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HEALTH VALUATION ACTUARY

Moderator: JAMES N. ROBERTS
Panelists: JOSEPH MICHALCIK
ALLEN J. SORBO
Recorder: SHU-YEN LIU

This session will consider several valuation issues from the point of view of the actuary of an:

- Insurance Company
- Blue Cross/Blue Shield Plan
- Health Maintenance Organization

Some of the items to be addressed by the panelists are:

- Basic methodology
- Source of data/coding conventions
- Extended benefit provision
- Loss adjustment expense
- Provider arrangements
- Employer refund arrangements
- Cash flow testing

MR. JAMES N. ROBERTS: The Health Valuation Actuary is a fairly broad subject, and the breadth of that subject is rarely covered by one person. And so to try to facilitate the possibility of some real discussion, I decided to narrow the scope of that topic. What we're going to be talking about is medical expense type products, primarily in the group insurance or employee benefit environment or at least product types where there's fairly frequent possibility for repricing. We are not planning on talking about health insurance in terms of increasing risk and level premiums and some of the issues related to that. If there are specific issues you want to bring up at the end, we can do that. In terms of the valuation actuary's role, we're talking primarily about liabilities, and in particular, claim liabilities as the main focus. Our objective is to talk about a reasonably current list of issues that the health insurance actuary has to deal with in the financial reporting environment, and each of us will discuss some subset of these issues from the point of view of the HMO actuary, the Blue Cross-Blue Shield actuary, and the Life and Health Insurance Company actuary, respectively.

I think it's interesting to note both the differences and the similarities between the three groups. Al Sorbo from Tillinghast/Towers Perrin will be representing the HMO point of view, and Joe Michalcik from the Oklahoma Blue Cross-Blue Shield plan will be taking the Blue point of view. I'm going to be taking the point of view of the Insurance Company actuary. The approach that we're dealing with will be focused around the relationship of the health valuation actuary to financial statement preparation primarily for insurance intermediaries as I've discussed. There are parallels in looking at claim liabilities for self-funded programs for employers. Although it's not our focus, it can easily be considered a part of the comments that will be made. The audience in the self-funded plan area is frequently less sophisticated than insurance company managements, and presents semantic problems of its own, especially in a plan with IRS restrictions. In particular, "reserves" is often used as a term for assets

rather than liabilities. They would, of course, like the liabilities to be equal to the assets so that they can prove that the plan is just precisely correctly funded, and that presents its own range of challenges for the actuary serving such plans. When you look at one of these plans where they try to convince you that the liabilities are equal to the assets, they'll have sometimes pretty bizarre approaches to measuring the liabilities. But beyond those special semantic problems which are kind of intriguing at times, we'll be dealing primarily with serving a more sophisticated audience.

The unique characteristics of medical expense products from the valuation actuary standpoint are that measurement of these liabilities tends to be fairly subjective, and they also tend to be of a short-term nature. These estimates turn into reality fairly quickly, and this suggests creating a loop of putting more recent information in to improve your estimates prospectively. You don't have to wait a long time to find out how close you were, in other words. The other important characteristic to do a good job as a valuation actuary for medical benefit plans requires a much closer knowledge and familiarity with operational aspects of the products. We may also have an opportunity to comment a little bit on some of the by-products that can fall out of the valuation role, in particular, various types of management information. Clearly using standard methodology and techniques, you end up with an allocation of expense to specific time periods which allows you to compare the claim expense with exposures that were in place at that point in time, and also allows management to judge the effectiveness or ineffectiveness of various courses of action.

Al Sorbo will discuss the HMO environment first. Al has roughly 15 years of consulting experience in the health insurance industry at large. HMO plans in particular are his specialty.

MR. ALLEN J. SORBO: I'm going to address the HMO perspective, and particularly, the estimated claim liabilities for balance sheets. One area I'm going to focus on specifically is the new standards of practice put forth by the Academy, particularly with this latest issuance, Standard of Practice No. 16.

I had the privilege of serving on a subcommittee that had the responsibility of drafting that piece, and I think there are some controversial issues for the HMO industry at large. In fact, I gave a presentation at a Group Health Association of America (GHAA) meeting about a month ago on this subject. Unfortunately, the audience was not quite as financially oriented as I had hoped, but I know there are some issues of concern from talking to some of the people in attendance. I'm willing to bet that within two years, if not sooner, there may be some revisions to the standards.

Also I'm going to be talking in general about the state of free-standing plans, "independents," as opposed to those that are aligned with the big insurance companies or the Blues where you have your own internal actuarial staffs working up these liability estimates for the most part. The focus here is on the rest of the industry that for years has gone its own way as far as making these estimates. Even today, 15 years after the beginning of the major growth of the HMO industry, we expected plans would be much further along than they are in terms of adopting traditional actuarial methods for estimating incurred but not reported claim liabilities. The industry has moved a long way. They're using some traditional methods, but they don't really know how to use them. They've adjusted to using lag tables to some extent to

calculate completion factors, but typically even the way they go about estimating completion factors is quite deficient.

There is a litany of problems that I see still remaining within the HMO industry. There's good news and bad news here. Too much reliance on utilization review (UR) bed day counts and referral counts is perhaps the negative. Obviously within the HMO industry, one of the advantages is that many HMOs are able to monitor almost all their bed days on a current basis. They should certainly use this data in their estimates of incurred claims expense and liabilities. The problem is, a lot of plans think they have a better system than they really do, in terms of estimating bed days, and there's little effort made to determine on a retrospective basis, how good their preliminary estimates are. A lot of plans go through the process of making an initial estimate, and then update those estimates a month later. But when they're preparing their financial statements, they don't review how good these initial estimates were. Of course, it's not too difficult for an actuary to create a method of retrospective analysis which determines how good the initial estimates from the UR department are.

