

RECORD, Volume 22, No. 2*

Colorado Springs Meeting

June 26–28, 1996

Session 108 PD

Pricing by Product Line

Track: Health

Key words: Health Management Organizations, Pricing

Moderator: JAMES E. DRENNAN

Panelist: JOHN D. STIEFEL III

Recorder: JAMES E. DRENNAN

Summary: What is the relationship among rates for health maintenance organizations (HMOs), preferred provider organizations (PPOs), and point-of-service (POS) plans? What should the relationship be? What should the actuary consider?

Mr. James E. Drennan: The pricing of managed-care-type products is very difficult. There is no right answer. There are relativities that differ by benefits, by type of groups, by networks, by geographical differences, and other differences.

John is going to talk more about the provider side, and I am going to go into the small group insured side or the pool-rated type of pricing. One of the real issues here is what to do with guarantee issue and some of the state reforms. This session is intended for actuaries with moderate experience.

John is an independent consultant from Hartford and he deals mainly in the provider area. He was with Aetna until 1993 and now is on his own.

Mr. John D. Stiefel III: As Jim said, I work on the provider side, so that is the perspective from which I'll be making this presentation. Based on my experiences dealing from the provider side, managed care organizations that come to us with proposals are well-prepared. They have done what I call a disciplined pricing. Others come to us with a negotiating hat on saying "Well how about this?" or, "I think in your area, you ought to be able to do this." It's clear they haven't done

their homework. They have done their pricing by, what I call, price setting. That's going to be the first of my four points.

First, pricing is not the same as price setting. Second, every network product should have a network pricing, and I'll give you a definition of that later. Third, network pricing is easy; and fourth, if you do a network pricing for every network product, the pricing differences between HMOs, PPOs, and POSs will be readily apparent.

To back up my four assertions, I will give you a definition of network pricing, a set of network pricing principles, and a set of other pricing principles that I call price-setting principles. I will show a format for network pricing and a list of some of the factors that influence network pricing and influence HMO, PPO, and POS pricing differences.

What is the definition of network pricing? Network pricing is a disciplined process for projecting future claims and expenses. Projections should consider in-network and out-of-network benefits, they should be on a per member basis (usually per month per member (PMPM) basis), and they should be based on the past group experience and/or tabular rates.

There are some network pricing principles that I will offer. Network pricing is easy, and the reason it's easy is because these are principles that you are either very familiar with or at least have some reasonable amount of experience with. Therefore, I won't spend a lot of time on them.

Tabular pricing is pricing based on a company book. Pricing for each network product, be it HMO, PPO, or POS, should have three tabular rates: in network, out of network, and total.

Experience rating is a blend of tabular rates and rates based on the group's experience. Bottom-up pricing starts from the smallest unit for which you can get experience (for instance, inpatient hospital, intensive care unit), and it builds up from there. Get your medical cost budget, build up your administration costs, particularly to profit margin, and then do your rates.

Conservative does not mean excessive. It means be realistic, and consider everything that could influence your network pricing. There are a lot of things.

Regarding community rating by class. Consider all factors that could influence pricing in your network, like demographics, location, etc. I put an asterisk by this because some jurisdictions for community rating by class and for adjusted

community rating jurisdictions do not permit you to use it for HMO pricing or in-network POS pricing.

Adjusted community rating, an HMO pricing term, means the same thing as experience rating. Risk-based pricing involves establishing your profit margin based on the risk that you, the actuary, think is being taken on the amount of surplus that you, the actuary think is needed to manage that risk. It also takes in the amount of return on that surplus that you, the actuary, thinks is appropriate for your company. Every network product should have a network pricing.

Other pricing principles include price-setting principles. Anyone can set a price. Look at what the other people are charging. Convert to PMPM pricing. Take as much administration margin as you think you can get away with. What's left is a so-called budget for medical costs. And again, as a representative of the providers, when you've done the pricing this way, I know it.

In the top-down approach: start with the premium you want, back out the administration, and work from there. In factor pricing, for example, set your HMO price at 90% of your PPO price, or 95% of someone else's HMO price.

Community rating. In some jurisdictions that's all you can do for HMO or in-network POS pricing. Community rating means one PMPM for an area. I put it under "the bad guys," the price-setting principles, because community rating is too often used as an excuse to not do a disciplined network pricing. Opportunity pricing is setting the price where you wish you could be, in hopes that if you price there, you will get enough members for your wish to come true.

