

# RECORD, Volume 29, No. 3\*

---

## Orlando Annual Meeting

October 26–29, 2003

### Session 118TS

## Effect of Malpractice Insurance Costs on Health Care Delivery and Health Insurance

**Track:** Health, Nontraditional Marketing

**Moderator:** STEVEN E. KONNATH  
**Instructors:** TIM BARTH†  
JAMES D. HURLEY  
LIAM M. MCFARLANE  
DONALD J. PALMISANO‡

*Summary: In both the United States and Canada, malpractice insurance issues have recently gone beyond simply driving higher costs and have resulted in a reduction in the number of providers performing specified services. A panel of experts discusses the effect of malpractice costs on health care delivery and health insurance, and potential solutions to reducing the costs of malpractice, including research on limiting human error and possible litigation reforms.*

**MR. STEVEN KONNATH:** I'm Steve Konnath. I work at Physicians Mutual Insurance Company. I'm a member of the Nontraditional Marketing Section Council. I'm also a member of the Health Section. This session is jointly sponsored between the Health section of the Society and the Nontraditional Marketing Section Council.

Our first speaker is Dr. Donald Palmisano, the president of the American Medical Association (AMA). He will talk to us about the health care delivery aspects of medical malpractice. The second speaker is Jim Hurley. Jim Hurley is a consulting actuary with Tillinghast. He is also the chairman of the American Academy of Actuaries Committee on Medical Malpractice. The third speaker is Liam McFarlane. He works with Dion, Durrell + Associates, and he helps the Canadian Medical Protective Association in dealing with the Canadian aspects of medical malpractice. The fourth speaker is Tim Barth. Tim Barth is a spaceport technology manager at NASA, and he's here because this just might be a problem where it takes a rocket

---

\* Copyright © 2004, Society of Actuaries

†Mr. Tim Barth, not a member of the sponsoring organizations, is spaceport technology development manager at National Aeronautics and Space Administration at Kennedy Space Center, Florida.

‡Dr. Donald Palmisano, not a member of the sponsoring organizations, is president of the American Medical Association in Chicago, Ill.

scientist to figure it out. Tim is going to talk about some things that could be part of the solution with medical malpractice. Without any further delay, I'd like to introduce Dr. Donald Palmisano.

**DR. DONALD PALMISANO:** I'm Donald Palmisano, as you heard, president of the AMA, and I'm from New Orleans, Louisiana. I'm excited about going home tonight to New Orleans because it's my mom's 90<sup>th</sup> birthday, and we're going to have a big party for her. She's got the best memory of anybody in the family, and it points out what modern medicine can do. Mom survived two different cancers. She is a vigorous, active woman, and it's modern medicine that allows her to be here with us today.

Facts don't cease to exist because they are ignored. We cannot ignore the fact that modern medicine has increased our life span and made us healthier, nor can we ignore the facts of what's happening in medicine today. There's a meltdown in medicine because of a broken medical liability system. If people ignore that, those facts will remain, and we will get the consequences of them. Eventually everybody will realize that we're trying to get people to realize it before patients are harmed. We know that human lives depend on our ability to discern the facts about what is ailing our patients and to work with those facts for healing and for curing them. People in your line of work understand this as well. In fact, many of you spend your careers turning data into hard factual evidence on which decisions can be made. Solving today's medical liability crisis also demands that we rely on facts—facts about what's driving up the cost of medical liability insurance, facts on what can and cannot stabilize those costs, and facts about how we can and must protect patient access to medical care. That's why I've come to speak to you today. We need your help to insure that the facts that become the evidence in the case for medical liability reform are reliable, credible and trustworthy. Reliability, credibility and trustworthiness are the qualities that are the hallmarks of your profession.

We all know that an out-of-control legal system is hurting medical innovation, undermining patient safety efforts and costing billions of dollars. It is causing physicians to limit high-risk procedures, refer high-risk patients or even leave practice altogether. We have collected the facts on this grim situation and determined that 19 states are presently in crisis because this out-of-control system has inflated the cost of medical liability premiums. Twenty-five states, according to our accounting, are considered at risk.

Is it the insurer's fault? We don't think so. But if we had to point in one direction, we would point at the underlying system. The legal system dealing with medical malpractice only exacerbates the problems it is meant to alleviate. Skyrocketing jury awards, especially for hard-to-quantify damages for pain and suffering, have driven up the costs of medical liability insurance in states that don't have their own medical liability reform laws in place.

Don't misunderstand me. When injuries are caused by a breach in the standard of care, the AMA believes that patients are entitled to prompt and fair compensation. Unfortunately, our medical litigation system is neither fair nor predictable. Transformed by high-stakes financial incentives, it has become an increasingly irrational lottery, driven by open-ended damage awards for unquantifiable non-economic damages. Studies have concluded that the only significant predictor of payment to plaintiffs in a medical liability case is disability, not actual negligence. In other words, in today's system, injuries often lead to settlements or jury awards even when there is no negligence. As a result, these settlements or awards do nothing to prevent negligence or to fix the systems in those few cases where negligence was actually a factor. The opportunity to hit the jackpot in court makes filing a lawsuit akin to buying a lottery ticket.

What's really needed to enhance patient safety—when the opponents talk about patient safety—is a system akin to the aviation safety reporting system. You'll hear more about that from the other speakers, but that's why the American Medical Association founded in 1996 the National Patient Safety Foundation. That's why we support HR-663, which passed the House of Representatives with only six dissenting votes, and why we support the sister bill in the Senate, 720, which passed the Health Committee unanimously. We hope that it passes the rest of the Senate, and we know President Bush will sign this because it will enhance patient safety. It's confidential, voluntary reporting reviewed by experts, feedback to those involved and dissemination of the information in a de-identified fashion. It works for the aviation industry, and that's why commercial aviation is so safe.

Is it any surprise that, with the current system, on any given day more than 125,000 suits clog our nation's courts? Who doesn't want to win the lottery? Yet 70 percent of those suits filed are closed without any payment. Of those that go to trial, the physician wins 80 percent of the time.

I'm a surgeon. Let's take the example of the removal of an appendix. We get instant peer review from the pathologist and the tissue review committee—appendicitis or normal appendix? If I had a 70 percent "normal" rate they wouldn't allow me to operate at my hospital, so how about some professional peer review for the attorneys filing those suits? But I digress.

As one professional to a group of professionals, I respect your professionalism and ask for your help on behalf of the AMA. We need reliable, credible data to help build our case for real medical liability reform. There are some questions we still need trustworthy data to answer. Part of our campaign is to educate the public about the dynamics of their current legal system. Help us prove that what raises premiums is liability payout. We can't escape that "frequency times severity" is a predictor of what you need to stay even, in addition to your attorney's fees for defense and the administrative costs. We have to keep making that message understood. If we could better differentiate non-economic award payments for pain and suffering from the compensation for lost wages and medical costs, this would

help prove that caps are necessary to make costs more predictable. In some areas we are able to show that 65 percent to 70 percent of the money paid is for the non-economic damages, but we need to get more data. Conversely, help debunk the junk science that passes for proof in some quarters about insurance company losses and about lost income and mismanagement raising premiums. We know this isn't true, and the insurance companies know it, but we need to make sure the public knows it as well.

I'm astonished. I do debates all over the country. I was just in North Dakota about a week or two ago, and I debated two trial attorneys. They held up a bunch of charts, and they said that A.M. Best shows that the reason the rates are going up is because of losses in the stock market. I bought the book from A.M. Best. The AMA audited the book for me. I carry it around to those TV shows and hold it up. "Here it is—A.M. Best. Show me what page in A.M. Best that's in." It doesn't exist on that page. Here is the page, and it says for the last five years, return on investment has been stable at 5 percent to 5.5 percent. The reason a lot of money wasn't lost in the stock market is because they didn't have a lot of money in the stock market. Eighty to 85 percent was invested in bonds and government securities.

