

Doing their duty:
An empirical analysis of the unintended effect
of *Tarasoff v Regents* on homicidal activity

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Abstract

The effect of state duty to warn laws inspired by *Tarasoff v Regents* has been debated for decades. Required reporting of patient threats to the authorities and potential victims gives incentive to the mental health professional to not meet with the most at risk patients, or at very least make the current state of the law abundantly clear to the patient as to suggest suppression of the most at risk statements leaving the psychologist in liability-free ignorance to the true mental state of the patient. As a result, the mental help needed to treat the patient may be foregone and violence may ensue. Using a fixed effects model and exploiting the variation in the timing and style of duty to warn laws across states, I find that mandatory duty to warn laws cause an increase in homicides of 8.9% or 0.76 people per 100,000. These results are robust to model specifications, falsification tests, and help to clarify the true, albeit adverse, effect of state duty to warn laws.

JEL Codes: K13, K32

Introduction

In its landmark ruling in 1976, *Tarasoff v Regents of the Universities of California*¹ (hereafter *Tarasoff*) set the standard for the duty a mental health professional owes third parties whose lives are threatened by the patient of the mental health professional. In subsequent years, each state enacted a similar law, but with variation in the duty required of the mental health professional. At the onset of *Tarasoff*, the duty owed to third parties became the subject of a “cottage industry of commentary” (Perlin 1992) in both the legal and mental health services communities. Since *Tarasoff*, both legal scholars and mental health professionals have argued that patients at most risk of dangerous activity will miss out on necessary counseling due to the costs mental health professionals incur while counseling risky patients (Stone 1976, Fliszar 2002, Ginsberg 2007). Ackerman (1976) predicted the result of *Tarasoff* to be the “end of effective psychotherapy” while Ginsberg (2004) suggested that the *Tarasoff* ruling “might be a valuable clinical tool”. Many early critics of *Tarasoff* eased off their original position (Stone 1984), but the question of *Tarasoff*'s effectiveness in deterring violence, and specifically homicides, remains unanswered empirically. This analysis attempts to tease out the dominating effect of *Tarasoff* by using a codification of Tarasoff laws and a fixed effects (FE) model to estimate *Tarasoff*'s effect on homicides in the United States. This should help fill the gap of proposed legal theory by analyzing the effect of duty to warn laws on state level homicide rates.

The Economics of Crime

Economists and other researchers have tried to explain why crime rose steadily in the 1980's and abruptly fell in the early 1990's. Based on economic theory, the reasons for the sudden changes in crime are expansive and far reaching (Levitt 2004). One theory suggests a

¹ *Tarasoff v. Regents of Univ. of Cal.*, 551 P.2d 334, 354 (Cal. 1976)

causal relationship between mental illness and crime. Either as the victim (Sliver et. al. 2008, Teplin et. al. 2005, Choe et. al. 2008), or perpetrator (Link et. al. 1995, Nestor 2002), previous literature suggests a causal link between sufferers of mental illness and crime. Marcotte and Markowitz's (2009) findings suggest that improving the treatment of psychiatric patients through prescription drugs decreases the number of harmful crimes committed in the United States. The findings presented here further strengthen the argument of a causal link between mental health and crime.

Many of the policy proposals presented in recent years to decrease violent crime have not been implemented due to the highly charged political nature of the intervening factors. A clear understanding of state duty to warn laws will aid in policy making and life saving for a number of reasons and does not fall victim to the factors that have plagued much of the research done on the topic for the last twenty years. While any positive statement about the effect of abortion (Donohue and Levitt 2001, Joyce 2009), gun control (Ayres and Donohue 2003, Black and Nagin 1998,), or the death penalty (Dezhbakhsh et. al. 2003, Katz et. al. 2003) on crime will be difficult to implement, duty to warn laws have no political prior and are potentially more likely to have bipartisan support for a change if required. The findings in this paper suggest life saving policy implications that potentially will not be bogged down in political strife.

Legal History

At the core of tort theory is the existence of duty of one person to another. In order to be found negligent, a tortfeasor must have owed a duty of care to the victim and breached that duty. The duty doctrine inspires would-be tortfeasors to act in a manner that is better for society than the tortfeasor might have acted otherwise (Hylton 2006). Under classic tort theory, therapists counseling dangerous patients would owe no duty to potential victims or law enforcement

agencies. Theory suggests that socially beneficial life-saving warnings to potential victims carried out by the therapist might be preferred to an absence of duty. In general, the therapist would not owe a duty to a third party, but the courts have ruled that the situation of a hostile patient is an exception to this duty standard. This exception of third party duty was first established by a tragedy of love gone wrong.

After unsuccessful attempts to court Tatiana Tarasoff, Prosenjit Poddar, a graduate student at the University of California at Berkeley in the late 1960's, found himself in a deep depression. At the counsel of some friends, he sought professional help from a psychologist at the university hospital in Berkeley. While receiving counseling, Poddar admitted desires to kill Tarasoff. Poddar's psychologist had Poddar detained temporarily, but at the discretion of the superior psychologist, Poddar was released. Neither Tarasoff nor her family were ever made aware of Poddar's intentions.² Later, Poddar successfully carried out his plan and murdered Tarasoff. The family of Tarasoff sued the hospital, the psychologist, and the superior stating that a professional duty should exist to protect third parties from eminent harm.

In a landmark decision, the Supreme Court of California ruled that while traditionally no duty is afforded to a third party, in the case of mental healthcare professionals, a duty to warn a third party exists under certain circumstances, and the failure to warn is cause for suit. In their opinion, the Supreme Court of California stated, "When a therapist determines . . . that his patient presents a serious danger of violence to another, he incurs an obligation to use reasonable care to protect the intended victim against such danger."³ In *Thompson v County of Alameda*,⁴ the Supreme Court of California determined that as long as the victim or class of victims is clearly defined, and the threat is substantial, the therapeutic professional holds a duty to, ". . .

² Though this may have not been possible since Tarasoff was in Brazil at the time the threats were made.