In shadow pricing you copy someone else's pricing. There's also medical director pricing. I've heard several medical directors make the comment, "The only thing that matters is medical management. We don't need to take a great deal of time on this actuarial stuff. It's just hocus-pocus. It doesn't really matter." These people don't understand that arrogance is not the same thing as financial soundness.

Some companies seem to think that accountants are qualified to do network pricing. I don't agree. I don't think they're any more qualified than nurses are qualified to do gallbladder surgery.

In market-driven pricing, you set your price based on where you think the market is. Meanwhile the market is setting its price based on where it thinks you are, and it gets very interesting. Emphasis, de-emphasis. If you want to emphasize the HMO, set the price at 70% of the PPO, for example.

Is there any place for price setting? Well, sure there is. You cannot ignore what your competition is doing, but every network product should have network pricing, so if you have to price using price setting, it's our duty as actuaries to make sure that a disciplined network pricing has been done. Our management knows what it is, and our management understands the difference between the network pricing and the price-setting pricing.

At this point, I think I've covered three of my four basic issues. Pricing is not the same as price setting. Every network product should have network pricing, and network pricing is easy. During the rest of my presentation, I'll try to cover the fourth point: if every network product has a network price, the differences between HMOs, PPOs, and POSs will be readily apparent.

Let's look briefly at a format for network pricing. Anyone who has done HMO rate filing is familiar with this. The major categories that should be considered are inpatient hospital, outpatient, primary care, specialties, other medical, and administration.

What should be analyzed for each category of medical service? If you observe utilization, what do you see? What is the expected utilization? Observe cost per unit of service, expected cost per unit of service, expected savings for the plan for member cost sharing. Then the expected PMPM cost is the utilization multiplied by the unit cost and if you use PMPM, divide by 12,000.

Here are some subcategories of hospital inpatient medical service you should analyze if you can: medical/surgical, maternity, mental health, substance abuse, intensive care unit (ICU), rehabilitation. For outpatient, use ambulatory surgery, radiology technical component, pathology technical component, mental health, substance abuse, emergency room, home health. You could probably come up with different categories that will be equally valid in the marketplace where they operate.

Primary care physicians. I have a lot of trouble getting breakdowns in this level of detail. The best luck I've had is just getting primary care figures in terms of number of visits and average cost per visit.

Other categories are specialty care physician, anesthesia, cardiology, general surgery, obstetrics/gynecology, orthopedic, neurology, radiology, pathology, mental health, substance abuse, and other.

Again, any of you can probably come up with different categories. Try to break it down, and use as many categories as you can get credible experience for.

Administration. How much administration expense do you really have to recover? What is the net cost of stop-loss reinsurance? The premium you pay less the average amount of stop-loss claims is your net cost.

When you put all this together, there is a network pricing format that you might come up with (Table 1). In this example, let's assume the company offers a PPO product now, and is going to offer an HMO and a POS effective January 1, 1997. Let's quickly look at how the format works. The starting utilization is not usually the same as a projected utilization. The starting or the observed unit cost is not the same as a projected unit cost. Savings from member cost sharing is a function of your benefit plan. In this example, for instance, starting utilization is from an indemnity environment. The projected utilization will be in managed care.

TABLE 1
NETWORK PRICING FORMAT
PROJECTED EXPERIENCE FOR CALENDAR YEAR 1997
CURRENT BENEFIT PLAN IS PPO
NEW BENEFIT PLAN WILL BE HMO (\$10 COPAY)