In the courtroom, you use the best evidence rule. If I say it's Wednesday and you say it's Thursday, the judge isn't going to listen to too much of that. The judge is going to get a calendar, look at it and say, "It's Wednesday. Let's go to another issue." What we need to do is to debunk this stuff and say, "You say A.M. Best said that. Well, do some more homework, go back to mathematical school, but go to A.M. Best." It's the best evidence rule. We have to debunk that stuff, and we need you to come forward and point that out.

Every time there's a hearing somewhere, we get this new study that pops up and says that caps don't work, the doctors are bad, and on and on. We need to debunk that with real evidence. The legislators have to make decisions based on the facts, not on hyperbole or junk math. That's what we need help with. We're doing the best we can, but we can do much better if we had your help.

We need to better quantify the cost of defensive medicine—the unnecessary tests and treatments performed to help avoid lawsuits. The federal government has stated that medical liability, including the cost of defensive medicine, adds from \$70 billion to \$120 billion to health care costs each year. If we could separate out the cost of defensive medicine alone, it would help show the magnitude of the crisis. Also, you could do some projections on where we will be headed if we don't get medical liability reform. What will future premiums be if we don't get liability reform? What kind of impact will it have on all of us as premiums continue to rise?

We see the example between Miami, Florida, and Los Angeles. In 1975 those two competed for the highest medical malpractice premium rates. Now, over a quarter century later, with the cap and all the other associated provisions in the Medical Injury Compensation Reform Act of 1975 (MICRA) in California, an obstetrician will

pay somewhere between \$59,000 to \$69,000 in Los Angeles for one year's premium, while in Miami it will be \$249,000 this year.

Don't tell me that caps don't work and use Missouri as an example. Opponents come up and say, "Caps don't work, look at Missouri. It's a crisis state." Sure, but that's comparing apples to oranges. How can you do math like that? How can people allow that? How can legislators say that they have so much information they don't know what to believe? Let's go to the experts. Go to the actuaries. You're the end-of-the-line experts. It's basic math. We can't allow that. Missouri has a cap per doctor per claimant. You can have five, six, or seven caps. It's a cap that grows every year. It's not a fixed cap per incident. So let's compare apples to apples, not apples to oranges.

That's where you come in and point that out. It's much more effective when you come out and say, "This is junk math." When we tell them that it's junk math, they look at us and say, "You do femoral bypasses. You do carotid artery endarterectomies. What do you know about math?" But if you say it, then common sense is going to rule again.

Regarding the threat of physician shortages, you can look at some of the work that shows physicians are moving out of the state in response to liability and reimbursement issues, verify its validity and possibly do some projections as to where this might lead. Pennsylvania has done a good job. The Pennsylvania Medical Society has gathered the names of approximately 1,400 physicians who have left the state, retired or restricted their practice. Those are real people with a list. It is given to the president of the Medical Society, and he gives it to the press every time he's asked that.

We believe there were some flaws in the Government Accounting Office (GAO) when they said that there was no scarcity of physicians when they checked. They said that this is really not what the doctors say. You cannot just go to the Board of Registration. You cannot just go to the State Board of Medical Examiners and ask, "How many doctors have you got this year compared to last year?"

I was in Mississippi the other day talking to a group of doctors. Before my formal talk, I met with 50 doctors who quit medicine. Some of them quit because they were going to quit anyway, but some of them quit because the system is so broken. I said, "I want each of you who has given up your license to practice medicine even though you don't practice medicine anymore to raise your hand." Not one hand went up, and that's what we expected. People don't give up their licenses, even when they don't practice medicine anymore. They're very proud to be physicians. It took a long time for the man or the woman to do that. They don't give up the license. You've got to do more than that. You can't use Medicare data to find a shortage of obstetricians. You can't do that. You have to go see how many women can't find a doctor. In time, Medicare patients probably will deliver babies, but not right now.

We see the physician shortages leading toward "have" and "have not" states. Those with reforms and those without reforms will turn into those with physicians and those without. Imagine the effect that will have on state economies. Who is going to want to come to Walt Disney World in the future and bring their grandkids if there are no neurosurgeons if they get in an auto accident? Think about that. I made that point to the Judiciary Committee when I testified for the AMA. Why would I want to take my grandkids to a place where I can't be assured there will be a trauma center open if there's an accident?

I was at the American College of Surgeons debating some attorneys the other day. Afterward, a doctor came up and told me a sad story about how he just lost his 10-year-old son in an auto accident. In his community, the neurosurgeon had moved out of state, and this little boy died. He had a correctable injury to his head. That's the kind of testimony we've heard at the Judiciary Committee. That's going to happen more and more. That's very, very sad.

So we want to go on and debunk the junk science. The AMA's quest for solid research and conclusions is based on the experiences I've had in forums across the nation, and I'm often in a position to rebut studies that I know are based on junk science.

Let me give you some examples. We talked about the Government Accounting Office and its flawed methodology. In our opinion, we found eight separate methodological errors. It would be great for you all to look at that and say, "Wait a minute. There are errors in this." It would be great if you would make a statement just like we make statements or if you would write a letter to the editor that states, "The Society of Actuaries says that this is not appropriate." Some examples are: the misuse of medians, erroneous assumptions about stock market losses, implications contrary to fact that insurance carriers are making large profits, at least three instances of equal weight assigned to all members of heterogeneous baseline populations, and the lack of control over confounding variables affecting variation of rates over time and geography.

The study for the advocacy group, Americans for Insurance Reform, produced under the direction of J. Robert Hunter, is, in our opinion, flawed in a number of ways. The principal defect is that it purports to prove there is no current explosion in medical liability insurance payouts and that growth in medical liability insurance is due to the insurance underwriting cycle. The folks at the Center for Justice and Democracy came out with another study, and, in our opinion, we found major flaws. They relied on an experimentally unverifiable, scientifically meritless "visual inspection" of the relationship between state-level tort reform measures and measures of changes in lost cost, instead of the appropriate statistical technique. They should use correlation analysis or other techniques that you all know a lot more about than we do.

Data from the National Association of Insurance Commissioners show that between 1975, the year that MICRA was enacted, and 2001, medical liability insurance premiums for California physicians rose 182 percent. If that sounds high, consider that the rest of the country saw a rate increase of 569 percent. Most important of all, MICRA and other similar reforms have helped insure that patients don't have to drive for miles to deliver their babies, that accident victims don't have to be flown to a distant trauma center and that women don't have to wait six months for mammograms. We don't want to see any more women like the nurse in Arizona who had to pass up her own hospital because they had closed down the obstetrics unit. Here's a nurse who went into labor and couldn't make it to the next town in time. She delivered in the car on the side of a road in 2002. That shouldn't happen in America, which has the best medical care the world has ever seen.

We don't want trauma centers to close down. We don't want obstetricians not to be there when women are in distress and in labor and can't deliver the babies. Does the rest of America deserve any less? We have states that are stable right now. California is one of them because of reforms passed in 1975. We think all of America should have the opportunity to have this fixed.

We've had some setbacks in the Senate, but we are committed to achieving federal reform. We're going to work and help the states. I wear a pin proudly that says, "Yes on 12," which refers to constitutional amendment 12 in Texas. They not only passed medical liability reform, but they immediately did a referendum, and they said in the constitutional amendment that their legislature has the right to set a cap on non-economic damages and medical liability. The people passed it.

