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15. Health Care Regulation

State governments should

- eliminate licensing of medical professionals or, as a preliminary step, recognize licenses issued by other states;
- eliminate ''corporate-practice-of-medicine'' laws;
- eliminate ''certificate-of-need'' laws; and
- enforce private contracts that include medical malpractice reforms.

Congress should

- eliminate states' ability to use licensing laws as a barrier to entry by medical professionals licensed by other states,
- eliminate the U.S. Food and Drug Administration's efficacy requirement for new drugs, and
- reject federal medical malpractice reforms.

A widely accepted premise of most health care reform debates is that health and medicine are special areas of the economy where markets are plagued by failure. For example, economists describe medicine as a ''credence'' good because it is difficult for consumers to judge its quality before *and even after* they have consumed it. It is also difficult for producers (e.g., doctors, hospitals, etc.) to judge the quality of their services, even after the fact. A doctor might *think* his actions were responsible for a good outcome, or not responsible for a bad outcome, but it is difficult to know for sure. Nevertheless, doctors tend to know more about the need for, and quality of, various services than patients do. That asymmetry of information creates an unequal relationship between patient and physician and causes much concern among health care reformers.

In 1963, Nobel Prize–winning economist Kenneth Arrow penned an influential article for the *American Economic Review* that described government intervention in health care markets as a response to the problems of uncertainty and asymmetric information in medicine. Lobbyists and health care reformers ritually cite Arrow's article as justification for their preferred government interventions.

The reality of health care markets, government intervention, and, indeed, Arrow's article is not that simple. Pulitzer Prize–winning sociologist Paul Starr notes that many government interventions benefit producers of medical care at the expense of consumers and *exacerbate* the problem of uncertainty. Health economist James C. Robinson writes:

> The central proposition of [Arrow's] article, that health care information is imperfect and asymmetrically distributed, has been seized upon to justify every inefficiency, idiosyncrasy, and interest-serving institution in the health care industry. . . . It has served to lend the author's unparalleled reputation to subsequent claims that advertising, optometry, and midwifery are threats to consumer well-being, that nonprofit ownership is natural for hospitals though not for physician practices, that price competition undermines product quality, that antitrust exemptions reduce costs, that consumers cannot compare insurance plans and must yield this function to politicians, that price regulation is effective for pharmaceutical products despite having failed in other applications, that cost-conscious choice is unethical while cost-unconscious choice is a basic human right, that what consumers want is not what they need, and, more generally, that the real is reasonable, the facts are functional, and the health care sector is constrained Pareto-efficient.

Robinson concludes:

> The most pernicious doctrine in health services research, the greatest impediment to clear thought and successful action, is that health care is *different.* . . . To some within the health care community, the uniqueness doctrine is self-evident and needs no justification. After all, health care is essential to health. That food and shelter are even more vital and seem to be produced without professional licensure, nonprofit organization, compulsory insurance, class action lawsuits, and 133,000 pages of regulatory prescription in the *Federal Register* does not shake the faith of the orthodox. . . . The uniqueness doctrine hence proves too much.

Consistent with Robinson's observation, producers have been the driving force behind or have subsequently captured most health care regulations, and have used them to protect themselves from market competition at the expense of consumers. Physicians sought and used licensing and corporate-

practice-of-medicine laws to prevent competition from less remunerative prepaid health plans or integrated delivery systems that curtail physician autonomy. Recently, nonphysician clinicians have used licensing, scope-of-practice, and minimum-education requirements to increase their incomes by reducing the supply of, and substitutes for, their services. Hospitals use government regulation to block competition from other, often innovative, medical facilities. Pharmaceutical and medical device manufacturers rely on the U.S. Food and Drug Administration to erect high barriers to entry into those markets.

Perhaps the one area of health care regulation that fails to fit this mold is the courts' refusal to enforce contracts where patients waive some or all of their right to sue for malpractice in return for a reduced price. Nevertheless, the effect of that regulation is the same as all others: lower quality and higher costs.

Medical Professionals

How might markets make medicine better, cheaper, and safer? Harvard Business School professor Clayton Christensen and his colleagues offer this insight: ''Many of the most powerful innovations that disrupted other industries did so by enabling a larger population of less-skilled people to do in a more convenient, less-expensive setting things that historically could be performed only by expensive specialists in centralized, inconvenient locations.'' In medical care, that process of using fewer inputs to achieve greater health outputs would come in large part from allowing less-trained clinicians, such as nurse practitioners and physician assistants, to perform tasks that were once performed only by highly trained (and more costly) physicians.

