

**A Study of the Relationship Between
Physician Kickbacks and Malpractice Rates**

Adam Widrig

Ferris State University

Abstract

Physicians face competing incentives to keep their patients healthy and to make money due to both their agency relationship with patients and to ex ante moral hazard caused by those competing incentives. This paper investigates the extent to which these incentives create ex-ante moral hazard due to the change in net benefits for physicians by examining the extent that legal payments from pharmaceutical and medical companies explain malpractice rates. By using the proportion of physicians from each specialty who face a malpractice claim annually, and the average annual dollar amount of legal kickback payments accepted per physician for each specialty, this paper finds that changes in average payment size to physicians based on specialty were found to share a statistically significant correlation with changes in the probability of malpractice. These results indicate that further study of the relationship between physician kickbacks and malpractice rates is justified.

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Motivation

According to the Civil Justice Resource Group, the minimum number of annual deaths due to medical accidents is 65,000 to 200,000. All other accidental deaths total 98,000. The minimum number of annual medical accident deaths caused by malpractice is 25,000 to 120,000. Malpractice occurs with around 0.8% to 1% of patients annually. However, only 2.9% of the reported victims actually file claims (but likely less than 25% of instances are even reported). Even fewer of these claimants end up being paid. In 2015, there were 11,582 malpractice payments made in the United States, totaling around \$3.8 billion (NPDB). The reasons for such a high death rate due to malpractice are largely unknown, and therefore a serious study of any variable affecting malpractice in the United States is well warranted.

Literature Review and Thesis

The inconsistencies of physicians in terms of diagnoses and methodology have been widely reported. A 1934 study by the American Child Health Association made some diagnostic inconsistencies quite clear. The study focused on school children being recommended for a tonsillectomy. After taking a sample of 1000 eleven-year-old school children, the study asked a group of physicians to examine the 389 children who had not already had their tonsils removed. After this first round of examinations, 273 children were recommended for a tonsillectomy. The remaining 116 children were submitted to a second test by a different set of physicians, who in turn recommended that a further 51 children needed their tonsils removed. Although only

around 60% of the original 1000 children studied had previously had their tonsils removed, after four rounds of examinations, physicians had recommended a tonsillectomy in 935 out of the 1000 school children.

A 2012 study published in *The Joint Commission Journal on Quality and Patient Safety*, reported a large amount of error when recommending HTLV and HIV tests. The study focused on a random sample of 555 requests for HTLV testing in the Southern Alberta region. The results of this study showed that “94% of the clinically directed HTLV tests were likely or definitely inappropriate—that is, only an HIV test was required” (Siemieniuk, Fonseca, & Gill, 2012). The inappropriate testing was attributed mostly to simple errors when submitting test requests.

Unfortunately, not all physician mistakes are innocent errors. Some are due to legitimate malpractice. In 2015, Dr. Aria Sabit pleaded guilty to conspiring to receive kickbacks from Apex Medical Technologies, which created an incentive for him to commit malpractice. After entering into a lucrative investment deal with Apex, Dr. Sabit doubled his pace in performing instrumented spinal fusion surgeries. Dr. Sabit was approached by Apex to invest \$5000 in the company, use its products, and then share in the profits. He did so. Over a two-year period, Dr. Sabit made \$438,570 on his original \$5000 investment. According to his plea agreement, the payments from Apex incentivized him to operate when it was not necessary.

Physicians cannot take all the blame, however. Pharmaceutical and medical companies are also to blame when it comes to over-prescribing and similar instances that could be considered malpractice. According to Marcia Angell (2009), “Many drugs that are assumed to be effective are probably little better than placebos, but there is no way to know because negative results are hidden. One clue was provided six years ago by four researchers who...found that on

average, placebos were 80 percent as effective as the drugs.” Angell describes how many pharmaceutical companies actively hide the negative results of research tests in order to make the results look more appealing to consumers and physicians. The companies have also begun the practice of influencing practice guidelines issued by professional and governmental bodies and influencing FDA decisions. That influence is achieved by leveraging conflicts of interest created through the use of researchers and decision makers who have financial ties to the pharmaceutical company with which they are working. Through these methods of influence, pharmaceutical and medical companies are able to directly shape the way medicine is practiced. In recent years, pharmaceutical companies have begun a new marketing strategy that focuses on promoting diseases to fit their drugs instead of promoting drugs that treat diseases. This strategy is used to influence both the end consumer of the drugs and the physicians prescribing them. This practice is sometimes called “disease-mongering,” and works by creating entirely new markets for existing drugs instead of creating new drugs to fit existing markets.

On the subject of kickback payments, Angell (2009) has the following to contribute:

No one knows the total amount provided by drug companies to physicians, but I estimate from the annual reports of the top nine US drug companies that it comes to tens of billions of dollars a year. By such means, the pharmaceutical industry has gained enormous control over how doctors evaluate and use its own products.

