An Economic Model Costing Early Offers Medical Malpractice Reform: Trading Noneconomic Damages for Prompt Payment of Economic Damages

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PAYMENT OF ECONOMIC DAMAGES
JEFFREY O'CONNELL,** JEREMY KIDD*** & EVAN STEPHENSON****

I. A NON-TECHNICAL PRESENTATION

This first section, in contrast to Parts II–VI, presents the Article's thesis in non-technical terms for the general reader.

A. The Problem

In personal injury cases, the current system of tort liability has long been unworkable, especially because the insured event is extremely complex.1 Under the current system, a plaintiff must prove two difficult elements: the defendant's fault and the economic value of noneconomic damages, mostly pain and suffering.2 In medical malpractice cases, determining not only the value of pain and suffering, but particularly fault, is an especially complex process.3 As a result, the system is fraught with uncertainties, which in turn cause excessive costs and delay for both sides.4 In the end, we do not have a sensible insurance system that results in prompt payment to needy victims. Rather, we have a system that results in prolonged, expensive fights over whether claimants are deserving.5 This system operates to the great detriment of both patients and health care professionals.

B. A Solution

A previously published description of the reform proposed herein reads as follows:

As a cure for much of this sad tale, [we focus on a proposed] statute which gives a defendant...an incentive to make an “early offer,” defined as a sum large enough to recompense injured victims for their net economic losses, including attorneys’ fees. If such an early offer is tendered, the injured victim will normally forfeit the opportunity in a negligence action of winning full common-law damages for both economic and noneconomic damages at trial....

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2. Id.
4. O'Connell, supra note 1, at 192.
5. Id.
Under this system, a defendant...has the option—not the obligation—to offer the claimant, within 180 days after a claim is filed, periodic payment of the claimant’s net economic losses as they accrue. Economic losses under an early offer statute must cover medical expenses, including rehabilitation, plus lost wages, to the extent that all such costs are not already covered by collateral sources [that is, other insurance], plus attorney’s fees.[6] Therefore, a defendant cannot make a lesser or “low ball” offer and still earn the advantage of foreclosing a full-scale tort claim. If the defendant decides not to make an early offer, the injured victim can proceed with a normal tort claim for both economic and noneconomic damages. Alternatively, if the claimant declines the early offer in favor of litigation, (1) the standard of misconduct is raised, allowing payment only where “wanton misconduct” is proven; and (2) the standard of proof is [also] raised, requiring proof of such misconduct beyond a reasonable doubt....Because of the uncertainty and cost of determining both liability and noneconomic damages under present tort law, it is likely that defendants in...medical malpractice...cases will promptly make early offers in many claims, even when liability is unclear. [William Ginsburg,] [a] leading malpractice defense lawyer has predicted that if [an early offers statute] were in effect, he would advise making the defined early offer in 200 of the 250 cases that his large [inter-state offices were] then litigating.

The opposing fear of potential higher costs under this early offers scheme is avoided in that no defendants need make an offer if they would not do so without this [statute]. Thus, defendants will make an offer only when it makes economic sense for them to do so. Moreover, this statute would not disadvantage victims as a class. [True, injury] victims would lose their recourse to full-blown tort litigation—with all its uncertainty, delays, and transaction-costs—[but] only when they are guaranteed prompt payment of their actual economic losses, plus attorney’s fees.

Thus, the uncertainty of determining both liability and damages for noneconomic damages is the key to understanding the malfunctioning of tort law—and to framing a [balanced] solution. Because the existence of pain and suffering is indeterminate and highly volatile, under [an early offer] system the fear of an award of pain and suffering damages can serve (1) to deter [providers of medical] services from exposing themselves to liability for such damages by indulging in anything close to [what could be seen by a jury as serious] misconduct and (2) as an incentive to make early offers of economic losses, which will provide prompt compensation to victims for many more (admittedly not all) of the inevitable injuries that accompany the delivery of [medical] services in an advanced technological society.

Because personal injury claims—alone among all other damage claims—routinely entail damages for both economic and noneconomic losses, defendants are uniquely positioned not only to make, but also to enforce, socially attractive settlements under the [early offers] system. As stated above, this system [encourages] a claimant’s acceptance of a defendant’s prompt offer of payment of the claimant’s net economic losses in return for a waiver of noneconomic damages, along with statutory sanctions that impose

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6. The attorney’s fees are assumed to be ten percent of the present value of the early offer. Payment of attorneys’ fees by defendants, in addition to net economic losses, is necessary to reimburse the victim’s economic losses, assuming no damages for pain and suffering are to be paid.
[both that higher] standard of [misconduct] and [that] higher burden of proof if the offer is refused. In non-personal injury claims, in which only economic damages are at stake, no such equitable means are available to sanction a claimant who refuses to accept an offer of only a portion of the total damages claimed.

Note that it is not feasible to provide a full-scale no-fault solution for [medical services] because of the difficulty of defining the “no-fault insured event” for injuries that arise from...medical treatment....Under no-fault auto insurance policies, an accident victim is compensated for an injury arising out of the ownership, maintenance, or use of a motor vehicle. Under workers’ compensation laws, an industrial accident victim is compensated for an injury arising out of, and in the course of, employment. [It is not feasible, however,] to force all health care providers to pay patients for any and all injuries arising in the course of medical treatment. After all, it is often impossible to determine whether a patient was injured by the treatment rendered or whether the adverse condition after treatment was just a normal extension of the condition which prompted treatment in the first place. A health care provider certainly could not be expected to pay every patient whose condition worsens after treatment....Because such a comprehensive no-fault solution is unworkable, and therefore unavailable, for...[medical accidental injuries,] the proposed [early offers system] is the most—and perhaps the only—workable, [economical,] equitable, and simplifying solution.

Such a [statute] well serves the goals of both internalization and compensation of losses in comparison to present tort law, and thus results in (1) appropriate deterrence; (2) less overdeterrence; (3) lower insurance costs; (4) less delay in the payment of losses; [(5) more payment of essential losses; and (6) lower transaction costs [read legal fees on both sides].7


For support for the proposition that a no-fault liability system would be unworkable in the medical malpractice area, see PAUL C. WEILER ET AL., A MEASURE OF MALPRACTICE: MEDICAL INJURY, MALPRACTICE LITIGATION, AND PATIENT COMPENSATION 23–24 (1993) (noting that no simple method can separate negligent medical outcomes from non-negligent outcomes). See also id. at 55 (noting that seventeen percent of a Harvard study’s after-the-fact determinations that health care provider negligence had occurred were “close-call cases”).

Finally, in analyzing this or any other tort reform, it should be noted that evidence as to the deterrent effects of tort litigation, at least in the medical malpractice context, is inconclusive. See Michelle M. Mello & Troyen A. Brennan, Deterrence of Medical Errors: Theory and Evidence for Malpractice Reform, 80 TEX. L. REV. 1595, 1598 (2002) (“We do find some limited evidence of deterrence, but conclude that overall the evidence is thin.”); WEILER ET AL., supra, at 75 (“Malpractice litigation appears, then, to be sending as confusing a signal as would our traffic laws if the police regularly gave out more tickets to drivers who go
C. How an Early Offers Statute Will Be More Effective Than Other Proposed Reforms in Encouraging a Healthy Settlement Process for Claimants and Defendants

According to Patricia Danzon, "[t]he economic criterion for evaluating a proposed [medical malpractice] reform is thus, Is it likely to...improve the efficiency of deterrence and compensation, recognizing that the practical choice is between imperfect alternatives?" The most common tort reform proposals—including damage caps, changes in the collateral source rule, and regulation of claimants' attorney contingent fees—lack an early offers law's ability to structure and encourage early and adequate pretrial settlement. As Danzon notes in the medical malpractice context, "most actual tort reform proposals aim primarily to reduce measurable claim costs and liability insurance premiums or budgetary costs to health care providers. This budget focus is likely to result, at best, in simply shifting costs from medical providers to patients and taxpayers."

Another reason for preferring an early offers law to other tort reforms is that the burden of the latter's reductions falls more on the worst injured or most legitimate tort victims (whom these reforms presumably do not intend to harm) than on claimants' lawyers' fees and less-than-valid claims (which these reforms do clearly intend to affect). An early offers law is superior to these other proposals because it avoids unintentionally disadvantaging the most needy, and arguably legitimate, claimants.

D. Early Offers Laws Will Avoid Burdening Health Care Providers and Claimants, Especially Legitimate Needy Claimants

Early offers statutes will reduce litigation-induced waste by causing more cases to be resolved much earlier. Early offers laws will also enhance the tort compensation mechanism by conditioning advantages offered to defendants on the extension of a binding offer to pay an adequate sum: claimants' uncompensated economic losses. Since early offers take claims out of the current system only after the claimant is assured of adequate payment, the worst-injured claimants, who have the most need of prompt and significant payment, will not be short-changed as a group by an early offers statute. Finally, the positions of insurance companies and other defendants cannot be much worsened by early

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8. Patricia M. Danzon, Liability for Medical Malpractice, in 1B HANDBOOK OF HEALTH ECONOMICS 1339, 1371 (Anthony J. Culyer & Joseph P. Newhouse eds., 2000). Danzon also mentions reduction in deadweight losses, an issue we address below in Part VI.A.

9. Id.
offers. Even if they conclude that early offers are making them worse off, they can simply stop making early offers and return to the current system.

E. Early Offers Can Reduce the Differences Between Claimants and Defendants

Recall that under an early offers law, every dispute begins in the current system. Within 180 days of a claim, the defendant insurance company may make an early offer, defined in the statute to include all of the claimant’s uncompensated economic loss as it accrues. If the defendant insurance company makes an early offer and the claimant rejects the offer, the standard of liability in the claimant’s upcoming tort action changes from negligence to, in effect, criminal misconduct (termed “quasi-criminal”), and the burden of proof heightens from “more likely than not” to “beyond a reasonable doubt.”

Assuming that the claimant was not injured by quasi-criminal misconduct, after an early offer is made, the claimant’s probability of winning a full-scale tort suit diminishes drastically and the expected value of the tort claim drops with it. How steeply does the claim’s expected value decline? The example below creates a hypothetical early offer scenario that quantifies this point and illustrates the types of trade-offs expected by early offers where there is an impasse between claimants and defendants.

For both the early offer and post-early-offer scenarios, our model adjusts future jury awards to their net expected present value. The phrase “net expected present value” bundles together four adjustments of nominal future jury awards. These four adjustments account for: (1) probability in outcome; (2) timing of outcome, and specifically a positive rate of time preference by individual actors; (3) the claimant’s lawyer’s contingent fee; and (4) other litigation-induced costs. Together, these adjustments return a figure for the value claimants should attach to their claims. A future nominal jury award must first be adjusted twice for probability: once for the probability that the jury will find the defendant liable, and again for the probability of various damage awards. We conflate these two adjustments into one weighted average probability of a damage verdict.

Example 1. Claimant P files a claim against Defendant D. If the claim is not settled, a suit is expected to be filed within a few months and continue for the typical time from injury to payment, three years. P estimates the probability that D will be found liable at 85.0% (line 1A, Table 1 below). But D is much more optimistic about its chances. D’s estimate of this probability is one-half of P’s estimate, or initially 42.5% (line 1B, Table 1). D also estimates the damages likely to be awarded in case of liability as being significantly lower than P does—specifically estimating damages at 80% of P’s estimate (lines 2, 4, 6 A&B, Table 1). P and D both adjust their respective expected payoff/payout estimates for the cost of hiring lawyers and adjust for time spent using the same inflation-adjusted annual discount rate at 2% (lines 14 A&B, Table 1). P’s

11. See WEILER ET AL., supra note 7, at 5 (“In the nation as a whole, the median time from injury to claim is 13 months, and from claim to payment 23 months, for a total of three years.”).
12. D’s discount rate applies only to the weighted average expected judgment, not to D’s total expected direct trial costs, because D’s costs are not a lump sum at the end of the trial. For simplicity, we assume that all
minimum acceptance or reservation price of about $400,000 (408.50, line 15A, Table 1) is higher than D’s maximum paying (or reservation) price of about $280,000 (279.78, line 15B, Table 1), as also described in Table 1 below. The parties fail to bargain out a settlement because their respective prices are out of range of each other.