The second point relating to reliance on referral counts is something that has been an epidemic within the more traditional staff model plans. There are many staff model management teams over the years that have thought we could count every referral case for which we haven't received the bill, and estimate some incurred but not reported (IBNR) claims based on that count. Well, I've yet to come across a system that's been able to accurately count and come up with a reasonable estimate using that sort of methodology. Even so, I think a lot of staff models have come a long way, and within the last five years or so have developed and become familiar with the use of lag tables for estimating liabilities and incurred claims for referral physician services. Although that's changing, there's still some education that has to be done, particularly at the top management level.

Much of the problem has been with the CEOs of HMOs who do not quite understand the difficulties that we wrestle with when we come up with estimates of incurred claims for the last couple of months or even three or four months back. Regarding those estimates, the possibility of errors, and the range of error in those estimates, there's been many top HMO managers who think there's got to be a more exact science than what's traditionally used within the industry.

Inadequate attention to trends in developing incurred estimates for the most recent two to three months has been a problem. These are areas where completion factors are typically totally useless.

Insufficient analysis of the claims tail, again, is an area where we've had to educate top management. You still run into a lot of presidents and finance directors of HMOs who wonder how could we possibly be paying claims that are 12 months old. And of course when you tell them you're paying claims that are 24 or 36 months old, it blows their minds. This problem applies even to plans that have adapted to using lag tables. The typical HMO way of producing lag tables (because of this mind set that we pay everything within 12 months) is to run 12-month triangles, and of course this doesn't give you any idea of what the real tail is. So we tend to look at other data to try to estimate what remains unpaid after 12 months, but we try to get plans to

adapt a longer horizon too. The problem is a lot of the information systems used by the HMO industry were designed by technicians who knew very little about actuarial science and had very little actuarial input into the development of those systems. Those are the reasons that certain formats for lag reports evolved within the industry. Even this is changing slowly, but hopefully we'll get there sooner than later.

The next point is that virtually no HMOs make provision for claim settlement expense, unless they're a Blue Cross/Blue Shield subsidiary or an insurance company subsidiary where traditionally you make this type of claim settlement expense provision in your liabilities. We've had to go through an education process with them again since we now have a standard that requires a provision for it. Another problem is HMOs typically do not build much margin. So when we tell them they should add 2-3% margin for the claim settlement adjustment expense, the liabilities becomes a sore point for the HMOs.

I suppose one adjustment that might moderate the impact of this for the HMOs would be to discount. Look at the payments for the current period and forecast the runout by month and discount with interest. This traditionally is not done for medical claims.

The next point relates to the accrual method for inpatient stays that extend beyond the end of the reporting period. For the most part, we're concerning ourselves with year-end reporting, statutory reporting, where we have to issue opinions on the liabilities. Again the practice throughout the industry is not uniform, and the accountants haven't been very helpful in this area because they're more or less flexible as to how a plan handles reporting these claims. We tend to look at what the benefit plan says. More often than not, the HMO is responsible for a case from the date of admission until the date of discharge, regardless of whether coverage terminated at the end of a particular month. So we tell our clients that they should be building in an inpatient provision for the entire estimated amount for the cost of the stay. I suppose we're encountering fewer problems with clients than we used to. There's been an education process needed here again, but most plans seem to be accruing for the days that extend beyond the end of the reporting period.

Inadequate claims inventory data have been a problem. We're generally looking at lag tables built on date of service to date paid. If we have some good inventory data, we can analyze the data and make some reasonable adjustments if the amount paid drops by a huge amount on a cash basis, compared to the previous three or four months running average. HMO plans generally don't have very good data in this area, although data are improving.

There are plans that simply don't want to build in any sort of a margin, and again, it's an education process that we have to go through with the industry to get them to change. It can become a particular problem at year-end if they have really been cutting it close. Then we encounter numerous situations where plans, even if they just built in 5% margin, would probably end up in a shortfall position. If they're running particularly tight in terms of meeting minimum statutory surplus requirements, this can be a problem. Again, a lot of this has taken on a new light, in terms of the fact that states are now enacting or have enacted minimum statutory surplus requirements, and that makes you relate this whole process of estimating claim

liabilities to the minimum statutory surplus requirements, and makes it a little bit easier to convince the HMOs that they should have some margins for safety.

The next point is inadequate attention to impact of renegotiated provider contracts. Again, an HMO should know very well when their key contracts with hospitals are renewing, and what impact this will have on their liabilities. There are many plans that have contracts that renew on a calendar year basis with their providers. But to the extent that they have a big provider renewing a contract in July that handles 50% of their inpatient days, or when they start to estimate July and August inpatient claims without taking account of the change in the per diem of that one provider, they miss the boat. It's not unusual for HMOs to overlook that. It's not that unusual for the people who have responsibility for hospital negotiations to be in a totally separate department from the financial people who put together the financial statements. In many cases, the two departments should be talking to each other much more than they are. A lot of plans need to make major improvements in their internal communications so that the finance people know what's going on with the hospital and physician renegotiations.

