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Policy matters

Maternity Care and Liability: Least Promising Policy Strategies for Improvement

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A B S T R A C T

Background: The present liability system is not serving well childbearing women and newborns, maternity care clinicians, or those who pay for maternity care. Examination of evidence about the impact of this system on maternity care led us to identify seven aims for a high-functioning liability system in this clinical context. Herein, we identify policy strategies that are unlikely to meet the proposed criteria and contribute to needed improvements. A companion paper considers more promising strategies.
Methods: We considered whether 25 strategies that have been used or proposed for improvement have met or could meet the seven aims. We used a best available evidence approach and drew on more recent empirical legal studies and health services research about maternity care and liability, when available, and considered other studies when unavailable.
Findings: Fifteen strategies seem to have little potential to improve liability matters in maternity care. Despite support for capping non-economic damages, a series of studies has found a modest impact at best on maternity care. Maternity-specific studies also do not lend support to tort reforms collectively and several other specific tort reforms. Some tort alternative and liability insurance reform strategies have narrow aims and are not policy priorities.
Conclusions: Caps on non-economic damages and other tort reforms have narrow aims and have been marginally effective at best in the context of maternity care. Several other possible reforms similarly are not promising. Continued focus on these strategies is unlikely to result in the high-performing liability system that maternity care stakeholders need.
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Introduction and Background

A new report, *Maternity Care and Liability: Pressing Problems, Substantive Solutions* (Sakala, Yang, & Corry, 2013b), and an overview of report highlights in this issue clarify that the current liability system does not serve well childbearing women, maternity care providers, or those who pay for the cost of maternity care, which includes liability-related expenses. Policy interventions are needed to better achieve a high-functioning liability system. Effective strategies must address a broad set of persistent challenges and

- Promote safe, high-quality maternity care consistent with best evidence, and minimize avoidable harm;
- Minimize maternity professionals' liability-associated fear and disaffection;
- Avoid incentives for defensive maternity practice;
- Foster access to high-value liability insurance policies for all maternity caregivers without restrictions or surcharges for care supported by best evidence;
- Respond appropriately when women and newborns sustain injury, and provide rapid, fair, efficient compensation;
- Assist families with responsibility for costly ongoing care of infants and women with long-term disabilities in a timely manner and with limited legal expense; and
- Minimize legal and administrative costs (Sakala et al., 2013b).

Four major classes of reforms might be used to improve liability matters: Tort, tort alternative, liability insurance, and health care system reforms. Each encompasses diverse possible strategies.

Tort Reform

The legal framework and rules governing harm resulting from medical malpractice have traditionally been matters for state

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courts. For five decades, tort reform statutes have supplemented this tradition in nearly all states (Studdert, Mello, & Brennan, 2004). Primary aims of the measures have been to stabilize the size of liability insurance premiums and the frequency and cost of claims, and to deter behavior that is believed to accompany malpractice pressure (Mello & Zeiler, 2008). Conventional tort reforms generally address the size of awards, modify liability rules, or limit access to courts (Studdert, Mello, & Brennan, 2004).

The evidence base for evaluating the effects of most traditional tort reforms across medicine generally is large and mature. Apart from caps on non-economic damages, better quality studies across clinical areas have found relatively little evidence that tort reforms have the desired impact on liability-related concerns (Mello & Kachalia, 2010). Numerous tort reforms have also been evaluated in the maternity context. This paper discusses eight specific tort reforms and the effect of multiple tort reforms.

Tort Alternative Reform

Although the national debate about problems with the liability system has largely focused on merits of conventional tort reform, some scholars and policymakers consider "tort alternative" reforms directed at making the liability system more efficient and responsive to injured patients. These strategies use alternative mechanisms to resolve disputes, dispense with negligence as the basis for compensation, and relocate legal responsibility for injury at the institutional level (Studdert, Mello, & Brennan, 2004). None of these reforms has been widely adopted by states.

Liability Insurance Market Reform and Regulation

Reform of liability insurance has attracted less attention than tort and tort alternative reforms (Sage, 2004). Liability crises that trouble health professionals are first and foremost insurance crises with spikes in liability insurance cost and/or reductions in the availability of coverage. It is important to dampen the volatile cycle of premiums that rise and fall regardless of risk and to ensure that insurance fosters high-quality care (Baker, 2005; Sage, 2004). This cycle is amenable to policy intervention, including better information, altered incentives, and appropriate behavior constraints (Sage, 2005). Liability insurance reforms focus on direct insurance industry regulations, government acting as insurers, and government-sponsored pooling arrangements. We found no controlled studies that have investigated the effectiveness of liability insurance reform in general or in the maternity field.

