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Pricing and Underwriting Stop-Loss Insurance

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Summary: This session discusses the pricing and underwriting of stop-loss insurance. Areas of discussion include:

- *The self-funded medical insurance market*
- *Provider excess market*
- *The health maintenance organization (HMO) market.*

Mr. Jack L. LaMar: Mr. Olsho is going to go first and give the employer perspective. I'm going to go next and give the HMO perspective, and Mr. Wilson is going to go last to provide the provider excess perspective.

Mr. David E. Olsho: I'm going to speak a little bit about what we typically call traditional self-funded medical insurance. Over the past several years, there have been complications such as managed care, and that's actually going to be a small part of what I'm going to be talking about.

I'm with Howard Johnson & Company in Seattle, Washington. We're going to talk about self-funded medical insurance. I did manage to find one client who had a fairly large amount of large claims data available. The client allowed me to present this to you as long as I didn't identify the client, so you have to guess. Second, I'll present the methodology that I advise my clients on when pricing stop-loss of managed care.

Finally, I want to briefly talk about the four additional topics that a number of my clients have raised with me over the last several years. The first is a two-year rate guarantee. Second is 24-hour coverage. The third is the use or nonuse of substandard industry factors and whether they're appropriate for stop-loss. And finally, something that is not really pricing or underwriting stop-loss, is reserves on incurred-type contracts.

I mentioned the following large claims statistics are based on some of your clients' data from five years 1990–94. This client averages about 300,000 covered employees with about two covered persons more or less per employee. And due to the data that were actually available, large claims are defined as those that are at \$180,000 or more.

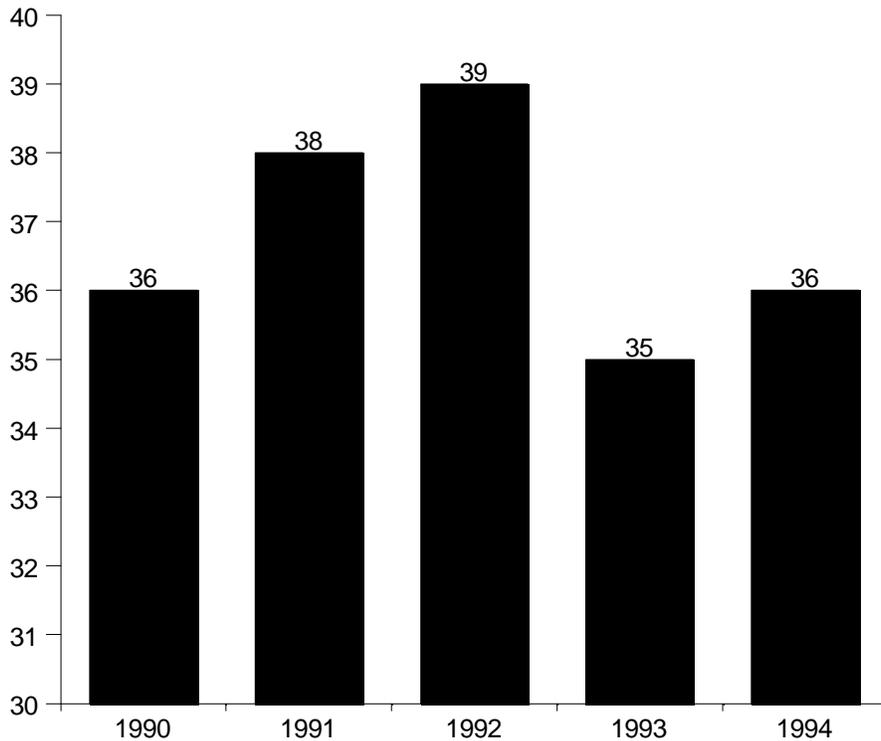
Table 1 shows large claims by diagnosis. These are total amount ground-up claims for these large claims that exceeded \$180,000. In my sample, cancer claims were the largest piece at 18%. Neonatal claims were second following slightly behind at 16%. Neonatal is the only one where there is a significant difference between Jack's and my slides. Jack will show about 31% of claims are neonatal, and I'm only at 16.5%.

TABLE 1
LARGE CLAIMS BY DIAGNOSIS

Diagnosis	Percentage of Large Claims
Other	33%
Cancer	18
Neonatal	16
Circulatory	14
Trauma	10
Transplants	9

Chart 1 is the number of both employee and dependent claims per 100,000 employees. Because of the way the chart is put together, it's perhaps hiding the fact that there has been fairly remarkable stability over these four years. The range has only been 35–39 claims per 100,000, and the peak was actually in 1992, the middle year. The beginning and ending year happened to be at the same level. So really it appears that the large claims, contrary to what one might initially expect, have been pretty stable.

CHART 1
LARGE CLAIMS PER 100,000 EMPLOYEES

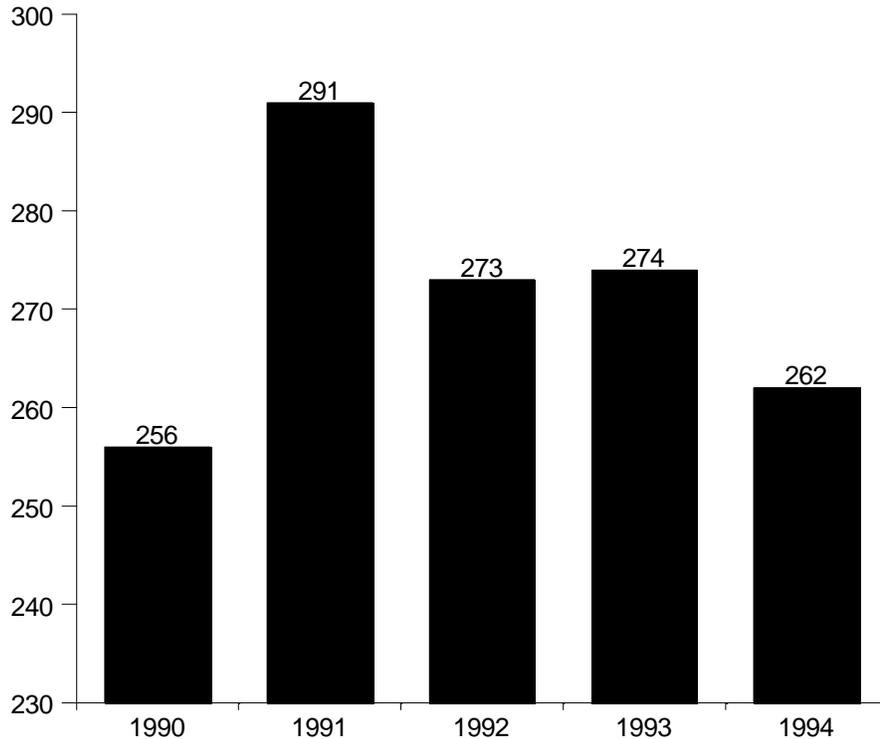


Now, we'll look at the average claim size (Chart 2). What you see here, again, is a little bit obscured by the way the chart is laid out, but, again, there's pretty remarkable stability. The peak is in the second year, 1991, and goes from 1990 to 1991. The increase from 1990 to 1991 was the largest increase that we've seen, and it has declined steadily to just about the beginning level in 1994.