Table 1: Net Present Expected Value of Example 1 Tort Claim in the Current System

<table>
<thead>
<tr>
<th>Trial Amounts/Probabilities</th>
<th>Current System (pre-early offer)</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Probability of Liability</td>
<td>$1,000.00</td>
<td>85.0%</td>
<td>42.5%</td>
</tr>
<tr>
<td>2. Expected Judgment 1</td>
<td>$800.00</td>
<td>10.0%</td>
<td>10.0%</td>
</tr>
<tr>
<td>3. Probability of Judgment 1</td>
<td>$250.00</td>
<td>10.0%</td>
<td>10.0%</td>
</tr>
<tr>
<td>4. Expected Judgment 2</td>
<td>$650.25</td>
<td></td>
<td>(260.10)</td>
</tr>
<tr>
<td>5. Probability of Judgment 2</td>
<td>$433.50</td>
<td></td>
<td>(294.78)</td>
</tr>
<tr>
<td>6. Expected Judgment 3</td>
<td>$408.50</td>
<td></td>
<td>(279.78)</td>
</tr>
</tbody>
</table>

Total Expected Direct Trial Costs

9. Pl. (cont. fee, 33%); Def. (fixed rate) | $(216.75) | $(34.68) |
10. Probability Claimant Will Sue        | 100.0% | 100.0% |
11. Expected Litigation Costs            | $(216.75) | $(34.68) |

Adjustments for the Value of Time

12. Net Expected Judgment                | $433.50 | $(294.78) |
13. Time Until Judgment (years)          | 3.00    | 3.00    |
14. Discount Rate (i-adjusted)           | 0.02    | 0.02    |
15. Real Net Present Value of Exp. Judgment | $408.50 | (279.78) |

Assume an early offers statute is in effect. Within the statute’s prescribed period, D makes an early offer to pay P’s uncompensated economic loss as it accrues. The present value of this offer, as noted in Table 2, below, is estimated at about $175,000 (173.40, line 1A, Table 2), versus D’s last offer in tort of about $280,000 (279.78, line 15B, Table 1). As also set forth in Table 2, after D makes the early offer of about $175,000 (plus 10% for the claimant’s lawyer), P’s
EARLY OFFERS

estimate of the probability that D will be found liable at trial has decreased by over 80% (line 15A, Table 2) to a mere 2% (line 2A, Table 2). This is a result of the post-early-offer heightened standard of both misconduct and burden of proof. The value P attaches to the claim is then so low that no rational lawyer would work on it contingently. If P hired an hourly lawyer equivalent to D’s to go forward with trial under the higher standard of liability and burden of proof, P would expect a loss from suit (see line 14A, Table 2).

Table 2: Effect of a Hypothetical Early Offer on the Value of Table 1 Claim

<table>
<thead>
<tr>
<th>Estimated Value of the Early Offer</th>
<th>Plaintiff’s Mind</th>
<th>Defendant’s Mind</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trial Amounts/Probabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Estimated Value of the Early Offer</td>
<td>$173,400</td>
<td>$1,907,740</td>
</tr>
<tr>
<td>2. Probability of Liability</td>
<td>2.0%</td>
<td>1.0%</td>
</tr>
<tr>
<td>3. Expected Judgment</td>
<td>$1,000,000</td>
<td>$800,000</td>
</tr>
<tr>
<td>4. Probability of Judgment</td>
<td>10.0%</td>
<td>33.3%</td>
</tr>
<tr>
<td>5. Expected Judgment</td>
<td>$800,000</td>
<td>$640,000</td>
</tr>
<tr>
<td>6. Probability of Judgment</td>
<td>80.0%</td>
<td>33.0%</td>
</tr>
<tr>
<td>7. Expected Judgment</td>
<td>$250,000</td>
<td>$200,000</td>
</tr>
<tr>
<td>8. Probability of Judgment</td>
<td>10.0%</td>
<td>33.3%</td>
</tr>
<tr>
<td>9. Weighted Avg. Expected Judgment</td>
<td>$15,300</td>
<td>$5,470</td>
</tr>
</tbody>
</table>

Total Expected Direct Trial Costs

<table>
<thead>
<tr>
<th>Pl. (fixed rate); Def. (fixed rate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$34,680</td>
</tr>
</tbody>
</table>

Adjustments for the Value of Time

| Time Until Judgment (years)        | 3.00 |
| Discount Rate (i-adjusted)         | 0.02 |
| Present Value of Exp. Judgment     | $14.42 |
| Real Net Present Value of Exp. Judgment | $(20.26) |

Significant Changes from Table 1

| Reduction in Probability of Liability | 83.0% |
| Change in R.Net Present Value of Exp. Judgment | $(428.76) |

Note: The Change in Real Net Present Value of the Expected Judgment, listed above in Table 2, is found by subtracting the Table 2 Real Net Present Value of the Expected Judgment from the same figure for Table 1. Precisely: (20.26) [line 14A, Table 2] - 408.50 [line 15A, Table 1] = (428.76) [line 16A, Table 2]. And, for the defense: (39.83) [line 14B, Table 2] - (279.78) [line 15B, Table 1] = 239.95 [line 16B, Table 2].

then conservatively adjusted downward by one third; the example assumes that P’s own insurance covers one third of compensatory damages.

15. In our example, the claimant’s post-early-offer belief in a 2% likelihood of victory on the issue of liability is extremely optimistic. In the current system, data indicates that a tiny fraction of 1% (0.16%, to be precise) of total medical malpractice cases brought to trial result in punitive damage awards against defendants. The type of egregious behavior that calls for punitive damages is roughly equivalent to gross negligence, but after a statutory early offer has been made and the claimant rejects the offer, the claimant must satisfy the higher beyond-a-reasonable-doubt standard of proof. Thus, the percentage of cases resulting in post-early-offer awards would likely be lower than the percentage awarding punitive damages—or less than 0.16%. NICHOLAS M. PACE ET AL., RAND INSTITUTE FOR CIVIL JUSTICE, CAPPING NON-ECONOMIC AWARDS IN MEDICAL MALPRACTICE TRIALS: CALIFORNIA JURY VERDICTS UNDER MICRA 60 & n.6 (2004) ("[T]he effective rate of punitive awards for all medical malpractice cases that go to a jury is 0.16 percent.").
Table 2 above does not show the effect of an early offer on the variance of expected awards, that is, awards as a group. Figure 1 below illustrates this aspect of early offers graphically. Figure 1, not limited to the specific case represented by Tables 1 and 2, does assume a normal distribution of possible damage awards as a group. The weighted average of all possible jury awards in Figure 1 returns a single payoff for claimants as a group, adjusted for the probability of recovery.

Figure 1: Early Offers’ Effect on Distribution of Expected Jury Awards, Versus Acceptance of Early Offers

In Figure 1, we assume this normal distribution of possible expected jury awards as a group, before and after early offers.\textsuperscript{16} Claimants’ initial expected jury awards are represented by the “pre-early-offers” curve. The expected reward from early offers is in turn represented by the “acceptance of early offers” curve. The acceptance of early offers curve differs from the pre-early-offers curve in two ways: first, it has the shape of a spike, rather than a bell; second, the center of the acceptance of early offers curve is located to the left of the center of the pre-early-offers curve. The acceptance of early offers curve is shaped like a spike because, if early offers are accepted, the amount of money to be paid is statutorily set and therefore largely certain. The pre-early-offers curve is shaped as a bell, instead of a spike, because the amounts to be paid are highly uncertain, varying from little or nothing to the almost unlimited. The center of the acceptance of early offers curve is located to the left of the pre-early-offers curve’s center on the horizontal axis because early offers will have a lower expected payoff than regular lawsuits (see, for example, Tables 1 and 2 above).

\textsuperscript{16} We do not include here a distribution for post-early-offer expected jury awards, because, as shown in Table 2 (line 14A), any value therefrom would on average be negative, given the rarity of success coupled with transaction costs (lines A2, A10, Table 2).
Put another way, Figure 1 illustrates that early offers provide claimants to whom early offers are made with compensation with negligible variance (illustrated by its spike shape) and hence little or no risk. Furthermore, the shaded area of the pre-early-offers curve can be seen as representing the expected payments foreclosed by the early offer—a chance in the current system to obtain noneconomic damages and amounts already covered by collateral sources. The unshaded area of the pre-early-offers curve roughly can be seen as representing uncompensated economic loss. The acceptance of early offers curve represents roughly the same level of uncompensated economic loss, but with negligible variance and hence little or no risk.

To go back to the hypothetical examples of the individual case shown in Tables 1 and 2, the early offer there reduces P's probability of winning any award in that case by 83% (line 15A, Table 2). The probability in this example is now only about 2% (lines A&B, Table 2), because it is difficult to prove gross negligence beyond a reasonable doubt. Consequently, the net expected present value of the judgment after an early offer is probably less than the cost of litigating. Line 14A of Table 2 indicates that the post-offer tort claim has a negative value of $20,260. In light of the amounts in the parties' minds without an early offer regime (lines 1-8, 15 A&B, Table 1), one might ask what P is getting that makes the trade-off of a likely lesser amount from an early offer advantageous? P gains a prompt net payment of a sum certain covering essential medical and wage losses of $173,400 (line 1A, Table 2; plus 10% for attorney's fee for a total value of $190,740, line 1B, Table 2), as opposed to three years of delay from a tort action, with a projected risk of getting nothing of between 15% (in the claimant's mind) and 57.5% (in the defendant's mind) (Lines 1A and 1B, Table 1; 100 - 42.5 = 57.5), plus a projected variance of damages if and when any are awarded (lines 1-8, 15 A&B, Table 1). The acceptance of early offers spike in Figure 1 illustrates the reduction in risk (admittedly along with the likelihood of lesser payment). A risky dollar is worth much less than a dollar without risk, especially for the seriously injured. As emphasized above, the claimant in Table 2 has received an early offer-binding guarantee of about $175,000 for uncompensated losses as they accrue. The claimant will actually receive more or less depending on the claimant's actual accrual of net economic loss. But the variance of the acceptance of early offers curve is determined by the claimant's medical progress, not by uncertainty surrounding potential jury deliberations. The defendant assumes the risk associated with the claimant's medical fortunes. In return for bearing little or no risk in litigation—a highly valuable benefit to suffering and injured tort victims—a claimant in the example gives up the amount already covered by insurance, as well as the possibility of pain and suffering or punitive damages.

The risk-shifting mechanism of early offers, most importantly, shrinks the effects of litigation-induced costs (that is, the "Wedge," and also as a corollary,

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17. See infra text accompanying note 138. For information about how often early offers may be made, see supra note 10 and accompanying text.
the variance of possible awards, and decreases litigation-induced costs. This concept of reducing the Wedge between the parties is absolutely crucial to the success of early offers. Because rational claimants will not go to trial post-early offer when the probability of prevailing is so low and when a socially adequate and binding offer is open, many more cases will be settled quickly. In terms of the Priest-Klein litigation model, the small post-early-offer expected outcome of the trial is reasonably clear to both parties absent quasi-criminal misconduct: the claimant will almost certainly lose. The early offer itself cannot be the subject of comparatively much controversy; its value is significantly pre-set. Judge Richard Posner’s insight that a wide range of possible bargaining outcomes increases the likelihood of litigation comes into play.

Early offers leave relatively few realistic bargaining issues and thus reduce the likelihood of litigation. Moreover, since early offers will encourage disputes to be resolved quickly, before trials can begin, parties avoid incurring a large portion of the usual litigation-induced costs:

- **Trial expenses in addition to lawyers’ fees.** There is much less need, for example, to hire expert witnesses, generate reams of documents for discovery, or perform extensive jury research and mock trials if the claim has been settled within the first 180 days.
- **Lost beneficial reliance.** Since claimants and defendants will quickly resolve cases except for the few involving quasi-criminal conduct, they can better predict their liabilities and assets, plan for the future based on those predictions, and enjoy the benefits of certain reliance on those plans.
- **Opportunity Cost of Trial.** When an early offer has been made, claimants and defendants need not allocate time and resources to protracted trials and pretrial negotiations. Their most valuable opportunities in lieu of trying a case are free for the taking. A claimant may use the time that would have been spent on a trial much more advantageously, for example, with family or working. For an insurance company or other defendant that need not litigate, resources that would have been needlessly spent on litigation will be freed for much better alternative uses.
- **Peace of mind.** Perhaps the greatest benefit to claimants and many defendants from an early offer is the peace of mind that comes from no longer having to face the emotional ordeal of a trial. At an earlier point, if an early offer is tendered, claimants may rest assured that much of their risk has been assumed by the defendant. Defendant insureds may also rest at ease that they will not be dragged through ugly, prolonged litigation or

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18. See infra text accompanying note 138. For a technical discussion on the beneficial role played by early offers in the Wedge, compare Figure 2 at notes 96–98 and accompanying text with Figure 6 at notes 121–127 and accompanying text.