Republicans and Democrats supported it. A Democratic representative said, "I'm tired of seeing my constituents not have a doctor when they're in distress in south Texas." That's why it passed, and that's why the rates have gone down 12 percent for this next cycle in Texas, according to the largest carrier for physicians in Texas.

That's what we need, and we're going to work at the federal level. We've passed the House of Representatives. It went to the Senate, and a minority of United States Senators on July 9 thwarted the will of the majority of the American public (72 percent support the measure). Forty-eight voted not to proceed to debate after S-11, which is the companion bill that passed the House, HR-5 (which is basically the California law: cap on non-economic damages and limits on contingency fees). Forty-eight were able to block it because of Rule 22, which is the filibuster rule, and so the debate did not occur. But we're going to keep trying, and we're not going to give up. We will be relentless about this, and we believe that it will pass because the American public is going to demand that it's going to pass. I suspect that they'll let them know at the polls, too, those who do not make sure we have an environment that's safe for medicine.

So we can change it, or we can support jackpot justice where a few individuals get huge awards to the detriment of millions of others. For physicians and all Americans

the choice is clear—the time for federal liability reform is now. We ask that you support the efforts of the president and House of Representatives and urge your senators to get legislation moving quickly. We must get reforms in place before more patients lose access to care.

Some people are going to tell you that this goal is impossible. They're the same people who told you we would never get a man on the moon. I was privileged as a young person in the military to see, on a black-and-white TV, Neil Armstrong walk on the moon. I was very proud to be an American and very proud to see scientific advances that allowed us to do that. Our history in America, this land of liberty, is based on us telling the naysayers that they're wrong and about overcoming great obstacles. We win when we go into something because we don't give up. That's what my daddy taught me when I failed my first anatomy test, and I thought I should quit medical school. He said, "Son, do your homework, have courage and don't give up." The AMA is going to do its homework, we're going to have courage and we're not going to give up. We're asking you to help us because nothing is impossible with determination, not for America, not for its citizens and not for us.

I want to also acknowledge the help of Dr. Steve Foreman, who works at the Pennsylvania Medical Society and who sent us a lot of questions. Every time I see Steve, I ask him to send us some questions, and I want to thank him for that particular help. Thank you very much. It was a privilege to be here.

**MR. KONNATH:** Thank you, doctor, that was fantastic.

**MR. JAMES HURLEY:** I want to talk a little about those financials that you were hearing about a moment ago. I then want to talk about the so-called "perfect storm," then about rates that are charged for medical malpractice, and then about the impact on health care, although I think you've heard a fair amount of that already from a better source than an actuary.

Regarding the A.M. Best financial data, I don't know how many of you are very familiar with how this information is compiled. It's probably a little different than the information you're normally accustomed to seeing if you're doing life work rather than property and casualty (P&C) work. They produce data from aggregates and averages. You probably have a version of aggregates and averages as well. They produce medical malpractice data, which is data for the last 25 or 26 years, and it's for the entire industry reporting to A.M. Best. These are statistics over the 25 or 26 calendar years that medical malpractice has been recorded as a separate line of business. Prior to 1975, medical malpractice wasn't on anybody's radar screen; it wasn't big enough to get excited about. Around 1975 or 1976, things got a little more agitated and a little more heated.

We're talking about a calendar year loss ratio. A loss ratio, for those of you who don't know, is the ratio of loss and loss adjustment expense divided by premium. The numerator of that has a significant component of change from prior periods.



Reserves change for this line of business. The reason is the reserves that are established for those liabilities that a company has at the end of a given period change over time. It's a very unpredictable line of business. It's not like paying out a limit on a life insurance policy or something like that. You don't know what the judgments are going to be. You don't know how many you're going to have, and it's very difficult to predict.

What happens in these loss ratios is that companies are constantly reevaluating their inventory of outstanding claims. That reevaluation process manifests itself as a reserve change during calendar years. When reserve liabilities change, they come through as an impact in that particular calendar year under either statutory or GAAP accounting.

Remember that this is just the loss ratio associated with paying damages and defending claims. When it's up around 100 percent, it means you're spending or anticipate spending every dollar of premium you get to pay loss and loss adjustment expense. If you look at the A.M. Best data over this time frame, there aren't a whole lot of periods during which that loss ratio is even below 100 percent.

So what's the message there? The message is that 100 percent of premium dollars in many of these years is being spent on paying and defending claims. There are a few years where that is below 100 percent, but over the long haul, there is a 100 percent loss ratio. If you look at it over the long haul from an underwriting standpoint, these companies would be losing money.

There are a couple of things that you need to do. The loss ratio isn't the only thing that's going on here. Companies have to pay their administrative costs, and they pay policyholder dividends. I failed to mention that there were periods of crises. One was in 1974-75, but we didn't have the information for that time period. We do have it for 1985-86, where the loss ratio drives on up to 150 percent to 160 percent, something like that. When you have a situation like that, it's not a situation where you go get a bigger truck. If you can buy watermelons for 25 cents but you can sell them for only 15 cents, you don't buy more watermelons.

As I said, the other things that make up the result of the combined ratio, or the overall underwriting result, are expenses and policyholder dividends. Those are stable and predictable over time. The real driver, as was alluded to earlier, is losses, understanding what those losses are and interpreting the trends in those losses over time. That's what drives the underwriting result. The 2002 combined ratio is 153. That's a little less than the combined ratio back in the 1985-86 period, but it's nothing to brag about. The combined ratio for 2003, now that it is available, is 140, so there has been improvement, but not a lot.

The other big driver for companies that provide coverage for medical malpractice is investment income. You can't talk about the underwriting results in isolation and not somehow combine it with the investment income results to see what the total

operating results are for this line of business. You can compare the investment income against premium and in some sense look at it from the standpoint of what offset does it offer against that combined ratio?

In the early years of the A.M. Best data, the investment income was 40 percent (round numbers to get the dynamics defined) of premium. In essence, if you thought about it, you might be able to write at something like a 135 or 140 combined ratio, and you could offset that with the investment income. If we got very technical, we would have to pay taxes and things like that, but in rough numbers you can see the power of investment income. The regulators know that, companies know that, everybody knows that, so you can't ignore investment income.

As you get into the latter part of the 1990s and come into 2001 and 2002, the figure drops below 20 percent. It's the first time it's been below 20 percent since 1975-76 as a percentage of premium. It means that lower investment income, caused by lower yields on bonds on an increasing premium base, cannot protect those high combined ratios any more. It means the dynamics have changed. Companies need to realize that, and they need to do something about it in response.

When you put these two together, you get what's called the "operating ratio." In essence, it's close to essentially the net of the two. For the most part it follows the loss ratio in terms of the overall results. We had a few years where the total operating results were over 100 percent. In the early part of the 1990s, this line of business looked great. The operating ratio was sub-80; people were clipping off 20 cents for every dollar of premium in terms of income. Everything looked great. But the problem was that things deteriorated, the loss ratio drove up and the operating ratio in the last few years went up over 100.

In 1999-00 it was 106. In 2001 it was 134. I'll go back to my truck analogy now that you know it. You don't get a bigger truck; that's not going to work. Losing 34 cents on a dollar after investment income is not going to work. The number in 2002 was around 120, so it's still 20 cents on a dollar. Improving, but not improving enough. Companies are losing money, and companies are going to do what companies do under those circumstances.