	Starting Util /1000	Projected Util/1000	Observed Unit Cost	Projected Unit Cost	Savings from Memb.	
					C/S	PMPM
Inpatient Hospital						
Med/surg/other	200.00	180.00	1,400.00	1,260.00	-	18.90
OB	30.00	27.00	1,700.00	1,530.00	-	3.44
Mental Health	30.00	27.00	600.00	540.00	-	1.22
Substance Abuse	27.00	24.30	275.00	247.50	.	0.50
Boarder Baby	6.00	6.00	1,800.00	1,620.00	-	0.81
Rehab	6.00	6.00	950.00	855.00	.	0.43
ICU/CCU	22.00	19.80	1,800.00	1,620.00	-	2.67
Other	4.00	3.60	1,300.00	1,170.00	.	0.35
IP Hospital	325.00	293.70			-	\$28.32
Outpatient Hospital						
Ambulatory Surgery	130.00	100.00	850.00	900.00	-	6.67
Emergency Room	400.00	200.00	170.00	130.00	-	2.17
Radiology	200.00	125.00	375.00	375.00	-	3.91
Pathology	175.00	150.00	125.00	125.00	-	1.56
Renal Dialysis	30.00	30.00	160.00	150.00	-	0.38
Home Health	15.00	60.00	500.00	400.00	-	2.00
Other	2,200.00	1,980.00	35.00	30.00	-	4.95
OP Hospital	3,150.00	2,645.00				\$21.63
Primary Care						
Physician	3,500.00	4,000.00	50.00	45.00	10.00	\$11.67

TABLE 1 (CONTINUED)

	Starting Util /1000	Projected Util/1000	Observed Unit Cost	Projected Unit Cost	Savings from Memb. C/S	PMPM
Specialty Care Physician						
Anesthesia	35.00	30.00	700.00	650.00	10.00	1.60
Cardiology	100.00	95.00	120.00	110.00	10.00	0.79
General Surgery	150.00	140.00	300.00	250.00	10.00	2.80
OB/Gyn	30.00	25.00	2,500.00	2,200.00	10.00	4.56
Orthopedics	178.00	140.00	170.00	140.00	10.00	1.52
Neurology	75.00	65.00	120.00	100.00	10.00	0.49
Radiology	800.00	720.00	150.00	120.00	10.00	6.60
Pathology	1,800.00	1,500.00	50.00	40.00	10.00	3.75
Mental Health	500.00	410.00	120.00	95.00	10.00	1.45
Substance Abuse	100.00	80.00	120.00	80.00	10.00	0.47
Other	500.00	450.00	70.00	60.00	10.00	1.88
Physician	4,268.00	3,655.00			\$	25.90
OP Other						
Immunizations	80.00	95.00	30.00	30.00	10.00	0.16
Eye Exams	250.00	250.00	100.00	95.00	10.00	1.77
Hearing tests	60.00	72.00	150.00	140.00	10.00	0.78
Podiatry	30.00	20.00	65.00	55.00	10.00	0.08
Mammography	18.00	23.00	65.00	60.00	10.00	0.10
Ambulance	24.00	22.00	450.00	400.00	10.00	0.72
Health Education	6.00	10.00	70.00	65.00	10.00	0.05
DME/Other	2,700.00	2,500.00	35.00	30.00	0.50	6.15
OP Other	3,168.00	2,992.00				\$ 9.79
Total Projected Cost of In Network Benefits						\$ 85.64

Every one of these numbers requires a lot of judgment, but I made up most of these numbers. Utilization for inpatient hospital and specialty physicians tends to go down. Outpatient, other, and primary care physician tends to go up. But one number, home health, goes up from \$15.00 to \$60.00. Inpatient hospital procedures are moved to the lowest category of inpatient care. Some of the numbers make some sense. What's really important is each of you get some good data as to what's observed. Make your own good judgments as what is to be projected, and then come down to your total PMPM and your administration cost.

Five things drive everything. (1) Services. What's included? What's covered in your plan? What is not included? (2) Percentage of claims in network. This is an in-network format. The out-of-network format is similar. It's vitally important to know what percentage of your action you think will occur in network. (3) Utilization. What are you starting with and what are you projecting? (4) Unit cost. What are you starting with and what are you projecting? (5) Administration is also important.

Next let's look at how to develop the PMPM premium (Table 2). Total projected cost of in-network benefits is \$85.86; 95% of your action is assumed to be in network; the previous 80% comes from PPO days. Ninety-five percent might be more like it for HMOs. Out of network, the projected cost is \$100. Total projected cost is 95% of \$85.86, plus 5% of \$100, which is \$86.57. Appropriate margins are then put in for administration to build from the bottom up to your total PMPM.