³ *Tarasoff v. Regents of Univ. of Cal.*, 551 P.2d 334, 354 (Cal. 1976)

⁴ *Thompson v County of Alameda*, 614 P.2d 728 (1980)

warn the intended victim or others likely to apprise the victim of the danger, to notify the police, or to take whatever other steps are reasonably necessary under the circumstances.”⁵

In subsequent years, dramatic changes occurred in both the law associated with therapeutic professionals and the way they conducted business (Wise 1976, Givelber et al. 1980). Courts across the country used the ruling of *Tarasoff* as a basis for creating a duty by mental health professionals to warn third parties of imminent harm. In addition, a variety of states codified these case law rulings into statutory law defined in each state’s legal code.

Though almost all states took a stand with respect to third party duty in response to the *Tarasoff* ruling, not all states hold therapists⁶ to the same standard. There are essentially four elements that play a role in each state’s stance relative to *Tarasoff*. Those elements are: professionals named, standard of threat, standard of victim, and what party is entitled to be informed. Important distinctions exist between the types of professionals named in each state. The standard of threat also varies by state, but in general, in order for a duty to exist, the threat made by the patient must be “clear and immediate”⁷ and a “threat of serious physical harm”⁸ and the victim must be readily identifiable. For example, the Arizona statute states that the health provider will be liable if:

*The patient has communicated to the mental health provider an explicit threat of imminent serious physical harm or death to a clearly identified or identifiable victim or victims, and the patient has the apparent intent and ability to carry out such threat.*⁹

⁵ *Tarasoff v. Regents of Univ. of Cal.*, 551 P.2d 334, 354 (Cal. 1976)

⁶ Throughout this paper I use words therapist, psychologist, mental health professional, therapeutic professional, etc interchangeably for stylistic purposes admitting that they are quite different in relation to the law (See Edwards 2010 for further explanation).

⁷ Fla. Stat. § 491.0147

⁸ Alaska Stat. § 08.86.200

⁹ A.R.S. § 36-517.02

Likewise, the duty to warn statute for Utah states that a therapist will be held liable for the actions of a patient if the,

*. . . client or patient communicated to the therapist an actual threat of physical violence against a clearly identified or reasonably identifiable victim.*¹⁰

Under state statutory duty to warn laws, the therapeutic professional is still only liable if the patient makes a credible threat and the professional does not take the proper action in providing warning to appropriate persons. Of these states that have codified duty to warn laws, therapeutic practitioners can bar any sort of duty by notifying proper authorities and the victim or victims named.

Tables 1 and 2 show that 39% of the state\year observations have some sort of mandatory duty to warn law, 17% have discretion, and the remaining has no law.¹¹ Five states have no case or statutory law on the duty to warn doctrine. The presence of state fixed effects essentially drops them from the analysis which allows for controlling of unclear psychologist incentives in those states.¹² Similarly, four states have suggested an adoption of *Tarasoff* through case law by expressing desire to rule in favor of *Tarasoff* when the correct fact pattern is presented.¹³ The only state to reject outright the *Tarasoff* ruling is Virginia.¹⁴ By 1986, about half of all states had passed some sort of *Tarasoff* ruling.

The remaining states constitute the large minority ruling which in Table 1 is classified as a discretionary duty to warn. These eleven states have adopted a policy that allows the therapeutic professional to use her best judgment in deciding to report threats of harm. These

¹⁰ Utah Code Ann. § 78B-3-502

¹¹ For a complete database of *Tarasoff* laws, see Edwards (2010).

¹² For instance, psychologists might report the marginal patient out of fear of becoming the defendant in the case that sets *Tarasoff* as precedence, or it could be that the psychologist doesn't report out of fear breaking the client-doctor privilege.

¹³ Alabama in *Morton v. Prescott* 564 So. 2d, Georgia in *Bradley Ctr. Inc. v. Wessner* 296 S.E.2d, Hawaii in *Lee v. Corregedore* 925 P.2d, and North Carolina in *Currie v. United States* 836 F.2d

¹⁴ *Nasser v. Parker* 455 S.E.2d 502. New Mexico's stance on duty laws is also unclear, see Edwards (2010).

statutes are formed as part of legal bars to break patient/doctor confidentiality privileges. In general, therapeutic professionals cannot divulge conversations had with a patient unless certain criteria are met. In these states with discretionary duties to warn, one acceptable reason to break the patient/doctor confidentiality agreement is a serious threat of harm. This, in result, is a much looser standard than a mandatory duty to warn. A mandatory duty law requires the professional to warn while the discretionary duty simply protects the professional from breach of confidentiality if she chooses to inform a third party. For example, Connecticut has established that:

*“ . . . all communications shall be privileged and a psychologist shall not disclose any such communications unless . . . the psychologist believes in good faith that there is risk of imminent personal injury to the person or to other individuals . . . ”*¹⁵

Similarly, Florida’s statute states:

*“Any communication between any person licensed or certified under this chapter and her or his patient or client shall be confidential. This secrecy may be waived under the following conditions . . . When, in the clinical judgment of the person licensed or certified under this chapter, there is a clear and immediate probability of physical harm to the patient or client . . . ”*¹⁶

In *Thepar v Zuzuka*¹⁷, the Supreme Court of Texas explained that, “The statute . . . permits . . . disclosures but does not require them,” thus reinforcing the notion that a discretionary duty makes warning permissible, but not required. The question is then how the variability in these laws effect doctors, patients, and ultimately the rates of homicide.

¹⁵ Conn. Gen. Stat. § 52-146c

¹⁶ Fla. Stat. § 491.0147

¹⁷ 994 S.W.2d 635 (1999)

This heightened standard of liability for the therapeutic professional should give rise to greater understanding of the current state of law. Psychologists have strong incentives to know the law governing duty laws in their state because a misunderstanding or incorrect application of the law could yield financially burdensome results through the legal process and will likely cause a loss of the license to practice by the administering board. The consequence is so great for incorrectly informing the appropriate third parties, it should give therapeutic professionals the incentive to know the law.

A survey of mental health professionals by Givelber, et al. (1980) found that 86% of psychologists living outside of California were aware of the ruling in *Tarasoff*, and psychologists were 30% more likely post *Tarasoff* to commit patients involuntarily to the hospital. Another empirical study of *Tarasoff*'s effect on psychological practice, Wise (1978) found that 25% of therapists reported greater patient reluctance to discuss violent thoughts, and more recently, Rosenhan et al. (1993) reported that 60% of therapists felt that patients were at least somewhat more reluctant to discuss sensitive information.

