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Health Care Cost Trends

Track: Health

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Summary: Health care cost trends have substantially increased in the past two years. Panelists discuss the factors contributing to these increased trends and the prospect for further increases for the remainder of 2001 and beyond.

MR. JOHN P. COOKSON: I'm a consulting actuary with Milliman USA. We have two other panelists today. Stephen Heffler is deputy director of National Health Statistics Group, Office of the Actuary of the Center for Medicare and Medicaid Services (CMS), formerly Health Care Financing Administration (HCFA). In addition, we have Lisa Tourville, who is an actuary and director of health care economics at UnitedHealth Care. She's a past-chairperson and a board member of the Management and Personal Development Section.

I will address some general issues about the underlying health care trend environment and related issues. Then Steve will talk about national health care issues that I see as the underlying basis for where trends come from. Then Lisa will build on that, talking about particular issues addressed by carriers and, to some extent, employers' issues as well.

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

Variability of Trends

In terms of the current environment, I see more variability now than I have in the last 10 to 15 years. Trends are variable in terms of geographic area. We see wide differences in specific geographic regions, and by carrier. I see trends in talking to my clients, as low as a 10 to 11 percent range for very large blocks of business, to well over 20 percent in other blocks of business. One of the important things that distinguishes some of these differences by carrier is the structure of their business and how it may be changing.

We had a lot of movement toward capitations in the mid-'90s with multiyear contracts, with the expectation that providers would make significant improvements in the efficiency of their care. In many cases, those hopes did not come to fruition, then the contracts lapsed, and the carrier saw substantial increases in cost. In addition, we have the managed care backlash that has affected carriers who have been more aggressive on the managed care side than those who have not been as aggressive. Those issues are causing a wide range of results in the marketplace.

Another important factor that has increased over the last couple of years is rate increases. If you look at what has happened in the marketplace, we had few or no increases during much of the mid-'90s. We've now had several years of large rate increases, relatively large compared to where they were. That causes or leads to the opportunity for selection both on the individual basis, where individuals are selecting which product that they want, and on the group basis, where groups may be shopping and looking for alternative carriers.

Given the imprecision in our rating systems and the lack of complete accuracy that leads to adverse selection, the last time we saw a significant bout of this was probably in the late 1980s when we had another peak in health care trends and very significant selection, particularly in the small group lines at that time.

Another factor Steve and Lisa will mention in their discussions is the impact of what's happening on the government reimbursement side. We had a squeeze in government reimbursements connected to the Balanced Budget Act (BBA) going back to 1997 where efforts were being made to produce long-term cost reductions in the government's health care costs at a time when providers were already pinched financially. That further accelerated a cost shift on the commercial side, where providers are trying to get revenue relief; and their consolidation had given them a lot more strength in terms of negotiating their contracts with payers.

The Medicare cutbacks at that time gave them more impetus to try to gain large revenue increases on the commercial side. The interesting thing is, a couple of budget increases have occurred since then, and Medicare has been much more liberal starting in mid to late 2000, going into 2001 and 2002, depending on whether you're looking at hospital, physician, or home health care.

Inflation

Inflation has a direct effect on health care on a concurrent basis. Through most of 2000 and into early 2001, inflation has been relatively high compared to the prior three or four years. Nearly one percent of the increase in inflation as measured by the CPI was from energy prices. But that price sector has backed off since early 2001. Even excluding the effect of energy on inflation, the underlying core inflation was still up almost a half a percent compared to the prior three- to four-year period. So that feeds directly into hospital budgets and health care budgets since it's a heavily service-oriented industry with a high degree of personnel cost.

Now we have a recession facing us. We were probably facing one this past summer, but it's certainly been exaggerated by the events of September 11. We really don't know how deep it's going to go and how long it's going to last, but recession usually has an effect of slowing inflation, and that would tend to have some mitigating effect on health care trends going out next year and into the year after. However, we aren't working with a very high inflationary base, so there's not a lot of room for it to come down.

Economic Growth

A factor we found in our studies and in many other economic studies is that the greater the real income of the population, or the real gross domestic product (GDP) of the population, the more they spend on health care. I tend to look at health care as a supply-driven industry, and that investment in this supply will slow during a recession or during slow growth periods. It will then have a lag relationship in our economic studies in terms of the effect on trends. So, we would expect on the private sector side to see a beneficial effect or a reducing effect on trends in maybe three to four years. Others may expect a more contemporaneous effect, but you get into a lot of issues in terms of looking at population experience versus looking at individual groups and employers and insurers.

Employment

Another point is employment, and there are three issues about employment that I would like to comment on. There has been a nursing shortage for some time, and it is only likely to grow in the future. The nursing sector is projected as one of the highest sectors with employment shortages going forward in the long term. This is an impetus for getting more efficient in the health care sector.

The second issue is that the unemployment rate has been very tight in recent years, with a very tight market for new employees. That has had an impact on many employers in terms of the last several years of rate increases that they've absorbed trying to cushion the effect for their employees—or trying to keep their employees from looking for alternative employment opportunities. Clearly not all employers did that, but there are quite a few, particularly larger ones, who have been absorbing costs or the bulk of the cost. I think the recent events have given employers cover to change their approach. The activity that we're seeing now is looking very strongly toward significant changes either in cost shifting to the

employees and benefit changes or other alternatives. Some employers are making some fairly dramatic changes effective this January. Others may take a longer-term perspective.

A related issue, though, is the impact of layoffs and unemployment on trends. Usually in the past layoffs have been concentrated in the lower-cost demographic categories, younger employees with smaller family sizes or no families. And so if you look at the effect on a per-employee basis, the morbidity costs tend to be lower for those laid off, and, therefore, you get an additional impact on trends.

In many cases, in anticipation of layoffs, there has been a rush to elective services by some employees. So you can get a claim bulge before layoffs. Although now with the effect of COBRA, I don't know if that's as much of an issue since they have the protection once there are layoffs, and they can keep coverage for as long as they may need it, or at least within the timeframes defined by the COBRA law. But the interesting thing is, looking at this; the impact of the layoffs and these kinds of shifts is not uniform across the population. In fact, it will probably be very different group by group.

Some groups may have little or no impact and will have little or no impact on their trends. Other groups may see substantial increases, 10 to 20 percent layoff rates, where the effects on the groups and their specific trends may be much more dramatic. So the issue of the financial leverage and the kinds of risk contracts you have and the distribution of your risk contracts will become very important under that environment.

Managed Care Backlash

We've been seeing very favorable trends, at least in our models that started in the late 1980s, which I refer to as the managed care effect. It includes the impact of moving to manage care on a more aggressive basis but also includes a fairly dramatic shift away from cost plus and usual, customary and reasonable (UCR) type reimbursement.

