

REPORT TO THE MARYLAND HEALTH SERVICES COST REVIEW COMMISSION ON DEFENSIVE MEDICINE

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I. INTRODUCTION

In the 2014 session, the Maryland General Assembly passed legislation that clarified the Health Services Cost Review Commission's (HSCRC) authority to implement global budget arrangements and manage costs and quality on a per capita basis.¹ The legislation also required that the HSCRC work groups created to provide technical input and advice on implementation of Maryland's new all-payer model consider "the impact and implications that defensive medicine has on hospital costs and the goals underlying the all-payer model contract." This report was prepared under a Memorandum of Understanding (MOU) between the HSCRC and the University of Maryland Francis King Carey School of Law (UMCSL) in response to this legislation. The MOU called for the UMCSL to conduct a review of the literature regarding the practice of defensive medicine and its implications for the implementation of the new All-Payer contract in Maryland in which hospitals in the state will operate under a global budget. Under the MOU, the UMCSL agreed to:

- 1) Conduct a review of the relevant literature including national and local studies or reports prepared by government agencies and objective peer-reviewed studies.
- 2) Gather other relevant data including Maryland specific data or research.
- 3) Prepare a report summarizing the findings from the literature review and data gathering which, to the extent possible from the available literature, would include:
 - a. A reasonable assessment of those hospital costs that are related to defensive medicine, on a percentage basis;
 - b. A definition of defensive medicine, particularly as it relates to hospital costs;
 - c. An assessment of the extent to which tort reform impacts hospitals' costs related to defensive medicine;
 - d. A discussion of whether there are certain service lines that incur higher or lower defensive medicine costs;
 - e. An analysis of any relevant data available nationally or in Maryland;
 - f. An assessment of how defensive medicine may or may not impact the growth in the cost and quality of hospital care in Maryland and what implications that may or may not have on the Commission's ability to manage cost growth under the new All-Payer model. This would involve considering whether the expected

¹ 2014 Md. Laws Ch. 263.

impact of defensive medicine nationally applies to a commensurate degree in Maryland.

In order to prepare this report the UMCSL subcontracted with the Johns Hopkins School of Public Health. The individuals who developed this report include Diane Hoffmann, JD, MS, Professor of Law and Director, Law & Health Care Program, UMCSL, Bradley Herring, PhD, Associate Professor of Health Economics, Department of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, and Virginia Rowthorn, JD, Managing Director, Law & Health Care Program, UMCSL.

This report responds to the tasks set forth in HB 298 and the MOU. It does NOT recommend ways that the state might consider reducing the practice of defensive medicine.

On January 7, 2015, a preliminary draft of this report was circulated to the work groups established by the HSCRC and on January 9, 2015, the report authors (Professors Hoffmann and Herring) presented a summary of the draft report to members of the work groups. Following their presentation, the work groups heard comments from the following individuals:

Maryland Hospitals:

- Carmela Coyle, President & CEO, Maryland Hospital Association
- Larry Smith, Vice President, Risk Management, MedStar Health
- Dr. Scott Spier, CMO, Mercy Medical Center

Physicians:

- Pam Kasemeyer, Partner, Law Firm of Schwartz, Metz and Wise
- Dr. Peter Curran, Cardiologist
- Dr. Stephen Schenkel, Chair, Dept. of Emergency Medicine, Mercy Medical Center and President, Maryland Chapter of Emergency Physicians
- Daniel Shattuck, Senior Associate, Barbara Marx Brocato and Associates
- Dr. Amar Setty, President, Maryland Society of Anesthesiologists

These individuals both reacted to the draft report and provided additional testimony on their experience with defensive medicine in Maryland, their impressions of the impact of defensive medicine on health care spending in Maryland, and how defensive medicine will affect the ability of the Commission to implement a global budget payment model in Maryland. A summary of their remarks is included in Appendix A to this report. In addition, this final report attempts to respond to some of the comments made by these individuals.

II. SUMMARY OF THE LITERATURE

A. Definition of Defensive Medicine

The definition of defensive medicine varies across the literature. Perhaps the most commonly used definition is that provided by the Office of Technology Assessment (OTA)'s 1994 report, *Defensive Medicine and Medical Malpractice*:²

“Defensive medicine occurs when doctors order tests, procedures, or visits, or avoid certain high-risk patients or procedures, primarily (but not necessarily solely) because of concern about malpractice liability.”³

This definition does not include changes in practice style, such as spending more time with patients, attention to medical record keeping, better communication, or obtaining informed consent.⁴ It also takes into account both “positive” defensive medicine (also called assurance behavior) and “negative” defensive medicine (also called avoidance behavior). Assurance behavior includes practices that supplement traditional care, such as additional testing, hospitalization or referral to specialists; avoidance behavior includes refusing to treat certain patients or to perform risky treatments. Definitional issues include whether the defensive medicine practice is conscious or unconscious, done primarily or solely because of concern about liability, includes only practices that are harmful or of no benefit or also includes practices that have minor or marginal benefit.⁵ To the extent that avoidance of a lawsuit is not the sole motivation for the practice, it may provide some benefit to the patient by lowering the likelihood that a diagnosis is incorrect especially where “the medical consequences of being wrong are severe.”⁶

B. Early Studies – 1994 and before

This report to HSCRC relies significantly on the 1994 OTA report for a summary of studies performed prior to 1994. The OTA report is without a doubt the most comprehensive objective report on defensive medicine prepared on or before that date. The report was prepared in response to a request by the House Committee on Ways and Means and the Senate Committee on Labor and Human Resources.⁷ The OTA report sought to answer the following questions:

- What are the causes of defensive medicine?

² OFFICE OF TECHNOLOGY ASSESSMENT, *DEFENSIVE MEDICINE AND MEDICAL MALPRACTICE* (1994) [hereinafter OTA REPORT].

³ *Id.* at 13.

⁴ *See id.* at 22.

⁵ *See id.*

⁶ *Id.* at 13.

⁷ The Office of Technology Assessment (OTA), an office of the U.S. Congress from 1972 – 1995, was established to provide members of Congress and Congressional committees with objective and authoritative analysis of the complex scientific and technical issues facing society at that time.

- How widespread is defensive medicine today?
- What effect will current proposals for malpractice reform have on the practice of defensive medicine?
- What are the implications of other (non-malpractice) aspects of health care reform for the practice of defensive medicine?⁸

In answering these questions the report authors reviewed prior studies with strong research designs and results of physician surveys conducted by national, state and specialty medical societies. These prior studies generally adopted one of the following three methodologies:

- Direct physician surveys. These surveys asked questions such as “Does fear or threat of malpractice liability influence whether you use additional diagnostic or therapeutic procedures?” and “How often do you practice defensive medicine?”
- Physician clinical scenario surveys. Under this approach, physicians are given a clinical scenario and asked to choose specified clinical actions and then to check from a list of options what factors influenced their choices. For example, after being presented with a scenario they might be asked: “In your decision to order test x, which of the following influenced your decision?” Malpractice risk is listed among the possible reasons for ordering the test.
- Statistical analyses of the impact of malpractice risk on utilization of one or more procedures, e.g., C-sections, CT scans, biopsies. Malpractice risk was typically measured by malpractice premiums, prior law suits, or tort reforms such as caps on damages.⁹

The OTA authors found that each of these methods had significant shortcomings. Both direct physician surveys and physician clinical scenarios indicate what physicians say they do but not what they actually do. Such surveys suffer from recall problems. They may also prompt respondents to think about malpractice liability so that it is in the forefront of their minds when they answer questions. Also, these studies can tell us how many (or what percentage) of physicians say they practice defensive medicine but generally not to what extent it is practiced. Clinical scenario studies may be better than direct physician surveys as they focus on a particular procedure or test, however, because the scenarios are so specific they cannot be generalized to other procedures or tests.¹⁰

Statistical analyses of the impact of malpractice risk can provide evidence of the impact of differences in malpractice liability risk on physicians’ use of tests or procedures but cannot provide a comprehensive estimate of the extent of defensive medicine.¹¹ Such a study, for example, might find that there is a difference in C-section rates between physicians who have been sued and those who have not, or between physicians with higher and lower malpractice insurance premiums, or between physicians in states with damage caps and states without, but

⁸ OTA REPORT, *supra* note 2, at 13.

