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**AIDS: COPING WITH THE HEALTH  
BENEFIT PLAN IMPLICATIONS**

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Panelists: ROBERT W. BEAL  
            JON EISENHANDLER\*  
            CHARLES S. FUHRER  
Recorder: JOHN R. APRILL

- o Dimensions of AIDS
  - Present
  - Future
- o Health insurance products and AIDS: Medical care insurance and disability insurance
  - Benefits affected
  - Measuring the financial effect
  - Controlling the future (or limiting our losses)

MR. JEROME M. STEIN: AIDS, of course, has been a very well-discussed topic in both the general media and in the trade press. Where insurance is discussed, most of the time, it is life insurance. We are very concerned in the health insurance business that many of our concerns are not adequately recognized, not only by the public, but even within our own industry and sometimes within our own companies. When health insurance is given attention in the public press, it is almost always in a critical nature, most often observing and criticizing the methods that we use or wish to use to identify the victims or potential victims of this disease in order to protect our policyholders and our businesses. You are about to hear about the magnitude of the problem and some very interesting and useful results of research on both medical care and disability pay insurance.

Chuck Fuhrer will be giving you an overall picture of what AIDS is, what's happening, the epidemiology and where it may be going from here. Chuck is with Health Services Corporation, the Blue Cross/Blue Shield organization in Illinois. He joined them in 1985 after having spent twelve years with Benefit Trust Life doing group health actuarial work. Chuck has a number of important and varied Society activities. Among several committees, he is the Chair of the Committee on Research on Theory and Applications and he is a co-editor of *ARCH*. He has had papers accepted for the *Transactions* and has just received the AERF Practitioners Award. Recent AIDS presentations include the SOA Symposium last May, the International Actuarial Congress in Helsinki in July and the SOA Annual Research Conference in August. Chuck has his Bachelor's Degree in math from the University of Chicago and has been an FSA since 1977.

\* Dr. Eisenhandler, not a member of the Society of Actuaries, is with Empire Blue Cross/Blue Shield in New York, New York.

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After Chuck makes his presentation we will have Dr. Jon Eisenhandler discuss AIDS with regard to medical care. Jon is with Empire Blue Cross/Blue Shield in New York City, the Blue Cross organization that covers New York State from New York City up to and including Albany. His responsibilities are in the systems and analysis area. Two current major analytic efforts in which he is involved are with regard to diagnostic related groups (DRGs) and with regard to AIDS. He has been working with AIDS data since 1986. He designed Empire Blue Cross/Blue Shield's automated methodology which identifies AIDS costs and claims, and he uses that for both reporting and analysis purposes. He has also been associated with several of the work groups of the New York City AIDS Task Force. Jon received his Ph.D. from the University of Massachusetts.

Last, but not least, our disability pay panelist is Bob Beal. Bob is Vice President of Finance and Planning in the Actuarial and Individual Disability Division of UNUM. For two years he was with the Hartford Office of Tillinghast. He was nine years with Union Mutual and three years with State Mutual. Bob's areas of speciality include both individual life and disability insurance. He has had extensive experience in product development, risk management, valuation, financial reporting and analysis, experience studies, management information and reinsurance. He is on the Task Force on the Financial Implications of AIDS. Bob has his Bachelor's Degree from the University of Maine and received his Master's Degree from Penn State.

I am Jerry Stein, Vice President and Associate Actuary with Prudential; and my Actuarial responsibilities include Individual Health and Small Group Life and Health products. With no further time spent by me, I would like to get into the program and start with Chuck Fuhrer.

MR. CHARLES S. FUHRER: I am going to give an introduction to the whole subject of AIDS. It may be considered superfluous, but I think everyone knows what they want to know about it, perhaps; but, if you've heard it all before, I apologize; and I will try to be brief.

As you know, a new cause of death has come upon us in the 20th Century. It is a horrible thing, particularly in light of the fact that most people feel it is completely preventable. Some people think that as many as 2 million people will die of this new cause of death in North America by the end of the century. What is particularly frightening about it is it seems to be concentrated on younger people who have presumably more life to live before they would have died of other causes; and often it seems to affect young males more than young females.

Now that I have said that, I wanted to point out that everything I said actually refers to two different causes of death: one is the so-called AIDS epidemic or the Acquired Immune Deficiency Syndrome; and the other one is automobile accident fatalities. I don't claim that the two are similar but the main difference between the two of them is, in the case of the AIDS virus, practically all of those 2 million deaths will be occurring in the future; whereas, in the case of all the automobile accident fatalities, most of the deaths have already occurred. The only reason I mention this is that people sometimes think that, when you start projecting what is going to happen with something like the AIDS virus, that this is just a bunch of guess work which doesn't really matter very much. The point that I am trying to make is that, if we never started talking about where the AIDS epidemic is going, then we probably would not have cared about it very much. From the very beginning of its introduction into the national

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consciousness, numbers such as 2 million, 5 million, have been bandied about. This, probably more than anything else, is what scared people, and maybe rightly so; but still this is something that is going hand-in-hand with the spread of the disease. That is why in this case projections are extremely important.

As you probably know, the AIDS virus is generally believed to be spread by sexual activity; and it is not a disease particularly of homosexuals or any other subgroup. It is a sexually transmitted disease. Probably you also know that it affects the immune system of the victim to the point where the victim is not able to hold off any type of infection, and that leads to a quick death. The other thing that distinguishes AIDS from a lot of other diseases is that there is a relatively long latency period from the time of the initial infection until the person's immune system is in such bad shape that he is close to death. We are not sure how long it is, but we know that it can be at least seven or eight years; and some people think that perhaps it could even be longer than that. The average time appears to be somewhere in the three- to five-year range; and even that is somewhat unknown.

As of the end of June 1988, the Centers For Disease Control (CDC) had had 66,366 cases of what they defined as AIDS reported to them. That number is significantly under 2 million, and it gives you an idea of an iceberg effect here, where we believe that there may be a number of people (a huge number of people) infected with the AIDS virus. We have only actually seen 66,000 cases and probably a few more since June. I did an estimate of how many cases probably had actually been diagnosed but just not reported to the CDC; and I figure that there are probably another 17,000, so that the total number of cases diagnosed at the end of June probably was on the order of 83,000. Once again that is an area of a guess; it honestly could be as many or more depending on the reporting time lag. Fortunately that is something that we will know in a couple of years from the cases of AIDS we diagnose.