Now many more provider contracts are negotiated with a focus on looking at what prospective costs are likely to be, and probably in the early to mid-90s the payers had a significant advantage on this issue. The pendulum has swung back, and we're seeing some backup on that from the standpoint of consolidation on the provider side. I believe that this uptick, at least some of this uptick from the managed care backlash is likely to be temporary. In the long run, we can't sustain health care trends well above GDP—maybe somewhat above, but not substantially above. Maybe some carriers went too far on managed care or were approaching it in the wrong way. These are some of the things that are now unwinding with respect to denied days and with capitation contracts lapsing, and I think we're seeing the effects of that now. This is an important issue for the long-term implications, with respect to those who have to do FASB liability calculations. What is the impact of these much higher short-term interim trends, and what kind of ultimate trend

assumptions do you ultimately assume?

Table 1

Out-of-Pocket % of Personal Health Care Expenditures and GDP

Year	% Pers HC	% GDP
1960	55.2%	2.4%
1970	39.7	2.4
1980	27.1	2.1
1990	22.6	2.4
1996	17.0	2.0
1999	17.6	2.0
2000	17.7	2.1

4

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One of the things I tend to look at is the economic aspect of health care. The numbers in Table 1 are from CMS data (Centers for Medicare and Medicaid Services (formerly HCFA)). I'm not sure they are the most current, but looking at out-of-pocket percentage of personal health care expenditures relative to GDP (and I believe you can go back even further than shown here, though I don't know that we can get the out-of-pocket expenditures prior to 1960) one of the interesting things is that we had substantial growth in the effect of employee insurance beginning with post-World War II and into the Korean War because of the wage freeze and then the allowance to incorporate health benefits as a tax-preferred fringe benefit. These out-of-pocket expenses are just the co-payments and deductibles and actual direct out-of-pocket expenses. They do not include the employees' contributions towards premiums.

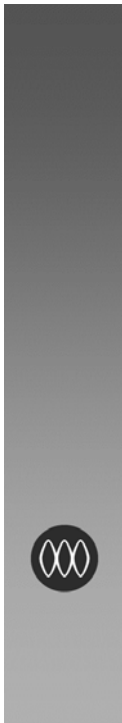
In 1960, over half of personal health care expenditures were still out of pocket, and that dropped dramatically through the decades. Medicare came on in the mid-'60s, and the dramatic reduction between 1960 and 1970 continued. Out-of-pocket expenses were 22.6 percent in 1990, which dropped to 17% in 1996, and it has come back up slightly in the last couple years to 17.6 and 17.7 percent. I suspect, given the economic difficulties of many employers in terms of their profitability and the huge health insurance rate increases that they're facing, we may see this continue to increase over the next few years. The interesting thing, though, is that the out-of-pocket percentages remained a relatively level percentage of GDP during

that period of time, starting out at about 2.4 percent in 1960, varying up and down, but then staying in the 2 percent range. That's an important consideration because one of the issues is the connection of people to the care that they're purchasing or not purchasing or that's being purchased for them.

Table 2

Historical Eras

NHE – Non-NHE	Years	
-0.1%	1930 – 1940	Depression, pre-WWII
2.1%	1940 – 1960	Wage freeze encouraged health insurance expansion during WWII and Korean War
3.1%	1960 – 1980	Continued health insurance expansion, Medicare and Medicaid, benefit liberalization begins
3.6%	1980 – 1990	Continued benefit liberalization
1.1%	1990 – 1999	Negotiated reimbursement, away from R&C and ASP, measurement of necessary care



In Table 2, the other issue I look at, and maybe these time periods could be defined a little bit differently, is ultimately the long-term trends have to come back down, excluding the normal economic factors. If we look at the health care growth rates—the national health expenditure growth rates compared to the overall GDP or compared to the non-health GDP—during the Depression we saw minimal or actually slightly less growth in health expenditures.

Then in the 1940s when we added health benefits as a fringe benefit, we saw national health expenditures growing at a substantially higher rate than non-health GDP, a little over two percent a year. That increased again between 1960 and 1980 as we added a lot of the government benefit programs such as Medicare and Medicaid. A lot of corporate benefit liberalization also occurred. A lot of the early health benefits, or employer benefits were indemnity-type benefits. Benefits were moved more toward cost-plus hospital reimbursement, charge reimbursement, and UCR on the physician side. We had formal wage and price controls in the early 1970s, and then later, in the late 1970s, we had some more voluntary-type controls that may have held cost down to some extent.

Beginning in the 1980s we saw another big increase in which health care grew in

excess of 3.6 percent above overall non-health GDP. Even though, at that point in time, HCFA had introduced the diagnostic-related group (DRG) system in 1983, we had several years of substantial increases in case mix index which increased providers' reimbursement over and above inflationary levels. They also had the opportunity to shift a lot of care to the outpatient sector, which was not regulated. In the late 1980s, a change to the negotiated reimbursement caused the DRG system to become more effective. In the early 1990s, HCFA moved to the resource based relative value schedule (RBRVS) for physician reimbursement, and in the late 1990s introduced prospective reimbursement for hospital outpatient and is looking at going forward to prospective reimbursement for some of the other more ancillary type benefits. That is a key issue going forward—looking at reimbursements and negotiations on a prospective basis and actually negotiating the reimbursements. The fact that a lot of carriers are able to take advantage of what HCFA is doing in leading the way will help ultimately to keep those excess trends to a reasonable level.

MR. STEPHEN HEFFLER: What I hope to do today is identify some of the major factors driving health-spending trends and then discuss the implications of these factors on the historical and projected national health expenditures that are produced in our office, the Office of the Actuary at the Centers for Medicare and Medicaid Services.

I want to start by giving a little background on the national health expenditures (NHE). They are the official U.S. Government statistics of health spending in the United States. They've been published annually since 1960, and the most recent estimates were through 1999. These estimates are both by type of service, which would be hospital spending, prescription drug spending, and by source of fund or payer, such as private health insurance, out-of-pocket, and the different public payers.

NHE Projection Model

We produce annually 10-year projections off of these historical estimates. These projections are based on the economic and demographic assumptions from the Medicare Trustees' Reports produced by the Medicare Board of Trustees. These are essentially exogenous inputs on the economic and demographic side. The public sector spending assumptions that we use are also exogenous inputs in our projections, and they are the official Medicare projections from the Trustee's Report.

Other public sector projections consistent with those assumptions are current law projections. They do not include such things as prescription drug benefits that could be on the way. Our value added in this process is that we supplement these projections with projections of private health spending for the whole U.S. We do that largely based on an econometric model of the U.S. health sector, and in the discussion I'll be hitting on a couple of the factors that are in that model.