20. Health and disability insurance, which the early offer mirrors, do not lead to all that much litigation compared to litigating fault and the value of pain and suffering.


22. For a full discussion of the litigation-induced costs that can be avoided by an early offers statute, see infra Part III.

otherwise publicly stigmatized. Just as important, with an early offer already on the table, provisions under the early offers statute provide defendants with an incentive to apologize and make information available to claimants and others without fear of additional tort exposure. Greater information about the causes of an injury and hearing some defendants apologize can not only increase the parties' peace of mind but can make for more frequent and prompter communication between health care providers, leading to more effective safety programs. Finally it is crucial to note that a recent study by the Harvard School of Public Health indicates that increased malpractice litigation under the tort system raises the prospect not of better health care but of "lower quality and availability of health care."  

Finally, it should be noted that the efficacy of the early offer as indicated by Figure 1 is not limited to the example in Tables 1 and 2. Rather, an early offer will likely be made whenever the value of an early offer exceeds the defendant's forecast of its liability in tort (based on the amount the defendant sets aside as a reserve to pay the claim).

F. Claimants and Defendants Are Inhibited from Reaching the Early Offers Result Through Pretrial Bargaining

If early offers benefit both claimants and defendants, why don't parties reach the early offers result in the current system through pretrial bargaining? Given the adversarial nature of bargaining over the many highly indeterminate variables that make up malpractice litigation, if they made such offers in the current system, defendants would fear sending a signal of weakness that would thereby encourage claimants to demand a much higher payment than originally sought. Claimants and their counsel similarly dread that an early offer to settle for only net economic loss will be seen as a lack of confidence in their case, risking

24. Early Offers would work to calm the animosities of the parties in an accident claim rather than inflaming them, as the current litigation culture now does. It accomplishes this by giving defendants a healthy incentive to promptly acknowledge any problems and even to discuss what happened. Under the current adversarial tort regime, claimants rarely receive an apology, admission of fault, or even an explanation of the adverse event. Many times a simple apology or explanation by the defendant can assuage the emotions of an injured party more effectively than a mammoth, long-delayed monetary award for pain and suffering damages. Such open and candid discussions could provide the accident victim with another form of valuable compensation often overlooked by the judicial system—peace of mind. In fact, researchers report that feelings of forgiveness and compassion have been proclaimed as therapeutic for accident victims because they reduce the anxiety and stress associated with continuing anger and resentment. The Early Offers plan induces the parties to discuss what happened rather than forcing them to engage in the combat of the current "blame game" of tort litigation. In so doing, Early Offers thus promotes understanding, cooperation and swift compensation rather than contentious, hostile, and dilatory legal proceedings [in addition to the greater patient safety accompanying open and prompt exchanges between health care providers after an adverse event.]


25. Michelle M. Mello et al., Caring for Patients in a Malpractice Crisis: Physician Satisfaction and Quality of Care, HEALTH AFF., July/Aug. 2004, at 42, 51.

clearly inadequate payment. As a result, the parties today fail to settle promptly for a claimant’s net economic loss even when it would be seemingly advantageous to both.

G. Why Binding Early Offers by Defendants Only

If an early offers system benefits both parties, why should it be the defendant under early offers who has the power to bind the claimant? Shouldn’t claimants have the power to make a binding early offer for payment of net economic loss by the defendant? The simple answer is that claimants and their counsel would “lack sufficient incentives to weed out frivolous or non-meritorious claims under such a plan.” If claimants had the power to unilaterally bind defendants, there would be “a perverse incentive to exploit the system with marginal claims or worse.”

But defendants, as the entities making payment, when confronted with clearly meritless claims will pay nothing and make no early offer—as they should. On the other hand, when faced with potentially meritorious claims, defendants will test whether “the statutorily defined early offer involves less exposure than a fullscale tort suit with all its uncertainty and transaction costs.” Only defendants have the appropriate incentives to “distinguish carefully between arguably meritorious and clearly non-meritorious claims” in order to reduce costs by promptly paying the required minimum benefits in suitable cases.

H. Why Redistribute Income from Noneconomic Damages to Economic Damages

It is important to note that medical malpractice law is a form of state mandated insurance. Anyone buying health care services must, in effect, pay for it. Thus, the state is more justified in dictating not only its presence, but also its structure, especially compared to insurance that, like life insurance, is purely voluntary. When the state mandates workers’ compensation coverage, it is redistributing from those with good tort claims to those without. The justification for such a transfer derives from the theory of diminishing marginal utility of money with its concomitant use of the concept of “interpersonal utility comparisons.”

The theory of diminishing marginal utility, when coupled with the proposition of interpersonal utility comparisons, purports to justify spreading dollars more widely among malpractice victims, rather than leaving heavy losses on some and imparting relatively large amounts to others. Thus, the theory supports the early
offers proposal insofar as it transfers some dollars from those eligible for payments for reimbursed economic loss and for noneconomic loss to those with otherwise unreimbursed economic losses.

The theory of interpersonal utility comparisons is of course highly controversial. Its critics rebut that policies designed to equalize incomes can be said to increase public welfare. Thus, they argue that if people have different net incomes, whether induced by accidents or not, a transfer that purports to equalize income would not necessarily make things better than before the transfer: the gain to the transferee is simply equal to the loss of the transferor. To take an extreme example, even if by a transfer, A, a collector, loses his chance to buy a fifth antique chair so that B, a quadriplegic, can buy a wheelchair, there is supposedly no way to establish that A does not need his new chair just as acutely as B needs his; that is, there can be no interpersonal utility comparison between A and B. According to such a view, no scientific basis exists for concluding that a redistribution of resources from A to B leads to net improvement.36 Similarly, opponents of such use of interpersonal utility comparisons would presumably argue that there is no justification for taking from those eligible for reimbursement from collateral sources and payments for noneconomic losses to pay for other accident victims' unreimbursed economic losses.

Nonetheless, the early offers plan is premised on the admittedly controversial proposition that public welfare is advanced when insurance thus diverts dollars from, say, payment of noneconomic losses to cover large amounts of serious economic losses. Economic losses of substantial magnitude, if unreimbursed, lead to lack of medical care, rehabilitation, and subsistence wages. Such losses are in the realm of what Lord Keynes called “absolute” needs, “in the sense that we feel them whatever the situation of our fellow human beings may be.”37 Granted that defining “absolute” needs can be difficult and that redistribution of income may be justified only for absolute needs, succor in the form of otherwise unavailable payment for medical services and wage losses of the seriously injured would seem clearly to fall within that category. If many victims of morally neutral events, namely accidents, are now paid much more than their economic losses, great or small, whereas other accident victims are paid much

assumption—that of the diminishing marginal utility of money income—to obtain a utilitarian basis for a goal of equalizing incomes. For on these assumptions it is easily shown that an equal distribution of income and wealth will produce more happiness than any other distribution unless the costs of achieving and maintaining such a distribution equal or exceed the benefits.

Id. We cite Posner to illustrate the basic principle discussed, while remaining mindful of his disdainful attitude toward redistribution.

less than their great economic losses, if paid at all, causing grave hardship; here, if anywhere, is a situation calling for interpersonal utility comparisons.  

II. LITERATURE REVIEW

The following Parts, II-V, are supplied to support the Article's thesis, often using technical economic modeling terminology and devices.

A. First Principles of Settlement Bargaining and the Causes of Litigation

Although our model utilizes standard legal and economic principles currently in wide use, our approach traces its history through a specific line of economic and legal theories.

Our model works well with numerous accepted settlement bargaining models. Chief among these is the George L. Priest and Benjamin Klein divergent expectations model. Priest and Klein noted, understandably enough, that settlement becomes more likely if the defendant and claimant agree about the prospective outcome of a trial. The failure to settle primarily owes itself to disagreement between the claimant and the defendant about a trial's likely result. One of the primary causes of disagreement between adverse parties is the vagueness of the legal decision standard; the more vague the standard, the greater the uncertainty as to any given case's outcome, and the greater the probability of litigation. A special cause of disagreement in medical malpractice lawsuits is uncertainty regarding what caused the injury to the claimant. A trial results when the claimant's minimum sell price (meaning the claimant's expected judgment less litigation costs) is greater than the defendant's maximum buy price (meaning the defendant's expected payout plus litigation costs). Higher litigation costs can thus encourage settlement by decreasing the minimum sell price and raising the maximum buy price, thus reducing the divergence between the parties.

We also incorporate into our analysis the insight of Richard A. Posner that the size of the range of possible bargaining outcomes influences the likelihood of settlement. The wider the range of possible bargaining outcomes, the less likely the parties are to settle. Posner showed that claimants and defendants bargain to divide the costs saved (read "the surplus") from not litigating. A larger surplus results in a wider range of possible bargaining outcomes and therefore higher stakes. A wider bargaining range lessens the likelihood of settlement in part

38. For an indication that pain and suffering damages were historically limited to egregious conduct in much the way the early offers plan limits them, see generally Jeffrey O'Connell, A Proposal to Abolish Defendants' Payment for Pain and Suffering in Return for Payment of Claimants' Attorneys' Fees, 1981 U. ILL. L. REV. 333, 367.
39. See Priest & Klein, supra note 19, at 13.
40. Id. at 15.
41. See id. at 15-16.
42. See id. at 13-15 ("A sufficient condition for litigation is that the plaintiff's minimum demand (A) exceed the defendant's maximum bid (B).").
43. See id.
44. See POSNER, supra note 21, § 21.5, at 523.
45. Id.
46. Id.
47. Id.
because the parties “cannot agree how to divide the available surplus.”

Posner’s view also implies that a wider range of bargaining possibilities decreases certainty about the claim’s value, because it may be subjected to so many disparate valuations.

This appears to contradict Priest-Klein, but such is not necessarily the case. Priest-Klein addresses individuals’ reactions to their own costs,\(^{49}\) while Posner addresses individuals’ reactions to the costs borne by the opposing side.\(^{50}\) Thus, Priest-Klein and Posner are discussing two separate forces that are perfectly explained when the other force is absent, but that, in reality, are constantly at odds in the lives of claimants and defendants. For illumination’s sake, let us look at the example of a defendant who threatens a claimant with a long, lengthy trial that will likely deplete the claimant’s resources and potentially make even a judicial victory a monetary loss for the claimant. This defendant is hoping that the claimant is more of a Priest-Klein individual, who would be more concerned with his own costs. Such a claimant would likely settle for a much lower price. If the claimant’s motivations are driven more by the Posner effect, he could simply threaten the defendant with a negative publicity campaign that would impose great costs on the defendant. Knowing that avoiding those costs would save the defendant more money and reputation, the claimant’s willingness to settle would decrease, and the minimum settlement acceptable to the claimant would increase.

For the purposes of this research, we assume that the Priest-Klein effect is dominant, leading to a positive correlation between costs of trial and willingness to settle. Because of the uncertainty regarding this, however, we do not rely on a strong positive correlation, but merely on the correlation being positive.

Like Charles J. Goetz,\(^{51}\) we partially attribute the wide range of possible bargaining outcomes in settlement negotiations for personal injury suits to the common law’s prohibition of selling personal injury claims.\(^{52}\) Goetz demonstrated that a highly competitive market to buy such claims would generate price information\(^{53}\) at no cost to claimants. One primary source of uncertainty regarding trial outcomes is the lack of complete information on the part of the claimant regarding culpability of the defendant. Claimants rarely have sufficient education or training to know how much blame, if any, the defendant bears in their current suffering. A market as defined by Goetz would proxy such information through market forces.\(^{54}\) Price information generated by multiple buyers of claims would closely approximate accurate culpability information because those with better knowledge would find such a market profitable.\(^{55}\) The

\(^{48}\) Id.

\(^{49}\) See supra notes 39–43 and accompanying text.

\(^{50}\) See supra notes 45–48 and accompanying text.


\(^{52}\) See GOETZ, supra note 51.

\(^{53}\) Id. at 42.