I calculated for you the cost of a \$180,000 specific claim—the experience-rated cost for this \$180,000 specific claim level. In the year 1990, it started at \$27.36. This is where the increase was over 50% to 1991 up to \$42.18 and then has steadily declined in 1992, 1993 and 1994 to \$36.27, \$32.90, and \$29.52 respectively.

This last year is only 8% higher than the first year, an annualized trend of 1.9%, which, as I'm sure you all know, is much lower than the medical consumer price index (CPI). In addition, it doesn't take into account any effects of leveraged trend, which is quite significant on stop-loss business. As far as I can tell, the reason for this whole experience is managed care.

CHART 2
AVERAGE LARGE CLAIMS
(IN \$1000S)



This one particular client, over the last several years, has been using managed care on its stop-loss business more and more. Initially, the focus was on the strict preferred provider organization (PPO) getting discounts from the hospitals and from the doctors; however, later on, there was some additional emphasis on getting the case management, the large claims—what we typically think of today as a managed care plan. In addition, this one client's entire block did not look like this 1.9% increase per year; what we're really seeing is a compounded effect that is much greater on the larger claims than on the smaller claims.

This is a simplified version of how I advise my clients to determine discounts for pricing managed care stop-loss. I should point out that this is how I advise them, and there is no guarantee that they pay attention to what I say. I start out by pricing a typical indemnity plan with no elements of managed care. Table 2 shows the breakdown of charges by the various elements of medical claim: hospital inpatient and outpatient, physician, drugs, and other.

TABLE 2
INDEMNITY PLAN—PERCENTAGES OF CHARGES

Claim Elements	Percentage of Charges
Hospital Outpatient	35%
Physician	28
Hospital Inpatient	17
Other	12
Prescription Drugs	8

An important assumption behind the methodology that I use is that any claim is divided up the same, with these same percentages. That’s obviously not true, but it seems that the results are consistent, or at least close enough, and the pricing effects are fairly modest. One additional advantage of doing this is that you can use your claims cost distribution, if that’s how you price stop-loss, to be very consistent with the dollar amount that you use. Table 3 shows, in the first column, that these percentages translated into dollar amounts equal to the ground-up annual charges for a typical insured. I do want to emphasize that I’m making these numbers up, so don’t believe everything that you see.

TABLE 3
INDEMNITY VERSUS PPO

	Indemnity	Discount	PPO
Hospital Inpatient	\$ 700	25%	\$ 525
Hospital Outpatient	340	15	289
Physician-Primary	260	15	221
Physician-Secondary	300	20	240
Drug	160	0	160
Other	240	0	240
TOTAL	\$2,000	16	\$1,675

Table 3 also shows the charges for a typical PPO plan using discounts that are probably reasonable: 25% inpatient, 15% outpatient, 15%, again, for primary care physician, and say 20% for a specialty, or for the specialists. For simplicity, let’s assume no discounts on all the other charges. An overall rating would come up to about a 16% discount. Assuming a 100% utilization, this is the discount, I think, you could use for pricing or for determining your aggregate attachment points on your aggregate insurance. It’s the discount that I would initially leverage, and that I will discuss later for pricing specific claims.

I want to point out that the 16% savings on the aggregate will have a reduced effect on, at least in my methodology, on the attachment point. It will be a 12% or 13% reduction based on the fact that when we price aggregate we’re carving out a leveraged or increased piece on the excess piece. In addition, what you should probably do in pricing is reduce this discount based on network utilization.

As you all know, a number of people go outside of network either because they're traveling, or they choose to keep their own personal physicians who are not in the network. So assuming a 75% utilization, you might want to reduce this discount to 12%. Again, I would reduce that reduction due to whatever incentives are in the plan design for encouraging utilization in the network, encouraging people to remain in the network. Lower co-insurance payments or higher deductibles would reduce the encouraging cost of the specific stop-loss. With a 75% example, I might use 13% or 14%.

Let's add some of the typical elements of managed care, for example, the large claim management. These assumptions are on the final column of Table 4. Let's reduce both the use of the specialist and the inpatient hospital by about a third. These will be offset by using outpatient and using your primary care physician. I arbitrarily increased some of those costs, decreased the drugs and the others so I could force the number to a 30% discount. I don't believe that this is an unreasonable discount from indemnity in today's marketplace.

TABLE 4
INDEMNITY VERSUS PPO VERSUS MANAGED CARE

	Indemnity	PPO	Managed Care
Hospital Inpatient	\$700	\$525	\$350
Hospital Outpatient	340	289	329
Physician-Primary	260	221	261
Physician-Secondary	300	240	160
Drug	160	160	120
Other	240	240	180
TOTAL	\$2,000	\$1,675	\$1,400
Discount	—	16%	30%

And, again, in practice, you would want to reduce this discount for the same reasons that we reduced the prior 16%. But for this example, let's assume we've already done that, and figure out what type of discount that you'd get when you were pricing specific claims using the managed care leveraging. A question you may ask is, what is managed care leveraging? It's the compounding effect of the discount on claims costs on stop-loss, or specific stop-loss claims. For example. Let's assume a \$200,000 indemnity first-dollar claim with a \$100,000 specific deductible. This would obviously result in a \$100,000 specific claim.