⁹ *See id.* at 41-43.

¹⁰ *See id.*

¹¹ *See id.* at 42.

cannot determine the overall baseline amount of defensive medicine that is practiced by physicians. Early studies were also limited because often there was not available or good quality data on physician utilization practices or, if such data was available, it was only available for small groups of physicians who may not have been representative of physicians more broadly in terms of practice patterns. These studies also generally did not control for other relevant factors such as the health status of the patient population.¹²

In their review of the prior studies, especially of direct surveys of physicians, the OTA report concluded that: “Their results are highly suspect . . . Because they invariably prompt responding physicians to consider malpractice liability as a factor in their practice choices.”¹³ As a result, they focused on prior studies with strong research designs and initiated several new studies including hypothetical case scenarios and utilization of health care services or changes in practice based on level of malpractice risk.

Selected findings from OTA’s review of the literature and results of their own studies on defensive medicine included the following:

- “Physicians are very conscious of the risk of being sued and tend to overestimate that risk. A large number of physicians believe that being sued will adversely affect their professional, financial and emotional status.”¹⁴
- “[D]efensive medicine is a real phenomenon that has a discernible influence in certain select clinical situations,” e.g., C-section deliveries in childbirth and the management of head injuries in emergency rooms. (These were cases in which OTA was able to document defensive practice. The authors state that “there are probably other clinical situations not studied by OTA or others in which defensive medicine plays a major role in physicians’ diagnosis and treatment decisions. However, in the majority of clinical scenarios used in OTA’s and other surveys, respondents did not report substantial levels of defensive medicine, even though the scenarios were specifically designed to elicit a defensive response.”)¹⁵
- “Overall, a small percentage of diagnostic procedures [not costs] – certainly less than 8% – is likely to be caused primarily by conscious concern about malpractice liability.”¹⁶
- “It is impossible to accurately measure the overall level and national cost of defensive medicine.”¹⁷(This is due, in large part, to methodological limitations.)

Regarding its assessment of the impact of tort reforms on the practice of defensive medicine, OTA looked at six prior studies on the impact of the following tort reforms that had been implemented in a number of states. These included:

¹² *See id.*

¹³ *Id.* at 5.

¹⁴ *Id.* at 2.

¹⁵ *Id.* at 74.

¹⁶ *Id.* at 1.

¹⁷ *Id.*

- Shortening statutes of limitation
- Limiting attorneys' contingency fees
- Requiring or allowing pretrial screening
- Caps on economic and noneconomic damages
- Amendments to the collateral source rule
- Periodic payment of damages

The hypothesis behind these studies was that tort reforms would change direct malpractice costs including total payouts for malpractice claims (based on a reduction in the frequency of claims and/or payment per claim and a reduction in malpractice premiums) and that this, in turn, would reduce the practice of defensive medicine. OTA concluded that the "best evidence" of this relationship was from a single study of the "impact of malpractice risk on [C-section] rates in New York State."¹⁸ Localio, et al. found a significant association between claim frequency and premiums and C-section rates. The study supports the assertion that malpractice reforms that reduce malpractice risk and premiums reduce defensive behavior. Yet, the authors concluded that it is not clear whether the study's findings "are generalizable to other procedures or specialties or other states especially in light of the failure of other studies funded by OTA to find such a relationship."¹⁹

Although each of the six prior studies had "methodological and data limitations,"²⁰ the OTA report concluded that:

- Across all studies "only caps on damages and amending the collateral source rule consistently reduced one or more indicators of direct malpractice costs"²¹
- The effects of other tort reforms "may have only modest effects on direct malpractice costs"²²
- The effects of tort reforms on defensive medicine "are largely unknown and are likely to be small"²³
- To the extent that tort reforms "do reduce defensive medicine, they do so without differentiating between defensive practices that are medically appropriate and those that are wasteful or very costly in relation to their benefits"²⁴

The OTA report was prepared during Congressional debates on the Clinton health care reform proposal. At that time, there were few, if any, studies that attempted to evaluate the impact of efforts to contain health care costs on the practice of defensive medicine. Thus, in response to the question of whether other (non-malpractice) aspects of health care reform affect the

¹⁸ *Id.* at 11.

¹⁹ *Id.* at 81.

²⁰ *Id.* at 79.

²¹ *Id.* By "amending the collateral source rule" the OTA report was referring to states that either required or let the jury reduce the award by the amount the plaintiff received from health or disability insurance.

²² *Id.*

²³ *Id.* at 2.

²⁴ *Id.*

practice of defensive medicine, the OTA authors referred to the different incentives posed by fee-for-service reimbursement methods and cost containment reimbursement strategies that are part of state and proposed national health care reforms, stating that the “fee-for-service system both empowers and encourages physicians to practice very low risk medicine.”²⁵ Numerous other articles have stated that under a fee-for-service reimbursement method physicians face little or no financial penalty, and can increase their revenue, when they order or perform extra tests or procedures. The OTA report asserted that “health care reform may change financial incentives toward doing fewer rather than more tests and procedures”²⁶ but the authors did not have any empirical basis for that assertion.

C. Studies From 1995 – 2014

Since the 1994 OTA report there have been many studies focusing on defensive medicine. The basic methodologies applied remained the same as those identified by the OTA report, i.e.,

- Qualitative surveys of physicians, i.e., direct survey questions or clinical scenarios with follow up questions for decision-making rationale, for overall amount of defensive medicine.
- Econometric analyses looking at the impact of malpractice risk on health care outcomes (e.g., utilization, spending, mortality) for changes in defensive medicine. Some studies use direct measures of risk such as malpractice premiums, claims frequency, and award size, while other studies examine changes in state laws such as damage caps and changes to joint and several liability.

The availability and quality of outcome data, however, improved considerably over time allowing for more robust analyses than was possible at the time of the OTA report. Given the considerable weaknesses of the qualitative survey methodology (identified in the 1994 OTA report), we focused on examining peer-reviewed publications and government reports which used an econometric approach.

It is important to stress, though, that these econometric analyses do not enable one to produce a direct estimate of the overall magnitude of defensive medicine. Instead, they enable one to produce an estimate of how much defensive medicine changes when a provider’s risks from malpractice change.

The most cited study published during this time is a 1996 article by Kessler and McClellan.²⁷ Using multivariate regressions, the authors looked at the impact of state malpractice reforms on individual inpatient spending and cardiac mortality for Medicare patients with heart disease in years 1984, 1987 and 1990. They found that “[m]alpractice reforms that directly reduce provider liability pressure lead to reductions of 5 to 9 percent in medical expenditures without substantial effects on mortality.”²⁸ However, the elimination of joint and several liability and

²⁵ *Id.*

²⁶ *Id.*

²⁷ Daniel P. Kessler & Mark McClellan, *Do Doctors Practice Defensive Medicine?*, 111 Q.J. Econ. 353 (1996).

²⁸ OTA REPORT, *supra* note 2, at 2.

adoption of a proportionate share liability rule resulted in a small increase in per patient Medicare spending per beneficiary.²⁹

A subsequent study in 1999 by Dubay, Kaestner and Waidmann³⁰ based on births from 1990 to 1992 found that higher malpractice claims risk, as measured by obstetricians' malpractice premiums, resulted in a higher C-section rate for three out of five groups of women studied. They also found that malpractice risk was not associated with birth outcomes, using Apgar scores as their measure.