Health Care Reforms

Finally, there is growing awareness that reform of the delivery and organization of health care can impact liability outcomes and a valuable track record in maternity care.

Methods

We used a best available evidence approach to help clarify the potential for specific strategies to meet the seven proposed aims of a high-functioning liability system. Finding no systematic reviews or experimental studies, we preferred studies that took into account potential competing predictor variables and confounding factors within empirical legal studies and health services research traditions. We preferred studies specifically about maternity care and liability, and considered more general studies when maternity-specific research was unavailable. We preferred results from the current or previous liability cycle but, when unavailable, consulted earlier studies. We preferred national or multistate studies to state-level studies. We excluded studies from other countries. We searched PubMed and LexisNexis, with widely varying search terms due to the diverse topics. The search results, health care news sources, journal table of contents notification services, and referees also pointed to relevant studies. In the absence of better quality empirical sources, we consulted theoretical analyses and commentaries and made judgments, indicated as such, about plausibility of addressing priority aims.

We deemed strategies that have been shown to have little or no impact or may plausibly be expected to have limited impact, in consideration of the breadth of liability system aims, to be of low policy priority for further implementation and evaluation.

Results

We evaluated 25 different strategies that might lead to a higher functioning liability system in maternity care, across the four major categories. Nine tort reform, one alternative tort reform, and five liability insurance reform strategies did not meet our criteria for policy priorities and are covered here. Strategies that did meet our criteria, including all of the health care reform strategies, are covered in the companion article in this issue (Sakala, Yang, & Corry, 2013a). Table 1 summarizes the current understanding of the degree to which more limited strategies do or could help to achieve the seven aims described.

Tort Reform

Tort Reforms Collectively

Two multivariable studies measured the additive effect of multiple tort reforms on the supply of obstetrician-gynecologists, out of concern that liability pressure adversely reduces supply:

- Yang, Studdert, Subramanian, and Mello (2008) evaluated the association between a series of tort reforms and two measures of obstetrician-gynecologist supply (number of obstetrician-gynecologists per 10,000 births and number of obstetrician-gynecologists per 100,000 women of childbearing age) across all states and Washington, DC, from 1991 to 2003. They examined 10 reforms: Attorney fee limits, collateral source rule, damages caps (four types), periodic payment, expert witness rule, joint and several liability modification, and pretrial screening. They found no relationship between the collective effect of tort reforms and obstetrician-gynecologist supply.
- Kessler, Sage, and Becker (2005) examined the impact of tort reforms on the growth of physicians at the state level from 1985 to 2001. They found that obstetrician-gynecologist supply increased by 2% in states that had adopted reforms that might directly reduce malpractice awards relative to states with no reforms. Indirect reforms were associated with a 0.5% decrease in supply. The supply was increased by 2% in states with both direct and indirect reforms. Comparable increases were much higher when this specialty's results were combined with those of four other specialties:

Table 1
Evidence Summary: Effects of Least Promising Reforms on Diverse Aims of Liability System

Interventions	Aims						
	↑ Safe, High-Quality Care	↓ Clinician Fear, Distress	↓ Defensive Practice, Practice Variation	↑ Public Interest Liability Insurance	↑ Appropriate Response to Injury	↑ Help for Infants, Women with Disabilities	↓ Liability and Administrative Costs
Tort reforms							
Collective	(−)	?	(−)*	(−)	(−)	(−)	(−)
Attorney fee limits	(−)*	(−)	(−)*	(−)	(−)	?	(−)
Caps on non-economic damages	−*	?	−*,†	(−)*	(−)	(−)	(−)*,†
Collateral source rule	(−)*	(−)	(−)*	(−)	(−)	(−)	(−)
Expert witness rule	(−)*	(−)	(−)*	(−)	(−)	(−)	(−)
Joint and several liability rule	(−)*	?	(−)*	(−)	(−)	(−)	(−)
Periodic payment of awards	(−)*	(−)	(−)*	(−)	(−)	(−)	(−)
Pretrial screening	(−)*	(−)	(−)*	(−)	(−)	(−)	(−)
Statute of limitations	(−)	(−)	(−)	(−)	(−)	(−)	(−)
Tort alternative reform							
Arbitration, mediation	?	(−)	(−)	(−)	?	?	?
Liability insurance reforms							
Joint underwriting associations	?	(−)	(−)	?	(−)	(−)	(−)
Liability insurance investment regulation	(−)	?	(−)	?	(−)	(−)	(−)
Liability insurance rate regulation	(−)	?	(−)	?	(−)	(−)	(−)
Liability premium subsidy	(−)	?	(−)*	(−)	(−)	(−)	(−)
Patient compensation funds	(−)	?	(−)	(−)	(−)	(−)	(−)

Key: +, Stronger evidence suggests strategy has this effect; (+), Plausible that strategy has this effect and/or weaker evidence suggests that it does; −, Stronger evidence suggests strategy does not have this effect or has modest effect at best effect; (−), Weaker evidence suggests that strategy does not have this effect or has modest effect at best; or impact implausible in absence of evidence; ?, It is difficult to anticipate actual impact.