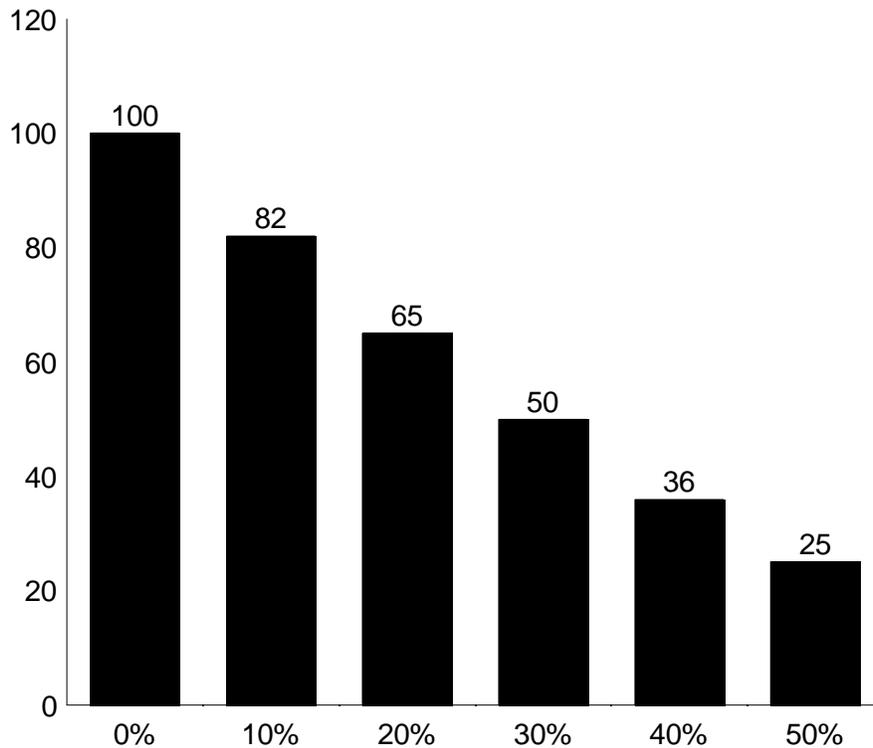
Through the magic of managed care, we now have reduced this claim from \$200,000 to a \$140,000, for a 30% discount. This would reduce the specific claim to \$40,000 for a 160% savings, which results in a doubling effect of the initial discount. This effect increases by deductible. At a \$50,000 deductible, there

would be only a 40% savings, but with a \$150,000 deductible we'd end up with 100% savings and no claims.

And this may tie back to the earlier slides that we were looking at where we were having relatively stable experience over the last five years or so with my client. The frequency of the claims in 1994 was equal to the claims frequency in 1990.

Let's look at some of the numbers that we have varying the discounts and then the size of the specific deductibles (Chart 3). The x-axis is the discount that we've calculated, and the y-axis is the percentage of savings from an unmanaged care plan. Chart 3 shows the effect on a \$25,000 specific deductible. You'll notice a couple of things. First, you can get a sizable savings from managed care. Our 30% discount produces a 50% savings in premium, or at least in claim costs. Second, the effect of savings slows down as the discount increases. The first 10% of savings—of discount—gives you 18% savings, but the last 10%, at least the last ten on this chart, gives you only about 11% savings.

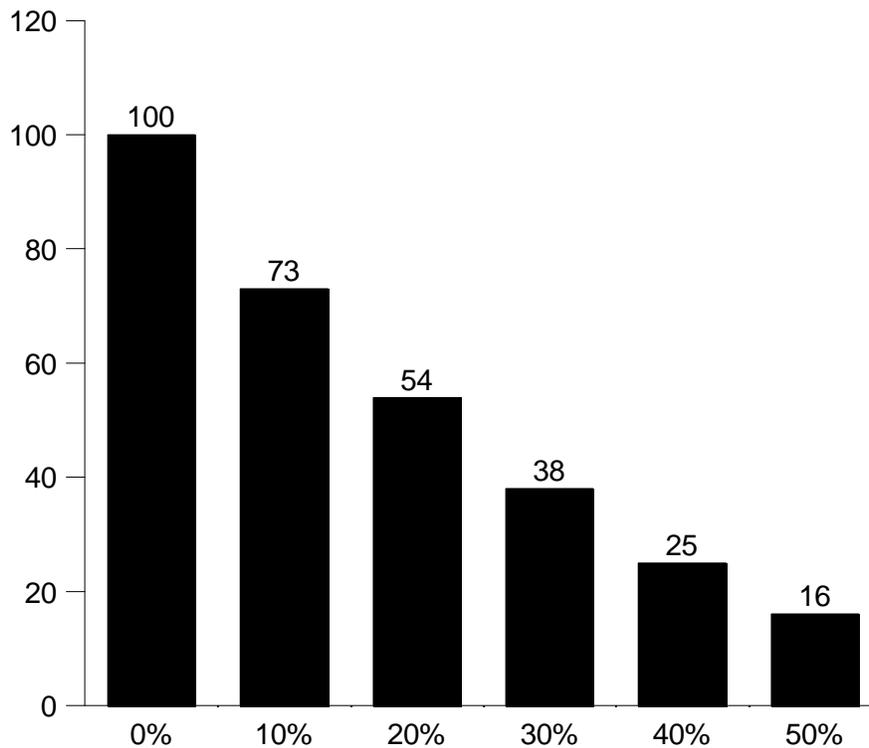
**CHART 3
MANAGED CARE LEVERAGING
(\$25,000 DEDUCTIBLE)**



Now, we can look at a \$180,000 claim, the one with a \$180,000 deductible (Chart 4). As I mentioned earlier, the effect increases by deductible. You get a 27% savings on the first 10% compared to 18%. On the last ten, you're getting only a

9% savings. You are, of course, discounting the premiums at that point by 84%, so you wonder how you're going to pay for the administration of all this. A 30% discount produces a better than two-to-one effect, or a 62% savings.

CHART 4
MANAGED CARE LEVERAGING
(\$180,000 DEDUCTIBLE)



Finally, I'm going to talk about these other issues that my clients have raised with me. The first is a two-year rate guarantee, and trend is a very important motivating factor on this. The clients or the groups don't want to have large rate increases due to trend. In addition, if you're going from a first-year incurred-and-paid to a paid, there's that additional increase. So what I'm going to do in my quick example is assume 20% trend per year. The first year on a paid contract would be \$100. Let's assume a 20% discount the first year to go to incurred-and-paid, and \$80 the second year would be up at \$120. So using a two-year rate guarantee, you might want to charge \$100 rather than the \$80. That may be a tough sell in today's marketplace, but you may also be able to convince people that they would be able to use the stability. I've seen a number of plans that have two- and three-year budget periods, and this may be important with that type of policy, if you're writing that.