While these studies are informative and give some insight into the mechanism by which *Tarasoff* laws affect homicides, it is important to note that sample selection may bias results, as psychologists may have incentive to overestimate *Tarasoff*'s negative effects in an effort to give evidence to overturn the law that heightens their own liability. While surveys of therapists might over-report the negative effects of *Tarasoff*, similar bias is no likely to be found in a state level panel of homicides.

As additional self-protection, the therapist has a strong incentive to make the current state of the law known to the patient (Klinka 2009)¹⁸. To completely avoid liability, a therapist will likely warn the patient ex ante, both verbally and by signed contract, of the law to allow the

¹⁸ specifically note 213 of Klinka (2009)

patient to monitor what is divulged. The evidence found in previous research suggests that this happens at least in part. Ex-post, there would be incentive on the part of the mental health professional to hide knowledge of homicidal tendencies of the patient by destroying notes made on the patient, or by lying about conversations. This is not likely to happen because in most cases, the murderer can be called as a witness against the psychologist, and in many cases, the murderer has met with multiple mental health professionals. It might also be the case that with improvements in mental health care, regular physicians might prescribe medications to combat mental health issues and completely bypass the role of the psychologist. This is likely to happen in many scenarios and is why changes in duty to warn laws only explain a portion of the variation in homicides.

As a result there are two possible effects when a duty to warn is required. The intention of the law is to stop patients from committing heinous acts of violence by warning the potential victim. If this were true, homicides should decrease. It could also be that increasingly aggressive duty laws against doctors will prohibit would-be patients from getting necessary mental counseling. This prohibitive effect likely happens through a number of channels. Patients might know the duty to warn laws in their state and be discouraged from seeking and receiving mental help (Wise 1976, Rosenhan et. al. 1998, Klinka 2009). In addition, doctors face strong incentives to make the relevant duty to warn laws apparent to the patient to imply an attitude of non-disclosure on the topic of sensitive subjects. Another likely channel of deterrence could be in the selection of patients a therapist is willing to treat (Borum and Reddy 2001). The risk of liability might be sufficiently great as to deter doctors from even counseling “risky” patients (Klinka 2009, Harmon 2008). Given the ambiguity of the effects, the question is one best answered empirically.

This analysis contributes to the related literature by offering some empirical evidence of *Tarasoff*'s effect and helps answer many of the theoretical questions raised by the *Tarasoff* duty over the past 20 years as well as explaining the rise and fall in crime over the last twenty years. In addition, it builds on recent work that links mental health conditions to crime in the United States (Marcotte and Markowitz 2009).

Model

I employ two common measures of homicides and estimate every model with both measures of homicides to ensure robustness of the results. A key component to the analysis is quantifying the qualitative heterogeneity in duty to warn laws. The first method is to employ a set of dummy variables that take on the values indicating whether each state/year cell has a mandatory duty to warn law, discretionary duty to warn law, or no law and is modeled like this:

$$h_{it} = \alpha m_{it} + \beta d_{it} + X_{it} + s_i + y_t + e_{it} \quad (1)$$

where h is the natural log of homicides per 100,000 that vary by state i and time t , X is a matrix of covariates,¹⁹ s and y are state and year dummies, e is the error term, m is a binary variable that takes on the value one when state i in time t has a mandatory duty to warn, and zero otherwise. d is a binary variable that takes on the value one when state i in time t has a discretionary duty to warn and zero otherwise. Table 2 shows the summary statistics of the state\year cells. States with discretionary duty to warn laws encompass 17% of the sample while state\years with mandatory laws count for about 40% of the sample. The omitted variable takes on the value one

¹⁹ State controls are explained in the Data section. Included is an indicator of states that have, through court law, expanded duty beyond the “readily identifiable victim” standard (classified as *broader duty* in the tables). These states are Arizona, Colorado, Nebraska, and Washington (*Peterson v State*, 671 P.2d 230 (1983), *Grimm v Board*, 564 P. 2d 1227 (1977), *Liperi v Sears*, 497 F. Supp. 185 (1980), *Perreira v State*, 768 P.2d 1198 (1989)).

when no duty is stated and zero otherwise. States with no relevant precedence on the issue are excluded from the analysis through state effects, as incentives are unclear.²⁰

This method of codifying *Tarasoff* laws gives equal weight to all types of mandatory duty laws. More specifically, it does not discriminate between duty to warn laws that originate in courts opposed to laws that originate in state legislations. Conceivably, therapeutic professionals could be more aware of state laws passed by legislations than decisions made in the state court system. To address this, another model specification is required to expand mandatory duty to warn laws to designate the source or type of law.

$$h_{it} = \alpha_1 mc_{it} + \alpha_2 ms_{it} + \alpha_3 ml_{it} + \beta d_{it} + X_{it} + s_i + y_t + e_{it} \quad (2)$$

The variable m in equation (1) is expanded to three binary variables that incorporate the governing body deciding the law. The variable mc measures the effect of mandatory duty laws decided by the state court system. These are states that, when presented with evidence similar to *Tarasoff*, have ruled that a common law duty to warn exists. ms measures the effect of mandatory duty laws enacted by state statutory law, and ml measures the effect of state judicial ruling that has dictated a duty to warn will be enacted when the fact pattern is presented to the courts. This situation occurs normally when the question presented before the court is something related to, but not exactly, the issue presented in *Tarasoff*. If, for example, a state court comes to a ruling about a psychologist duty to report child abuse, the court usually discusses a *Tarasoff* duty to warn.²¹ The advantage to this model specification is that it allows states to switch from civil law to statutory law as a state codifies existing common law doctrine.²²

²⁰ These states are North Dakota, Nevada, Maine, Kansas, and Arkansas.

²¹ See Alabama and Georgia as examples in Edwards (2010)

²² States such as California (*Tarasoff v Regents* and later Cal Civ Code § 43.92) and Delaware (*Naidu v Laird*, 539 A.2d 1064 and later 16 Del. C. § 5402)

Another possible concern is in the timing of the laws. It is possible that newly enacted state laws are not immediately known by the professional counseling community, and laws are not passed perfectly at the beginning of the year. A law passed any time in 1984 is counted as existing for all of 1984.²³ In order to account for this, I estimate

$$h_{it} = \alpha m_{it-1} + \beta d_{it-1} + X_{it} + s_i + y_t + e_{it} \quad (3)$$

$$h_{it} = \alpha_1 mc_{it-1} + \alpha_2 ms_{it-1} + \alpha_3 ml_{it-1} + \beta d_{it-1} + X_{it} + s_i + y_t + e_{it} \quad (4)$$

which follow the same specifications as equations (1) and (2) but with lagged law indicators.