* Support from assessment includes maternity-related data.

† Ratings, based on maternity care evidence, differ from those of Mello and Kachalia (2010), who reported a favorable effect in medical system overall.

8% and 10%, respectively, suggesting a modest impact on supply of obstetrician-gynecologists relative to other physicians.

Evidence about the impact of multiple tort reforms has focused only on obstetrician-gynecologist supply and found a modest impact at best.

Attorney fee limits

In medical malpractice, attorneys for the plaintiff usually receive a fee only if their client wins the case. This "contingent fee" arrangement, a fixed percentage of the award (Inselbuch, 2001), provides incentives for attorneys to take a large enough share of the payment for damages when they win to offset lawsuits without compensation when they lose. Attorneys often charge from 33% to 50% of the total award. Concern about fairness to plaintiffs has led to legislative changes that target the amount of money paid to the plaintiff attorney (Budetti & Waters, 2005). However, such a reform could discourage attorneys from accepting meritorious cases owing to limits on potential revenue.

A recent review found several well-designed studies showing no effect in medicine generally of attorney fee limits on claim frequency, claim payouts, liability premiums, and physician supply, with more limited evidence also suggesting no effect on defensive behavior and quality of care (Mello & Kachalia, 2010). We found two recent, national, maternity-specific studies:

- An analysis from 51 jurisdictions from 1991 to 2003 found that attorney fee limits were neither associated with measures of obstetrician-gynecologist supply (Yang et al. 2008), nor with mode of birth (total cesarean, primary cesarean, and vaginal birth after cesarean [VBAC] rates; Yang, Mello, Subramanian, & Studdert, 2009), nor with five health outcome measures (low 5-minute Apgar scores, preterm birth, low birthweight, birth injury, infant mortality, and maternal mortality; Yang, Studdert, Subramanian, & Mello, 2012).
- In two models assessing the association between attorney fee limits and death of newborns in the first 6 days of life across states from1980 to 2001, contingency fee restrictions were associated with a 7% reduction in Black newborn mortality, significant only in models that did not include state-specific trends, and had no relationship to White newborn mortality (Klick & Stratmann, 2007).

Caps on non-economic damages

Payments made to individuals to compensate for damages from medical error are generally divided into economic and non-economic damages. Economic damages usually consist of past and future medical expenses for care and rehabilitation, as well as lost wages or earnings potential, measured in monetary terms (Levmore, 1994). Non-economic damages are more subjective and compensate for such damages as loss of a family member through "wrongful death," past and future pain and suffering, and mental anguish (Levmore, 1994).

The size of damage awards has become a major focus of state legislation. The principal response has been to limit, or "cap," the amount of money that can be awarded in a malpractice suit, versus leaving juries free to determine the size of awards. Legislated caps have restricted the size of awards well below levels otherwise awarded. Some states limit total recovery. More commonly, they limit non-economic damages, such as the non-economic cap of $250,000 enacted by California's landmark Medical Injury Compensation Reform Act of 1975 (Budetti & Waters, 2005).

Health professionals have often actively lobbied for caps on non-economic damages, whereas consumer advocates have generally held that such limits, which may be set near the level of a physician's average annual income, are unfair to injured parties and especially create burdens for those with more serious injury. Further, caps may provide a disincentive for lawyers to take clients with meritorious cases and reduce incentives for deterring harm. About one fifth of states have struck down caps on non-economic damages as unconstitutional (American Medical Association, 2009).

Many believe that limiting non-economic damages is the most effective single tort reform that a state can enact (Studdert, Mello, & Brennan, 2004). Summarizing the better studies across all clinical areas, Mello and Kachalia found that non-economic caps substantially reduce claim payments, may increase litigation costs, moderately constrain premium growth, may reduce defensive assurance behaviors, and modestly increase physician supply. They found the evidence to be unclear about possible impact on the number of claims that plaintiff attorneys accept, health insurance premium levels, and the quality of care (2010). They did not consider most criteria included in Table 1.

A series of multivariable studies has assessed the impact of caps on non-economic damages in maternity care. As detailed below, consistent evidence suggests that the impact of non-economic caps on damages in this context is minimal at best, with a number of studies finding no benefit and one identifying harmful population effects. Any modest benefits must be balanced against questions about justice for injured women and newborns and their families and other potentially more effective ways of achieving desired aims.