The second renewal (the third year), if you're going to another two-year rate guarantee, you have your typical problem; going from \$80 to \$120 the first to second year where there's a 50% rate increase; going from the second year to the

third and fourth year would be going with our 20% assumption from \$100 to \$158, which is a 58% increase. So you're perhaps just delaying the huge hit.

Advantages of having this are, number one, you collect more in the first year. Number two, you get a little bit of interest earnings. Number three, you're at least encouraging the first renewal. A disadvantage is you probably have to have some additional financial reporting considerations. You should probably be holding a premium reserve for that additional amount you're collecting in the first year so that you don't distort your earnings. The second is the groups that are sophisticated may demand some of your interest earnings back, so you may not get as much as you're hoping for. Third, as I explained, the second renewal into the third year is going to be at least as difficult as the first renewal on a typical one-year rate guarantee plan.

I have given my clients some suggestions. You could keep the same rate, but increase the specific deductible going from the first to the second year, say from \$30,000 to \$35,000. Number one, that would get them used to increasing their deductible, and give you a little bit lower premium base to go on for the next renewal. The second thing that we could do is guarantee a more modest rate increase the second year. Perhaps rather than going from \$80 to \$120, give them a \$90 to \$110 increase. That makes the second to third year increase much easier to sell.

Now I'll talk about 24-hour coverage. There has been a great deal of talk about this, and, as far as I can tell, not a whole lot of action. There are a number of problems in administering something like this. For example, you may not want to offer all employees, like new or part-time employees, medical coverage. There may be a waiting period or a 30-hour-a-week minimum or something. That's difficult when you have to offer everybody workers' compensation. In addition, in stop-loss, you're typically on the risk for a year and then you're off. On workers' compensation, the date the injury was incurred, you're on the hook until the person recovers. So there's a little bit of difference in the administration of this; what happens if they change carriers, and things like that. In addition, you still have to provide for the life and the disability. I don't think anyone minds selling life insurance. The disability, on the other hand, is perhaps outside of the range of some of the managing general underwriter (MGU) and specialty medical carriers as opposed to the property and casualty. Finally, many states don't permit it. That will always make it a little difficult.

Next is substandard industries. Quite simply, many of our clients don't use it. How many people out there who are writing stop-loss use substandard industries? It doesn't look like too many. How many people don't? A little bit more perhaps. The response I give to my clients (and they don't like it), and admittedly it's a weak

one, is that maybe the workers' compensation covers the typical differences by industry, but there are probably lifestyle differences among the workers which result in different claims experience. Maybe I'm being a little discriminatory, but you might expect the blue-collar workers to not have quite as healthy a lifestyle as white-collar workers.

There's a part that's not really pricing or underwriting; it's reserves on incurred-type contracts: incurred in 12, paid in 15, incurred in 12, paid in 24, etc. This past year, for the first time, an auditor raised the issue with one of my clients about whether there should be an additional claim reserve set up at the end of the 12 months to cover the run-out period. My argument is based on a contract provision. That is, a claim is not a claim until it's paid by the third-party administrator (TPA) or the insurance company on behalf of the group to the provider. Therefore, at the end of the year, if the payment has not been made, even though the covered person incurred those charges, there is still not and may never be a claim if the TPA has a relatively long lag; there's slow reporting.

The auditor, however, thought that we should take the incurred date on these types of contracts as the date the covered person incurred the claim because they believe that virtually all the claims are going to be reported within the 3- or 12-month run out, which is probably true. I still argue that, based on that contract provision, there is not a claim and so there should not be a claim reserve. However, there probably should be some sort of a premium reserve, again, to cover the fact that we don't want to earn the premiums over the 12 months, but want to incur the claims over 15. The accountants will be very upset about the mismatch between the premiums and the claims, that is, the timing mismatch.

This issue, in this example, has not yet been completely resolved. However, the auditor signed off because he thought there was enough. It's not a major part of this client's business, and the auditor thought that the overall reserves were adequate. So, at the moment, it's still an ongoing problem.

Mr. LaMar: I'm going to be talking about HMO reinsurance. In most states, you can write this as reinsurance, and I just typically call it HMO reinsurance. There are several states that do require an insurance policy, and I think the theory is that they're taking risk and so you really are reinsuring the risk. Whether the states are requiring an insurance policy or doing it for theoretical reasons or to get premium taxes, I'm not really sure.

We're going to look at the market, the size by deductible, the stop-loss components (the coverage), and then some underwriting and pricing considerations. We'll also look at the stop-loss claims by diagnosis. In HMO reinsurance, we try to build, at

least somewhat, a partnership relationship with the HMO. If we can help them save some costs, then we're both going to benefit. You'll especially see that when we look at the coverage. For instance, if we have an organ transplant network, which we do, and they're able to put the people into that and get good case rates for it, they're going to benefit as well as us.

When you look at the market for HMO reinsurance, some carriers will go direct and some will use brokers, but it's not totally a broker-driven market. We have somewhat sophisticated buyers compared to employer stop-loss. You're dealing with chief financial officers. I don't think you have the gaming that goes on with the provider excess area that Dave Wilson will be talking about because, again, you're trying to build a partnership relationship.

The biggest thing about it is that you have a limited market. At the end of 1994, according to the Group Health Association of America (GHAA), which is now the American Association of Health Plans (AAHP), there were 617 HMOs, and we estimated that about 300 of those are self-insured. Those would be the HMOs that felt like they didn't need to transfer any risk, like Aetna and CIGNA, for example. There were approximately 26 new HMOs started in 1995, and so that increased the number of HMOs. But you also have decreases going on due to consolidation.

This is a fairly mature market. You have established carriers that have been doing this for some time. I've been doing this for about 12 years, and it was going on sometime before that. So new carriers have to buy their way into the market because it's limited and we have established carriers.

Typically, HMOs try to get the price down, and they don't buy as much coverage as you would maybe expect them to in the employer or the provider side.

The purpose of Table 5 is to see the size of the deductible compared to the size of the HMO. Of the HMOs that have less than a \$50,000 deductible 80% have fewer than 10,000 members. When you look at this, you have to understand a couple of things about HMO reinsurance because the deductible is leveraged in the two ways Mr. Olsho showed with his managed care leveraging. The other thing is that HMO reinsurance stop-loss is typically inpatient hospital only. And if inpatient hospital represents roughly a third of the total claim costs, then that deductible gets lowered much more. So a \$25,000 deductible is going to be equivalent to probably more than a \$100,000 deductible. Also, we're dealing with the number of members, and this is in contrast to a number of employees. So you'd have to convert that to an employee basis to make a comparison.