In 2006, the Congressional Budget Office (CBO) released a background paper entitled "Medical Malpractice Tort Limits and Health Care Spending."³¹ The paper was a response to Congressional consideration of proposals that would impose federal limits on medical malpractice claims as many states had already done. In 2004, CBO examined the effects on malpractice insurance premiums resulting from state laws imposing limits on medical malpractice claims and awards, concluding that these limits reduced premiums and, in turn, reduce costs for federal health insurance programs. CBO's subsequent 2006 paper went a step further to see if changes in the malpractice environment would change physician utilization of health care for their patients. The study differed from most others that had been done up until that time as it looked at a "broader set of spending measures than [had] been examined elsewhere."³²

Specifically, the CBO study extended Kessler and McClellan's analytical approach by examining the impact of tort reforms on:

- All Medicare inpatient spending, rather than only inpatient spending for heart disease;
- Medicare physician/outpatient spending;
- Overall Medicare spending; and
- Overall health care spending per capita, including both inpatient and outpatient separately.

The 2006 CBO study also included more controls and specification checks than those included in the study by Kessler and McClellan and relied on state level spending from 1980 through 2003.

The primary conclusions from the 2006 CBO report were that:

²⁹ A commonly cited paper by Mello et al., based directly off of extrapolating Kessler and McClellan's estimate of the change in defensive medicine induced by tort reform, suggests that defensive medicine is about 2.0% of total health care spending, \$45.6 billion in 2008 dollars. Moreover, Mello et al. suggest that defensive medicine from hospitals is \$38.8 billion (in 2008 dollars) and that defensive medicine from physicians is \$6.8 billion (in 2008 dollars). See Michelle M. Mello et al., *National Costs of the Medical Liability System*, 29 HEALTH AFF. 1569 (2010).

³⁰ Lisa Dubay et al., *The Impact of Malpractice Fears on Cesarean Section Rates*, 18 J. HEALTH ECON. 491 (1999).

³¹ CONGRESSIONAL BUDGET OFFICE, *MEDICAL MALPRACTICE TORT LIMITS AND HEALTH CARE SPENDING* (2006), available at <http://www.cbo.gov/sites/default/files/04-28-medicalmalpractice.pdf> [hereinafter CBO REPORT 2006].

³² *Id.* at 1.

- Caps on noneconomic damages resulted in a statistically insignificant reduction (1.4%) in overall health care spending, but a statistically significant reduction in Medicare inpatient spending;
- Replacement of joint and several liability with proportionate share allocation of liability resulted in a significant increase (4%) in overall spending.

The latter finding was attributed to a shift from hospitals paying all or the large majority of damages (sometimes referred to as the “deep pockets rule”) to physicians paying significantly more of the total damages.

The more detailed findings from CBO by hospital vs. physician and by Medicare vs. total spending are presented in Figure 1 below, which we have reproduced from the CBO report. As illustrated in this figure, the effect of tort reforms tended to be stronger for hospital spending than for physician spending and stronger for Medicare spending than for total spending. Based on the figures for hospital spending in Figure 1, one can produce a rough lower-bound estimate of the costs of defensive medicine in the hospital setting of 2.7% of total costs.³³

CBO’s overall message to policymakers in 2006 was therefore that while tort reform would likely reduce malpractice premiums, evidence is weak or inconclusive that tort reform could reduce defensive medicine.

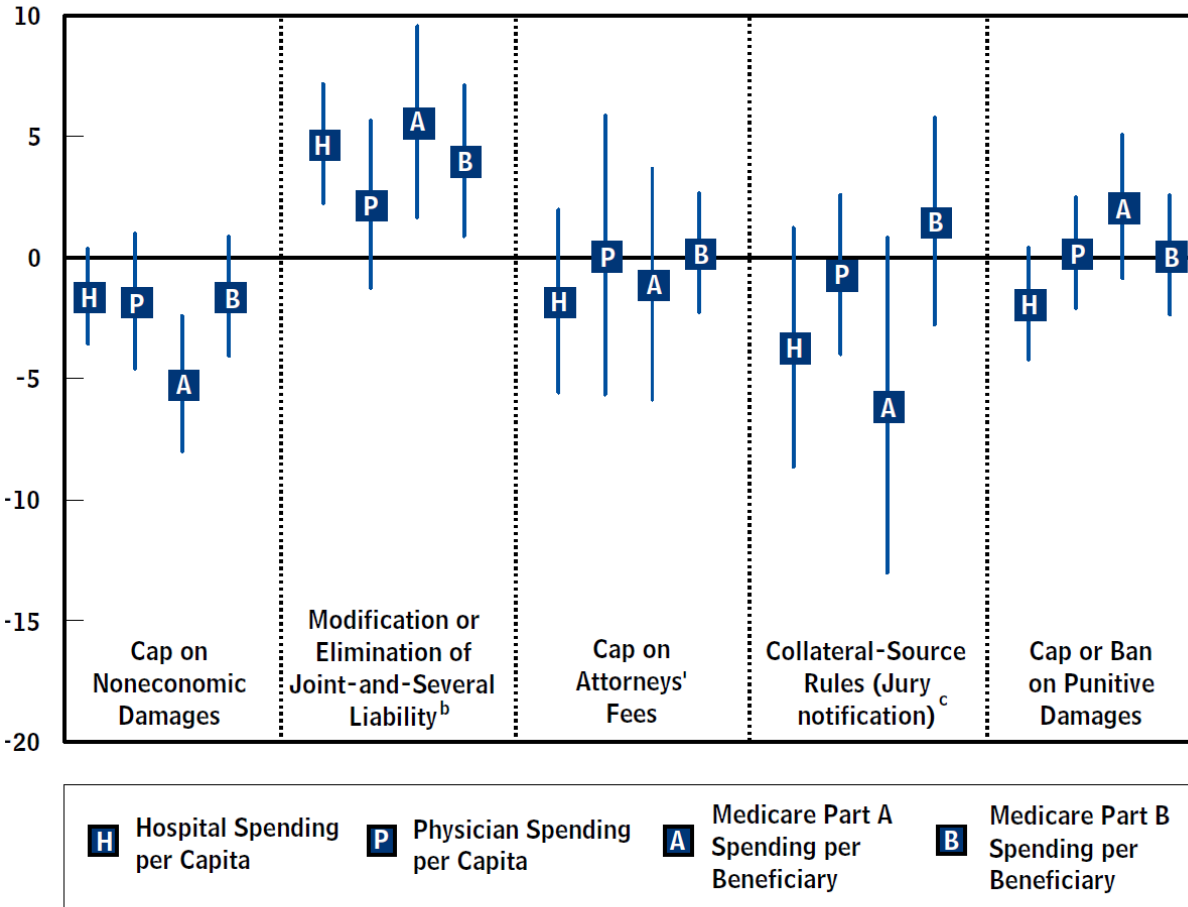
In 2009, however, CBO modified its conclusion in a series of letters to members of Congress (i.e., Senator Hatch in October with follow-up clarifications to Senator Rockefeller and Representative Braley in December) stating that “*more recent research* [emphasis added] has provided additional evidence to suggest that lowering the cost of medical malpractice tends to reduce the use of health care services.”³⁴

³³ We produced this 2.7% estimate for a lower bound of the amount of defensive medicine that occurs in the hospital setting by taking the average of the absolute values in Fig. 1 for hospital spending per capita across the five tort reforms. These five magnitudes are 1.6% for cap on noneconomic damages, 4.7% for modification of joint and several liability rule, 1.8% for cap on attorneys’ fees, 3.7% for collateral source rules, and 1.9% for caps on punitive damages. As noted above, the effect of implementing a tort reform on the change in health care spending can be interpreted as a lower-bound estimate of the underlying amount of defensive medicine that exists. While four of the five effects of tort reform on healthcare spending here are negative (i.e., a tort reform decreases defensive medicine), the negative effect of the modification of the joint and several liability rule still suggests a lower bound estimate of defensive medicine of 4.7% of total spending (i.e., this particular tort reform increases defensive medicine). While one approach to quantify the underlying amount of defensive medicine could take the largest of the five effects observed (which could be appropriate if one was truly confident about the magnitudes of each of these estimates), an alternative, more conservative approach (which we take here) for an estimate of defensive medicine would take the average of these five, with the underlying rationale that each estimate, in and of itself, is measured with some random error. Moreover, this lower-bound estimate of defensive medicine by taking the average value of the five estimates from tort reform rather than the sum of the five estimates assumes that the effects of the individual tort reforms on the practice of defensive medicine are not cumulative. That is, this conservative approach we take assumes that any given tort reform essentially eliminates all defensive medicine so that implementing a second or third tort reform does not further reduce defensive medicine.