**TABLE 2
NETWORK PRICING FORMAT**

Total Projected Cost of In-Network Benefits	\$ 85.86
% of Benefits Paid In Network	
Observed - Previous Year	80%
Expected - Current Year	95%
Total Projected Cost of Out-of-Network Benefits	\$100.00
Total Projected Cost of Benefits	\$86.57
Administrative Expenses to Be Recovered	
Total	\$3,000,000
PMPM	\$ 12.50
Net Cost of Stop-Loss Insurance (PMPM)	\$ 1.00
Cost of Carve-Outs (PMPM)	\$ 2.00
Risk/Profit Margin	\$ 4.00
Less: Expected COB Recoveries	\$ 1.00
Total Premium (PMPM)	\$105.07

There are factors that influence pricing and the PPO versus POS versus HMO differences. First, what services are included? What are not included? How much is in network? What is the utilization and unit cost? Unit cost is a gross cost less the savings per member cost sharing. What is the administration cost?

Let's look at some of the subfactors. What's important is that you each use your own judgment, rather than think of this as the book on what should be included under here. For instance, what services are included and not included? Preventative benefits are often covered by HMOs and POSs, but not by PPOs.

What drives the percentage of claims in network? Your network cannot do some of the services. People have to go to the emergency room, but it doesn't always happen to be in network. Sometimes people will voluntarily choose to go out of the area. Each of these factors is very different for HMOs, PPOs, or POSs. A

100/70 plan will give you a lot more ability to steer into your network than a 90/80 plan will.

Claims administration exceptions. What really happens when someone forgets to get a referral? The gatekeeper, or lack thereof, and utilization management are two key aspects here. One is part of the medical management. How effective is it really? And second, how effective is the benefit plan via co-payments or steering or co-insurances in steering action into your network? There's claims, administration, exceptions, and hospitals in network, just for example. If you've gotten a good deal from your hospital, but the hospital is on the verge of bankruptcy, that means one thing. If the hospital made \$5 million last year, that means something else. What will physicians in network really do? Can they upcode—can they get around the deal? Extended member cost sharing is in your benefit plan. What is the degree of discounts already achieved?

What drives unit cost? The obvious driver is negotiated arrangements with providers. What do you have? How much pressure are you putting on your providers already? Is it capitated? Is it fee-for-service? Is it a diagnostic related group? There's extended member cost sharing and characteristics of physicians in hospitals in network. Do you know your providers? What are they like? What about out-of-network facilities? There's medical cost inflation, stop-loss, and reinsurance. Again, these are just factors. Each of you can and should come up with your own list.

And the fifth factor is administration. What are the network management expenses in total and how much are you going to charge this year to this network? Some of the other factors are net cost of stop-loss reinsurance, carve-outs, coordination of benefits (COB) recoveries, risk/profit margin, loss from individual conversion.

I'll elaborate a little bit on the risk/profit margin. There are three subfactors to consider in building that up. There's the degree of risk sharing with your providers. To what extent are you taking all the risk? To what extent is your product prospectively rated or nonexperience rated? To what extent is there experience rating?

What is the required surplus to manage the risk taken and to manage unforeseen contingencies? What is your judgment, as the actuary, as to how much of this is needed? Your judgment should be shared with management and even if you cannot build the margin you need, they should at least know.

There's the return on investment target for return on required surplus. What do you think is appropriate? Is it 15%? Is it 20%? What is your judgment?

Of my four conclusions, the first is pricing is not the same as price setting. Two, every network product should have a network pricing, even if you have to do price setting to set your price. Three, network pricing is easy. You all have the skills and the background to do a good job with the network pricing. Four, if you do a network pricing for every network product in your area, the pricing differences among HMOs, PPOs, and POSs will be readily apparent.

One corollary before I close. Often, prices have to be set by price setting. When that happens, the pricing differences that should show up among HMOs, PPOs, and POSs will not show up, because everybody is copying everybody else's price. I hope Jim can speak to what really does show up in some markets.

Mr. Drennan: I am with Towers Perrin in the St. Louis office. I am going to talk to you a little bit about methods of pricing from more of an indemnity approach and then I'll discuss an HMO approach.

The first approach is what we call an adjusted indemnity approach. The adjusted indemnity approach is typically what you would use for a PPO product. If you've come from a commercial insurance company background or Blue Cross background, then most of your experience is in a traditional indemnity product and you're going into PPOs. The second approach is a service category cost buildup, which is similar to what John was showing you. That's where you have some experience by subcategory, and you're building it up.