Chart 1 shows the percentage change in health spending from 1980 through the most recent historical estimate, 1999. This information was released in March of this year. The black line in the chart is overall national health spending trends, and since 1993, overall U.S. health spending has been below six percent. A large part of that deceleration from the prior period is attributed to the impacts of managed care. One interesting thing about this chart is that the last three years have been marked by a switch in the relationship between the private and the public sector. From about 1990 through 1996 or 1997, you had public sector spending growth well outpacing the private sector, and that relationship then reversed where we now have private sector spending growth outpacing public sector spending growth. Much of that slowdown in the public sector is due to the impacts of legislation in 1997.

Chart 2 shows our most recent published projection. It was also released in March of 2001. It goes through 2010 and is largely based on data that we had through August of 2000. Much has changed since then. The general trend was that overall health care spending growth would accelerate even from the recent historical level, which had shown a slight acceleration in 1999 from 1998, to growth rates a little over eight percent for the first four years of the projection, before then decelerating to about 6.5 percent by the end of the projection period. Our projection was for the private spending to continue to outpace the public spending as the things that have been driving the private sector spending growth—prescription drug spending, increases in health insurance premiums—would outpace some of the other public sector effects that were causing that growth to accelerate somewhat, things like the givebacks and the additional legislation since the BBA.

In the long term we make things reverse again as private sector spending growth slows, as economic and income growth slows, as insurance companies look for ways to slow health care spending, as consumers are more accepting of more restricted forms of care and insurance. Medicare and Medicaid in the public sector continues to grow at its current law level, which is driven in large part by increases that are set in law based on price increases after 2010.

Technology

I'm going to talk a little about what technology might mean in the context of these health-spending projections. We've done some analysis. There has been a lot of research by some well-known economists in this area on what the impact of technology is on health care spending growth. If you looked at a range of estimates and took the middle of that range—very sophisticated methodology—most people would say about half of the real per-capita health spending growth over the historical period was due to increases in medical technology. This is holding constant. A lot of the other effects, the insurance effects, income effects, and so forth, are very difficult to put an estimate on, which is why most people do tend to say "roughly" or "a range."

Recently, there was a group of experts that included well-known actuaries and economists that looked at Medicare spending growth projection assumptions in the long term (75 years), and looked at what would be a sustainable or underlying rate of growth. One of the things the group looked at was what impact technology had on health spending growth, and its finding was that a reasonable assumption would be for overall health and Medicare to grow about GDP plus one percentage point over the last 50 years of the projection. This puts you a little higher when you compare the sort of overall health vs. non-health growth, that we've seen in the 1990 to 1999 period, but lower than we had seen in periods prior to that. And the group's major reason for that assumption was the impact of new technology and how that drives demand for medical care services.

Economic Growth—Trends and Implications

I'm going to talk about specific factors that affect our national health expenditure projections. In Table 3, last year our projections had real GDP growing around five percent in 2000, and around 3.5 percent in 2001. These statistics are tied into the Medicare Trustees' Report assumptions. Even the historical measure for 2000 has come in lower than what we thought, and this one percent is an expectation of 2001, which some people may think is a little high for 2001, but this points out that economic and even income growth in 2001 is much slower than we thought last year.

Table 3

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Economic Growth - Trends

- Slower economic growth for 2000-2

	<u>Expected</u>	<u>Current</u>
Real GDP		
2000	5.2	4.1
2001	3.5	1.0
2002	2.3	2.6
Real Disposable Personal Income		
2000	3.1	3.5
2001	4.2	3.0
2002	2.8	3.1

- Economy-wide prices near expectations



What does that imply for our health spending projections? There's a tie between income and economic growth, the wealth effect, and health spending. This would imply that slower growth would mean slower health spending growth than what we

projected last year. But we do actually build this in. This is one of the variables in our econometric model. We build this in with a lag effect, so, the full force of this slowdown isn't felt necessarily in one year but over a couple of years. This particularly impacts sectors that have larger out-of-pocket consumer cost sharing; things like prescription drugs and dental services.

Medicare—Trends and Implications

Our projections last year, as I mentioned, were based off of the 2000 Medicare Trustees' Report. It did not include the givebacks that were associated with the Benefits Improvement and Protection Act, and it did not include those effects, many of which are associated with what is the year-to-date, at least through August Treasury data showing Medicare spending growth of almost 13 percent over last year. In Table 3, looking at how the two trustees' reports were different from one year to the next, you can see that 2001, for the whole year, the projection is higher than what actually occurred. Further out, the growth rate is similar to what we saw last year. The dip there is due to, in part, some of the slowing economic growth and the impact that has on the payment system for physicians, as well as the expiration of some of these givebacks for the different payment systems.

Prescription Drugs—Trends and Implications

The third factor I wanted to discuss was growth in prescription drugs, and our last historical estimate for growth was 17 percent for 1999. We projected this would uptick slightly in 2000 before decelerating somewhat. This projection for 2000 seems to be in line with some of the published data. IMS Health reported 16 percent growth for its retail channels, which is what the NHE reports for drugs sold at retail outlets. Data just published in *Health Affairs* from Milliman showed prescription drug growth per privately insured person at around 14.5 percent. If you add the number of insured people on top of that, which increased in 2000, this puts you in the 16 to 17 percent range. We think that number is in line with what we'll see for 2000. A large part of this high growth is attributed to the direct-to-consumer advertising effect and the change that occurred in 1997 with direct-to-consumer advertising for drugs through print media and television ads being allowed. There has been a tremendous growth in the amount of money invested by drug companies in that medium, and that continued to grow quickly in 2000. The amount of money put into direct-to-consumer advertising was up 39 percent in 2000.

But an interesting thing, and I think this may show up in some of the revised NHE data, is that both IMS and Milliman are showing that the peak in prescription drug spending increases took place in 1999, not 2000, and then actually started decelerating in 2000. That seems to be the trend, and it is supported by a couple of factors. There were fewer new drugs introduced in 2000 than we had seen previously. There were 35 in 1999. There were over 50 in 1997. At the same time, you have insurers trying to switch their benefit plans towards more cost sharing. One example is managed care companies using three-tiered payment systems. There are a number of overall insurance companies now that are using these

tiered-payment systems. Three tiered was the most common. They're talking about four-tiered or five-tiered plans, so the trend is definitely towards more consumer cost sharing for prescription drugs.

As far as the implications on our prescription drug spending projection, I think the 2000 number probably will be in line with the official estimates. Because of the slowing economic growth, we had projected that drug spending would peak in 2000 and then decelerate. We think that deceleration actually will be quicker than we had thought, given the slower economy. Although slowing from 17 to 12 percent, prescription drugs is still by far the fastest growing sector of the NHE.

Managed Care—Trends and Implications

Some of the more recent data of privately insured populations says that some form of managed care enrollment counts for a little over 90% of all enrollment. That's been relatively stable for the last couple of years. But underlying that has been a shift to much less restrictive forms of care. This continued in 2001, and, as you can see in Table 4, roughly 70% of participants are in either point-of-service plans or PPOs, which is much higher than was the case in 1990, whereas HMO share is where it was in 1990.

