RECORD, Volume 27, No. 1*

Dallas Spring Meeting
May 30–June 1, 2001

Session 61PD
New and Improved Managed and Unmanaged Care: Reimbursement Models and Disease Management Programs

Track: Reinsurance/Health

Moderator: MARK RICHARD TROUTMAN
Panelists: JANE L. JOHNSON†
MICHAEL GERARD STURM
ALAN W. WINSTON‡
KURT JAMES WROBEL
Recorder: BRIAN DALE SHIVELY

Summary: Panelists discuss the following managed care topics:

- *Design issues/pros and cons (e.g., self-directed health-care model)*
- *Provider reimbursement methodologies*
- *Consumer and regulatory issues*
- *Insurance and reinsurance pricing and underwriting issues (including per diem excess, carve-out excess, aggregate, etc.)*
- *Catastrophic claims*
- *Risk-based capital repercussions*

MR. MARK RICHARD TROUTMAN: "New and Improved Managed and Unmanaged Care: Reimbursement Models and Disease Management Programs," why did I choose that title? Well, first of all "New and Improved," fits because managed care, like household products, always has some feature that is new and improved. "Managed and Unmanaged Care" is really the subject at issue, and we will approach it from two different perspectives. "Reimbursement Models and Disease Management Programs," are the two perspectives that will be provided by two reinsurers, who will talk about how they support a payer, a risk taker, and a provider of value-added services. We will also hear the perspectives of some people who support entities that are involved in defined contribution (DC) or episode of care models, and the consumer is the employee who is purchasing health care. I work for Summit Re, which is a reinsurance intermediary broker specializing in HMO

† Ms. Johnson, not a member of the sponsoring organizations, is a manager of the ROSE program at ING Re in Minneapolis, MN.

‡ Mr. Winston, not a member of the sponsoring organizations, is Second Vice President and a manager of the Health-Care Division at Employers Reinsurance Corporation in Overland Park, KS.

Note: The chart(s) referred to in the text can be found at the end of the manuscript.

excessive loss reinsurance. Our reinsurer is Employers Reinsurance Corporation (ERC). The recorder today is our chief actuary, Brian Shively.
We'll start with Jane Johnson. Jane is not an actuary, she is the manager of Medical Management for ING Re in Minneapolis and she is responsible for the overall management of the ROSE program, which is a trademark program. This program consists of case management consulting, claims management, and research and program development. In addition to critical care nursing experience, Jane's background includes care coordination and directing and managing the home health agencies and sales for a large HMO. Jane is a registered nurse and holds a B.S. from South Dakota State University. She is also a certified case manager and a member of the Case Management Society of America. Jane has made several other presentations in the recent past, including topics related to "HMO Senior Health Plans," "Transitional Care as an Alternative to Acute Hospitalization," and "Practical Solutions to Personal Conflicts with Health-Care Access." Most recently she has made presentations on "How to Obtain Provider Excess Coverage," and "A Reinsurer's Perspective on Case Management." Jane will focus on catastrophic case management, trends in health care, case management approaches to respond to those trends, and coverage determinations for new technologies.

MS. JANE L. JOHNSON: My comments will focus on the medical end of things—the cost of procedures and what we have done at ING Re in terms of looking at some of our claims costs. I'll talk about managed care versus unmanaged care, cost comparisons, some of the drivers of cost that we're seeing in reinsurance, reinsurance trends, and then some approaches to manage the risk.

A well-managed HMO has an average cost of $150 per member per month (PMPM), of which $29 is inpatient only costs. That's compared to a loosely managed HMO with an average cost of $220 PMPM, of which $56 is inpatient-only costs. You can see that there is a lot of opportunity to really decrease your costs if you manage the care well with catastrophic claims.

Technology is a big driver of cost. Every year there is something new coming out. Something that is standard therapy today was experimental five or ten years ago. One of the large areas is transplants. First-year costs for liver transplants average over $240,000. For every average, there are always those outliers, those cases that go bad, such as multiple organ failure. We had billed charges on a liver transplant that was in excess of $2.7 million; the plan ended up paying $2.3 million. Small bowel transplant is probably the most expensive kind of transplant with a $470,000 first-year cost. It is now Medicare-approved for certain diagnoses. Average first-year bill charges are more than $300,000 for heart transplants. With heart transplants you get into areas of bridges to transplantation with ventricular assist devices. Charges for those can be around $4,000 per day inpatient in intensive care units. People can also be maintained at home on these ventricular assist devices, which is not quite as expensive. They are also being developed for long-term use. At Columbia University, they are estimating that the average first-year cost of long-term left ventricular assist device use as being more than $220,000. A new area is liver dialysis, but I was not able to get cost information on that procedure.

Another driver of costs that we are seeing is drugs and blood components. Drug expenditures are rising more rapidly than other health-care spending. There was one study done of seven different diagnostic categories over a 3-year period of time, and it showed increases in cost from 43% to 219%. The 219% was in hormone replacement therapies for diabetes and asthma. One of the most expensive drugs that we are seeing is Cerazyne, which is a drug for Gaucher's disease, which is a problem with metabolism where you basically are missing an enzyme. That therapy can cost $170,000 to $340,000 per year. Another expensive drug is Remicade to treat Crohn's disease, which is an inflammatory bowel disease. That drug runs around $62,000 per year. Chemotherapy both for cancer treatment and for HIV treatment is also expensive. Cancer treatment can be around $42,000 a year; HIV treatment averages around $15,000 per year in drug costs. In both of these circumstances, you run into problems with anemia and immunosuppression where the body is not able to fight off infection. Drugs that treat anemia can add another $45,000 per year, and the drugs that treat immunosuppression and prevent infection can add another $80,000 per year.