The nature of the implementation of *Tarasoff* and subsequent laws lends itself to fixed effects (FE) estimation. State and year FE estimation allows for controlling of state level unobserved effects that do not vary with time as well as time varying national trends.²⁴ With homicides, it would be inappropriate to use OLS estimation, as the distribution of homicides is count data truncated at zero.

A common approach is to convert the count of homicides per state per year to rates of homicides per 100,000 residents of the state population and take the natural log of that rate. This transformation lends itself more closely to OLS estimation, as the log of the homicide rate is nearly normally distributed. The preferred specification for this analysis is a FE estimator where the dependent variable takes on the form of the log of the homicide rates. As seen in Table 2, the minimum amount of reported homicides per state per year is 3 which allows for log transformation without having to account for zeros in the data.

²³ For instance, if Wisconsin passed its law in June of 1988, the law is counted as existing for the entire year of 1988. Because this tends to over state the length of the law, lag law variables are included as alternate specifications. So in Wisconsin, the lag law variable would count the law as starting in 1989. No significant difference results.

²⁴ The results are generally insensitive to changes between year effects and state-specific time trends.

FE estimation does, however, have serious potential threats to unbiased estimation. Chief among those concerns is the possibility of underestimated standard errors caused by failure to identify serial correlation, non-random treatment (or non-random assignment of duty laws) and the usual binary nature of the treatment variable (Bertrand et. al. 2004). Bertrand et al. (2004) show that clustered standard errors at the state level correct for serial correlation by allowing for correlation in the error terms within state across time. This resolves the issue of understated error terms by, in many cases, conservatively overstating them in allowing the error terms to be robust and correlated. In this analysis, I use a test developed by Wooldridge (2002) to test for serial correlation in the error terms and correct as needed. The other concern is the non-random assignment of law. The possibility of non-random treatment and policy endogeneity will be discussed further in the *Robustness* section.

Data

The data on homicide rates comes from a variety of places. The preferred measure of homicides comes from the WISAQARS database compiled by the CDC from the National Center for Health Statistics (NCHS). It spans from 1981 to 2006 and captures the timing of the majority of legal changes in law. NCHS data comes from collection of death certificate information and contains information on nearly all deceased persons. To provide some robustness to the NCHS data set, I employ yearly homicide data from the Uniform Crime Report (UCR). The UCR publishes a Supplemental Homicide Report (SHR) monthly, but has shortcomings in the monthly reporting (Marcotte and Markowitz 2009, and Katz et. al 2003). SHR data is collected from volunteer participation of law enforcement agencies across the United States. The SHR has some missing data, likely due to self reporting, but overall accounts for 90% of homicides (Joyce 2009). One advantage of using the SHR data on homicides is that

it allows me to take out of the count of homicides committed by a stranger to the victim. Given the “readily identifiable victim” standard required to impose a *Tarsoff* duty, I’d expect *Tarasoff* laws to also explain the variation in homicides by non-strangers in the same manner as the full sample of homicides. In addition, the magnitude of the effect of these duty to warn laws should be greater in the subsample of homicides by non-strangers. For this study, the NCHS count of homicides will be the main source of homicide data, as it appears to be more inclusive of homicides in the United States and does not rely on voluntary reporting, but the UCR-SHR homicide count of non-stranger homicides provide a useful robustness check of the results found using the NCHS data.

State demographic characteristics included in all models consists of median age, percent of the population that is black, percent of the population that is male and median income. These all come from census micro-level data compiled by the IPUMS website (Ruggles et al. 2009). State unemployment rates collected from the Bureau of Labor Statistics are included. One major concern in any analysis of U.S. crime rates through the 1980’s is the prevalence of crack cocaine and its effect on violence. Unfortunately, good national measures of crack usage are scarce (Levitt 2004). Some of the effect of crack should be captured by the year fixed effects, but many intercity homicides in the 1980’s were likely caused by the prevalence of crack. To account for this, I use two data sources. First, I include the number of Drug Enforcement Agency (DEA) arrests made regarding cocaine in the model estimation.²⁵ Data on DEA arrests only exists between 1993 and 2006. For the remaining years of the sample, I use drug related deaths reported by Morality Detail File. These combined sources produce a good control for crack but does not report an interpretable result. The per capita crack variable is included in all models.

²⁵ Obtained from the Federal Justice Statistics Resource Center (fjsrc.urban.org)

Another variable that might matter in these model specifications is the number of psychologists per state. Potentially, psychologists might migrate to states with more psychologist-friendly laws. Marcotte and Markowitz (2009) find this to not be the case, so it is not of great concern.²⁶

State duty to warn laws were compiled by the author, and a full description of each state and relevant court cases can be found in Edwards (2010).²⁷

Results

Estimation

Table 3 reports the estimations results of the effect of state *Tarasoff* laws on the natural log of NCHS homicide rates. Each model estimate is weighted by the square root of the state population, includes state and year fixed effects, demographic and economic controls, and robust standard errors clustered at the state level to allow for correlation of the error term within a state across time.²⁸ Column (1) of Table 3 estimates equation (1), column (2) estimations equation (2) and so on respectively. Table 4 replicates Table 3 using UCR-SHR data on homicides by non-strangers.

Tables 3 and 4 yield interesting results. Column (1) reports coefficients in the case where each state is coded simply as having a duty law or discretion, regardless of the origination of the law. It could possibly be the case that duty laws originating from case law (judge-made law) might not have the same effect as statutory law given the cost to finding out the current state of case law in each state. To compensate for this, column (2) in each table separates the law by its body of origin. We see that across specifications and data sources in Tables 3 and 4 that the

²⁶ Even if there were psychologist migration, it would be captured, at least in part, by state-specific time trends. See note 24.

²⁷ See note 20 for a description of the *broader duty* variable.