State licensing of medical professionals allows physicians and others to block that market process. To practice medicine in a state, physicians, nurse practitioners, physician assistants, and other clinicians must obtain a license from that state. To obtain a license, they must satisfy specified minimum-education requirements. For each type of clinician license, each state specifies the tasks the license allows clinicians to perform. That list of tasks is called the clinician's ''scope of practice.'' (Physicians' scope of practice is plenary.)

Licensing allows physicians to restrict entry into their profession and to restrict the supply of substitutes for their services. By lobbying legislatures to restrict the scopes of practice of nurse practitioners and physician assistants, physicians can reserve certain tasks for themselves. Such restric-

tions increase the demand for physician services and increase physician incomes. They also make medical care more expensive and reduce access.

Licensing also enables midlevel clinicians to do the same. Nurse practitioners, for instance, can restrict entry into their profession (and thereby increase their incomes) by pushing states to increase the education requirements for a nurse practitioner's license. They can block competition from substitutes for their services by lobbying to restrict the scopes of practice of other nonphysician clinicians.

Physicians typically argue that they seek to restrict the scopes of practice of nonphysician clinicians because broader scopes of practice would threaten patient safety. Yet study after study has shown that midlevel clinicians provide a level of quality equal to that of physicians performing the same services. The American Medical Association, the nation's largest lobbying group representing physicians, acknowledges this:

> More than 50 journal articles and reports comparing physician and nonphysician services have been reviewed. These were in peer-reviewed journals though not, for the most part, peer-reviewed journals with a physician readership. The articles and reports usually look at one procedure or at the treatment of one kind of patient, usually a patient with an uncomplicated disorder or the need for routine treatment. These studies almost uniformly conclude that in the particular instances studied, a non-physician clinician in defined circumstances can provide an acceptable level of care.

Typically, midlevel clinicians also provide those services at a much lower cost.

Moreover, licensing does little to discipline clinicians who actually harm patients. A study by the consumer watchdog Public Citizen found that between 1990 and 2005, ''only 33.26 percent of doctors who made 10 or more malpractice payments were disciplined by their state board—meaning two-thirds of doctors in this group of egregious repeat offenders were not disciplined at all.''

There is a limit, of course, to every clinician's competence. Market forces and medical malpractice liability already do much more than licensing to protect patients. In the absence of licensing, private credentialing and the desire to protect brand names and reputations would do even more to safeguard patients from incompetent providers.

The standard, static economic analysis suggests that, on balance, licensing has little if any positive effect on health outcomes. Economists generally agree that licensing increases the quality of medical services *actually delivered*. Economists also agree that licensing increases the cost of medical

care and therefore reduces the *quantity* of services delivered. For example, access to care will almost certainly fall if physicians secure regulations that inhibit nurse practitioner–staffed clinics such as MinuteClinic and RediClinic, which provide convenient and affordable access to routine care in retail stores such as CVS and Wal-Mart. Thus, licensing may do nothing to improve overall health.

A more dynamic analysis further suggests that licensing may in fact lead to *worse* health outcomes. Prepaid group practices such as Kaiser Permanente and Group Health Cooperative combine an integrated delivery system with prepayment. These plans make greater use of midlevel clinicians, preventive and primary care, and electronic medical records than other types of insurance or delivery systems. As a result, they have shown remarkable success at increasing the delivery of high-quality services, reducing low-value and harmful services (including medical errors), and making health insurance more affordable. As noted earlier, however, physicians have used licensing to block competition from integrated delivery systems and prepaid health plans, in large part because prepaid group practices are generally less remunerative for physicians and restrict physician autonomy. Thus, licensing may be reducing the overall quality of care by inhibiting higher-quality forms of health care delivery.

Reform is an inadequate response to licensing's pathologies. Whether licensing authority is vested in a legislature or regulatory agency, state or federal, there is no way to insulate that authority from influence by those whose incomes hang in the balance. Even absent political pressure, a government body is inherently unable to strike the proper balance between access and safety for millions of patients across billions of encounters with medical personnel. Such an authority would inevitably restrict access to care and block innovations that make medicine better, cheaper, and safer.