Total parenteral nutrition (TPN) charges run $50,000 to $150,000 a year. Hemophilia treatments average $125,000 per year, and the factor products themselves make up about 90% of the cost for care of patients with hemophilia. Another problem is that patients may start to build up a resistance to these factors and require an anti-inhibitor product. At $500,000 to $1 million a year, these drugs are very expensive.

Another area driving costs in health care is mandated benefits. By 1997, at least nine states had mandated bone marrow transplant benefits for patients with breast cancer, even though the medical data was not out there to support that. In fact, it has been proven recently that it is not any more effective than standard therapy.

Another mandated area is with infertility treatment. The problems that you get with that are an increased likelihood of multiple births and increased prematurity rates. Multiple births with fertility treatment are 35%, of which 85% are twins and 15% are triplets or higher. That compares to just an overall general population multiple birth rate of only 3%. When you have multiple births, you have increased incidence of prematurity; the rate for prematurity in triplets is 90%. There was an extensive review done of all U.S. births between 1990 and 1995, and that showed that 25.8% of twins were born prematurely as compared to only 3.2% of single births. In that study, they define prematurity as less than 35 weeks gestation, while the typical way of defining prematurity is less than 37 weeks.

Another factor that we are seeing is related to more informed consumers because of information that is available on the Internet. There was a study done in 1997 that showed that 43% of Internet use was for health information and treatment options. Direct advertising is another factor. You can't open a magazine or look at a TV program without seeing advertising for drugs; probably the most notable is Viagra. Patients are coming with a lot of information in their hands to the doctor's

office and they are saying, "This is the treatment that I want." That makes it very difficult for physicians.

Another issue is our litigious society. I think everyone is very well aware of the 1993 *Fox vs. Health Net* case where there was an $89 million award. We do not know what the eventual settlement was, but that was another bone marrow transplant for breast cancer case. A lot of our health plans were covering the procedure as a fallout from that, even though it was not medically proven to be more effective; they were covering it with the rationale that they could afford the $150,000 to $200,000 procedure, but could not afford $89 million.

Another area coming into play is the aging population. It is stated that the elderly account for 40% of short-term hospital stays and 50% of professional health care's time. It is estimated that this effect will be most heavily felt between the years 2011 and 2030.

Chart 1 shows some of the trends that we are seeing. We looked at all of our claims costs at ING Re between 1997 and 2000, and it was found that almost 70% of our claims costs came from seven different major diagnostic categories. They were: (1) pre-term births, (2) cancer, (3) cardiac, (4) pulmonary, (5) congenital defects, (6) bone marrow transplants, and (7) hematologic diseases. You can see that pre-term births are consistently our highest cost. Cancer has consistently increased in large part because of the chemotherapy that has been in use. In 1997, that was only 4% of our reinsurance costs; in 2000 it was about 12%.

Another trend that we are seeing is the demand for more comprehensive coverage. HMOs historically have requested inpatient-only service coverage. Now they're asking for outpatient, including hemodialysis, chemotherapy, and high-cost drugs.

Case management is certainly the gold standard when considering approaches to manage the risk. Most plans have their internal case management programs. There are also external case management programs out there with freestanding case management companies. Many of the reinsurers have case management programs to assist their clients, and, as Mark mentioned, ours is the ROSE program. It's been around since 1984. We have health service consultants who do business consulting and a lot of research and case management consulting for our clients.

Another area that has become more popular within the last five to ten years is disease management. Most recently it's been shown that rather than trying to manage every member that you have with a certain disease, it's much more cost-effective to concentrate on those with a particular severity or some other co-morbidities. For example, do not focus on all of your coronary artery disease patients, but focus on those that have coronary artery disease and diabetes.

Another area that has a large ROI is perinatal management. Any time that you can prevent a premature birth, you are saving hundreds of thousands of dollars. The average cost for a 24-week premature infant is $290,000; daily neonatal intensive care costs average around $4,000. We have seen costs exceed $10,000 in

neonatal intensive care units. I found data that showed each week gained in gestational age saves $16,500. If you're at one of those really high-cost facilities, it can easily be $70,000 just by extending that pregnancy by another week. Another area where there's a big difference in cost when you manage early in the disease process is hepatitis C. If you are managing a mild case of hepatitis C, the cost is $700 per year. If you are managing a severe case, it is more than $15,000 per year. The end result is when you get liver damage and end up with a liver transplant, and then you are looking at more than $200,000 per year.

Claim management is another area that is effective in managing your risk. With contracting, we recommend per diems or case rates whenever you can get them. Also, use provider networks such as transplant networks. Then incentivize your members to go into the network by having a cost differential in your benefit. United Healthcare recommends that there be at least a $10,000 out-of-pocket expense to steer patients into a network.

Another tool that plans and reinsurers are using is carve-outs. This is where you have an outside entity that's taking over the risk, for specific conditions such as transplants, burns, spinal cord injuries, and traumatic brain injuries. We have seen that to be effective, especially if you don't have the infrastructure yourself to be able to manage that risk. We have also seen where it can be more expensive that way, especially if you are looking at a disease process or an injury process that's predictable, such as a spinal cord injury where you have a certain level of injury and rehabilitation.

Another area that's important in managing risk is having a process for technology review and coverage determination. A standard process is followed for every case and there are third-party expert reviewers, especially if the case is going to appeal. Hand in hand with that is the clear contract language, both for the primary insurer and for the reinsurer. If you have ambiguous language, the courts will side with the plaintiffs.

MR. TROUTMAN: Those of you who have been involved in managed care know ING has been one of the leaders in that market for a long time. Next is Alan David Winston of ERC. Alan is in charge of the ERC managed care programs, branded ERCMC. Before joining ERC in 1995, Alan also worked at and co-founded various organizations, including U.S. Health Care, Paradigm Corporation, and Health Care of Texas, among others. Alan has probably forgotten more than most of us have learned about the HMO business. Alan is going to focus his presentation on the discussion of two of an actuary's all-time favorite risks: frequency and severity. He will also talk about something he calls process risk. He will focus on outcome-based demonstration of savings and ways to offer incentives for the use of programs, so you may see an analogy to a front-end or a back-end load mutual fund. You have to offer an incentive on the front end or the back end.