\(^{54}\) See id.

\(^{55}\) See id.
lack of such a market limits claimants to one set of buyers, defendants, who have an incentive to reveal only information that benefits themselves. No other buyers may draw out information about defendants' price range through competitive bidding. Goetz's analysis implies that limiting claimants to one set of buyers, defendants, expands the range of possible bargaining outcomes and decreases certainty about a claim's value.

As noted by Barry Nalebuff, the negotiation process may also be distorted by the strategic use of settlement demands. Claimants seek to appear strong and to discover information about defendants' reservation price, that is, the highest price a defendant would pay. In particular, claimants craft their settlement demands to amass "bargaining power" and to make their threats to sue look credible to defendants. The need to maintain credibility restricts the range of prices claimants may demand to sometimes unrealistically high ones. If the defendant rejects a high settlement demand, the claimant has probably learned little about the strength of the defendant's position, or about the defendant's reservation price. But the rejection of a low settlement offer indicates that the defendant is confident and has a low reservation price. By making a high demand, the claimant avoids appearing weak and also avoids emboldening the defendant. Unfortunately, the ritual of high demand by claimants and rejection by defendants does little to help claimants learn about the defendant's reservation price. Consequently, an "excessive number of cases proceed to court." The Nalebuff model predicts that plaintiffs should win fewer than fifty percent of cases. In contrast, the Priest-Klein theory generally predicts that plaintiffs should win about half the time. It is worth noting that plaintiff medical malpractice win rates in the early nineties were about thirty percent or even lower. Some studies put more current plaintiff win rates at approximately twenty-five percent, while Lester Brickman puts the plaintiff win rate in 2001 at

56. See id. at 39-43; see also Robert Cooter, Towards a Market in Unmatured Tort Claims, 75 VA. L. REV. 383, 386 (1989) ("Prohibiting sales [of matured tort claims] to third parties blocked competitive bidding and brought the usual abuses associated with monopoly—unequal power, asymmetrical information, and distorted prices.").

57. See GOETZ, supra note 51, at 41-43.


59. Nalebuff, supra note 58, at 198 ("For the plaintiff bargaining power depends on the defendant's believing that he will be taken to court if a settlement is not reached.").

60. id.

61. Id. at 198–99.

62. Id. at 199.

63. Id.

64. Id.

65. Id. at 208.

66. Id.

67. See Brian Ostrom et al., What Are Tort Awards Really Like? The Untold Story from the State Courts, 14 LAW & POL'Y 77, 83–85 (1992) (noting that plaintiff win rates are about twenty-nine percent).

68. See Thomas B. Metzloff, Resolving Malpractice Disputes: Imaging the Jury's Shadow, 54 LAW & CONTEMP. PROBS. 43, 50 (1991) (noting that plaintiff win rates are about 18.8%).

about thirty-nine percent in some areas.\textsuperscript{70} Obviously, all such figures are well below fifty percent. Plaintiffs’ failure to win half of medical malpractice trials does not disprove the divergent expectations principle.\textsuperscript{71} It does imply that the fifty percent prediction could be distorted by strategic behavior.\textsuperscript{72}

Approaches similar to Nalebuff’s have been taken over the years, dealing primarily with the asymmetric information problems of the physician-patient relationship. Lucian Bebchuk notes that imperfect information regarding changes in the potential size of the award, the size of the litigants’ costs, and the nature of the parties’ information can affect the likelihood of settlement.\textsuperscript{73} Unlike Bebchuk, we allow for a continuum of possible awards with varying probabilities, allowing greater detail in examining changes in the likelihood of settlement.\textsuperscript{74}

It is instructive to apply existing models of asymmetric information in production to medical malpractice litigation. Strategic decisions in medical malpractice suits may appear very similar to the strategic decisions of competing producers under imperfect information. In bargaining between firms A and B, A may, as claimed by Andrew Daughety and Jennifer Reinganum, actively choose a disadvantaged position under asymmetric information.\textsuperscript{75} This is done through A’s repeated playing of sequential games and through A’s practice of sending signals to B. If firm A waits, it may gain better information regarding the market, an advantage that may outweigh the loss associated with allowing B to be the “leader.” In the case of medical malpractice, patients and doctors may similarly act strategically to gain better information about the other party. The physician is the party with better information regarding true liability to the patient, and tries to signal lower liability to the patient through a low or no settlement offer. A patient is the party with better information regarding the extent of the harm, and will attempt to signal a higher level of harm with higher demands or a high counter-offer. These signals, by transmitting information, may increase settlements by diminishing the disparity of expectations discussed above if believed. If, however, the parties believe the signals to be “cheap talk,” or exaggerated versions of true valuations, expectations may diverge further.

Asymmetry of information is seen as a major stumbling block to tort reform proposals. Any proposal that makes it more difficult for a plaintiff to recover will simultaneously make the plaintiff more willing to accept an offer but a defendant less likely to offer. This makes predicting the outcome of reform problematic. Given the adversarial nature of litigation, there are inevitable obstacles to the claimant’s finding out what the defendant knows and vice versa. Asymmetries are thus likely to persist. The search for a solution, then, becomes a choice

\textsuperscript{70} See Brickman, supra note 13, at 716 (citing JURY VERDICT RESEARCH, CURRENT AWARD TRENDS IN PERSONAL INJURY 41 (Catherine Thomas ed., 2002)).
\textsuperscript{71} See Metzloff, supra note 68, at 64–65.
\textsuperscript{72} It is worth noting that Priest and Klein assumed, for purposes of their model, “that the parties behave nonstrategically with respect to litigation and settlement.” Priest & Klein, supra note 20, at 7 (emphasis added).
\textsuperscript{74} See infra Part IV.A.1.
\textsuperscript{75} Andrew F. Daughety & Jennifer Reinganum, Asymmetric Information Acquisition and Behavior in Role Choice Models: An Endogenously Generated Signaling Game, 35 INT’L ECON. REV. 795, 795–97 (1994).
between attempting to: (a) improve the signals given by each party, or (b) find a way to bypass a flawed signaling process.

As to (a), the problem is not so much asymmetric information in the signaling process but (unwelcome as it may sound to economists’ ears) highly uncertain, indeed often unknowable, information given the huge vicissitudes of medical malpractice litigation. According to a lawyer and physician who together exhaustively examined malpractice litigation in New York, Colorado, and Utah, “the legal system is even more prone to error than the medical system it attempts to judge.”

As a result, if we choose (b), we choose to largely bypass the signaling process, alleviating current difficulties by implementing direct incentives on both parties to settle promptly. Incentives presented to physicians increase the likelihood of their making the requisite early offers to plaintiffs, and once early offers have been made, plaintiffs face strong incentives to accept it. By creating those incentives for each party to settle, the parties’ expectations are brought together. We are thus able to avoid the asymmetric information problem without having to solve the asymmetry itself, and we can avert the largely futile task of trying to create better signaling by opposing parties.

B. Technical Predecessors

Like Ariel Rubinstein, we incorporate a fixed discount factor into our expected payoff-payout models to adjust for the value of time. Rubinstein constructed a perfect equilibrium bargaining model in which two players successively propose portions for dividing a “pie” between them non-cooperatively. The Rubinstein model informs our study of early offers chiefly with its application of a fixed discount rate to the value of the pie—here an expected damage award—through time.

Gyu Ho Wang utilizes a continuous time (integrand) model for expected return, allowing a probability distribution function for damages. Our model utilizes this same integrand form, allowing for a continuous distribution of award probabilities. We add to that the previously mentioned notion of positive rate of time preference, as well as the notion of court costs increasing over time. The primary difference between Wang’s model and our model is one of simplicity and intent. Wang addresses the effect of medical liability on the quality of patient care. While certainly worthy avenues for discussion, quality-of-care issues are not the main subject of this article. In other words, given that all the vicissitudes of current malpractice litigation make it unlikely to deter substandard care, we

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77. See Ariel Rubinstein, Perfect Equilibrium in a Bargaining Model, 50 ECONOMETRICA 97 (1982).
78. Id. at 98–99.
79. Id. at 99.
81. Id. at 57–58, 73.
concentrate on making more sense of the litigation process itself to which we now turn with a still more detailed construction of our economic model.


Needlessly inflated litigation-induced costs distort the tort system. These litigation-induced costs harm society in numerous ways. First, too many legitimate potential claimants never receive compensation because these costs deter them from bringing valid claims. Second, defendants pay often artificially high amounts to settle. Third, the net amount received by claimants from settlement and from jury awards is often unnecessarily low. Far from keeping some litigation-induced costs to a minimum, the current system allows these costs to produce more baleful effects than would exist under an early offers law. These costs unnecessarily harm not only both parties to every settlement and trial, but also potential claimants whom the current level of litigation-induced costs deter from filing a claim in the first place. Since these costs drive a wedge between claimants and defendants, we term their deleterious consequences the “Wedge Effect.”

A. Defining “Litigation-Induced Costs”

“Litigation-induced costs” in our model is a broader concept than trial expenses. Litigation-induced costs, as defined here, have two primary properties. First, these costs consist of something valuable to one or both of the parties that must be foregone to pursue a claim—a broad category composed of market and non-market costs. Second, these costs generally increase over time. What follows is an expansion on examples covered earlier. Examples of litigation-induced costs discussed previously are as follows:

- **Litigation expenses other than lawyers’ fees.** Many claimants’ lawyers pay expert witnesses and other trial expenses, including those incurred in generating documents for discovery, performing extensive jury research, and conducting mock trials, out of the judgment or settlement. These charges increase with time. They reduce the claimant’s expected payoff the longer litigation continues, and may be minimized by early settlement. Defendants’ lawyers incur similar types of litigation costs. Defense lawyers generally bill these costs directly to the client.

- **Lost Beneficial Reliance.** A large unknown liability or asset pending (the

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82. At the same time, many iatrogenic injuries are minor and are not severe enough to prompt a lawsuit. See WEILER ET AL., supra note 7, at 79 ("Most disabling injuries are short-term in character, and thus perhaps reasonably left to the victim's own resources.").

83. See infra Figure 2 and accompanying text.

84. See infra Figure 2 and accompanying text.

85. Cf. WEILER ET AL., supra note 7, at 140 ("In sum, our analysis of malpractice litigation data demonstrates that the problem is not a litigation surplus, but a litigation deficit."). By this statement, the authors appear to mean that many injured victims deserved compensation but received none, not that litigation is the best mechanism for compensating such victims. See supra note 82 and accompanying text.

86. See supra text accompanying notes 22–25.

87. As to lawyers’ fees, see infra notes 106–109 and accompanying text.
judgment or settlement, or lack thereof) prevents claimants from making long-term plans related to the resolution of a claim. The same holds true for insurance company defendants that cannot be confident as to what claim values to place on their financial reports. Thus, neither claimants nor defendants can readily allocate resources in anticipation of the future and both lose the gains from “reliance” on such plans.\(^8\) Lost beneficial reliance increases the longer the parties labor under uncertainty.

**Opportunity Cost of Litigation.** When they begin devoting time and resources to a legal dispute, claimants and defendants forego other prospects. For instance, medical malpractice claimants’ opportunity costs may include income from foregone investments, consideration of the defendant’s pretrial settlement offers, vacation, time spent with family, medical rehabilitation, lost wages, and so on. One might expect that insurance company defendants’ opportunity costs primarily consist of foregone investment income. A corporation, of course, has no “family” to spend time with in the human sense, but that is not true of the individual health care providers insured by liability insurance companies. Both insureds and insurers may indeed have personal opportunity costs associated with litigation, such as reputation, and may be willing to offer a settlement to avoid such costs.\(^9\) Foregone opportunities constitute a cost that, to value the suit accurately, the claimant (defendant) must subtract from (add to) the expected payoff of the future award.\(^10\) Overall, opportunity costs generally should increase with time and can be avoided by early settlement.

**Peace of mind.** Litigation especially taxes the emotional well-being of injured claimants.\(^11\) If the defendant makes a pretrial settlement offer, claimants have the opportunity to receive something immediately to compensate for (perhaps otherwise increasing) lost wages and medical expenses. But if claimants choose to litigate, they undergo an enormously draining and frustrating fight and the cost must be weighed against any expected award. Litigating claimants give up the peace of mind that comes from avoiding further battle. As indicated above, physician defendants in medical malpractice cases also carry a heavy emotional burden.\(^12\)

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89. *See infra* note 92.

