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The Actuary And The Clinician: A Look At The Past Ten Years

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Summary: By working together, have actuaries and clinicians achieved more than what they could independently?

This session examines clinician and actuarial collaborations. Attendees explore the pitfalls and advantages of this clinician-actuarial union.

Mr. David V. Axene: Why should actuaries and clinicians work together? It's a very interesting situation. About ten years ago, at the Anaheim Society meeting, I brought a doctor with me to do a presentation on what I thought might happen. For the past ten years, I've found that there are some things that are very helpful when actuaries and clinicians work together.

The actuary brings to life a global perspective. We know how to calculate things like average length of stay, frequencies, probabilities, etc. We take a big bucket of data and end up using it to calculate all kinds of funny things. When it comes down to what's going on, we don't really care too much about individual patient conditions, or we at least don't understand individual patient conditions. We're great at the averages. When you're trying to do health-care related consulting or health-care related analysis, you need to understand a lot of stuff about the individual patient.

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Now our doctors and nurses have very local, very individual perspectives. They're used to talking to individual people. They rarely understand the aggregate impact of what they do. The next time that you go to your doctor for an office visit, ask him what the average, per month per member (PMPM) impact of his referral patterns for pathology are. You'll find that the idea of trying to work with that is very difficult. They understand individual patient characteristics, and what care is needed. They have very little knowledge of what's happening on an aggregate or overall perspective. They have excellent knowledge about what to do for a condition, but when you ask them something important like how much something costs, they really don't know.

I mean we're back to the numbers. They don't teach actuaries why a patient should have a certain type of office visit, as opposed to another type. They don't teach actuaries when people should go home from the hospital or about a clinical condition and so, we severely lack that kind of information and knowledge.

What has to be done to a patient to finish that patient's care needs? If you have a sore throat, and the doctor gives you ampicillin, penicillin, erythromycin, or whatever for your sore throat, you don't need to go back when you feel good. You know you don't need to go back when you don't have a sore throat anymore, or at least you think you know that. But you really don't know that as an actuary. When we're looking at care patterns and whatever, we really don't know what is going on in most of those places because we've never been trained to do that.

Why are results we observe clinically reasonable or unreasonable? Let's say Linda is from Cincinnati and Dale is from Chicago. If I looked at an average length of stay in Cincinnati and in Chicago, for the exact same patient, or what we thought was the exact same patient, what if we saw a difference there? Do we know if it's reasonable or unreasonable that there is a difference? We don't know that kind of stuff. We also don't know how efficient things can get. In other words, what's the best that can ever be done? We perhaps could do a lot of analyses in many communities, and find out what's the best that has been done in the community. But we really don't know what's the best that could be done because we don't understand the clinical side of things.

The why's of care choices. I mean, when a doctor says, do this instead of this, why do they do that? We don't really understand that. We have not been trained to do that. If you're an actuary who has been placed in a managed care perspective, or if you just happen to be an actuary who is working for a commercial insurance company that is trying to figure out how to price things, and you're trying to understand why premium rates are higher or lower in this community versus that community, you really don't know what's going on until you get some clinical

input. I claim that actuaries need clinical insights to help them make their choices, or else the work that we do as actuaries is second class.

There are things about that particular specialty that the doctor and nurse community lack. Few payers provide the data to providers to help them make more cost-effective decisions. Nobody gives them the kind of data that they need. So the reason they don't know the answers is usually because somebody didn't give them the information that they needed. Now some of them are getting smart. They're creating physician management companies and they're creating the data themselves. If the carriers won't give it to them, they're going to gather it themselves. If you give them information, they, by nature, try to strive for doing the best.

Clinical people have a hard time doing good cost-benefit decision-making processes. What happens is, because they don't have good cost-benefit decision-making processes, because they have never had the information to make those decisions, sometimes they make foolish choices. They have an inability to accurately estimate how much care choice really costs society. When you start talking about the advantages of using subacute care or recovery care, when you explain to a doctor the benefits of doing this to society, oftentimes they'll change their behavior, especially if it doesn't hurt them. Until they hear about that, they really don't know what to do. So they're doing what's good for them, much like you and I would. It's called financial self interest.

Doctors and nurses are really having difficulty today because they don't have very good valid outcome data and outcomes studies to decide what they should do in the first place. It turns out that if you talk to a doctor who is honest with you, you'll find out that less than 25% and probably closer to 20% of what they do on a day-in-and-day-out-basis is based upon hard science. The rest of it is filtered through an experience level that includes hard science and just conjecture. So you have to be very careful that they want valid outcomes data. If you don't give it to them, they can't make good decisions.

It turns out that physicians and nurses are often biased as to the way it has been done before. They're often afraid to step out and try something new. I'm sure actuaries are the same way. We like to do it the way that the people did it before us, because that was right, so we'll do it that way and keep doing it over and over again. I believe that clinicians need actuarial insights to help them make key decisions, because they probably control most of the health care system. Perhaps actuaries can do a better job with clinical insights and knowledge. I'll describe my process about ten years ago, when I started down this trek of trying to tell the

doctors why I was doing a better job. I started working with them. I personally think that clinicians can do a better job with actuarial insights and knowledge.

Perhaps much of our health care woes are a result of actuaries and clinicians not working together. We, as an actuarial profession, have really let down our publics in a very big way. We had what the doctors needed to become better. They had what we needed to help make sure good health care happened and we never talk to each other. I wouldn't be surprised if that's why we're at a 14% gross domestic product today. I really think that we, as actuaries, philosophically, need to understand that we had some of the answers.

I hope each one of you will find your friendly doctor to work with, because it will really expand what you, as an actuary, can do, if you want to do a better job.

We have three speakers—Tim, Jim, and myself. Tim Feeser will describe his perspective of interaction of actuaries and clinicians, and give you his perspective that he has had in his consulting career. I'll describe my experiences working with clinicians and Jim will describe his experiences as a doctor within Milliman & Robertson, which is mostly an actuarial firm. There is a small number of people they call nonactuaries. I think we should call them clinicians or doctors or nurses. But he'll describe his role and what he has seen in working with actuaries

Mr. Timothy Feeser: First of all, I'll discuss that from a consultant's perspective. I spent my entire career as a consultant, so I've kind of gone through the process where I was working and doing a lot of healthcare work, without the doctors helping me out, and then brought the clinicians in to provide me with some good assistance.