Instead, state governments should eliminate medical licensing. Many things would not change. Hospitals, health plans, and other organizations would continue to rely on board certification, private credentialing organizations, and their own internal processes to evaluate the competence of clinicians. Courts would continue to hold health care organizations and individual clinicians accountable for harm caused by negligence.

What would change is that providers would seek innovative ways to use midlevel clinicians to bring quality care within reach of more low-income Americans. And greater competition between different delivery and payment systems would drive the medical marketplace toward providing greater health for more Americans at a far lower cost.

Medical Facilities

Another way markets might make medical care better, cheaper, and safer is through rigorous competition among medical facilities, including clinics, physician offices, urgent care clinics, ambulatory surgical centers, specialty hospitals, and full-service hospitals. State laws that require government approval of new medical facilities are a leading barrier to competition between medical facilities.

For most of the 20th century, federal and state governments encouraged greater spending on medical care. Medical expenditures—especially by government—truly exploded after the creation of Medicare and Medicaid in 1965. In the 1960s and 1970s, state governments attempted to contain those rapidly growing outlays essentially by engaging in centralized economic planning. Their primary tools were laws requiring hospitals, nursing homes, and even physician offices to obtain a ''certificate of need'' (CON) from a state planning agency before opening a new facility or investing in new equipment. The rationale behind CON laws was that by restraining the supply of hospital beds, government could restrain medical spending. By 1976, the federal government mandated CON planning nationwide.

CON laws failed to slow the growth of medical spending. In a survey of the empirical literature on CON laws, health economist Michael Morrisey writes that those studies ''find virtually no cost-containment effects. . . . If anything, CON programs tended to increase costs.'' The failure of CON laws to achieve their stated aims led the federal government to lift its CON-planning mandate in 1987 and led many states to eliminate their laws also. Yet other states have maintained and even expanded their CON requirements. Why?

Although CON laws have done nothing to contain spending, they have been a boon for incumbent health care providers. Though the stated purpose of CON laws is cost containment, those regulations also protect existing health care facilities from competition. Morrisey concludes:

> A reasonably large body of evidence suggests that CON has been used to the benefit of existing hospitals. Prices and costs were higher in the presence of CON, investor-owned hospitals were less likely to enter the market, multihospital systems were less likely to be formed, and hospitals were less likely to be managed under for-profit contract. . . . The continued existence of CON and, indeed, its reintroduction and expansion despite overwhelming evidence of its ineffectiveness as a cost-control device suggest that something other than the public interest is being sought. The provider self-interest view is worthy of examination.

CON laws increase health care costs and deny patients the benefits of new forms of health care delivery. There is no justification for these laws, and no place in a market economy for Soviet-style economic planning. States should eliminate CON laws immediately. If state officials are concerned about runaway health expenditures, they should reduce or eliminate the government subsidies that fuel such spending.

Pharmaceutical Regulation

The Food and Drug Administration is the federal agency tasked with implementing the federal Food, Drugs, and Cosmetics Act of 1938, which Congress enacted in response to drug-related poisonings that killed over 100 children. That act requires pharmaceutical manufacturers to demonstrate to the federal government that their products are safe. Originally, if the FDA did not reject the application within 180 days, the firm could proceed to market its product.

Another drug-related tragedy occurred in 1962 when pregnant women taking the tranquilizer thalidomide gave birth to children with severe deformities. Though thalidomide victims numbered over 10,000 worldwide, there were relatively few in the United States, as the FDA had not yet approved thalidomide for marketing. Congress nevertheless responded to this tragedy by enacting the 1962 amendments to the Food, Drugs, and Cosmetics Act. Those amendments require firms to prove to the FDA's satisfaction that their products are efficacious for the indication for which approval is sought and require firms to obtain an affirmative approval from the FDA before marketing a new drug.

Economists have long acknowledged a fundamental tension in the FDA's regulation of pharmaceuticals. According to MIT economist Ernst Berndt and colleagues:

> A central tradeoff facing the FDA involves balancing its two goals—protecting public health by assuring the safety and efficacy of drugs, and advancing the public health by helping to secure and speed access to new innovations.

Failure to meet the first goal—assuring the safety of new drugs—results in what is called a ''Type I error.'' Failure to meet the second goal—speeding access to effective new drugs—results in a ''Type II error.''

