome is listed on the vertical axis. Those outcomes are death by natural force (nature), death by overexertion, death by being struck by a blunt object (struck), and pedestrian-related deaths. Suicides have been converted from rates to death counts and included in the figure for comparison. The horizontal axis measures the magnitude of the effect in terms of deaths. Each point on each row of Figure 2 represents the point estimate of the regression and the bands around the point represent a 90% confidence bound. Recall that bounds that include zero, the dark vertical line in the center of the figure, are not statistically significant. As is seen in Figure 2, there seems to be no relationship between these laws and seemingly unrelated counts of mortality. The one exception may be pedestrian-related deaths, which see a small and marginally significant increase in deaths with the change to tort liability laws for psychiatrists. This may be the result of suicide deaths being misclassified as pedestrian-related accidental deaths.

CONCLUSION

We find some evidence that psychiatrists faced with liability for suicide may screen out patients at a relatively high risk for suicide. And those patients may receive worse or no care as a result. In particular, replacing the traditional (i.e., no liability) rule with one that imposes liability on psychiatrists for suicides was associated with an increase in the suicide rate in both of our specifications. There is, however, support for the opposing hypothesis that greater liability leads to better care when NPMDs are viewed in isolation: the suicide rate declined when NPMDs were first made potentially liable. Because specialists like psychiatrists would seem to

have greater ability to screen patients, these results are consistent with the Dillbary screening hypothesis and with the Vars improved-care hypothesis.

These findings are supported by existing literature about "defensive medicine" and also add significantly to that literature. In one survey of 669 doctors in different specialties, 39% reported often avoiding high-risk patients.[158] This rate was by far the lowest among emergency room physicians (13%), who have the least ability to engage in patient screening.[159] The survey suggests that concern with malpractice liability is at least partially responsible for screening: "[s]pecialist physicians who lacked confidence in their coverage were more than twice as likely as other specialists to . . . avoid . . . high-risk patients."[160] Attempts to assess the impact of this self-reported patient avoidance, and other effects of changes in tort liability, have not yielded consistent results.[161] Our study fills a gap in this literature.

These findings have important implications for suicide and tort law generally. Holding specialists liable for suicide without holding generalists liable may be a grave mistake because of screening. On the other hand, expanding liability just to other doctors may reduce suicide rates. This suggests that the best policy might be to retain the traditional no-liability-for-suicide rule for specialists[162] and to drop it for NPMDs. However, further research is needed. The phenomenon of avoiding liability by avoiding potential claimants is significant for policy and tort law well beyond the context of suicide. This Article provides empirical support for what is usually just a theoretical or anecdotal claim.

Because so few states held psychiatrists liable but not NPMDs, however, our more robust finding is that suicide rates were not significantly affected by holding all doctors and other defendants potentially liable. NPMDs did not appear to screen out high-risk patients and appear to have exercised greater care. The psychiatrist and NPMD effects cancelled out and extending liability beyond doctors had no effect. One possible extrapolation from our data would be to hold NPMDs liable, but not psychiatrists.

At least one commentator has endorsed this reasoning, though without as rigorous empirical support. In a recent book, Professor Susan Stefan has advocated moving back toward the traditional no-liability position. Specifically, she argues that mental

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158. David M. Studdert, Michelle M. Mello, William M. Sage, Catherine M. DesRoches, Jordon Peugh, Kinga Zapert & Troyen A. Brennan, *Defensive Medicine Among High-Risk Specialist Physicians in a Volatile Malpractice Environment*, 293 JAMA 2609, 2612 tbl.2 (2005).

159. *Id.*

160. *Id.* at 2613.

161. *See* Theodore Eisenberg, *The Empirical Effects of Tort Reform*, *in* RESEARCH HANDBOOK ON THE ECONOMICS OF TORTS 543 (Jennifer Arlen ed., 2013) ("Consistent evidence of effects [of tort reform] on physician behavior and physician supply has not emerged."); *see also* David A. Hyman, Charles Silver, Bernard Black & Myungho Paik, *Does Tort Reform Affect Physician Supply? Evidence from Texas*, 42 INT'L REV. L. & ECON. 203, 204 (2015) (finding that strict cap on noneconomic damages in medical malpractice cases did not affect physician supply).

162. Or perhaps with a recklessness exception as proposed by Professor Stefan. STEFAN, *supra* note 39, at 275.

health professionals should be liable for the suicide of an outpatient only if the professional acted intentionally or recklessly, not just negligently.[163] This limited liability proposal, she argues, would "reduce existing perverse incentives for mental health professionals to cherry-pick the healthiest and least suicidal outpatients."[164] And while she does not frame her other claimed benefits in terms of precaution and administration costs, she believes her proposal would reduce over-hospitalization, involuntary interventions, along with provider anxiety and malpractice insurance bills.[165]

Should jurisdictions expand tort liability for suicide beyond doctors? Perhaps not. Expanded liability may not have increased suicide rates, but it may have increased spending on ineffective suicide prevention activity and administration.[166] The old rule may therefore do a better job of minimizing the costs of harm, precaution, and administration—the total costs of suicide.[167] This hypothesis has strong support in theory, but we cannot test this hypothesis because our data include no direct measures of suicide prevention efforts, litigation, or their costs.