Table 4

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Managed Care - Trends

- Managed care enrollment stable at 93% of total private insurance enrollment
- The shift towards less restrictive forms of managed care continued in 2001

	<u>1990</u>	<u>1997</u>	<u>2000</u>	<u>2001</u>
HMO	23%	33%	29%	23%
POS	5%	18%	22%	22%
PPO	17%	31%	41%	48%

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The impact of the shift to managed care was a one-time effect as consumers were moved from higher-cost fee-for-service plans to lower-cost managed care plans, which were able to extract price discounts in negotiating with the providers and were able to move patients out of inpatient settings into less costly outpatient settings. The trend seems to be, and we'll see if this shows up in the data, that that

effect has run its course and all the easy cuts and savings have been made. It's going to be much more difficult down the road, and that is showing up in the fact that providers of consolidated plans had increased their bargaining power. If you look at expected premium increases for different kinds of plans, the managed care plans are moving right in line with the fee-for-service plans. And so we continue to believe that this is a one-time effect.

However, as health-spending growth accelerates and takes a larger portion of people's incomes, employers and insurers will look for ways to slow that spending growth and consumers will look for ways to slow their premium growth. The way that may be accomplished is by becoming accepting of the more restricted forms of managed care that in the short-term projection period, the 10-year period, is likely to happen and may have more of an impact than what we projected last year just because of the slowing economy. However, we think the longer-term impacts will be similar to what we projected last year.

Underwriting Cycle—Trends and Implications

In our data, 1999 was the first year since 1994 that we saw premiums increasing faster than benefits. We expect this to continue at least through 2002, and each year during that period premium growth is expected to accelerate. So how does that compare to our projection from last year? Our premium growth looks like it was on the high end of that seven to nine percent range for 2000. So we may be a little high in 2000 compared to what the actual premium growth came in. On the flip side, it looks like for 2001 and 2002 that premium growth will outpace what we projected last year. We were in the nine to nine-and-a-half percent range. Kaiser just came out with 11 percent for 2001 premium growth. A lot of the 2002 numbers are in the double digits, 10 to 15 percent range. So we think that we probably were a little low in 2001 and 2002.

What does all that mean for the overall health spending projections? We think in 2000 that the projection is probably a little high compared to where it'll come in. We had a slower economy. It looks like we over-predicted premium growth. Our growth was over eight percent in 2000. That growth is probably going to be more in the seven percent range in 2000. For 2001 and 2002 and the short-term period after that, we're probably a little low in our projection. We're still over eight, but it's probably going to be in the upper eights as opposed to what we projected. Medicare growth is faster than we thought. These tend to outweigh some of the effects of the slower income growth and the effect that would have on prescription drug spending. Then in the long term, we still expect the numbers to be around 6.5 percent by 2010.

National health spending as a share of GDP, which is an often-cited statistic, was 13 percent in 1999. We projected that to increase to 16 percent by 2010. If I had to guess, I'd say that number is probably a little low; it may be higher than that in our next set of projections, and I think it has much more to do with the overall economy than it does health in particular. When you have overall GDP growth that's

now projected to be two to three percentage points lower than what we thought last year, it lowers the denominator of that calculation.

I think over the 10-year period the NHE projection probably is likely to be a little faster than what we projected last year. The GDP growth is much slower. I think we'll increase that share more than we had thought.

A couple of other interesting notes. I had talked about our expectation that private sector spending growth would outpace public sector spending growth. That will continue. We will still have rapid double-digit prescription drug spending growth, so we're projecting rapid premium growth. As the baby boom generation advances into its 50s, they move into a higher health utilization and cost demographic category, and will drive private spending growth up, at least in the short term, faster than public sector spending.

Another interesting note that seems to be showing up in a lot of the data is that hospital spending, which had either declined or grown very slowly for a number of years, seems to have bottomed out, and much of the data is starting to show an acceleration. We projected an acceleration, but it looks like it may be even faster than we thought as both spending turns around and inpatient utilization has started to climb again.

That's where we stand now. Our office will release our historical estimates through 2000 in January of this year, and then a few months later we'll come out with a revised set of 10-year projections. Then there'll be a new Medicare Trustees' Report that will shortly follow with a whole different set of Medicare projections and demographic and economic assumptions that will start the whole cycle again.

MS. LISA F. TOURVILLE: I am with UnitedHealth Care, and my primary function is to project medical trends. What I'm planning to talk about today is the trend forecast model (TFM) that we've built, and about some of the things that we consider when we're setting the medical trends, such as major legislation, medical technology, and pharmacy pipeline information. It's an extremely extensive, large model, but no matter what the technology is behind it, unless you have the collaboration of the different departments that you're working with, the output is really meaningless.

It's quite a collaboration between health care economics, which is my area, the actuarial departments, both pricing and reserving, underwriting, network management, the medical officers, the finance area, and the field—all very critical pieces. We actually look at 65 different items within the model, and we end up rolling a lot of them up, but unless we start out at the bottom level and roll up, we don't necessarily understand what's going on. We've got 18 historical quarters in the model right now and 10 projected quarters.

Items Projected—Categories/Components

We break out projections by health cost category: physician, inpatient, outpatient, pharmacy, mental health, and chemical dependency, as well as the different components we consider such as demographics. When we look at our historical information there's a definite impact there.

It's very interesting when you do start taking a look at the possible layoffs from the recession, if you look at who your customer base is and what could happen in the near future with the demographic population—not only because of the baby boomers but because of the economy and what's going on. Another component is the geographic mix. Are you moving into higher- or lower-cost areas of a state or a region? Other components are the duration of the business and product mix. Again, are you moving in or out of higher- or lower-cost products?

Customer industry mix is another component to consider. We do try to take a look at this on a site-by-site basis. We have 35 to 40 different health plans that we actually model, but it's very important that you keep track of everything that's going on at each site. If you've got an extremely large customer within a given health plan or a given site that is impacting the overall results, you may want to take that customer out depending on what you're trying to do. If you're trying to study utilization patterns, do you want to remove somebody who's adversely affecting it, or if you're about to add on a large group or terminate a large group, it depends on what type of numbers you're looking at.

Other components are benefit changes, core utilization, and core cost. We always have our total utilization statistics and our total unit cost, but to get a good understanding of what's happening, you have to try to pull out the other pieces that are influencing that such as mix of services or changes in demographics. So we do try to get at the core.

Then we've got mix of services, and leveraging the impact of fixed co-pays and deductibles on moving health care costs. There are regulatory mandates, both at the state and the national level. Policy process changes—is there something going on within UnitedHealth Care itself that could impact the way claims are being paid that could have a positive or negative impact on medical costs and thus trends? Finally, the last component is workday calendar day adjustments. When we first threw that component into the model, there were a lot of people thinking we were totally nuts until they actually saw the quarter that leap year occurred in, and that there was one more day that people could actually receive health care.

