The Impact of Medical Liability Reform on Texans' Access to Healthcare

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October 2017

I. Introduction

1. We have been asked by the Texas Alliance for Patient Access ("TAPA") to analyze the impact of the State's landmark 2003 medical liability tort reforms on Texas residents' access to healthcare.[1] We have also been asked to assess the likely effects of House Bill 719 ("H.B. 719"), previously before the Texas Legislature. This bill, which died in committee, would have raised the cap on non-economic damages in medical liability cases, and would have provided for further increases as the Consumer Price Index ("CPI") rises.[2]

2. Our findings reflect the latest available data on the number of direct patient care physicians – actively practicing medicine in Texas. We cite the bases for our conclusions throughout the text and in the accompanying exhibits, so that interested parties can replicate and confirm their validity.

3. Before presenting our findings, we provide a brief history of the medical liability crisis in Texas and the legislative reforms enacted in 2003.

II. Background

A. Initial Efforts to Improve Access to Healthcare by Limiting Non-Economic Damages Awards

1. In 1977, the Texas Legislature sought to reduce the cost of, and increase access to, healthcare for Texas residents by passing a series of medical liability reforms that included a cap on non-economic damages awards.[3]

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[1] Two of the authors have conducted similar impact analyses of medical liability tort reforms enacted in California. See, for example, William G. Hamm, Ph.D., H.E. Frech III, Ph.D., and C. Paul Wazzan, Ph.D., "MICRA and Access to Healthcare: By Lowering Healthcare Costs, MICRA Has Improved Californians' Access to Care," January 2014.

[2] See H.B. 719, "A Bill to Be Entitled, An Act Relating to Liability Limits in a Healthcare Liability Claim" (available at http://www.legis.state.tx.us/tlodocs/85R/billtext/html/HB00719I.htm; accessed on April 3, 2017). HB 719 proposed that when there is an increase or decrease in the CPI, the non-economic damages limit set by the 2003 Texas medical liability reform would be adjusted accordingly. The non-economic damages limit would be equal to the current limit ($250,000) multiplied by 1 plus the percentage increase or decrease in the CPI that measures the average change in the prices of goods and services between September 1, 2003, and the time damages are awarded by judgment or settlement. The bill's immediate impact would have been to raise the cap by 32.9%, to $332,222. We calculated this amount based on the text of the proposed bill and the CPI for September 2017, which was the most-recent CPI available at the time of this report. See Exhibit 1 for a detailed explanation of this calculation.

[3] "Summary of Texas Medical Professional Liability Law," Texas Medical Association (available at https://www.texmed.org/StatuteOfLimitations/, accessed on July 25, 2017).

2. Most of those reforms were later invalidated or significantly weakened by the courts. In 1988, for example, the non-economic damages cap was declared unconstitutional. Although the cap on wrongful death awards added by the 1977 legislation was partially upheld, the court ruled that it applied on a per-defendant, rather than a per-plaintiff, basis.[4] Because of these and other legal developments, the Legislature's reforms had a relatively little impact on the incidence and cost of medical liability litigation.

3. In 1995, the Texas Legislature adopted new reforms that were also intended to reduce the cost of, and increase access to, healthcare. These reforms included a requirement that plaintiffs in medical liability cases post a bond or provide an expert review of the defendant's actions within 180 days of filing a claim. The pre-suit review requirement, however, was rarely enforced and the 1995 reforms did little to achieve the Legislature's intended purpose of improving access to healthcare.[5]

4. By the late 1990s, the number of lawsuits and the size of medical liability awards in Texas had increased significantly. In 2000, an insurance-rate rollback that had been in effect since 1996 was lifted. Together, these developments set the stage for what the American Medical Association ("AMA") and many Texas commentators have called "a healthcare crisis."[6]

B. The Healthcare Crisis in Texas

1. Many commentators believe Texas's healthcare crisis lasted from the late 1990s to 2003. More precisely, the crisis continued until May 2005, some 21 months after the 2003 reforms took effect.

2. In 2003, the Legislature found that since 1995, the frequency of health care liability claims had increased at a rate that it deemed to be excessive. The Legislature concluded that the increase in liability

[4] Michael S. Hull, R. Brent Cooper, Charles W. Bailey, Donald P. Wilcox, Gavin J. Gadberry, and D. Michael Wallach, "House Bill 4 and Proposition 12: An Analysis with Legislative History," *Texas Tech Law Review*, Volume 36, Supplemental 2005, pp. 4-5.

[5] *Ibid.*, p. 5.

[6] See, for examples, James Pinkerton, "Valley doctors caught in 'lawsuit warzone,'" *Houston Chronicle*, March 4, 2001; Naomi Snyder, "The doctor will not see you now: City is low on neurosurgeons, losing obstetricians'" *Corpus Christi Caller-Times*, June 16, 2002; James Pinkerton, "Border-area physicians protest malpractice cost, Frivolous lawsuits causing crisis, doctors contend," *Houston Chronicle*, March 23, 2002; and James Pinkerton," Valley at epicenter of debate on malpractice caps," *Houston Chronicle*, August 30, 2003. It is also worth noting that representatives of the Texas Trial Lawyers Association (TTLA) also expressed concern about the crisis in access to medical care. TTLA representatives offered proposals to address the crisis, in addition to those ~~offered~~ provided by other interested parties. All sides appeared to agree that access to care was adversely affected by litigation and reform was necessary, but they differed on both the nature of the problem and how to solve it. See *The Medical Malpractice & Tort Reform Act of 2003: Hearings on Texas H.B. 4 Before the Senate State Affairs Committee*, 78th Legislature, R.S. 22-26 (April 16, 2003).

claims "…caused a serious public problem in availability of and affordability of adequate medical professional liability insurance."[7]

3. In the two years ~~prior to~~before enactment of the reforms, 14 of the 17 medical liability insurers in Texas disappeared. In some areas of Texas, there were 300 medical liability suits for every 100 doctors. While some 85% of these cases were unsuccessful, they still cost doctors approximately $20,000 to $40,000 per suit to prepare a defense and many hours away from their practices. ~~In addition~~Also, , doctors were finding it increasingly difficult to afford the high medical malpractice insurance premiums that were rising rapidly as a result of these lawsuits.[8]

4. Hospitals and nursing homes also faced substantial increases in their liability insurance costs, which inhibited their ability to maintain or expand needed health care to the communities they served. Additionally, many of these institutions experienced severe problems obtaining coverage for certain physician services, particularly in high-risk specialty areas such as obstetrics and emergency care.[9]

5. A hallmark of the crisis was the dramatic increase in the cost of obtaining medical liability insurance for both physicians and hospitals.[10] In January 2003, the Texas Hospital Association ("THA") reported that "the average hospital premium in Texas rose from $370,000 in 1995 to approximately $430,000 in 2000. Between 2000 and 2003, the average hospital premium more than doubled, reaching $870,000 in 2003."[11] As insurance premiums increased, many hospitals reported that they were unable to purchase the desired level of insurance, or that the amount of insurance available to them had decreased.[12]

6. In the short run, the increases in medical liability premiums were born by healthcare providers. Because these providers must recover their costs to stay in business, over time the increases tended to increase the cost of care to both patients and taxpayers.

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[7] Texas H.B. 4, "A Bill to be Entitled an Act Relating to Reform of Certain Procedures and Remedies in Civil Actions," effective September 1, 2003, pp. 85-86.

[8] "Ten-Gallon Tort Reform," *Wall Street Journal*, June 6, 2003.

[9] Michael S. Hull, *et al.,* "House Bill 4 and Proposition 12: An Analysis with Legislative History," *Texas Tech Law Review*, Volume 36, Supplemental 2005, p. 3.