³⁴ Letter from Douglas W. Elmendorf, Dir., Congressional Budget Office to U.S. Senator Orrin Hatch (Oct. 9, 2009), available at http://www.cbo.gov/sites/default/files/10-09-tort_reform.pdf.

Figure 1: Congressional Budget Office's 2006 Summary of Findings on Tort Limits

(Percentage impact of tort limit on per capita spending)^a



Source: Congressional Budget Office.

The three more recent studies CBO cited in 2009 were:

- Baicker, Fisher and Chandra (2007).³⁵
- An earlier National Bureau of Economic Research (NBER) Working Paper version of Lakdawalla and Seabury (2012),³⁶ circulated in 2009; and
- An earlier NBER Working Paper version of Avraham, Dafny and Schanzenback (2012),³⁷ circulated in 2009.

³⁵ Katherine Baicker et al., *Malpractice Liability Costs and the Practice of Medicine in the Medicare Program*, 26 HEALTH AFF. 841 (2007).

³⁶ Darius N. Lakdawalla & Seth A. Seabury, *The Welfare Effects of Medical Malpractice Liability*, 32 INT'L REV. L. & ECON. 356 (2012).

³⁷ Ronen Avraham et al., *The Impact of Tort Reform on Employer-Sponsored Health Insurance Premiums*, 28 J.L. ECON. & ORG. 657 (2012).

Baicker et al. (2007) looked at state-level Medicare spending per beneficiary for 1993 through 2001 as a function of either state-level malpractice payment or premiums per physician and found that “higher malpractice awards and premiums are associated with higher Medicare spending, especially for imaging services that are often believed to be driven by physicians’ fears of malpractice.”³⁸

Lakdawalla and Seabury (2012) examined both county-level health care spending and mortality as a function of medical malpractice costs from RAND’s jury awards data. For health care spending they found that the effects of higher malpractice costs (measured by the magnitude of local jury awards) on health care spending exceeded their direct effect on higher provider’s fees incorporating higher malpractice premiums, thereby indicating an increase in defensive medicine must have occurred to explain the excess spending. But they also found that these higher malpractice costs were associated with reductions in mortality leading the authors to conclude that the reforms were not cost-effective.

Avraham et al. (2012) examined the impact of state tort reforms on self-insured employers’ health care premiums for 1998 through 2006 and found that “[c]aps on non-economic damages, collateral source reform, and joint and several liability reform reduce premiums by 1 to 2% each.”³⁹

Based primarily on these three more recent studies and the earlier work of Kessler and McClellan (1996), CBO’s 2009 letters indicated that a package of tort reforms including a \$250,000 cap on noneconomic damages; \$500,000 cap on punitive damages; modification of the collateral source rule; shortening of the statute of limitations; and replacement of joint and several liability with a proportionate share allocation rule would reduce total national health care spending by about 0.5%. This figure is the sum of 0.2% from lower medical liability premiums and lower total damage awards and “an additional indirect reduction of 0.3% from slightly less utilization of health care services.”⁴⁰

The relatively small effect of federal tort reforms on reduction of health care utilization associated with defensive medicine can be explained by three main factors:

- The underlying effect of reform (especially caps) on reducing defensive medicine is modest;
- Replacing joint and several liability with a rule of proportionate liability may increase defensive medicine instead of reduce defensive medicine; and
- Some of these reforms have already been implemented in a number of states.

Despite CBO’s evolved stance on defensive medicine in 2009, the literature is relatively mixed overall and there have been other rigorous economics papers finding either no or little effect of malpractice risk on defensive medicine. These other studies include:

³⁸ Baicker et al., *supra* note 35, at 841.

³⁹ Avraham et al., *supra* note 37, at 657.

⁴⁰ Letter to Sen. Orrin Hatch, *supra* note 34.

- Baicker and Chandra (2005)⁴¹
- Currie and MacLeod (2008)⁴²
- Morrissey et al. (2008)⁴³
- Sloan and Shadle (2009)⁴⁴

D. Other Factors that Affect the Practice of Defensive Medicine

The literature on defensive medicine includes numerous factors that affect physician clinical decision-making. Some of these factors operate in tandem with defensive medicine decisions and others directly affect decisions to engage in defensive medicine. For example, clinical factors that both affect physician decision making about whether to order a specific diagnostic test include “patient symptoms, [the] seriousness of the suspected disease, [the physician’s] degree of certainty about [the] diagnosis, [the] accuracy of the available diagnostic test, and [the] risks and benefits of treatment”⁴⁵ or failure to treat. What might be considered defensive medicine is more likely to occur when the suspected disease is very serious, e.g., some type of cancer, and the physician wants to be very certain of the current diagnosis because the risks/costs of a wrong diagnosis are very high.

Other non-clinical factors, aside from potential malpractice liability, also affect the practice of defensive medicine. The following factors were listed by OTA based on studies prior to 1994:

- The availability of technology
- Physician specialty and training
- Practice organization (solo, group, hospital)
- Familiarity with the patient
- Awareness of and sensitivity to test costs
- Financial incentives
- Patient expectations
- Insurance status of patient⁴⁶

More recent studies have looked at some of these factors. For example, in a 2005 study by Studdert et al.,⁴⁷ specialists reported using technology to “pacify demanding patients, bolster their own self-confidence, or create a trail of evidence.”⁴⁸ As an example, they cited

⁴¹ Katherine Baicker & Amitabh Chandra, *The Effect of Malpractice Liability on the Delivery of Health Care*, 8 RAND F. FOR HEALTH ECON. & POL’Y art. no. 4 (2005).

⁴² Janet Currie & W. Bentley Macleod, *First Do No Harm? Tort Reform and Birth Outcomes*, 123 Q.J. ECON. 795 (2008).

⁴³ Michael A. Morrissey et al., *Medical Malpractice Reform and Employer-Sponsored Health Insurance Premiums*, 43 HEALTH SERVS. RES. 2124 (2008).

⁴⁴ Frank A. Sloan & John H. Shadle, *Is There Empirical Evidence for Defensive Medicine? A Reassessment*, 28 J. HEALTH ECON. 481 (2009).

⁴⁵ See OTA REPORT, *supra* note 2, at 41.

⁴⁶ *Id.*

⁴⁷ David M. Studdert et al., *Defensive Medicine Among High Risk Specialist Physicians in a Volatile Malpractice Environment*, 293 JAMA 2609 (2005).

⁴⁸ *Id.* at 2616.

advancements in diagnostic and therapeutic technologies that make early detection of cancer both feasible and beneficial but that also increase the likelihood that a missed diagnosis will be ruled negligent and assessed substantial damages. The authors concluded that defensive use of technology can be self-reinforcing and that “[t]he more physicians order tests or procedures with low predictive values or perform aggressive treatment for low risk conditions, the more likely such practices are to become the standard of care.”⁴⁹ Anecdotal reports also indicate that patients expect perfection, especially for “centers of excellence” or “number 1 programs”, etc.