Even though I'm giving you the consultant's perspective, I'm sure many of you might be working for insurance companies and managed care organizations. You'll probably be very able to relate to some of the experiences I've had in dealing with clinicians.

I'll then get into the roles of each practitioner within specific projects. The actuary has a skill set and the physicians have a different skill set. Now, I'll highlight that by going through a case study project, that will illustrate how well the actuaries and clinicians can work together to bring more of a value-added result to a consulting engagement than what would have otherwise been achieved. I'll conclude with the future and where I see this budding relationship heading.

Past interactions of actuaries and physicians. For me it has evolved into two real major phases, the first phase being interacting with the physicians more, the

physicians as a third party or a direct client. By third party, I mean a consultant. Before physicians became real prominent partners, we worked for Health Maintenance Organizations (HMOs) as managed care organizations, hospitals, and so forth. The physicians usually were affected in some way by our work product. They were more of a third party to us with the work that we were doing as the intermediary or health plan. Then we got more involved as physicians actually hired us as consultants and we assisted them in a lot of the things that we probably had been beating them up with for the last five years or five years prior to actually working with the doctors. Then we went into the phase where we actually brought the doctors in as consulting companies.

Let's talk a little bit about the actuary and the physicians as third parties or clients. First of all, when we look at the physicians as a third party to us in our consulting work, again, we're working for the health plan. The types of projects we're doing typically have an impact on their reimbursement levels. We're consulting with the health plans, whether it's fee schedule changes, capitation rate, reimbursement strategies to the network, providers, and so forth. That relationship tends to get someone adversarial when you start messing with someone's livelihood. If it's changing for maybe not such a bright outlook, you tend to get a little adversarial.

For example, fee schedule developments, which was a very common project over the last several years, was moving commercial reimbursements to resource-based relative value schedule (RBRVs). What that has done is change the curve of discount of usual and customary fees, especially for the specialists. When the specialist saw the results of the work product, probably presented to him or her by the provider contracting department at the plan, he or she certainly jumped through the roof and had some pretty negative reactions of what was going to happen to their income levels. The person involved from the provider contracting staff probably sat in on those meetings and when it got heated, he probably said, "Well, you know we'll have to talk to the actuaries because they develop the numbers."

We would get brought in and, in some instances, be sitting at the table across from our doctors to try to justify to them and explain how we develop the fees. They would always try to find ways to shoot it down and that it can't possibly be right and so forth.

Perhaps more of an extreme hit to the doctors, when you move into capitation, is that the actuaries are making assumptions without clinical input on the effects or quantifying the relative effects of medical management. When you think of capitated reimbursement, you're thinking of a fixed payment stream to the physicians that forces them to change their behavior in a way that they're delivering

care. Not only does that include making some sort of fee-for-service equivalent discount in the model that you're using to build up the capitation, but you must also make a discount on the volume. You're assuming that it's going to be a success with managing care. But more often than that, we're flying by the seat of our pants in making just subjective adjustments to what we thought utilization should be cut to, to save the plan costs, but still leaving room for them to be successful under the capitation, without having a real good feel for what those subjective adjustments might have been. We think it's probably 10%, and we'd expect a 10% utilization drop without really having good backup to support that call.

I think the physicians over time thought, why not hire our own actuary to help us out in dealing with these contracts, fees, capitated reimbursement, and so forth. I think the proliferation of physician hospital organizations (PHOs) in the early 1990s was certainly a natural fit for them to hire consultants. You got the doctors and hospitals binding together to go into the risk business. A lot of them felt they could do a better job at managing the health care dollar. So they thought, we'll form this integrated system and then just take a percentage deal from the health plan. We'll end up sharing in 100% of the savings we generate rather than saving it with the plan. So they hired the actuaries to help them in contract analysis. The actuaries, have a lot of the information, so we're able to use that information to provide good analysis for the clinicians. It makes them feel like they're getting a good deal from the plan, or that they're not getting the wool pulled over their eyes by the health plans that have all the information.

Once we help negotiate fair deals, the actuary becomes more of an educator. When you go into markets where the physicians aren't used to managed care, and it's somewhat relatively new for them, you want to make sure that they understand that they may not have done as well as it might first look. They might forget about the issue of incurred but not reported. At the end of the year, the actuary explains that you're not making 20%. When the rest of these claims come in, it might be only 2–3%.

As far as capitation rate setting, we're just on the other side of the fence. We're helping the physicians look at taking a capitation rate from a plan. We're assisting them with what some of the finer points are in service school, by confirming that all the utilizations and the types of services they might be providing under those capitation arrangements are accounted for rather than having the plan just say they are going to pay you 90¢ for that capitation and they'll do these services when the doctors don't have any data or a feel for whether that's a fair rate.

One of the other particular projects that we also got involved in is looking at a lot of risk-sharing model designs. For integrated systems, when we take on the global risk

dollar, they need to put something in place to get all the providers working together to make sure they succeed under the deal.

What happened over that whole time period when actuaries are flying solo and working with provider clients was that they discovered that they get a lot of questions in these meetings that they really can't answer. A lot of questions are dealing with some of the financial results, but they're looking for a lot of clinical input as well, supporting the numbers. I know I personally wasn't prepared to do that and I know a lot of my colleagues weren't either. We decided we needed to hire some physicians to help us out. Consulting firms began hiring physicians as consultants and what did that bring us? We got the physicians' perspectives. Essentially, they are sensitive to the health care provider's needs. They understand how care is delivered, and basically they understand how care is provided across the whole spectrum of settings—hospital, inpatient, outpatient, ancillary services, and so forth.

They also bring you credibility with your provider clients. There's nothing worse than being in a meeting, presenting all your beautiful financial tables and then having all sorts of technical, medical practice type questions coming at you about how that affects the numbers, and not being able to answer them. Instead of being beat up, it was nice to have the physician at your side going into the presentations to the board of physicians and backing you up, and being able to answer the questions.