There are a couple of problems in including large inpatient claims in lag tables. One is HMOs frequently end up paying for claims on a partial basis so they get interim billings from the hospitals, and the bill ends up getting broken up and doesn't get allocated back to the month of original admission within the construction of the lag table. So it's split up among the various months, where the first day on the current bill received ends up being the date of admission, or the date of incurral. We need to be able to filter out the impact of very large claim.

One current issue that is fairly new in the industry that has an obvious impact on estimating claim liabilities is the development in the area of low option plans. Often, plans in terms of their lag tables lump all their various lines of business together. To the extent they're shifting one way or another, they should be knowledgeable about those shifts so that they know what estimates they should be making on a current basis for incurred claims. I'm not so sure that sufficient attention to detail is really given to these changes.

Some of these issues I've outlined here, such as longer lag for out of network claims, have to be pointed out to the plans because they may not really understand what to expect. Monitoring the network and out of a network mix, looking at it from various perspectives, maybe on a gross basis out of a network and in network combined, in addition to the two pieces separately, can yield some very misleading readings. If there's a big shift from out of a network to in network or vice versa over time, it can have some unexpected impact on your incurred cost if you're not really watching it closely from all angles.

Another issue is joint venture agreements with carriers. A lot of HMOs are entering into joint venture agreements with indemnity carriers because they have to from a regulatory point of view. In a lot of cases, the HMOs are accepting most of the risk. This isn't a session to address those issues, but one of the potential liability issues becomes any residual liability that the HMO may have for those out of network claims that ostensibly are the responsibility of the insurance company partner, but in reality (because of the joint venture contract), flow back to the HMO. This can be a touchy

point in certain states where it seems that the state insurance departments may not understand what they've allowed to happen, and there's a lot of potential problems on the horizon. Hopefully insurance companies do know what's going on and what they're allowing to happen so there isn't anything mysterious about some of these liability items that end up on the HMO financial statement because of these arrangements. Certainly, there is a need depending on who's processing out of network claims for the HMO to be privy to what's going on and how those estimates are being made, so that they don't have any big surprises at year-end settlement time as to what their ultimate liability is going to be.

Modifications to the NAIC HMO blank were effective for year end of 1990. The actuarial opinion is supposed to include some language pertaining to how the HMO did its reconciliation of the previous year's reserve estimate and follow up studies. This issue is addressed in the Actuarial Standard of Practice No. 5, and the NAIC has added a specific requirement that the actuary put in his opinion, the extent that he's reviewed the follow up study and is in agreement with the analysis done by the HMO of that reconciliation.

Last, I'd like to touch on some issues covered in the most recent Actuarial Standard of Practice from the Academy, and focus on what I consider to be some of its more controversial aspects. This applies to all insurance company actuaries who are dealing with their HMO lines of business and are opining on those lines of business. The actuary is supposed to review and be very knowledgeable of all provider contracts and risk incentive clauses. The statement of opinion issued by the actuary is supposed to include some statement that indicates knowledge of capitated risk contracts and the risks and incentive provisions and so forth that are covered in those contracts.

The opinion is also supposed to include a statement regarding whether any analysis of financial position of any capitated provider entities was done by the actuary. If you have a large capitated Individual Practice Association (IPA) where you shift all the physician risks to that IPA, are you as the plan actuary looking at the financial statements, and have you reviewed the liability estimates for that IPA? If not, the opinion should say basically that you haven't done any such review.

The opinion should indicate whether sufficient provision has been made for any plan liability that may relate to any insolvent providers that the plan either alerted you to or that you learned of in the course of your reviewing the experience of a large capitated IPA or perhaps a large capitated medical group. Where this whole issue gets very murky is in the plans that are network type HMOs that capitate a multitude of small or medium size medical groups of all types, from primary care to multispecialty, and all sizes with ranges of ability to really absorb the liabilities that they're being asked to absorb, and where potentially I think there can be some significant exposures. I think this could be an issue in the 1990s. In certain markets that rely on this contracting mechanism, and if the HMO growth of the 1980s tends to continue into the 1990s, and HMOs become a very significant part of the practice of some of these smaller medical groups in many of these cases, these doctors are given their cap of $35 or $40 and told by the plan, "Good luck, if you come out ahead, good for you; if you lose a little bit, too bad; if you lose a lot, too bad, you're on your own." There's little management exercised by the HMO. HMOs are generally not asking for any

information from these medical groups, I'm not going to mention specifically markets where this type of contracting mechanism prevails at this point. I think there's potentially some big problems in this whole area.

The next point I will review is covered and uncovered liabilities. I'm not going to run through the definition: it is covered in the NAIC blank precisely. You should be familiar with that if you're issuing opinions. The NAIC blank treats capitated agreements now as covered liabilities. The uncovered liabilities come into the calculations of minimum statutory surplus requirements in the NAIC Model regulations. When you are capitating a small primary care group that is referring out two-thirds of the services to specialists (where these doctors negotiate either on a one-on-one basis how much they are going to pay for each referral or however they handle it), there is potentially major uncovered liability that may pop out of no where at any point in time. There have been examples of IPAs that have gone belly-up and an HMO has had to come in and bail them out or help close up the IPA. In almost all these cases, there is no hold harmless contract between the HMO and physicians the medical group refers patients to. There is probably little question that the medical group itself is going to be left high and dry, and the HMO is not going to bail it out, and they will not be able to bill their patients. There is a real question about other referral specialists the group is referring patients to, because there is no protection for the members in many states. California has something in place now that says any doctor who accepts any HMO patient agrees to effectively a hold harmless even though there's no contracts specifically saying that. But unless almost every state goes that route, there are potentially huge uncovered liability issues for the HMO industry. HMOs are not going to like this, and again there's a lot of murky issues for actuaries. There is no way in the world that we are going to be able to analyze the financial condition of all these physician entities, and most HMOs are not accumulating any information even on their contracts with their biggest providers that are capitated.