²⁸ The test developed by Wooldridge (2002) suggests serial correlation in the error. State level clustering is used to control for this.

simple coding of mandatory duty laws yields positive and significant results. When these laws are expanded, the law that remains significant across specifications is statutory mandatory duty law. Tables 3 and 4 report a positive and significant coefficient on the measure of mandatory duty laws created by state legislations (mandatory duty (statutory law)) suggesting that all else equal, states with statutory mandatory duty laws have on average 1.2 more homicides per 100,000 of the population compared to states with no laws.

Comparing Table 3 to Table 4, we see that in general, the significance and sign of each law does not change. We do observe, however, that the magnitude of the estimated effects of the *Tarasoff* laws increases by anywhere from 2% to 7% when I restrict homicides to homicides by non-strangers. This is consistent with the notion that these duty to warn laws apply most closely to victims where the murderer is known because those are the only types of murders reasonably affected by *Tarasoff*'s ruling given the "readily identifiable victim" standard and suggests some degree of robustness to the results.

Columns (3) and (4) in each respective table compensate for the possibility of a lag effect of duty laws. Newly created law, regardless of the venue of creation, might take time to make its presence known. In addition, each state was coded to have the law for the entire year in which it was enacted. To check the robustness of the results, each law is lagged a year. Comparing the results of the coefficients between columns (1) and (2) and columns (3) and (4) for each specification suggest that though magnitudes change slightly, signs and significance of each result does not. This suggests that if there is a lag effect, the lag effect is similar to the direct effect.

The coefficient on the discretionary duty variable is consistently negative across specifications, but insignificant. The negative sign suggests that given the opportunity to decide

when to report, therapists successfully distinguish between real threats and idle patient banter, but the large variance prohibits any sort of meaningful interpretation.

There is still another model specification that provides additional evidence of the effect of duty to warn laws. The timing of the court decisions in Tables 3 and 4 represent the decision of the highest ruling court. It is possible that *Tarasoff* laws began to alter patient and professional incentives at the trial or appellate court level thus changing the year of law uptake for states with court made law. To test this, I specify a different model where the variables *mc* and *ml* are timed to reflect the lower court ruling.²⁹ This only applies to states where the *Tarasoff* duty was discussed in the lower courts. In some cases where a *Tarasoff* duty is implied (coded as *mandatory duty likely* in the data), the lower court opinion does not discuss the *Tarasoff* duty thus the original coding remains unchanged. Tables 5 and 6 replicate Tables 3 and 4 with the *mc* and the *ml* variables recoded to reflect the timing of the lower court opinions. We see that signs and significances do not change, though magnitudes fluctuate slightly.

Robustness

The results suggest robustness across data sources (NCHS, UCR-SHR), coding of the independent variables of interest (level, lagged), and timing of court decisions. In addition, I present further evidence that the results are not particularly sensitive to slight changes in the data. One potential source of bias might be from an overly influential state that biases the results. To check for this I ran each regression 47³⁰ times dropping each time a different state from the estimation. The summary statistics of these regressions are displayed in Table 7. The means in Table 7 represent the average values of the estimated coefficients obtained from the 46 distinct

²⁹ The majority of state rulings have been made at the state supreme court level in states with appellate courts, thus the lower court is the appellate court. Adjusting timing to the lowest court level didn't yield substantially different results from the appellate court.

³⁰ See footnote 13.

regressions dropping each time a different state from the regression. Panels (1) and (2) represent the summary statistics of the coefficients of interest for the simple and expanded coding of laws. Panels (3) and (4) represent the same but for lagged laws. The dependent variable for each regression is the log of the homicide rate as reported by the NCHS.³¹ The coefficient describing the effect of mandatory duty laws varies slightly in magnitude depending on the state dropped, but the sign and significance does not change suggesting that the results are not dependent on one influential state.

Another check of robustness is to see verify that *Tarasoff* laws are not actually capturing some underlying trend in crime.³² I do this by seeing if state duty to warn laws explain the variation in other measures of crime, particularly, assaults. In general, every state sets a lofty requirement of bodily harm required to induce a therapist's duty such as, "substantial risk of imminent and serious physical injury,"³³ "serious physical harm . . . causing death,"³⁴ or "explicit threat to kill or inflict serious bodily injury."³⁵ As is often the case, law makers are concerned that new law will open the "flood gates of litigation" and be overly burdensome to the legal system. To avoid frivolous cases against therapeutic professionals, law makers have found it necessary to set an extremely high threshold for the amount of potential harm. Thus, a threat of assault would not necessarily require a therapist to report the patient, and consequently, these duty laws should have no effect on assault rates. Table 7 replicates the estimation of equations (1) – (4) where the dependent variable is the natural log of the assault rate as reported by the UCR database. As seen in Table 7, duty to warn laws do not have a significant effect on assaults

³¹ The same test was performed for the UCR-SHR data and the results were essentially the same and are available upon request.

³² In addition to the evidence presented here, three year leads of the duty to warn laws were included in each model and were found insignificant in almost every instance suggesting that the laws do not reflect some underlying trend in crime.

³³ D.C. Code § 7-1203.03(a)

³⁴ ORC Ann. 2305.51

³⁵ 59 Okl. St. § 1376 and See Edwards (2010) for each state's specific standard of harm.

suggesting that what is being captured by the duty to warn laws is not some spurious trend in crime but rather a causal relationship.

To further this falsification test, I replicate equations (1) – (4) with differing measures of crime that these duty to warn laws should not explain. The dependent variables are the natural log of the auto theft rate, larceny rate, and robbery rate as measured by the UCR. In total, 30 coefficients of interest were estimated in 12 models and only three of the duty to warn coefficients were significant at the ten percent level. This is approximately what is expected and suggests that changes in these laws are not explaining some underlying spurious trend in crime in the United States.

Another potential problem may be policy endogeneity. Typically, policy endogeneity plays a biasing role in state panels through a number of ways. One way is through some sort of political party bias. Figure 1 shows the current state of duty to warn laws in each state. As seen in Figure 1, there is no clear political line drawn for any particular type of law. Thus, there appears to be no clustering in laws by political ideology.³⁶ In addition, there appears to be little to no clustering of state duty laws by region. Each type of law is represented in each region of the United States.