Let's talk first about the adjusted indemnity approach. You basically start with an indemnity level of cost and utilization which would typically be from a continuance table. You may have your own. You may have some consultant's tool that you've built up. This tends to be a middle-of-the-road model. It has tended to be kind of an average cost, not appropriate for any one group. You may have area ratings or benefit ratings. All those things are in your continuance tables. Typically, the continuance table is total hospital and then total physician. You don't have it broken down as well as you would in approach two. It's a broad-based approach. It's good if you have a large block of experience and can document your table, adjust it, and tilt it just right and get it area adjusted and benefit adjusted. It is really most appropriate when you don't have detailed managed care experience.

The approach then is to write up the indemnity plan, using your network benefits and your nonnetwork benefits. So you basically write two products. Most of you would have a Lotus model or a personal computer model. Then you want to estimate the network adjustments, such as fee discounts, utilization adjustments, and type of service categories, which is much more difficult. You usually don't

have such good data, so you have to use the discount approaches and estimate and use it with some doubt.

Utilization adjustments are somewhat the same. It's hard to get detailed numbers by category. And then the type of service category is defined by your benefit plans.

The categories are weighted by expense to get a composite discount. If you had some primary care discounts and maybe some specialty discounts, then some hospital case rates or per diems weight all that and come up with your overall adjustments. Apply this to get your network costs. Your network cost might have been x and average discounts are 15% so the in-network benefit is x times $(1-15\%)$. You have your out-of-network benefit with no discounts. Assume it's just a standard indemnity approach. Weight the two, bring them together to get a composite. When you weight the two, how much you assume for out of network will depend on the type of group and the type of network. If your network is broad-based, you'll get a lot of in-network usage, but maybe fewer discounts. If your network is narrow and closely defined, you may get good discounts, but a lot of people don't have access.

The best way is to actually run a model comparing your existing group. What's the distance to providers and where are they going now and doing all sorts of sophisticated pricing. That generally doesn't happen. Most of the time, you're doing some approximations.

For example, we have an HMO and we use some typical benefits found in some of the small group reform areas. The HMO has a \$10 office copayment, \$150 emergency room admission, and a prescription card copayment. The POS has the same in-network benefits as the HMO. Out of network it has a deductible of \$700 with 70/30 co-insurance. Your PPO should have somewhat better benefits than your POS, but not so much so that the relativities are right. We used a \$10 office visit, and \$450 deductible. Our model actually started out with an 80/20 coverage, but some things are discounted and some services receive no discounts. So this is a weighted average. The PPO has a 60/40 out-of-network benefit.

In this case, we were assuming the HMO and the POS had 35% discounts and the PPO had 20% discounts. The relativities are more important than the absolute numbers. I have seen an example where the PPO had greater discounts than the HMO. What do you do? You wind up with your prices inverted. There's not an easy answer. One answer is, don't sell the HMO if your PPO is better. Two, adjust the prices to where they should be, knowing that you're going to have some cross subsidies between the two products. Three, the better answer is revise the dis-

counts. Get them in line, which sometimes doesn't happen until you have the membership to get the discounts.

We assume some utilization adjustments in the HMO and the POS. We assume the inpatient would be a 15% reduction, but we assumed more of a shift to the office visits. You expect more office visits. That's where we want people to go, and it is a lower cost. You want to get them out of the specialists' offices. For out-of-network benefits, we assumed a 20% utilization and 80% in our network. In this example, the HMO was 5% lower than the POS, which was 2% lower than the PPO. These are the relativities which are a little too close together. I would rather see a little wider spread.

Now the second approach will have a detailed expense displayed by utilization and cost, and this is used where you have experience. Or you at least have a reasonable idea of a generic model of some managed care or some HMO experience.

We generally would start with a model that uses moderate type assumptions as a starting point. This would be sort of generic, baseline, standard, and not really considered aggressive pricing. You'd adjust it then. If you were going into an area, you might adjust it for market conditions. You might think you have to be aggressive here. You might adjust it because you know you've got some better discounts in this one area. You might have stronger utilization controls.

The main problem is usually going into a new area or doing a new product or doing something new where your old experience is never exactly valid. Obviously, you adjust for the out-of-network utilization, and you rate it using an indemnity model for the out-of-network benefits. You'd go back to your first method for the out-of-network benefits, and combine it with this. Let's look at a couple of examples.