I want to talk about the "perfect storm." How do we get to these kinds of numbers? The first issue is that back in the early part of the decade, there was a very competitive market. This line of business looked profitable in the early 1990s and into the middle 1990s, so the market was very competitive. There are lots of companies that write this business. Some of them are commercial carriers, but a lot of them are now provider-owned. In the original crisis of the 1974-75 period, companies were formed to write only this business. They are not for profit; they are mutuals. They're owned by their policyholders. Who are the policyholders? They're doctors and hospitals, so they're not in this to make a lot of money. They're in this

to provide coverage at the lowest financially feasible cost consistent with their viability. But they are forced to compete in a marketplace with companies that are in there for profit as well, and so the marketplace is fairly competitive. When there's excess capacity, companies will compete. It's a competitive marketplace. There were lots of folks in this business, particularly in the early part of the period. That's changed as we come to the end of the period.

The second driver is lost cost trend. If you went back to the periods of the 1974-75 time frame or the middle 1980s, lost cost trend—combined frequency and severity changes—was in the 20 percent per year neighborhood. How do you keep up with that? You keep jacking your rates up year after year after year, trying to keep pace with it. In the early part of the 1990s we had very modest lost cost trend, lower than we ever expected. It affected the financial results, the trends in lost cost and the trends in rates. Rates at the start of the period of the 1990s were based on expectation of higher trends. When those didn't materialize, rates didn't need to go up, so they stayed flat. In fact, lots of companies reduced their rates during the early part of the 1990s. Unfortunately, lost cost trends toward the end of the period, mostly driven by the severity of claims you heard about a little earlier, caused rates to go up in response. They also needed to reconcile themselves to the cumulative modest trend that existed in the early part of the period.

Investment yields went from high to low. Companies aren't losing money. Companies don't invest significantly in the stock market. Roughly 85 percent to 90 percent of the assets that these companies have are invested in fixed income instruments. They can't afford to take the risk of being in the stock market, and they don't. To the extent they have, they've shed it because of the volatility associated with it, with the volatility of the lost cost. These companies depend to some degree on investment income. That's not the driver of what's going on in rates today, but it's a contributing factor. Companies need to reconcile themselves to the economic dynamics that are out there right now. You can't write this coverage at a 125 combined ratio; you need to write at a lower combined ratio because of the change in yields available.

Reserves went from strong to weak. I mentioned the changes in reserves and how they affect those calendar year results. At the beginning part of the 1990s and through the 1990s, because lost cost trends came in lower than we expected and we set reserves in expectation of higher lost cost trends, there was favorable reserve development. That contributed to those low combined loss ratios during the middle 1990s. That's done now. With the surge in lost cost and the reconciliation to those lower trend rates, companies no longer have strong reserves. The betting line out there is that the industry, which has around \$20 billion to \$22 billion in reserves, is deficient. Depending on whom you talk to, that number can be pretty significant. So we don't have strong reserves. We have weakened reserves, and we're probably going to have to strengthen them.

In the early part of the period, reinsurance was cheap and readily available. Today, it's difficult to find and very expensive if you can find it. As you can imagine, the unpredictability of these losses is such that the companies need to have reinsurance. They're relatively small companies in the scheme of things, in terms of the provider-owned companies, and they need reinsurance. After September 11, as well as the experience on the medical malpractice line for reinsurers, they've had to increase their prices. They've done so; I won't say with a vengeance, but they certainly have gotten religion as far as reinsurance pricing is concerned.

What are the options? From the standpoint of being an insurance company, you can think about all the things you can influence. You can't influence investment income. You can't change loss cost trends. You can't change the reinsurance market. You can't change your reserve position. What can you change? You can change rates.

What are companies doing? They're increasing rates. Unfortunately when you go to evaluate rates, I've mentioned the uncertainty and the severity of claims in this line of business. It's a very unpredictable line. The number of claims is relatively low, but the severity is very high and unpredictable relative to other casualty lines of business. It's not like earthquake insurance and it's not like hurricane insurance, but it's bad and very difficult to predict.

We've talked about how investment income has gone down. There aren't investment losses, but investment income is down. You have to adjust your pricing to reflect those lower rates of return that are out there now. When you go to make rates, you don't get to recoup. If you didn't get it right last year, you don't get to go back and say that you're going to get it back this year. Rates are prospective. You make rates for losses you're going to have on policies you issue next year. You make rates based on investment returns you can get next year. If you had investment losses, that's too bad. That's what surplus is all about. We don't get to recoup.

There is also the impact of tort reforms. It's a very difficult issue, and obviously there are some emotions in tort reforms from time to time. It's very uncertain what the impact of tort reforms is going to be when they're implemented. If you implement a \$250,000 non-economic cap in a given state, you have to recognize that you don't necessarily have a fix on what the true loss costs are right now. You don't necessarily know that, and you need to be starting from the right starting point in terms of any rate adjustment you may talk about.

The minute you get tort reforms passed, the next thing out of a legislator's mouth is, "What are you going to do about rates? Roll back rates? Freeze rates?" Florida is a good example. Because they put a \$500,000 non-economic cap, they're currently debating what rollback they're going to implement for rates. Rates in the state of Florida went up on average 50 percent for the three major writers in the last 12 months. One of those major writers told me that they may not continue to write in

Florida. Now you're down to two. Now they're in the process of telling those two companies what rollbacks they're going to have for a \$500,000 non-economic cap.

Let's put that in perspective. A lot of doctors in Florida buy \$250,000 limits. If I have a \$500,000 non-economic cap, and the total limit of liability I have is \$250,000, what impact is that going to have on my rate? Not a lot. You may discourage some claims, but that's about it.

As the debate goes on, it's going to be difficult to see what companies will do in response to what's happening in Florida. This debate goes on throughout the United States. West Virginia implemented a \$1 million non-economic cap. Most doctors in West Virginia buy \$1 million limits. Is that going to have a big impact on any expected loss? No. Is a company going to change its rates in response to that? No. It needs to be more meaningful. The reforms need to be meaningful. They need to be implemented at a place where they're going to have an impact if you have an expectation of cutting back the rates. I'm not going to argue pro or con about tort reforms. I'm just telling you that if you implement non-substantive reforms, and then you tell companies writing that business that they're going to roll back the rates when the reforms are non-substantive, what are they going to do? They're going to take their capacity and go elsewhere.

I want to talk for a minute or two on the impact of health care from my perspective. Dr. Palmisano gave you a great overview of that from a very personal, anecdotal and factual perspective. Looking at it from a macro level, on a direct-cost basis, there's probably \$10 billion to \$12 billion of premium recorded by A.M. Best for medical malpractice across the country. Most people will recognize that that's just the stuff that's written by insurance companies that report to A.M. Best. There's probably another \$10 billion or so that would be there if the self-insured, the captive programs and all those things were counted. You're dealing with something that is probably \$20 billion to \$25 billion. That's the direct cost side of things.

In terms of health care, that may not be big enough money to get on anybody's radar screen, but as mentioned earlier, the indirect costs are probably the more significant element. By that I mean, in some explicit and identifiable way, defensive medicine, which gets debated thoroughly in a lot of areas. The GAO, as was mentioned earlier, has recently done a study and their comment was that there have been a lot of studies of this defensive medicine but there's not one credible study that we can point at and say that this is the impact.

I think when we talk about this, just as we indicated earlier, you're talking about a multiple of that \$20 billion to \$25 billion. When you talk about something that is three to four times in addition to the \$20 billion to \$25 billion, that's a significant number. Now you're talking about a number that you need to think about. What's the impact of this on health care as a consequence of \$100 billion being spent on something that doesn't necessarily help health care delivery and doesn't accomplish

its goals any way? You've got to think about that a little. The GAO in its findings said they realize that defensive medicine exists, but they don't think they can quantify it at this point, although there are some studies out there that do try and quantify it.