Two other factors that have been cited in recent articles and studies are physician perceptions of risk rather than actual risk of malpractice suits, and practice cultures in the geographic area in which the physician is practicing. The 2005 study by Studdert et al. of defensive medicine practices among high-risk specialist physicians found that “objective measures of physicians’ liability experience and exposure were not associated with individual physicians’ propensity to practice defensively,” rather it was more subjective factors such as confidence in liability coverage and perceived burden of insurance premiums that were associated with “higher odds of . . . physicians practicing virtually all forms of defensive medicine.”⁵⁰ Similar findings were reported by Carrier et al. in two subsequent studies.⁵¹ Other studies have reported that non-financial fears may play a role in physicians engaging in defensive medicine such as the mental distress and damaged reputation that can accompany a malpractice suit.⁵²

D.1. High Risk Areas of Practice

A number of studies, mostly direct physician surveys, have looked at the practice of defensive medicine for specialties at high risk for malpractice. These specialties have included emergency medicine, obstetrics/gynecology, surgery (including general, orthopedic and neurosurgery), and radiology. These high risk areas were confirmed by interviews with hospital insurers in Maryland.⁵³ Carroll and Buddenbaum (2013)⁵⁴ looked at whether specialties categorized as “high risk”⁵⁵ or “low risk”⁵⁶ actually had different experience with the medical malpractice system. They found that

- High liability risk specialties have more claims overall and more claims that result in an indemnity payment

⁴⁹ *Id.*

⁵⁰ *Id.* at 2615.

⁵¹ See Emily R. Carrier et al., *Physicians’ Fears of Malpractice Lawsuits are Not Assuaged by Tort Reforms*, 29 HEALTH AFF. 1585 (2010); Emily R. Carrier et al., *High Physician Concern About Malpractice Risk Predicts More Aggressive Diagnostic Testing in Office-Based Practice*, 32 HEALTH AFF. 1383 (2013).

⁵² See CBO REPORT, *supra* note 31, at 7.

⁵³ In addition, nursing was mentioned by hospital insurers as a high risk area for hospitals. Plaintiffs who develop bed sores, suffer injury from falls or medication errors, or because of “alarm fatigue” (i.e., failure of a nurse to respond to a call button) may sue nurses and hospitals for malpractice.

⁵⁴ Aaron E. Carroll & Jennifer L. Buddenbaum, *High and Low-Risk Specialties Experience with the U.S. Medical Malpractice System*, 13 BMC HEALTH SERVS. RES. 465 (2013).

⁵⁵ These included emergency medicine, general surgery, obstetrics and gynecologic surgery, and radiology.

⁵⁶ These included general and family practice, internal medicine, and pediatrics.

- Indemnity payments for high risk specialties are much higher than those for low risk specialties
- High risk specialties see more claims due to improper performance of a procedure; low risk specialties have more claims related to diagnostic error.⁵⁷

Studdert et al.⁵⁸ asked physicians in the six high risk specialty groups above how frequently they engaged in each of the following types of defensive medicine: (1) order more tests than medically indicated; (2) prescribe more medications than medically indicated; (3) refer to specialists in unnecessary circumstances; and (4) suggest invasive procedures against professional judgment. Almost 60% of respondents “reported that they often ordered more diagnostic tests than were medically indicated”⁵⁹ with 70% of emergency physicians reporting that they ordered such tests. Just over fifty percent (52%) of “all respondents reported that they often referred patients to other specialists in unnecessary circumstances”⁶⁰ with the practice being most common among OB/GYNs (59%). One-third of respondents reported “prescribing more medications than were medically indicated” and “suggesting invasive procedures which, in their professional judgment, were unwarranted.”⁶¹ Surgeons were somewhat more likely than others to say they suggested unnecessary invasive procedures (44%). Respondents were also asked to describe their most recent defensive medicine act. Over half of emergency physicians, orthopedic surgeons and neurosurgeons who responded said that they used CT scans, MRIs or radiography that was not clinically necessary.⁶²

The study by Studdert et al. and many other studies of specialists and defensive medicine are largely based on physician self-reports, which (as noted above) may be biased, or limited by lack of recall or definitional problems. Specialist studies using regression analyses to link malpractice risk to health care utilization and/or defensive medicine have largely been in the area of obstetrics and looked at the rate of C-sections. Obstetrics has been described in numerous studies as a specialty with a high rate of litigation for a number of reasons:

- The physician is dealing with two patients (mother and baby) not just one.
- It is not always clear whether disabilities of the child after birth are prenatal or perinatal in origin (i.e., causation is often an issue in litigation).
- If the injury is to the baby, damages include care for a life time.⁶³

Studies have asserted that many C-sections are performed defensively and that the current high rate of C-sections is due to malpractice liability risk.⁶⁴ Schifrin and Cohen (2013)⁶⁵

⁵⁷ *Id.*

⁵⁸ *See* Studdert et al., *supra* note 47.

⁵⁹ *Id.* at 2612.

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² *See id.*

⁶³ Barry S. Schifrin & Wayne R. Cohen, *The Effect of Malpractice Claims on the Use of Caesarean Section*, 27 BEST PRAC. & RES. CLINICAL OBSTETRICS & GYNAECOLOGY 269 (2013).

hypothesized that the reason for the high rate of C-sections is that in “virtually every suit involving intrapartum care” the plaintiff alleges that an earlier delivery (by C-section) would have changed the outcome. In terms of whether malpractice risk changes C-section rates, Zwecker et al. (2011)⁶⁶ found that average state malpractice premiums of over \$100,000 were associated with a higher incidence of total C-sections, fewer vaginal births after C-section, and lower rates of instrumental deliveries compared with when the average premium was less than \$50,000.

While a number of other statistical analyses have found that a higher malpractice claims risk, as measured through obstetricians’ malpractice premiums and or claim frequency, was associated with an increased rate of C-sections,⁶⁷ the results of such studies are mixed with some finding no relationship between malpractice lawsuit activity and C-sections.⁶⁸

D.2. Studies on the Impact of Financial Incentives on Defensive Medicine

We are unaware of any studies examining the direct association between defensive medicine and the implementation of global budgets (or any similar payment models). Two studies over the last dozen years (described below) have examined the effect of the interaction between state tort reforms and managed care on health care spending, which may allow one to make an inference about the use of capitation by HMOs to reimburse providers and its impact on defensive medicine. The underlying reason for examining such an interaction is to test whether certain financial incentives might exacerbate or mitigate the amount of defensive medicine practiced by health care providers. That is, it tests whether a provider’s decision to practice defensive medicine may be exacerbated when that provider receives additional reimbursement for that service,⁶⁹ or if a provider’s decision to practice defensive medicine may be mitigated when that provider either receives no additional reimbursement for that service (e.g., a diagnostic service billed separately to a lab) or bears the cost themselves for that service (e.g., a physician receiving a capitated payment or a hospital receiving a global budget).

⁶⁴ The rate of C-section deliveries in the US rose from 20.7 to 31.1% between 1996 and 2006. Philip Zwecker et al., *Effect of Fear of Litigation on Obstetric Care: A Nationwide Analysis of Obstetric Practice*, 28 AM. J. PERINATOLOGY 277 (2011).

⁶⁵ See Schiffrin & Cohen, *supra* note 63.

⁶⁶ See Zwecker et al., *supra* note 64.

⁶⁷ See H. Shelton Brown, *Lawsuit Activity, Defensive Medicine, and Small Area Variation: The Case of Cesarean Sections Revisited*, 2 HEALTH ECON. POL’Y & L. 285 (2007) (citing A.R. Localio et al., *Relationship Between Malpractice Claims and Cesarean Delivery*, 269 J. AM. MED. ASS’N 366 (1993); A. Dale Tussing & Martha A. Wojtowycz, *Malpractice, Defensive Medicine, and Obstetric Behavior*, 35 MED. CARE 172 (1997)); Y. Tony Yang, *Relationship Between Malpractice Litigation Pressure and Rates of Cesarean Section and Vaginal Birth After Cesarean Section*, 47 MED. CARE 234 (2009).

⁶⁸ See Brown, *supra* note 67 (citing Frank A. Sloan et al., *Tort Liability and Physicians’ Care Levels*, 17 INT’L REV. L. & ECON. 245 (1997); Laura-Mae Baldwin et al., *Defensive Medicine and Obstetrics*, 274 J. AM. MED. ASS’N 1606 (1995)).