MR. ALAN W. WINSTON: Thank you. What I'll be talking about will be similar to what Jane has already referenced, so Jane and I collectively are trying to take a reinsurer's perspective for this presentation. What I will focus on is the risk types

that we and other reinsurers look at, and also how technology is helping us get knowledge of the risk faster and manage it faster.
The risk categories that we look at are severity risk, frequency risk, and process risk. Very simply defined, severity risk includes things that are very low frequency but high cost. That represent 80% of total costs when looking at our exposure. We look at frequency risk as a primary carrier would. I think that reinsurers now are looking at both of these risks as a primary carrier would. Using differentials in treaty coverage terms, reinsurers try to encourage customers to allow the reinsurers' managed care programs to be part of their specialized managed care and operating platform. It certainly bodes well for the loss ratios from a reinsurance perspective, but also for the loss ratios of our customers. We really want to add more value down the chain, and it works well. The best way to manage risk is at first dollar. The most difficult way to manage risk is waiting for the claim to get anywhere near a reinsurance level and then trying to change the continuity of care. This latter approach has certainly not been as successful as it might have been, and it's also very disruptive to the patient.

The third risk is what we are defining as process risk. Breakdowns in process run everywhere from pre-certification to enrollment eligibility, as well as paying a claim. We find as reinsurers that those risks get rolled up into spec claims at the reinsurance level. You might have a reinsurance claim that could be defined as a high-risk maternity or a high-risk birth. The claim from a clinical standpoint followed the proper protocols. But from a process standpoint, because of a breakdown in the claim process, breakdowns in coordination of benefits (COB)/subrogation coverage, or a breakdown in just the process of doing business, something caused the claim to hit the reinsurance level. Those are things that we're looking at now.

Most reinsurers are looking at transplant management and catastrophic injury management, which involves trauma, burns, head and spinal cord injuries, and neonatal management. Premature births are absolutely a high-visibility item now. They have tripled in exposure in our managed care programs. We and other insurers have programs that handle those types of catastrophic risks such as Cardiology COE, the Center of Excellence network. Again, trying to prevent a premature birth is certainly worth the investment because the cost differential is huge.

On the frequency of risk side there are managed mental health programs. That's usually done on a capitated basis. A national provider network or PPO network is another tool that is used. Cardiology disease and management is an area where you really want to go after chronic illnesses and identify patients with a chronic illness, especially where there is a co-morbidity. A cardiology patient who is managed properly will rarely hit a spec level with the use of medication and proper management. End-stage renal disease (ESRD) is something somewhat new. Obviously, plans in the federal government or industry have allowed us to pick up another 12 months of that exposure, so the primary carriers as well as reinsurers are looking at programs to get their hands around the ESRD claims because they will certainly eat into their loss ratio.

Hemophilia management, or biotech drugs for hemophilia disease management, is a program that can save significant money. There are only 10,000 hemophiliacs in the country; however, the cost is huge.

Diabetes disease management, especially coupled with cardiology, is well worth the investment and research. Ceredase is for treating Gaucher's disease. There are other biotech drug therapies as well. There is Flolan for treating pulmonary hypertension. These are drugs that cost hundreds of thousands of dollars per patient per year. It's not just the discount on the drug, but it's an entire education program that drives the management of that disease and the management of the administration of that drug from the families through the physicians, and it works well.

Oncology disease management is probably self-explanatory, but absolutely needed, especially when you have cancer patients who develop cardiac problems through chemotherapy. It's certainly a way of being able to keep your hands around that risk.

The last two areas are process risks. The first one that you want to look at it is case management. Traditional case management coordinated with a good pre-certification program, a concurrent review program, and a continuum of care is one program that will yield excellent returns. We certainly found this true at ERC, and I know other reinsurers and primary carriers who have found the same positive result.

Non-network cost containment programs and the coordination of care are self-explanatory, but frequently overlooked. HMOs typically are good at being able to manage claims within their network, but struggle with out-of-area situations. This is a feature that traditional insurance companies do very well, so we'd like to bring this to the HMO block of business to start driving better savings and better bottom-line results.

How do you go about controlling process risk? If you look at the beginning and the end of what happens in a health-care transaction, there are several different disparate systems that run simultaneously and rarely talk to each other. You are probably all familiar with these on an individual basis, but what does it mean when you are trying to put it all together? Eligibility should be making sure there is coverage. Managed care contract compliance tests shouldn't be an issue if the contract between the provider and the payer was complied with during that transaction. What was stated in the contract? Was it paid and was the care paid for properly? If there was a PPO network in place, were those services used properly or were they used at all? Were the CPT codes matched with the proper ICD-9 codes? Was there a check for upcoding? An example of upcoding is trying to make a simple office visit or a simple procedure more severe in order to generate more revenue. Medical disease and catastrophic management need to work together. Has drug data been looked at when evaluating the total cost of a patient? Are drugs being used properly? Is there abuse with regard to prescription drug dispensing? Is the coordination of benefits (COB) and subrogation aspect of processing working

properly or being used at all? I'll give you an example. The primary carrier wanted to reduce their backlog in their claims shop. To reduce a turnaround time overall they turned off the COB switch until they saw their loss ratio start to creep up. They realized 18 months later that they were not running their claims through their COB and subrogation process. Those things need to be looked at regularly.