[10] See, for example, "Texas Department of Insurance, Medical Malpractice Insurance: Overview and Discussion," April 22, 2003, p. 6, Table 1.

[11] Texas Hospital Association, "Hospital Professional Liability Study Executive Summary," 2003, p. 1. See, also, *The Medical Malpractice & Tort Reform Act of 2003: Hearings on Article 10 of Texas H.B. 4 Before the Senate Civil Practices Committee*, 78th Legislature, R.S. 21 (April 16, 2003) (testimony of Matthew T. Wall, Texas Hospital Association).

[12] Texas Hospital Association, "Hospital Professional Liability Study Executive Summary," 2003, p. 1.

7. The sharp increase in medical liability claims made many doctors unwilling to treat patients with complex or high-risk diagnoses. Disproportionately affected were pregnant women, minors, the elderly, and patients seeking care at hospital emergency rooms. Patients with a wide range of illnesses and injuries found it increasingly difficult to ~~find~~ see a local doctor willing and able to treat their medical conditions.[13]

8. In short, the anecdotal evidence indicated that the medical liability crisis was limiting healthcare services available to the public – especially residents of the State's rural areas – and it appeared that even greater shortages in the supply of doctors were on the horizon in the absence of significant medical liability reform.

C. The 2003 Reform

1. In 2003, the Texas Legislature acted to end the crisis by enacting a series of tort reforms designed to improve Texans' access to healthcare. The most important of these reforms was a stacked cap on non-economic damages awards. The cap allows a plaintiff to collect 100% of his or her economic damages plus (a) up to $250,000 in non-economic damages when one or more physicians and/or nurses are found liable for the patient's injuries; (b) an additional $250,000 if a healthcare institution, such as a hospital or nursing home, is also found liable in the same case; and (c) an additional $250,000 if a second unrelated healthcare institution is found liable.[14]

2. While the stacked cap limited non-economic damages awards, it allowed individual plaintiffs to receive significant compensation for their subjective damages – up to $750,000. No limits were imposed on awards to compensate plaintiffs for their economic damages – present and future medical bills, lost wages, and necessary household services.

3. Before the Legislature enacted the reforms, it considered (a) indexing the cap on non-economic damages to the rate of inflation, and (b) allowing exceptions to the cap. It ultimately rejected both alternatives in favor of the stacked cap, to maximize the benefits that it believed Texas residents would derive from the reforms.

4. The reforms took effect on September 1, 2003, but in some cases, their impact on Texas's appeal as a place to practice medicine was delayed. When it became evident that the Legislature would act to ameliorate the medical liability crisis, plaintiff lawyers flooded courthouses with lawsuits. During the three

[13] Rick Perry, "Tort Reform Has Had Just the Impact We Desired," *Austin American Statesman*, July 17, 2012.

[14] Texas H.B. 4, "A Bill to be Entitled an Act Relating to Reform of Certain Procedures and Remedies in Civil Actions," effective September 1, 2003, pp. 59-60, and 86.

months following the law's enactment, but before the law took effect, plaintiff lawyers filed the equivalent of 1.5 years of medical liability lawsuits in many Texas counties.[15] The number of pending lawsuits was ~~actually greater~~greater in 2004 than it was in June 2003, when the reforms were signed into law.

5. The backlog of medical liability lawsuits did not begin to diminish until late 2004.[16] At this point, new carriers began entering or re-entering the market, and carriers ~~began~~ started dropping their insurance rates to reflect the improved outlook for medical liability tort claims.[17] In May 2005, the AMA removed Texas from the list of states deemed to be in a medical liability crisis.[18]

D. The Legislature's Objectives in Enacting the Cap on Non-Economic Damages

1. By enacting the 2003 reforms, the Texas Legislature sought to reduce the number of health care liability claims, and thereby make the tort system less of a deterrent to physicians seeking to practice medicine in the state. The Legislature also intended to decrease the cost of claims~~,~~ and to better ensure that claims were more ~~-~~closely related to actual damages, without unnecessarily limiting plaintiffs' rights.[19]

2. The reforms were also designed to give physicians and hospitals access to more-affordable medical liability insurance, and thereby make affordable health care more available to Texas residents. ~~In addition,~~Also, lawmakers hoped to "reduce malpractice pressure and, as a result, increase the supply of physicians, especially obstetricians and other impacted specialists."[20] Finally, the reforms were intended to lessen the disincentives for physicians to treat high-risk patients and to discourage the practice of defensive medicine.

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[15] Stephen P. Magee and Devrim Ikizler, "Physician Per Capita Measurement Error and the 2003 Texas Medical Malpractice Reforms: Supply Effects on Existing Physicians Are Rapid and Larger Than on New Physicians," April 22, 2014, p. 5.

[16] *Ibid.*

[17] Texas Department of Insurance, *2004 Annual Report*, Part I Report of Program Activities, p. 2 (available at http://www.tdi.texas.gov/reports/documents/04annual1.pdf; accessed on July 25, 2017).

[18] Janet Elliot, "AMA Takes Texas Off Its Liability Crisis List," *Houston Chronicle*, May 17, 2005 (available at http://www.chron.com/news/houston-texas/article/AMA-takes-Texas-off-its-liability-crisis-list-1479518.php; accessed on July 25, 2017).

[19] Texas H.B. 4, "A Bill to be Entitled an Act Relating to Reform of Certain Procedures and Remedies in Civil Actions," effective September 1, 2001, pp. 86-89.

[20] *Ibid.*

III. Analytical Framework and Methodology

A. Analytical Framework

1. Holding income constant, the ability of an individual to obtain needed medical care depends primarily on two factors: (1) the supply of physicians and other healthcare providers in his or her community; and (2) the cost of care. For those individuals with high-risk diagnoses, such as pregnancy complicated by diabetes or high blood pressure, access to needed medical care will depend on a third factor, as well: the willingness of a physician in the community to accept the individual as a patient, and thereby assume the risk of an unfavorable treatment outcome. Such an outcome is often followed by a lawsuit claiming that the result was due to medical error.

2. A state's medical liability tort system can affect all three of these factors, and therefore can have a significant influence on individuals' and families' access to quality healthcare.

1. How the Tort System Affects Access to Healthcare

3. The medical liability tort system affects the supply of healthcare providers by influencing the state's relative appeal as a place to practice medicine. In states where plaintiffs can obtain unlimited awards at trial for subjective damages, plaintiffs with marginal or non-meritorious claims have a strong economic incentive to allege medical error and file suit, and their attorneys have considerable leverage in obtaining large settlements from insurance companies for these dubious claims. Not only will such an unfettered system require providers to allocate a greater portion of their revenues to medical liability insurance premiums; it will also cause physicians to spend more time in depositions, trials, and meetings with their counsels, meaning they will have less time available to practice medicine. It will also make providers more vulnerable to the reputational damage that accompanies a medical liability lawsuit, regardless of whether the suit has merit or is successful.

4. Because of what they perceive to be a state's more-hostile tort liability environment, some physicians will choose to withhold their services from state residents. They will do so by (a) rejecting patients with high-risk diagnoses;[21] (b) changing the scope of their practices from high-risk specialties (*e.g.,* obstetrics) to

[21] For instance, a 2003 (pre-reform) Texas Medical Association survey found obstetricians electing not to see pregnant patients who previously had a Cesarean section or who had a history of high blood pressure; orthopedic surgeons who chose to stop performing hip and knee replacements for patients with arthritis, or to stop accepting patients with neck or back problems; internists who asked other doctors to see patients with chest pains or complications from diabetes; anesthesiologists who elected to stop treating children; and geriatricians who delayed sending patients with complex problems to a nursing homes and instead kept them in a higher-cost hospital longer than otherwise necessary.

relatively low-risk specialties (*e.g.,* gynecology);[22] (c) shifting the location of their practices within the state from low-income or rural areas to higher-income urban areas where it is easier to recoup higher medical liability insurance premiums from patients; (d) moving their practices to states with a more-benign medical liability system; or (e) taking early retirement and no longer seeing patients. For the same reasons, new doctors will be deterred from establishing their practices or accepting residencies in states with more-permissive tort systems. In each case, the supply of healthcare providers will go down for state residents and access to healthcare will suffer.