The chief concern would be how each state decided its respective duty to warn laws. The laws could possibly be endogenous if they were created as response to some statewide trend in crime. This is likely not the case. *Tarasoff* and its subsequent rulings have been matter of clarification of law rather than a mechanism to combat crime. If state legislators or state judges want to appear tough on crime, they will increase law enforcement spending and the like rather than tweaking duty to warn laws. It could be the case that state policy makers react with

³⁶ For instance, Texas and Connecticut have similar duty laws but are on opposite ends of the universe politically. In addition, California, Utah, Idaho, and Massachusetts all have similar laws, but generally are polar opposites politically.

legislation to a high profile murder where psychological counseling should have played a role. If this is the case, it furthers the exogeneity of the law as long as the occurrence of the high profile murder (the shootings at Columbine, Virginia Tech, or Northern Illinois for example) is fairly close to random and does not reflect any sort of state trend in homicides. Bias could also be introduced into the model if these laws were enacted as part of a larger health care bill. This was the case with the state of Nebraska,³⁷ but as seen in Table 5, dropping Nebraska doesn't significantly change the results. Thus, it can be said with some certainty that the implementation and style of duty laws are fairly close to random.

As stated earlier, an additional test of the sensitivity of the results is the alternate timing scheme for states that enacted *Tarasoff* laws through adjudication. Every duty to warn law decided in a court was appealed and reviewed at least by the relevant state court of appeals but most often by the respective state supreme court. If we are interested in finding out at which point mental health professionals began to respond to the *Tarasoff* ruling, it is necessary to check alternate specifications. In the results presented in Tables 3 and 4, the law wasn't considered law until the state supreme court ruled,³⁸ but it is also likely that mental health professionals began responding to duty to warn laws at the lower courts' decisions. We see in Tables 5 and 6 that though the magnitude fluctuates slightly, signs and significances remain robust.

Conclusion

The effect of state duty to warn laws on homicidal activity has been debated for decades. This paper shows that all else equal, mandatory duty to warn laws cause an increase in homicides of 8.9% or 0.76 people per 100,000.³⁹ This is consistent with previous literature that suggests

³⁷ R.R.S. Neb. § 38-3132

³⁸ This of course only refers to the variables *ml* and *mc* in equations 2 and 4.

³⁹ 39.3 homicides per state per year, on average.

that worsening mental health conditions lead to more crime. Duty to warn laws change the incentives of both the patient and the doctor. The original intention of the law was to deter dangerous patients from committing heinous crimes, but what actually happened was that the law changed the incentives to the patient and the doctor such that the patient has incentive to withhold homicidal tendencies, and the doctor has incentive to not explore homicidal tendencies. In addition, these laws increase the liability to health professionals and incentivize those professionals to not treat the most at risk patients, or at very least make the current state of the law abundantly clear to the patient as to suggest suppression of the most dangerous statements leaving the psychologist in liability-free ignorance to the true mental state of the patient. As a result the mental help needed to treat the patient is foregone, and all too often violence ensues.

I find these results to be robust across a multitude of specifications and falsification tests. The policy implications are simple and fairly easily employed. A change in law to no duty or discretionary duty should cause a decrease in homicides.

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Table 1

Summary of State Duty to Warn Laws			
<i>State</i>	<i>Duty Law</i>	<i>Date Passed</i>	<i>Deciding Body</i>
Alabama	mandatory likely	1985	Court
Alaska	discretion	1986	Legislation
Arizona	mandatory	1977	Court
Arkansas	no law	--	--
California	mandatory	1976	Court
Colorado	mandatory	1987	Legislation
Connecticut	discretion	1989	Legislation
Delaware	mandatory	1988	Court
District of Columbia	discretion	1973	Legislation
Florida	discretion	1987	Legislation
Georgia	mandatory likely	1982	Court
Hawaii	mandatory likely	1996	Court
Idaho	mandatory	1991	Legislation
Illinois	discretion	1990	Legislation
Indiana	mandatory	1998	Legislation
Iowa	no law	1981	Court
Kansas	no law	--	--
Kentucky	mandatory	1986	Legislation
Louisiana	mandatory	1986	Legislation
Maine	no law	--	--
Maryland	mandatory	1989	Legislation
Massachusetts	mandatory	1989	Legislation
Michigan	mandatory	1989	Legislation
Minnesota	mandatory	1986	Legislation
Mississippi	mandatory	1991	Legislation
Missouri	mandatory	1995	Court
Montana	mandatory	1987	Legislation
Nebraska	mandatory	1980	Court
Nevada	no law	--	--
New Hampshire	mandatory	1987	Legislation
New Jersey	mandatory	1979	Court
New Mexico	no law	1989	Court
New York	discretion	1984	Legislation
North Carolina	mandatory likely	1987	Court
North Dakota	no law	--	--
Ohio	mandatory	1997	Court
Oklahoma	mandatory	2009	Legislation
Oregon	discretion	1973	Legislation

Pennsylvania	mandatory	1998	Court
Rhode Island	discretion	1978	Legislation
South Carolina	mandatory	1998	Court
South Dakota	mandatory	1978	Court
Tennessee	mandatory	1989	Legislation
Texas	discretion	1979	Legislation
Utah	mandatory	1988	Legislation
Vermont	mandatory	1985	Court
Virginia	no duty	1995	Court
Washington	mandatory	1983	Legislation
West Virginia	discretion	1977	Legislation
Wisconsin	mandatory	1988	Court
Wyoming	discretion	1999	Legislation

Notes: For a complete database of each law, including references see Edwards (2010).