National, multivariable studies suggest that non-economic damages caps have a less clear and strong impact in the maternity arena than in medicine generally:

- *Premiums.* An analysis of the association between caps and liability premiums in all states and the District of Columbia from 1999 to 2001 found that premiums of obstetrician-gynecologists were not different in states with and without non-economic caps. Premiums were about $15,000 lower in states with "hard" non-economic caps (no exceptions) than in states with "soft" non-economic caps (exceptions), but were not different in states with hard caps and no caps (Guirguis-Blake, Fryer, Phillips, Szabat, & Green, 2006).
- *Award sizes.* In the National Practitioner Data Bank, non-economic caps were not associated with malpractice payments made on behalf of obstetrician-gynecologists from 1990 to 2001 in all states and the District of Columbia (Currie & MacLeod, 2008).
- *Physician supply.* An analysis of the county-level impact of non-economic damages caps on obstetrician-gynecologist supply per 100,000 women aged 15 to 44 from 1985 to 2000 found that caps above $250,000 were not associated with an increase in obstetrician-gynecologist supply, overall or in rural counties. Caps at $250,000 were not associated with increased supply overall, but were associated with a 5% increase in supply in rural areas (Encinosa & Hellinger, 2005).
- *Physician supply.* In an analysis of all 51 jurisdictions from 1991 to 2003, Yang and colleagues (2008) found that four different types of caps (caps limiting punitive damage awards and caps on non-economic damages: At $250,000, between $250,000 and $500,000, and greater than $500,000) were not associated with two measures of obstetrician-gynecologist supply.
- *Physician supply.* Chou and Lo Sasso (2009) found that state caps on non-economic damages were not associated with the initial practice settings of obstetrician-gynecologists who completed their training in New York from 1998 to 2003.
- *Hospital maternity units.* A county-level analysis from 1985 to 2000 found that caps on non-economic damages were associated with a slightly increased likelihood of a hospital maternity unit (0.27% in all counties, 0.26% in non-metropolitan counties; Zhao, 2007).
- *Interventions and outcomes.* An analysis of all 51 jurisdictions from 1991 to 2003 found that VBAC rates were significantly higher and cesarean rates were significantly lower in state years when caps on non-economic damages were in force. The effect size increased with the stringency of the cap: Caps of $250,000 or less were associated with a 1.92 percentage point higher VBAC rate, caps between $250,001 and $500,000 with a 1.37 percentage point higher rate, and caps above $500,000 with a 1.25 percentage point higher rate. Higher caps on non-economic damages were associated with lower total and primary cesarean rates (Yang et al., 2009). However, caps were not associated with five measures of adverse outcome (Yang et al., 2012). Yang and associates (2009) estimated that a non-economic damages cap at the $250,000 level would have averted 12,800 cesarean sections in the country in 2006 among the more than 1.3 million such procedures performed that year (Martin et al., 2009).
- *Interventions and outcomes.* Using birth certificate data from 1989 to 2001, Currie and MacLeod (2008) reported a contrary result, that caps on non-economic damages were associated with a 5% increase in the likelihood of cesarean section and a 6% increase in preventable childbirth complications. They did not find an association with labor induction or augmentation or low 5-minute Apgar scores, used as a measure of newborn health.
- *Outcome.* An analysis across all states from 1980 to 2001 found that non-economic damages caps were associated with a 6% decrease in Black newborn deaths in the first 6 days of life, significant only in models that did not include state-specific trends. No reduction was found for White newborn death in the first 6 days (Klick & Stratmann, 2007).

In addition to the national studies, an analysis of the impact of California's $250,000 non-economic damages cap on high-end jury verdicts found a distinctive impact in the maternity context. The caps' fiscal impact differed across different types of injuries. Caps were associated with lowest reductions in total awards—in the range of 2% to 5%—for the largest and most costly class of claims against obstetrician-gynecologists, newborns with severe neurological injuries, versus much greater reductions for other types of injuries averaging 67% (Studdert, Yang, & Mello, 2004).

The impact of non-economic damages caps on various maternity care measures seems to be modest at best. Studies of impact on cesarean rates are contradictory, with the best case avoiding a fairly small portion of cesareans. A national study found no impact on five measures of outcome, another found reduced Black newborn death in one model but not another, and a third associated caps with an increase in preventable complications.

Collateral source rule

The longstanding practice of letting injured persons collect the full amount of judgments in lawsuits even if insurance or some other "collateral source" pays for part of their losses raises

concerns about fairness to liability insurers and those who purchase insurance (Fleming, 1966). Some states require that malpractice awards be reduced by amounts received from collateral sources, which raises concerns about fairness to plaintiffs. Others permit defendants to present evidence to the jury about amounts available from collateral sources for possible consideration when awarding damages (Budetti & Waters, 2005).