The financial and clinical skill linkage is, I think, very powerful between what the clinicians bring and what the actuaries have. That skill set enables us to do a better job at that analysis and manipulation, as well as development of models. For example, data are critical to this industry. Without data, you're essentially guessing. Actuaries like to say we incorporated subjective adjustment into our analysis.

That is not enough. You have to be able to interpret it accurately also. Without that interpretation you're guessing and making decisions based on bad data or bad interpretations of those data. You just don't realize it. By bringing the clinicians on board, you actually have someone who probably can assist the actuary in interpreting that data and making better informed decisions. The physicians or clinicians can also bring you some added input as far as what some of the parameters or variables need to be in a lot of the modeling that you're doing to assess the future as well as existing strategies to deal with health care deliveries moving forward.

What I'll do now is walk through, in a little bit greater detail, what some of the roles of each of the actuary and clinicians are when we work through a lengthy process in a consulting engagement that involves a two-to-three-month implementation process. It is the design and implementation of a risk-sharing model for say, a PHO that's looking to get into the risk business big time.

When we talk about a PHO or integrated health system taking global risk, really they're becoming more like the health plan. They're really just taking the health care risks from the health plan and feeling they can manage it better themselves. What we're doing, as a consulting division, is going in and putting in a risk-sharing design that will help them work together, to give them higher probability of being successful under that type of a business arrangement.

The actuaries get involved in looking at what the pool allocations need to be. They've got the hospital expense pool, physician pool, and so on. What the actuaries will do is look at setting what those budgets need to be based on a lot of the health care claims data, which are at their disposal.

The actuaries will also get into what the appropriate interim financial payments need to be—subcapitation and so forth. They will provide assistance in how to manage this risk. The actuaries will show a lot of rosy scenarios when we try to implement this program, but there's always the other side of the fence. So things like specific provider stop loss will be an important tool to be used to manage risk under these deals.

Finally, the actuary will do a lot of the modeling and scenario testing, under reasonable assumptions, to show what will happen and what can be expected upon implementation of a risk-sharing model over two to three years.

What the physicians bring is really the designing of the incentives component. They understand how clinicians practice medicine and they'll be able to implement how physicians will get paid, how bonus dollars that get accrued will be split up amongst the doctors using appropriate guidelines, quality of care indicators, and financial indicators, and so forth.

They also provide the development of the case management strategies. They have the basic knowledge of disease management program design and so forth. That will be very important to be implemented here, so that the provider group has a chance of being a success under this risk arrangement.

Finally, communications to the network providers of the whole model design and why it can work is a lot more credible when it's coming from the physician, who

may be practicing in managed care, managing medical practices, and so forth, who has been there and done that.

This is a pretty simplistic idea of what you might present when you're first starting out and going through the process of presenting a potential risk-sharing model to an entity. Just to reiterate what the actuary is doing, a fixed per member per month revenue stream is coming into the system. Then, based on the structure of the system, the delivery settings and so forth, the actuary will then be assigning what should be going into the appropriate expense buckets. Hospital services, for example, might include inpatient, outpatient, physician services, split into primary care and specialists, and then another services pool. Also, the actuary will get involved in looking at what the interim payment mechanisms need to be, on the hospital side, probably paying off some interim per day payment we move throughout the contract year. Primary care services are often popular; that's a capitated pool. Specialist services could be a mixture of fee-for-service and subcapitation. For other services, there are probably things carved out like mental health services. It's very common for that to be capitated. Prescription drugs, or maybe some religious directive services, if we're dealing with a Catholic Healthcare System, can also be included.

Managing risk will be important. We mentioned getting the actuaries involved in providing tactics to manage risk. Provider specific stop-loss insurance may be done at the individual pool level or it may be done for total medical services.

Once a model is put in place, the actuary will basically project a bunch of scenarios for it as to what will happen, assuming certain actual experience that evolves versus the preliminary budget that we set based on what we've negotiated with the payor.

The physicians bring information as to how you incent all the providers to work together to be successful and save costs under what the budget is. For example, the physicians have the insights, how do they get the primary care doctors and specialists to get along? What are the financial incentives that we should be grading on versus the quality indicator parameters? All those things are the types of things that the clinicians contribute by understanding how physicians practice medicine, how they'll act when change is implemented upon them. They're very important skills that need to be brought to this type of engagement.

Then finally, the clinicians provide for communication. Once we have everything put in place, communication of these results as we continue to go throughout the board meeting process and so forth in this engagement, the physicians are there to answer questions. We're going to draw upon their clinical backgrounds and

experience of practicing medicine under managed care, to get everyone feeling comfortable throughout the system that this is something that can actually work and that they should feel comfortable doing.

An example of the type of budget this engagement can lead to shows what might happen. If we go back to that hospital bucket and we look on the inpatient side, most of the savings are bonus dollars and are going to come out of the inpatient hospital pool. We have a budget of \$25 out of that \$40 that we assume is inpatient, assuming the actuary is flying solo on this project. The actuary might come in on budget and basically assume that based on where you're at in a loosely managed market, I think first year you should be able to cut 15% of the days. That's going to result in our \$3.75 surplus. In this example, we got \$450,000 for the year based on the 10,000 life risk deal. So many ways to split up the money and let's just assume that it's 50/50. You need to try to tell the physicians and get them to believe that, that's a reasonable thing that they'll be able to accomplish. You don't really tell them how they're going to do it. Because you're not a clinician, you don't really have the background to tell them what type of case management strategies they might implement and so forth.

So you have a hard time kind of pushing it through the rest of the way. You get kind of stonewalled with a lot of questions on why you think it can work. This is to keep reiterating what some of the problems are that actuaries have when they're trying to do that solo like setting the reimbursement strategies, without fully understanding how care is delivered.

Just a quick example on what might happen there in that specialist pool. It's common to certainly some of the specialist groups. It's conducive to really capitate them. It's pretty common to capitate cardiology. Maybe it's not very good to capitate the cardiovascular surgeons. There is discretionary versus nondiscretionary type of medicine. So, you might want to capitate the physician who has a lot of discretion. There are those specialists that it is best not to capitate; hopefully, you haven't done that. But again, having your clinicians backing you up and explaining what might work from a reimbursement standpoint, would be very important.