As Table 15.1 illustrates, the FDA succeeds in its mission when it either timely approves an effective drug (quadrant 1) or blocks a harmful drug (quadrant 4). The FDA commits a Type I error when it approves an unsafe

Table 15.1
FDA Type I, Type II Error Problem

		Correct Decision: Approve	Correct Decision: Delay/Reject
FDA Decision	Approve	(1) **Success** (Helpful drug approved)	(2) **Type I Error** • Harmful drug approved • Patients harmed • Error traced to FDA officials
	Delay/Reject	(3) **Type II Error** • Helpful drug withheld • Patients harmed • Error *not* traced to FDA officials	(4) **Success** (Harmful drug withheld)

drug (quadrant 2). Type I errors harm patients by exposing them to dangerous or even deadly products. The FDA commits a Type II error when it delays or denies approval of a beneficial drug (quadrant 3). Type II errors harm patients by withholding products that would protect them from illness or death.

The FDA faces starkly different consequences for Type I and Type II errors. Type I errors bring swift and certain retribution on the agency. The victims of a Type I error are easily identifiable. Victims, their loved ones, the media, and Congress can discipline FDA officials for approving a harmful product. FDA officials know that a Type I error will lead to congressional hearings and public disgrace, and may even end their careers.

In contrast, FDA officials are rarely disciplined for Type II errors. Delaying or denying approval of a beneficial drug harms patients no less than approving an unsafe drug, yet victims of Type II errors are much harder to identify. Neither the Type II victim, nor their loved ones, nor FDA officials know exactly which patients might have been helped by a beneficial drug whose approval was delayed or denied. The patients and their families may never have heard of the drug. Indeed, the FDA may never have heard of the drug either: Type II errors include beneficial drugs that are never developed due to the high cost of winning FDA approval. Because of this information asymmetry, the political system does not—indeed cannot—discipline FDA officials for Type II errors the way it disciplines them for Type I errors.

Dr. Henry Miller, a former FDA official, offers an account of how those incentives affect the behavior of FDA reviewers:

> In the early 1980s, when I headed the team at the FDA that was reviewing the [new drug application, or NDA] for recombinant human insulin, the first drug made with gene-splicing techniques, we were ready to recommend approval a mere four months after the application was submitted (at a time when the average time for NDA review was more than two and a half years). . . . My supervisor refused to sign off on the approval—even though he agreed that the data provided compelling evidence of the drug's safety and effectiveness. ''If anything goes wrong,'' he argued, ''think how bad it will look that we approved the drug so quickly.'' . . . The supervisor was more concerned with not looking bad in case of an unforeseen mishap than with getting an important new product to patients who needed it.

The tradeoff between Type I and Type II errors is unavoidable. Reducing either type of error results in more errors of the other type. The FDA must commit a certain number of each.

The asymmetric information the FDA receives about Type I and Type II errors leads the agency to support policies that *increase* morbidity and mortality. Suppose the FDA were considering a new regulation that would prevent 1,000 deaths due to adverse drug reactions but that would slow down the approval of new drugs such that 10,000 patients would die while waiting for life-extending drugs that otherwise would have been approved. The FDA would implement the new regulation, even though it would result in 9,000 additional deaths.

Every effort to quantify the costs and benefits of FDA regulation supports that conclusion. Economist Sam Peltzman published the first such analysis in 1973. In 2005, Peltzman wrote:

> I found that the unregulated market was very quickly weeding out ineffective drugs prior to 1962. Their sales declined rapidly within a few months of introduction, and there was thus little room for the regulation to improve on market forces. . . . Most of the subsequent academic research reached conclusions similar to mine. . . . I concluded that the proof-of-efficacy requirement was a public health disaster, promoting much more sickness and death than it prevented. Nothing I have seen since has moved me to change that conclusion—the disaster is ongoing.

A study by Tulane University economist Mary K. Olson estimated that when additional revenue from user fees enabled the FDA to review drugs more quickly, the health benefits of quicker access to new drugs were roughly 12 times as great as the costs from additional adverse drug reac-

tions. Another study, by University of Chicago economist Tomas Philipson and colleagues, found that quicker reviews brought significant health benefits, but ''did not, in fact, have *any* effect on drug safety.'' That is, there appeared to be no additional adverse drug reactions. Those findings imply that the FDA will tolerate additional deaths due to Type II errors even if doing so were to produce little or no reduction in deaths due to Type I errors. Indeed, despite such research, Congress has in recent years sought to give the FDA additional powers to reduce Type I errors.