Testimony given throughout the United States, in various states and at the federal level, is replete with descriptions of what the impacts of these things are on health care delivery. In terms of hospitals closing down their trauma centers, Representative James C Greenwood (R-PA) had testimony in Langhorn, Pennsylvania, up the road from St. Mary's Hospital, where he said his father was taken to the trauma center and resuscitated. St. Mary's trauma center closed, so Rep. Greenwood is thinking about that in terms of what he thinks needs to happen and he supported HR-5.

From the standpoint of physicians, I think Dr. Palmisano gave you a much better explanation of what's going on from the physician's standpoint than I'll ever be able to give. I think that the GAO saying that there's not a demonstrable, evidence-based finding that access is being impacted should punctuate that by saying "yet," because I think we are getting there. The rate increases that have been filed in 2002 are history; they're done. We have filed rate increases in 2003, and we're continuing to file rate increases in 2004. It's not over yet. Again I'm not going to argue what the solution is necessarily, but there are problems, the problems are going to get worse and we're going to continue to have problems.

The actual dollars being paid by doctors is sometimes interesting. In the state of Florida, the lowest-rated physician I could find was about \$15,000 for one-third of a million dollars of coverage. The highest-rated doctor in this survey was \$210,000. You have to deliver a lot of babies to pay a premium if one of your costs is \$210,000. That's a big problem.

As I said, the lowest increase in the state of Florida was 21 percent last year, while the high was 75 percent. Part of the problem is adjusting to these costs. You know that what's happening out there on the reimbursement side is not going to keep pace with that type of increase at all.

I will just note that the real issue may be in the reconciliation of these increasing costs that are coming from medical malpractice to the reimbursement that exists out there, whether it be the federal reimbursement level or capitation from managed care programs. Those things aren't reconciled right now. As we head down this train track, I think we may be heading for a wreck as we go forward.

**MR. KONNATH:** Thanks, Jim. To present the issues from the Canadian perspective, we have Liam McFarlane.

**MR. LIAM MCFARLANE:** I'm a Canadian casualty actuary. I do work in both medical malpractice insurance and other professional liability. In fact, I have clients

that are both medical providers and also lawyers, so I have some viewpoints from both sides. I'm going to give you the Canadian perspective. I'll talk about health care delivery in Canada. You can contrast that with your knowledge of what goes on in the United States. I'll then talk about medical malpractice insurance in Canada and the Canadian Medical Protective Association, which is a dominant provider of that insurance in Canada. There are a few numbers that I'll talk about, and I'll quickly talk about the implications of the rising costs.

In Canada, constitutionally the provinces are responsible for the delivery of health care. The Canada Health Act, which is a federal regulation, governs the delivery of the health care in Canada. It sets national standards that provinces must meet to receive federal funding. Historically, I think the feds funded health care in excess of 50 percent of the costs; now I think they would pay less than 20 percent, so most of the costs are covered by the provinces within Canada.

The Canada Health Act covers insured health care services, such as your medically necessary hospital coverages, your physician (when you go to see your doctor) and surgical dental services, as well as some extended health care services. By and large it provides a platform for the delivery of the vast majority of the health needs that Canadians have.

There are principles set within the Canada Health Act. Those principles are that it has to be comprehensive, so provinces have to deliver health care that meets the vast majority of folks' needs. Anything that you require, from basic senior GP to any type of surgery, must be portable among provinces, so that if you move from one jurisdiction to the other there are no punitive aspects to it.

Universality is another principle; it has to cover all Canadians. You can't have this put in place to cover a subset of Canadians. Accessibility is another one, with the idea being that it covers all Canadians and all Canadians should have access to health care. We should have the same delivery capability for somebody sitting in Toronto versus somebody who is sitting in White Horse in the Yukon Territories.

Another principle within this Health Act is that it is publicly administered. It seems strange to me that that's a principle of it—it's really a delivery mechanism. But basically that's within the Act; it's publicly administered on a not-for-profit basis.

In terms of physicians, they bill the provincial health insurance plans for services delivered. There's a schedule that outlines what costs are reimbursed for certain scheduled services. The health care practitioner bills a province for these. Their annual billings are typically capped, so there is a limit to how much they can bill. In certain circumstances, depending on the medical practitioner, he may hit that limit (assuming he starts on January 1) on September 30. From a financial perspective, there is no motivation for that physician to continue to practice.

The provincial health insurance plans reimburse a portion of the physician's medical malpractice premium. Thus in Canada the physician will obtain his medical malpractice insurance, and there's a reimbursement scheme. They vary by provinces. For example, I think, in Ontario, it's based on fees that they would have paid at a 1986 level or something like that. But by and large the physicians themselves are only responsible for a small proportion of the total cost. That's true particularly of high-risk practitioners, where the underlying costs of malpractice insurance are higher. The part that they pay is a very small proportion of those costs.

Regarding medical malpractice insurance in Canada, private entities distribute these products. Now having said that, the Canadian Medical Protective Association (CMPA) is the dominant provider of malpractice insurance in Canada. They insure over 95 percent of physicians in Canada. They're on a not-for-profit basis, so even though the playing field is open to any entries, we're only aware of one other provider that offers professional liability insurance to the medical profession. They offer it as part of a broader suite of professional liability products they offer to engineers, accountants or lawyers. They also offer those products to the medical profession.

Regarding the Canadian Medical Protective Association, it is certainly a unique entity. There are some good lessons to be learned in terms of how it delivers its benefits, but basically it's an organization for physicians who practice in Canada. One of the panelists was talking about the fact that you have physician-funded or physician-backed carriers in the United States, which would be similar to this organization. It's been around for over 100 years, and it's been incorporated by special act of Parliament. It is funded and operated on a not-for-profit basis. It is for physicians and by physicians. It is run by physicians. The executive director is a physician. The counselors are physicians, and many of the senior staff are physicians who offer advice on claims, etc.

Until the mid-1980s, this organization operated on a pay-as-you-go basis, very similar to lots of government programs in Canada. For example, national pension schemes operate as pay-as-you-go—wherever the money comes in, they're paying out the back door to someone else. It's not that there's any accounting for this in a proper actuarial sense, where they're making sure there are enough assets to meet the liabilities. Instead it's basically operated on a cash flow basis. That was the case for the Canadian Medical Protective Association until the mid-1980s. At that time some of my colleagues advised them that they should move to a fully funded basis. Over a period of time, that has occurred. They are now fully funded, and by that I mean at any one point in time if you look at their balance sheet, they have sufficient assets to pay for all of the obligations of the organization of that period of time.

It has 61,000 members—they call them "members," not necessarily "policyholders." There are no policies. They insure 61,000 members, or 95 percent of licensed



physicians in Canada. They have a fantastic database. In fact, in terms of the claims experience of physicians in Canada, we have it.

They are, as I said, governed by an elected council of physicians from across Canada. They obviously bring that perspective. They're looking after each other. Their leadership is physician-based. Their senior staff and their CEO are physicians. Senior officers are physicians. They're a noninsurance company, so they're not regulated in Canada as an insurance company. They don't have the same requirements for setting reserves from an actuarial perspective. For example, if they choose to operate on a pay-as-you-go basis, they can do it. They provide unlimited occurrence coverage in all provinces and territories in Canada. Contrasting with the United States, you have low limits and claims made, so you have an issue with physicians when they go to retire in that they have to buy some tail coverage. When you have these markets that exist today, that's easier said than done. We don't face that issue with CMPA. You have coverage on an unlimited basis for any events as long as you're a member.

Fees are set annually on a regional basis by type of work. Basically it's the sum of the current year costs. For next year we estimate what the costs will be for events that will occur during 2004 and then we applied either a credit or debit. If it's in a surplus position, we credit that over a period of time. If it's in a deficit position, we put a charge in over a period of time. It's basically just cycling the money back through the system.