90. Whereas marginal opportunity cost may be declining over some time interval, as opportunity costs become “sunk” (or are lost), total opportunity costs increase with time.

91. (B)oth the plaintiff and defendant suffer the psychological consequences of protracted litigation. From the perspective of physician defendants, the lawsuit represents a personal attack on their professional ability and reputation. The time and energy plaintiffs spend litigating a claim often delays the emotional closure needed to move forward with their lives. *Kelly K. Meadows, Note, Resolving Medical Malpractice Disputes in Massachusetts: Statutory and Judicial Initiatives in Alternative Dispute Resolution, 4 SUFFOLK J. TRIAL & APP. ADVOC. 165, 167–68* (citing Allen K. Hutkin, *Resolving the Medical Malpractice Crisis: Alternatives to Litigation, 4 J.L. & HEALTH* 21, 24 (1989/1990)).

92. The emotional cost to doctors in [medical malpractice] litigation is also very high. Nothing is more humiliating, painful, or embarrassing for a doctor than to be accused of negligently hurting a patient. A victory in court probably does little to alleviate this emotional pain. The mere accusation of malpractice can have an adverse effect on a doctor’s reputation among her colleagues and her credibility with the community.
Moreover, the early offers statute provides defendants with an incentive to apologize and make information available to claimants and others without fear of additional tort exposure. Greater information about the causes of an injury and hearing some defendants apologize may not only increase the parties’ peace of mind, but may also make for more and prompter communication between health care providers leading to more effective safety programs.93

B. Measuring Some Litigation-Induced Costs

Although it is probably impossible at this point to measure precisely and accurately the broad concept of litigation-induced costs, empirical data indicates that some measurable components of these concepts already equal the amount paid to claimants as compensation. A study published in 2000 observed that only forty cents of every malpractice insurance premium dollar goes to claimants as compensation, another forty cents “is spent on litigation,” and the remaining twenty cents goes to insurance overhead.94 The Congressional Budget Office, in a recent report on the U.S. tort system, similarly concludes that “[t]he best available data on the direct costs of tort cases suggest that victims who file claims receive an average of 46 cents from each direct dollar spent on the system (with the other 54 cents going to attorneys’ fees and insurance expenses).”95 All other things equal, cutting back on just these measurable litigation-induced costs would greatly reduce waste, enhance the efficiency of the tort system, and benefit both claimants and defendants.

C. Graphically Modeling the Effects of Litigation-Induced Costs: The Wedge Effect

This section pursues the “Wedge Effect” and its deleterious consequences for claimants and defendants. A Wedge Effect, as indicated above, exists when buyers and sellers in a market must share a cost related to consummating a transaction. The Wedge is the amount by which the purchase price to the buyer is raised plus the amount the selling price received by the seller is reduced. The paradigmatic example is the sales tax on goods. As will be seen below, to the extent that litigation-based costs cause a Wedge Effect in the market for resolution of medical malpractice claims, the current system artificially prevents some welfare-enhancing settlements, reduces the compensation of claimants unnecessarily, inflates the payout of defendants, and creates a deadweight loss.

Scott Forehand, Note, Helping the Medicine Go Down: How a Spoonful of Mediation Can Alleviate the Problems of Medical Malpractice Litigation, 14 OHIO ST. J. ON DISP. RESOL. 907, 909 n.9 (1999) (citation omitted).

93. See supra note 24 and accompanying text.

94. Danzon, supra note 8, at 1344, 1369.

1. How an Ideal Market for Settlements Would Operate

To clearly explain the Wedge Effect, this section first presents how an ideal "market" for resolution of medical malpractice claims would operate. Figure 2 below diagrams that market (bearing in mind that we assume any individual claim will have one potential buyer, the defendant).

![Equilibrium Market for Resolution of Tort Claims](image)

Figure 2 illustrates an ideal equilibrium market for resolution of medical malpractice claims, which are sold at certain prices (vertical axis) and quantities (horizontal axis). A diagram like Figure 2 could represent (1) a "market" for a single claim with one buyer and one seller, or (2) a series of pairs of one buyer and one seller, or (3) one or many sellers.

Buyers are defendants; sellers of claims are claimants. Demand curve $D$ represents defendants' buy preferences. Demand curve $D$ slopes downward because defendant buyers prefer to settle a larger quantity of claims as they grow cheaper. Supply curve $S$ represents claimants' sell preferences; it slopes upward because a higher quantity of claimants prefer to sell their claims as defendants make increasingly generous settlement offers.

Both curves have some slope, which is determined by price elasticity. We use the notion of elasticity to measure the sensitivity of the quantity demanded or supplied to changes in price. We assume that the supply and demand curves are neither completely elastic nor inelastic, as illustrated in Figure 2.

96. Given the legal restrictions on buying and selling personal injury claims, see supra notes 51–57 and accompanying text, Figure 2 cannot represent the classical conception of a market in which many buyers and many sellers compete for the same goods.
Elasticity is a vital issue in this discussion\textsuperscript{97} because, as with discussions of tax burdens, the greater the elasticity of demand (supply), the more the burden falls on suppliers (consumers). A perfectly elastic demand curve means that the entire burden falls on suppliers, or in this case, claimants. Economic theory holds that perfectly elastic or inelastic demand and supply curves are unlikely to exist. Even vital resources, such as gasoline, or addictive substances, such as heroin, are likely to have elasticities greater than zero. There are some commodities for which demand appears to a seller to be perfectly elastic. Markets for these commodities are often called perfectly competitive markets. In reality, the demand for such products still exhibits finite elasticity when the market is viewed as a whole.

In the case of supply, a perfectly inelastic supply curve is illustrated only in the case of Aggregate Supply models, where the economy has reached its long-run capacity. For an individual market to exhibit a perfectly inelastic supply curve, it would have to be perfectly regulated by government\textsuperscript{98} or every resource in society would have to be utilized in the production of settlements. A perfectly elastic supply curve would indicate constant marginal costs. Although it is hypothetically possible that an underutilized judicial system could, for a time, increase the number of cases without increases in marginal costs, that trend could only continue for a limited time, and would rapidly find itself confronted by increasing marginal costs. Therefore, our assumptions that demand and supply are neither perfectly elastic nor perfectly inelastic are supported by economic theory.

The "market" price in Figure 2 to settle any particular malpractice claim is $P_{\text{equilibrium}}$, and the quantity of malpractice claims settled by the parties is $Q_{\text{equilibrium}}$. The plaid area below the demand curve but above $P_{\text{equilibrium}}$ constitutes the "consumer surplus," or, in terms of medical malpractice claims, the gains to defendant insurance companies from settling at the equilibrium price. The lightly shaded area ABC constitutes the "producer surplus," or, in this context, the gains to claimants from settling at the equilibrium price. In a perfect equilibrium market such as Figure 2, claimant(s) and defendant(s) have completely captured and exhausted the gains from settlement(s). All is well.

2. How the Wedge Effect Changes Ideal Market Conditions

Litigation-induced costs alter the Figure 2 "market" by raising the price defendants must pay to resolve claims. They also divert part of the total price paid by defendants away from claimants into the pockets of lawyers and others. Claimants also bear substantial litigation-induced costs, which further diminishes the amount they receive. Simply put, claimants get less while defendants pay

\textsuperscript{97} For the foundation for the discussion in the next three paragraphs, see generally JAMES B. GWARTNEY ET AL., MACROECONOMICS: PRIVATE AND PUBLIC CHOICE (10th ed. 2003); N. GREGORY MANKIW, PRINCIPLES OF MACROECONOMICS (2d ed. 2001); and JAMES WILLIS, EXPLORATIONS IN MICROECONOMICS (5th ed., rev. 2002).

\textsuperscript{98} The use of the word "perfectly" here is not frivolous. In order for a perfectly inelastic supply curve to exist, the government would not only have to define the maximum number of legal cases but would have to specifically determine the exact number of cases brought and settled.
more. The inflated price paid by defendants and the deflated price received by claimants creates the Wedge. Figure 3 graphically illustrates the Wedge Effect.

Figure 3: The Effect of Litigation-induced Costs on a "Market" for Resolution of Tort Claims

![Diagram](image_url)

Litigation-induced costs, in effect, alter the "market" by placing a barrier between producers and consumers. This barrier is detrimental in the following ways.

- First, a shift in the supply curve to the left of the position of $S_{\text{defendant}}$ results in a reduction in the number of settlements. The vertical distance of any point on the supply curve $S_{\text{plaintiff}}$ represents the minimum amount that claimant must receive to be willing to settle, that is, the amount necessary to cover costs. It is only above this price that a claim is offered for sale to the defendant. Litigation-induced costs take a "cut" from the amount paid by defendants. A higher amount must be extracted from the defendant for the claimant to receive compensation above costs. This is represented in a shift of the supply curve to $S_{\text{defendant}}$. When the supply curve is thus restricted, a new equilibrium is reached. This new equilibrium sees a reduction in the total number of settlements reached, $Q_{\text{current system}}$. The horizontal distance between this point and our $Q_{\text{equilibrium}}$ is the number of cases that would have reached resolution without imposition of litigation-induced costs.

- Second, the price of settlement paid by defendants ascends. As noted above, the defendant must pay a higher price for the claimant to receive

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99. In this example, we represent litigation costs in a manner similar to a tax on suppliers (claimants). We are aware that the burden of litigation costs is divided among claimants and defendants. However, it is important to note that the result is the same if we assume a tax on consumers (defendants). According to economic theory, it is the amount of the tax, not the person upon whom it is placed, that determines its effect. See MANKIW, supra note 97, at 131. Thus, our simplification is appropriate without any loss of general applicability.
compensation above costs. As supply is restricted, the equilibrium price paid by defendants rises. The price for the defendant is now $P_{\text{defendant}}$, not $P_{\text{equilibrium}}$.

- Third, the price received by claimants declines. Unfortunately, a higher price paid by defendants does not mean that claimants are receiving a higher price. Because of litigation-induced costs and the reduction in the number of cases resolved, using Figure 3 above as a basis of comparison, claimants see their price received decline from $P_{\text{equilibrium}}$ to $P_{\text{plaintiff}}$.

- Fourth, the combined litigation-induced costs paid by defendants and claimants create the Wedge. The Wedge is the vertical distance GH in Figure 3. The area GFDH represents the potential gains from trade diverted from the parties to litigation-induced costs. Similar to economic analysis of taxation, this is a net transfer from consumers (defendants) and producers (claimants) to the taxing authority (attorneys and others). There is a reduction in consumer (defendant) and producer (claimant) surplus associated with this transfer and the creation of the Wedge.\(^1\)

- Fifth and finally, the Wedge creates triangle FAD—a deadweight loss. The striped area FAD, formerly split between defendants and claimants as part of Figure 2, becomes deadweight loss. Every other welfare effect caused by the Wedge has resulted in net transfers from claimants and defendants to attorneys and others involved with litigation. It is only this—the deadweight loss—that shows that society is unambiguously harmed by the creation of the Wedge. In other words, the deadweight loss indicates a complete loss of consumer and producer surplus. It is a net loss to society, and represents defendants who were willing to offer a settlement and claimants who were willing to accept, but who were prevented from doing so because litigation-induced costs drove them apart.

These negative consequences are the result of litigation-induced costs forming this wedge between consumers and producers. Thus, any reduction in litigation costs would lessen the harmful effects described above. Reforms should be judged by how well they shrink the GFDH and FAD areas without generating new and equally deleterious side effects.\(^1\) With other variables held constant, reducing the Wedge brings more gains to both claimants and defendants. Reducing the deadweight loss produces an efficiency gain and thus greater satisfaction for claimants and defendants.

---

\(^{100}\) Instead of enjoying the area below the demand curve and above CA, the defendant now receives only the smaller shaded area below the demand curve and above GF. The claimant similarly loses the larger area CAB and receives the diminished shaded area HDB.

\(^{101}\) See Danzon, supra note 8, at 1371 ("[A]ny reform that reduces the deadweight costs of litigation and defensive medicine or improves the efficiency of deterrence or compensation without increasing litigation or overhead costs would improve the efficiency of the system.").
IV. THE EFFECT OF LITIGATION-INDUCED COSTS ON CLAIMANTS' INCENTIVES TO SETTLE OVER TIME

This section introduces a model that puts a value on tort claims. In addition to valuing claims, this model sheds light on the causes of the Wedge Effect and how it can be minimized, and explains both the derivation of the supply curves in Figure 2 and the ambiguous influence of litigation-induced costs on claimants' inherent incentives to settle.