You should check for duplicate payment edits in the claims process. Is a health carrier bumping up against its disability carrier's files or its workers' compensation carrier's files to see if there is double-dipping by providers? Is the pre-certification and case management program lined up to bounce against the claims system? For example, there is a length of stay approved for five days in the hospital, but the provider and the hospital bills for ten. The claim system pays ten anyway. In another pre-certification system, the case managers did a wonderful job at getting the providers to agree to a five-day length of stay, but the hospital billed for ten days and the claims system paid ten. So is there a link between the claims system and the pre-certification and case management system? Is there a benefit plan in place, and is that followed in the claims process? Is there a benefit plan in place and incentivized by the beneficiaries of the patients to stay inside of the network? All these probably work well for their piece of the process independently, but managing process risk concerns all of this combined. Do all the different disparate systems talk to each other? Fortunately, technology today is allowing that to happen. We've looked at different vendors around the country. Some of them were based on an ASP platform and some get into a Legacy system and hard-code programs to allow other disparate systems to talk to each other, but the point is that you will see a reinsurer now trying to get its hands around that type of process management. We see claims that come into ERC triggered with a diagnosis or a medical tag. When we review these types of issues with our customers on the HMO side, they have the same questions. Process management is certainly of interest to our customers. That's another way of looking at risk other than the traditional way of looking at severity and frequency risk. A lot of this process risk I talked about will show up more on the frequency side than it will on the severity side, but I think it paints a clear picture by looking at it from a process standpoint.

Other solutions to controlling risk in the reinsurance market include aligning incentives. This means that we want to try to get the users of care from the customer's customer and our customer to get all the incentives aligned; that starts at the benefit plan. We want to change their behavior to use the managed care programs that we or any reinsurer has in place and clearly take that incentive and drive it all the way down to the primary level. To give a good example, we really want to have notification of a severe burn, a head trauma, or a premature birth. These are things that will affect our layer with average retentions of around $100,000 to $125,000. How do we get the ability to get our managed care program at ground zero or at first-dollar level of our customer?

We have developed incentives in our reinsurance treaty that basically require benefit plan design changes at our customer level. A good example of that is pre-certification language in the benefit plan that requires providers to pre-certify or they don't get paid. This requires a member to pre-certify so that they don't have

any additional out-of-pocket obligation. We know that our managed care programs save a significant amount of money, so one of the things that we have done is to drop down the deductible level on some of the programs so that we are sharing savings up front with our customers. For instance, if we are notified of a severe head trauma, burn, or catastrophic injury within 24 hours of that injury occurring, we will drop our retention down by 10%. That's one way that we are sharing the risk. That is one way that a reinsurer will pass the savings along up front to a customer. The necessary condition is that the managed care program is being used.

Waiving the average daily maximum limitation is another way to incentivize a customer to drive usage of a managed care program. If a discount falls within certain levels, reinsurance benefits may be greater. It is a predetermined algorithm in the reinsurance treaty, that if a discount that is being obtained by the customer on his or her own, or a discount that's being obtained through one of our managed care programs reaches certain levels, we will change the coinsurance or the reimbursement back to the customer. Reinsurers also may have premium differential. Ultimately what will happen is that if the experience gets better, the premiums will come down, but prospectively there are some reinsurers that will incentivize their customers to use managed care programs by having a differential in premium.

Health technology has changed managed care, especially from a reinsurance perspective. The major goal through all of this is obviously lowering loss ratios for our customer and also for the reinsurer.

Some reinsurers are looking at building a platform that will take the disparate managed care companies and put them into a single source or a single one-stop shop platform that will cut out the variation and reduce friction costs by stacking up with various types of managed care specialty companies. Instead of an HMO going out and contracting with 12 or 15 different companies, they contract with one organization virtually through the Web that will be the interface between the disparate managed care companies and these particular customers. This is something that's new. Certainly ERC is looking at that. Again, the bottom line is taking all the clinical management and the risk management that is available and putting it under one single platform to solve the problem and drive the goal of lowering loss ratios, providing quality care, and satisfying our customer's customer.

MR. TROUTMAN: The presenters you've heard from so far have talked about the trends they see in the health-care market and the way they've tried to add value to their clients. Our next presenters take a different perspective. They are involved in a program that is a DC program or an episode-of-care program, and the question is, how similar or different are the things they do to tackle the same issue? Is the DC model, which seems to be getting a lot of press, an answer looking for the question or is it a legitimate program which is trying to answer a growing need in the market? What does this program attempt to do on the insurance level as opposed to the reinsurance level? We will hear first from Kurt Wrobel. Kurt is director of product design and pricing and chief actuary at HealthMarket. He joined the

company in May 2000, shortly after its inception. HealthMarket's notable founder and CEO is Steve Wiggins, formerly of Oxford Health Plans. Kurt is responsible for pricing and designing the episode-of-care products. Prior to that he had stints at William Mercer and Hewitt Associates, where he worked for large employers and Medicaid programs. He is an associate and a member of the Academy. He has degrees from Wharton, the University of Wisconsin, and UCLA. He has made other notable presentations on HIV-AIDS populations and pricing and underwriting those risks. He'll talk about the episode-of-care products at HealthMarket, which is one of the new, emerging entrants in that marketplace.

MR. KURT JAMES WROBEL: I'd like to change gears and look primarily at the individual member and how he or she acts within a plan design. I will try to give you an idea of how individuals act and what the economic incentives are with the HMOs, PPOs, and standard indemnity plans. That is the backdrop on our negative thinking about some of our solutions that we have at HealthMarket that help people more efficiently purchase health-care services and hopefully bring down costs and provide better solutions for members.

In the current health-care environment you have rising medical costs and some degree of managed care backlash. Health plans are responding in certain ways to that combination. One is the obvious—you can raise premiums. Secondly, you can cost-shift the forms of deductibles, coinsurance, and out-of-pocket maximums. You can alter the network composition of bringing cheaper providers into a network. People are no longer considering larger structural changes within the health-care plan design. They're no longer considering, for the most part, managed care solutions like they did ten years ago.