They're also not limited in how they invest the funds as an insurance company. They certainly took advantage of the U.S. equity markets, in particular through the 1990s, where their assets were returning 15 percent to 20 percent per year. They had a good chunk of that in U.S. equities, but again they deal with professional money managers, who deal with that, and they will scale back when appropriate. Right now I think they believe it's a buying time, and they'll be buying equities again, but we've had some circumstances where we've had less than 5 percent return on our assets because of the fact that we've been a bit more aggressive. But over the long run it's paid off for the CMPA.

As I said, they're physicians, members only, so that's whom they insure. They do not insure nurses or other professional folks who are associated with the medical profession. There's no contract. You pay your fee. There's no policy; you're just covered.

Assistance is discretionary according to their bylaws, but I don't know of any circumstances where they have denied assistance to a member. They will not, I believe, in situations of sexual assault or something like that, stand behind the person if they feel that this person has committed that criminal act. But typically they're there for the doctors.

The services that they provide are more than just medical malpractice. They provide advice to doctors on practice issues because, again, there's a risk management focus. If a doctor is not sure how to approach a certain thing, he can pick up the phone and talk to another doctor with the CMPA for some advice. They provide advice on billing matters if they're having an argument with the province. Obviously they provide services in all of those areas around the malpractice issues.

Their defense philosophy is important. To them the professional integrity of the doctors is first and foremost. They will defend a member to the hilt as long as there is good expert support to do so. If their legal counsel and other experts tell them that there is no malpractice, they will defend it at any cost. The result is that you don't get the legal community taking cheap shots. There are no frivolous actions just because they're going to have very deep pockets. That's been very, very favorable to CMPA in terms of their results. The fact is it's known in the legal community. If you have a real action, fine; if you don't, you won't get anywhere with it.

Their members are eligible for protection regardless of their history or track record. If there have been six malpractice events against the physician before but there hasn't been an issue with the college or the licensing body, they will get insurance. They will not be rated any differently than anyone else. That's for the licensing body to determine if this doctor should be practicing. If they should be, then they get insurance.

From an efficiency perspective, the majority of the funds are returned to physicians in claims costs and other related services. I would think in some years it's close to 90 percent, so there are no commissions, no distribution costs, no income taxes, etc. It's just the internal cost of delivering a service.

As I said, we're aware of only one other program in Canada that offers coverage on a claims-made basis, with per occurrence and aggregate limits. I think basically what they do is look at the CMPA rate structure, which is published on its Web site, and they will look for spots where they feel that the CMPA is inefficient. Maybe the CMPA is overcharging a low-risk group, and they'll try and offer some products. By and large, though, they're chasing a small proportion of the market. Again, they have the underwriting considerations and all the rest of it that CMPA doesn't have.

I want to look at a few statistics quickly. If you look at per thousand CMPA members, we see a couple of things. Legal actions that commenced in the calendar year of 2002 were 20 or so per thousand members. These include threats or actions where CMPA becomes aware that a doctor or a physician member may be named, but hasn't yet contacted CMPA. They'll track those as well because that could potentially lead to a situation or a claim. If you were to look at these numbers on a per thousand basis, they'd be similar to the U.S. experience. I think we've done that in the past. There are very few situations where the actions go to trial. Only two legal actions proceed to trial per thousand. In Canada we have 61,000

physicians, so you're looking at 20 legal actions that will actually get to trial per year. We have a great proportion of legal actions that are actually dismissed, and then some of them are settled. CMPA will settle if they determine in their view it's indefensible. If through the preponderance of all the legal evidence and advice it has been clear that it's malpractice and not defensible in court, they will try to settle it before it goes to trial.

With the judgments for plaintiff versus the judgments for the physicians, it's overwhelming in favor of the defendant physician. Even though we don't see a lot of frivolous cases, there is some energy being expended by their legal community in taking these cases forward when predominantly they're judged in favor of the physician.

If you contrast the average duration of these types of legal occurrences versus the average cost in looking at closed claims of approximately the last 10 years, you can see that to get a judgment for the plaintiff is going to take on average 74 months to go through the system. The average cost over that period of time is \$682,000, in Canadian dollars. Again, that's over the last 10 years in Canada nationwide. If you were to go into Ontario, which is a little higher risk, and go to the more current numbers, you're going to see that those average judgments are over \$1 million. The experiences in Ontario for high-risk practitioners are similar in level to what's being experienced in the United States, but even to just come to a settlement and go through it is taking 41 months on average, so there's a lot of tail in this business. These are averages. We see claims that are out there over 20 years of duration. You get situations where there may be the potential of a molestation when someone was a child, and then this person has memories of these issues as an adult and takes some action. So we have a 25-year tail on some of these claims.

For illustration, I want to share some of the sample fees to contrast some of the numbers that were put out there earlier for the United States. These are actually in effect for doctors in Canada right now. They do include a credit from prior experience, but a general practitioner of family medicine in Quebec is less than \$1,000 a year. In Ontario, which is a high-risk area, it's \$2,200. The important point is that Ontario is the high-risk area, and, when you get into the obstetrics and whatnot, it's \$75,000 a year. There's a credit in there, so the actual costs of the current year could be close to \$100,000, but they're nowhere near some of the numbers that were put out earlier in terms of the minimum you're seeing in Florida of \$15,000. The average per practitioner in Canada, if you were to take a weighted average of all practices across the country, is probably in the neighborhood of \$5,000. The cost issue from that perspective on an average is not an issue. It is an issue for the higher-risk practitioners.

What are the implications? Availability of insurance is not an issue because the CMPA is there. They have been providing insurance for a long time. Again, it's funded by doctors and managed by doctors, so availability is not an issue. The issue

is that physician incomes are largely controlled by government. These reimbursement schemes exist in all provinces, but there's no certainty associated with the reimbursement. A specialist who invests a lot of time, money and effort going through the educational process to get there has his income capped and has this \$75,000 or \$100,000 potential fee hanging over his head. Because he has no guarantee that the government is going to pay that, we're seeing a lot of problems in the high-risk area. The doctors are saying that this just doesn't make any sense. "My income is capped. I may be faced with issues if there is a change in government. I'm also seeing that there are a lot more lawsuits in that area, so I'm more likely to be sued. If that's the case, I might as well recover my costs." Many of these doctors are moving to the United States. We've had some across-border, high-risk Canadian practitioners come to the United States for those reasons.

Access to these specialists because of that has been difficult. Again, one reason is they're increasingly dependent on the government funding. We have somewhat of a different issue there. You have perhaps the legal community issue. Obviously that's a problem for us as well, in terms of some of the costs, but I think some of the mechanisms that exist between governments and the physicians and how these things are paid for are causing issues. For some of these high-risk practitioners, the insurance premium in Canada would be a higher proportion of their income, because their income is capped, than it would be in the United States, notwithstanding that in the United States the actual premium may be triple the Canadian premium. It still may be a smaller proportion of the U.S. doctor's income.

The increasing costs are a concern to governments. Putting that in perspective, I think it was said that the size of the pie in the U.S. context was \$25 billion. I think the medical malpractice costs in aggregate in Canada for the year are \$250 million, so that's roughly 0.01 of the U.S. costs, and our population is 0.1 of the U.S. population. From a cost perspective, you have a ten-fold issue relative to our costs. These are of concern to governments. However, it's still a very, very small proportion of the government budget for health care, so it becomes in many ways difficult to get their attention on it. They look at health care and say that we spend \$25 billion in health care and then we have \$250 million in malpractice premiums, so it's not a big problem. In that context, though, they don't equate that issue to the issue of access to specialists, which the medical community sees. Our issues are trying to convince government that there is an issue. It is difficult and similar to yours.