If you know one big medical group is getting more than 50% of its business from HMOs (which might include yourself along with some other HMOs), I'd be a little bit concerned. There have been cases of big medical groups that have had severe financial problems where the HMO market share got too big and they were not getting paid enough or they were not managing enough. They went out of business and caused a lot of problems for the HMO and the community.

The last point is delivery system changes. This is probably not a big issue for most HMOs. The issue here relates to IPAs to some extent, more likely staff models, traditional staff models, where they make major changes in the contracting mechanism, like switch from fee-for-service laboratory to capitated laboratory or fee-for-service mental health to capitated mental health or the other way around. Obviously that has some immediate impact on incurred claims expense and the reserves which an actuary or the financial staff of the plan has to take into account.

MR. ROBERTS: Joe is the actuary at Blue Cross/Blue Shield of Oklahoma, has many years of experience there, and also has insurance company experience.

MR. JOSEPH MICHALCIK: I'm going to try not repeating anything Al said. I did a little bit of a survey before this meeting, among Blue Cross actuaries primarily in the southern half of the United States. All of us had some life insurance company

experience in our background so it's not surprising that our ideas were pretty similar. In what Al was saying about using more than 12 months run-off factors for studying claims, I have found that in one Blue Cross plan, anything that ran more than 24 months from the date-of-incurral to the date-of-payment was primarily an out-of-state claim or a large claim that had been sitting around because of adjudication problems, where they are unsure about how the contract should be interpreted in terms of coverage and noncoverage.

The way we start our claim reserves is calculating the incurred claims per contract month exposed, which requires you to pay attention to changes in what the underlying make up of your block of business is over time. I'm fortunate that I can follow things like the single/family composition of a block of business, the average deductible size of a block of business, some turnover rates or lapse rates if you want to call it that, the mix of the business between PPO and nontraditional. My data tend to be mixed. I can separate it out and put it back together if I need to, but all those things are factors when you look at a claim trend for reserving purposes. It's not necessarily the same data you're going to use for pricing when you combine it all on a per contract basis like I do.

Another important factor is seasonality of claims, particularly when you get into some higher deductible plans. The seasonality factor can distort your opinion as to what really is happening to the underlying trend if you're not aware of those things.

Jim didn't specifically say we should talk about Medicare supplement policies, but certainly the change in the Medicare law in 1989 to include catastrophic benefits, and then backing such benefits out for 1990, changed the lags in terms of not only the pure premiums that were underlying the Part A hospital benefits, but also the completion factors because you're only covering one deductible per year. Therefore, keeping track of benefit differences is an important part of this operation.

I specifically asked the other Blue Cross actuaries and found that everybody was using a full expense liability for the cost of administering the claim run-off. It didn't surprise me after I stopped to look at who I talked to. They all worked for life insurance companies sometime in their prior employment history. In terms of the first responsibility I think it is the statutory accounting blank, and in talking with the other Blue Cross actuaries, only one out of about six or seven talked about adjusting reserves for a GAAP statement. Some of us aren't even sure we should be required to file a GAAP statement. There's some uncertainty there: the difference being for a GAAP statement a reserve should be high half the time and low half the time, but you have a different standard that you want to apply for valuation actuary purposes where you want to be on the high side a much higher percentage of time.

Al mentioned the large claims. I do not feel the least bit shy in going beyond just plain completion factor calculations, and keeping track of those large claims that are outstanding. We've had several, particularly in the last two or three years, where they've just managed to build up to a big inventory number. As to these bigger claims that are sitting in house, I've convinced our claim people that anything over $50,000 should be kept track of as a separate item. They may get paid next month or they may not get paid for six months, but I go outside the pure mechanical aspects for calculating reserves to anticipate that this is going to be an amount over

and above what is included in completion factors. You don't want to get too conservative because some of the estimates you hear from the claim people neglect that there could be a significant discount from billed charges to what actually gets paid.

In terms of management reporting, all of us are keeping track of the actual margins for reserves, doing reserve tests almost every month, keeping track of whether there is a margin, how much it is, and whether the margin is getting bigger or smaller. I think all of those that I talked to in the Blue Cross system provided monthly recast financial results where we go back and substitute the actual reserve numbers for what were used in the original financial statement. I don't specifically use an explicit margin. In my reserve calculations, I don't use a discount for interest on the cash flows of the money going out. It does provide a little bit of margin. Most or all of Blue Cross products are really one year renewable term type products so I don't worry about premium reserves per se. In doing the claim reserves, I've got a fairly good history of completion factors and what the range of possible numbers might be using completion factors from several different years. My approach is to find a reserve number that is going to be adequate a high percentage of the time but still be reasonable.

Sometimes, the completion factors can be calculated in a computer program which throws out numbers that are just unreasonable. It happened to me just last December. If I had used just the computer generated numbers, I would have had $3 or $4 million additional to be reserved, which would have made the fourth quarter loss ratio something like 105% where we were running 83% or 84% all year. It was certainly not consistent with our other knowledge of what was happening in terms of our provider contracts and some word of mouth knowledge about whether the hospitals were terribly filled or unfilled. One other item we could talk about was cash flow testing. At this point, among the relatively small sample, not presenting all 53 plans, nobody was doing any cash flow testing. In fact, one person remarked that their assets are small, and no opinions were specifically asked for.