That industry control has inevitably resulted in physician malpractice via over-prescription, though the consequences of such influences are much subtler than in the case of Dr. Sabit’s unnecessary spinal operations. Obviously, not all the factors attributing to malpractice are so dishonorable, and they are practically infinite. However, a few factors can be pinpointed.

Changes in malpractice rates are correlated with changes in a combination of two main factors:

inherently competing incentives faced by physicians due to their agency, and ex ante moral hazard caused by those incentives.

Argument

While the type of kickback Dr. Sabit received is obviously illegal in the United States, there are still some other forms of legal “kickbacks” that physicians may take advantage of. The incentives physicians face by receiving legal forms of kickbacks from pharmaceutical and medical companies is one possible factor attributing to malpractice that has yet to be sufficiently explored. In the United States’ Anti-Kickback Statute, a “kickback” is defined as “the exchange (or offer to exchange), of anything of value, in an effort to induce (or reward) the referral of federal health care program business” (Sabella). Kickbacks of this nature are subject to both civil and criminal lawsuits. However, there are still some forms of legal payment that physicians may receive from pharmaceutical and medical companies. Every instance of legal payment is recorded in a national database located at OpenPaymentsData.CMS.gov. The data includes payments for things such as: food and beverages, education, consulting fees, speaking fees, travel and lodging, entertainment, gifts, grants, honoraria, and royalties and licenses. Although legal, these types of payments may still be considered kickbacks. Around 90% of the payments studied were associated with a specific drug or medical device, whether it be for promotion or education about the drug or device.

Kickbacks such as these still exist because of physicians’ agency relationship with patients. “An agent’s control over who gets the business is valuable property” (Getzen, 2013). Agency, in this case, refers to one party (the agent) making decisions on behalf of another party (the principal). When patients visit a physician, they concede their agency to that physician in

terms of physical or psychological welfare decisions and they trust the physician to advise them correctly. Physicians do have an incentive to use this agency in an ethical manner due to the risk of malpractice lawsuits and (hopefully) the inherent desire to keep patients healthy. However, what some patients do not consider enough, is that physicians also face significant incentives to use their agency to make additional money. “In the short run, it is easier to profit by betraying a trust to make a dollar” (Getzen, 2013). Taking kickbacks is one way to steal a portion of the professional value created by trust and agency in the health care industry. For instance, a physician may choose to prescribe one particular drug over another similar drug because of payments they have received from a pharmaceutical company. This creates a problem if the prescribed drug is either less effective or more expensive than the alternative. The physician is essentially committing fraud since the patient is unknowingly accepting an extra cost from which only the physician will receive benefit. Wrongful prescription such as this would be considered malpractice. The competing incentives that physicians face (patient health and physician wealth) have the potential to drive them to accept kickbacks and therefore affect malpractice rates.

Not only do the incentives created by kickbacks inherently affect the potential for malpractice, but they also create an opportunity for ex ante moral hazard to affect physicians. Normally thought of in terms of insurance, ex ante moral hazard is a change in behavior due to a decrease in the perceived riskiness of that behavior. A classic example of ex ante moral hazard is a person who, because he is insured, partakes in risky behavior such as skydiving. Although the person may not have gone skydiving normally, the possession of insurance lowers the perceived risk of such a behavior because he will not need to pay any possible medical costs out-of-pocket. Similarly, the existence of lucrative kickbacks for physicians change the net benefits of malpractice, affecting the physicians’ decisions with respect to committing malpractice.

Without the possibility of kickbacks, physicians would be highly unlikely to intentionally commit malpractice due to the riskiness of such behavior. With kickbacks in play, however, the cost-benefit relationship of intentional malpractice changes such that the benefits of malpractice are increased. Ex ante moral hazard due to the incentive of kickbacks is yet another factor in determining malpractice rates.

While it's been established that there exists an incentive to prescribe specific drugs and medical devices due to kickbacks from pharmaceutical and medical companies, it has never been studied whether these factors actually affect malpractice rates. The Open Payments database has made it possible to construct an empirical study to determine if such a relationship actually exists. For this study, the national average historic proportion of each physician specialty that faces a malpractice claim annually was used as a proxy for the probability of malpractice in each specialty. To place a value on incentives, an average annual dollar amount of legal kickback payments per physician was determined for each specialty. Due to time constraints, payments to physicians in only ten counties were considered. To create sample relatively indicative of the United States as a whole, the most populous county in each of the United States' ten most populous cities was chosen. This sample provided sufficient geographic and economic variation while still providing plenty of data to perform the study.