At the very beginning I mentioned that people looked at the rapid growth of AIDS cases, and they started to try to project where that was going to go. One of the methods that has been used is based on general ways of looking at epidemics, in which you try and narrow down how fast it is spreading to a susceptible population. This is somewhat hampered by the fact that there are no data at all on how many people have been infected, but by working back from the number of AIDS cases and using some data on the length of latency period, some researchers have managed to estimate how many cases of the virus there have been in the past. Then that growth rate can be used to estimate the number of future AIDS cases. That brief description is in the method used in the Cowell-Hoskins paper. That method has been used by other people in similar ways and it is thought to be (at least by some people) one of the better ways of doing it.

There also have been more complicated models where people have tried to guess how many people have been infected in all the various subgroups and estimate how many sexual encounters those people would have with uninfected people, and what the probability of each one leading to an infection would be. Those models are extremely complicated and suffer from a large number of parameters, but at least they are useful to look at.

Personally I thought it better to project data that we have. I fitted curves to only the number of AIDS cases. Unfortunately it was very sensitive to the particular curve selected. Although I have my favorite one, the range of the

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number of AIDS cases by the end of the century was quite large, and presumably I just was picking differently shaped curves. In any case most people who have looked at this think that we will have somewhere between 300,000 and 2 1/2 million cases of AIDS in the U.S. by the end of the century. Some people feel that is a little wider range than there should be and I feel that is probably all we know. In any case, if you look at the higher side of those numbers and try figuring out how many of those cases your company is going to get and multiply that by the average cost of treating an AIDS patient, it could be a bit of a frightening thing to look at it. Another panelist will get into some of these things.

The only other thing I wanted to mention is where this thing is likely to go. We have seen a slight decrease in the rate of growth of cases. That may be due to people being more careful about spreading the disease. Most physicians feel that a cure for AIDS (if it will be found) will be very far in the future and perhaps will never be found. Also we feel we are pretty far away from an effective vaccine that could be given to people who are not infected with the disease that would prevent them from getting it, like a polio vaccine. Physicians can give you some pretty good reasons for that, but I don't need to go into it.

I do want to mention one other thing: there are some physicians who do feel that we may be close to finding some drugs that slow down the effect of the virus on the body so that the latency period could be extended from the current average of about four years to maybe something much longer. Some people even think azidothymidine (AZT) may be able to do that. There are some experiments on that. I haven't heard about those lately, so maybe they haven't been too successful. One of the things that I suspect will happen, if it were to be announced in a couple of years that a drug was found which has a major effect on stopping somebody with the AIDS virus from getting the disease, is that at that point all the people who have been afraid to be tested because they couldn't see the value in knowing the awful truth or who have been tested in confidence (so that we have been unable to collect the data on the number of people that have it) will suddenly find it in their best interest to sign up to take this drug. If that drug is expensive, that will be a relatively high cost for health insurance. Although it may not be so terrible, we may have it happen perhaps within six months to a year, so it is something to worry about. The good news is for the first time we will really find out how many people have the virus, so at least we will have a better idea of where things are likely to go through the full-blown disease.

MR. STEIN: Now we will have Dr. Jon Eisenhandler discuss medical insurance.

DR. JON EISENHANDLER: I am from Empire Blue Cross/Blue Shield and, for those of you who don't know who we are, we are the largest health insurer operating in the region with the nation's largest number of AIDS cases. Empire Blue Cross/Blue Shield unquestionably provided health insurance coverage for more cases of AIDS than any other insurer in the nation. We are a not-for-profit corporation offering health insurance to individuals and organizations in the eastern part of New York State, from the New York City area up to the Canadian border.

Since the start of the epidemic, our corporate policy has been to treat AIDS as any other illness. We do not do any special underwriting for AIDS. We strongly oppose testing as a precondition for coverage. Our AIDS policy stems from our corporate commitment to offer health insurance to all people who live

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and work in our operating area. As part of this commitment, we sell both group and individual contracts with minimal medical underwriting. For the most part our underwriting is restricted to preexisting condition clauses which are typically waived for groups of more than twenty-five lives. We do some limited medical underwriting for our individual major medical and hospital contracts.

As part of our corporate response to the challenge posed by AIDS, we have undertaken to understand our experience with this new disease. Some of the questions which concern us are:

1. How many cases of AIDS have we covered?
2. What does a typical case look like?
3. What are the cost and utilization trends?
4. In light of our lack of medical underwriting, are we experiencing particularly bad adverse selection?

To answer these and related questions, we developed a methodology which identifies claimants with AIDS, or perhaps more correctly, claimants with the recognizable manifestations of Human Immunodeficiency Virus (HIV) disease. Using this methodology, individuals with HIV disease are identified based on the diagnostic information included with their institutional claims. Claims histories of individuals with HIV disease are then built. These histories include all claims incurred no earlier than three years before the individual was identified.

The focus of our analysis is institutional claims in the New York City area. This is where our AIDS exposure is greatest. In the next few months we hope to extend this analysis to cover all types of business and all our areas.

Based upon an examination of all institutional claims incurred and paid between January 1, 1982 and June 30, 1988, Empire Blue Cross/Blue Shield has been able to identify 5,963 individuals with HIV-related claims (Table 1). Without considering the records excluded from the analysis, this number is unquestionably conservative with the actual number of cases being higher. The magnitude of the undercount is a matter of conjecture. Our analyses of possible sources of undercount suggest that since the early years of the epidemic reporting has improved and the relative size of the undercount has decreased.

TABLE 1  
New HIV Cases By Year and Quarter

<u>Year</u>	<u>Quarter 1</u>	<u>Quarter 2</u>	<u>Quarter 3</u>	<u>Quarter 4</u>	<u>Total</u>	<u>Percent Change</u>
1982	13	21	32	40	106	
1983	74	77	67	95	313	195
1984	141	130	138	186	595	90
1985	215	231	250	264	960	61
1986	316	326	389	336	1,367	42
1987	477	433	453	398	1,761	29
1988	565	296			861	
Total					5,963	

Note: Data are not adjusted for completion.  
 Source: Empire Blue Cross/Blue Shield Institutional Claims Incurred and Paid  
 -- January 1, 1982 Through June 30, 1988.

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Not surprisingly, the number of individuals with HIV-related illnesses has increased substantially since 1982 (Graph 1). In the first quarter of 1982 only thirteen new cases were identified. By 1987 new cases were being identified at an average rate of about 440 per quarter, and the first quarter of 1988 is the largest we have experienced.