Still, there is an opposing argument in favor of expanding liability even if it does not significantly decrease the suicide rate and may even increase costs: it better promotes fairness. Some law and economics scholars contend that "fairness" should play no part in torts.[168] But the fairness claim here may coincide with efficiency: the primary cost of suicide should be borne by the doctor who could foresee the risk and should have taken steps to prevent it, not the distressed and very often impaired victim.[169]

This Article is to our knowledge the first of its kind. And while it provides support for our hypotheses, it could be strengthened by future research. One obvious follow-up project would be to survey doctors and insurance companies about their knowledge of and self-reported reactions to changes in tort law. Interested parties may read the case law differently or ignore it. Doctors may assume they could be held liable even when they could not be.[170] Another project would be to assess the

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163. *Id.*

164. *Id.* at 276.

165. *Id.* Other commentators have defended the traditional rule as to outpatients. *See* Murray, *supra* note 101, at 663 (arguing that a special relationship justifying psychiatrist liability for suicide should generally "not be found to exist between psychiatrists and patients treated on an outpatient basis").

166. *See* STEFAN, *supra* note 39, at xxi ("Some clinicians who determine a person does not need hospitalization admit the person anyway to avoid potential liability . . . .").

167. GUIDO CALABRESI, THE COSTS OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS 26–31 (1970). "Fruitless" litigation is one such cost. Lewis L. Laska, *Medical Malpractice Cases Not to File*, 20 MEM. ST. U.L. REV. 27, 28 (1989).

168. ROBERT COOTER & THOMAS ULEN, LAW AND ECONOMICS 9 (6th ed. 2011); Louis Kaplow & Steven Shavell, *Fairness Versus Welfare*, 114 HARV. L. REV. 961, 967 (2001) (arguing that "the welfare-based normative approach should be exclusively employed in evaluating legal rules" and that "notions of fairness like corrective justice should receive no independent weight").

169. Dux v. United States, 69 F. Supp. 3d 781, 789 n.2 (N.D. Ill. 2014); *see also* Bertolote et al., *supra* note 81, at 151–52.

170. *Cf.* Bruce Bongar & Ronald Stolberg, *Risk Management with the Suicidal Patient*, NAT'L REG. HEALTH SERV. PSYCHOLOGISTS (2009), https://www.nationalregister.org/pub/the-

dollars spent on suicide prevention and litigation. As suggested above, high enough costs of this type could tip the scales against tort liability expansion. What is clear from this first empirical examination of the question is that tort law belongs in the conversation about suicide prevention.

APPENDIX

A. Model Validity

While for our purposes the difference in differences methodology allows us to approach the "gold standard" of randomized control trials, it has been shown to perform best when the changes in the legal intervention are, after including state and year fixed effects, "as good as random."[171] That is, the estimates provided by Models 1 and 2 are considered to be unbiased provided that there is no observable way to predict the uptake of the intervention with respect to the outcome of interest. We test this formally by looking at any relationship between previous years' suicide rates and the passage of laws. Specifically, we model the following equation:

$$L_{it} = \gamma_1 s_{it-1} + \gamma_2 s_{it-2} + \gamma_3 s_{it-3} + \Psi_{it} + \rho_t + \tau_i + \varepsilon_{it}$$

The equation estimates a linear probability model that attempts to identify factors that influence the probability that state i in time t will pass law L.[172] The objective of

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national-register-report-pub/the-register-report-fall-2009/risk-management-with-the-suicidal-patient [https://perma.cc/B5WL-QVGR] ("The fear of being sued probably has more widespread and deleterious effects on clinicians than do actual lawsuits.").