TABLE 5
HMO SIZE BY DEDUCTIBLE

HMO Size:	Deductible		
	<\$50,000	\$50,000–\$75,000	>\$75,000
Number of members			
<10,000 Members	80%	52%	14%
10,000–50,000 Members	20	35	26
>50,000 Members	0	13	60

Table 5 shows that there are a good number of HMOs with fewer than 10,000 members that have a \$50,000–\$70,000 deductible. Some of them with less than 10,000 members have a \$75,000 or higher deductible. We try to keep the deductible reasonable because of insolvency concerns. We don't have aggregate coverage on HMO reinsurance, so we're not trying to protect an aggregate cover.

As far as the coverage goes on HMO reinsurance, we have inpatient hospital only. We have co-insurance percentages that we apply. This is so the HMO that is managing the care maintains a financial interest in managing that case because we're relying on their case management. Also, when we do co-insurance percentages, we might do 90% if it's for a per-diem hospital, and 80% if it's on a discounted fee-for-service basis. And this is really an incentive to try to get the HMOs to structure better contracts.

We have overall per-diem maximums in place. And, again, this is partly because people want to buy price instead of coverage. They also believe, because of the managed care and the contracts that they have they can live with lower coverage. So the per-diem maximums typically would be \$2,000, \$2,500, or maybe even \$3,000 per day. For example: if you have a 50-day stay, HMO liability might be \$200,000. If you have a \$2,000 limit per day in place, that would be \$100,000. The extra \$100,000 would not be a covered expense under the HMO reinsurance. Under HMO reinsurance, when we underwrite this, we're looking at specific hospital contracts, and will actually add those contracts to the HMO reinsurance agreement. If they have contracts with certain hospitals, those are in the agreement so that there's no dispute about what's payable.

Most of the time, we sell 12–15 or 12–18 contracts. We have very few claims from the HMO that fall outside the contracts that aren't payable. HMOs are different in that they know about claims ahead of time because of the managed care, and there's just not the concern that they're going to fall outside these time limitations. We do make exceptions. If somebody has a dispute with a hospital, we don't make them pay that claim in order to get reimbursed. We would wait on that. So again, the partnership comes in where you're both trying to win.

Out-of-area conversion is different because of employer stop-loss. The HMOs typically have in-area conversion. If people want to go to an individual policy and it's in their service area, they can convert to an individual HMO policy. Because HMOs are limited in their service area, when people go outside the service area, they need some way to have a conversion policy, and that's part of the reinsurance agreement. The other big thing is an insolvency provision continues benefits should the HMO go insolvent. This is typically mandated by the states for HMOs.

When we're looking at HMOs, we're wanting to know the type of members they have: are they commercial versus Medicare versus Medicaid, versus point of service, and what is the percentage of the total of each? The demographics for established HMOs aren't as important because you're assuming the HMO gets a big cross section of risk. If an HMO has 50,000 members, it has a pretty sizable base. For new HMOs, it's a little hard to incorporate demographics into the process. They can start out with 1,000 members and you can do the demographics on them, but by the end of the year there might be 10,000 members, and your demographics can be out of whack. So oftentimes we prefer expediency. We ignore the demographics.

The geographic location is important because the practice of medicine is different in different places. You can have two HMOs with identical contracts with hospitals, but in the northeast, it's going to cost more than the southeast.

Sometimes the HMO is not providing organ transplants, so you take that into account. But you have to be careful about that because litigation may require them to provide that anyway. So you don't want to discount too heavily for that.

The single most important criterion when underwriting HMOs is the hospital contracts the HMO has, and this goes hand in hand with the network coverage for tertiary care. They can have 95% of their dollars in network hospitals, and as a reinsurer, you're going to see the other 5% in the tertiary care centers. We specifically determine where and under which contractual arrangements that cases like neonates, traumas, and organ transplants are sent.

What kind of market the HMO is going after is important especially with start-up HMOs and in relation to the demographics; are they going to be heavy into Medicaid or heavy into Medicare. It's very difficult to apply a strict manual rating system. The HMOs are unique. They're built around a local network and that network is unique. If you do a real good manual rating system, you'll end up with a different rate with every HMO in the country. We also use experience, and I think, as is typical, you tend to give more credibility than is due.

Table 6 shows the stop-loss claims by diagnosis, which you can compare with Table 1. Again, when you look at this, you need to remember that this is inpatient hospital only. So it's going to be different because of that. One additional point, when you have Medicaid, is that neonate claims are going to be over 50% instead of the 31%.

TABLE 6
STOP-LOSS CLAIMS BY DIAGNOSIS

Diagnosis	Percentage of Claims
Neonates	31%
Other	25
Cancer	13
Circulatory	11
Trauma	11
Transplants	9

Mr. David Wilson: I'm at the Apex Management Group for a health care consulting firm located in Princeton, New Jersey. Most of our business is with health care providers and risk takers and sort of the new world order as risk gets shifted around. Let's just jump right into this.

How many people in the audience are actually doing provider excess loss right now? Oh, there's a whole bunch. How many people are making money? Yes, one very small hand goes up. Too early to tell. Anyway, let me define what I think provider excess loss is because it can be many different things.

It is basically excess loss protection for health care providers taking risk. Health care providers can be a group of primary care physicians that may be taking on some kind of global risk, or it can be provider-sponsored networks. So it's encroaching on the HMO reinsurance area in a certain way. Conceptually, it's a form of reinsurance to the extent that the providers are now being asked, through capitation contracts or case rates, to take on risks and take on the role formerly held by insurers and HMOs. The problem for them is that their revenue is fixed, or generally fixed, and their expenses may not be. And there are other issues with that as well because some of the cost to them is in hard dollars, and some of the cost to them is in soft dollars.

Jack and I were talking a little bit earlier about how do you set up a contract for physicians, and this is really where you get into potentially a lot of soft dollars if all you're covering is their services. There are two basic flavors for the contracts. One is specific, which I think is fairly widespread. I think probably everybody in here

that does provider excess does specific contracts. The other one is aggregate. How many people are doing aggregate contracts? A couple more. Aggregate tends to be much rarer.