Table 2

Summary Statistics			
	Mean	Min	Max
Population	5143545 (5687750)	418488	36200000
Percent Male	0.485 (.0099)	0.450	0.526
Percent Black	0.1028 (.1178)	0.0003	0.6996
Median Age	34.2103 (3.6616)	24.2	45
Unemployment	5.8302 (2.0431)	2.3	17.4
Mandatory Duty (case law)	0.1033 (.3045)	0	1
Mandatory Duty (statutory law)	0.2353 (.4243)	0	1
Discretionary Duty	0.1742 (.3794)	0	1
Mandatory Duty Likely (case law)	0.0558 (.2296)	0	1
Mandatory Duty	0.3944 (.4889)	0	1
Broader Liability	0.0694 (.2542)	0	1
Homicides by non-strangers per 100,000 of the population (UCR-SHR)	4.455 (7.1904)	0.0364	64.9364
Homicide Count (NCHS)	408.2187 (568.7693)	3	4232
Homicides per 100,000 of the population (NCHS)	8.6955 (12.4836)	0.0455	102.3556
Median Income	30740.75 (4353.809)	21387.14	44946.74
Year	-- --	1981	2006

Note: Standard deviations in parentheses

Table 3

**FE estimation of the effect of state duty to warn laws on the log of state NCHS
homicide rates**

	(1)	(2)	(3)	(4)
Mandatory Duty	0.0897** (0.0368)	-- --	0.0835** (0.0392)	-- --
Mandatory Duty (case law)	-- --	0.0452 (0.0472)	-- --	0.0275 (0.0507)
Mandatory Duty (statutory law)	-- --	0.142** (0.0477)	-- --	0.138** (0.0502)
Mandatory Duty Likely (case law)	-- --	0.0374 (0.0466)	-- --	0.0553 (0.0452)
Discretionary Duty	-0.0579 (0.0838)	-0.0370 (0.0841)	-0.0667 (0.0824)	-0.0425 (0.0825)
Broader Liability	-0.178*** (0.0348)	-0.193*** (0.0370)	-0.126** (0.0372)	-0.138** (0.0402)
Percent Male	-1.762 (1.231)	-2.104* (1.176)	-1.709 (1.235)	-1.933 (1.180)
Percent Black	0.160 (0.155)	0.196 (0.150)	0.172 (0.157)	0.217 (0.151)
Median Age	0.0145 (0.0140)	0.0196 (0.0140)	0.0157 (0.0142)	0.0214 (0.0143)
Unemployment Rate	-0.00396 (0.00868)	-0.00349 (0.00885)	-0.00211 (0.00916)	-0.00159 (0.00923)
Real Median Income	0.0000244** (0.00000828)	0.0000252** (0.00000772)	0.0000266** (0.00000847)	0.0000279*** (0.00000786)
Laws are Lagged	N	N	Y	Y

Sample Size	1287	1287	1240	1240
Adjusted R-squared	0.957	0.958	0.957	0.958

Notes: State-level clustered standard errors are in parenthesis and all models are weighted by the square root of the state population. The dependent variable is the natural log of homicides per 100,000 of the population as measured by the NCHS. The values in models (3) and (4) represent lagged laws coefficients. Each model contains state and year fixed effects, and a constructed variable of DEA cocaine arrests and drug related deaths from the Mortality Detail File. A detailed outline of mandatory and discretionary duty to warn laws can be found in Edwards (2010). * p<0.10 ** p<0.05 *** p<0.001

Table 4

FE estimation of the effect of state duty to warn laws on the log of state non-stranger UCR-SHR homicide rates

	(1)	(2)	(3)	(4)
Mandatory Duty	0.157** (0.0523)	-- --	0.153** (0.0493)	-- --
Mandatory Duty (case law)	-- --	0.227** (0.0745)	-- --	0.203** (0.0686)
Mandatory Duty (statutory law)	-- --	0.165** (0.0602)	-- --	0.180** (0.0630)
Mandatory Duty Likely (case law)	-- --	-0.0581 (0.0637)	-- --	-0.0627 (0.0661)
Discretionary Duty	-0.00525 (0.0898)	-0.0181 (0.0943)	-0.0354 (0.108)	-0.0397 (0.111)
Broader Liability	-0.122** (0.0513)	-0.143** (0.0523)	-0.102* (0.0554)	-0.127** (0.0570)
Percent Male	-6.480** (2.997)	-7.468** (2.941)	-6.443** (2.957)	-7.484** (2.905)
Percent Black	0.0900 (0.157)	0.0633 (0.155)	0.114 (0.164)	0.102 (0.159)
Median Age	0.0609** (0.0299)	0.0597* (0.0297)	0.0566* (0.0290)	0.0574* (0.0290)
Unemployment Rate	0.000644 (0.0121)	0.00230 (0.0120)	-0.000168 (0.0117)	0.000825 (0.0113)
Real Median Income	0.0000175 (0.0000108)	0.0000171 (0.0000107)	0.0000197* (0.0000115)	0.0000182 (0.0000114)
Laws are Lagged	N	N	Y	Y
Sample Size	1151	1151	1104	1104

Adjusted R-squared	0.874	0.876	0.880	0.881
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Notes: State-level clustered standard errors are in parenthesis and all models are weighted by the square root of the state population. The dependent variable is the natural log of non-stranger homicides per 100,000 of the population as measured by the UCR-SHR. The values in models (3) and (4) represent lagged laws coefficients. Each model contains state and year fixed effects, and a constructed variable of DEA cocaine arrests and drug related deaths from the Mortality Detail File. A detailed outline of mandatory and discretionary duty to warn laws can be found in Edwards (2010). * $p < 0.10$ ** $p < 0.05$ *** $p < 0.001$

Table 5

FE estimation of the effect of state duty to warn laws on the log of state NCHS homicide rates with lower court timing				
	(1)	(2)	(3)	(4)
Mandatory Duty	0.136*** (0.0379)	-- --	0.136** (0.0397)	-- --
Mandatory Duty (case law)	-- --	0.166** (0.0629)	-- --	0.164** (0.0622)
Mandatory Duty (statutory law)	-- --	0.132** (0.0426)	-- --	0.133** (0.0450)
Mandatory Duty Likely (case law)	-- --	0.0981** (0.0373)	-- --	0.0985** (0.0376)
Discretionary Duty	-0.0322 (0.0826)	-0.0336 (0.0829)	-0.0391 (0.0812)	-0.0405 (0.0816)
Broader Liability	-0.187*** (0.0334)	-0.186*** (0.0341)	-0.137*** (0.0366)	-0.136*** (0.0374)
Percent Male	-2.275* (1.138)	-2.262* (1.135)	-2.239* (1.145)	-2.225* (1.143)
Percent Black	0.172 (0.147)	0.167 (0.152)	0.188 (0.149)	0.185 (0.152)
Median Age	0.0197 (0.0137)	0.0192 (0.0139)	0.0207 (0.0141)	0.0202 (0.0143)
Unemployment Rate	-0.00480 (0.00898)	-0.00494 (0.00893)	-0.00276 (0.00943)	-0.00285 (0.00934)
Real Median Income	0.0000239** (0.00000765)	0.0000237** (0.00000776)	0.0000262** (0.00000782)	0.0000261** (0.00000791)
Laws are Lagged	N	N	Y	Y
Sample Size	1287	1287	1240	1240