At Blue Cross in Oklahoma, all of our claims are coded with the date of service. In cases of a hospital claim with a relatively large number of days of inpatient care, it's all coded with the same date, the original date of hospitalization. The only place that I'm aware of any grouping of data is prescription drug claims, at the end of the year. The claim examiners do have rules about splitting them into quarterly groupings, and then they use the center of the quarter as the incurral date. It may throw a little bit of variance into what the real reserves are, but it's real small relative to the other dollar amounts that we are trying to keep track of.

As far as management reporting goes, every month when I do the claim reserves, I prepare a range estimate of what the reserves could be as well as my recommendation, and I try to write a meaningful, comprehensive validation of why I picked that particular number as "my best estimate" of what the claim reserves ought to be, and there hasn't really been a necessity for the company management to change my estimate because it's usually extremely well documented. We keep some statistical data on the average length of time from the original date of service to the actual time the claim was paid. A little trick I picked up from the Blue Cross people was to convert your claim reserve in terms of the average number of days of claim pay out

to see the relative size of it, whether it is going up or going down. I also have an implicit goal, i.e., to keep a positive margin although occasionally a million dollar claim that nobody knows anything about may pop out.

The valuation actuary is not going to try and set a reserve so high that it will cover every possible combination of large claims. My experience both with Blue Cross of Oklahoma as well as my prior employment was probably 19 times out of 20 I've been on the high side in reserves, and the one time that I was low it was not significantly so. There is an implicit margin in the reserves, and I have some concern that maybe in the future the accounting people are going to try and discourage us from using too much of an explicit margin. I know some plans have put as much as 10% in there to really be on the safe side. What I found over the course of time was that without margins, you can generally stay within a reasonable variance on a medium size plan. Maybe with some of the small ones or the smaller HMOs, you can't control your variances as much as the larger ones, but most of the time you can keep it closer to minus five so that if you have a 5% margin, you will be adequate most of the time.

MR. ROBERTS: I'm going to put my other hat on, and discuss the health valuation actuary role from the point of view of the insurance company. I want to emphasize that although I'm a consulting actuary with a public accounting firm, my comments do not relate to the audit role in the insurance company environment but to that of a valuation actuary working inside an insurance company. The auditors were blessed by developing a rule book to follow. The actuarial profession has not gone that way, but allows room for judgment and understanding of the real operation.

The basic methodology, although many approaches are being used and accepted, is what I describe as a traditional completion factor approach. There is an excellent *Transactions* [Vol. XLI (1989): 89-146] paper by Mark E. Litow that describes the methodology in some detail, and in the discussion of that paper by Charles S. Fuhrer, there was a bibliography prepared. If you're not acquainted with what I characterize as traditional methodol-ogy, those could be excellent references. In general, the approach relies on observing a historical payment pattern for a given month or quarter, for the claims incurred during that time period, and how they get paid out over time. Observing that pattern allows you to deduce any unpaid amounts at different durations. This approach is quite universally applied and accepted with the exception of the most recent time periods, such as one to four months timeframe, where there is a reliance on deducing the incurred claims, usually adjusted for trend and exposure changes or any other known events, and then subtracting what has been paid to get the remnant liability. Some of the alternatives are in use because the claim system that's being used is either outdated or does not support this kind of methodology. For example, a number of months' worth of claims that typically run out based on a study that is repeated occasionally and multiplying that by some average payment month, is still used from time to time. Alternatively, a factor that's based on a run out test made at a particular point in time, usually the prior December 31 where the run out claims have been related to some prior exposure amount, possibly claims paid in the prior 12 months or some such index, is also used. Another alternative, more the traditional methodology in HMOs, has become useable to some extent by insurance companies now because of the fairly frequent use of hospital precertification programs in their products and

gives the actuary some opportunity to have earlier knowledge prior to payment of claims. For example, using precertified hospital claims can give you an additional tool in trying to estimate the liability. Although as Al said, it sounds great, sometimes it doesn't work out as well, and my experience with HMOs is that it's used a lot but very rarely tested adequately. Although it sounds like it should work well, in reality, it often doesn't.

I mentioned in the introduction that familiarity with the actual operations is extremely important for the actuaries practicing in this field. Understanding the operational issues allows you to discard a lot of the traditional myths that you might have assumed. A very practical way to gain operational familiarity, especially in a large organization is to take your group actuarial students, and make them work in the claim processing unit for several months at some point in their careers so they learn what really happens. I know in one of my prior jobs, we did that and learned what really happened in the claim department and how things were coded. Most practicing actuaries are pretty creative, and if they understand what is being done, they can usually develop some ingenious adjusting methodology when necessary. Therefore finding out what's really happened is very important. The kinds of myths you might be able to destroy might concern the coding for the incurral date or if there's some kind of a backlog count or processing inventory going on, what is really in there, what might be missing, and how is it counted. When you receive a report, knowing various system issues and what it really means can be quite important.

The focus should be in understanding the actual operational changes. The introduction of managed care products and services is an issue with a lot of carriers, and digesting that is as important because some of the things that are being done to try to either control cost better or participate more in the delivery of medical care services in some sense have altered the way claims get paid. I guess this is being sensitive to the shift in product mix, deductible levels Joe mentioned, and things like that can be real important.