⁶⁹ See, e.g., Ily Schurtz, *Physicians’ Financial Incentives and Medical Treatment: How Do They Interact?*, 57 J.L. & ECON. 1 (2014) (focusing on rates of C-section in Texas, Schurtz looked at both malpractice risk (as measured by caps on damages) and the rate of C-sections among commercially insured mothers, for whom the procedure is considered profitable, and among mothers covered by Medicaid, for whom the procedure is thought to be unprofitable. He found that after the implementation of caps on damages, C-section rates for commercially insured women increased 2% relative to the rate of C-sections among mothers covered by Medicaid.)

Kessler and McClellan (2002)⁷⁰ extended their 1996 analyses to test for whether the effects of state tort reforms on Medicare heart disease patients' inpatient spending were different in areas with low or high managed care enrollment. The authors found that the effects of tort reform on spending were concentrated in areas with lower managed care penetration, concluding that "managed care and liability reform are substitutes." In other words, managed care plans appear to be able to reduce the provision of defensive medicine on their own.

Likewise, Avraham et al. (2012) found that reductions in self-insured employers' premiums associated with state tort reforms were concentrated in PPOs rather than HMOs (where HMOs are a more restrictive form of managed care than PPOs), suggesting (similar to Kessler and McClellan) "that HMOs can reduce 'defensive' healthcare costs even absent tort reform."⁷¹

It is unclear, however, whether capitated payment rates to providers (which would not compensate providers for additional services), utilization review (which would explicitly not cover some services in certain instances), or some other managed care mechanism would have been responsible for the reduction in defensive medicine observed in these two studies.⁷²

As noted above, we were not able to find any studies that looked at the association between defensive medicine and the implementation of global budgets. Prior analyses of the likely effects of implementing global budgets have generally focused on the overall effect of reduced health care spending (rather than defensive medicine per se) which result from the difference in financial incentives for prospective fixed payments versus retrospective volume-based fee-for-service payments. A brief summary of these underlying provider incentives and of the experience with implementation of global budgets within the U.S., Canada and Europe are included in a 2009 policy brief from Mathematica Policy Research to the Massachusetts Special Commission on the Health Care Payment System.⁷³ While we are unaware of any studies of the costs of defensive medicine under global budgets in European countries, we think it would be inappropriate to apply the findings of any such studies to the costs of defensive medicine under

⁷⁰ Daniel P. Kessler & Mark B. McClellan, *Malpractice Law and Health Care Reform: Optimal Liability Policy in an Era of Managed Care*, 84 J. PUB. ECON. 175 (2002).

⁷¹ Avraham et al., *supra* note 37, at 657.

⁷² While an HMO's use of capitated payments to providers differs somewhat from the global budget payment model proposed for Maryland, there have not been studies of the impact of payment models that are more similar to the Maryland global budget payment model on defensive medicine. Some have suggested that ACOs may be a more relevant model (due to the coordination of ACOs across multiple providers) but there have been no studies as of yet of the impact of ACOs on health care spending or defensive medicine.

⁷³ As summarized in this Mathematica Policy Research report, global budgets that have been implemented in the U.S. for hospitals and health care systems have included the Department of Veterans Affairs, described as "the single largest global budget for health care services in the U.S.", a group of hospitals in Rochester, New York which between 1980 and 1988, "voluntarily accepted and operated under individual and aggregate caps on hospital income from all payers, including Medicare and Medicaid." Outside the U.S., the Mathematica report stated that Canada and most European countries had implemented some type of global budgeting for their health care systems. However, the report also stated that "[n]o systematic studies have examined the effect of global budgets on cost and patient outcomes. Comparisons of the U.S. and Canada have suggested that global budgets can constrain the rate of cost growth with little or no effect on aggregate measures of health." See MATHEMATICA POLICY RESEARCH, INC., GLOBAL BUDGETS FOR HEALTH CARE (2009), available at <http://www.docstoc.com/docs/168907678/global-budgets---MassGov>.

a global budget payment system in the U.S. because of the very different nature of the tort system in European countries and in the U.S.⁷⁴

E. Defensive Medicine in Maryland

In reviewing the literature we found no specific studies of the practice of defensive medicine in Maryland. Given that, we attempted to determine if there were any unique malpractice risk issues in Maryland or laws or other practices that, in light of the findings presented above, would likely make rates of defensive medicine different in Maryland than in other states.

That said, differences between health care spending in Maryland and the rest of the country may possibly reflect differences in the extent of defensive medicine practiced in Maryland as compared to that practiced in other states. The average total premium for a single individual for private-sector firms in 2013 was \$5,730 in Maryland and \$5,571 for the U.S. based on data from the Medical Expenditure Panel Survey's Insurance Component.⁷⁵ Average Medicare spending per beneficiary in 2012 from the Dartmouth Atlas (which adjusts for differences in age, sex, and race) was \$10,515 in Maryland and \$9,687 for the U.S.⁷⁶ Although defensive medicine practice is one factor that could contribute to these differences, any number of factors besides defensive medicine could explain the slightly higher health care spending amounts in Maryland.

E.1. Medical Malpractice Risk in Maryland

Anecdotal reports from hospital/physician insurers in Maryland indicated that there has been a decline in the number of malpractice claims filed in the last few years in Maryland and nationwide but that the average payout has been increasing over the last few years primarily due to damages awarded or obtained through settlement for the costs of life time care for birth injured patients. All malpractice claims in Maryland (in excess of \$30,000) must be filed with the Maryland Health Care Alternative Dispute Resolution Office (MHCADRO). Data from MHCADRO indicate that the total number of malpractice claims filed against physicians in the state over the past four fiscal years has declined from 940 in FY 2011 to 588 in FY 2014.

⁷⁴ Although this is changing slightly, in most European countries, lawyers in tort actions are not paid on a contingency basis and in some countries the losing party must pay the litigation costs of the winner. In addition, some countries have an administrative body that hears patient complaints against physicians. As a result, there is much less incentive for patients to sue physicians in these countries than in the U.S. Interestingly, In a 2009 commentary posted by The Hastings Center, Richard Saltman, Professor of Health Policy and Management at the Emory University School of Public Health and cofounder of the European Observatory on Health Systems and Policies in Brussels, stated that in "Britain, Sweden, and other Western European [countries] health policy makers never use [the] term [defensive medicine], nor do they consider the practice of defensive medicine a policy concern." Richard B. Saltman, *Cost Control in Europe: Inefficiency is Unethical*, HEALTH CARE COST MONITOR (2009), <http://healthcarecostmonitor.thehastingscenter.org/richardsaltman/cost-control-in-europe-inefficiency-is-unethical/>.

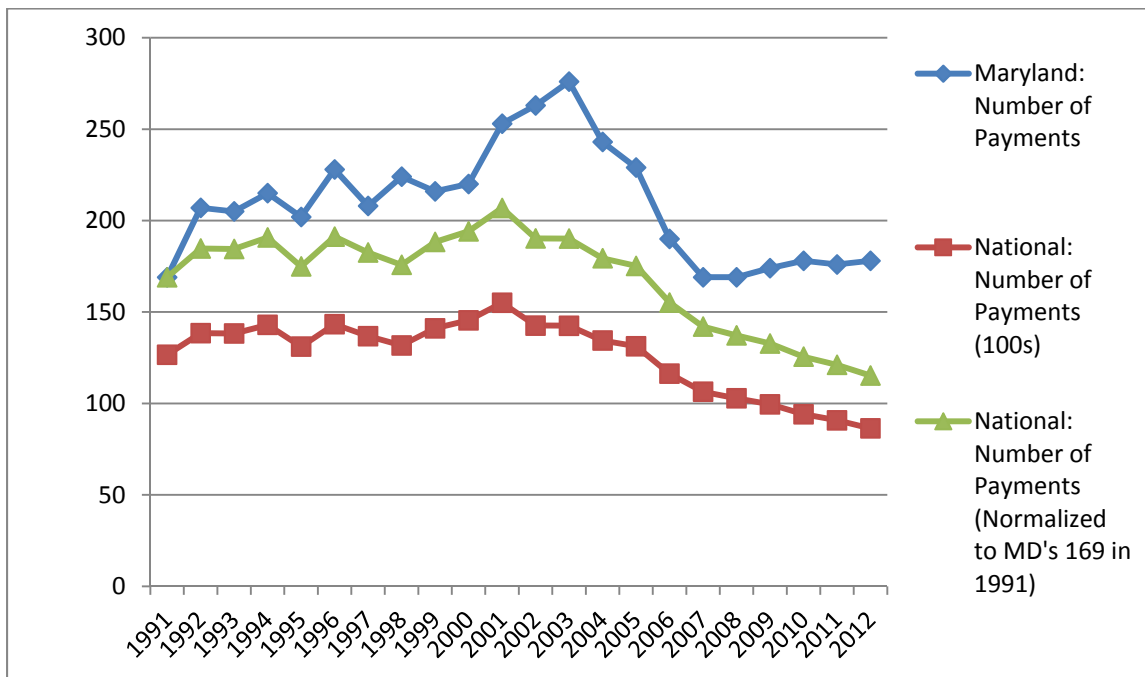
⁷⁵ See AGENCY FOR HEALTHCARE RESEARCH & QUALITY, 2013 MEDICAL EXPENDITURE PANEL SURVEY—INSURANCE COMPONENT (2013), http://meps.ahrq.gov/mepsweb/data_stats/summ_tables/insr/state/series_2/2013/tiic1.htm.