There are some problems with this. For the most part, these solutions don't allow individual members to purchase health-care services more effectively. The cost shifting really doesn't change behavior. If you break your leg, you're still going to see a physician. It's not going to reduce your utilization, so cost-shifting programs simply change where the dollars go. We actually have to pick up the cost of care. The in-network choice, which is one that's already been implemented with PPOs, has some attractive features and offers a simple choice for the individual member, but it doesn't really mean that the individual is using the most efficient provider. Under this in-network choice, you're simply using the cheapest providers on a per-service basis; it doesn't mean that they're necessarily more efficient. Managed care controls, for the most part, have had limited success. I do want to say that in the case of catastrophic care there have been a lot of improvements to cost, but that's one area where managed care has been successful. In other areas of the plan design, for the most part, we believe it hasn't been particularly successful in managing costs.

That leads us to the long-term solution. At least as it stands now, there aren't many structural options available for health plans. We at HealthMarket believe the ultimate long-term solution is changing members' economic incentives within the plan design to get them to be more conscious about cost and quality. The question is, how do we go about doing that? How do we make rational decisions in our

other purchases and why? Every day in our economy we buy televisions, cars, chairs, glasses, and different products and also make efficient economic decisions within that context. You have an easily identifiable product that you can buy, you have product attributes that are easily understood, you have product and price variability, you have limited risks, and you know what you're going to pay; you simply pay that and you have some economic burden in the exchange. All of these seem like somewhat simple features, but some are notably lacking in most plan designs. The question is, can we then take these features that allow for an efficient economic purchase and put them into an insurance product? For the most part, I think we can.

Let's get out of health care for a second and bring this to auto insurance. This is actually an experience I had last year when someone damaged my bumper. The insurance company offered a fairly reasonable choice and one that fits in with the efficient features of an economic exchange. They told me I could either take my car to an approved mechanic and have it completely covered, less my deductible, or, after a review by an adjuster, I could be written a check and then take my car anywhere I wanted. It seems like a simple structure, but these types of plan design features aren't offered within a health-care plan design. If you looked at it under each of the attributes that I talked about earlier in terms of identifying an efficient economic purchase, I just have the simple, final product I have to consider, which is the bumper. I understand the attributes of the product. There's price and quality variability, which is something you wouldn't see in a typical health plan design. I can see different providers out there, but I have the one option to go within the "in-network" or I can go to a series of other body shops to get my bumper fixed. There's limited risk, especially in the first choice; I also bear an economic burden in the exchange that reflects the underlying cost of my choice. If I go to the in-network, I have a cost that represents the underlying cost of that choice; if I go to another body shop, I also have a cost that sticks by the insurance company. Either way this sort of mechanism allows me to make an efficient economic exchange.

This economic framework alleviates many of the problems associated with traditional health insurance plan designs. I can more efficiently purchase health-care services because I have an identifiable product and can apply some quality variability because I have an economic burden in the exchange. I know I'm going to have limits on my provider choice, but because of that choice, I have to pay for it. That economic framework allows me to make that choice. If you think about that framework in terms of different plan designs with an HMO, for example, you only have a small co-payment. You can go wherever and whenever you want, once you make that small co-payment. If you think about the economic incentives inherent in that model, you have no incentive at all to ration your own care, so what that promotes is that inherent tension between HMOs and individual members. The HMO, on the one hand, wants to control cost; the member, because he or she has no financial incentive to control his or her utilization, wants to consume more resources; that's the inherent conflict. On the PPO and indemnity side, you have cost sharing, which simply shifts cost and doesn't change your behavior. You have an in- or out-of-network choice that doesn't truly look at the efficiency of the individual provider. It only looks at the per-unit cost of providers. In either one of

these scenarios, I don't think we're allowing members to make more efficient economic decisions, and that's what we're trying to think about at HealthMarket. You need to create individual health-care products in which people can think about a product and make price and quality choices around that product. Some examples would be a pregnancy episode, a hip replacement, diabetes, or one of the transplants that Alan and Jane talked about. When you create these episodes, people can then make decisions around those episodes.

What we're thinking of in terms of an episode-of-care plan structure is twofold. One, members (and this is under our ideal scenario of the HealthMarket) would be given a list of provider teams, which include both physicians and hospitals, that would be willing to provide care for a different amount of cost sharing. You now have this wide selection of providers you can go to, and the fact that you are provided a fixed amount of money or perhaps a different level of cost sharing to go to different providers, you now have price and quality variability around those episodes. There's also a tremendous amount of economic efficiencies created at the provider level. In this case, providers would receive a risk-adjusted global rate based on age, sex, complications, and co-morbidity and also some potential for catastrophic protection. Within that context, providers would then have incentives to do a few things. One, they have an incentive to hold down the cost within the entire global rate. They no longer have the incentive that they had under fee-for-service to bill out constantly. I think that's a very powerful incentive, but the second piece is that they don't have the tremendous risk that is associated with capitation. They don't have to take the population risk of a group of people. They only have the risk at the individual patient level.

You can see some of the advantages of this sort of approach. Members will now have the opportunity to consider the cost of medical services among competing providers. In our HMO setting, as I mentioned before, you have every incentive in the world to not ration care. You have the incentive to go and go and go. With different cost sharing associated with provider teams, you have price and quality variability, which reinforces the consideration of cost and service. Members will not be subject to managed care controls or face provider choice limitations. You will no longer have the traditional managed care control techniques such as preauthorization. It will simply be up to you, the physician, and the provider team. You no longer have the controls that you had under a traditional health plan.

The other feature is one that I think too often actuaries don't talk about or consider, and that is the quality metrics. You have different forms such as a Health Employer Effectiveness Data Information Set and other quality measures that don't truly get at quality. I think the only way you can truly measure quality is around a definable product. You can just imagine someone trying to evaluate the quality of the car within each individual component. When you create a product, it's easier to develop quality metrics that people can evaluate to make efficient decisions.