A. Deriving the Model for Claimants: Adjusting Future Nominal Damages Awards

As noted in discussing Figures 1 and 2 above, our model adjusts the value of future awards to their net expected present value. Again, the phrase "net expected present value" bundles together four adjustments to future awards, which account for (1) probability of payment; (2) time, and specifically a positive rate of time preference by individual actors; (3) claimant's lawyer's fee; and (4) other litigation-induced costs. Together, these adjustments return (or provide) a figure for the value of claims; these amounts also create the supply curve in Figure 2. We hereupon take up items (1)–(4) in greater detail.

1. Adjusting for Probability

Again, as noted in discussing Figures 1 and 2 above, a future nominal jury award must be adjusted twice for probability: once for the probability that the jury will find the defendant liable, and again for the probability of various damage awards. We conflate these two adjustments into one weighted average probability of a damage verdict. We assume a normal distribution of the possible damage awards. The weighted average of all possible jury awards returns a single probability-adjusted payoff that the claimant should expect. This is the claim's expected value. Let \( E(p) \) stand for expected value.

We now turn beyond Example in Part I.E to Example 2. Claimant P believes that jury J is 50% likely to find liability in a medical malpractice case. If J awards damages, P believes it will award one of four damage values: $1 million; $750,000; $500,000; or $250,000. All of these damage awards are equally probable. In other words, there is a 50 percent probability that P will receive nothing, and a 12.5% probability of receiving any one of the positive damage awards. The weighted average verdict, also known as the expected value or \( E(p) \), is $312,500, computed in Table 3 below. Example 2 and Table 3 assume a small number of discrete possibilities. A more precise method would use a continuous function. Let function \( f(v) \) represent the probability distribution that the jury will find liability for any alleged tort injury \( x \). Let \( s(v) \) represent the probability distribution of possible jury awards for alleged injury \( x \). Combined, \( f(v) \) and \( s(v) \) return the weighted average of all possible damage awards. Our model assumes a normal distribution of probable damage awards, as illustrated in Figure 4 below:

---

102. This Article ignores income tax adjustments.
Table 3: Weighted Average Expected Verdict Under Example 2 Facts

<table>
<thead>
<tr>
<th>Probability of Damage Award</th>
<th>Possible Nominal Award (thousands)</th>
<th>Weighted Average (thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Award 50.0%</td>
<td>X $ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Award 1 12.5%</td>
<td>X $ 1,000.00         = $</td>
<td>$ 125.00</td>
</tr>
<tr>
<td>Award 2 12.5%</td>
<td>X $ 750.00         = $</td>
<td>$ 93.75</td>
</tr>
<tr>
<td>Award 3 12.5%</td>
<td>X $ 500.00         = $</td>
<td>$ 62.50</td>
</tr>
<tr>
<td>Award 4 12.5%</td>
<td>X $ 250.00         = $</td>
<td>$ 31.25</td>
</tr>
<tr>
<td>Sum 100.0%</td>
<td></td>
<td>$ 312.50</td>
</tr>
</tbody>
</table>

Figure 4: Probability Distribution of All Possible Jury Awards, $f(v)s(v)$

We use the standard mathematical notation for a continuous function, an integral (\( \int \)). This function, \( f(v)s(v) \), takes the weighted average expected value, \( E(p) \), of all possible jury awards. Thus far, the expected value of the claim is:  

\[
E(p) = \int f(v)s(v)dv
\]

2. Adjusting for the Value of Time

Next, claimants must adjust future expected damage awards for time. A dollar today is obviously worth more than a dollar tomorrow. This is true because of

\[103. \text{ Notation } dv \text{ is mathematically required and merely denotes } v \text{ as the object of the integral.}\]
two separate factors. The first, of course, is that a dollar today may be invested, leaving today’s dollar worth its face value plus potential investment income. The second related but somewhat different reason is that individuals have some positive rate of time preference. In other words, claimants who receive the choice of obtaining something desirable today or tomorrow will choose to receive it today, *ceteris paribus*. The mathematical rate of the time discount is *r*, and includes discounts for the investment value of time, as well as individuals’ positive rate of time preference. The total discount depends on the number of time periods, *t*. The standard equation for discounting to present value is:

\[
\frac{\text{\$Amount}}{(1 + r)^t}
\]

Let *t* represent years. The present is *t* = 0. An award given by a jury three years from the present will occur in *t* = 3. A jury award in *t* = 3 must not only be discounted according to *r*, it must also be corrected for annual inflation *i*, which offsets the discount factor.

**Example 3.** Jury J is expected to give $1 million to Claimant P at *t* = 3, in future dollars. Let *r* = 0.05 (5%). Let *i* = 0.03 (3%). The inflation-adjusted *r* = *r* - *i* = 0.05 - 0.03 = 0.02 (2%). The value of the $1 million in *t* = 0 is $942,322.33, as follows:

\[
\frac{\$1,000,000}{(1.02)^3} = \$942,322.33
\]

This equation uses discrete\(^{104}\) compounding intervals equal to the value of *t*. Increasing the number of discrete compounding intervals—even while using the same annual discount rate *r*—adds an additional discount.\(^{105}\) In this article, we avoid compounding interval issues by using continuous compounding. The discount rate will be expressed as the base of a natural logarithm *e* raised to the power of −*r* and *t*, or *e*\(^{-rt}\). Our restated model (2), below, adjusts the expected jury award to account for the value of time:

\[
E(p) = e^{-rt} \left[ \int_{x} f(v)s(v)dv \right]
\]

---

104. "Discrete" means that we use a finite or countable number of compounding periods, rather than using continuous compounding.

105. For instance, if Example 3 were compounded monthly, *r* = 0.02/12 = 0.00167, and *t* = 3 * 12 = 36. The present value of the Example 3 jury award compounded monthly would equal $941,811.57.
3. Adjusting for Claimants’ Attorneys’ Contingent Fees

Claimants’ attorneys generally charge a contingent fee of roughly one-third of the jury award. There is evidence indicating that claimants’ lawyers may subtract litigation costs from the award first and then extract their fees. Others choose to extract their fees first and then subtract litigation costs. Our model can adapt to either situation. We assume the latter.

Let $a$ represent the portion of the judgment received by claimants. We define $a$ as being 66.7%, or $a \in [0.667]$. Since claimants pay the contingent fee only when they receive an award, the fee need not be adjusted for probability and remains outside the integral (that is, to the left of $\int f(v)s(v)dv$ below in model (3)). The contingent fee, however, must be paid in the future when the client receives the award, so it is adjusted for time. The restated model including $a$ is:

$$E(p) = e^{-n} \left[ a \int f(v)s(v)dv \right]$$

4. Adjusting for Other Litigation-Induced Costs

The expected value of jury awards must also be adjusted for litigation-induced costs, as defined above. Let $c(t)$ represent these costs. Litigation-induced costs accrue over time and must be discounted. They also increase over time. Adding $c(t)$ to the restated equation (4) below renders the model complete:

$$E(p) = e^{-n} \left[ a \int f(v)s(v)dv - c(t) \right]$$

B. Litigation-Induced Costs May Either Discourage or Encourage Claimant Settlement

Equation (4) suggests that the expected payoff of a claim inherently diminishes the longer payoff is delayed. Litigation-induced costs, however, can

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106. See Weiler et al., supra note 7, at 17.
107. See Emily Couric, The Trial Lawyers 124 (1988); see also supra text accompanying note 87.
108. Claimants’ lawyers may use a standard contract that entitles them to take their contingent fee “off the top,” that is, before subtracting costs. See, e.g., David Crump & Jeffrey B. Berman, The Story of a Civil Case: Dominguez v. Scott’s Food Stores, Inc. (3d ed. 2001).

In consideration of the services to be rendered for me by my said attorney hereunder, I hereby sell, transfer, assign and convey to my above named attorney or attorneys an undivided interest of ONE THIRD (1/3) interest in and to said claims and amounts received in settlement in the event same is or are settled without suit, and FORTY (40%) per cent of same and of any judgments obtained or amount received, on or for such claims or suits, if same is or are collected by suit or by settlement after suit is filed.

Id. at 8. When claimants’ lawyers take their contingent fee off the top, this obviously increases the risk to claimants, as a lengthy and expensive trial may even cause them to receive little or no award after the contingency fee and trial costs have been paid.

109. For the former example, monetary costs of trial can simply be included in the value of $a$.
110. See supra note 108 and accompanying text.
111. See supra Part III.A.
either contribute to this inherent diminution or mitigate it. Settlement-
encouraging reforms can avoid this uncertainty by contracting the pretrial and
early settlement bargaining time periods, as an early offers law does. Our
analysis below relies on the following largely uncontroversial assumptions:

1. Increasing net expected costs over time reduces expected payoff, and
encourages claimants to settle at a lower price. Rising costs enlarge the
Wedge and drive down the price received by claimants (see Pplaintiff, Figure
3 above).

2. Increasing the contingency fee decreases \( a \), reduces expected payoff, and,
with such lowered returns for claimants, increases the probability of their
accepting a settlement offer at any given price. A rising contingency fee
also increases the Wedge and drives down the price received by claimants
(see Pplaintiff, Figure 3 above).

3. Skewing the probability distribution function (that is, \( f(v)s(v) \)) to the left
(right) in Figure 4 will decrease (increase) the expected payoff, and will
increase (decrease) the probability that claimants will accept a settlement
offer.

1. Marginal Trial Expenses and the “Dissipation Principle”

To discover the change in the expected value of claims over each increment in
time, meaning the marginal gain or loss in expected value from one unit of time
to the next, we find the first derivative of equation (4) above, as shown in
equation (5) below:

\[
\frac{\partial E(p)}{\partial t} = -re^{-rt}a \int f(v)s(v)dv - \left[ e^{-rt}c'(t) - re^{-rt}c(t) \right]
\]

Equation (5) returns (or provides) the change in a claim’s expected value,
\( \partial E(p) \), over the change in time, \( \partial t \). Term I represents the overall change in the
expected payoff over one unit of time due to all the elements except litigation-
induced costs. Term I indicates that claimants’ expected payoff diminishes with
each unit of time the award is delayed. Claimants have an inherent incentive to
settle to avoid deductions in expected value owing to delay.

Term II, however, may or may not offset Term I’s diminution of expected
payout and its encouragement of settlement. The first item in Term II, \( e^{-rt}c'(t) \),
represents the discounted value of marginal trial expenses. These trial expenses
contribute to claimants’ portion of the Wedge (see Figure 3, area CEDH).
Marginal trial expenses are always positive and will always reduce expected
payout and encourage settlement the same way Term I does.

112. We use the word “marginal” in its economic sense of “each additional” unit viewed individually
(here, trial expenses), not in its colloquial sense of “extremely small.”
But the second item in Term II, \( -re^{-\mu}c(t) \), represents variables that increase claimants’ expected payoff with succeeding units of time.\(^{113}\) These are referred to as “dissipating opportunity costs.” Dissipating opportunity costs exert upward pressure on the expected value of the claim with each unit of time, and discourage claimants from settling (more on these incentives in a moment). We call this the “Dissipation Principle.” To understand the Dissipation Principle, one must remember that opportunity costs are the value of forgone opportunities once a choice is made. When such choice is no longer available, meaning a valuable opportunity has been foregone and has receded into history, it no longer subtracts from claimants’ expected payoff.

The Dissipation Principle thus means that before a claimant foregoes opportunities to gain income, the value of any prospective income must be subtracted from the expected value of the future judgment. But after these opportunities have been given up (that is, “sunk”), they cease to be subtracted from the expected payoff. Simple examples would include claimants with lucrative investment opportunities that they can take advantage of in the event of immediate settlement. The prospect of losing this investment imposes a cost. But once the choice is made not to settle and the opportunity passes, the prospect of losing this investment is no longer a cost.

At the onset of a claim, the claimant’s opportunities that are exploitable through early settlement exist and have some value. But as time passes without settlement, a claimant’s opportunities available through early settlement fade into history, one by one, and each then ceases to be subtracted as a cost from expected payment. All other variables held constant, as these costs go down, expected payoff must go up. These foregone income opportunities may include investments, wages, or non-market valuables such as delayed medical rehabilitation, time that could be otherwise spent, or peace of mind given up to pursue litigation.