A recent review of better quality studies found fairly strong evidence that the collateral source rule may reduce health insurance premium levels, but is not related to the frequency of claims, payouts for claims, legal expenses, malpractice premium levels, assurance defensive behaviors, physician supply, or outcomes of care (Mello & Kachalia, 2010). Four relatively recent national multivariable studies specific to maternity care found modest impact of this reform at best, with one reporting an adverse association:

- An analysis from 51 jurisdictions from 1991 to 2003 found no significant relationship between collateral source offset and multiple measures of obstetrician-gynecologist supply (Yang et al., 2008), mode of birth (Yang et al., 2009), or birth outcome (Yang et al., 2012).
- Investigating national data from 1989 to 2001, Currie and MacLeod (2008) found that collateral source offset was not associated with the likelihood of cesarean section, labor induction or augmentation, preventable labor and birth complications, or low 5-minute Apgar scores.
- A county-level analysis from 1985 to 2000 found that mandatory offset of collateral sources was associated with a slightly increased likelihood of having a hospital maternity unit in the county: 0.60% for all counties, and 0.76% in non-metropolitan counties (Zhao, 2007).
- In two models assessing the association between collateral source rule and death of newborns in the first 6 days of life across states from 1980 to 2001, the collateral source rule was associated with a 5% to 7% increase in mortality among Black newborns. The investigators suggest that this rule may weaken pressure to avoid harm by reducing the likelihood that attorneys will accept clients (Klick & Stratmann, 2007).

Expert witness rule

Many believe that the tort system has fostered "professional" medical witnesses who frequently testify in lawsuits and compromise their integrity to provide testimony supporting the side that engaged their services. This perception has undermined confidence of obstetricians and other health professionals in the fairness of the negligence system (Fisher, Dombrowski, Jaszczak, Cook, & Sokol, 1995).

An analysis of expert physician witnesses in closed neurologic birth injury cases from 34 states and the District of Columbia from 1990 to 2005 found that 71 "frequent witnesses" (testifying in 10 or more cases) participated in 89% of all neurological birth injury cases. Also, 79% of the frequent witnesses worked at least three fourths of the time for either plaintiffs or defendants (Kesselheim & Studdert, 2006). Although these results have been interpreted as a sign of problems in the expert witness system, it is unreasonable to expect witness equipoise. Attorneys may wish to avoid working with experts with a history of testifying for the other side. Expert witnesses may align consistently with one side owing to genuine differences in understanding of basic and controversial clinical questions. Further, repeat witnesses have a history of previous depositions and trial testimony under oath and are obliged to adhere to past testimony to avoid dismissal of their current testimony. Also, peer pressure and fear of retribution for testifying on behalf of plaintiffs may limit some witnesses to working on behalf of defendants.

In response to unease that physicians are being judged by laypersons on juries guided only by such experts, some states have established specific standards for medical experts (Budetti & Waters, 2005). Although variation in the approach to expert witness rule across jurisdictions poses challenges for a national analysis, the sole recent national multivariable study in the maternity field did not detect an impact of this reform:

- In an analysis of data from 51 jurisdictions from 1991 to 2003 expert witness rule was not associated with two measures of increased obstetrician-gynecologist supply (Yang et al., 2008), three measures of mode of birth (Yang et al., 2009), or six measures of birth outcome (Yang et al., 2012).

Joint and several liability rule modification

In the traditional tort system, all defendants being sued for negligence are subjected to "joint and several" liability, which means that any defendant who is found to have been responsible for a negligent injury can be required to pay the full amount of an award, regardless of others deemed to be at fault (Levmore, 1994). The rationale is that it is fairer to require a negligent party to pay a disproportionate share of an injury than to deny compensation to the victim. However, there are concerns that this rule creates an incentive to sue as many defendants as possible, particularly large institutions such as hospitals, to ensure that there are sufficient assets to pay damages, and could create barriers to access to needed consultations. A recent review of better quality studies across all clinical areas concluded that this reform does not reduce claims payouts, legal expenses, and malpractice premiums, and does not improve physician supply and quality of care, with more limited evidence suggesting no effect on claims frequency and defensive behaviors (Mello & Kachalia, 2010).