Case one is an HMO and a POS only. This is fairly similar to the one we saw earlier with the \$10 office copayment. The out of network had the 80% co-insurance with a \$250 deductible. Here we assumed that the out-of-network utilization was only 6%. That's very low. If you can get 94% of your benefits in network, you really have a strong network. Because of that, the differential was only 1% between the POS and the HMO. The POS price is 1% higher than the HMO. Why is that? In your POS, everyone is going into your HMO; therefore, it's not much different.

Now what happens if you change that 6% to a much more reasonable number? We assume the same benefits, but we have a 20% out-of-network utilization and the cost differential changed from 1% to 2%. Your benefits aren't spread quite wide enough. So it's a combination of how far apart the benefits are in network and out

of network, and what the percentage is going in and out. And from there, it's just a mathematical calculation.

Let's discuss another one that gets more complex. We add a PPO, so now we have a three-level benefit. You get into some very difficult pricing issues, if you allow an option for people to take any one of the three. This generally happens in your larger groups. In the smaller groups, it's generally the group that has to take one of the three and stick with it, or they can opt out once a year.

These HMO and POS benefits are the same as the prior examples. What we've added here is a PPO with a \$10 office copayment, a 90% co-insurance in network, and a fairly rich PPO. Out of network, the PPO has a \$100 deductible and 70% co-insurance. So again, we don't have a wide difference in benefits.

We assumed 20% out of network. The PPO wound up 14% higher than the HMO and the POS was 2% higher. Said another way, if the HMO was 100, the POS was 102 and the PPO was 114. So that's that same 2% difference on the POS, but the PPO came up quite a bit higher. It actually should be higher. If you have a network and you want people to go into your stronger network, your HMO network, you need to have your prices far enough apart, that maybe 14% is far enough to get people to go to the HMO. If you don't, they'll stay with the PPO. People tend to like the wider access of the PPO. So you have to have the right trade-offs between the two. Your benefit design and discounts and making sure that you get the stronger utilization controls are really key to that.

Let's discuss one more example. Again, it has the three-level benefits. Now this HMO is roughly the same as we've had before. In the POS, we decrease the benefits a little for out of network, with a \$700 deductible, and 70/30 coverage for out-of-network benefits. The PPO also decreased slightly. We went to a \$700 deductible and 60/40 out-of-network benefit.

Based on a sampling of rate filings, basically the HMO is 100 and the POS came up at 106. If you remember, we had been showing 102 as the theoretical difference. These were slightly different out-of-network benefits. So the carriers all came up with a wider difference than what our theoretical model would have had. And the PPO came out at 113 and ours was 114. So it was fairly logical. That was for a selected number of carriers. Now for those who had filed both the HMO and the POS, the range actually went from a 2% differential between HMO and POS to 22%, with an average of 9%. Many carriers had a lot of different experience. They used their own data. The key is to use your own data and your own judgment, unless you want to look at the market to see if you're in line. If you're out of line, you have a tough choice. You must either go back to your network people and say,

"We need better deals," or you must change your prices and tell your management, "We're going to lose money on this." Project how much you're going to lose, and let management know up front that you just can't continue to lose money.

In summary, we haven't answered the questions of exactly how to price because that's not our intent. Our intent is to show you that the relativities and the methodology all key on having data, applying it, and using some good actuarial techniques.

Mr. Sanford B. Herman: In the models that you've shown, you haven't really addressed the issue of potential antiselection, where you have a dual or triple option. That could be worth more than many of the factors that you've already talked about.

Mr. Drennan: You are correct. Most of these were done in the small group marketplace where the group has to select one plan, and you don't have the selection. When you get into the larger groups, they will demand that each individual can opt back and forth, and the individual will select to their benefit almost every time. If you have one group with certain claims experience under one plan and you give that same group two plans, the sum of the two plans will always be greater than the one you had before. How much greater? Sandy's right; it could be very material. We're talking about the small group marketplace, but you have to add that antiselection feature when you get into the larger group models.

Mr. Stiefel: In the format that I came up with, if I had to do it over again, I would have put that under my list of subfactors for utilization. What makes the observed utilization go to a different expected utilization? That's a very good example.