We find it particularly pertinent that our annual rate of increase has been decreasing since the start of the epidemic. Barring any significant changes in current trends or the discovery of an unexpectedly large number of hitherto undiscovered cases, the current trends are such that within the next few years we foresee our annual number of new cases peaking and stabilizing. When this occurs, our annual liability will also peak and stabilize.

The age and sex distribution of identified cases is similar to that reported by the CDC in its AIDS Weekly Surveillance Report of June 27, 1988 and by the New York City Department of Health in its AIDS Surveillance Update of July 27, 1988. Over 90% of the cases are male and just under 50% of the cases are between the ages of 30 and 39 (Graph 2 and Table 2). Empire Blue Cross/Blue Shield's population of people with AIDS is somewhat older than that reported by the CDC or the City Department of Health with about 40% of the identified cases over age 40 as contrasted with 31% for the CDC and 35% for the City. This is to be expected as our customers tend to be older than the general population of our operating area. There is no reason that HIV disease should be an exception to this pattern.

TABLE 2  
Identified HIV Cases by Age and Sex

<u>Age</u>	<u>Male</u>	<u>Percent</u>	<u>Female</u>	<u>Percent</u>	<u>Total</u>	<u>Percent</u>
No Age	2	0.0	0	0.0	2	0.0
< 5	41	0.8	35	6.9	76	1.3
5- 9	12	0.2	10	2.0	22	0.4
10-14	7	0.1	6	1.2	13	0.2
15-19	14	0.3	11	2.2	25	0.4
20-24	95	1.7	26	5.2	121	2.0
25-29	540	9.9	80	15.9	620	10.4
30-34	1,121	20.5	125	24.8	1,246	20.9
35-39	1,319	24.2	110	21.8	1,429	24.0
40-44	935	17.1	47	9.3	982	16.5
45-49	675	12.4	46	9.1	721	12.1
50-54	380	7.0	2	0.4	382	6.4
55-59	287	5.3	3	0.6	290	4.9
60-64	25	0.5	2	0.4	27	0.5
65+	6	0.1	1	0.2	7	0.1
Total	5,459	91.5%	504	8.5%	5,963	100.0%

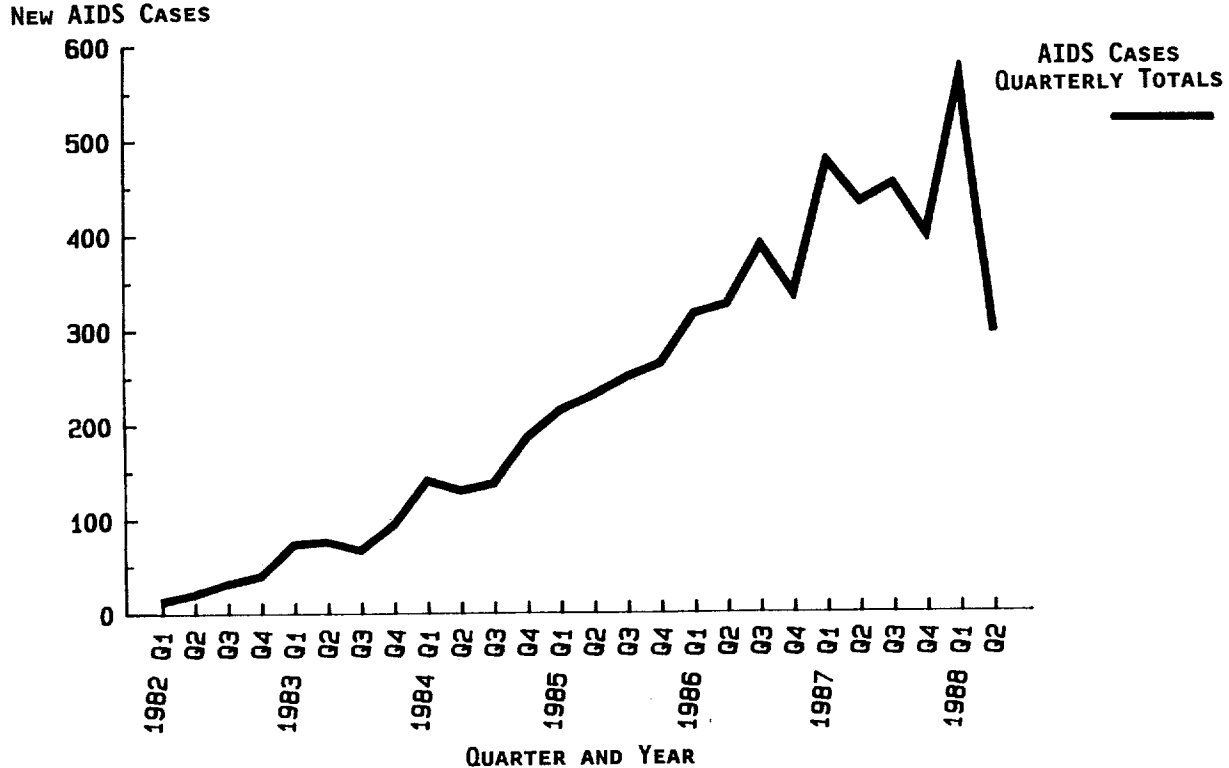
Source: Empire Blue Cross/Blue Shield Institutional Claims Incurred and Paid  
-- January 1, 1982 Through June 30, 1988.

It is especially noteworthy that the composition of our AIDS population has not changed substantially since the early years of the epidemic (Table 3). The proportion of female AIDS cases has increased slightly. The average age of a new case has remained essentially stable, albeit increasing negligibly, since 1984. The lack of demographic change suggests that our risk group composition has been fairly stable, i.e., primarily homosexual men. This in turn implies that our HIV experience is diverging from that of New York City.