Little is to be gained from minor reforms such as user fees. The asymmetry of information available to the FDA guarantees that the agency will always behave in this manner.

Nobel Prize–winning economist Gary Becker advocates eliminating the efficacy standard and returning the FDA to the status quo *ante* 1962. Peltzman suggests, however, that even the safety requirement delivered more harm than benefit. Another Nobel Prize–winning economist, the late Milton Friedman, proposed eliminating the FDA entirely.

At a minimum, Congress should eliminate the FDA's efficacy standard. Eliminating the efficacy standard would not leave patients unprotected. The FDA would still have the power to keep from the market drugs that have not been proved safe to the agency's satisfaction. Moreover, private certification of pharmaceutical safety and efficacy, which already exists informally, would expand. Patients harmed by pharmaceuticals would continue to have recourse to the courts, which (along with liability insurers) would create powerful incentives for pharmaceutical manufacturers to conduct appropriate testing.

The United States already has an essentially unregulated, albeit informal, process for certifying drug efficacy. The FDA approves a drug for one particular use, which goes on the drug's label. Yet physicians may—and do—prescribe drugs for other, ''off-label'' uses. An example is aspirin. Though designed for pain relief, doctors have long prescribed aspirin to prevent heart attacks.

Lack of FDA certification does not mean such uses are dangerous or unproven. Off-label uses are suggested or discovered by doctors and scientists; tested; and discussed worldwide in medical journals and symposia, and (if validated) appear in medical textbooks, the *U.S. Pharmacopeia Drug Information*, the *American Hospital Formulary Service Drug Information*, and other authoritative sources. Off-label uses often become the standard of care, particularly in fighting cancer and other diseases. Absent the FDA, those private organizations would play a greater role in certifying safety and efficacy.

Moreover, additional organizations would step forward to meet the demand for safety and efficacy certification. Underwriters Laboratories certifies the safety of thousands of consumer products, many inherently dangerous. That organization's charter states that it will certify the safety of any consumer product submitted to it. Underwriters Laboratories or other consumer advocates, such as *Consumer Reports*, could perform that vital function. Most likely, however, integrated and prepaid health plans such as Kaiser Permanente and Group Health Cooperative would perform that function as an agent for their enrollees. Prepaid group plans lead the industry in the use of electronic medical records, which are essential to tracking accurately a drug's effects on patients. When the FDA wanted to study whether the pain reliever Vioxx was causing heart attacks, it turned to Kaiser Permanente of Northern and Southern California.

Market-based certification respects the freedom of doctors and patients to make treatment decisions according to individual circumstances. It also provides them with information more quickly than government certification. Economist J. Howard Beales III found that off-label uses that were later certified by the FDA had been certified by the *U.S. Pharmacopeia Drug Information* an average of 2.5 years sooner. Market-based certification can also do more for patients than government certification can. The FDA is prohibited by law from considering cost-effectiveness as a criterion for approval. In contrast, prepaid group plans face financial incentives to ensure that their enrollees receive maximum value for their money, and can condition their seal of approval on whether a drug provides benefits that are worth the cost.

Two things must be made clear. First, if Congress were to eliminate FDA regulation of pharmaceuticals—or just the agency's efficacy standard—more patients would likely be harmed by new drugs. That unfortunate fact will lead to greater skepticism of new drugs by doctors and patients, as well as innovations that would more quickly detect and stop adverse drug reactions. Second, many more lives would be saved through greater innovation and quicker access to helpful drugs than would be lost to harmful ones.

Medical Liability Reform

The right to sue health care providers for medical malpractice is an important tool for protecting patients from injury due to negligent care. Patients typically have little information about the quality of care. By

imposing the costs of negligent care on providers, the medical malpractice ''system'' can align the incentives of providers with those of patients

Nevertheless, many people complain—with some justification—that the medical liability system in the United States performs poorly. Research suggests that malpractice liability does little to discourage negligent care, that only a small fraction of patients injured by provider negligence actually recover damages from providers, and that many who do recover are not victims of negligence. Many specialists (neurosurgeons and obstetricians, to name two) report that they cannot afford the rising cost of medical liability insurance. Duke University professor Christopher Conover estimates that in 2002, the U.S. medical liability ''system'' cost Americans $81 billion net of benefits. Physicians and other providers—who have seen often-dramatic increases in malpractice insurance premiums—have intermittently declared the medical liability system to be in ''crisis'' for over 30 years.