Two more points remain about the advantages of episode of care. First of all, providers now will be forced to compete around a defined product. Under the current situation there isn't much competition and if there is, it's at the per-unit or

the per-service level and not at the overall episode level; you can have a low per-unit cost, but simply charge up a lot of services. When you put it around an episode, they'll be forced to manage within that entire episode budget, so they'll be looking at the entire cost of care. Because of the global fee, providers will now have a financial incentive and more efficient product care within that entire episode. This situation also exists in capitation, but the issue in this case is giving them a more manageable level of risk than you would under capitation.

We all admit at HealthMarket that the biggest challenge we have is getting providers into contracts around episodes of care. That's an ongoing effort on our part. One of the things that we're trying to do with our catastrophic care program is align incentives down to the member. It's somewhat similar to the choice I had under the auto insurance example. There are three choices. First, if you provide adequate notification, all of your coinsurance, deductibles, and cost sharing is completely waived at the member level. Secondly, you then provide what I would call an in-network choice of different facilities in which you would have absolutely no exposure and wouldn't have to worry about the underlying costs of the services. It would be completely covered. If you decided to go outside of network (in our case we believe that's a perfectly valid decision), we will give you a fixed amount of money to do that. For example, within our network the cost of a transplant is $120,000. That would be estimated based on our outside vendor. We would then say you can do one of two things. First, you may go to the in-network where the service is covered, or if you go out of network, we're going to give you $120,000, and that's it. Our expenditure in that case would be limited, but the individual would have the choice to go outside of the network if he or she thought that was the best choice.

We at HealthMarket believe that managed care and some other areas can provide some marginal advantages on cost, but to get a more cost-effective product and one that's still acceptable to individual members, you have to harness the individual economic decision making at the member level. Also, the provider economic incentives need to be changed. We believe that can be done within the episode-of-care program.

MR. TROUTMAN: Our last speaker is Mike Sturm. Mike is a Fellow and member of the Academy. He is an actuary in the Milwaukee office of Milliman & Robertson, and he has been one of the consultants in the design and implementation of this episode-of-care program. Mike's area of expertise is obviously health care.

MR. MICHAEL GERARD STURM: What are our goals in this industry? When I say ours, I mean everybody's, including the health-care industry, not just the actuaries, but the care management side of things, the marketing, sales, etc. What are we trying to accomplish? These are the age-old problems of health-care cost, access, and quality.

First, we want to lower cost. We all want to go in and pay the low price, yet we want the best care. How will we define the best care? Well, we haven't totally figured that out yet. David Dranove in Session 18, the Health Section Luncheon,

talked about the shopping problem and not knowing what the best care is because there is so much variation in care across the country. We want to try to minimize that because each person has one optimal care choice and how often that's actually achieved in any given situation is really questionable. We want to achieve efficient markets. We want people to understand what they're buying. They should buy the right services at the right time at the right price. Then, of course, there is the challenge of eliminating the uninsured. I'm going to change that goal by saying the elimination of the untreated. Health care is such a unique good that you don't have to pay for the goods if you don't want to. I contend that most of the uninsured are getting care for the most part. They may not be getting the most optimum care because they don't have insurance, but I contend that the untreated is a lot smaller portion of the population than the uninsured, and that's evidenced by the charity share given by hospitals and physicians.

We decided our goals were to lower the premiums, raise the quality, and have the best health insurance care for everyone. How are we going about achieving our goals right now? Well, first off, we're shifting cost to the insured. That's another thing that's been going on forever. Since I've been in this business, employers have been buying down their benefit plans. They've been shifting more premium onto the insured. I think it's a big shell game. I don't think that you're necessarily decreasing the trends in health care. To a certain extent, when people have to pay more for the services, they're more aware of it, but as Kurt mentioned, 80% of the costs are broken legs and diseases or conditions that you can't control. You're going to get the health care either way, so cost shifting is really not the answer to keeping premiums low. Medical spending accounts are another recent cost containment technique. Again, we're trying to make people believe that it's their own money. You're opening your own wallet when you pay for the care. That may help them shop for discretionary services. You're not going to go to the doctor for a hangnail or a cold, but you might start seeing the doctor when you get strep throat or something more serious.

What is the definition of DC? Every one of you is probably thinking of a different definition right now. But some of you are thinking, how is DC different from what we do right now? I don't know about you, but my employer currently is defining the contribution that he's going to pay toward my health-care costs, so that's already happening. It happens to be as a percentage of the lowest option in my plan. I think it's 100%. I don't think DC is about the employer setting the contribution. Does it have to do with the employer not increasing its employer contribution for health-care inflation? That is probably the most logical definition of DC, but I don't know if that's happening. I don't know how many of you were in the post-retirement medical session yesterday, but they were talking about how employers are setting contribution caps

If employers can't tell their retirees, "I'm going to stop paying for your cost at some point," do you really think they're going to be able to tell that to their actives and get away with it? Health care is a compensation issue, and if you cut back people's health-care benefits they're probably going to expect more in salary. Again, it's just shifting the cost around.

We talked about dissociating employer contributions with inflation. There are some radical consultants out there who are saying that we should make the contribution flat across all ages. Imagine for a moment a 55-year-old and a 25-year-old in a company getting the same contribution. Is the employer going to say, "Here's $2,400, go buy your own health insurance?" If they do that, it's a cut-around strategy. These people are going to have to go out in the individual marketplace. We know the individual marketplace. It will age-rate them, so $2,400 isn't going to be enough for the 55-year-old. Second of all, it will be medically underwritten in most states, so there are some real issues. You're breaking down the insurance pool if you start talking about giving people a flat-dollar amount and tell them, "Go away and buy your own health insurance." There are some situations where you can set it up so that the employer can say, "I'm going to give you so much and you can go and buy from these pool companies." HealthSync is one of the companies that promotes this. They say to an employer of 200 employees, "OK, give me your group and I'll take your premium. I have these 10–20 carriers that you can choose from." There are some issues with that. If you get too many carriers in any one employer, you have this issue of selection, right? When it gets down to 10–20 employees, you want to medically underwrite, so if everybody goes up and quotes a composite rate and you only get 10 employees, I think you're going to want to medically underwrite. Then you're going to say to the carrier that's sitting next to you, "Well, I got all the sick ones and you got all the healthy ones." You could take the age issue in and of itself and probably get ten actuaries in this room who agree on a reasonable age slope, but I don't think you can get ten actuaries in this room who will agree on a reasonable health status adjustment. That's where that situation breaks down. How do you divide up the cream between the ten companies?