# EMPIRE BLUE CROSS/BLUE SHIELD NEW AIDS CASES BY QUARTER JANUARY 1982 THROUGH JUNE 1988

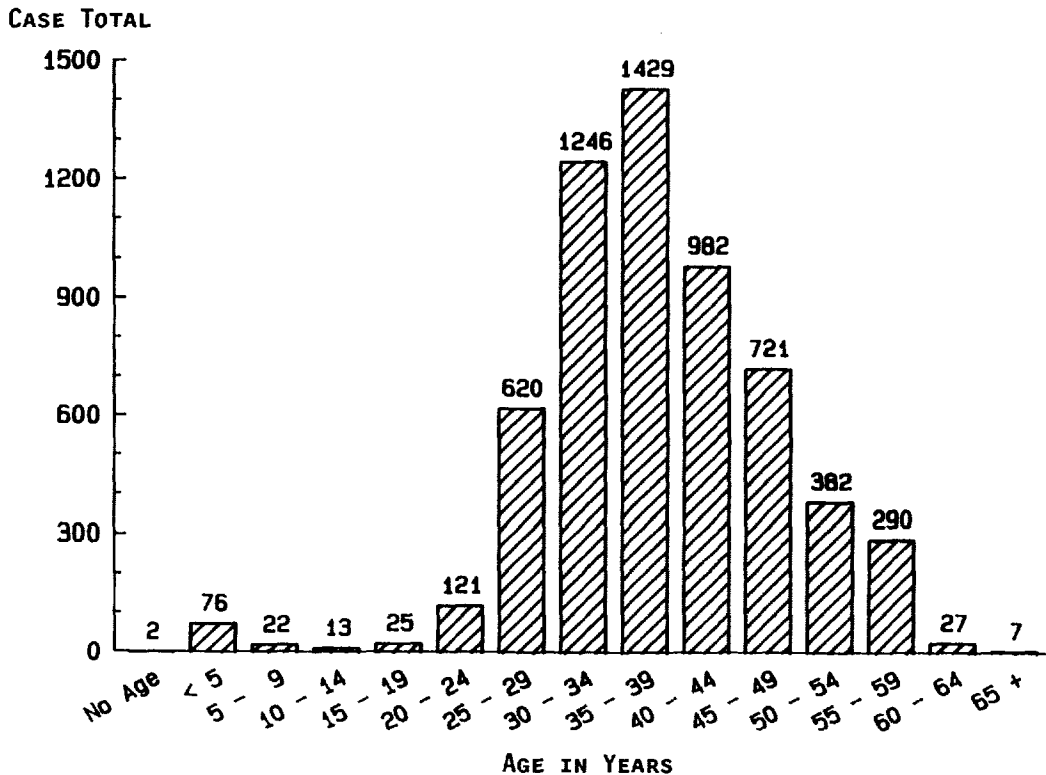
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GRAPH 1



THE DATA FOR 1988 ARE INCOMPLETE.

# EMPIRE BLUE CROSS/BLEU SHIELD HIV CASES BY AGE JANUARY 1, 1982 THROUGH JUNE 30, 1988



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GRAPH 2



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In New York City newly reported cases among intravenous drug users and their sexual partners (who tend to be younger and by definition include more women) now outnumber newly reported cases among homosexual men. This does not surprise us as intravenous drug users are, relative to the population as a whole, less likely to have health insurance.

TABLE 3  
Percent Female and Mean Age By Cohort

<u>Cohort</u>	<u>Number of Cases</u>	<u>Percent Female</u>	<u>Mean Age</u>
1982	106	8.5	33.8
1983	313	6.7	38.2
1984	595	6.1	37.6
1985	960	5.8	37.8
1986	1,367	8.8	37.9
1987	1,761	9.3	38.1
1988	861	11.4	38.4
Total	5,963	8.5	

Note: Mean age calculation excludes men older than 59 and women older than 49 from all cohorts because they could not be identified prior to 1987.

Source: Empire Blue Cross/Blue Shield Institutional Claims Incurred and Paid -- January 1, 1982 Through June 30, 1988.

Our typical claimant with HIV disease incurs just under four inpatient stays, two outpatient claims (treatment in an institutional setting not requiring an overnight stay), and occasional treatment at home through an institutional provider (Table 4). As the latter cohorts are still incurring claims, it is difficult to observe any strong trends in these data.

TABLE 4  
Average Number of Hospital Claims  
By Type of Claim and Cohort

<u>Cohort</u>	<u>Cases</u>	<u>Inpatient</u>	<u>Outpatient</u>	<u>Homecare</u>
1982	106	3.96	1.98	0.19
1983	313	3.61	1.51	0.19
1984	595	3.71	1.70	0.22
1985	960	3.57	1.97	0.24
1986	1,367	3.39	1.98	0.22
1987	1,761	2.67	1.92	0.14
1988	861	2.12	1.44	0.05

Notes: 1. Inpatient claims include all claims requiring an overnight hospital stay.  
2. Homecare claims are those claims for home services administered through provider institutions.  
3. Data for 1987 and 1988 are substantially incomplete.

Source: Empire Blue Cross/Blue Shield Institutional Claims Incurred and Paid -- January 1, 1982 Through June 30, 1988.

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For slightly more than 60% of claimants the first HIV-related claim was incurred before they were recognized as having HIV-related claims (Table 5). More than half of these individuals, or 30% of all cases, incur some kind of claim in the year immediately preceding their identification. The rest incur their first HIV-related claim one to three years before identification.

TABLE 5  
First HIV-Related Claim  
By Cohort and Six-Month Interval

<u>Six-Month Interval</u>	<u>82</u>	<u>83</u>	<u>84</u>	<u>Cohort 85</u>	<u>86</u>	<u>87</u>	<u>88</u>
-6			17	85	108	142	84
-5			30	76	98	123	68
-4		13	58	62	105	96	50
-3		33	53	69	105	131	71
-2	13	67	70	110	156	204	117
-1	51	86	139	193	280	387	156
1	42	114	228	365	515	678	315
Total	106	313	595	960	1,367	1,761	861
-6			2.9%	8.9%	7.9%	8.1%	9.8%
-5			5.0	7.9	7.2	7.0	7.9
-4		4.2%	9.7	6.5	7.7	5.5	5.8
-3		10.5	8.9	7.2	7.7	7.4	8.2
-2	12.3%	21.4	11.8	11.5	11.4	11.6	13.6
-1	48.1	27.5	23.4	20.1	20.5	22.0	18.1
1	39.6	36.4	38.3	38.0	37.7	38.5	36.6
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Note: Six-month interval calculated for each claim relative to the hospital admission date on which the claimant began treatment for the claim which identified him/her as an HIV case. A negative value indicates a claim incurred before identification.

Source: Empire Blue Cross/Blue Shield Institutional Claims Incurred and Paid -- January 1, 1982 Through June 30, 1988.

The fact that an individual incurs an institutional claim may be somewhat misleading as an indicator of the seriousness of an illness because institutions are often used in lieu of primary care physicians. When the analysis is restricted to inpatient claims (a claim requiring an overnight stay), in order to look at those claims which unequivocally require institutional care and hence are excellent indicators of the seriousness of an illness, the picture changes somewhat (Table 6). For over half of all claimants with HIV-related claims, the first overnight hospital stay is the claim which identifies that person as having an HIV infection. Another 30% incur their first inpatient claim in the year prior to being identified as an HIV case. The remainder incur their first HIV-related inpatient claim either earlier than this or, in the case of a few people, are never hospitalized overnight.