Different Views

We look at different views when considering TFMs. We've got all the different components, but as we add them up, there are several different things that we're considering. One is allowed trend. As I like to say, that's what the provider gets paid. It's a combination of the co-pay, out-of-pocket expenses, and our liability, which is net trend. When we're working with accounting and trying to set the

budgeting process, they care about the net trend. They want to know what's going to happen to the bottom line, to the per month per member (PMPM) on a market, product, and line of business level.

The other two pieces we consider are business product mix and core pricing trend. We actually add those two pieces up to get net trend. Underwriting is most concerned about the core-pricing trend. Now, with each of the components within there, depending on your company and how you go about underwriting, some may actually fall under the core and some may fall in the business product mix, but the way we look at it, core is what we need to be doing overall to the base rates. It's the average increase that you need to put on every single customer as they come up for renewal, whereas the business product mix components are what underwriting should be looking at on a group-by-group basis and making sure that it's being accounted for in each one.

Major Categories

This takes all the components that we have and rolls them up into the different pieces—price, volume, intensity, and cost sharing. Here's where we start to get our clinical management folks involved in trying to pick pieces apart, figuring out exactly what's going on. Price is more of a contract negotiation issue. Volume is how many patients are seeking care, and how many units of care are they receiving? Do we have any control over that? Can we communicate with providers? Clinical management is extremely interested in that. Intensity has to do with the severity of each unit of care that's received. Could that be impacted by medical technology? Then, of course, there's cost sharing.

Trend Survey

Marketing departments usually complain that they are being priced out of business. They can't possibly sell. Other companies are trending and rating far lower than we are. But I noticed that as I went to each new company, everybody said that, and I thought that can't possibly be true everywhere. We do subscribe to different trend surveys. Chart 3 is a compilation of a couple of different surveys that we've put together because we wanted to see whether we were really that far out of the market. What I am hearing is that trends are pretty high right now. I think everybody's pretty much looking at least in the double digits. I know there are some exceptions. But, overall we're seeing that the HMO total was around 13.5 percent for 2001, Q2.

Medical Care CPI

People will ask me if it's valuable to look at medical CPI, and my answer is absolutely. When we break things down into the different components, one of the things we look at is core unit cost or price. That's somewhat comparable to the medical CPI in Chart 4. We like to try to compare what our actual results have been to what's coming through here because that's also an indication of how successful we are on our contract negotiations.

Core Unit Cost

We look at a lot of historical data, and the first thing is to interpret it, to understand what it's telling us, and then to determine if, in projecting into the future, there's any reason to believe those patterns are going to continue. In Table 5, core unit cost for this specific site was a perfect example. For 1999 inpatient was 5.5 percent. As we moved into 2000, it increased from 11 percent for the first quarter to 31.2 percent for the fourth quarter. Obviously there was a bit of a panic going on as we went through and tried to figure out what was going on here. We have models that we have built and sent out to the different markets across the country. One is to quantify a contract by entering in all of the specific information, common procedural technology level if it's a physician, and come up with an aggregate number of what we feel that contract is worth. Then when you're going through the negotiation process and you're talking about what kind of changes will occur, you model the changes, and then you have a way to see the impact of that contract change on our company.

Table 5
Core Unit Cost

	1999	2000q1	2000q2	2000q3	2000q4	2000	2001q1
Physician	4.2%	0.3%	0.0%	-0.3%	-0.1%	0.0%	0.6%
Inpatient	5.5%	11.0%	16.8%	23.1%	31.2%	20.5%	10.4%
Outpatient	5.2%	5.5%	8.4%	11.5%	15.6%	10.2%	5.2%
Pharmacy	7.4%	14.1%	12.6%	13.2%	19.3%	14.8%	17.3%

Then we have a consolidation model where you enter the summary level information for all of the different providers, enter in our market share, and you have a good feel for what kind of impact the negotiations have on your bottom line. Well, when we saw this example, of course, we went straight to the consolidation model for this site, and they had a 2.2 for 2000, for inpatient. So we sat down with them and tried to figure out exactly what was going on. First of all, they didn't think they were supposed to include non-participating (par) providers in their analysis, and they had just terminated an extremely large contract, or a contract with an extremely large hospital system, because that system was asking for 20 to 30 percent rate increases, and they could not come to agreement, so they terminated it. It was the majority of their market share, so they had to work with the members.

To ease the pain on the membership they decided to pay non-par payments at in-network benefit rates. You can see what happened. It was something that completely caught us off guard. Everybody learned some great lessons when we went through this, but at the same time we knew that it was a temporary effect, and we did not have to worry about it in the projection process for 2002, which is what we were concerned about at the time. In fact, because of the high level of payments that were coming out, we may actually see negative trends in that area for 2002.

Core Utilization

Another example we had for core utilization is shown in Table 6. The numbers are all high here except for pharmacy. Outpatient, if you look at 2000, for the first quarter was 6.8 percent, and increased to 33.3 percent by the first quarter of 2001. As we dug into this one, we found that they decided that, between themselves and the providers, the capitation arrangements that they had were not effective. They terminated them. In our modeling process we try to come up with estimates of encounter data because we've got our fee for service, units per thousand, but we don't necessarily have the capitation encounter data. So we come up with estimates, and we put them in the model. Obviously, we did not do a very good job. The minute that those capitation arrangements terminated, the fee-for-service utilization skyrocketed. Again, it's a one-time issue. We don't have to worry about it going into 2002, but unless we can truly go in and pick apart and figure out exactly what's going on, we don't necessarily have a solid ground for our projection purposes.

Table 6
Core Utilization

	1999	2000q1	2000q2	2000q3	2000q4	2000	2001q1
Physician	-0.8%	0.2%	9.7%	11.5%	8.0%	7.3%	12.1%
Inpatient	-7.1%	8.1%	17.8%	11.9%	17.5%	13.9%	19.7%
Outpatient	-5.4%	6.8%	25.3%	32.2%	33.3%	24.4%	33.3%
Pharmacy	5.0%	-7.1%	1.4%	-0.7%	-1.2%	-1.9%	7.3%

Physician Trend Drivers

We've got a physician trend factor, and we want to know exactly who's driving that. We'll take a look at the different specialties for physicians. In Chart 5, you can see radiology was contributing about 13.4 percent of the increase. And then we dig down a little bit further to figure out which part of that is unit cost, and which part of it is utilization of the radiology. These are the types of pieces of information that our clinical management folks rely on.

Legislation

Moving into legislation, these are some of the things that you need to keep an eye on as you are setting trends. One is the Balanced Budget Act of 1997. I'm really not going to get into the details of the Act. I'll focus on how it makes us look at the upcoming PBOR legislation. We started out with the BBA, and the whole purpose of it was intended to balance the federal budget by the year 2002. The Congressional Budget Office (CBO) had put together estimates of what they thought the savings were going to be.