There's not much to say about the topic of providing consumers with information. I think Kurt and HealthMarket are doing a good job of bringing this exchange together and defining an episode of care, and at the same time making consumers more aware of exactly what should happen. I think David Jurnov talked yesterday about the primary care physician (PCP) doing that job for you by bringing everything together. They help the patient navigate the market on the system.

Another way that we're trying to achieve our goals is objectively measuring services. The Health Care Financing Administration has been doing this for the last 10-20 years. They established diagnostic-related groups for inpatient care and they pay case rates. They have physicians paid on resource-based relative value schedules. Finally, they have the ambulatory categories, and they're paying on that basis. I think those are good ways of trying to identify exactly what we're buying as consumers.

Then there is the care management issue. There's been talk of it being unsuccessful. I think what Kurt was referring to was micromanagement of care with the physician as gatekeeper. I think most clinicians agree that large case management helps, but a lot of the micromanagement can be done away with. You still need some type of utilization review life program to identify these large case patients and channel them to the right care management triage nurses.

Another consideration is consumer choice. This is something I consider as a by-product of everything that's going on in the marketplace. We're providing more choices to consumers because we can. I don't think it necessarily helps us achieve our goals. There are some pricing issues for actuaries because, if a carrier walks into a full replacement group and historically they had one product that had one cost-sharing feature and now there's two, there will be some adverse selection because these people are going to minimize their cost sharing. You'll collect the same premium, but overall costs are going to go up because you won't collect the same amount of cost sharing effectively. Then you have the issue that I talked about earlier where you get into these hypermarkets for which certain companies are promising that you can have all carriers. It becomes a multiple-choice product, and there are all kinds of underwriting issues associated with that. But I won't get into those.

To wrap up, why will our goals be unmet in the short term? I don't foresee lower premiums coming around anytime soon. Demand has always exceeded supply. Spending as a percentage of gross domestic product (GDP) has moderated somewhat in the late 1990s. It's hovering somewhere around 13%. By the way, I think Mr. Jurnov attributed managed care to be the cause of health-care spending increases as a percentage of GDP. He may be right, but I think that you have issues in both the numerator and denominator. Health care is one of those things such as professional sports where we all complain about the players that get paid $7 million a year, but we consume it nonetheless. We pay outrageous prices for the tickets. Health care is one of those things because you always ask, "How much is it worth to you to live an extra year of life?" I think to a lot of people it's worth a lot of money, and we don't want to cut back. I wouldn't be surprised by the time I die that health-care spending as a percent of GDP will be in the 30-40% range. What's more important than living an active healthy life? You only can add so many luxuries to make life nice.

Why won't we get the best care in the short term? Again, Professor Jurnov talked about it yesterday. We need to study longitudinally how people move through years and what their conditions are over time. His biggest point was that we're not collecting enough data right now. I don't think any of us have sat down and studied the problem long enough.

How do we achieve efficient markets in the short term? Comparison shopping is always going to be difficult. The perception is that price is always correlated with quality. We all know that there is a correlation there, but is it 100%? No, you're going to find inefficient pockets of providers. Are the inefficiencies really as bad as we perceive? We all have an aunt or a grandparent or maybe an immediate family member who has contracted a catastrophic case. Do they walk in completely unknowledgeable and go to the least efficient providers or go to doctors who don't know what they're doing? I don't think so. There are opportunities to make the market more efficient, but once you get a disease or a condition, you will investigate it thoroughly. The Internet has helped us with the proliferation of information.

Finally, there is the issue of the elimination of the uninsured. Again, I don't think this is as much of a problem as people point it out to be. I think for the most part people are being treated. I don't think society wants to chip in for everybody to have health insurance right now. I think we decided that when Bill and Hillary's plan failed.

MR. TROUTMAN: You've heard four perspectives on how reinsurers and insurers should assume risk and provide quality affordable health care to the ultimate consumer. What's the best way to do it? I guess, like someone who has dual degrees in art and logic, you have to draw your own conclusions. Let's have some discussion. Who will be first?

MS. LEEANNA M. PARROTT: In the HealthMarket model, how does a patient know which episode he or she falls into?

MR. WROBEL: That's a good question. Services that fall outside of the episode are simply covered by standard fee-for-service methodology, so the hope is that long term we'll get to around 60% of the medical expenditures within the episodes. Preventive services would probably fall outside our episode program. Perhaps long term you could even create preventive-type episodes for seeing a physician for preventive services. We haven't created those yet, but I think that's a good point. What was your other question?

MS. PARROTT: How does a patient know which episode he or she falls into?

MR. WROBEL: We probably spent about $4 million putting together what we call an episode rules engine. When claims come into our system we're able to identify them as an individual being within an episode, so that would trigger the entire process. The individual would be notified that there's an episode, and in the long term we've allowed them to have a choice of providers that he or she could go to within that episode. We'd say, "Based on your claims information, you have now gone into X-Y-Z episode," and at that point you would have choices. One of the challenges of an episode system is identifying someone being in an episode and telling him or her that he or she is in an episode. We spend a lot of money trying to do that.