2. How the Tort System Affects the Cost of Healthcare

5. The medical liability tort system also affects the cost of care, both directly and indirectly. The direct effect is obvious: as the tort system encourages more lawsuits, especially non-meritorious lawsuits, the higher cost of awards and settlements will drive up medical liability insurance premiums. The increased costs eventually will be passed along to patients, in the form of larger medical bills, higher health insurance premiums, or both.[23]

6. Far more important, but less obvious, is the indirect effect of the medical liability tort system on healthcare costs. As healthcare providers become more vulnerable to lawsuits, they will seek to insulate or better defend themselves from these lawsuits by making greater use of what is commonly known as "defensive medicine." This term refers to the practice of ordering diagnostic tests or treatments that may not be in the patient's best interest or may not improve treatment outcomes, but which will make the physician less vulnerable to lawsuits. Defensive medicine drives up the cost of healthcare to patients and taxpayers without necessarily improving the quality or results of that care. As healthcare becomes more expensive, more families will find themselves unable to afford care.

7. There is an extensive scholarly literature that reports on attempts to quantify the impact of the medical liability tort system on the practice of defensive medicine. The most widely cited of these studies finds that direct reforms of the tort system – mainly the use of caps to limit awards for non-economic, or subjective, damages – are associated with a 4.2% reduction in healthcare expenditures on elderly patients

[22] See, for example: William F. Rayburn, "The Obstetrician-Gynecologist Workforce in the United States: Facts, Figures and Implications, 2017," American Congress of Obstetricians and Gynecologists, p. 87 ("In some states, for maternal–fetal medicine specialists, the cost of liability insurance has become prohibitive. Quoted premiums in some states, such as New Jersey, exceeded $300,000 for a mature policy with a per claim limit of $1 million and an aggregate of $3 million. *Specialists in those states no longer attend deliveries and instead confine their practices to consultative services.*" emphasis added).

[23] Some of the additional costs will be passed along to taxpayers who fund federal and state healthcare programs.

who have suffered heart attacks.[24] Despite this significant reduction in expenditures, however, the study found no increase in adverse medical outcomes.[25] In other words, tort reform was found to reduce the cost of care without harming patients.

8. The reduction in total healthcare expenditures resulting from non-economic damages caps may be more or less than 4.2% for diagnoses other than heart attacks. To put the magnitude of the potential savings from caps in context, we note that 4.2% of Texas's healthcare spending in 2015 amounted to more than $1.8 billion.[26]

A. Bill, you might want to allude to the NY Times article, "A Fear of Lawsuits Really Does Seem to Result in Extra Medical Tests," http://www.tapa.info/assets/a-fear-of-lawsuts-.pdf

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~~9.~~1. In this report, we focus primarily on the impact of Texas's 2003 medical liability reforms on the *supply of physicians and other healthcare providers,* and their willingness to treat high-risk patients. We will analyze the reforms' effect on the *cost of care* in a subsequent report.

B. Methodology

1. Most scholars who have studied the effects of the medical liability tort system on physician behavior appear to agree that, other things being equal, an increase in the vulnerability of healthcare providers to lawsuits will reduce the supply of physician services. This agreement is fully in accord with well-established principles of economics. Where there is disagreement among scholars, it has to do with the importance of the tort system, relative to other factors that can affect the supply of physicians.

2. The purpose of our analysis is to determine whether and by how much the 2003 Texas medical liability reforms increased the supply of physicians in Texas. To accomplish this objective, we compare the change in the per-capita supply of physicians during the - crisis period with the corresponding change after the reforms took effect.

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[24] Daniel P. Kessler and Mark B. McClellan, "Medical Liability, Managed Care, and Defensive Medicine," National Bureau of Economic Research Working Paper 7537 (February 2000), pp. 16 and 29.

[25] *Ibid.*

[26] Total health care expenditures in Texas for 2015 were $42.9 billion. See Texas Comptroller of Public Accounts, *Texas Health Care Spending Report Fiscal 2015*, p. 2 (available at https://comptroller.texas.gov/economy/docs/96-1796.pdf; accessed on July 25, 2017).

3. We define the " crisis period" as the years 1997 to 2005. We selected 1997 as the beginning of the pre-reform crisis period, even though there is evidence that the so-called crisis began earlier in the 1990s, for reasons of data availability. We were not able to obtain reliable, comparable data on the number of practicing physicians in Texas for years before 1997.

4. We selected 2005 as the end of the " crisis period" for several reasons. Pending lawsuits fell below 2003 volume. The number of direct patient care physicians that left practice peaked. The number of physicians insured by the Joint Underwriting Association (JUA), the state insurance pool of last resort, declined for the first time in 3 ½ years. All of the major physician liability carriers cut their rates. New carriers entered the market. Consequently, in May 2005, the American Medical Association removed Texas from its list of states in medical liability crisis.

5. ~~As discussed below, however, the data strongly suggest that the 2003 reforms took longer to affect physician perceptions and behavior in rural areas. For this reason, we compare the pre-reform and post-~~

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6. To measure the effect of the 2003 reforms on the supply of physicians, we compare the rate of growth in the number of licensed doctors before and after the reforms, relative to the change in the state's population. It is necessary to relate the change in supply to the change in population (that is, make the comparison on a per-capita basis), because the principles of economics hold that other things being equal, an increase in demand for health care stemming from a growing population will call forth an increase in the supply of healthcare providers. If the rate of growth in the number of physicians per capita increased after the reforms took effect, it provides *prima facie* evidence that the reforms were effective in achieving the Legislature's intended purpose of improving access to health care for Texas residents. If, however, the rate of growth in the number of physicians per capita did not increase or went down after the reforms took effect, it would provide *prima facie* evidence that the reforms did not achieve the Legislature's purpose because other factors more than offset the reforms' expected positive effect on supply.

7. We readily acknowledge that factors other than liability risk affected the locational decisions of health care providers, both before and after the 2003 reforms were enacted. For example, Texas' economy generally out-performed the U.S. economy during both periods, making the state relatively more attractive as a place to live and practice medicine. Also, the growth of academic medical centers in Austin and other Texas cities may have attracted physicians to the state independently of medical liability reforms. Other

factors unrelated to liability risk tend to discourage physicians from setting-up their practices in Texas, such as the State's highest-in-the-nation uninsured rate[27] and its extremely low Medicaid payment rates.[28]

8. In our opinion, however, these other factors, by themselves, cannot explain the results from the data analyses reported below. Some of these other factors, such as the relatively stronger performance of the Texas economy, were present in both the pre- and post-reform periods. Other factors are, themselves, strengthened or weakened by liability risk. For example, research-oriented physicians who wish to continue providing patient care on a part-time basis will be more likely to locate or re-locate to an academic medical center in, say, Austin, than in Minneapolis or Baltimore, to the extent that the 2003 reforms reduce healthcare providers' vulnerability to non-meritorious medical liability lawsuits. Even with these qualifications, it is impossible to rule out the possibility that the results from our data analysis overstate the effect of the 2003 reforms on physician supply.