What I want to do is compare just to try and point out some of the challenges with provider excess loss. Compare some of the different issues with employer stop-loss, which is the most prevalent form of excess loss coverage out there right now. On the employer stop-loss side, the employer loses a dollar for every dollar of claim expense. They have dollars going out of their bank account to cover those claims. On the provider excess loss side, the provider loses an unknown amount for every dollar of claim expense. It could be a dollar if it's a hard dollar contract where they're actually paying another provider, or it could be some kind of opportunity cost where only their time is at risk. There are other issues in trying to determine just what they are really losing.

Employers can generally tolerate fairly large fluctuations in their aggregate results. They may get really annoyed with their employee benefit consultants if they're missing their projections by large amounts. Nonetheless, where it might be 4–6% of their total expense budget, a 10–20% swing in that number isn't exactly going to cause them a whole lot of stress. But providers depending on how much of this business they're doing and how much their total revenue is dependent on it, are now put into the same kind of role as insurers. They're very sensitive to true losses, and solvency can be very sensitive to aggregate fluctuations.

I think there's a story going around right now about a hospital system in a northern California city that did a lot of capitation business and apparently didn't do a very good job of negotiating the contracts and blew literally 50% of the hospital's surplus in one year. So solvency can be a real issue.

The policyholder in employer stop-loss has very little control over treatment and resulting loss, only as much as they can influence it through the benefit plan design, providing incentives to use certain networks of providers. If it's a point-of-service plan, they may have total steerage into transplant networks or mental health systems, but that's about it. What about the provider excess loss side? The policyholder has some control over treatment and resulting loss. To a large extent, they are actually providing the treatment, so there's some potential conflicts there.

The employer stop-loss market is a very large market. It's also a mature market. Pricing algorithms and data, although always a problem, is still fairly well established. I think managed care is probably going to drive the analysis, as David's presentation indicated, much more towards the kind of analysis you need to do in HMO and provider excess loss.

But the provider excess loss market is a very small market, and it's immature. There are many players out there right now scrambling for coverage. Because it's a small market and it's immature, knowing how to do it is a real issue. Because of the control in loss issues, there's basically no moral hazard in employer stop-loss.

On provider excess loss, moral hazard is a very real issue. It is possible to set up reimbursement mechanisms where you can actually reimburse a provider substantially more than their cost for actually providing care. That creates a real conflict and a real moral hazard to underwriting issues.

On the employer stop-loss side, I think the financial results have generally been good. Most people have been making some money at that. On the provider excess loss side, those that have been in the business for a while have seen very mixed results and, in fact, the market should be growing substantially just through rate increases alone. But generally, the financial results have been mixed and even poor, and there are a number of reasons for that which we'll get into as we get going.

What I see on the employer side is that we have a soft market right now, and it's getting softer. I don't know if people would agree with that here, but every underwriter I talk to is complaining about how tough it is right now to hang onto business. The two-year rate guarantee works for cases that are not running well, but anybody that's running well is going to come back to you and want to renegotiate in the second year. So it is a soft market and it is getting softer, so I think there's going to be some downturn there.

On the other hand, the provider excess loss market is a very soft market right now, and I think that's more a function of knowledge and tools, and just data availability, and it is getting harder. Part of that is being driven by some of the major reinsurance organizations that are saying, enough is enough, we must get people's collective acts together and make sure that we're doing a good job in rating this.

Now, in terms of the actual actuarial pricing challenges, data are the key. At every presentation I've been to so far, speakers keep talking about how just getting data is a real challenge. Data on provider excess loss are also a real challenge. The problem is you're trying to hit a moving target. What you're trying to do is characterize a particular component or subcomponent of a health care delivery system, or maybe a stand-alone delivery system. But if they're doing their job right, that tends to be a moving target. They should be getting better at doing what they're doing, and that's going to create some problems in terms of trying to anticipate where they're headed. That could be good or bad.

Science, art, and magic is where health care actuaries really come into play. It would be nice if we had all the data in the world. I have a couple of statisticians who work for us that say if they had all the data in the world, they wouldn't need actuaries. And I'm beginning to think what we're supposed to be real good at is making something out of nothing. That's where we get into art and magic. You may not have data on the system; you get into all the very issues that Jack talked about with the HMO rating. If you had all the information—you would be coming up with different rates all over the place. But what we have to do sometimes is kind of magical, and the more you get involved with the actual underwriting process, the more that might come into play.

You need many pricing tools. There are a lot of different pieces. There are a lot of different ways of cutting up the risk. You can subcapitate out cancer care or radiology, so that the finer you cut it, the more data you need. And it's not just data to build capitation rates, too. It's data to look at the variability of what's going to happen by patient. I would also argue that you need risk analysis tools, and I'm going to get into that a little bit later. We've been talking to some of our clients about trying to come up with a custom approach to provider excess loss in terms of fitting the coverage to their specific needs. When you do that, you have a bunch of mini-insurers out there. We would argue that they need to put up risk capital, and part of their capitation rate needs to be a return on the risk capital they're putting up to be in the risk business. Insurers have to put up risk capital. Why not providers?

And I think as some of this provider-sponsored network (PSN) legislation moves through some of the states, there's going to be a push to make sure that these entities that are taking on risk have some minimum capital requirements and/or minimum reinsurance requirements, which is going to fuel the provider excess loss market as we move ahead.

Some of the biggest challenges when you get in this are claim reporting and reserves. Claim reporting, from the provider side, is pretty poor in general. Part of the reason is that they're all established to send out bills. Say you have, on the employer side, a third-party administrator that's accumulating those bills. If Pete goes in the hospital three times during the year and he runs up \$180,000 in bills for maybe some oncology treatment, then there might be an outside administrator that's saying, "Well, we have a \$180,000 deal here, and we may have a claim." On the provider side, hospitals are used to packaging bills for different stays, and one of the challenges with health care data is in terms of building episodes of care to study. There are treatment patterns and protocols, and things like that. Finding out you have claims is a real challenge.

I have one suggestion from someone that I'll share with you. Underwriters should not accept claims from providers until their internal audit people have audited the claim themselves. Anyway, that translates into problems. Problems just identifying claims translates to problems in setting reserves because you're never really sure what you have until long after it's all over. So the tail on this tends to be even longer than employer stop-loss.