⁷⁶ See DARTMOUTH INSTITUTE FOR HEALTH POLICY & CLINICAL PRACTICE, DARTMOUTH ATLAS OF HEALTH CARE (2012), *available at* <http://www.dartmouthatlas.org/tools/downloads.aspx>.

We also examined data for malpractice payments contained in the National Practitioner Data Bank (NPDB) for physicians.⁷⁷ While we looked to the NPDB for information about trends in malpractice claim frequency and severity, the NPDB data set may be incomplete as it does not include claims that are paid by hospitals that are not paid on behalf of a physician.

Figure 2, below, shows the number of malpractice payments for Maryland versus the U.S. overall for years 1991 through 2012. In Maryland, the number of malpractice payments increased from 1991 to 2003, decreased from 2003 to 2007, and then remained relatively stable after 2007. This pattern is relatively similar to that for the U.S. overall, although the number of payments in the U.S. continued to decline after 2007. Moreover, relative to Maryland's starting point in 1991 (i.e., pegging the national number in 1991 to be the exact same as that in Maryland), the trend for number of payments in the U.S. overall appears to have been somewhat lower than the number of payments in Maryland.

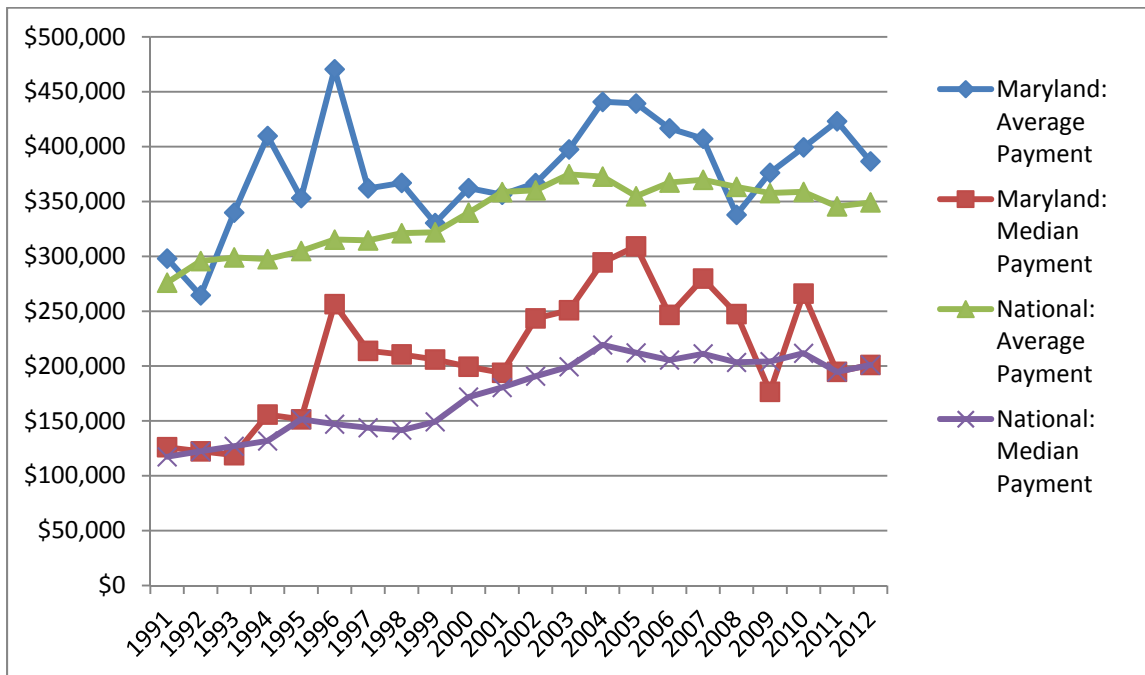
Figure 2: Number of Malpractice Payments for Maryland vs. the U.S. over Time



Source: National Practitioner Data Bank.

⁷⁷ HEALTH RESOURCES & SERVICES ADMINISTRATION, U.S. DEP'T OF HEALTH & HUM. SERVS., NATIONAL PRACTITIONER DATA BANK PUBLIC USE DATA FILE (2015), <http://www.npdb.hrsa.gov/resources/publicData.jsp>.

Figure 3: Size of Malpractice Payments for Maryland vs. the U.S. over Time



Source: National Practitioner Data Bank.

Dollar values are adjusted for inflation using the Consumer Price Index (All Urban Consumers) in 2014 dollars.

Figure 3, above, shows the size of malpractice payments for Maryland versus the U.S. overall for years 1991 through 2012. It shows both the average payment per year and the median payment per year for both Maryland and the U.S. All of these estimates are adjusted for inflation and shown in 2014 dollars. In both Maryland and across the U.S., there have been increases in the average and median inflation-adjusted payments over time. While the numbers for Maryland fluctuate from year to year, the growth rate in Maryland seems relatively similar to the growth rate across the U.S. The level of the average and median payments, however, are somewhat higher in Maryland than in the U.S.

E.2. Existing Tort Reforms in Maryland

Maryland, like virtually all other states, has adopted a number of tort reforms. In 1986, Maryland adopted what might be considered its most significant reforms including:

- A requirement that a certificate of merit be obtained within 90 days of filing a malpractice claim.
- A \$350,000 cap on non-economic damages from 1986-1994; a \$500,000 cap thereafter to increase by \$15,000/year (subsequently amended to limit cap to \$650,000 between January 1, 2005 and December 31, 2008 and thereafter to increase by \$15,000/year).
- A provision giving authority to courts to order periodic payment of damages.

Although Maryland has one of the highest caps in the country it is still within the group of states with caps on non-economic damages. As noted above, such caps have been shown in

studies to reduce medical malpractice costs. Early studies (from the pre-1994 period, as summarized by OTA) found that only caps on damages and amending the collateral source rule consistently reduced one or more indicators of direct malpractice costs but there were no careful studies to evaluate the impact on indirect defensive medicine.

The recent studies discussed above in Section C, which include papers published in reputable economics journals, along with CBO's additional analysis and synthesis, may lead one to conclude that defensive medicine practices in Maryland contribute less to health care spending (on a percentage basis) than the national average. This conclusion would be based on the facts that Maryland is among the 22 states that has implemented a cap on noneconomic damages but one of only ten states that has not reformed its joint and several liability rule.⁷⁸ The 2006 CBO analysis found that a cap on noneconomic damages was associated with a 1.6% reduction in overall hospital care spending per capita during the 1980 to 2003 time period. It also found that elimination of joint-and-several liability was associated with a 4.7% increase in overall hospital spending per capita. Therefore, implementing the former (i.e., a cap on noneconomic damages) in Maryland may have reduced defensive medicine and not implementing the latter (i.e., eliminating joint and several liability) in Maryland has likely not increased defensive medicine. This conclusion, however, is subject to at least three important caveats: (1) Maryland has one of the highest caps on non-economic damages in the country and the CBO studies did not take into account the amount of a state's cap; (2) claim severity in Maryland is higher than the national average; and, (3) Maryland does not have a cap on economic damages or total damages. These factors may operate to mitigate the impact of Maryland having implemented a cap on non-economic damages and not having changed its joint and several liability rule. As to the last of the three caveats listed, only a half dozen states have caps on total damages and the CBO reports did not examine whether caps on economic damages or total damages alone affected the practice of defensive medicine. However, if anecdotal reports we heard are correct, i.e., that the increase in the severity of malpractice claims is due to increases in economic damages, then caps on non-economic damages alone may not have the observed effect of reducing the practice of defensive medicine.