9. It is also possible, and we believe more likely, that our results *understate* the reforms' impact. As demonstrated later in this report, by reducing their vulnerability to non-meritorious lawsuits, the reforms increased the willingness of physicians to treat patients with high-risk or complex diagnoses – a benefit of reform that is not captured by statistics on physicians per capita. Nor would these statistics capture an increase in the hours worked by physicians because of their reduced vulnerability.

10. In short, we believe the results of our analysis provide a meaningful and reliable measure of the 2003 reforms' impact on the supply of physicians in Texas, although the size of the impact may be somewhat larger or smaller than what our data show it to be.

C. Data

1. ~~In order to~~To assess the effects of the 2003 reforms on the number of licensed physicians in Texas, we analyzed data from the Texas Medical Board ("TMB"), as well as data from the Texas Department of Insurance ("TDI"), the Texas Medical Association ("TMA"), and the Texas Hospital Association ("THA").

[27] Jessica C. Barnett and Edward R. Burchick, United States Census Bureau, "Health insurance coverage in the United States: 2016," September 12, 2017 (Report Number P60-260), Table 6. (Accssed at https://www.census.gov/library/publications/2017/demo/p60-260.html?eml=gd&utm_medium=email&utm_source=govdelivery)

[28] Federal Register, Volume 80, No. 227, Wednesday, November 25, 2015 Notices, pages 73779-73782, Department of Health and Human Services: Table 1. Federal Medical Assistance Percentages and enhanced Federal Medical Assistance Percentages, Effective October 1, 2016 through September 30, 2017 (Fiscal Year 2017).

We also relied upon publicly available sources from the relevant time periods to help us interpret the data in an appropriate context.

2. The TMB provided us with an Excel file that contains data for the years 2002-20176 regarding the number of physicians in Texas, as well as their practice address, specialty, and age, and whether they were engaged in direct patient care.[29] To create a data set that would also include information for the pre-reform crisis period, we expanded the Excel file to include data for the years 1997-2001, using PDF files maintained on the TMB website. The final data set that we analyzed for the purposes of this study thus includes data for all active, direct patient care physicians practicinglicensed in the State of Texas during the years 1997-20176.[30]

3. We considered, but chose not to use, data published by the Texas Department of State Health Services ("TDSHS").
We found their data inconsistent, and filled with
numerous data entry errors regarding city, county, and zip code. Moreover, the 2002 TDSHS data omits 586 in-state, active, direct patient care physicians simply because the physician's medical sub-specialty was unspecified. Within two years, the corrected information appears on the TMB physician file. However, the changes were not made retroactively on either the TMB or TDSHS file. We cleaned up these coding errors by using an SQL May 2018 database and comparing physician specialty for all unspecified DPC physicians ever licensed in Texas.

IV. DSHS claims that they measure physicians by practice address, and if a practice address doesn't exist they use a mailing address. That simply isn't true. They use the county designation on the master database. This became obvious when looking at Rockwall county and seeing that DSHS counted almost twice as many physicians than the actual total. The county designation on TMB's database would support that, but when using SQL to match all practice zip codes with the appropriate county, we noticed that DSHS numbers were way-off. When a zip code did not return a city or county, we manually

[29] The TMB is the statutory body that regulates the practice of medicine in Texas. It collects and maintains detailed data concerning physician demographics, status of practice, location, complaints, compliance, litigation, and enforcement.

[30] In 2010, the TMB modified how "active but not in practice" physicians were classified by including those physicians with a "Practice Time Code" of "N/A." Because we were unable to extend this modification to the TMB's PDF files, we excluded "active but not in practice" physicians based only on the TMB's original classification (*i.e.,* "Registration Status Code" of "Active Not Practicing") for all years. We were not able to determine whether the percent of total licensed physicians categorized as "active but not in practice" under the new classification was materially different in the pre-and post-reform periods, but we believe this percent to be immaterial.

looked up the address and corrected the zip code. These data entry errors occurred roughly 100 times per year.

V. For instance, in 2002 the TMB data file showed 22 active, direct patient care physicians with a practice address in Dallas, Texas, that DSHS erroneously counts in Rockwall County. Oddly, a Galveston physician appears in Rockwall County. The county line did not change. These were simply entry errors.

~~3.~~

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1. Some researchers believe the TMB data are inferior to the TDSHS data because they include administrators, researchers, and other categories of physicians that may not be fully engaged in patient care.[31]

4.2. To address this concern, we only counted direct patient care physicians with an active Texas practice. Omitted from the count are teachers, administrators, researchers, residents, fellows, and those physicians racticing in a VA hospital. Arguably, ~~practitioners who provide direct patient care – particularly to sub-categories of patients who are under-~~ medical school faculty and residents should have been included in the count because they also see patients. However, we took the conservative approach and excluded them from the count of direct patient care hysicians.

~~5.~~3. Some critics of the TMB data also claim that doctors who do not themselves pay medical liability insurance premiums (*e.g.,* medical school faculty and doctors employed by the Department of Veterans Affairs) are not likely to be influenced by tort reform. We believe this argument is invalid because it misses a key benefit from tort reform, as perceived by doctors themselves. High medical liability insurance premiums do, indeed, deter some physicians from locating their practices in states lacking effective caps on non-economic damages awards. For many doctors, however, an even greater deterrent is the prospect of being unjustly sued and the reputational and lost-time costs that go with it. These providers are also likely to find post-reform Texas a more attractive place to practice medicine, even though they do not appear to

[31] See, for example, David A. Hyman, Charles Silver, Bernard Black, & Myungho Paik, "Does Tort Reform Affect Physician Supply? Evidence from Texas," *International Review of Law and Economics,* 42 (2015) 203–218 (henceforth, "Hyman, *et al.*").

benefit from lower medical liability insurance premiums.[32] An increase in the number of such providers would not be picked-up by the TDSHS data.

6.4. In sum, while the TMB data have some limitations, as do all data sets, its coverage and availability make it a reasonable and valid choice for analyzing the impact of the 2003 reforms on the supply of active, direct patient care physicians in Texas.

IV.VI. The Impact of the 2003 Reforms on Access to Healthcare

1. In general, we find that the data validate the Texas Legislature's expectations when it enacted HB 4, as well as the claims made on the law's behalf in various news reports. Indeed, the limits on non-economic damages have led to a significant increase in the number of physicians per capita in the State, thereby increasing Texas residents' access to healthcare.

A. Licensing

1. The influx of new doctors following the reforms was so large that it overwhelmed the TMB.[33] In 2007, the TMB reported that it had licensed 10,878 physicians since 2003, up from 8,391 in the preceding four-year period. In fact, the TMB issued 980 medical licenses at its meeting in August 2007, a record number that raised the count of doctors in Texas to 44,752. Even with the unprecedented rate of approvals, there remained a backlog of nearly 2,500 physician applications awaiting processing.[34]

2. The TMB reported in 2012 that it had licensed a record 3,630 new physicians. It attributed the increase in the rate at which new physicians were licensed to the reforms passed in 2003.[35]

3. To the extent that new licensees were offset by doctors allowing their licenses to lapse, there would be no improvement in access to healthcare. Hence, we must look at how the total number of licensed physicians changed, relative to the change in population, after the reforms took effect.

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[32] Even non-payers benefit financially from a reduction in the cost of the medical liability tort system because more of their total compensation will be paid to them as salaries and benefits, rather than redirected to insurance companies or self-insurance reserve accounts.

[33] See, for example, "Influx of Doctors Overwhelms Texas Board," *The New York Times*, July 9, 2007.