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TABLE 6

First HIV-Related Inpatient Claim  
By Cohort and Six-Month Interval

<u>Six-Month Interval</u>	<u>Cohort</u>						
	<u>82</u>	<u>83</u>	<u>84</u>	<u>85</u>	<u>86</u>	<u>87</u>	<u>88</u>
-6			11	37	49	55	40
-5			17	37	48	66	36
-4		8	35	26	66	58	34
-3		20	27	38	55	86	54
-2	6	56	53	101	136	170	93
-1	42	66	112	188	270	299	130
1	58	161	333	525	727	978	448
Total	106	311	588	952	1,351	1,712	835
-6			1.9%	3.9%	3.6%	3.2%	4.8%
-5			2.9	3.9	3.6	3.9	4.3
-4		2.6	6.0	2.7	4.9	3.4	4.1
-3		6.4	4.6	4.0	4.1	5.0	6.5
-2	5.7%	18.0	9.0	10.6	10.1	9.9	11.1
-1	39.6	21.2	19.0	19.7	20.0	17.5	15.6
1	54.7	51.8	56.6	55.1	53.8	57.1	53.7
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

- Notes:
1. Six-month interval calculated for each claim relative to the hospital admission date on which the claimant began treatment for the claim which identified him/her as an HIV case. A negative value indicates a claim incurred before identification.
  2. Total number of claimants with inpatient claims is less than the total number of claimants with HIV-related claims because not all claimants with HIV disease incur a claim requiring an overnight stay.

Source: Empire Blue Cross/Blue Shield Institutional Claims Incurred and Paid -- January 1, 1982 Through June 30, 1988.

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We have also been concerned about the survival patterns of claimants with AIDS (Graph 3). We were surprised to find no improvement in survival through at least the cohort of 1986 (Table 7). Sixty percent of claimants incur their last claim within six months after they have been identified as having an HIV infection. Another 20% incur their last claim in the next six-month period or within six to twelve months after being identified as having HIV disease. Another 15% incur their last claim between 12 and 24 months after they have been identified. In view of the nature of the disease, it is clear for the overwhelming majority of people with HIV disease that once a person stops incurring claims for any length of time, he or she is dead. There are few exceptions to this. For example, we know of two survivors from the cohort of 1982 who unquestionably have HIV infections as both had claims in 1988 with an HIV diagnosis. Yet, both went several years without incurring any institutional claims.

TABLE 7  
Last HIV-Related Claim  
By Cohort and Six-Month Interval

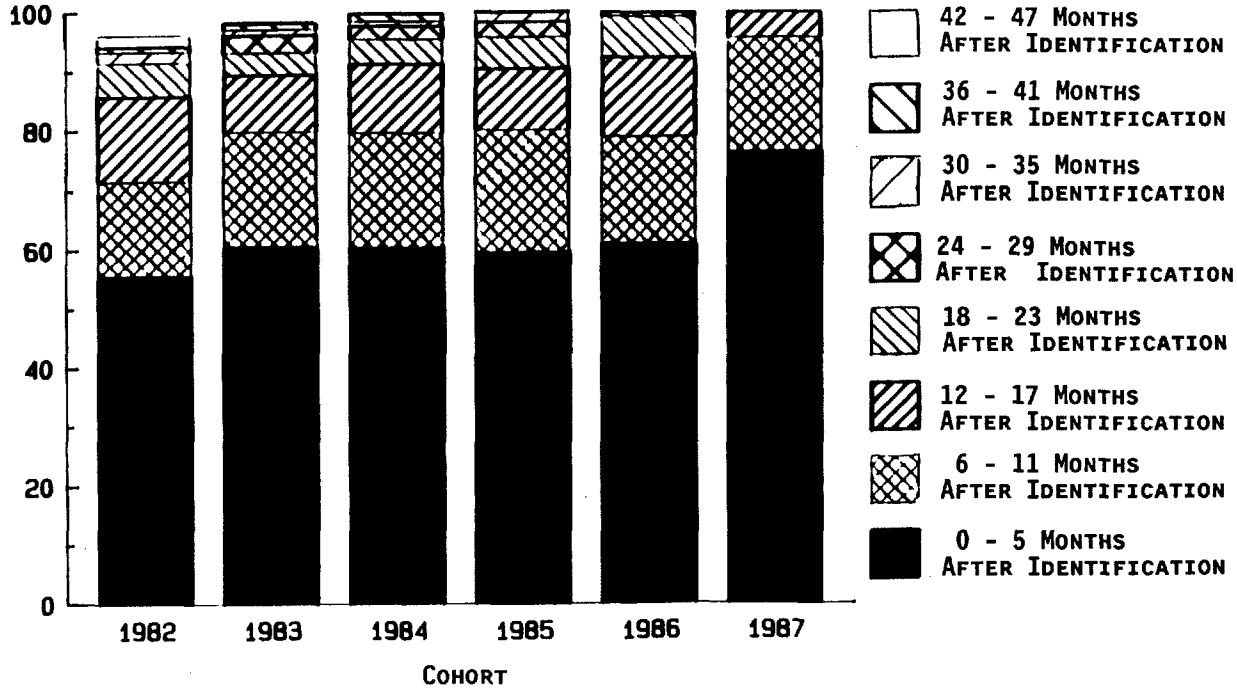
<u>Six-Month Interval</u>	<u>Cohort</u>						
	<u>82</u>	<u>83</u>	<u>84</u>	<u>85</u>	<u>86</u>	<u>87</u>	<u>88</u>
1	59	190	360	572	835	1,346	861
2	17	60	114	198	245	339	
3	15	30	69	99	182	76	
4	6	12	25	51	95		
5	0	9	13	24	10		
6	2	3	5	15			
7	1	3	8	1			
8	2	1	1				
9	2	2	0				
10	0	1					
11	1	2					
12	1						
Total	106	313	595	960	1,367	1,761	861
1	55.7%	60.7%	60.5%	59.6%	61.1%	76.4%	100.0%
2	16.0	19.2	19.2	20.6	17.9	19.3	
3	14.2	9.6	11.6	10.3	13.3	4.3	
4	5.7	3.8	4.2	5.3	6.9		
5	0.0	2.9	2.2	2.5	0.7		
6	1.9	1.0	0.8	1.6			
7	0.9	1.0	1.3	0.1			
8	1.9	0.3	0.2				
9	1.9	0.6	0.0				
10	0.0	0.3					
11	0.9	0.6					
12	0.9						
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Note: Six-month interval calculated for each claim relative to the hospital admission date on which the claimant began treatment for the claim which identified him/her as an HIV case.