MS. PARROTT: If the patient already starts a relationship with a provider, will he or she be forced to switch providers after the episode has begun?

MR. WROBEL: The idea is that at some point you have to go to a specialist. If you did it at the PCP level, you would get the claims and that information and that would identify you as being within a particular episode. Then as you go into the episode, you have a choice among competing episode teams, which includes specialists and facilities. At the individual level, hopefully, individuals could then go with their current provider or their current physician and either have an opportunity to go with the episode with that provider or go to a competing group of other providers.

MR. SANFORD B. HERMAN: How would you envision packaging, marketing, and getting this product to the consumers who want to buy it? Would it be through an employer-based type of health insurance program where you define premium up front, or would there be pieces that you buy up front as you hit catastrophic type of care?

MR. WROBEL: I think we view it as a standard insurance product. In fact, I view it as more of a pure insurance product than a typical HMO. We're just financing. When something happens to you, we'll give you a fixed amount of money. If you need a knee replacement, for example, we would give you a fixed amount of money, or create some market mechanism where there would be different costs based on the underlying costs of that particular service, but the idea is to have a standard insurance product that wraps around services that fall outside of that episode.

MR. TROUTMAN: In that sense, it brings health care full circle; you're basically offering a scheduled benefit plan and the employer can buy variations of the schedule.

MR. WROBEL: Right. The other point Mark's making is that you can buy a richer benefit package. We would create a situation where 90% of the provider teams are completely covered. For small groups or for someone who wants a lesser package, we might have a situation where 40% of the provider teams would be covered, so you can vary the financing based on some of the expected cost sharing associated with someone having an episode of treatment.

MR. JOHN MICHAEL CROOKS: We're in a very litigious society right now and I wondered if you thought about the likelihood that you're going to have someone arguing that, "I'm not in this episode, I'm in some other one, which reimburses me at a higher rate," or, "Look, I didn't understand what I got when I bought this or my employer bought it and I didn't understand what was coming down the pike and I need this treatment." I think if the episode-of-care treatment modality is needed, it costs a lot more than what you're saying. What if I have a doctor who is saying that it may be experimental, but it's my only hope of living?

MR. WROBEL: I don't think the experimental issue is going to go away. We'd have to make decisions on a case-by-case basis in terms of whether or not we'd include experimental treatments within the episode. The idea is, however, if someone does fall into a breast cancer episode or something like that, he or she would have a selection of provider teams. Once he or she makes that selection, he or she is completely covered by a provider team. The provider team would essentially be taking the risk for each individual patient. It's risk-adjusted for age, sex, complications, and co-morbidity, but it still doesn't get at the need for the experimental treatments.

MR. CROOKS: Along those same lines, what if the provider team that you cover doesn't offer me a bone marrow transplant for my breast cancer and I take you to court? Your panel, under what you're defining as the episode of care, isn't providing me with the quality of care that's necessary.

MR. WROBEL: I'd be the first to say that the experimental issue, and some other areas that could get us sued, will not change from a regular health plan. The other issue is we're completely out of managed care at the physician level, so some of the other potential exposures under a managed care situation, such as a problem with pre-authorizations and pre-certifications will not be a problem. In some areas we will be the same as other health plans, while in other areas I think we're going to have improvement relative to other health plans.

MR. STURM: I think there are situations that you address that aren't going to fall into the clean episode, and the plan is to have a member complaint hotline. There may be situations where HealthMarkets is going to say, "This is in the best interest and pay your claim and be done with it."

MR. WROBEL: All of the comments, I think, are actually correct. Creating episode products and marketable health-care products is not easy. It takes a lot of effort to create standard definitions. But if you are able to do it, you're able to harness a lot of the efficiencies at the member level and at the provider level that we simply don't have now in health insurance plans.

MS. WEI SUN: I guess for the episodes of the payer for some units such as pregnancy I can see a clear definition of a case. What about diabetes, which has longer episodes?

MR. WROBEL: We view diabetes as a chronic episode in which there will be payments every six months. For conditions that you have for the rest of your life, for example in a diabetes episode, you would get x dollars for every six months. They would automatically renew every six months, contingent that you're under our plan. In the other procedural episodes, it's just a one-time event.

FROM THE FLOOR: On the reinsurance side, your typical reinsurance program, when offering an incentive to use a provider transplant network, would actually define care as being care delivered within transplant plus one year or something like that?

MR. WROBEL: Yes.

MR. HERMAN: This is a follow-up question on the issue of diabetes. Would you envision that you would redefine the episode every 6 months? Because what looks like one type of situation would look totally different 6 or 12 months down the road.

MR. WROBEL: Absolutely. All our episodes are adjusted for complications and co-morbidities. If someone would become sicker, then they would get a higher episode allowance or a different type of episode than they would have for the prior six months.

MR. COREY N. BERGER: What are the rating issues associated with the episode-of-care model? How do you deal with the lag between finding out about a condition and classifying it into an episode?
MR. WROBEL: From a rating perspective, if we know people are sick and we lose business because we know they're sick, especially with a chronic condition, I don't view that from the insurer's perspective as something necessarily bad. I view that as an advantage of our system because we're really looking at individual conditions. Actuaries look at days per thousand and other things that aren't pertinent to someone's long-term condition. If we can look at individual clinical attributes, I think we can get a better handle on the rating and do a much better job of estimating our costs and making underwriting decisions.

One of the challenges we have associated with the episodes of care is when we get claims information versus when we actually notify someone. That is admittedly one of the challenges, but the way I look at it, especially from a long-term perspective, as we get better with information and get more sophisticated with claims information that will be much less of a problem in five or ten years. It's going to get better.

FROM THE FLOOR: From a rating perspective, this product is no different from any other product that exists in the smaller group market. They're still going to comply with all the laws of 15% maximum load for health status. They're going to experience rate on the large group side. It's just a different way of looking at the claims.

Chart 1