We found three relatively recent studies of the impact of this reform in the maternity field:

- In their analysis of data from 51 jurisdictions from 1991 to 2003, Yang and associates found that joint and several liability reform was not associated with multiple measures of obstetrician-gynecologist supply (2008), mode of birth (2009), or health outcome (2012).
- Investigating national birth data from 1989 to 2001, Currie and MacLeod (2008) found that joint and several liability reform was associated with a 7% decrease in the likelihood of cesarean section and a 13% decrease in preventable complications of labor and birth, but not with labor induction or augmentation or with a low 5-minute Apgar score. They argue that this reform aligns malpractice risk more closely with the physician's own actions and may help to increase hospital accountability.
- In two models assessing the association between abolition of joint and several liability and death of newborns in the first 6 days of life across states from 1980 to 2001, the reform was associated with a small increase in white newborn mortality, which was not robust, however, to inclusion of state-specific trends (Klick & Stratmann, 2007).

Periodic payment of awards

Defendants who are found to have negligently injured a person have often paid all damages that are owed in a lump

sum when the legal action concludes. Because awards often include estimated lost income, future medical expenses, or other future losses, it may be unfair to require immediate payment of all damages, including some that may never materialize (Budetti & Waters, 2005). Liability insurers can benefit by spreading payments over a longer period and retaining any that are unused. Periodic payments also allow insurers to more accurately predict their losses and in turn set more consistent insurance rates. However, in a Florida sample, a large proportion of families with a child with birth injuries used up-front payments for major purchases such as vehicles and homes that are adapted to persons with disabilities (Sloan et al., 1993). Nonetheless, these concerns have led some states to permit periodic payment of some damages.

A recent review found limited research suggesting that periodic payment does not reduce claims payouts or improve physician supply in medicine generally. Conclusions could not be drawn about its relationship with legal expenses, defensive assurance behaviors, and quality of care, and results were mixed regarding claims frequency and liability insurance costs (Mello & Kachalia, 2010). Two relatively recent national multivariable studies found no benefit for this reform in the context of maternity services:

- In their analysis of data from 51 jurisdictions from 1991 to 2003, Yang and co-workers found no association between periodic payment and measures of obstetrician-gynecologist supply (2008), mode of birth (2009), and birth outcome (2012).
- A county-level analysis from 1985 to 2000 found that periodic payment was not associated with increased likelihood of having a hospital maternity unit in the county, nationally and in non-metropolitan counties (Zhao, 2007).

Pretrial screening

Some states require or had required malpractice cases to be screened by a medical review panel before the cases go to court. Pretrial review is intended to identify cases that lack merit and to encourage the parties to resolve the case without litigation (Levmore, 1994). Some states permit results of the pretrial review to be admitted as evidence if the case proceeds to court (Budetti & Waters, 2005). A recent review of the better quality evidence in medicine generally found that results of a few well-designed studies suggest that pretrial screening panels are not effective in reducing claims cost, claims frequency, and liability insurance premiums, and may reduce defensive behavior. The evidence was unclear with respect to possible relationship with legal expenses, physician supply, health insurance premium levels, and quality of care (Mello & Kachalia, 2010). Similarly, Struve (2004) found that there is no good evidence that potential advantages of pretrial screening have been realized, and many states that had adopted this reform have repealed or invalidated it. Two relatively recent national multivariable studies assessed the impact of pretrial screening in maternity care:

- A national analysis of data from 51 jurisdictions from 1991 to 2003 found that pretrial screening panels were associated with a small (0.07%) but significant positive effect on the VBAC rate and a significant negative effect on cesarean (0.28%) and primary cesarean (0.27%) rates (Yang et al., 2009). However, this reform was not associated with measures of obstetrician-gynecologist supply (Yang et al., 2008) or of birth outcome (Yang et al., 2012).
- A multiple regression analysis found no relationship in 2002 between the availability of mandatory or optional submission panels at the state level and annual malpractice insurance premiums of obstetrician-gynecologists, along with numerous other measures of liability system cost, timeliness, and efficiency across all clinical areas (White, Pettiette, Wiggins, & Kiss, 2008).

Statute of limitations

Another type of access constraint involves shortening the length of time that patients have to file a malpractice suit after an event giving rise to a claim (Levmore, 1994), known as the "statute of limitations." Because some injuries do not manifest themselves immediately, these statutes often extend the time for bringing a lawsuit so that an injury can reasonably be discovered. Whereas a "statute of limitations" for a 25-year-old is on average 2 years, it is 12 years for a newborn (Shea, Scanlan, Nilsson, Wilson, & Mehlman, 2008).

Malpractice insurance companies need sufficient reserves to cover potential lawsuits, and the longer the period of time for possible cases to arise, the greater are challenges for planning reserves. Prolonged uncertainty about liability generally increases premium levels and can be unsettling to clinicians. Most states have shortened the period that parties in general have to bring a negligent injury lawsuit (Budetti & Waters, 2005).