Source: Empire Blue Cross/Blue Shield Institutional Claims Incurred and Paid -- January 1, 1982 Through June 30, 1988.

# EMPIRE BLUE CROSS/BLUE SHIELD LAST HIV-RELATED CLAIM BY COHORT AND SIX-MONTH INTERVAL

PERCENT OF FINAL HIV-RELATED CLAIMS



GRAPH 3

INSTITUTIONAL CLAIMS INCURRED AND PAID  
JANUARY 1, 1982 THROUGH JUNE 30, 1988

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AIDS utilization is concentrated into a comparatively short period (Graph 4). For those cohorts for which we have reasonably complete data, we have observed a consistent pattern of utilization. Fifty-five to sixty percent of inpatient days are incurred in the first six months after identification. About 10% of inpatient days are incurred in the six months prior to identification and 15% in the six twelve months after identification (Table 8). What we have seen is the cohort of 1985 and what you see is a fairly steep curve of increasing utilization prior to when they actually get fairly sick and when the utilization is at its peak. Then it drops off quickly.

TABLE 8

Cohort 1985 -- Inpatient Utilization by Six-Month Interval

<u>6-Month Interval</u>	<u>Mean Inpatient Days</u>	<u>Percent of Total</u>
-6	.3	.5
-5	.4	.7
-4	.3	.5
-3	1.1	1.9
-2	2.4	4.0
-1	6.5	10.9
1	33.3	55.4
2	9.3	15.4
3	3.9	6.5
4	1.9	3.1
5	.6	.9
6	.1	.2
7	.0	0.0
Total	60.1	100.0

Note: Six-month interval calculated for each claim relative to the hospital admission date on which the claimant began treatment for the claim which identified him/her as an HIV case. A negative value indicates a claim incurred before identification.

Source: Empire Blue Cross/Blue Shield Institutional Claims Incurred and Paid -- January 1, 1982 Through June 30, 1988.

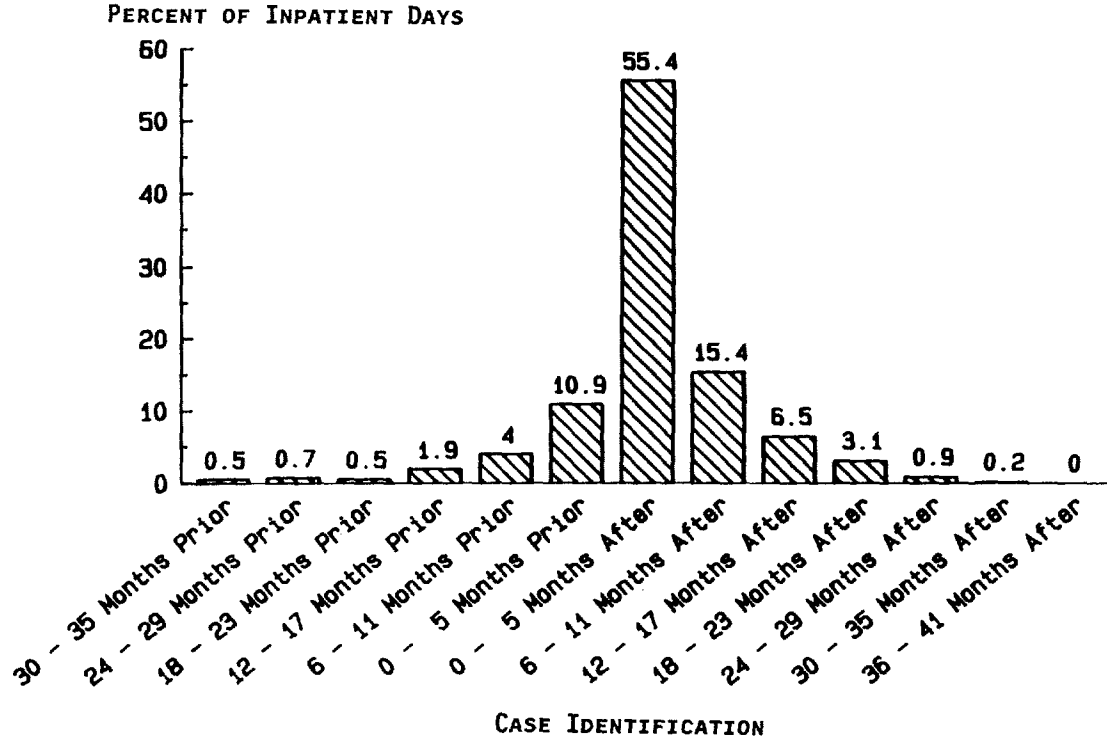
We have seen a continuous decline in inpatient utilization (Graph 5). The average number of days per case has declined since the start of the epidemic. This decline can be attributed to a decreasing length of stay rather than a decreasing number of hospital admissions as the average length of stay has decreased while the total number of inpatient claims has not substantially changed (Table 9).

There appears to have been two phases in the decline of utilization. The first phase of the decline lasted until 1986. This initial decline in utilization is not surprising. One would expect improvements in the care of people with HIV-related diseases as medical personnel in institutions learn how to treat these patients. Such improvements, however, are finite. Without a change in the technology or the availability/organization of health care, there is a limit to such improvements. This limit was probably approached in 1986 and 1987. At that point, utilization began to stabilize.