Creating favorable projection scenarios without knowledge of really what the physicians need to do to reduce hospital utilization is difficult. Again, it's difficult when you don't have the physician backup to really explain the details. A lot of times you're sitting up there throwing arms up in the air and just telling them they have to believe it.

That leads to the last point. It's just a huge credibility issue when you go in and work with the providers and don't have the clinical backup to really answer a lot of the specific questions that they're going to have.

So how does that improve when you bring in the clinician? First, physicians understand physicians. You're getting the appropriate reimbursement strategies. You will have set up the pools correctly and the interim reimbursement that had been structured, based on good clinical input and you will not have capped people you shouldn't have and so on. They understand the incentives.

They know how physicians game the system when all these changes are placed upon them. They'll understand some of the things that should be thought of. There is certainly a backlash in the market right now on HMOs. All we're doing is cutting costs. How do we reward those bonus dollars based on quality? The physicians have a better feel for what quality means in the medical profession, and they'll be able to set those parameters or put those incentives in place, so that we're appropriately doing that and not just cutting costs.

Physicians and healthcare professionals provide the knowledge for how to succeed. Again, case management strategies, disease management strategies, and so forth, are very important. You can set up the risk-sharing model and give them the risk deal and the money, but if you don't give them the technology to really succeed, under those type of deals, they're destined to fail.

By having the clinician working with you as an actuary, it's going to help you provide more meaningful analysis so when they start talking about what case management strategies are going to be in place, you can actually work with the clinician to build the more detailed model or exhibit. You could be a little bit more sophisticated with your model and you're bringing a little bit more value-added analysis as an actuary in your presentations.

Finally, the physicians bring credibility. They've got credibility with their physician peers; they've been there and they've done that. For example, I worked with a physician, who had a lot of good experience working in managed care himself, and then went on to manage a lot of large medical practice groups in Northern California. His job there was to take on global risk and negotiate the deals and implement a lot of these strategies to make sure they were successful. Then when he comes on as a consultant, this is the ideal project for him. He has a lot of credibility. When the questions come up, he's able to really communicate very well in the group and really move the project along.

Finally, they provide good education and training to the providers. They can convey the case management, how to succeed, and all the other little things that are important for them to have a happy life under their new career in the managed care arena.

I think you'll find there are pitfalls in trying to bring physicians in and work with you as a consultant though. If we go back to that last project that we just discussed, I would say that particular physician I just described was ideal for that particular project. If you tried to do that same type of project with a physician who never really had that type of experience in managing risk and physicians groups and so forth, or even practicing in a real heavy managed care setting, in doing this same type of engagement, you may lose a little bit of credibility. The physician may not have the right skill set. It's no different than an actuary, trying to do a Medicare feasibility analysis, with pricing work experience on the commercial side only or so forth. The same thing here. You want to make sure that you've got the right clinical fit for the type of engagement you're doing from a consulting perspective.

What's ahead for the future? I think the demand for healthcare services is certainly going to continue to increase. Things like new technology and open access products are extremely popular. They're growing very rapidly. We're going to continue to see pressure on the need to deliver a lot of care. I think that molds well for the actuaries and physicians having to work together. It's almost going to force a marriage for them to work together to understand what the new strategies will be to quantify how these strategies are really going to affect the healthcare expenses. There's going to be a cost to all of these disease management/case management programs that will be implemented, and we'll need to make sure that we understand how that affects the overall health plans or health entities operational cost as well.

Mr. Axene: I'm going to try and go back and give you my side of the story. I tried to work with clinicians. It was a little over 12 years ago. I had a client who wanted to have an answer for a particular problem and they asked me to help them understand how they can get better bed days per 1,000. Prior to that point, I asked the client in California if I could bring out any client I wanted and they would teach him everything. About two months prior to this call, one of these clients decided to do business with a competitor. For some reason my client wasn't too excited to train any more people to compete with them. It hit me real hard that they provided a value to my customer, and maybe I should start to do that. We decided to hire our first doctor, and it really began at the Spring Anaheim meeting at Disneyland. I asked the doctor to come speak with me at the program. We talked about how we can work together and a little bit about managed care.

Well that was a real interesting thing. Little did I know ten years later at an Akron meeting that I would have the chance to talk about it one more time. During the months prior to that meeting, we decided to hire a physician to help us, and we concluded that we just weren't trained appropriately and we were dealing with risks far beyond what we should be getting into, unless we had some more clinical insights. Fortunately, I found a guy who probably could add and multiply faster without a calculator than I could with a personal computer. He was probably one of the most analytical physicians I'd ever met. We concluded that we needed more input and so we went back and we hired 25–30 doctors and nurses who are trying to help us.

Integration of actuarial science and practice of medicine is what we tried to do several years ago. It was obvious that we couldn't do it alone and a good physician or nurse with good analytic skills would be a partner we needed to help fix healthcare systems. Trying to figure out how we can make the healthcare system better is an altruistic journey. We believe that there was significant waste in the system, and without getting the clinical insight, we didn't think that we could accomplish anything. It was really an altruistic trip that turned out to be actually an enjoyable one.

What has been proved? First of all, a problem: Analysis of the health care system showed that there's very little rationale to why services are delivered in a way they are. To give an example, six years ago, we met with a nine hospitals in the greater San Francisco area trying to figure out why they referred things from cardiologists to cardiovascular surgeons the way they did. At the nine hospitals, we came up with 45 ways of doing things. You figured there would be more than that, because there are more than 45 doctors. We found 45 different pathways of care to do identically the same thing for the same people.

We went in and asked doctors why they were doing it this way. Their answer was, that's the way we do it. It doesn't provide a lot of rationale. Now as an actuary, I might answer, "I'm the actuary, I can study anything and if someone helps me understand the whys, maybe I can help people find a better way to do it." I believe that actuaries are perhaps some of the best analysts that exist in the industry today. We probe. We peel back the onion and we try to understand things. All we gotta do is make sure we get the right input, the right tools, and the right ideas so that we can do that analysis. When we get into health care, we don't sit down and talk to the doctors, or the nurses, or the people doing it. It's like all we're doing is playing with numbers. We're really not doing anything reasonable.