Then we moved to the Balanced Budget Refinement Act of 1999 (BBRA). What happened through the BBRA was savings were far greater than the CBO had estimated. Providers were getting even less than expected, and the benefits were cut more than expected. For UnitedHealth Group, we're thinking we've got a serious

impact on the government program side, but we also have to expect through the original BBA that we're going to have some cost shifting on the commercial side. You then have to determine the impact on government programs. And is there a cost shifting effect on the commercial side?

Then came the Benefits Improvement and Protection Act of 2000, which was geared much more at the benefit level. That one didn't so much impact our commercial business, but we definitely had to take a look at our government programs to figure out what the impact was there. Once we saw everything that's happened over the past four or five years with the BBA, we are paying more attention to PBOR legislation. This actually started back in 1996, and I think any good actuary should have been following this from the very beginning and trying to figure out what the impact would be. When you're going through the underwriting process you know that in June there have already been groups that renewed for the following year, and there are even multiyear groups that have renewed for two to three years going forward. You need to keep track of that as you're going through what the impact might be of this legislation.

There was also action on the legislation in 1996, and the question was at that time: Should we be doing anything in our rating actions for 1997? For 1998? At this point, there's nothing that has been implemented. There's a version of the bill that the Senate passed back in June, a version of the bill that the House passed in August, and we're still waiting. It was actually going to go to a conference committee between the two, and I think because of the events that took place in September that's become a lower priority, and they didn't cover it in September like they intended to.

As the insurer, we go through and take a look at the CBO estimates of the impact of the different components of various legislation, such as PBOR, and try to figure out how it affects us. Are there any bills that already impact us, or are there some that just don't impact us? Then we have to determine if we agree with the estimates, with whatever information you have, which is kind of difficult. A lot of times you don't have the information, but you go through and figure out which piece of legislation impacts you, and then of those that do impact you, which portion of it is medical expense and which portion is administrative expense? Presently, Congress is considering a four percent PBOR, and that's based on the House version of the bill.

In Table 7, you can see over time how the different versions of the bill have had different estimates from the CBO. Here it is October, and again we've already gone through the underwriting process of a lot of our groups for the calendar year 2002. If this bill gets passed and implemented in the short term, you could be in trouble if you have not considered this at all in the rating. The bill was supposed to go to a conference committee to be convened in September. At the time that I put this speech together, that's what the situation was, and it hasn't been talked about since.

Table 7

Legislation - PBoR Estimates

- Congressional Budget Office Estimated Ultimate Effect on Premiums for Employer-Sponsored Health Insurance:
 - S. 283 (4.2%)
 - S. 872 (4.2%)
 - S. 889 (2.9%)
 - S. 1052 (4.0%)
 - H.R. 2315 (2.6%)
 - H.R. 2563 (4.0%)

10/22/2001

18

Medical Technology

One of the other things that we consider as we go through our forecasting process is medical technology. There are changes in guidelines. Pneumococcal vaccine is a good example. They changed the guidelines for the vaccine and recommended that children under the age of two receive it three to four times, whereas before they hadn't recommended children of this age receiving it at all. It's not necessarily an addition to utilization, but it's definitely an impact on cost.

New diagnostic tests. Brachytherapy is a radiation treatment for the angiograms, the re-narrowing of arteries after angioplasties, and it's supposed to be beneficial. It's going to be expensive in the short term, but it will hopefully replace all of the repeat angiograms that people are having done. The Lysophosphatidic acid (LPA) and the EXACT stool are ovarian and colon cancer detectors. Because of these tests, we'll diagnose diseases earlier. They cost more up front, but in the long run will it save us?

Next to consider are new treatments, such as artificial organs and treatment for hepatitis. Hepatitis is the liver. Abiocore is the heart. And the Hatler respiratory is lung. These would be things that would not necessarily replace anything. They would be additional. As we go through these, the questions that we ask are: How much is it going to cost? How many people are going to have it? Is it a replacement? Is it something that's going to be an addition?

Pharmacy Pipeline

Moving to the pharmacy pipeline, we work very closely with our clinical people to try to figure out what is coming down the pipeline. What do we need to be aware of? We have a very tight-knit group that works very closely together. If we don't keep an eye on everything that's happening, it's difficult to make the projection. As we go through this we keep running totals because you're going to have medical technology changes, new drugs, and changes to guidelines every year. You can't look in a vacuum and ask: What's the one-year impact? You have to look at what was done last year and what was done the year before to truly measure the change because that's what you're trying to get at here.

Prozac is an example of brand name patent expiration. A generic substitute, the first one on the market, is out there for six months on its own as a generic competitor, and generally the pricing is somewhere around a 25 percent discount. After six months, all of the other generic companies come to market, and then there are some real savings. So, from the minute that the brand-name drug goes to generic, you have a six-month period where the savings won't be quite as great, and then after that, the savings really start to kick in. With something like Glucophage, there's not actually a generic equivalent out on the market right now. So, even though their patent has expired, there's not necessarily going to be any changes on that one for a while.

Moving from prescription to over-the-counter drugs there's obviously going to be quite a bit of change. There are changes in the guidelines, detection, evaluation, and treatment of high blood cholesterol. They've come out and said something like only 30 percent of people who should be treated for high cholesterol are actually being treated.

There are changes in FDA status. We looked at the possibility that Synthroid was going to lose its approval. As we studied that drug, we found that there is virtually no impact for us because, even though it is a brand name, it is very low cost in comparison to other brand names and in comparison to the out-of-pocket expenses and the co-pay. If they were going to move over to the generic equivalent, there wasn't much of an impact for us.

The introduction of new blockbuster drugs is something to consider. There's one coming up that is the inhalable form of insulin—I think it's called Exubera. And that's one that pharmacy people are saying will be a blockbuster. It probably won't hit until 2003 but it's definitely something to look into.

As I mentioned on the medical side, the things that we ask ourselves are: How many people do we think are going to be impacted? What's the cost? Is it going to be a replacement? The additional thing that we see on the pharmacy side that's interesting is it may also impact the inpatient and physician side. If you have something that currently is an injectable drug being given in an inpatient facility by physicians, you're getting physician and inpatient charges for it. If it's replaced by

an oral prescription drug, your prescription drug costs may increase pretty significantly depending on what it is, but you would actually see some savings on the physician and inpatient side. So, we try to go through and consider everything possible as we're projecting these trends, and it's fascinating.

MR. BOB ARONSON: I have a question for Steve. The information you were talking about, the updated reports and previous reports, are they available anywhere online?

MR. HEFFLER: They're available on HCFA's Web site, www.hcfa.gov. The trustees' report for 2001 is available online, as well as a short summary of our national health expenditure projections and all the detailed information behind the projections in downloadable format. There was also a *Health Affairs* article that I think I included as a reference in the presentation that gave a description of the projection with some selected data. Those are the mediums for the information.