The final point is that there is support in the medical community for tort reform initiatives—structured settlements where there are tax implications or savings there. There is subrogation currently where the provincial health authorities can recover costs in the case of negligence of a health care provider. So one arm of the government recovers costs and the other one pays it out the back door when they reimburse it. There are large administrative burdens, with extra costs paid for no reason. Convincing government of that, however, is a different challenge. Obviously they're trying to streamline the defense processes. Other tort reforms where there

would be caps on non-economic damages, for example, would be warranted, but in many ways we have some controls of that through precedent. We don't have quite as bad a situation as you do.

**MR. KONNATH:** Tim Barth, the next speaker, is pursuing a fellowship Ph.D. program with the University of Central Florida and part of his work is actually on this topic.

**MR. BARTH:** I want to shift gears a little. I work for NASA at the Kennedy Space Center. I'm not an expert in malpractice or in health care delivery, but my main goal is to get you thinking from an actuarial standpoint about your role in the overall health care delivery system, because it really does take a system's perspective to make improvements. Specifically I'm going to talk about improvements with respect to human error.

Five years ago today I was in the hospital breathing a huge sigh of relief because my wife had just given birth to my son. Reflecting on it, the space program and health care have similar goals—affordability and accessibility. In the days leading up to my son's birth, I was not overly concerned about the quality of care or even affordability because I have good insurance (it cost more than I liked, but I have good insurance). But I was concerned about accessibility because October 29 was also the day of the John Glenn launch, if you remember that. My main concern in the days leading up to my son's birth was getting to the hospital, because there was something like a million visitors in our county. Luckily we got there before all the traffic showed up, but accessibility was a real issue for me because of this unique event happening.

About a month ago, my son, who just turned five today, turned on C-SPAN. I saw that they were replaying the debate in the Florida legislature about malpractice reform. All these legislators were coming up to the podium and they were all saying, "Yes, I'm going to vote for this bill, but I think the real problem is this..." For example, they would say that the real problem is getting the bad doctors out of the system. They were all pointing fingers at the insurance industry, greedy lawyers and new technology. They said that there was not enough technology in health care delivery.

The system is more complicated than that. All those things have to work together, but I was disappointed that no one said anything about designing our health care delivery systems—meaning the equipment and the people—so that health care professionals would be less likely to make mistakes.

Things have gotten incredibly better over the last 50 or 100 years, but they need to get even better. Dr. Palmisano mentioned that NASA operates the FAA system for aviation safety. I serve on their advisory panel and I'll talk more about it in a minute. After that, I want to talk about some concepts regarding human factors

and management. Again, my main goal is to get you to think about your role in this overall health care industry.

Safety is a common problem. Many industries are facing safety challenges. They always have to improve safety, the bar gets raised every year and they have to do it within a constrained fiscal environment.

I work on the ground systems, including the space station processing facility, the Orbiter processing facility, the international space station, and the space shuttle. They are arguably the most complex systems that were built. When I talk about systems, I'm not just talking about the hardware that you see or the facilities equipment, I'm also talking about the people and the processes that work on the space program.

If I had given this talk before February 1, 2003, it probably would have had a different tone because we hadn't had a launch accident in the space shuttle program for a long time. But we did have a tremendous national tragedy on February 1. With that said, though, regarding the space shuttle over the last decade, we've cut the cost of the launch in half and increased the safety by a factor of four. Part of my message today is to say that cost and safety improvements are not necessarily mutually exclusive. You can improve safety while also reducing costs. The space shuttle, although it's getting old, it is by far the most reliable launch system ever built.

I'm going to talk about the connection between the safety of those who use the system—in space it's the astronauts, while in health care it's the patients—and the safety of those who work on those systems. It's one of those things that make common sense. If you keep the people safe on the ground who have to work around these hazardous systems and materials, they're less likely to make mistakes that could affect the astronauts who go in space.

One thing you have to have is a vision, and NASA does have a vision as far as reducible space transportation systems. I don't have time to get into the details here, but basically the bottom line is that we want to get to the point where if you come to central Florida, you can go over to Cape Canaveral and buy a ticket just like you buy a ticket to go on a cruise line. You can go up into space for a week to a hotel in space. You can go to Spain in 37 minutes. You can go to Australia in two hours. Obviously it has to be accessible and affordable.

The space for such a system already exists, built primarily for the Apollo program. I don't know if anybody has had a chance to go over there, but it's a tremendous engineering marvel. We have that today, but we need also to move to something like this on a ground system side to enable that vision. We need to have the ground systems and the flight systems working together.

Health care, aviation and space transportation are all risky and complex industries. We're trying to reduce human error as part of an overall risk mitigation and management effort. We do things like that individually in health care. For example, we get second opinions all the time. That's the same type of thing that we're trying to do with these safety reporting systems. When I drove over here, I didn't drive 100 miles an hour. I drive at a safe speed so I can take personal responsibility to get here in one piece.

Organizations also have efforts: training, procedures and new technology. For example, there are approximately 200 spin-offs from NASA technology that have made their way into health care, but they are not the only answer for patient safety. Safety reporting systems are part of it in every industry.

The Institute of Medicine's study estimates that the cost of preventable errors annually in the United States in hospitals is between \$17 billion and \$29 billion. Even the low estimate is more than the cost of the American space program, so there are additional impacts. The point is that we can do better in reducing medical errors.

I was surprised to see that the safety of health care professionals—the incident rates for nursing home workers, hospital workers, etc.— is about the same as the construction industry and far less than what you would call your benchmarks. Again, I think it's important to look at the safety issues with our health care professionals in conjunction with the patient safety issues.

As for industry best practices, DuPont has been setting the bar for a long time. In fact, I read a speech by Lamar DuPont from 1937. He started DuPont's emphasis on safety. Today DuPont is at 0.1 percent, almost two orders of magnitude difference from the construction and health care industries.

In terms of the medical error rate, the bottom line is that you have about the same chance of being involved in a medical error if you're admitted to a hospital as being involved in a space transportation error if you were an astronaut and launched on the shuttle.

The "Six Sigma" performance is the goal that people shoot for. It means 3.4 errors per million. Both in health care and space transportation, we have a long way to go to get to Six Sigma. I would argue, though, that if we get there in terms of safety, we're also going to get there in terms of our accessibility and affordability goals. Safety is a key in the overall system performance.

There are two main types of safety reporting systems. The two types are mandatory systems and voluntary systems. Mandatory systems are much more common. The main goal of the mandatory system is to hold people accountable. The data in those systems are usually entered after all the lawsuits are settled. As far as actuarial input, I think there are a lot of data in those systems that could be

mined to look for things to improve the safety of those systems. It's generally not looked at.

Voluntary systems have a totally different emphasis. They're specifically designed to improve the safety of the overall system. I don't think it's any coincidence that aviation has better than a Six Sigma performance and they also have been operating a voluntary safety reporting system for the last 25 years. With voluntary safety reporting systems, you're trying to capture information such as close calls, near misses, hazardous situations and other things that never show up in legal issues.. Those are the indicators of things that are above the surface of the water; they're just the tip of the iceberg. They are those actual accidents and errors that slip through the system.

Medical, highway transportation and OSHA are examples of mandatory systems. The FAA aviation system, NASA's aerospace system and the Veterans Administration's Patient Safety Reporting System are examples of voluntary systems.

Human error in systems is another factor. Design systems so they're resistant to error. At NASA, errors are usually not made because a technician or an engineer messes up. Errors are made because the design was from 20 years ago, and you have all these things that you can't make heads or tails of. They have to work on this machinery under very difficult circumstances.

There is model called the "Swiss cheese" model, for obvious reasons. It says that when you have an actual error, it's the result of a number of barriers failing. The idea in improving human errors is to try to close those holes in the Swiss cheese so the errors can't slip through the system. That's how you make a robust or resistant design.