If there is no rationale for why the doctors are doing it, maybe the system needs some guidance. How about helping them define what should be done? How about developing guidelines for professional conduct for physicians? I mean, all of you who went through the ethics course, or were old enough not to have to do that, have a book that you get that talks about guidelines and professional conduct. The medical profession basically has never had a set of guidelines for professional conduct.

From the Floor: Dave? I think it's unfair to say that. They would argue that they have a code of ethics.

Mr. Axene: That's true. They do have a code of ethics, but when it comes to why they do certain events on an individual patient basis, they haven't had any rationale for years that would tell why they do that kind of stuff.

From the Floor: Don't they each individually take the Hippocratic oath?

Mr. Axene: Actually, I spoke on a panel with a physician, and he indicated that less than two-thirds of medical schools even require doctors to take the Hippocratic oath when they get out of medical school.

In looking at actuarial expertise in clinical matters, can you actually define best practice? Think about incurred-but-not-reported expenses related to something that you probably know something about. Could you sit down and define best practice to do an incurred but not reported? Now it's quite subjective in certain elements of how you would do that, but probably you could sit down and try to do that. In fact, we had study notes that perhaps teach us what supposedly is best practice. In the medical community, trying to define best practice is a real interesting thing.

What is best practice? Does anybody really care? As long as people are paying all the bills and you don't have very much out of pocket. Does the patient really care? Would anyone change if they knew they weren't practicing it? What we had found is that not everybody cares about this.

From the Floor: People talk about best practice being defined and think of the incurred but not reported example that you gave there. But it seems to me that what really gets defined is minimal acceptable practice as opposed to best practice, especially in medicine. Best practice on the cutting edge, is very difficult to actually define. There are a lot of people saying, I think this is best practice and I think this is best practice. A lot of what they do is try to say, if you're sitting out some place and you don't have the world's best specialist to deal with your problem, what

should we tell that person to do? I look at that as more minimally acceptable practice as opposed to best practice.

You can bring the same problem to two actuaries. Somebody who has a lot of experience will look at it and say, here's the way you should attack that problem. The other one, who doesn't have a lot of experience, will say here are the five methods that I'm going to use and I'll figure something out on the other side.

Mr. Axene: There's a lot of information about best practice that is hard to define and the word best means a lot of things to different people. How about some actuarial analysis to help people find out how much better the system could be? Assume that the system is pretty good today; is there anything that actuaries can do to decide how much better it could be? For example, what if I tell you that the best cardiologist in the world can tell you that they can rule out a myocardial infarction within 12–18 hours. The average length of hospital stay in the United States is close to 6 days? Would you say that if you had one of those, that you would care whether or not they were able to do it in 18 hours versus in six days? So, sometimes we get into this that maybe with some analysis we could actually help people see some targets that they should even look at.

How about developing some results that show the financial benefits of achieving higher efficiency? It turns out that if you're on Wall Street, and you're a publicly traded HMO, becoming very efficient in your care gives more money to shareholders. So they sometimes like to give more money to shareholders to drive the stock price up. A capitated medical group might like to be more efficient, so they can make more money on their capitation. It turns out that a hospital on a diagnostic related group (DRG) basis might like that shorter length of stay so they can make more money on the case rates. Perhaps by linking the actuarial things together with the clinical things, you can find ways of helping people achieve what they want out of life.

How about helping customers best practice? How can they get to where they really want to be? We have found that as we explain things to customers, they actually like higher levels of managed care. The reason is, as someone was stating in the session earlier, that the patient knows that somebody is caring about them and actually working through the process and giving them reasonable expectations. It turns out that if the doctors and the actuaries work together, you have a better chance of doing that. You might ask, is there a measure of efficiency that can compare multiple environments by doctors and actuaries working together and I think there is. We call it degree of healthcare management (DOHM), which is a measure of how efficient a system can become. Think of a spectrum where the far

left is zero and the far right is 100 and we're going to place somewhere on that system, how efficient things are. It turns out that between those two extremes, you can actually position organizations and draw curves where the middle line is what the desired or target PMPM might be for a particular community.

It's one thing to do some actuarial analyses; it's totally different to validate them with clinical findings. It's real interesting that the only people who can really change the system are the doctors and the other allied providers. When you get them to understand what's going on and educate them to see that things could be better for them and the public at large, then can you really see an opportunity for change. What I'm seeing is that a lot of actuarial analyses fall flat. Working together with the clinicians is refreshing, you can work together to get the answers you need, to see the biggest change.

It's possible to independently validate results from a clinical review. In fact, we do this all the time. We call it chart reviews, where we actually go out and have doctors and nurses look at patient charts to compare the analysis. By doing this side by side, you can validate each other's work. For example, I've gone out after a clinician has been there and where the clinician has said, there's 30% waste in the system, and I've independently done actuarial analysis and verified that it's about 30%. It is not always 30%, but it'll be very close. I've also gone out and done actuarial analysis, and had a clinician follow me in and be able to independently, without any bias, show it's about the same number that I came up with, and we have seen it back and forth.

Clinical chart review results show comparable, results to the actuarial analysis and in fact, help physicians understand what needs to be fixed in their practice to achieve the ideal result. Can you imagine what a doctor will do when I say, you can be at three days length of stay instead of four? They usually ask the big question, how? The clinical chart review actually shows them, patient by patient, what you would do differently, day by day, to actually accomplish that reduction in length of stay. When a doctor can see what can be done, they can then change their practice. They can't do it from just an actuarial table.

My definition of quality is, "finding out what's wrong with the patient as quickly and as efficiently as possible, and fixing it as quickly and as efficiently as possible." In other words, when you fix it, you have a good outcome automatically. Personally, I think that I would like a doctor to find out what's wrong with me as quick as they can, make sure he or she is right as quick as possible, and fix the problem as quickly as possible.