MR. BOB CUMMING: I have two questions for Lisa. The first question is: When you're analyzing trends, have you ever thought about or tried to look at the impact of changes in the health status mix of the people, like using a risk adjuster to try to take that out of what might be the utilization trend?

MS. TOURVILLE: Yes, one of our other companies under UnitedHealth Care, Ingenix, has been working on putting together both risk-adjuster type models and predictor models based on pharmacy experience, and we're working with them very closely to see if there's anything that we can take in and actually embed into our model.

MR. CUMMING: I asked this question because there was some thought recently that maybe some carriers were seeing higher trends because they were covering people that had greater health care needs. They were reaching deeper into the pool with the lack of employees out there, and that might reverse in the future. The second question is: Do you incorporate changes in care management in the trends? Let's say your company's going to introduce a new disease management program, and you expect to save x dollars. Do you develop your own estimates or do you rely on other people?

MS. TOURVILLE: That's a very good question. My company definitely comes up with all kinds of new initiatives that are going to take place, and there are a couple of different areas in the company that try to independently come up with estimates of what they believe the impact will be, and then we'll compare notes. We try to do it independently of each other so that we can see what everyone thinks, and then we sit down and talk about it together.

MR. MORRIS SNOW: I do a lot of Financial Accounting Standard (FAS) 106 work, and the issue we always deal with is what should we be using for trend both short and long term? What trend assumptions would you be using for HMO, PPO, or POS,

both pre- and post-age 65? I realize that nobody has a crystal ball, but acceptable ranges would be a good answer, and maybe you could actually explain why you pick those numbers.

MR. HEFFLER: My response is that the data is available at www.hcfa.gov. Our projections are the overall health sector by payer. We don't have projections by age or by different groups, although we do look at some information and demographic effects by different age groups. To the extent that you can look at private insurance as a proxy for the under-65 population, maybe you could go there, but there are things that are in there, Medigap and so forth, for the elderly population that would be picked up. As far as a range, I don't have an estimate. We don't really have any information at that detailed a level.

MR. COOKSON: The answers can vary a lot from plan to plan depending on plan design, over and under age 65 retirees, and the structure of the drug benefits. I think, though, in terms of at least the Medicare supplement piece, excluding the drug, the Medicare trustee's reports include intermediate-term projections that provide a good source. They don't project the co-payments, which would be the liability of the plans, but at least it gives you an idea of what the underlying costs are. We struggle with it all the time, too. We have just recently dealt with the appropriate long-term trend for military retirement plans. It has to tie back to what the economic assumptions are in terms of inflation and interest rates. You can get different answers for different plans depending on what the particular situation is.

MR. HEFFLER: Just one thing to add to my response. We don't have projections of spending by age group, but our office is currently working on preparing historical estimates of U.S. spending by age group. It's something that is done sporadically. I believe that last time we released estimates was for 1991. We get at least a couple of calls a week asking sort of a similar question, and all we have to offer, at least in the near term, are some estimates in the short term of historical spending by age group.

MR. DAVID BAHN: This is a comment for Lisa on the theory that any good model always can use two more variables. I'm going to offer two more components that we have found important within our business in projecting trend. The first is a variation on product mix. It's acquisition of business. Did you buy a block of business? As you merge that block into your own existing block of business, that can be a real driver of trends, especially, for instance, on the small group side. A second possibly is regulatory pricing actions, and if you're in a state where you are extremely heavily rate regulated, especially on, say, the small group, and the state imposes pricing limitations, as those limitations expire, and you give larger increases, you're going to have a form of adverse selection, but it's not strictly the typical adverse selection.

MS. TOURVILLE: On buying a block of business, as you mentioned, we do take that into consideration. Currently we throw it into our customer industry line where if we have a new industry coming on or a new block of business, we'll definitely take that into consideration.

MR. SCOTT L. JOHNSON: I have a question for both Steve and Lisa. Steve, on your graph (Chart 2) for the projected trends I was surprised to see that you've got the private sector national health expenditure trends to be going down in the future. That surprises me because right now we're pricing for products that we're expecting to take off in the near term, which have higher co-pays and higher deductibles associated with them. I'm wondering if you're seeing that or if you're taking that into consideration at all.

MR. HEFFLER: We do try to take that into account, and we've done so in the past through the use of HMO enrollment as a proxy for managed care penetration. We try to include that in a projected period by including a shift to more restrictive forms, or different forms of insurance that required the beneficiary or the enrollee to have a slightly higher co-pay. They decrease utilization. We don't project what that may be. We don't get into that detail. But that is part of the reason that we have the growth in private sector spending slowing from the peak in 2001 and 2002.

Probably the bigger impact there is due to the inclusion of the income variable or the economic growth variable, which slows dramatically over the projection period, at least from the recent fast growth. In effect, it picks up a little bit of the expectation that people won't have as much money to spend on health care. They would change some of their purchasing decisions and could serve somewhat as a proxy for the effect you're talking about which would be slightly higher co-pays.

MR. JOHNSON: This question is for Lisa. I guess I was a little surprised that you use 18 quarters of data in your projection of trends. Do you weight them all equally? We focus on 12 quarters of data with a real intense focus on eight quarters. I was just wondering how you do that.

MS. TOURVILLE: It's not so much that we use the full 18 to project forward, but we use it to try to understand exactly what has happened historically. A lot of times I will have discussions with the CEO of a specific health plan that will say that they're always well below the national averages in utilization. Okay. Let's take a look at that and see. In 1997, you were higher. 1998, you were lower. 1999, you were higher. In 2000, you were lower. What's there to tell me that you would differ that drastically for the national averages?