This ''crisis'' has spawned numerous proposals to reform medical malpractice liability rules. The American Medical Association advocates a nationwide cap on noneconomic damages similar to the $250,000 cap enacted in California. Other proposals include legislative limits on contingency fees for plaintiffs' attorneys; ''no-fault'' compensation systems for medical injuries, such as the limited programs adopted in Florida and Virginia; alternative forms of dispute resolution, such as arbitration and special medical courts; the English rule of costs; and reform of the collateral source rule.

Each of these reforms would leave some patients better off—typically by reducing prices for medical care—at the cost of leaving other patients worse off. So-called loser pays reforms would often reallocate the costs of frivolous lawsuits to the correct party. However, that rule deters less affluent patients from seeking legal redress for legitimate grievances. A cap on noneconomic damages would reduce health care costs for noninjured patients, but at the expense of leaving some injured patients with uncompensated losses. Limits on contingency fees would reduce costs for noninjured patients, but at the cost of denying compensation to injured patients whose cases plaintiffs' attorneys deem too expensive to pursue.

Many observers have called on the federal government to enact such reforms. As discussed in Chapter 11, Congress is not constitutionally authorized to impose substantive rules of tort law on the states. Although the federal government may enact technical procedural changes, state legislatures are the proper venue for correcting excesses in their civil

justice systems. The fact that medical professionals can avoid states with inhospitable civil justice systems gives them significant leverage when advocating state-level medical liability reforms, and gives states incentives to enact such reforms. That some states have done so demonstrates that they have the ability.

Yet state-imposed medical malpractice reforms share two flaws with federally imposed rules. As noted earlier, imposing one set of limits on the right to sue for medical malpractice on all patients and providers will help some patients while hurting others. And the fact that those rules are written into statutes makes harmful rules extremely difficult to remove.

A more patient-friendly and liberty-enhancing approach would allow patients and providers to write their own medical malpractice reforms into legally enforceable contracts. For cases of ordinary negligence, patients could choose the level of protection they desired, rather than have a uniform level of protection (and the resulting price) imposed on them by the courts. Providers could offer discounts to patients who agree to limits on compensation in the event of an injury. If not, the patient could pay the higher price or seek a better deal from another provider. Insurance companies could facilitate such contracts on behalf of their enrollees. Those companies would have strong incentives to ensure that those contracts provide adequate protection, else the insurers could face higher claims from injured patients who could not collect the full extent of their damages. The regular tort rules would continue to apply in cases where patients and providers did not contract around those rules, where patients were subject to duress, or where providers were guilty of intentional wrongdoing or reckless behavior.

Freedom of contract would make medical care more affordable to many low-income patients. It would also enhance quality competition. Providers who know they are less likely to injure patients could offer more expansive malpractice protections, or equivalent malpractice protections at a lower cost. Low-quality providers would not be able to do the same and would face strong financial incentives to improve their processes of care.

Such contracts are not possible today because courts have invalidated them as ''against public policy.'' That policy has restricted the freedom of adults to make mutually beneficial exchanges that hurt no one else. It has also increased the cost of providing medical care to the indigent, which has undoubtedly reduced their access to care.

To remedy this costly restriction on liberty, courts should abandon their current policy and enforce contractual limitations on the right to sue for

medical malpractice. If courts refuse, state legislatures should require them to do so. Economist Richard Thaler and law professor Cass Sunstein write:

> In our view, state lawmakers should think seriously about increasing freedom of contract in the domain of medical malpractice, if only to see whether such experiments would reduce the cost of health care without decreasing its quality. Increasing contractual freedom won't solve the health care crisis. But it might well help—and in this domain every little bit of help counts.

As noted earlier, the medical malpractice system does a poor job of providing relief to injured patients, preventing frivolous lawsuits, or discouraging negligence. The remedies for these shortcomings are not obvious. A dynamic marketplace that allows parties to experiment with—and abandon—different malpractice rules is the quickest and surest way to find those solutions.

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