Now the American Medical Association's definition of quality talks about a common good outcome. It does not include efficiency. But I think the rapidity by which you solve the problem and get the right answer, is probably the best definition of quality that exists.

The specialty societies, especially surgeons, accept this already today. The American College of Surgeons in particular, in their mission statement, talk about this efficiency by which you get to the back end of solving the problem as being a strong, idealistic goal that they shoot for.

Some of you perhaps haven't thought about this, but the good news is that quality and efficiency are converging items. The more studies that I've done to study quality and the more studies that I've done to study efficiency, I have found that approximately 90–95% of the most efficient doctors have the highest quality, and 90–95% of the highest quality doctors have the most efficient results.

Think of an internal medicine physician who is trying to find a needle in the haystack. It's called doing a lot of tests. A highly skilled, highly competent one will find it quicker than one who really doesn't know what he's doing. It's back to the example Tim gave earlier, about a person who has only done commercial rating, trying to do a Medicare risk contract. If you have never done an incurred but not reported before, or if you have never done a Medicare risk contract before, it takes you a few extra minutes to get there. But perhaps the best one to do that is one who is familiar with the process and has done it many times. What we found is that's true in medicine too. Those who know their stuff the best can get to the end the fastest, not sloppily, but appropriately. Since quality and efficiency are strongly and positively correlated, it turns out that you can focus on one and almost accomplish the other because of the strong correlation between the two.

We have found that as we improve efficiency, we're actually improving the quality of care. It turns out that we often get criticized within our organization for focusing too much on efficiency and not focusing on quality. But essentially, if you really study it carefully, they are basically euphemisms for each other. It's true that there are some people so efficient that they're worthless, and there are some people that focus on so much quality that they cost too much. When you look at the macro material part of that, it turns out that you'll find that there is a homogeneity between the two extremes, that you can work with and you can almost approximate one by the other. We found that to be a very demonstrable tool.

So what did we do? We tried to find, codify, and clinically define best practice. I will define what I think we mean by best practice, and Jim can clarify that. We use

the phrase best observed practice. We actually try to find it where it's happened. We look for good outcomes. We document that. We write it down and codify it and we call that a guideline. This took the form of practice lines or tools that commissions would listen to. These were designed and developed, so that doctors could find a pathway, to help them through the maze of the healthcare system. We then did our actuarial thing by developing actuarial models to help people know what it would look like if we ever got there. That's often called the well-managed model or the highly managed model. How many bed days per 1,000 could I do? For the idealized patient, that recovers the quickest, with the fewest complications, you can define that. You find when you go through that analysis that a significant portion of our consumption of healthcare today is medically unnecessary. This is not from actuarial analysis. This is from clinical analysis and then taking it and compositing it all together, actuarially, to find out what the impact will be at the aggregate level. It makes sense to some people, but not many.

It turns out that you can measure this as you compare systems to it. You can quantify it so that you can see what it would mean to somebody and you can fix as many of these as you possibly can to help people get to these idealistic goals. Based upon some consulting that we were trying to do in Canada, we have found that until people care about the money, there isn't very much work to do.

In the U.S., we have HMOs that want to make money. We have carriers who want to make money. We have doctors who want to make money. We have employers that want to save money and as long as somebody cares about the money, it works well. In Canada, those who control the system don't have any incentive to improve the system. Those who have the incentive to improve the system are the government. They push off all the management to others but don't give them any incentives to fix it, and it's real interesting to find that Canada has actually more waste in their health care system than we do in the states.

Jim Schibanoff is going to describe how physicians look at today's healthcare problems and how actuaries fit into that perspective.

Dr. James Schibanoff: What I'd like to do is talk about the physician's new world, which is in some ways, a summary of what we've heard from Tim and Dave, as well as some other thoughts that I've developed over my career that is about 25 years in healthcare. I practiced pulmonary medicine, critical care, and internal medicine for 18 years. At the age of 50, I had a mid-life crisis and became chief executive officer of two hospitals in San Diego, which were both on the critical list. For the past two years, I've been working with Milliman & Robertson and principally in guideline development. I have a lot of experience to bring to our discussion.

Now looking at the physician's new world, I think this is one of the major developments. Physicians have been used to competing with each other for patients. They're not used to coming together as a group and competing for groups of patients. They're not used to competing for contracts. The idea that 25% of their practice could go away if they lose a contract is foreign to them. It's frightening and threatening from both the clinical and financial standpoints.

As we've alluded to, there is a new definition of quality. Whatever that new definition is, it's an objective definition. The old definition was subjective. In general, quality was how I practiced medicine. It was what medical school I went to, what hospital I'm affiliated with. It wasn't how well I actually delivered a service or created an outcome. The old definition relied on what we call "structure and process variables" like where I went to medical school, how many board certifications I have; those kinds of things. It didn't relate to what kind of outcome I achieved for my patient, or what kind of an outcome we created for a group of patients. In the early 1990s, the Institute of Medicine looked at somewhere between 80 and 100 definitions of quality and came up with the definition of "quality is the ability to achieve an optimal outcome," which I think is a good general definition, except that it doesn't include the efficiency component. I think a definition for 1998 is "the ability to achieve an optimal outcome at an optimal cost."

Now what that outcome is, is all over the map. It could be mortality rate, or functional status 50 years from now. Those outcomes vary depending on whether you're a payer or provider. The whole issue of outcomes is very broad. I think the definition of quality clearly hinges on the ability to achieve optimal outcome at a minimal cost.

With new thinking about the definition of quality, there are new methods of quality. The old method, which was practiced in most hospital medical staffs and probably still is in many facilities, is looking in review at one patient at a time to see what was minimally acceptable. This was, as I said, in most hospitals, the quality review process. You look at a chart that may have fallen out because of a death or complication, and you say, does this meet the minimal standard of care? If it's the minimal standard of care, then it passes. It's one patient at a time; it's not looking at aggregate groups of patients.