[34] Ralph Blumenthal, "More Doctors in Texas After Malpractice Caps," *The New York Times*, October 5, 2007.

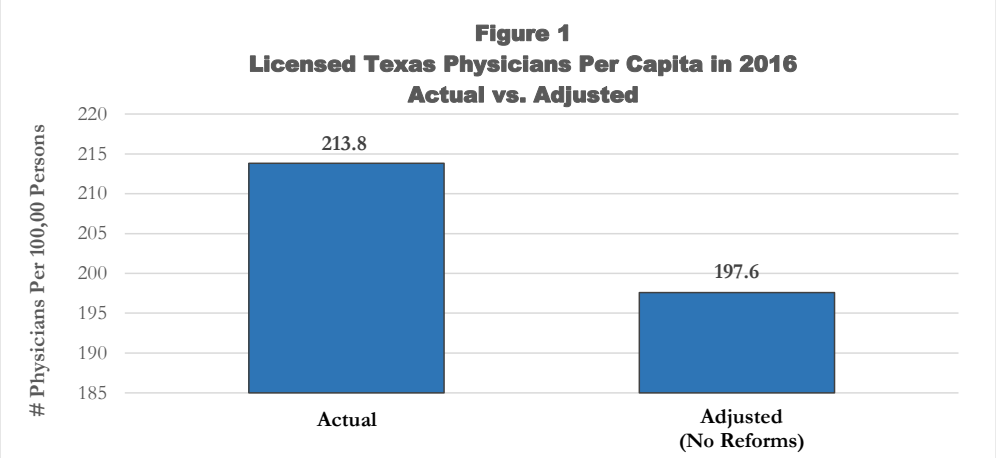
[35] "Healthy Signs: Record Number of New Docs is Good News for East Texas," *Longview News-Journal*, September 25, 2012. See, also, Ronald M. Stewart, Molly West, Richard Schirmer, and Kenneth R. Sirinek, "Tort Reform Is Associated with Significant Increases in Texas Physicians Relative to the Texas Population," *Journal of Gastrointestinal Surgery*, Vol. 16, No. 10 (October 2012), pp. 1-11.

B. Rate of Increase in the Number of Physicians Per Capita

1. Access to healthcare in Texas, as measured by the number of physicians per capita, increased after the passage of the 2003 reforms at a rate exceeding the corresponding rate of increase in the pre-reform crisis period.

2. Exhibits 2 and 3 show the year-over-year growth in the number of in-state ~~licensed~~, direct patient care physicians in Texas during the pre- and post-reform periods. The data presented in Exhibit 2 show that the number of Texas in-state,- direct patient care physicians ~~licensed physicians in Texas~~ increased by 55.5% between 2003 and 2016. If, instead, the number of these physicians per capita had continued to grow at the pre-reform rate (0.93%), the increase would have been only 43.7%.[36] Thus, the data suggest that by 2016, the reforms had increased the number of physicians serving Texas residents by 11.8 percentage points.[37]

3. Figure 1 compares the actual number of physicians per capita in 2016 with what the ratio would have been if the number had grown at the pre-reform rate.



NOTE: The adjusted number of licensed physicians per capita assumes that the per capita number would have continued to grow at the pre-reform (1997-2002) rate.

[36] This is our estimate of physician population growth in Texas if the 2003 reforms had not occurred (the "adjusted number of physicians"). This calculation is explained in detail on Exhibit 2.

[37] Our conclusion differs from the conclusion reached by Hyman *et al.* The difference may be explained by their decision to use a data set that excludes some physicians who provide direct patient care. It may also be because Hyman *et al.* do not compare the post-reform period to the pre-reform crisis period, but rather use 1980-2002 as the base period, thereby diluting the effects of the crisis on physician supply.

C. Medical Specialties

1. Our analysis of the 2003 reform's impact on the number of physicians in various medical specialties is presented in Exhibit 4. Our findings are summarized in the following paragraphs.

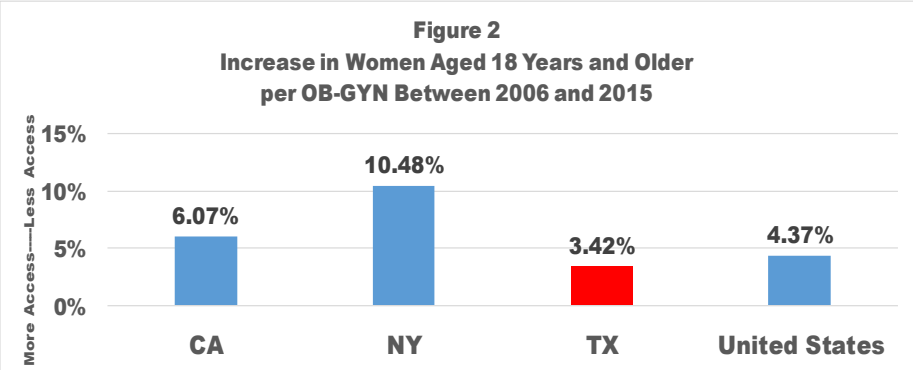
2. Cardiology: The number of cardiologists increased by 34.5% between 2003 and 2016. The average annual per capita growth rate for this important specialty during the post-reform period (2.3%) was more than double the pre-reform crisis period rate of growth (0.9%).

3. Obstetrics-Gynecology: In contrast, the number of OB/GYN specialists grew by only 1.7% between 2003 and 2016. A comparison of the pre-reform and post-reform average annual per-capita growth rates shows that the rate was higher in the pre-reform period (0.4% versus 0.1%). We believe, however, it would be a mistake to interpret this slow-down in the per-capita growth rate as evidence that the reforms have not had a favorable impact on Texan's access to OB-GYN physicians. In fact, other data indicate that since 2006, Texas has added more direct patient care OB/GYNs than any other state, including more-populous California.[38]

4. Texas's success in attracting OB-GYN specialists can be reconciled with the slow-down in the per-capita growth rate when we take nationwide trends into account. During the post-reform period, the total number of new OB/GYN specialists in the United States has failed to keep pace with the growing number of women of child-bearing age. As a result, the average state has seen the number of child-bearing-age women per OB-GYN specialist go up.[39] As Figure 2 shows, although Texas has not bucked this nationwide trend, it has fared significantly better than most other states in attracting and retaining OB-GYNs.

[38] William F. Rayburn, "The Obstetrician-Gynecologist Workforce in the United States: Facts, Figures and Implications, 2017," American Congress of Obstetricians and Gynecologists, "Table 2. Interstate Relocation Patterns of Obstetrician-Gynecologists Between 2006 and 2015," pp. 17-18. Some 1,826 new obstetricians were added nationally, with 21.4% of them going to Texas. Texas added 390, California added 265, and New York (a state without caps) lost 141 OB/GYNs.

[39] *Ibid.*



5. While the child-bearing-age-women-to-OB-GYN ratio has increased by 4.37% for the US as a whole (and by 10.48% in New York, where there is no cap on non-economic damage awards), it has increased by only 3.42%, or 22% less than the national average, in Texas.[40] The data suggests, therefore, that the 2003 reforms *have* helped Texas compete more effectively for a relatively small pool of OB-GYNs.

6. Emergency Medicine: The emergency medicine specialty experienced the most significant percentage growth after the 2003 reforms. During the 2003-2016 period, the number of emergency medicine physicians increased by 120.3%. Thus, for every 100,000 persons in Texas, there were an additional 7.5 emergency medicine physicians in the post-reform period. The average annual rate of per-capita growth for this specialty during the post-reform period (6.3%) was two-thirds higher than the corresponding rate for the pre-reform crisis period (3.8%).