One of the difficulties with provider excess loss is you actually negotiate how you're going to build the claim. That becomes part of your contract. Nothing is cast in stone, though you might use per diems. I've got an example of one quotation that was prepared for an academic medical center in southern California, and there are, I think, three or four different ways of building claims for that organization that have very different impacts on what kind of price you would charge for basically "the same coverage." Coverage isn't the same because of the way you build claims.

Therefore, you want to make sure that underwriting agrees to build claims and sets the price. The actual claim processing people or the adjudication people in your shop know what underwriting has agreed to. If they've agreed to a certain schedule, make sure that everybody is in sync with it.

Aggregate itself is very difficult to price, and it's a complex issue just trying to identify what's happening to the providers' business. Are they growing or shrinking? What all are you covering? How do you evaluate hard and soft dollars? Whose numbers do you use? If they're presenting a capitation rate to you, do you want to go along with that? Do you want to audit that? I would caution you that you definitely don't want to use their numbers unless you approve of them. There are some folks out there that would love to provide excess loss, particularly on the aggregate side, as a way of making a bad deal a good deal, and that's not really our function.

There's another concept that we call Super Cap that's basically tertiary care carve-outs; they might be transplants with United Resource Network where you actually capitate out part of the high-end tertiary care treatment. And if that, in fact, is present, then you need to evaluate exactly what that is worth to the organization.

Perhaps if we had incentive plans like this for our underwriters and brokers, that might help a little bit to make the business profitable. I think one of the problems right now is there's just not enough accountability. There are a lot of deals being done, and they're not always all that well thought out.

From the underwriting standpoint, there are a number of challenges. Some of the brokers that control a large part of the market are trying to create a commodity

market for this business. It's to their advantage to create a commodity market because then they can really get everybody duking it out on price. I talked to one gentleman yesterday who works for a large provider organization. He said he'd like to do some things internally with provider excess loss, but because of this whole sort of commodity mentality and pricing, and the way it is, it's to his advantage to buy it on the outside because what he can buy coverage for is typically less than what he anticipates his claims will be, not considering administrative expenses and things like that.

But brokers are trying to create a commodity market, and I think we're doing a disservice to the actual end user because they're all unique; they all have their own unique circumstances and coverage needs to be fitted to them. Operational historical data for many of these organizations is rare. I mean this is a new business for them that they're getting into. They may not have any capitated lives when they come to you, or they may have 2,001 programs. They have plans to grow it to 50,000 through contracts with another four or five HMOs throughout the year. So what are you evaluating? Who actually has the ball for managing care? These are all things that you need to factor in, and it generally makes operational historical data somewhat questionable.

Knowledge of what's going on as an underwriter in the local market is a big asset. Knowing, you know, how the systems are competing, who's lining up with who, and who seems to have the marketing edge can all influence sort of the direction that the business is going. Buyers, even though you could end up dealing with chief financial officer, are a little unsophisticated. They learn quickly, but they are a little bit unsophisticated just in terms of what they're getting into. It goes back to that hospital situation in northern California. I've also heard several stories where brokers will be out working with a particular institution and their capitated program. They'll say, "We want provider excess loss coverage, and here's my contract from last year. By the way, what did I buy last year?" So there are some issues there.

And we've talked about claim reporting as an issue. Claim reporting has some carryovers when it comes to renewal. You know, if the reporting has huge lags, how do you do renewals? That's a real problem. Some organizations have played around with leaving the renewal open so that there's a door to go back and renegotiate if suddenly you get hit with a flood of claims. To a certain extent, that's what you have to do when you have a big system that you're unfamiliar with, or that you have very little history with. You have to be very careful about what you agree to on renewals. At the same time, you have pressure from the fact that, there's probably another 20 carriers sniffing around.

What we've seen out in the market, because of the commodity approaches, is either too much or too little coverage. You know, we've structured a provider excess loss arrangement to protect some provider from risk that they really can't handle. The way the coverage is designed, if you have a hospital system that doesn't have a whole lot of surplus, and maybe sends a great deal of its tertiary care stuff out, but is still responsible for it, and you structure a deal that's not nearly as rich as the contracts that they have with other institutions to handle neonates or burns, there's a potential they could really get hit. So I think you have to do a good job of evaluating what their deals are and what their costs are. Cost, in many of these institutions, as I said before, is a very fuzzy issue. Most of them are working towards having some kind of sophisticated cost accounting system so that they can actually tell you what it really costs them to handle a neonate. The cost is going to be a function of how much of the system they actually own. We deal with one large hospital organization that has several hundred physicians on salary, including a whole lot of specialists. So its real costs, when this is a marginal piece of their business, are very suspect. You also want to look at the HMO provider contract just to find out what the HMO provider is responsible for. We just touched on true cost measurements there.

There are other things that you want to look at in underwriting these things. This is like another level of detail down from the HMO side. In HMOs you're going to want to look at all the payers that they're contracted with. In this case, you want to look at specific payer characteristics in place in the market. You want to take a look at what services are covered under their contract with the HMO.

What are they capable of providing in network? For what services do they have to send you out of network? Do they even cover it? Are they responsible for out-of-network claims? Do they have arrangements for designated specialty centers? Are they a designated specialty center? Just who's responsible for what in terms of capturing clinical data and managing the clinical side of it? What systems exist within their own payment system? I mean if they're accepting capitation into a large policyholder loan (PHL), there's a whole myriad of ways that the money can be split up inside the system. Do they pay their providers fee for service? Do they internally pay the hospital on a per diem basis a percentage of billed charges? Are there bonuses for certain kinds of behavior? Do they have any quality incentives? How do they measure quality? We want to get into just what kind of populations they are. There's very special needs for each of these populations, and some real differences in how the rates certainly fluctuate.

Let's look at the provider itself. What exactly is their structure? I mean are they an individual practice association (IPA)? Are they a physician hospital organization (PHO)? How are they governed? Do they have subcontracts with other providers? Do they have a home health care agency that they've subcontracted to? What

geographic area are they covering? Do they really have enough coverage, or are you going to get a lot of out-of-network or out-of-area emergency activity based on the area they're covering?

Take a look at the market to try to anticipate what's going to be happening to the covered lives. Competitively what's happening in the marketplace? Are there new HMOs coming in? How do the various systems stack up against each other? Who's being acquired by whom? I don't know how many hospital deals we were involved in a couple of years ago, when at the 11th hour, some major hospital company came along and bought the hospital.