The new methods of quality, I think, are what we would describe as continuous quality improvement, as articulated by Don Berwick and Paul Elwood, the two leaders of the American Quality Movement. That is looking at aggregate groups of patients, benchmarking for best practices, looking at process improvement, and improving the process as opposed to finding that bad apple. The number that I

think is most widely cited when you have a healthcare problem in an outcome is about 80% of the time it's due to a process problem and about 20% of the time, it's due to an actual physician mistake. So in most cases, it's a process problem as opposed to a bad doctor. I think a very important way of getting at physicians is talking about how to improve processes of care, as opposed to identifying that bad doctor. The bad doctors are there, but there aren't that many of them.

There has been a lot of thinking in the last decade about how physicians actually change their practice? How can you take them through the change process? I think most people look at a series of five different options. The first is incentives and rewards; you've heard from both Dave and Tim about creating financial incentives for physicians to change their practice. I think, in general, those financial incentives are extremely controversial. Do you reward physicians for giving inadequate care? Financial incentives are powerful, but they're not the only incentives to get physicians to change their practice. An incentive might be to see what we can do to retain this contract. An incentive might be, let's see what we can do to help the hospital remain financially viable so that my practice that is connected to this hospital remains viable. I don't want to relocate to another hospital ten miles away. There are a number of incentives that you can call on that aren't directly related to the distribution of a risk pool.

Punishments, disenrolling physicians, and those kinds of things, should be a last resort. Administrative changes can be looked at, for example, if a particular pharmaceutical is being over prescribed, and it's not necessarily an efficacious pharmaceutical, you just take it off the formulary. That would be an example of an administrative change. Continuing medical education is a powerful tool for change, but that in and of itself, generally doesn't produce sustained change. You need to have the feedback component of the change process. So you go through the educational process and then you monitor the new practice and give physicians feedback with data. This is where your role as actuaries comes in.

Over the years, I have a lot of experience in dealing with physicians and aggregate data. Physicians go through a fairly predictable sequence of how they relate to aggregate data. First of all, they say, as we've said earlier, that data are really not relevant because every patient encounter is unique. "I take care of one patient at a time; why would you want to show me how all the patients who had hip surgery have done?" When you get past that, you might hear, "It may be relevant, but my patients are sicker." That's a very common response, and there are two answers to that.

When you're dealing with large populations of patients, those differences iron out. More importantly, if you use the data as an improvement tool, as opposed to a

punishment, it doesn't matter if your patients are sicker. You just want to improve these outcomes. I'm sure you get sent all the real tough cases, but let's see if we can improve these outcomes by 20% over the next year. If you use data as an improvement tool, you can overcome this severity issue. I personally find severity systems very difficult to use, and you end up having lots of arguments about whether this severity system is better than that severity system. It's better just to ignore it if at all possible.

Then you have the physicians who think that this data may have had some use, but there are lots of problems with the data. It really has a lot of problems, and you have to kind of get beyond the issue that, you'll never get perfect data. If you can help with the definitions of what you want, then you can get good useful data that will probably never be perfect.

Then the last big hurdle is, "This is good stuff, but, we need to keep this stuff closely held because if we release it to the greater medical community, the lawyers will get it and they're going to sue us." That's a common issue. The way I've dealt with that is by saying that the newspapers, and my example is *The Los Angeles Times*, knew and printed more information about my hospital than my own physicians knew. You get beyond that. Finally, you get to the point where the doctors say, give me more stuff. Then the shoe is on the other foot, where you need to produce good data. You get into the issue of whether this is nice to know or whether you need to know that. You have to get into the prioritization issues because it's costly.

With that background, I thought I'd give some examples of how physicians and actuaries work together. One, as Dave has alluded to, is in guideline development. Are these results clinically appropriate? There are a number of examples I could cite. We're looking at what the best achievable length of stay for a Whipple Procedure is. The Whipple Procedure is a major operation for cancer of the pancreas, where you not only take out the pancreas, but you take out several associated organs, and you do a lot of hook ups. We have really two data sources. One small hospital along the Hudson River in Dobbs Ferry, New York, has a length of stay of eight days. A major northeastern University teaching hospital that publishes widely has a length of stay of 12 days. Which one do you use? That's the question.

A major medical center, let's say the University of Chicago, has a length of stay for total prostatectomy of one to two days with excellent results. Are they doable elsewhere in the country? Another question is outpatient mastectomy. Back in 1993, when only 1% of the mastectomies done in the United States were done as

an outpatient, was that something that was doable? Did we need to anticipate? Was that 1% that was doing outpatient mastectomies the fringe?

These are the kinds of questions that we deal with every day in terms of developing guidelines and associated actuarial models. Dave talked about chart reviews as a validation process. To summarize, they help to assess the current degree of healthcare management, identify opportunities for improvement, and can be used as a basis for cost models. Here are some examples. These are the most common things that are found. Patients on review really didn't need to be admitted to the hospital. There were logistical delays. You asked for a consultation from a heart specialist one morning and he didn't show up until the next afternoon. That's a potentially avoidable day. It might be a delay in service. That heart specialist may schedule a catheterization which couldn't be done on a weekend because the catheterization lab is closed on the weekend. Then there are discharge delays, keeping the patient in the hospital after they have reached a point of stability. The most common reason for delays is in the discharge and the failure to move to the next level of care.

In many systems, we find that half the days are potentially avoidable. Here's an example of how actuarial and clinical expertise works together. An eastern HMO with 200,000 commercial members has had a good experience, I'd say. Their bed days per 1,000 are 154. They felt that they could do better. They set an objective of reducing the bed days by 14. By going through a chart review process, an analytical process, they determined that they could reduce their medical days by six, surgical days by four, and also make reductions in a couple of other areas. They didn't think that they could reduce their mental health days. They had a target this year of 140 bed days per 1,000. The cost of doing this, of hiring more case managers, and doing more home care was \$500,000 but they project a savings of \$3 million for those 14 bed days per 1,000 saved. Thus far, they're on track for 1998.