E.3. Financial Incentives in Maryland and Their Impact on the Practice Of Defensive Medicine

There is no existing empirical analysis directly related to the effect of different provider payment models on the practice of defensive medicine. That said, in order to shed some light on how the new all-payer model of hospital global budgets may affect the relationship between defensive medicine and the growth in the cost and quality of hospital care in Maryland (and, in turn, the implications for the Commission's ability to manage cost growth under the new CMS waiver), we can make some inferences from the relationship between defensive medicine and managed care. The studies by Kessler and McClellan (2002) and Avraham et al. (2012), reviewed above in Section D.2, indicate that the effects of state tort reforms on reducing defensive medicine were higher in situations with less managed care. (Kessler and McClellan compared areas with high or low managed care penetration, while Avraham et al. compared HMOs to

⁷⁸ Ronen Avraham, Database of State Tort Law Reforms, <http://www.utexas.edu/law/faculty/ravraham/dstlr.html> (last visited Mar. 6, 2015).

PPOs.) In other words, managed care appeared to be able to reduce defensive medicine, even absent tort reform.

As noted above, the referenced studies are unable to disentangle whether the reductions observed in defensive medicine practices were driven more by capitated payments to providers or other managed care techniques such as utilization review. If these findings were indeed driven more by the reimbursement model (i.e., capitation rather than, for example, utilization review), then Maryland's shift in hospital payment from a fee-for-service model (with no volume constraint) to an overall revenue constraint via HSCRC's global budget payment model ought to then reduce the practice of defensive medicine in the hospitals that have opted into the new payment model. This outcome, however, assumes alignment of physician and hospital incentives.⁷⁹

F. Conclusions

Despite a relatively large body of literature examining the practice of defensive medicine, there are simply no reliable estimates of the baseline costs of defensive medicine to the health care system. The direct survey approach of quantifying defensive medicine has serious limitations. In contrast, the econometric analysis approach of examining defensive medicine can only really permit one to quantify the changes in defensive medicine that result from changes in malpractice risk. (These studies cannot allow one to infer the baseline amount of defensive medicine without making some strong assumptions; therefore they are only a minimum estimate of the costs of defensive medicine.) Overall, these econometric studies suggest that tort reforms generally have a relatively small, but not insignificant, impact on health care spending. The effect of tort reform on hospital spending averaged 2.7% across the five types of tort limits evaluated by CBO in its 2006 report and CBO's 2009 estimate of the likely effect of a federal tort reform policy on total health care spending was only 0.5%.⁸⁰

There is no data in Maryland to directly indicate that its physicians are unique in their practice of defensive medicine. That said one can make two inferences about the extent of defensive medicine in Maryland compared to the rest of the country. The first of these inferences relates to the tort reforms already implemented in Maryland. The implementation of a cap on noneconomic damages in 1986 suggests that defensive medicine may be lower in Maryland than in other states, and the lack of a joint-and-several liability reform in Maryland also suggests that defensive medicine may be lower in Maryland as compared to other states. However, as stated above, this inference is subject to several caveats. The second of these inferences relates to the mitigating effect of managed care on the relationship between tort reform and defensive medicine. If the effect of managed care on defensive medicine is due to financial incentives of a plan's payment model (instead of utilization review or some other aspect of managed care), then the new all-payer global budget arrangement could mitigate the

⁷⁹ Under the new hospital payment model in Maryland, physicians will still be under a fee-for-service model and hospitals will be under the new global budget reimbursement model.

⁸⁰ As noted earlier, this figure is relative to a baseline where many states already have implemented tort reforms as well as based on the observation that tort reforms can either increase or decrease defensive medicine.

practice of defensive medicine in Maryland. As mentioned above, however, this assumes that hospitals and physician incentives are aligned.

Appendix A

Summary of Commentary from Stakeholders Regarding the Cost of Defensive Medicine in Maryland*

Maryland Hospital Association: Carmela Coyle, Larry Smith, Dr. Scott Spier

- National costs of defensive medicine, or the fear of malpractice litigation are about \$46 billion each year.
- One recent study of the cost of defensive medicine in three hospitals in Massachusetts found that 13 percent of hospital costs were judged to be at least partially defensive.
- CBO estimates medical tort reform would reduce the federal budget deficit by \$54 billion.
- Maryland ranked 7th in the nation in per capita medical malpractice payouts in 2013.
- Maryland ranked as having the 4th largest increase in malpractice payout amounts from 2012 to 2013 - a \$26 million spike.
- Maryland was one of eight states with more than \$100 million in payouts in 2013.
- Maryland has \$2 billion of potentially unnecessary hospital spending.
- Even if defensive medicine is only 1% of health care costs, it represents significant dollars.
- The National Practitioner Databank data understates the number of claims filed.
- Many physicians are compelled to avoid costs related to malpractice when they should be focused on doing the right thing for patients.
- Malpractice cases affect physicians personally.
- Maryland should focus on clinical practice groups getting together to determine how to practice medicine better.
- Tort reform has nothing to do with the practice of defensive medicine but instead the costs of malpractice.
- Maryland needs a systemic change like a no-fault system.
- The threat of a lawsuit has a large impact on clinical decisions.
- Findings of the preliminary report are underestimated.

- Maryland should look at non-judicial solutions to medical malpractice like a no-fault birth injury fund.
- Use of life care plans has changed the landscape of Obstetrics.
- Self insurance costs at Mercy Medical Center have more than doubled in the last 3 years – 4% of annual revenue is spent on insurance coverage versus 2% a few years ago.
- Because of malpractice risk some hospitals need to rethink whether they want to continue to provide Obstetric services – could be an access issue.
- Malpractice costs and environment impact physician recruitment in certain areas.
- Don't believe that global budget will reduce the cost of defensive medicine.

Physicians: Pam Kasemeyer, Dr. Peter Curran, Dr. Steve Schenkel, Dan Shattuck, Dr. Amar Setty

- Physicians have no lack of interest in working with hospitals but don't want the practice of medicine to be dictated to them. Physicians should be able to deal with patients individually and use their training to make appropriate clinical decisions.
- We can have all the laws we want but there is a huge difference in culture between states. There are also large differences between malpractice insurance costs between states as a result.
- Spending by Medicare per capita for malpractice differs greatly between Florida (\$14,000 per capita) and Minnesota (less than \$7,000 per capita).
- Many times the clinical practice of medicine can be in conflict with population health.
- Maryland is different under the all-payer model in that financial risk is on the hospitals and the clinical risk is on the physician.
- Physicians are challenged with dealing with both the real risk and the perceived risk of malpractice suits.
- We need to protect the tort reforms Maryland already has and think about further needs.
- Maryland needs to continue to push for access across Maryland – malpractice costs could challenge that.

- Use of physician assistants and non-physician clinicians is expanding and we need to consider the impact of that dynamic.
- The community standard of care now incorporates defensive medicine.
- We are in the midst of the largest shift of risk from Medicare and payers to health care institutions.
- We can't assume that care coordination will reduce the cost of defensive medicine.
- We need to understand the nuances of the risk of malpractice under accountable care organizations.
- This discussion should continue into the future.

*This summary was prepared by Steve Ports, Health Services Cost Review Commission.

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