So there's a great deal of consolidation and teaming up going on in the marketplace. We see academic hospitals set with networks of community hospitals set together against for-profit hospitals, together with some of the big charity systems. Just who has the reputation? What's the payer reputation and strategy? Are they a high-quality shop? Do they do a good job in supporting on the clinical side? What's their strategy for growing the business? Are they going to get into the Medicaid or Medicare marketplace? What are the providers' goals for getting into capitation? How much of the revenue do they want to have coming from capitation? These are all things that you need to think about. Who's going forward and who's going back?

We looked at one of our clients, and they had several capitated contracts, and some of them were growing with organizations like U.S. Health Care and Oxford, and others are going backwards. And there were very different experience results in each piece, so it becomes important to look at who they're doing business with and where that business is headed.

The basic elements of the contract are: reimbursement basis, deductible, co-insurance, and length of contract term. Anyway, this is just an illustration to give you a kind of feel for how wild the rates can move. And what we have here is an academic medical center. We're just talking about hospital expenses only. Reimbursement percentage on top of the deductible is 90%. Here the carrier would be reimbursing 90% of all claims as they're defined in excess of \$75,000.

We have several different scenarios here. In one scenario we've agreed to build the claims at 70% of reasonable and customary charges. What we try to do is get hold of their bill master and fix that so there is no game playing such as, "Well, we raised our reasonable and customary charges 30%." If they did that, they'd get back to 100% of reasonable and customary charges, which may not be so reasonable from your perspective. There's a different percentage for outpatient. The rate that we came up with was \$5.97 per member per month.

If we change the way we bill claims down to 45% of reasonable and customary, not to exceed a per-diem cap, then the rate drops substantially, and we're also providing substantially less coverage. What if we get a little fancier here and start building claims based on the kind of room that's used? In this case, we got a whole schedule based on neonatal intensive care with skilled nursing facilities. For anything that's referred outside the system, different intensive care and acute care type settings, the rate dropped to 34 cents. So how you bill claims can dramatically change the rates. There has been almost a 20-fold difference in rating structure.

This also presents a challenge for the providers in trying to figure out what they're doing. How many people have done first-dollar health medical like group rating? Everybody. Great. When you do that and send new rates out to the field, how often do you find certain more aggressive sales representatives calculating rates with every combination every way, looking for anomalies? Everybody should put up their hands. That's possible with this kind of product, too. I've heard of one broker that for one client asked for 120 different combinations of things. And what do you think he's looking for? Not what the best deal is for the client in terms of coverage, but where the anomaly is. You can get big swings based on how the coverage is set up.

Let's discuss provider excess loss as a replacement for risk capital. So there's kind of a new twist to this. What we're trying to do for clients on the provider side is optimize their use of provider excess loss because there are dollars going out of the system and potentially dollars coming back. You don't want to trade dollars. If you can get somebody to give you coverage for less than you think it's actually worth, then you might be encouraged to pursue that. You want to figure out what risk you're taking on, and how variable those risks are.

The way capitation rates are typically presented to the providers is to assume everything is going to work out, based on what we expect the utilization of different services to be. There's no mystery to calculating a capitation rate. What are the list of services you're going to provide? What are you going to charge for those services? And how many do you expect for a population?

The problem is things bounce around, and they certainly vary by commercial, Medicaid and Medicare. The provider's ability to manage Medicaid and Medicare, from a clinical sort of perspective, also varies. There are real challenges with Medicaid just because of all of the disenrollment and re-enrollment pent-up demand kinds of things that happen there. It's hard to keep people in the system long enough to really be able to manage any sort of chronic conditions. How variable the members claims can be is certainly one aspect of this.

And then what we get into is what we call a Markov chain problem. We're a Monte Carlo stimulation study of the business. It's a typical sort of risk theory study where we're trying to look at probabilities of ruin. When we're talking to providers, we use the inverse and we talk about probabilities of solvency. They feel better about that, and it's just not as pessimistic an attitude as insurers have typically.

It's great to run simulations and come up with a distribution of anticipated results, and then look at how provider excess loss affects that. But the bottom line is that when you're trying to determine how much risk capital they need to put out, they can have more than one bad year in a row. So what we've done is set up a system where we actually can link numbers of years together.

If you are familiar with Markov chains and transition probability matrices, my hat's off to you. I had to go back to my old statistics books and look all this stuff up when we started working with it. We can get a whole lot more sophisticated here, and I think we probably will collectively as we go forward. We need to have some changes rather than just assume that it's a random walk in the simulation studies that we do; we need to start putting some balance on how far they can walk either way. If you have too many years in a row, I think the board of directors is going to come back and slam them and make some changes. Likewise, they cannot have too many good years in a row or the market will push them back towards the middle.

But what I want to do is present some actual results that we used for a client, which was a large hospital-based physician-hospital organization that was taking on capitation risks for Medicaid, Medicare and commercial patients. What we've done is take a look at the sort of maximum cumulative loss over five years expressed as a percentage of capitation revenue. This is as low as they got in a five-year swing, and this is with a specific provider excess loss scenario. In this particular case, we were using a \$25,000 specific claim.

One of the issues with trying to fit provider excess loss to providers is that some of them aren't as risk averse as they really need to be, and they don't buy enough coverage. They tend use rules of thumb based on how they feel about what kind of stop-loss levels they're buying in their employee benefits plan. This kind of an analysis gets that all out in the open.

For this particular client, we took a look at different specific deductibles and different probabilities of solvency. So it was based on all the simulation studies we did where we actually fit the claim distributions to their specific anticipated experience. We created these distributions, and based on how secure they wanted to be, or how risk averse they were when looking at increasing probabilities of solvency at the different deductibles, the risk capital definitely changes.

If you wanted to be 95% sure that you weren't going to have to go back to the board and say, "We need more capital to back this program; our cumulative losses have exceeded what you originally gave to us," then you only need 6.25% of anticipated capitation revenue as the capital, assuming you buy a \$25,000 specific claim. If you get all the way up to \$150,000 at the other end and want to be really sure that you don't have to go back to the board, then you need 17% of capitation revenue as capital.

This is a very large client. We're talking about \$43,000 of capitation revenue. They're anticipating that by the year 2001, their capitation revenue will be somewhere in the \$500-\$700 million range. So even though this doesn't look like a big deal to them now, it is going to be a big deal going forward. And as they became a true insurer, they wanted to do this whole so there's a risk capital kind of approach.