To discover the correlation between incentives due to kickback payments and the probability of malpractice, an F-test for simple linear regression was performed. The test indicated that the incentive faced by physicians due to receiving kickbacks is a statistically significant factor when predicting the malpractice rate for any physician specialty. The correlation coefficient was 0.721, indicating a fairly strong correlation between the two variables. Additionally, about 52% of the variation in malpractice probability was associated

with observed variation in average annual kickback payments. These results are consistent with the knowledge that physicians face many incentives outside the vein of kickback payments, and therefore payments should not be the only significant factor when predicting malpractice probability. The relative importance of kickbacks when predicting malpractice rates as compared to other factors is of little importance at this point. The important takeaway is that kickbacks are a statistically significant factor at all, albeit not the only one.

Objections

It is worth noting that several objections could be made to this study. The most important of which are the relatively small sample size and the use of a linear regression with only one independent variable and no control variables. The first of these objections is simpler to defeat. Although results may differ if payments from every physician in the United States were considered, it is unlikely that they would be vastly different. Since physicians from a relatively wide variety of regions were studied, variables associated with particular locations could be mostly ignored. For instance, it is entirely possible that physicians of all specialties in Los Angeles receive more payments on average than do physicians in New York, or that all physicians in Phoenix face a lower probability of malpractice than those in Chicago. However, since an average for payments was taken that included all ten of the United States' most populous cities and malpractice probabilities were taken from a nationwide study, variations such as these are not likely to have significantly affected results.

The second objection – that of using only one independent variable and a simple linear regression – is likely more serious. It is obvious that many factors other than physician kickbacks would affect the probability of malpractice in each specialty. For that reason, a

multiple regression test including several such factors would almost certainly provide a more accurate representation of the relative effect of each on the probability of malpractice. A linear regression was performed instead due to the lack of data on most other likely factors. The Open Payments database provided easy access to data on physician kickback payments, but data for other factors is not so easy to access. A truly well-rounded study would likely need to undertake a nation-wide and multi-year data collection project covering a variety of factors related to malpractice. Such a study was impractical for this paper. Even after considering these limitations, the study performed is likely to be fairly consequential because the goal of the study was simply to garner more study on the subject. This paper was intended only to be one piece of the puzzle in what would likely be a very extensive conversation on the relationship between legal kickbacks and malpractice rates.

Implications

Judging by the results of this study, there is reason to conclude that financial interactions between physicians and pharmaceutical and medical device companies should at least be more closely monitored. Depending on the findings of future studies, the results may also open a conversation about the possibility of stricter regulations on payments to physicians. The results of this study indicated that there was a statistically significant correlation between kickback payments and malpractice probability, suggesting the possibility that kickback payments may be actually *affecting* malpractice probability. At the very least, the results call for further study of this relationship.

If kickbacks do indeed affect the probability of physicians committing malpractice, patients should be much more worried about what types of relationships their physicians have

with what companies. The Open Payments database already provides a means for patients to research the payments their physicians have received, but it is possible that an additional database reporting instances of malpractice could be an equally important resource. If patients had access to information on both payments and malpractice, they could make better judgments on whether to trust a particular physician with their agency.

The obvious macro-implication of this study is the possibility of reducing nation-wide malpractice rates by introducing rules and regulations on legal types of kickbacks. Just the fact that kickbacks share any significant correlation with malpractice rates at all warrants a serious discussion about whether these types of kickbacks should be allowed. Patient safety should be the most important factor when making decisions for the future of the United States healthcare system. The risk of malpractice is an important factor affecting overall patient risk. Therefore, any variable affecting malpractice rates should be legitimately considered – including legal kickbacks from pharmaceutical and medical companies paid to physicians.

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Appendix A – Data Table

BY PHYSICIAN SPECIALTY		
Physician Specialty	Proportion of Physicians Facing a Malpractice Claim Annually (Probability)	Average Kickback Size per Year (Incentive)
Cardiology	8.6	\$1,738.76
Dermatology	5.4	\$1,096.43
Emergency Medicine	7.6	\$141.44
Family General Practice	5.2	\$159.18
Gastroenterology	11.6	\$865.02
General Surgery	15.3	\$3,964.26
Internal Medicine	7.7	\$410.01
Neurosurgery	19.1	\$13,158.77
Obstetrics & Gynecology	11.1	\$301.49
Ophthalmology	6.6	\$304.14
Pediatrics	3.1	\$69.81
Plastic Surgery	12.6	\$299.20
Psychiatry	2.6	\$319.46
Urology	10.4	\$71.01

Appendix B – F-test Results

REGRESSION STATISTICS	
Multiple R	0.721047333
R Square	0.519909256
Adjusted R Square	0.479901694
Standard Error	3.349777104
Observations	14
F-test	12.99527463
F-stat	4.747225347
P-value	0.0036133