7. Anesthesiology: The anesthesiology specialty saw a 23.7% increase in the number of physicians per capita between 2003 and 2016. The average annual per-capita growth rate in the post-reform period was more than double the pre-reform rate (1.6% vs. 0.7%).

8. Neurosurgery: The number of physicians in the neurosurgery specialty increased on a per-capita basis by 19.6% between 2003 and 2016. During the pre-reform period, the number of neurosurgeons per capita grew slightly (0.5%), but in the period following the reform the growth rate almost tripled (1.4%).

[40] *Ibid.*

9. Pediatric Surgery: The pediatric surgery practice also grew rapidly following the 2003 reforms. After going down during the pre-reform crisis period, the number of pediatric surgeons per capita increased by 49.7%.

10. Orthopedics: The number of orthopedists per capita *declined* during the five years ending in 2002, and then increased 8.1% following the 2003 reforms.

11. Primary Care: Between 2003 and 2016, the number of primary care physicians per capita increased by 10.1%. The average annual per-capita growth rate for this specialty during the pre-reform crisis period (1.4%), however, exceeded the post-reform growth rate (0.7%).

12. Re-cap. Figure 3 displays the trends described above. It shows that following the 2003 reforms, the rate of increase in the per-capita supply of doctors in Texas accelerated for six of the eight specialties analyzed. As Figure 4 shows, four of these six specialties – Cardiology, Neurosurgery, Pediatric Surgery, and Orthopedics – are among the five most vulnerable to medical liability lawsuits, and therefore pay the highest medical liability insurance premiums. These are the specialty areas we would expect to derive the most benefit from the 2003 reforms.

Figure 3
Average Annual Change in the Number of Physicians Per Capita by Specialty

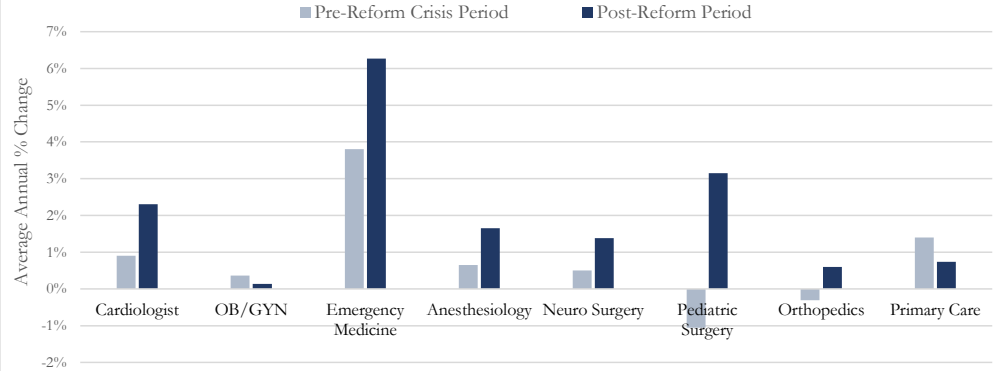
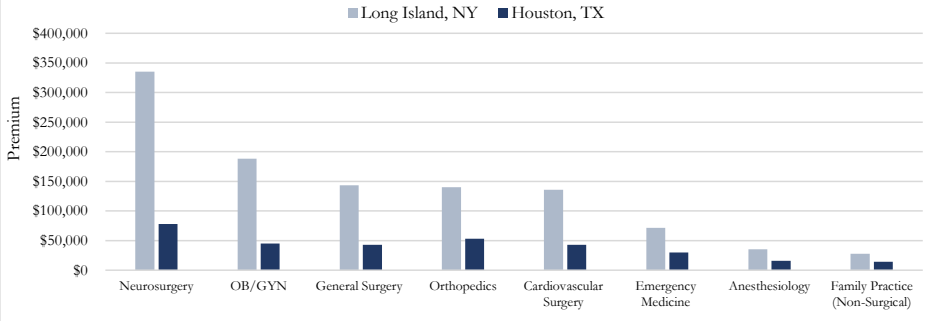


Figure 4
Medical Liability Insurance Premiums
Long Island, NY (Non-Reform) vs. Houston, TX (Reform)



13. Two of the eight specialties analyzed did not show an increase in the per capita growth rate after the 2003 reforms – Primary Care and OB-GYN. It is not surprising that Primary Care did not show an increase. It is the specialty that is *least* vulnerable to medical liability lawsuits, and therefore least likely to benefit from tort reform. In contrast, OB/GYN is one of the specialties that is most vulnerable to medical liability lawsuits. As explained above, however, the failure of this specialty's per-capita growth rate to accelerate after the reforms took effect is explained by nationwide trends, which almost certainly obscured the favorable effect of the reforms on the supply of OB-GYN specialists. Indeed, Texas added more OB/GYNs during the 2006-2015 period than any other state in the nation.

D. Licensed Physicians in Rural Areas

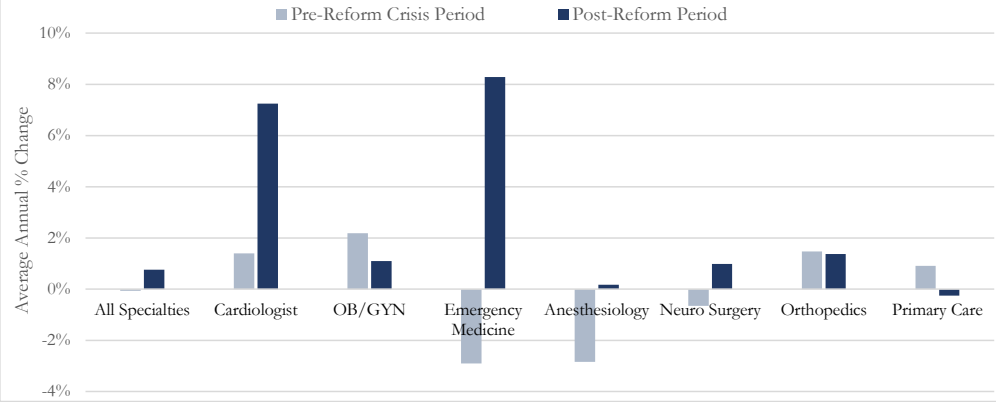
1. Exhibit 5 further analyzes the data on medical specialists and considers physicians working in rural areas of Texas, where widespread access to healthcare, particularly to certain types of specialists, has historically been more difficult.

2. When 2002 is used as the end-date for the pre-reform crisis period, the results of the data analysis are mixed. The average annual change in the per-capita number of rural-based Cardiologists, Emergency Medical Physicians, and Neurosurgeons was significantly greater in the post-reform period than in the pre-reform crisis period. Other specialties, such as OB/GYN, Anesthesiology, Orthopedics, and Primary Care showed no improvement following the reforms.

3. In analyzing the TMB data, however, we noted that in 2003, the number of physicians per capita in rural areas declined or remained unchanged for every specialty. In contrast, the number of physicians per capita in *non*-rural areas increased in 2003 for every specialty. This suggests that the benefits from medical liability reform took longer to reach rural areas, due to the relatively greater difficulties involved in establishing a successful practice in these areas, and as a result, rural areas were still experiencing the effects of the medical liability crisis in 2003. When we re-defined the pre-crisis reform period for rural areas to include 2003, we find that the results are fully consistent with the statewide results: the rate of increase in the number of physicians per capita was higher in the post-reform period for all specialties except OB-GYN, Orthopedics, and Primary Care. As we noted earlier, (1) the Primary Care specialty is among the least vulnerable to medical liability lawsuits and would therefore be expected to show the least benefits from medical liability reform, and (2) the post-reform slow rate of growth in OB-GYN physicians is consistent with nationwide trends, and almost certainly masks the favorable impact of the reforms on this specialty.