171. Marianne Bertrand, Esther Duflo & Sendhil Mullainathan, *How Much Should We Trust Differences-in-Differences Estimates?*, 119 Q.J. ECON. 249, 250 (2004). If the assignment of the treatment is not "as good as random" after controlling for state and year fixed effects, the bias that results is sometimes referred to as endogeneity. *Id.* The biasing effects of endogeneity can be especially salient when looking at changes to legal regimes because laws are enacted and changed by policy makers who, conceivably, do not just randomly pass laws. It is important to note, however, that in order to achieve valid estimates of an effect of law, the passage and laws need not be totally random to everything, they need only to be random (after controlling for unobserved but time invariant state characteristics and national trends) relative to the outcome variable of interest—and more specifically still, the unaccounted for and unobserved variation in the outcome. In Models 1 and 2, the unobserved variation in the outcome of logged suicide rates is represented by ε_{it}. That is, after we do our best to explain all the variation in suicide rates by including controls for changes to tort liability, state and year fixed effects, and all the other controls discussed previously, the variation in suicide rates that remains unexplained is represented abstractly by ε_{it}. In order for our empirical approach to be valid, it must hold that there is no correlation between the laws and the error term, or, $corr(L_{it}, \varepsilon_{it}) = 0$. Since, however, ε_{it} is an abstract idea not measurable in the data, we are not able to directly measure the above correlation. Fortunately for us though, we do know that there is a temporal aspect to the passage of a law, and if the above correlation were to hold, we would expect to see policymakers acting to pass laws in response to suicide rates in previous years that they do observe.

172. We run this check of model validity for each of the laws of interest in Models 1 and 2 that include Psychologist (Psych), General Practitioner (GP), All Others, Narrow, Wider, and Widest.

a linear probability model is to predict probabilities—in this case the probability of the passage and existence of a law. However, we are less interested in predicting the overall probability of a law passage and keenly interested in any predictive power of retrospective, or lagged, suicide rates modeled in the above equation for the last year as s_{it-1}, two years ago as s_{it-2} and three years ago as s_{it-3}.

Lawmakers are not randomly passing laws, but as long as the laws are not passed in a way that can directly be tracked back to observations of lagged suicide rates, we feel fairly confident that, in at least this regard, Models 1 and 2 are not biased. If it is true that Models 1 and 2 are valid, then we would expect to see the estimated effects of γ_1, γ_2, and γ_3 to be statistically insignificant. The results of those estimates are in Table A1.

TABLE A1: LINEAR PROBABILITY MODELS TO PREDICT LAW UPTAKE WITH LAGGED SUICIDE RATES

	Last Year	Two Years Ago	Three Years Ago
GP LIABLE	0.000	0.000	0.000
	(0.001)	(0.001)	(0.001)
PSYCHOLOGIST LIABLE	-0.008	-0.005	0.000
	(0.006)	(0.005)	(0.005)
EVERYBODY ELSE LIABLE	-0.002	-0.001	0.000
	(0.002)	(0.002)	(0.003)
NARROW: PSYCH ONLY	-0.009	-0.006	0.002
	(0.006)	(0.006)	(0.006)
WIDE: PSYCH AND GP	-0.009	-0.005	0.003
	(0.006)	(0.006)	(0.006)
WIDEST: EVERYBODY	-0.002	-0.001	0.000
	(0.002)	(0.002)	(0.003)
WITH CONTROLS			
GP LIABLE	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)
PSYCHOLOGIST LIABLE	-0.009^	-0.007^	-0.002
	(0.005)	(0.004)	(0.005)
EVERYBODY ELSE LIABLE	-0.002	-0.002	0.000
	(0.002)	(0.002)	(0.003)
NARROW: PSYCH ONLY	-0.007	-0.006	0.002
	(0.005)	(0.005)	(0.006)

WIDE: PSYCH AND GP	-0.008	-0.007	0.001
	(0.005)	(0.005)	(0.006)
WIDEST: EVERYBODY	-0.002	-0.002	0.000
	(0.002)	(0.002)	(0.003)

In this Table, every labeled row represents a unique regression where the predicted outcome is the row label, and the lagged suicide rates of interest are represented by column labels. Each regression includes state and year fixed effects, and the second half of the table includes the results replicated from above with the inclusion of all other controls mentioned previously.[173] Below each estimated coefficient, in parentheses, is the standard error of the estimate.[174] There are thirty-six estimated coefficients in this table that could, if statistically significant, suggest evidence of a biased model. Of those thirty-six, only two are statistically significant at the 10% level, which suggests that while these laws are not being passed randomly, they are probably not being passed in a way that would bias our results.[175]

One additional concern to the validity of our preferred empirical model is the temporal nature of suicide rates. While it is a classic assumption of linear regression, it is unrealistic to assume that state suicide rates are not related to one another across years. To account for this, we adjust the estimated standard errors in each equation.[176]

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173. For the sake of completeness, we report the results with and without controls. In the event of a discrepancy between the two, we defer to the results that include controls, as they control for many state-specific, time-variant factors that have been shown to be influential in explaining the variation in suicide rates. The variables we include are: real mental health expenditures, institutionalization rate, involuntary commitment minimum and maximum stay laws, caps on damages tort reforms, proportion of the state house and senate that is Democrat, the unemployment rate, urbanization rate, population over forty years old, and the logged accidental poisoning rate.