Fallibility is part of human nature. If humans are involved, you're going to have mistakes. You can shoot for zero incidents, but there are going to be some. Management can't change that. You just aren't going to change it. Even if you have robots, robots are designed by humans, and they're going to make mistakes. But management can do a lot to change the conditions and to learn from mistakes so they don't happen again. That's the main message behind voluntary safety reporting systems.

Learn from the mistakes of others. You don't live long enough to make them all yourself. It's a tough thing to do, to learn from your own mistakes, but to go forward you have to learn from your own as well as the mistakes of others in order to prevent them.

My main message is that for it to work, I don't think the health care industry or the insurance industry can do it individually. It has to be a partnership where they work together to provide these types of systems. The technology is the easy part. The



partnership to get these systems and efforts working in the same direction to reduce errors as a part of the overall system and part of controlling malpractice costs is the real trick.

I was talking about learning from the mistakes of others. There was a study that said about 1,500 debris, instruments or whatever, were left in patients during operations annually. How can that possibly happen? We think the same thing in the shuttle. We take all these tools and stuff inside the Orbiter, and every once in a while, even though it's signed in and out, we leave something in there. We lift the Orbiter to the vertical position, and we hear this clank. But guess what? It's not just that the same type of situation exists, but the same types of corrective actions also exist. The same types of thing to prevent that kind of thing from happening in the operating room are the same types of thing that we use to prevent leaving instruments inside the Orbiter.

In anesthesiology, since the 1940s, they have made consistent progress on improving their mortality rate when they put somebody under. It has really penetrated their culture. My wife had a procedure about a month ago where she went under. I've been carrying around this Institute of Medicine book to read in waiting rooms for probably a year and a half. Nobody had ever said anything to me. But when we met the anesthesiologist, she was very familiar with the book and recognized it immediately. It's out there in their area within health care, and they've been very successful, so I know that it can happen in other areas as well.

As I said, NASA has goals for low-earth orbit exploration. The key for us to get there is that we have to figure out how to make space transportation reliable, affordable and accessible. Think about how we're trying to make our systems more reliable and also about patient safety. I took my son to look at Mars through a telescope when it was close to Earth. He looked up, saw this orange, saw the ice caps and he said, "Dad, I want to go to Mars so I can see if Earth looks blue from there." The point is that we will do that some day. We're a great nation, and we're working together with other nations to realize that vision. But think about the Space Age and the Space Age health-care delivery, with Six Sigma or whatever. The average astronaut age is approaching 50. A Mars mission would be over two years long. Do you think there are going to be some health care delivery issues on a human mission to Mars? There absolutely will be, and there are going to be very limited resources to make it accessible in that kind of environment. We need to work on our health care delivery systems just to support the space program as well. That may be a stretch, but I wanted to get you thinking.

**MR. KONNATH:** Let's go ahead and handle a few questions if you have them.

**MR. BOB SACKEL:** Jim was talking about the rate increases coming in the malpractice costs. I believe it's a certainty that ultimately you're going to have caps because you're going to reach critical mass. Obviously the fight is important, but I wanted to address another issue, to Dr. Palmisano. What can the doctors do in

terms of developing protocols within their profession? They could practice without much risk for malpractice if they followed the right protocols. What could you do to help in that effort?

**DR. PALMISANO:** The American Medical Association is very much involved in best practices, the guidelines clearinghouse, and a whole bunch of things that you can read about at the AMA Web site regarding the quality efforts. Some states have attempted to do that, where if you follow a certain protocol, then the burden is on the other side. It's a higher hurdle for the other side to make a claim, and so we think there's merit in looking at that. The problem we have right now is that there are so many cases that are filed without merit and then the attorneys say that we have accountability. Rule 11 in the federal courts is supposed to hold lawyers accountable for frivolous suits. I'll ask in debates, "Give me the names of those who have been punished under Rule 11. I want to see if I can get to one." I never get to one. Nobody is sanctioned for filing frivolous suits.

In Louisiana, the Medical Society has worked with the trial attorneys, the defense attorneys and the entire legislature on informed consent. That became an important issue because people filed suits saying that the physician didn't do any negligence, but failed to get informed consent. We came up with an optional model. If you follow this model, you can't have a claim for informed consent unless you can show that there was coercion, fraud or something of that nature.

**MS. VERA DALLAL:** I noticed that in the presentation by Mr. Hurley that there was no split by cost experienced in tort-reformed states versus states that didn't have tort reforms. I'm going to assume that there is less volatility and dire need in the tort reform case states. Has there been any exploration in insurance securitization, just like catastrophe bonds for those blocks of business done in tort reform states, so that your capacity can be increased and therefore show a shining example where there's a clear benefit to being a tort reform state versus another state that has no tort reform?

**DR. PALMISANO:** Clearly data have been collected on a state-by-state basis, and you can analyze and look at states where there have been material tort reforms. One example that was mentioned was California, which looks like a good tested-and-tried experiment. I don't know of any situation where there has been an attempt to create an insurance transaction that backs that up and says that we're going to guarantee that this thing works or something like that. If I were to read between the lines, you're asking why wouldn't somebody try and do this? If you pass a law in Florida, and it puts in a \$500,000 non-economic cap, why wouldn't somebody say, "We'll guarantee that this thing is going to come up and if it doesn't, we'll reinsure it." I have not heard that occur. That would be like saying that I'm going to be the one that takes the maximum risk. It's like the reinsurers in the case of severity. I'm not sure exactly how that would work. That would require more exercise and mathematical work to see if you could get something like that to work, but I haven't seen it done yet.

**MR. PAUL ERICKSEN:** Do you have any statistics regarding physicians who were following guidelines and what the average claims were versus ones who weren't? Maybe if they're following the guidelines, you give them a break on the rates, like a non-smoker discount.

**MR. HURLEY:** There are no programs out there that would be easily able to identify doctors who follow the guidelines. I think most physicians believe that they are following guidelines when they practice, and sometimes there are bad outcomes. There are experience rating-type programs that identify a doctor who doesn't have claims and give him a credit. But there's nothing that says he followed the guideline, therefore I'm going to give him a credit. However, there are some companies that will look at claim experience in greater detail than what I just described (you get a credit or you don't). They'll go into it and say, "He's had a claim, but we reviewed that claim, and it was not a claim that should have been made. He conformed with that." Those companies peel back the onion another layer.

**DR. PALMISANO:** Talking about the states that are stable states, you can go to the AMA Web site and see the map. The states in crisis are painted red. There are 19. There are six states that are stable: Louisiana, Indiana, New Mexico, Colorado, Wisconsin and, of course, California. I just came back from a Louisiana State Medical Society meeting a couple of weeks ago, and the chairman of the board of the major carrier, which is a mutual-type company run by physicians, pointed out that even though we're one of the most stable states in the United States, the problem of frequency continues to exist. There's no accountability when people file suits. We have a medical review panel, and people are saying that all these claims are coming in, and it costs them \$15 million a year just for the medical review panels for one carrier. Something has to be done. The system will melt down. You can bank on it. It will melt down. Whatever system comes out of this, whether it's the emergency measures in HR-5 and S-11 or whether it's something like Philip Howard is talking about where you have medical courts and a compensation set-up similar to a worker's comp-type system, you have to have something that gives accountability to attorneys who advise their clients to file frivolous suits. They see if they can challenge someone to settle with them because there's a tremendously bad outcome. A baby is born who has neurological impairment. Even though there are no standards that are broken, that's a great risk for the insurance company to go to trial and maybe lose \$5 million, \$10 million or \$15 million, so there's an incentive to settle.