4. Figure 5 shows the pre- and post-reform rates of change for each specialty when 2003 is used to mark the end of the pre-reform crisis period.

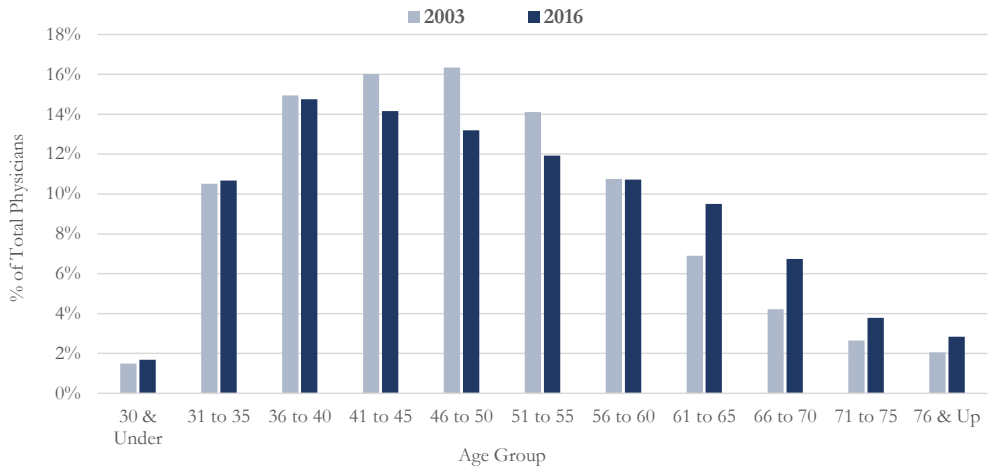
Figure 5
Average Annual Change in the Number of Rural Physicians Per Capita, by Specialty



E. Experience of Licensed Physicians in Texas

1. The TMB maintains data on the age of licensed physicians in Texas. As Figure 6 illustrates, these data show that between 2003 and 2016, there was a shift in the age distribution toward older physicians (over the age of 55). This may mean that the 2003 reforms induced some physicians to delay their retirement and continue practicing medicine. To the extent this occurred, the reforms have given Texas residents greater access to more-experienced physicians and enabled more Texans to continue seeing doctors with whom they have established a satisfactory long-term relationship.

Figure 6
Age Distribution of Texas Physicians: 2003 vs. 2016



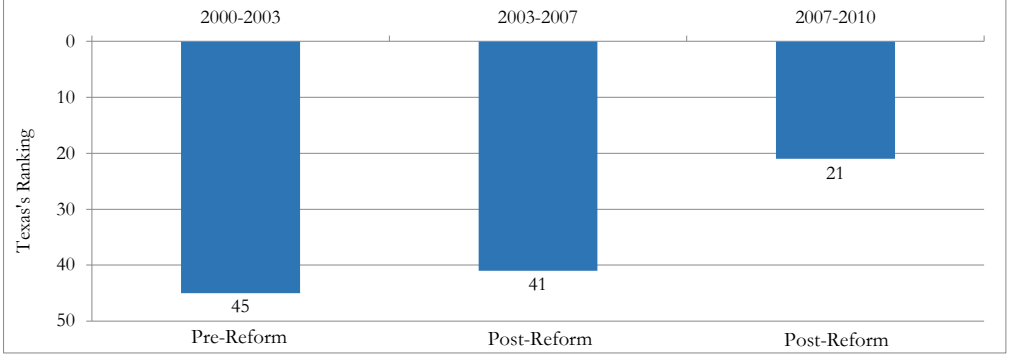
F. Texas's National Ranking

1. The AMA ranked Texas 45th in the nation in terms of physicians per capita for the years 2000 to 2003.[41] As Figure 7 shows, after the 2003 reform Texas moved up to 41st in the AMA rankings for the

[41] Physician Characteristics and Distribution in the US, *Dept. of Physicians Practice and Communications Information, Division of Survey and Data Resources, American Medical Association*, 2003.

2003-2007 ~~period, and~~period and rose to 21st for the 2007-2010 period.[42] (These rankings cover all 50 states plus the District of Columbia.)

Figure 7
Texas's Physicians-Per-Capita National Ranking



2. By 2017, Texas's appeal to physicians had improved to such an extent that Physicians Practice, a practice management firm, ranked the State second best in the nation as a place to practice medicine.[43]

G. Texas's Success in Retaining Medical Students

1. In 2014, Texas retained approximately 60% of the physicians who had completed an in-state undergraduate medical education program~~s~~. Texas' retention rate ranked second highest in the nation, bested only by California.[44] That same year, Texas retained 80.6% of physicians who completed both their undergraduate and graduate medical education in the State – the third highest retention rate in the U.S.[45]

[42] Physician Characteristics and Distribution in the US, *Dept. of Physicians Practice and Communications Information, Division of Survey and Data Resources, American Medical Association*, 2012 and prior editions.

[43] Physicians Practice, "2017 Best States to Practice: The Top Five" (http://www.physicianspractice.com/best-states-practice/2017-best-states-practice-top-five, accessed October 17, 2017).

[44] Association of American Medical Colleges, "2015 State Physician Workforce Data Book," November 2015, available at https://members.aamc.org/eweb/upload/2015StateDataBook%20(revised).pdf. See Figures 4.1 and 4.2, and Tables 4.1 and 4.2.

[45] Association of American Medical Colleges, "2015 State Physician Workforce Data Book," November 2015, available at https://members.aamc.org/eweb/upload/2015StateDataBook%20(revised).pdf. See Figure 4.4 and Table 4.4.

H. Willingness of Physicians to Treat High-Risk Patients

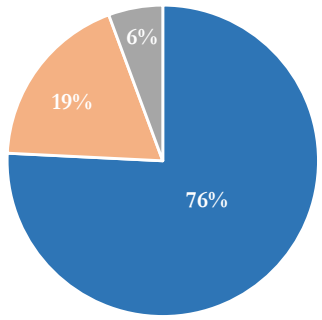
1. In the aftermath of the reforms, Texas physicians were far more willing to treat complex or high-risk cases than they were during the pre-reform crisis period.

2. The Texas Medical Association conducted surveys of physician attitudes in 2003, 2004, 2006, 2008, and 2010 (see Exhibit 7). Among other questions, physicians were asked:

In the past two years, have you begun denying or referring complex or ~~high risk~~high-risk cases?	Since September 1, 2003, have you begun denying or referring complex or ~~high risk~~high-risk cases?

3. Of the 1,108 respondents to the 2003 survey, 60.7% reported that in the last two years of the pre-reform crisis period, they had begun refusing to treat or referring complex or high-risk cases. As Figure 8 shows, 94.4% of these respondents said "professional liability pressures" were either a "very important" (75.8%) or a "somewhat important" (18.6%) factor accounting for their actions.