A recent review of better quality studies in medicine overall found a fair amount and strength of evidence showing no impact of shortened statute of limitations on claims payments, defensive assurance behavior, or physician supply, and inadequate evidence to understand impact on legal expenses and quality of care. Limited evidence suggested some reduction in liability insurance premiums. Results were equivocal for claims frequency (Mello & Kachalia, 2010). We found no empirical research specific to care of childbearing women and newborns.

Tort Alternative Reform

Arbitration, mediation

The traditional tort process, which is harsh for both the aggrieved and defending parties, has been likened to war (Johnson, 2000). By contrast, mediation and arbitration offer potential to save time and expense associated with protracted legal struggles, soften the experience for the involved parties, and help to preserve relationships (Dauer & Marcus, 1997; Johnson, 2000).

Some states have established an alternative to going to court by permitting physicians to require that disputes with their patients be resolved by a binding decision of a third-party arbitrator, rather than by judicial process. Another approach makes arbitration voluntary, but enforces arbitration agreements when made or permits the findings to be introduced into court (Budetti & Waters, 2005). Some scholars favor a court-ordered arbitration model, which is well-established in other litigation contexts and constitutional (Metzloff, 1992). Arbitration relies on an arbitrator rather than a judge or jury and typically rests on traditional tort theory of liability.

Mediation, a more flexible negotiation facilitated by a neutral third party, emphasizes autonomy, informed decision making, and confidentiality in reaching a mutually acceptable decision. It has greater potential for avoiding the harshness of the traditional tort system and promoting learning and healing (Todres, 2006).

Most support for these strategies is hypothetical. An earlier study with state-level data from 1974 to 1986 found that

allowing arbitration agreements did not have a significant association with liability premiums and malpractice claim frequency or severity (Zuckerman, Bovbjerg, & Sloan, 1990). A pilot project in New York City involved 19 mediated cases and found satisfaction among the parties, irrespective of outcome, settlements in most cases, and attorneys on both sides estimating that they spent about one tenth the time that would have been required to prepare for a trial (Hyman & Schechter, 2006). Interviews with participants in 31 mediated lawsuits across 11 hospitals found satisfaction across many parties and identification of ways to improve hospital safety. Although mediation could potentially aid healing, improve patient care, shorten litigation processes, and reduce costs, the absence of physician participation limited impact on patient safety (Hyman, Liebman, Schechter, & Sage, 2010). New York State is currently piloting a "judge-directed negotiation" model through the Agency for Healthcare Research and Quality Patient Safety and Medical Liability Reform Demonstration Projects program (2010). The effect of arbitration and mediation on the maternity field does not seem to have been studied. Mediation may be an important tool when bundled with other strategies, such as disclosure and apology (see companion article; Sakala et al., 2013a).

Liability Insurance Reform

Joint underwriting associations

Legislators who perceive medical liability coverage to be unavailable or unaffordable may create a risk-sharing mechanism, such as a Joint Underwriting Association (JUA), to serve as a market of last resort. In a JUA, a state authorizes or requires one or more carriers to issue medical liability insurance policies to providers that are unable to obtain insurance from the voluntary market (Danzon, Epstein, & Johnson, 2004). JUAs may increase access to insurance coverage (Sloan, Mathews, Conover, & Sage, 2005), but do not address the price or affordability of the insurance product.

With relatively small risk pools for midwifery and birth center liability insurance, the potential for a single large payout to result in unaffordable premium rates, and the rise of physician- and hospital-focused providers of liability insurance, JUAs may be important mechanisms for making coverage reliably available to midwives and birth centers. The Washington State legislature established a JUA for midwives and birth centers (Myers & Myers-Ciecko 2004; available: http://www.washingtonjua.com). Another JUA model offers liability insurance to diverse entities, inclusive of maternity service providers. For example, the Pennsylvania Professional Liability JUA offers coverage to physicians, certified nurse-midwives, and birth centers (available: http://www.pajua.com). Evaluation of JUA contributions to maternity services, including the potential for this model to foster reliable coverage across the full complement of maternity service providers, is warranted.

Investment regulation

Regulators have overseen insurers' investments. In 1990, the National Association of Insurance Commissioners issued a model law with guidelines for insurer asset investment. Several states adopted that law or similar restrictions (Nordman, Cermak, & McDaniel, 2004). In 1996, the National Association of Insurance Commissioners adopted a more comprehensive model law covering all insurer investments, later weakened if a sound investment plan could be demonstrated (Nordman et al., 2004). Regulators are authorized to intervene if an insurer fails to meet general requirements. Insurance companies are required to provide quarterly financial statements to regulators (Hoyt & Powell, 2006). We found no evaluations of this strategy. In the best case, investment regulation would address a small portion of liability challenges in maternity care.