Example 4 and Figure 5 below present a graphical illustration of the Dissipation Principle.

**Example 4.** Claimant P files a medical malpractice claim in \( t = 0 \) (let \( t \) represent months for purposes of Example 4). Six months later in \( t = 6 \), P begins sacrificing other opportunities related to income, health, emotional well-being, and other valuables in preparation for trial in \( t = 8 \). P subjectively values these combined opportunities at $50,000. From \( t = 6-22 \), P foregoes almost the total value (over 98%) of these opportunities as part of preparing for and participating in the trial. This dissipation in opportunity costs is calculated for purposes of this example using a rate of 2.6% per month. In \( t = 36 \), jury J awards P the amount anticipated by P, $1 million. Marginal trial expenses are an average of $3,200 per month from the start of the trial in \( t = 8 \) until its conclusion in \( t = 36 \), as in Figure 5.

---

113. Item \(-re^{-\mu}c(t)\) increases the expected payoff of the claim over time despite bearing a negative sign because the model causes Term I to be subtracted from Term II. Thus, if a negative value, such as Term I, is subtracted from another negative value, such as \(-re^{-\mu}c(t)\), this is mathematically the same as adding a positive value to Term I, or increasing expected payoff.
Figure 5: Total Effect of Dissipating Opportunity Costs and Marginal Trial Expenses on Example 4's Expected Value (EV)

Figure 5 illustrates a hypothetical simulation of the Dissipation Principle. The anticipated judgment is diagrammed twice, once as a dotted line and once as a solid line. The dotted line is the amount of the anticipated judgment discounted each month at an annual rate of 2% (a monthly rate of 0.167%, or 2 divided by 12). The dotted line has no other adjustments; it is called the “pure discounted judgment line” and serves as the baseline for assessing the net impact of litigation-induced costs on the anticipated judgment.

The solid line, called the “cost-adjusted judgment line,” adjusts the anticipated judgment for the effects of litigation-induced costs. The cost-adjusted judgment line accounts for, first, marginal monthly trial expenses, \( e^{-r}c'(t) \), and, second, marginal dissipated opportunity costs, \(-re^{-r}c(t)\). Marginal monthly trial expenses and the Dissipation Principle work at cross-purposes. The former, \( e^{-r}c'(t) \), decreases the anticipated payout of the judgment and causes the cost-adjusted line to run well below the pure discounted judgment line. The latter,

---

114. For reasons of simplicity, Figure 5 ignores adjustments for probability in Example 4’s anticipated judgment.

115. Figure 5 assumes that dissipation occurs at an exponential rate sufficient to discount the $50,000 in opportunities by at least 98% over 16 months (from \( t = 6-22 \); the monthly discount rate is \( r = 0.26 \)). The Dissipation Principle’s most general effect would also exist if opportunity costs dissipate at any other rate. The rapid nature of dissipation under the assumption of exponential rapidity within a few months allows its clearer demonstration. Even though the same general effect would exist using many other lower rates of dissipation, it would be less pronounced. But a dissipation rate that is sufficiently gradual might increase the value of the claim so slightly that dissipation never dominates marginal trial expenses.
−re−rt c(t), increases the anticipated payout of the judgment and causes the cost-adjusted line to approach the dotted pure discounted line.

In Figure 5, at \( t = 1 \), before any opportunity costs have dissipated, the full value of Example 4's $50,000 in other opportunities is subtracted from the pure discounted judgment line. This creates a disparity between the cost-adjusted (solid) line and the pure discounted (dotted) line. Beginning in \( t = 6 \) and continuing through \( t = 22 \) (a total of 16 months), however, over 98% of the opportunity costs dissipate. Consequently, the cost-adjusted line rapidly rises to approach the pure discounted judgment line as opportunity costs are "sunk." The rise of the cost-adjusted line signifies an increase in the value of the claim. All other things equal, a rational claimant will prefer the expected payoff in \( t = 10 \) to the expected payoff in \( t = 6 \), so that in \( t = 6 \) the increasing value of the claim due to dissipating opportunity costs discourages settlement.

2. The Dissipation Principle as Lessening Claimants’ Incentives to Settle

The Dissipation Principle may discourage claimant settlement for some period of time, but only under an extremely narrow set of assumptions, like those in Example 4. These assumptions are: (1) that the claimant has a substantial reserve of opportunity costs that (2) can be dissipated at a rapid rate. Tort reformers can enhance the prospects for settlements by remaining mindful that claimants may be most susceptible to settlement enhancing measures before they forego valuable opportunities in preparation for trial, as will be the case under an early offers statute.

But regardless of whether the sign of \( \frac{\partial E(p)}{\partial t} \) in equation (5) is negative or positive, the dissipation effect always detracts at least slightly from the claimant’s overall incentive to settle. With other variables held constant, at some point during trial preparation or litigation, claimants whose opportunity costs begin to dissipate also experience some decline in the incentive to settle. If the Dissipation Principle’s effect dominates over Term I’s effect for some temporary period of time, there must be a break-even point when Term I and Term II are of equal magnitude. Referring back to and restating equation (5), a possible break-even point can be defined as:

\[
- re^{-r} \int_{x} f(v)s(v)dv = e^{-r}c'(t) - re^{-r}c(t)
\]

Both sides of the equation contain discount factor \( e^{-r} \). These cancel each other out and leave a simpler equation, defined as:

\[
- ra \int_{x} f(v)s(v)dv = c'(t) - rc(t)
\]

Multiplying both sides of the equation by \(-1\) further simplifies the equation. The break-even point may be most simply defined as:
(8) \[ ra \int_{x} f(v)s(v)dv = rc(t) - c'(t) \]

We have labored this point and inserted more equations because we believe that in some limited circumstances the sign may flip from negative to positive after a break-even point. In these cases, for some period of time the Dissipation Principle’s effect dominates and discourages settlement.

Empirical studies show that the settlement rate dips and rises during roughly the time period when dissipation should in theory occur. In these studies, 60.4% of medical malpractice claims filed with insurance companies result in the filing of a lawsuit.\textsuperscript{116} Nearly all of these are closed “after suit but before trial,” that is 53.6% of the original pool of claims. Of the remaining 6.8%, only 1.6% of these claims close during trial, while 3.2% close “at verdict” and 2.0% “are closed on appeal.”\textsuperscript{117} The smallest percentages of claims are closed during roughly the time this Article predicts the most dissipation: when claimants forego the most opportunities in preparation for and during litigation. Of course, these statistics do not “prove” the Dissipation Principle,\textsuperscript{118} but they are consistent with it and therefore provocative.

Complications introduced into the model by the Dissipation Principle arise after claimants begin serious preparation for litigation. Legal reforms should help disputants avoid many, if not most, of the complications of litigation-induced costs by nipping them in the bud. Reforms should encourage settlement while the claim is still young, as an early offers statute does.

V. DEFENDANTS’ INCENTIVES TO SETTLE AND THE OVERALL EFFECT OF EARLY OFFERS ON THE WEDGE EFFECT

A. The Effect of Litigation-Induced Costs on Defendants’ Incentives to Settle over Time

This section introduces a model that describes defendants’ expected payout to claimants. It demonstrates that defendants have an inherent and dominant incentive to settle over time. The defendant model closely tracks the claimant model in equation (4) above:

\begin{equation}
E(p) = e^{-\alpha} \left[ \int_{x} f(v)s(v)dv \right] + \int_{t} c(s)ds
\end{equation}

\textsuperscript{116} Danzon, supra note 8, at 1358.
\textsuperscript{117} Id.
\textsuperscript{118} Danzon attributes these settlement rates to the acquisition of more information by both litigants. See id.
But equation (9) modifies equation (4) in two important ways. First, the function of equation (9) returns a positive number, but to the defendant this number represents a negative value because defendants are paying. Second, a (the claimant’s lawyer’s contingent fee) is removed and does not influence defendants’ payout or incentives. (In terms of Figure 3, the contingent fee is subsumed under claimants’ portion of the Wedge in area CEDH, not under defendants’ portion.) Defense counsel bills hourly as defense costs accrue, instead of charging contingently. Notation \( \int c(s)ds \) is a continuous function representing defense counsel’s average billing rate (and related costs) over time \( t \). Defense counsel’s rate adds to the expected payout because both are cash outflows (negative numbers). We analyze the effect of litigation-induced costs on defendants under the following uncontroversial assumptions:

1. An increase in defendants’ expected costs over time increases defendants’ expected payout and increases their likelihood of offering a settlement at any given price, as well as increasing the average settlement offer.
2. Skewing equation (9)’s probability distribution function to the left (right) will decrease (increase) expected payout, and will decrease (increase) the probability that defendants will offer a settlement, as well as the size of the settlement offer.

According to equation (9), defendants’ trial expenses always increase over time. The more protracted the dispute period, the more defendants’ portion of the Wedge grows (see Figure 3, area GFEC). With other variables held constant, defendants’ incentive to settle is constant and positive through time. Defendants should therefore prefer to resolve tort claims as early as possible to minimize the Wedge.

B. Early Offers Can Reduce the Wedge Effect

The risk-shifting mechanism of early offers, discussed above in the introduction and summary, shrinks the Wedge and decreases litigation-induced costs because rational claimants will not go to trial post-early offer. As a result, more cases will be settled quickly.

Figure 6 below graphically illustrates a hypothetical reduction in the Wedge caused by adoption of an early offers law.

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119. A simple version of \( c(s) \) is a linear function, and it serves to illustrate this example well. However, \( c(s) \) need not be a linear function for the following discussion to be true. Thus, linearity is a sufficient, but not a necessary, condition. All that is necessary for the following discussion is that \( c(s) \) be increasing with time. Because few defense lawyers offer discounts during any time period while the case is proceeding, we are confident in the assumption that \( c(s) \) is, in fact, increasing with time.

120. See supra Part I.

121. The reductions in the Wedge and deadweight loss depend on the elasticity of the demand and supply curves.
Figure 6: Effect of An Early Offer on the Wedge Effect in a “Market” For Resolution of Tort Claims

Figure 6 hypothetically illustrates six improvements resulting from adoption of an early offers law:

- **First**, the claimant supply curve shifts to the right. In Figure 3 above, the litigation-induced costs caused a shift of the claimant supply curve to the left. Any reduction in such costs will shift the curve back to the right. In Figure 6 above, the pre-early-offer defendant supply curve is $S_{\text{pre-EO}}$. Following the early offer, the curve shifts to a position not unlike that of $S_{\text{EO}}$.

- **Second**, the Wedge shrinks, and costs cut by this shrinkage expand the consumer (defendant) and producer (claimant) surpluses. Before an early offer, the Wedge took up area $\text{EFIH}$ in Figure 6. After an early offer, the Wedge decreases to area $\text{DBC}G$. Areas $\text{EFKD}$ and $\text{GJIH}$ are no longer part of the Wedge, while the smaller area $\text{BKJC}$ is added to it. (The actual size of these areas depends on the elasticity of supply and demand.)

- **Third**, the overall price paid by defendants to settle drops in Figure 6 from $P_{d1}$ (the pre-early-offer price) to $P_{d2}$ (the post-early-offer price). The drop in price applies to all claims currently bought by defendants. This generates savings on every such claim.

- **Fourth**, defendants will settle a larger number of claims, relative to the elasticity of demand, at the lower price. The quantity of claims

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122. See supra note 99.

123. Of note is the fact that reductions in the Wedge are potential reductions in wages to attorneys. However, similar to analysis of taxation, reduction in the vertical size of the Wedge does not always result in a reduction in the total area of the Wedge. Under certain circumstances, the total area of the Wedge may actually increase, increasing compensation to attorneys, in addition to adding to consumer and producer surplus. In every event, however, a reduction in litigation costs is beneficial to claimants, defendants, and society as a whole.