What are some of the types of liabilities that need to be established? Most of our comments relate to IBNR, incurred but not reported claims. We probably all agree that there's a bit of a misnomer because in reality, we're measuring incurred but not paid in some sense, reported or not reported. Usually once you know about these benefits and have started the adjudication process, the system makes that period between reported and paid infinitesimal. Therefore, you're really dealing with what hasn't been paid. Another type which Joe referred to, would be some extended benefit. Here are reasons why there will be future service periods or expenses for which you may be currently liable but the service hasn't yet been delivered. Typically, this would be related to a period of disability. It's important to understand not only what the contract says about extensions, but how it's being interpreted. For example, if all of your hospital expenses are coded to be incurred on the admission date and your only liability is for continual confinement for that one stay, then you don't really have to worry about this because your normal patterns will allocate that series of expenses related to that confinement back to the admission date and you'll pick it up in your normal methodology. But if you have intervening periods which would get coded in the customary processing as new incurral dates, and you are liable for them because of something that has happened, then I think you need to recognize that expense. It is a fairly debatable issue within our profession, and even if

you know that you're going to pay those, what time period should you allocate that claim expense to: the period at which you become liable whether or not continued coverage exists, or should you be allocating those to the new period if coverage is continued. I've seen tremendous varieties of practice, especially with HMOs. At one extreme, would be to take a continual hospital stay that overlaps the accounting period, and try to pro rate between the two different months and carve out the piece that you think you're not liable for because it goes into the next accounting period. At the other extreme would be a fairly conservative estimate of liability where you take expenses that go far off into the future and allocate them back to their earliest possible date. Obviously, there's a philosophical issue on the level of conservatism and so forth, but it's an issue that the actuary needs to deal with explicitly and a consistent methodology needs to be developed.

Another type of liability that I've seen which should be considered might be setting up a liability to recognize the phenomenon of a trend. For instance, you've got a levelized premium and an increasing claim cost. Shouldn't you recognize that somewhat? We probably would agree that it's a reasonable approach to recognize such a liability. The magnitude of it tends to be fairly small, and I'd say 99 times out of 100 it's ignored. A similar issue might be AIDS. It has been discussed a lot especially by the life actuaries. Should we be trying to estimate to some extent the incidence and whether current liabilities have been predicted adequately by our completion factors? I think the usual response to that is to just consider it as one more component of trend in projecting the unpaid claims. I guess all of us in our roles as pricing actuaries, miss a trend occasionally, and probably the fact that a new disease such as AIDS is the cause of it is probably about the smallest reason we've ever missed on projected trend. The third issue is related to individual major medical products and small group where there is a clear durational cost increase in excess of normal medical trend. This would occur, for example, where you write a small group at a premium that tends to be more excessive at the early duration because of underwriting evidence of some sort, and less adequate at later durations. You can make a case that a liability for that phenomenon could be recognized. Again, I would say it usually isn't. Usually, the company will tend to take those premium redundancies straight to the bottom line at the early durations, and wonder what happened later on. This is another issue appropriately addressed by the valuation actuary.

Stepping away from claim liabilities for just a second, the valuation actuary also should be involved in determining the liability for experience refunds or dividends. It is a liability that is clearly of an actuarial nature, and although it may not necessarily be covered in a contractual type of payment, I think it's something that the valuation actuary appropriately should be involved in. This is especially true if the refund formula has an IBNR provision or claim liability provision built into it or if any difference between the level of liability that would be produced in the formula as opposed to what's held in the financial statement could produce inconsistencies in the recognition of liability between the two pieces. You need to think that through for your own environment and make sure that you're covered and consistent.

Claim settlements, expenses, or loss adjustment expenses have been discussed by everybody. Joe mentioned that all the Blue Cross actuaries he talked to came from a life company background and they typically recognized these. My experience with life company actuaries on explicit recognition of an expense liability is that this is either

ignored or swept into the general margin. This issue is very important for HMOs. There are often specific arrangements with providers that could trigger additional payments to them based on some performance indices. A liability for those kinds of payments if that applies to your block of business also obviously needs to be considered, and I think it's appropriate for the valuation actuary to be involved in it.

I want to talk about where data come from and some of the issues that have to be dealt with. Obviously, a key one and it's come up already, is the definition of the incurred date. More often, the incurred date that the actuary is forced to deal with falls out of the convenience of adjudicating the claim, and the particular system constraints that are in place. The most common at least among current generation claim adjudication systems would be the date that the service was delivered. For a hospital stay that has a period of time associated with it, the admission date is by far the most common date coded into the system, and that's usually what the valuation actuary has to deal with. Where that isn't the case, i.e., neither service date nor admission date, the date that the actuary is given is put in. These data may relate more to the need to adjudicate claims, and may have some relation to the deductible accumulation period or some other phenomenon. You need to think through how the incurred date that you're dealing with relates to the liability attached to your organization. If it's different than a straight recognition of the attachment of liability, then you need to figure out a way to deal with it. The extension of liability issue is probably the exception where you may have a series of services delivered that tie into a date of disablement as opposed to service, and the modern claim system typically will not give you that stream of payments tied back to the original date, and then you need to come up with a different methodology for recognizing the extent of liability if you think it's appropriate. So the issue of what the incurred date really means is important.