# EMPIRE BLUE CROSS/BLUE SHIELD INPATIENT DAYS FOR COHORT 1985 BY SIX-MONTH INTERVAL

AIDS: COPING WITH THE HEALTH BENEFIT PLAN IMPLICATIONS

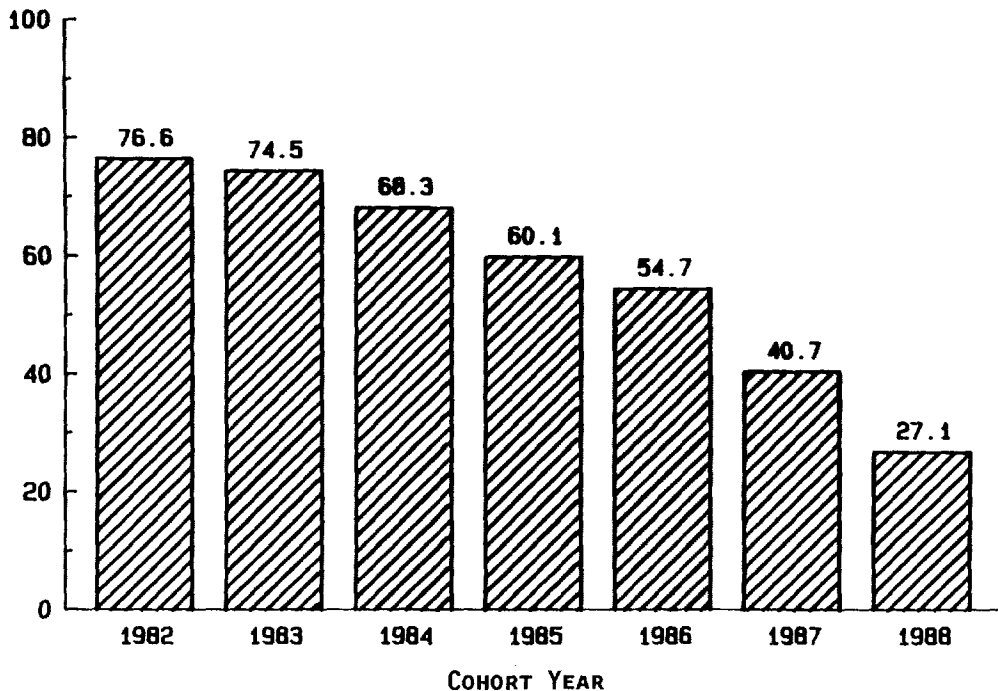
GRAPH 4



INSTITUTIONAL CLAIMS INCURRED AND PAID  
JANUARY 1, 1982 THROUGH JUNE 30, 1988

# EMPIRE BLUE CROSS/BLUE SHIELD MEAN INPATIENT HOSPITAL DAYS BY COHORT JANUARY 1982 THROUGH JUNE 1988

MEAN INPATIENT DAYS



2444

GRAPH 5  
OPEN FORUM

AIDS CASES



AIDS: COPING WITH THE HEALTH BENEFIT PLAN IMPLICATIONS

TABLE 9

Inpatient Hospital Days By Cohort

<u>Cohort</u>	<u>Mean Length of Stay</u>	<u>Mean Inpatient Days</u>
1982	19.3	76.6
1983	20.6	74.5
1984	18.4	68.3
1985	16.9	60.1
1986	16.1	54.7
1987	15.3	40.7
1988	12.8	27.1

- Notes:
1. Inpatient days exclude claims with a hospital admission date prior to January 1, 1982 or claims incurred more than three years prior to the date the case was identified as HIV related.
  2. Data for 1987 and 1988 are substantially incomplete.

Source: Empire Blue Cross/Blue Shield Institutional Claims Incurred and Paid -- January 1, 1982 Through June 30, 1988.

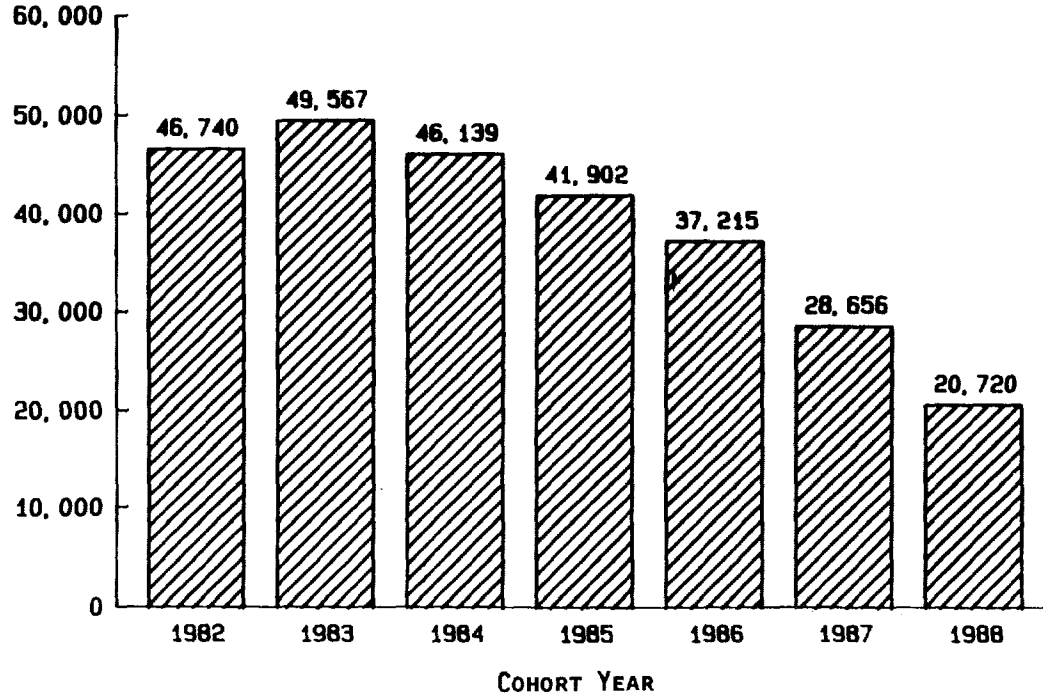
When the peak periods of utilization for the cohorts of 1985 and 1986 are compared, the difference is only 1.5 days. This is much less than the comparable difference between other cohorts, both earlier and later. In 1987 utilization began to fall again. When the peak period of utilization is compared for the cohorts of 1986 and 1987, the difference between the two had increased from the 1.5 days between the cohorts of 1985 and 1986 to about 4 days (a number which will probably decrease slightly when all claims have been processed). At this time we are not certain why it began to fall again or even if the decline is real with no change in the pattern of utilization. We have identified two plausible factors:

1. AZT is probably contributing to the decline of inpatient utilization. The cohort of 1987 was the first group of AIDS patients to have access to AZT on a non-experimental basis. Given the toxicity of AZT its extended use is problematic; and the fact that AZT delays the progression of HIV disease but does not cure it means that it is very likely that rather than a true decline in utilization, institutional treatment is simply being minimized or deferred as long as the individual takes AZT.
2. A second factor contributing to the latter decline in utilization may be hospital crowding. Hospitals in New York are reporting that they are approaching their maximum capacities. If you think about the situation of New York prior to the AIDS epidemic, that makes a great deal of sense. There are numerous reports of hospitals turning away non-emergency surgical cases or voluntary surgical cases. This has contributed to the drop in utilization, and it's a real drop in utilization; and these days will not be made up.