Rate regulation

About one third of states use insurance premium rate regulation, which ideally keeps prices high enough to prevent insolvency and low enough to make insurance relatively affordable. No comparative studies have assessed this strategy (Mello, 2006).

In addition to incremental rating regulation strategies (Brierton, 2004; Nelson, 2000), Geistfeld (2005) proposed setting a uniform premium level for all medical professionals in a jurisdiction, regardless of specialty or geographic area. This would have favorable implications for maternity providers and others in clinical areas at higher liability risk and for geographic areas and types of services with small, vulnerable risk pools (e.g., midwives, birth centers). It would directly address the deep sense of liability system injustice that is widespread in the obstetrics community. Geistfeld (2005) observed that setting premium levels on the basis of specialty, geographic location, and claims experiences could create provider incentives to reduce error and protect patient interests. In the best case, rate regulation would address a small portion of liability challenges in maternity care.

Premium subsidy

To address concerns about the affordability of liability insurance and access to maternity care, several states have considered or implemented providing direct subsidies to clinicians for liability premiums (Smits, King, Rdesinski, Dodson, & Saultz, 2009). We found one evaluation of a maternity caregiver premium subsidy program. Owing to concerns about access to maternity caregivers, especially in rural areas, Oregon instituted a malpractice premium subsidy program in 2004 for obstetrician-gynecologists, family physicians, general practitioners, and certified nurse-midwives. Afterward, the number of clinicians providing maternity services in all groups, most prominently among family physicians and general practitioners, continued to decline in the state. A multidisciplinary survey found that access to malpractice premium subsidies was not associated with continued provision of maternity services even though the groups had identified liability premium costs as the leading factor in discontinuation of maternity services 4 years earlier (Smits et al., 2009).

Patient compensation funds

Some states have adopted the insurance reform of creating patient compensation funds (PCFs). These limit health care provider claims to a specified monetary level, regardless of the size of an award, with the PCF covering amounts above that level (Budetti & Waters, 2005). PCFs thus offer some reassurance about costs to health care providers and their insurers.

A 2004 investigation identified nine states with PCFs and one that had discontinued a PCF (Sloan et al., 2005). Typically, liability premiums and investment returns, rather than state subsidies, fund PCFs. Because health care providers pay premiums to private primary insurers and surcharges to state PCFs, this reform can be costly. Investigators found that PCFs function as passive financial intermediaries with no special contribution to patient safety, loss prevention, or claims

management. The report did not specifically reference maternity matters (Sloan et al., 2005).

In 2011, the New York State Legislature established a Medical Indemnity Fund created from 1.6% of hospital inpatient maternity care revenues to cover medical and other expenses of neurologically impaired newborns. Defendants or insurers are responsible for all other costs. Because plaintiffs must establish provider negligence and causation through the court system, the fund does not reduce litigation expenses or hasten resolution and payments to families (Greater New York Hospital Association, 2011).

A recent assessment of the effects of PCFs in medicine generally affirmed that the limited contribution of current models shifts liability cost burden away from health professionals and insurers, and noted that PCFs might include quality improvement incentives and reduce legal and liability insurance costs by incorporating disclosure and early offer programs (Mello & Kachalia, 2010).

Discussion

The effect of caps on non-economic damages has been well studied within maternity care, with studies finding modest and narrow impact at best. A smaller number of studies have examined effects of several other traditional tort reforms within maternity care, with generally disappointing results. Despite strong interest in limiting payouts as a strategy for keeping malpractice premiums in check, the relationship between the two seems to be weak at best (Baicker & Chandra, 2005). With one exception, remaining reforms considered here have not been evaluated in the context of maternity care. However, there is little more general support for these strategies. Where data are sparse, even if the reforms proved to be effective at achieving their aims, they would be of limited value owing to a narrow focus relative to the range of aims that warrant the attention of policy makers.

This investigation underscores the importance of conducting liability research in specific clinical areas, as previously shown in a study of newborn and emergency room injuries (Sloan et al., 1993). Whereas evaluation of tort reforms collectively and with respect to caps on non-economic damages have shown the desired impact in medicine overall, their impact in maternity care is modest at best.

Our investigation also clarifies the importance of ensuring that liability reform strategies meet the needs of all key stakeholder groups. Many strategies that have been pursued have focused on clinician and liability insurer interests, with an indirect relationship to interests of childbearing women and newborns and those who pay for their care (Hyman & Silver, 2005). For desired effects, policy makers will need to implement and assess interventions with potential for multifaceted impact, as discussed in the companion article in this issue (Sakala et al., 2013a).

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