124. See supra text accompanying note 97.

125. See supra note 85 and accompanying text.
voluntarily purchased by defendants will increase in Figure 6 from $Q_{\text{pre-EO}}$ to $Q_{\text{EO}}$. This does not mean that defendants will likely pay more overall; the increase in claims submitted to any given defendant will likely be too small to offset the savings on all current claims. The types of new claims that will be brought are either those worth so little that the old system's costs deterred claimants from filing them, or those that should have settled in the old system but went to trial instead due to litigation-induced costs. Furthermore, because defendants are not required to make offers, the quantity increase is entirely voluntary and cannot cause defendants to pay out more overall unless they choose to.\footnote{126}

- Fifth, the overall \textit{price received by claimants climbs} from $P_{p1}$ to $P_{p2}$. Although claimants face a lower expected payoff, the total value received by the average claimant arguably will increase. Granted, the expected payoff to claimants under tort law includes the possibility of higher valued awards, yet evidence shows that such awards are received by a small portion of claimants.\footnote{127} Tort law also includes potentially substantial costs that under statutory early offers are not exacted because further litigation has been averted. Finally, and to repeat, in total compensation terms, the dramatic reduction in risk to the claimant due to a guaranteed payoff is \textit{itself valuable as compensation}.

- Sixth, the \textit{deadweight loss shrinks}. The Figure 6 area $\text{FBCI}$ is taken out of the deadweight loss and split between the consumer (defendant) and producer (claimant) surpluses, on the one hand, and the Wedge on the other. Area $\text{FBK}$ becomes part of the new consumer surplus, while the producer surplus is expanded by area $\text{JCI}$. As noted, the Wedge is increased by the area $\text{KBCJ}$. As the deadweight loss shrinks, claimants formerly prevented from settling in the pre-early-offer system by litigation-induced costs achieve settlements without inflating defendants' overall costs.

An early offers law, thus, would seem to make both defendants and claimants better off overall by saving litigation-induced costs and increasing the number of welfare-enhancing settlements.

At this point, the reader is asked, before moving on to Part VI, to recall—and perhaps reread for emphasis—Sections I.C–E above. They, especially the text accompanying Examples 1 and 2 along with Figure 1, best illustrate with readily accessible exemplars the case for early offers reform, now reinforced for the reader by the rest of Section I and the more technical material in Parts II–V dealing with this crucial issue of lessening of Wedge.

\footnote{126} See \textit{supra} notes 10, 85 and accompanying text.\footnote{127} See \textit{CONG. BUDGET OFF., supra} note 95, at 8 (observing that less than six percent of all state tort cases result in a damage award greater than one million dollars). For example, Lester Brickman observed in 1992 that in asbestos lawsuits "a small percentage of the unimpaired—perhaps 10–20%—will hit the asbestos lottery and be awarded $100,000 or more." Lester Brickman, \textit{The Asbestos Litigation Crisis: Is There a Need for an Administrative Alternative?}, 13 \textit{CARDozo L. REV.} 1819, 1873 n.231 (1992).
VI. AN EARLY OFFERS STATUTE WILL BE MORE EFFECTIVE THAN OTHER PROPOSED REFORMS IN REDUCING THE WEDGE EFFECT AND ENHANCING THE SETTLEMENT PROCESS FOR CLAIMANTS AND DEFENDANTS

If the senior author’s proposal of an early offers law can reduce the Wedge Effect and avoid the Dissipation Principle through statutorily defined offers that encourage settlement, it meets one of Patricia Danzon’s key economic criterion for evaluating a proposed reform, that is, whether it is likely to reduce the deadweight loss of litigation.

We turn now to prominent tort reform proposals including damage caps, changes in the collateral source rule, and regulation of claimants’ attorney contingent fees. Our model strongly suggests that these other tort reform measures lack an early offers law’s ability to structure and encourage pretrial settlement. They either fail to reduce the Wedge Effect or reduce it less than statutory early offers. These proposals also do little or nothing, unlike an early offers statute, to steer clear of the Dissipation Principle’s effect, which can temporarily muddle claimants’ inherent incentive to settle.

A. Problems with Competing Tort Reform Proposals

The theme running through tort reforms competing with early offers is not so much improvement of the tort mechanism, but cutting costs regardless of the fact that injured patients will thereby be hurt. Early offers are superior to reforms such as damage caps, changes in the collateral source rule, and restrictions on lawyers’ contingent fees because, unlike such reforms, statutory early offers improve both the pretrial settlement process and the compensation mechanism of the current system.

1. Damage Caps and Changes in Collateral Source Recovery

Early offers laws incorporate concepts from damage caps reforms and limitations on the collateral source rule. Like these reforms, early offers laws benefit defendants by restricting noneconomic damage awards and by eliminating repayment of claimants’ already-insured losses. Although our model implies that damage caps and restrictions on the collateral source rule may encourage earlier settlement and reduce the Wedge Effect, as do early offers, they do so solely at claimants’ expense. In contrast, the early offers plan would

128. See supra Part V.B.
129. Danzon, supra note 8, at 1371.
130. We forego at this point the implications of statutory early offers for cases with multiple defendants and the issue of joint several liability. We do urge, however, that limitations on joint and several liability, like other tort reform proposals discussed herein, solely advantage defendants and correspondingly disadvantage plaintiffs.
131. Our model does not take into account the effects on it in states that have already enacted these reforms.
almost certainly result in much greater reductions in both the time to settlement and the Wedge Effect as well as offering claimants something valuable in return for their assent: prompt payment of essential losses and thereby greatly reduced risk.

Roughly half of the states have reformed their tort systems by enacting ceilings on possible noneconomic or even total damage awards. These caps have generally limited noneconomic damages to a figure at or near $250,000, which still allows a significant amount of such damages. Limiting noneconomic or total damages clearly shifts the probability distribution function to the left (that is, lessening the amount) in cases where a jury might award an amount in excess of the cap. Empirical studies have confirmed this effect of damage caps; caps reduce the "severity" of claims by nineteen to thirty-nine percent, with payout per claim reduced by up to forty percent, even though these caps, unlike early offers, "directly constrain only a small percentage of cases." Reductions in payment under changes in the collateral source rule similarly shift the function to the left and effectively serve as a "cap" to the extent that defendants are exposed to lesser payment. This leftward shift of the damages function thus lessens the expected payout of defendants (and their insurers), while of course reducing the expected payoff to claimants (and their lawyers).

Any shrinking of expected payoff should make claimants more likely to settle at any given price. On the other hand, because defendants' payout has lessened, they grow less willing to settle at any given price; thus their settlement offers grow smaller with damage caps and changes in the collateral source rule. Specifically, applying Priest-Klein principles would at first blush seem to indicate that the result of such changes is uncertain, as the minimum sell price will decrease, but so will the maximum buy price. Decreasing the number of possible damage awards, however, also decreases the variance of the probability distribution function. In other words, there should be a spike in the probability of the statutorily limited award similar to, but much less pronounced than, the spike in Figure 1 above, representing the effect of a statutory early offer.

As the variance of higher awards decreases in the case of damage caps and collateral source deduction, parties should more easily agree on which damage awards are most probable (particularly awards that are highly likely to reach the statutory or effective "cap"). The Priest-Klein model implies that, inasmuch as damage caps or changes in the collateral source rule cause parties to agree on the likely outcome of the case (in this instance the quantity of damages), they will grow more likely to settle. A decrease in variance of damages awards should increase certainty and agreement about claims' expected value (especially claims

133. Danzon, supra note 8, at 1355-56, 1372.
134. For example, California and Texas (two of the most populous states) have capped noneconomic damages in medical malpractice cases at $250,000. See Zimmerman & Hallinan, supra note 133; see also CAL. CIVIL CODE § 3333.2 (West 1997); TEx. CIV. PRAC. & REM. CODE ANN. § 74.301 (Vernon 2005).
135. Danzon, supra note 8, at 1356.
136. Id. at 1372.
137. See supra notes 39-43 and accompanying text.
138. See supra text accompanying note 17.
139. See supra text accompanying note 17.
140. For an explanation of the Priest-Klein model, see supra notes 39-43 and accompanying text.
with high noneconomic damages), and facilitate earlier settlement. One recent empirical study finds that "[c]apping noneconomic damages...reduces settlement time by 35.9%."141 Restricting the collateral source rule would reasonably be expected to have similar effects.142

Thus, as stated earlier, damage caps and changes in the collateral source rule share some of the beneficial effects of statutory early offers and, all other variables held constant, reduce the Wedge Effect just as early offers statutes effectively "cap" damages and eliminate collateral source recovery. Nevertheless, statutory early offers are superior to either of these reforms standing alone (or together) because early offers are not one-sided. Claimants receive in return reduced risk plus prompt payment. Settlement thus will be much quicker under an early offers plan. Rather than causing a reduction in the current multi-year process of settlement by 35.9%, as in the case of damage caps,143 statutory early offers cases will settle in a matter of months. Early offers must be tendered within 180 days, and claimants generally should have little reason to delay acceptance. Similarly, however much collateral source rule changes or damage caps reduce the variance of expected awards, they cannot reduce it as much as the binding payment of net economic loss under the early offers plan. Thus, early offers result in much greater reductions in the Wedge Effect than the above reforms.

2. Restrictions on Claimants’ Attorneys’ Contingent Fees

Restricting claimants’ lawyers’ contingent fees should also reduce the Wedge Effect by the amount claimants’ lawyers lose as a result of contingent fee control. But significant costs unrelated to the contingent fee, such as the delay in payment to claimants and other trial expenses, remain undiminished within the Wedge. Empirical studies show that only reductions in statutes of limitations, damage caps, and offsetting collateral sources have any effect. Contingent fee reforms of the type enacted, it seems, have no effect.144

In addition to, at best, a minimal reduction in the Wedge, contingent fee restrictions lengthen the time to settlement.145 Such restrictions most likely decrease claimants’ incentives to settle at any given price by increasing their expected payoff (variable \(a\) in equations (3) and (4) above grows with any restriction on the contingent fee). Defendants’ expected payout, on the other hand, does not include \(a\). In other words, as claimants grow less willing to settle at any given price, defendants are no more willing to increase their payout. The net effect of these diverging incentives will be an overall decrease in the

141. Helland & Tabarrok, supra note 69, at 537.
142. See Danzon, supra note 8, at 1374 ("Empirical evidence confirms that collateral source offset rules have not only reduced claim severity but also claim frequency, consistent with the prediction that lower awards reduce the incentive to file."). Danzon does not go so far as to say that collateral source offset rules reduce the time to settlement.
143. See supra note 141 and accompanying text.
144. See DANZON, supra note 8, at 1356. But for a different contingent fee reform with a quid pro quo, see Michael Horowitz, Making Ethics Real, Making Ethics Work: A Proposal for Contingency Fee Reform, 44 EMORY L.J. 173 (1995).
145. See generally Helland & Tabarrok, supra note 69.
likelihood of early pretrial settlement and a higher percentage of claims that result in delayed settlement or even trials. One empirical study has found, consistent with our model, that when claimants’ lawyers’ contingent fees are limited, the time to settlement increases by eleven to twenty-one percent.146

Restricting contingent fees may also reduce the number of cases brought by reducing lawyers’ incentives to take cases.147 Even though lawyers may file fewer claims in the first place, it is unclear whether restricted contingent fees will actually result in fewer trials, given the new mix of cases. But the reduction in claims filed due to contingent fee caps may fall just as heavily on legitimate tort claims as on less valid ones. Restrictions on contingent fees seem to focus more on the abuses of lawyers than on unintended consequences of such restrictions for injured patients. Other than punishing claimants’ lawyers, they appear to offer little if anything in reducing the Wedge Effect or accelerating compensation for legitimate tort claimants.

VII. CONCLUSION

The early offers plan has many of the same positive effects as damage caps, restrictions on contingent fees, and limits on collateral source recovery, but with this crucial difference: any advantage of such reforms for defendants must be paid for by them through prompt compensation for claimants’ essential losses. In closing, we are emboldened to argue that the early offers plan as described and modeled above furnishes one of those exceedingly rare opportunities to improve an unfortunate situation (here medical malpractice litigation) with no increase—and indeed it would seem a decrease—in dollar costs.

146. See id. at 519–20 (noting that, when contingent fees are restricted or banned, lawyers switch to hourly pricing); id. at 536–37 (observing that hourly billable pricing of lawyers increases the time to settlement and that the “time to settlement is 21% longer in cases that are contingency fee limited”); id. at 538 (observing that, in using Florida time-series data, “[s]ettlement times increased by 11.1% in the 13 months after contingency fees were limited compared to the previous 10 months”).

147. See CONG. BUDGET OFF., supra note 95, at 30 (noting that just limiting on contingent fees “could hurt other [tort] victims by reducing their access to legal representation”).