Disease management is the great prospect for the future. I think the great criticism of managed care is that it has managed price and it hasn't truly managed care. I think that's where many of the problems come up. If we look at Jeff Goldsmith's "Three Stages of Managed Care," the first stage is managing price, the second stage is creating value, and the third stage is actually going upstream and changing the nature of the disease process. The promise that disease management holds, is looking at populations of patients, and doing interventions that actually promote health. I think the best example is diabetes mellitus. If it's managed properly, you can reduce long-term complications by at least 50%. This is that convergence of quality and efficiency that Dave has talked about.

Asthma, diabetes, congestive heart failure, AIDS, end stage renal disease, and hypertension are some examples of how disease can be managed much more proactively to improve outcomes and cost.

This process is one that actively involves the actuary, and it's a very logical process driven by data and by the quality improvement principles, formulating a clear definition of the disease and developing a comprehensive baseline information set. The key role that you have is generating specific clinical and economic questions, critical appraisal, evaluation, development of guidelines, and creating a process or a system for process and outcome measurement. They must be reported and implemented. At the completion of the project, look at the results and continually refine and improve it.

Here's an example from asthma. These are the kinds of parameters that we can look at in the aggregate. We use flow meters. Flow meters can be used at home to measure the day-by-day condition of asthma. It will measure how rapidly you can expel air from the lungs in a condition where the airways get blocked by spasms of the muscles. A percentage of people are on maximal steroids or are getting optimal therapy. A percentage of people get flu shot prevention or have case management. Look at the number of emergency room visits per 1,000, the number of hospital days per 1,000, costs on a PMPM basis, patient satisfaction, and a measurement of health status. If we look at the benchmark, we would have high use of home monitoring, high use of the most effective therapy, high use of flu shots, and a moderate number of patients that are case managed. There would be a small number of patients that need to go to the emergency room or actually get admitted to the hospital. You have to think of hospitalization in asthma as a failure of outpatient therapy. You really shouldn't have people admitted to the hospital. They should have been treated at the onset of their symptoms, not when they reached the crisis stage.

Cost and then the satisfaction measures. It is somewhat high to have a benchmark of 30% of the patients who have poor satisfaction. But this is just one example of how aggregate data can be used to improve care. The opportunities for improvement are using flow meters, getting patients to use their medications more effectively, getting flu shots, and having a greater number of patients case managed.

In conclusion, I think the formula for success for a physician is the physician's ability to collaborate with all the other important people in health care. I take a little issue with the statement that at the heart of medicine is that doctor/patient relationship. I think that's important, but I think it leads to behaviors that tend to

exclude other very important people in the healthcare system including nurses, pharmacists, therapists, and certainly not the least of all, actuaries.

Mr. James Edward Oatman: It seems to me that we've got great academic medical institutions in this country, and this whole issue of the variance in practice and different outcomes has been known for a long time. Those very same medical institutions do a lot of research on finding new ways to treat disease. Why have they not been leading the charge on the best practice guidelines and do we, as actuaries, need to do more in trying to focus our attention on partnering with some of these leading academic institutions, so that they really get on the bandwagon of developing better practice guidelines and educating doctors around this whole concept? It seems to me that there is a big gap there, in terms of even where medical education today is going.

Dr. Schibanoff: I couldn't agree with you more. I don't know why research on cost effective efficient medicine isn't more highly valued. When you look at the medical literature, there's really a paucity of literature about efficient healthcare. There's a lot more literature about a new medication or a new technology, than there is in the optimal number of days of hospitalization for mitrovalve replacement.

There is a wealth of information out there that needs to be analyzed, and I think that we could do a great service to American medicine by doing exactly what you say.

Mr. Axene: I agree with what you said, and that's part of the reason we wanted to have this session. Unfortunately, there is inertia to stop this movement, because it's introducing change. The issue that we find is that managed care is being subjected to a much higher standard of demonstrated evidence than current practice is. I mentioned earlier that less than 25%, and probably closer to 20% of what goes on today can be supported by double blind, the highest level of evidence type studies. Large, public bodies are wanting to require HMOs and managed care companies to have 75-80% be demonstrated by the highest level of evidence. It's an unfair playing field right now, and if you didn't have to change quickly, you probably wouldn't either. I think that they're just responding to this financial self-interest curve that I talked about earlier in a way that we would probably respond if all of a sudden we had to be capitulated as actuaries.

Mr. Walter H. Hoskins: I work almost exclusively in managed care and we all accept the general truth that we have to have properly aligned incentives for physicians. I do have one concern and that is, as far as I know a lot of physicians are signed up with dozens of health plans or their groups are. Is there any real impact that one health plan has on a particular physician? In terms of their guidelines, all these things sound fantastic in theory, but if they're only 1 of 12

companies, where does the impact really come in? This is a perfect panel to ask because you all deal with physicians. Is there any real impact of a particular health plan, even if it has perfectly aligned incentives or punishment feedback in the real world?

Mr. Feeser: I guess it breaks down to two different markets, a more mature market versus a loosely managed market. If we go to a mature market, where the physicians are exposed to the different health plans as you've said, more often than not, they're interested in taking the dollar. They know how to do it and they know the strategies. The physicians will look at the risk deal they've signed with each plan and certainly become more of a marketer per se of a health plan from time to time. They hope that more patients are in that health plan because when they do a good job, they make more money. I think that's potentially an issue.

Mr. Axene: I have found that you have to really go back to your core values and ask the question, why we're doing this in the first place? I think that I have seen many of my clients develop what I call value-based management objectives. It does not matter, if we can do a whole lot in the community. What really matters is whether we can take care of our patients appropriately and do the best for them. If you really believe that you're improving the quality of care, it doesn't matter what the other guys are doing. Now, there is the practical situation that until you're probably close to 7.50% of the doctor's practice, you can't control them. The whole education process is one where you actually try to change the behavior of the doctors by working with them. I would say that the most successful clients that I see in their particular market ignore the true global effect that they're going to have because these same doctors work for the other plans. They're probably going to help the competition be better at it too, but in the grand scheme of things, a little bit done here and a little bit done there, will actually improve the quality of the overall system. I think there's enough altruists out there, to actually focus on that and the benefits come down the road. Occasionally, you'll see a radical swing in membership, when everybody will go to this plan or that plan, but that happens very rarely. People can sleep well at night knowing that they're providing high quality care.