Chart 1

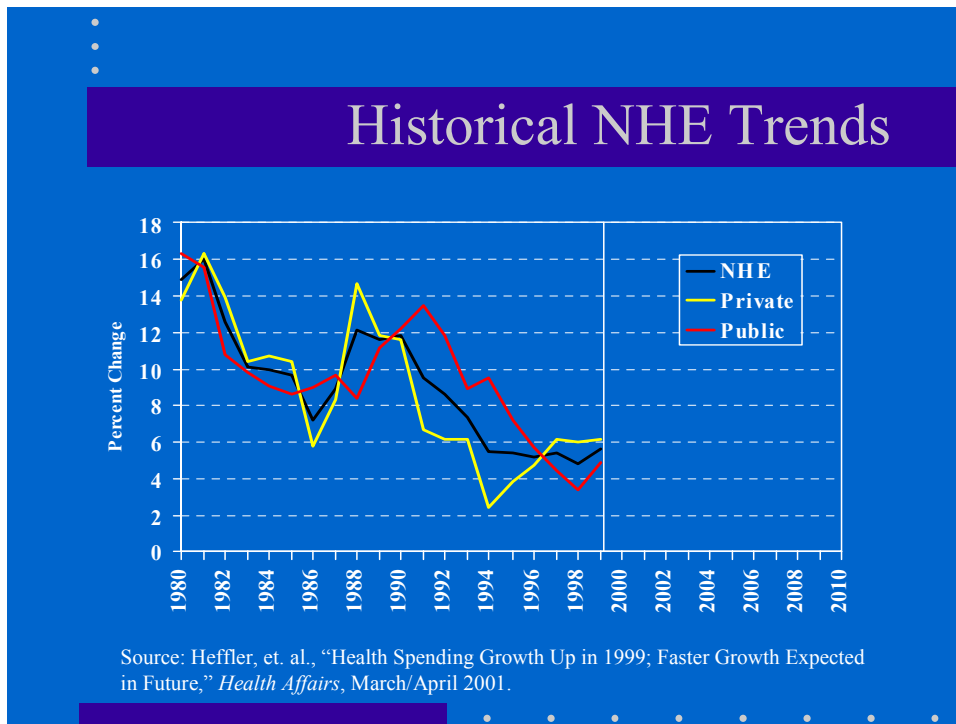


Chart 2

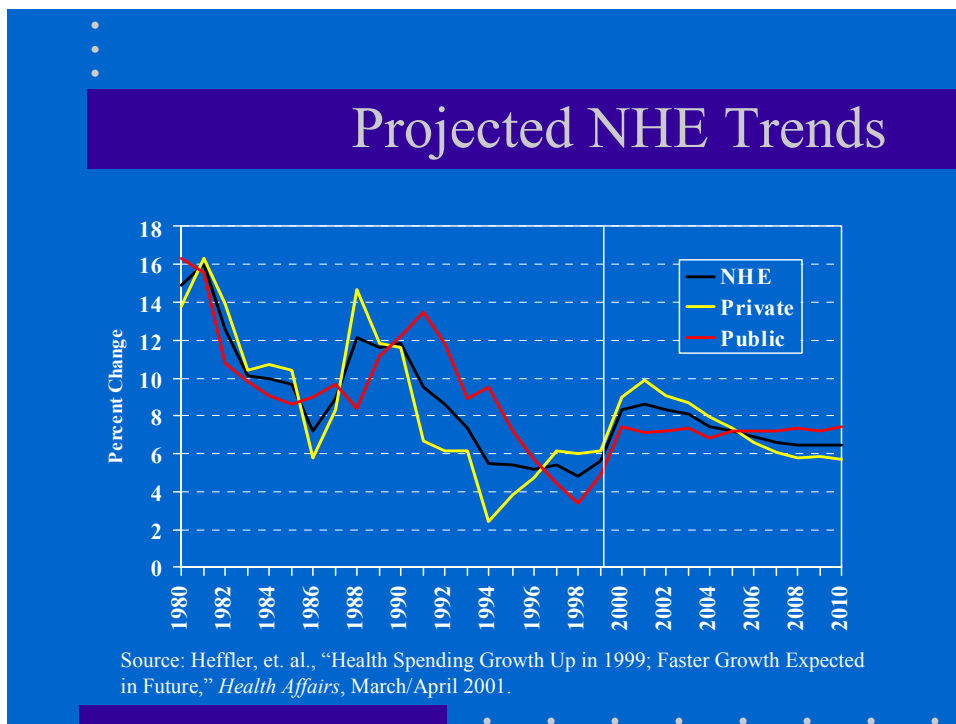
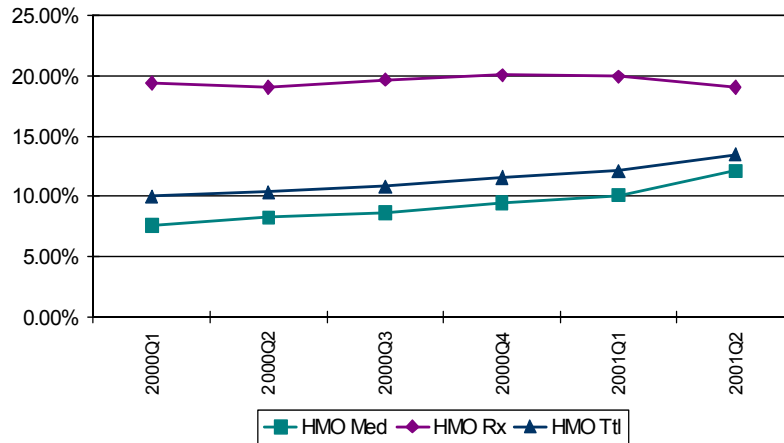


Chart 3

Trend Survey Trends in use

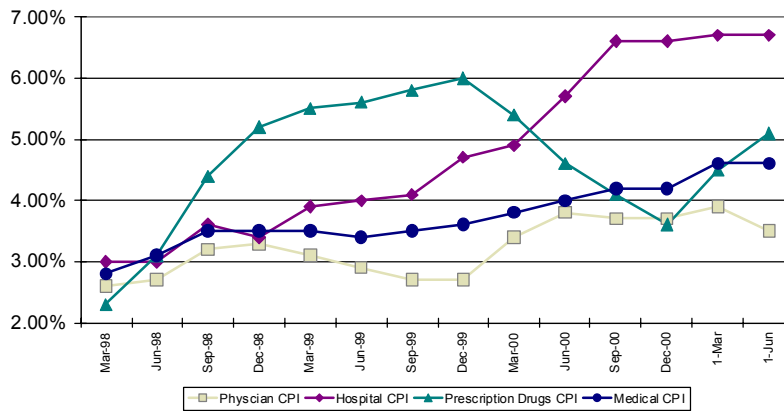


10/22/2001

7

Chart 4

Medical Care CPI Rolling 3-Month Averages

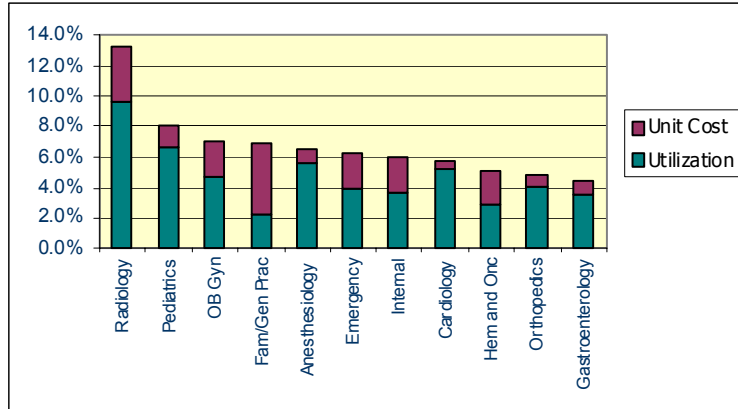


10/22/2001

8

Chart 5

Physician Trend Drivers Contribution to Trend



10/22/2001

11