174. The estimated coefficient and standard error for each variable are used to perform a standard t test of statistical significance where the null hypothesis is that there is no effect and the alternative is an effect different from zero. In each of our tables, we report the results of the test of statistical significance at different cut off levels with three symbols: ^ $p<0.10$ † $p<0.05$ ‡ $p<0.01$. That is, an estimated coefficient flagged by a "^", suggests a statistically significant result at the 10% level, or alternatively, that we can be 90% confident in the result.

175. Recall that inherent in performing tests of statistical significance is the idea that the researcher may, on occasion, run across a false positive—that is, mistakenly "reject the null hypothesis" or find an effect that does not reflect the true underlying population. *See supra* Part III.D. The amount that we make this mistake, also called a Type 1 error, depends on how liberal we are with what we consider to be statistically significant. Something being statistically significant at the 10% level concedes that we would expect to make a mistake about 10% of the time, thus, it is not concerning that we find statistical significance in the above Table in two of thirty-six cases.

176. In our specific context, this results in clustering the standard error estimates at the state level. This approach typically results in more conservative standard error estimation and has been suggested as a "fix" for the auto-correlative nature of state suicide rates. *See* Bertrand et al., *supra* note 171, at 258.

B. Source Table

TABLE A2: SOURCES

CA	Bellah v. Greenson, 146 Cal. Rptr. 535 (Cal. Ct. App. 1978)
CT	Edwards v. Tardif, 692 A.2d 1266 (Conn. 1997)
	Estate of Girard v. Town of Putnam, No. CV085002754–S, 2011 WL 783599 (Conn. Super. Ct. Jan. 28, 2011)
DC	Garby v. George Wash. Univ. Hosp., 886 A.2d 510 (D.C. 2005)
FL	State v. Rushing, 532 So. 2d 1338 (Fla. Dist. Ct. App. 1988)
GA	Purcell v. Breese, 552 S.E.2d 865 (Ga. Ct. App. 2001)
	Ga. Clinic, P.C. v. Stout, 747 S.E.2d 83 (Ga. Ct. App. 2013)
IA	Jain v. State, 617 N.W.2d 293 (Iowa 2000)
	Mulhern v. Catholic Health Initiatives, 799 N.W.2d 104 (Iowa 2011)
ID	Brooks v. Logan, 903 P.2d 73 (Idaho 1995)
IL	Hobart v. Shin, 705 N.E.2d 907 (Ill. 1998)
KS	Wozniak v. Lipoff, 750 P.2d 971 (Kan. 1988)
KY	Bowden v. Sandler, No. 2008-CA-001279-MR, 2009 WL 1491395 (Ky. Ct. App. May 29, 2009)
LA	Argus v. Scheppegrell, 472 So. 2d 573 (La. 1985)
MD	Farwell v. Un, 902 F.2d 282 (4th Cir. 1990)
ME	Estate of Cummings v. Davie, 40 A.3d 971 (Me. 2012)
MO	Kivland v. Columbia Orthopaedic Grp., LLP, 331 S.W.3d 299 (Mo. 2011) (en banc)
ND	Champagne v. United States, 513 N.W.2d 75 (N.D. 1994)
NJ	Fernandez v. Baruch, 244 A.2d 109 (N.J. 1968)
	Zygmaniak v. Kawasaki Motors Corp. U.S.A., 330 A.2d 56 (N.J. Super. Ct. Law Div. 1974)
NM	Silva v. Lovelace Health Sys., Inc., 331 P.3d 958 (N.M. Ct. App. 2014)
NY	Fuller v. Preis, 322 N.E.2d 263 (N.Y. 1974)
OH	Fischer v. Morales, 526 N.E.2d 1098 (Ohio Ct. App. 1987)
OK	Runyon v. Reid, 510 P.2d 943 (Okla. 1973)
RI	Frizzell v. Town of Little Compton, No. 98-0252, 2000 WL 33159170 (R.I. Super. Ct. Jan. 28, 2000)
TN	White v. Lawrence, 975 S.W.2d 525 (Tenn. 1998)
	Rains v. Bend of the River, 124 S.W.3d 580 (Tenn. Ct. App. 2003)
TX	Kassen v. Hatley, 887 S.W.2d 4 (Tex. 1994) (citing TEX. CIV. PRAC. & REM. CODE ANN. § 93.001(a)(2) (West 2011)(effective Sept. 1, 1987))

UT	Farrow v. Health Servs. Corp., 604 P.2d 474 (Utah 1979)
	Faucheaux v. Provo City, 343 P.3d 288 (Utah Ct. App. 2015)
VT	Wilkins v. Lamoille Cty. Mental Health Servs., Inc., 889 A.2d 245 (Vt. 2005)
	White v. Harris, 36 A.3d 203 (Vt. 2011)