Adjusted R-squared	0.958	0.958	0.958	0.958
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Notes: State-level clustered standard errors are in parenthesis and all models are weighted by the square root of the state population. The dependent variable is the natural log of homicides per 100,000 of the population as measured by the NCHS. The values in models (3) and (4) represent lagged laws coefficients. Each model contains state and year fixed effects, and a constructed variable of DEA cocaine arrests and drug related deaths from the Mortality Detail File. Court cases, in these regressions, were coded to be decided after the lower court ruled as opposed to the highest court ruling. A detailed outline of mandatory and discretionary duty to warn laws can be found in Edwards (2010). * $p < 0.10$ ** $p < 0.05$ *** $p < 0.001$

Table 6

FE estimation of the effect of state duty to warn laws on the log of state non-stranger UCR-SHR homicide rates with lower court timing				
	(1)	(2)	(3)	(4)
Mandatory Duty	0.111** (0.0547)	-- --	0.134** (0.0546)	-- --
Mandatory Duty (case law)	-- --	0.207 (0.143)	-- --	0.223 (0.144)
Mandatory Duty (statutory law)	-- --	0.0987* (0.0587)	-- --	0.123** (0.0597)
Mandatory Duty Likely (case law)	-- --	0.0223 (0.0556)	-- --	0.0488 (0.0506)
Discretionary Duty	-0.0113 (0.0914)	-0.0165 (0.0925)	-0.0308 (0.109)	-0.0358 (0.110)
Broader Liability	-0.0956* (0.0504)	-0.0924* (0.0512)	-0.0860 (0.0546)	-0.0831 (0.0558)
Percent Male	-6.794** (3.147)	-6.726** (3.144)	-6.847** (3.105)	-6.777** (3.106)
Percent Black	0.111 (0.159)	0.0933 (0.159)	0.131 (0.163)	0.118 (0.161)
Median Age	0.0711** (0.0331)	0.0683* (0.0340)	0.0664** (0.0328)	0.0639* (0.0336)
Unemployment Rate	-0.00144 (0.0119)	-0.00205 (0.0119)	-0.00216 (0.0115)	-0.00259 (0.0115)
Real Median Income	0.0000196* (0.0000111)	0.0000188* (0.0000112)	0.0000209* (0.0000118)	0.0000201* (0.0000118)
Laws are Lagged	N	N	Y	Y
Sample Size	1151	1151	1104	1104

Adjusted R-squared	0.873	0.873	0.880	0.880
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Notes: State-level clustered standard errors are in parenthesis and all models are weighted by the square root of the state population. The dependent variable is the natural log of non-stranger homicides per 100,000 of the population as measured by the UCR-SHR. The values in models (3) and (4) represent lagged laws coefficients. Each model contains state and year fixed effects, and a constructed variable of DEA cocaine arrests and drug related deaths from the Mortality Detail File. Court cases, in these regressions, were coded to be decided after the lower court ruled as opposed to the highest court ruling. A detailed outline of mandatory and discretionary duty to warn laws can be found in Edwards (2010). * p<0.10 ** p<0.05 *** p<0.001

Table 7

Descriptive Statistics for the duty to warn laws coefficients when a state is dropped

	Mean	Std. Dev.	Min	Max
	<i>(1)</i>			
Mandatory Duty	0.089	0.005	0.0718	1.03
Discretionary Duty	-0.058	0.015	-1.27	0.016
	<i>(2)</i>			
Mandatory Duty (case law)	0.045	0.007	0.005	0.066
Mandatory Duty (statutory law)	0.141	0.006	0.116	0.167
Mandatory Duty Likely (case law)	0.037	0.006	0.011	0.067
Discretionary Duty	-0.037	0.016	-0.106	0.037
	<i>(3)</i>			
Mandatory Duty	0.085	0.005	0.066	0.101
Discretionary Duty	-0.674	0.015	-0.136	0.008
	<i>(4)</i>			
Mandatory Duty (case law)	0.029	0.008	-0.012	0.051
Mandatory Duty (statutory law)	0.141	0.007	0.114	0.171
Mandatory Duty Likely (case law)	0.055	0.006	0.032	0.086
Discretionary Duty	-0.043	0.015	-0.110	0.033

Notes: This table presents the average coefficient estimated when each state is systematically dropped from the model estimated in Table 3. Thus, each row represents the descriptive statistics of the estimated coefficients of 47 regressions. Panels (3) and (4) represent lagged laws.

Table 8

The effect of state duty to warn laws on the log of UCR assault rates				
	(1)	(2)	(3)	(4)
Mandatory Duty	-0.0008 (0.053)	-- --	-0.00002 (0.050)	-- --
Mandatory Duty (case law)	-- --	-0.013 (0.075)	-- --	-0.021 (0.073)
Mandatory Duty (statutory law)	-- --	0.0067 (0.066)	-- --	0.013 (0.062)
Mandatory Duty Likely (case law)	-- --	0.0078 (0.060)	-- --	0.011 (0.057)
Discretionary Duty	-0.013 (0.035)	-0.0085 (0.038)	-0.019 (0.031)	-0.011 (0.035)
Broader Liability	-0.257*** (0.056)	-0.257*** (0.060)	-0.263*** (0.053)	-0.265*** (0.057)
Laws are Lagged	N	N	Y	Y
Sample Size	1021	1021	979	979
Adjusted R-squared	0.922	0.922	0.925	0.925

Notes: Robust standard errors are in parenthesis, and all models are weighted by the square root of the state population and clustered at the state level. The dependent variable is the log of the assault rate per state per year as measured by the UCR. Controls include percent male, percent black, median age, unemployment rates, and real median income. The values in models (3) and (4) represent lagged laws coefficients. Each model contains state and year fixed effects, and a constructed variable of DEA cocaine arrests and drug related deaths from the Mortality Detail File. A detailed outline of mandatory and discretionary duty to warn laws can be found in the Legal Appendix. * p<0.10 ** p<0.05 *** p<0.001

Figure 1

Current State Duty to Warn Laws