Not to be ignored is the definition of the paid date. This one seems obvious, but in fact, I've seen some big errors under the assumption that the paid date really is the date the claim gets booked to the general ledger. What you're really trying to do in a financial reporting environment is to recognize the claim expense. You need to make sure that what isn't recognized already as a booked claim gets into the liability somehow. A reconciliation of the claims back to the GL is an important step in the process. Another issue relating to data is that claims get unpaid for various reasons, there are stop pays put out, coordination of benefits (COB) recoveries, recoveries from hospital audits, various other refunds and offsets. It's important to learn and understand how those get dealt with in the basic data. Do they go back into the claim triangles that you're dealing with? If so, what paid date and what incurred date do they go in? That is, what cell do they go into in the data? It can have quite a significant impact, and it's important to understand how that's dealt with in the data. A seasonal pattern's been mentioned. There are also some operational issues that can have an effect. For example, suppose we saw a bizarre seasonal pattern falling out of the claim data we were looking at, and it turned out that because of the logic and the adjudication system any claim that straddled the October 1 date got split into two different incurral periods purely to accommodate the deductible carry forward provision in the contract. There was also a similar phenomenon that any claim that straddled January 1 got split into two pieces but it didn't happen at any other time of the year. In fact, the observed seasonal pattern wasn't the result of more medical services, being delivered at specific points in time. It was purely a result of the way

the adjudication logic worked in the system. My point is that excellent communication between the valuation actuary and the operations people is essential, and where that communication isn't taking place, there's a much higher likelihood of a big error in liability estimate. I mentioned my preference that a basic part of actuarial training be actually to sit and pay claims for a while.

There are some special problems in facilitating communication, especially regarding TPAs. If you're dealing in a nonowned claim adjudication structure, then the problem of effective communication is more difficult, but I think a basic walk through of the procedures would really help at a minimum. Joe mentioned cash flow testing. I'm going to put my auditor's hat back on just for a second. We asked the question in each health insurance organization what type of cash flow testing has been done because the Academy said we should ask that. The responses are quite varied but tend to be that they don't do any. Their response is either, "Well, I know we stay pretty short in our investments so I think we're okay," or "I haven't really looked at that but I think maybe somebody in corporate does." Those are the kinds of responses you typically get. I think it's an important issue given what has happened in the insurance industry broadly right now for us to have a notion of what the assets look like. The basic philosophy is important, one option is that your assets should match the liability in a shut down mode. If you didn't incur any more claims as of statement date, those liabilities would pop up real quickly, and are your assets liquid enough to cover that? That would be one extreme. The other extreme might be to assume that you are in a positive cash flow phenomenon barring some real unbelievable scenario, something fairly draconian. Under this extreme, you could always count on the cash flow so you can probably invest in perpetuity and be satisfied. Those are the two extremes. What is the right philosophy in terms of continuation of business and counting on future cash flow versus the very draconian situation that you can't have any asset that doesn't mature in 90 days? I don't know what the answer is but I do think we need to be at least pointing out to management at a minimum if there is a pretty significant mismatch or potential liquidity issue.

We talked about margins, and Al and Joe both expressed a belief that margins are appropriate whether they're explicit or implicit in using conservative assumptions. The actuary should identify what the margins are. Some conservatism appears to be necessary since we tend to be very uncomfortable if we think there's a reasonable chance that we're going to be inadequate. From a statutory standpoint, we tend to want to be conservative explicitly or implicitly. The valuation actuary has to state that the reserves are adequate in his opinion. On a GAAP statement, Joe commented that the accountants may push in a different direction on this, and I think it is probably accurate. A strict interpretation of GAAP accounting would probably state that the liability ought to be a best estimate with a reasonable chance of an understatement as well as an overstatement. Again, I don't think our profession has a clear answer for that, but there is a strong preference for some level of conservatism. As far as the level of conservatism, it has a lot to do with the environment that you're dealing with. If it's purely enough to cover random variation, the margin probably doesn't have to be very big. Usually after the fact when you go back and do some analysis, you can figure out why you were wrong, and it's usually because there was something happening that you didn't know about. Back to the operational issue again, if you've got good systems data and you're pretty close to what's going on operationally, then you probably don't need too much in margins. If you don't

have good control over data, perhaps it all comes from TPAs or sources that you do not have good knowledge of, then a good size margin is appropriate. Again there are a lot of operational issues in making the right decision.

I'm going to skip discounting for the time value of money other than to say that it's not very commonly done. I think most health actuaries feel the impact of discounting for interest is not particularly material and probably can be ignored for medical expenses.

I'd like to mention the methodology for stop loss insurance and still leave some time for discussion. Many carriers, Blue Cross plans, and commercial companies especially, have some stop loss-type products that they offer to larger customers, and the reserving methodology is much less well defined. Let me give the extremes again on philosophy. Liability attaches when the stop loss point has been penetrated, or liability should be accrued as it becomes apparent that the stop loss, the attachment point, is going to be penetrated. The other extreme might be to not hold any liability till the plan year's complete, even if you blew the attachment point in the first month. Then you don't really have to accrue anything other than once you have completed a plan year, anything you haven't paid off yet is the only liability. Again however, as many insurance entities there are in the U.S. is probably about how many different methodologies are being used.