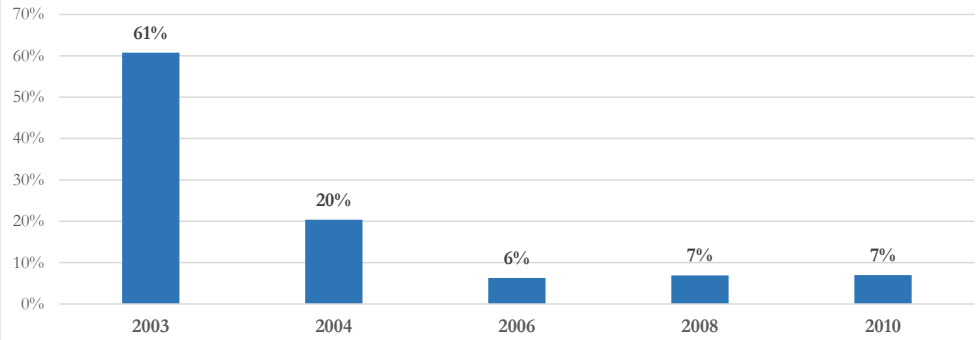
Figure 8
Importance of Professional Liability Pressures in Explaining Physicians' Decision to Begin Denying or Referring Complex or High-Risk Cases (2003)



Very Important Somewhat Important Not Important

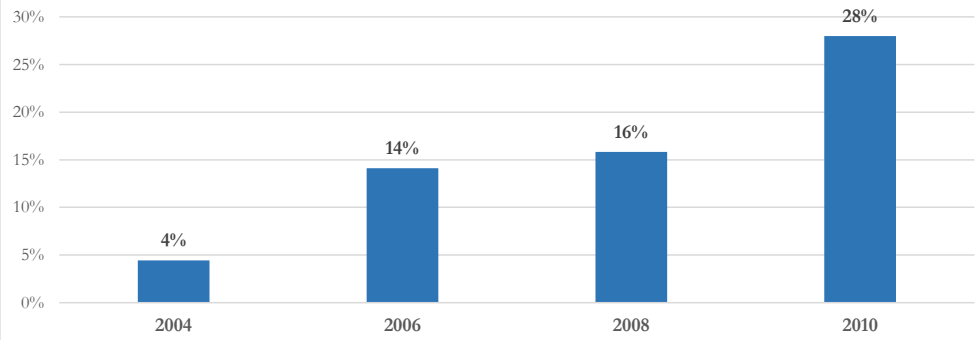
4. After the cap took effect, the share of respondents that began refusing to treat or refer complex or high-risk cases dropped to 20% in 2004, and to 7% in 2010. These results are shown in Figure 9.

Figure 9
% of Respondents Who Began Denying or Referring Complex or High-Risk Cases



5. Following the establishment of the cap in 2003, physicians were asked if they had "[b]egun accepting complex or ~~high risk~~high-risk cases . . . [they] previously referred or denied."[46] As Figure 10 shows, the percent of respondents who answered "yes" rose from 4% in 2004 to 28% in 2010.

Figure 10
% of Respondents Stating That They Had Begun Accepting Complex or High-Risk Cases They Previously Referred or Denied



[46] Texas Medical Association Liability Surveys, 2004, 2006, 2008, and 2010.

6. ~~All of~~*All* the 2010 respondents stated that "the perceived or expected [medical] liability climate" was either a "very important" (72%) or "somewhat important" (28%) reason for the change in their willingness to treat such patients.[47]

I. Reduction in Hospital Liability Costs

1. Five years after the reforms were implemented, Texas hospitals were experiencing major reductions in medical liability costs and were reinvesting at least some of their savings in programs intended to benefit patients.

2. A survey conducted by the THA found that by 2008, hospital professional liability insurance premiums had dropped significantly from pre-reform levels. The 109 hospitals that provided premium information for THA's survey reported a total decrease in annual hospital liability premiums of more than $100 million since 2003. In some cases, the saving occurred at the same time coverage limits doubled or tripled.[48]

3. The THA survey also found that 85% of hospitals were finding it easier to recruit specialists, and 69% of hospitals were maintaining or expanding services as a result of the costs-savings associated with the medical liability reforms. More than half of the hospitals reported using the liability insurance cost-savings to expand safety programs, and more than half of them reported using their savings to maintain or expand services for patients who were uninsured or underinsured. Similarly, 46% of hospitals reported using all or part of the savings to subsidize shortfalls from various government programs, such as Medicaid.[49]

J. Charity Care

1. We also analyzed data from the THA to assess the effects of the 2003 reform on charity care in Texas counties. The results are presented in Exhibit 10. Of the 183 counties that responded to THA queries, 76% stated that they had increased charity care between 2003 and 2014. The average increase per hospital was more than $15 million. These results suggest that a significant portion of the cost saving

[47] Texas Medical Association Liability Survey, 2010.

[48] Texas Hospital Association, "Texas Hospitals Reinvesting Savings from Medical Liability Reform: THA Survey Shows Patients Benefit from More Specialists, Expanded Services," Press Release, September 10, 2008.

[49] *Ibid.* See, also, "Texas Hospitals Reinvesting Savings from Medical Liability Reform: THA Survey Shows Patients Benefit from More Specialists, Expanded Services," available at http://www.texashospitalsonline.org/, September 10, 2008.

associated with the 2003 reforms went towards assisting patients who were underinsured and/or uninsured, and that these patients had greater access to medical services as a result.

K. Conclusion

1. In sum, the available data show that the 2003 tort reforms achieved the Legislature's intended effects of improving access to health care for Texas residents. The reforms provided Texans with greater access to physicians, particularly physicians in four of the five specialties most vulnerable to medical liability lawsuits. The reforms also significantly increased the likelihood that Texas residents with high-risk diagnoses can find a qualified specialist who is willing to treat them.

2. These benefits have not come at the expense of patients with meritorious medical liability claims. According to the Texas Department of Insurance's closed claims data, the average payout in high-dollar (*i.e.,* greater than $250,000) lawsuits is $877,796 (2012), demonstrating that plaintiffs with serious injuries are still able to obtain large compensatory awards.

V.VII. Likely Consequences of Raising the Cap on Non-Economic Damages

1. HB 719 would have immediately raised the cap on subjective, non-economic damages to $328,514, and would have provided for further increases in the cap over time. Such increases would tend to slow or reverse the post-reform gains in physicians per capita, and thereby diminish access to medical care for residents of Texas.

2. The immediate effect of an increase in the cap would be to encourage more lawsuits against physicians and hospitals, particularly non-meritorious suits – the type of suit that caps are most effective in discouraging. As the number of lawsuits and the associated costs of defending against them increase, medical liability insurance premiums will rise. Physicians will then, once again, restrict the services they provide to high-risk patients, shift away from high-risk specialties, and move to areas of the state that are less litigious or offer other economic advantages.

3. Patients with high-risk conditions and patients residing in rural areas would be disproportionately affected by the reductions in the supply of healthcare resources. An increase in liability risk resulting from the higher cap would reduce the willingness of doctors to treat high-risk patients, since – by definition – the possibility of an unfavorable outcome in these cases, even when the best medical care is provided, is high.

A withdrawal or contraction of medical resources available to high-risk patients is what occurred in the run-up to the 2003 reforms, and it is likely to happen again if the cap is raised.

4. Similarly, Texas' experience during the crisis period indicates that the supply of healthcare resources is at greater risk in rural areas, where the ability to pass-on the increased costs of medical liability insurance is more limited than it is in more affluent areas. As it did during the 1997-2003 pre-reform crisis period, a higher cap on non-economic damage awards will cause more physicians to relocate their practices from rural areas in Texas to higher-income areas within the state, or to other states.

5. Finally, an increase in the cap on non-economic damages would reduce the ability of community hospitals, clinics, and health centers to serve lower income families. These providers operate on thin margins and tight budgets. In the short run, an increase in medical liability insurance costs would have to be offset by budget cuts in other areas of their operations, such as by cutting service hours for patients, reducing the medical staff, or reducing the breadth of services offered by a given facility. Thus, raising the cap on non-economic damages will likely reduce charitable care to these families as well.

6. In general, increasing the caps would make Texas a less-attractive state in which to practice medicine, and thus fewer physicians will establish or maintain a practice within the State.