MR. JOHN A. HARTNEDY: I'll address my question primarily to Jim, but I'd like comments from the rest of the panelists. First is, Jim, in talking about insurance companies, I want to know whether you feel that we should keep in mind as valuation actuaries the A&H cycle? If you buy a recent report, recent as last year, from M&R, the down cycle is going to be in 1992-93, and there is going to be a number of insolvencies because we're much weaker as an industry in surplus than we have been before. That's my first question, and the second thing I want to add to that is we've begun studying our AIDS claims. We're running about a percent of total claims which according to Dave Holland's papers, we're running actually below average so we're doing quite well. Our claims are on a date of service basis, and as an actuary, I am comfortable with that. All our business is cancelable. It's major medical, so generally I figure part of my reasoning is if I stop, if I cancel, I don't have any liability. But if I ever send out a cancellation notice on these AIDS patients, I suspect that a lot of them could just go straight to the hospital and I'm going to have a continuing liability for that. I just looked at our 124 actives and the 85 new ones I expected we're going to have this year, and I figure that's a liability of around $5 million. Our length of time has increased very rapidly in the last two years by 50%, and our average claims payment has almost tripled. In the period of about a year, we're up to about $85,000 now. My concern is, as a valuation actuary, do I have to hold something for these AIDS claims because of the volatility, the lack of predictability, and possibly even if I cancel my business. I may end up with all these people running to the hospital and I have a $5 million liability. I just did this in the last couple of days, and I'm still struggling with what I should do. I would really appreciate your opinions on that.

MR. ROBERTS: Let me respond first, and then Al and Joe may have some comments also. First, on your question on the cycle, I'm glad you brought it up. It was on the list of things to discuss. I've heard a lot of arguments on this. Reserving for

the cycle would obviously be some way of smoothing financial results, and therefore, would tend to be desirable to most insurance company managements. The best argument I've heard for increasing your reserve, therefore your expense recognition when you tend to be profitable, reducing the level therefore pushing the redundancy into earnings when you tend to be unprofitable. The best reason I've heard for doing that would be to say that for a block of business such as an employer group, you've agreed to underwrite them on some philosophical basis over a period of time. During that period of time you would expect the premiums to be redundant at certain periods and inadequate at other periods. That's just a phenomenon of the way we do pricing and handle underwriting. If you look at reserves as the present value of future benefits minus present value of future premiums, and you've got a future deficient premium expected then you can set that up, and it would reverse itself in another period of time. That's the best argument I've heard. I'm not real moved by it. As an accounting firm, if we could figure out some way to get real excited about this concept, then bless it, so that all the health insurers would have levelized earnings over the cycle, we could probably get lots of new clients. For the type of business in which you reestablish your role as underwriter every month, putting aside extra margins in the reserves doesn't seem to fit with the concept of recognizing claim expense real well. That's my opinion on it. My comment on the AIDS issue, what I hear you saying, John, is that you've also got an implicit contract with potential AIDS patients to cover their expenses in the future, and that it's not really recognized in your past experience, but I don't know how far you would go with that. When you're trying to estimate the incidence of HIV-positive people in the population and assume that they are going to be your claim eventually, this is probably going to an extreme in conservatism, and where short of that, you should fall in identifying your potential liability, I think it is the issue. If you got to the point of being unable to work, then I think it becomes a little clearer. If you identify those as the point in time of the attachment of liability, then I think traditional methodology with possibly some recognition and additional component for trends might cover that.

MR. MICHALCIK: Well, I'll talk about the AIDS question first. There are three places you can pay that claim such as a regular group insurance type benefit, a COBRA benefit, or possibly an extension of coverage. In my short survey of the Blues plans, I learned that you should be careful about what each specific state says is your potential liability under extension of the benefits. In three out of the six or seven plans I talked to, they are now permitted to charge a premium during the extension of benefits period. In Oklahoma, the law is written in two parts. You get a three month extension in one circumstance and six in another. If we can charge a premium for it to the extent that, and these would be the group premiums, the group premium would understate the expected morbidity during that extension period, I would feel comfortable with holding the extra reserves. As far as the claimants that fall under COBRA and to the extent that COBRA is already worked into our premium and claims basis for a number of years now, if there is going to be an increase in the number of COBRA claims that you've seen and the maximum is still 102% of the group rates, I would feel comfortable with an extra liability item there.

As far as the underwriting cycle, I have a vague recollection of reading some place that unless you intentionally misrated a group, in other words, low balled an estimate, that you should not try to anticipate the loss because you missed a trend. If you had a large group and you intentionally underrated them by 10% because you wanted the

business real bad, that would be one place to set up some kind of an under-premium liability or a deficiency reserve. I recall six or seven years ago, I recommended that we set up some sort of an allocated surplus account to take care of relatively infrequent large claims. We're not a giant company like Prudential or Metropolitan, but our auditors said no because that was not part of matching claims up against the current income in the right time period. Free surplus is supposed to take care of catastrophic claims. I think some of the parallel is there, and you really shouldn't try to change the slope or direction of your earnings patterns based on whether you are anticipating the trends to change either in an upward or downward direction.

MR. ROBERTS: There is another technique that's used on the valuation side, to a very limited extent, to smooth the underwriting cycle in reported income. For large group accounts, the experience refund or dividend liability tends to get smaller as experience gets worse, and gets bigger as experience gets good. Anyway, there is at least one large company accrue experience rating deficits with some probability of recovery. It's certainty not the generally accepted approach, but it has been used. It has the same kind of effect.

If there's a conclusion out of all this, the basic approaches and issues are quite similar between the three types of organizations that we've identified, yet there are some unique differences. The differences may be as great between various examples within a category as there are between the categories.