The institutional charges associated with a typical HIV case have been declining since the start of the epidemic (Graph 6 and Table 10). Assuming the utilization

# EMPIRE BLUE CROSS/BLUE SHIELD MEAN INPATIENT CHARGES BY COHORT JANUARY 1982 THROUGH JUNE 1988

MEAN INPATIENT CHARGE IN DOLLARS



2446

GRAPH 6

OPEN FORUM

AIDS: COPING WITH THE HEALTH BENEFIT PLAN IMPLICATIONS

patterns hold, a reasonable estimate of the average ultimate institutional charges for cases identified this year would probably be \$35,000-\$40,000 considering inflation. This does not include non-institutional charges. The underlying cause of the lowering of costs is the decline in utilization stemming from the decline in the average length of an inpatient stay. Lower than average inflation rates for HIV-related claims have also contributed to the decline in institutional charges. It is not readily apparent why this is the case. It may be attributable to changes in the facilities used to treat HIV-related illnesses, a shift from intensive care to less costly rooms. It may also reflect a shift in the locus of the epidemic away from areas with higher per diem costs. We have hospitals in Manhattan that seem to be more costly than the hospitals in the outlying boroughs.

TABLE 10

Institutional Charges by Cohort

Cohort	Mean Institutional Charges	Mean Inpatient Charges	Mean Charges per Inpatient Day
1982	\$ 47,686	\$ 46,740	\$ 610
1983	50,316	49,567	665
1984	46,926	46,139	676
1985	43,202	41,902	697
1986	38,468	37,215	681
1987	29,661	28,656	704
1988	20,765	20,270	747

- Notes: 1. Data for 1987 and 1988 are substantially incomplete.  
 2. Institutional charges include all institutional services.

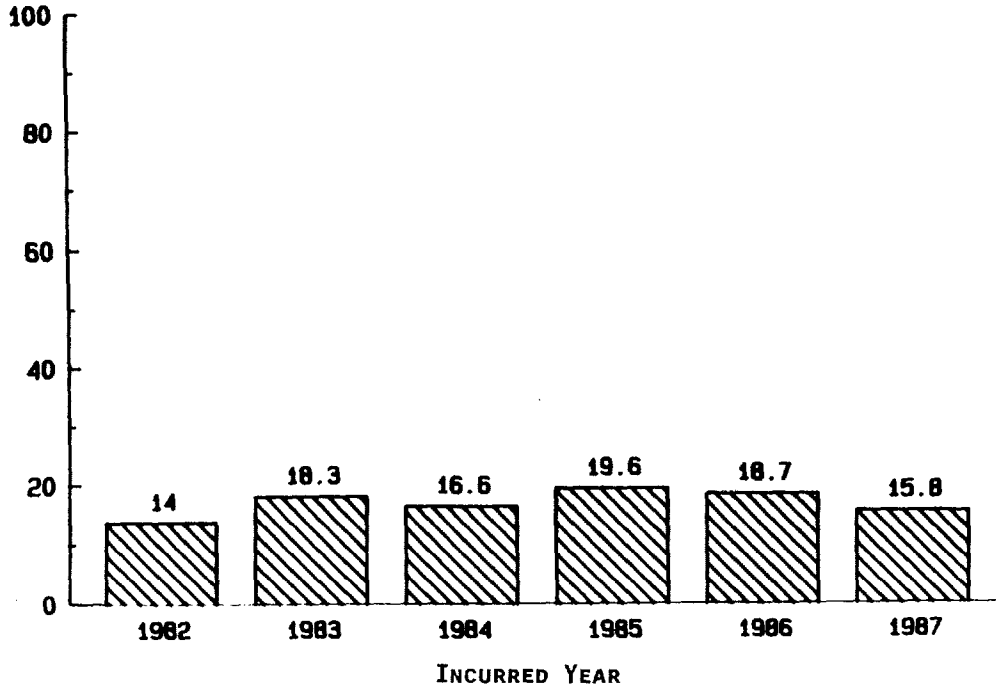
Source: Empire Blue Cross/Blue Shield Institutional Claims Incurred and Paid -- January 1, 1982 Through June 30, 1988.

As we at Empire Blue Cross/Blue Shield do not do any significant medical underwriting, we do attract bad risks to our small group and individual coverages. We did not expect AIDS to be different from any other disease in this regard. We were concerned that it might be much worse, either due to the composition of our individual market or the possibility that our competitors or some of our customers were dumping their bad risks into the individual pools. We are willing to accept the former, but not the latter.

We were not surprised to find that HIV-related claims in the individual market have been disproportionately more costly than the individual market as a whole (Graph 7 and Table 11). More importantly, the individual market's share of HIV-related costs has been reasonably stable with some signs of decreasing in the later years. This suggests that our individual market has not attracted bad HIV risks so much as it started out with them. Had we attracted them, we would have expected to see a steadily worsening situation as the epidemic progressed and individuals and groups became more aware of it. Essentially, we started bad and we have stayed bad. This observation is further buttressed by an analysis we did of the movement between accounts by the people who had at some point developed AIDS. The data showed no net movement away from experience rated accounts into the individual market.

# EMPIRE BLUE CROSS/BLUE SHIELD HIV-RELATED PAYMENTS AND THE INDIVIDUAL MARKET JANUARY 1, 1982 THROUGH DECEMBER 31, 1987

PERCENT OF HIV PAYMENTS



1988 DATA ARE EXCLUDED FROM THIS GRAPH  
BECAUSE THEY ARE TOO INCOMPLETE.

2448

OPEN FORUM  
GRAPH 7

AIDS: COPING WITH THE HEALTH BENEFIT PLAN IMPLICATIONS

TABLE 11

HIV-Related Payments and the Individual Market

<u>Incurred Year</u>	<u>Percent of HIV Payments</u>	<u>Percent of Total Payments</u>	<u>Difference</u>
1982	14.0%	14.3%	-0.3
1983	18.3	13.6	4.7
1984	16.6	14.0	2.6
1985	19.6	14.3	5.3
1986	18.7	14.4	4.3
1987	15.8	12.5	3.3

Note: Data for 1988 are too incomplete to be included.

Source: Empire Blue Cross/Blue Shield Institutional Claims Incurred and Paid -- January 1, 1982 Through June 30, 1988.

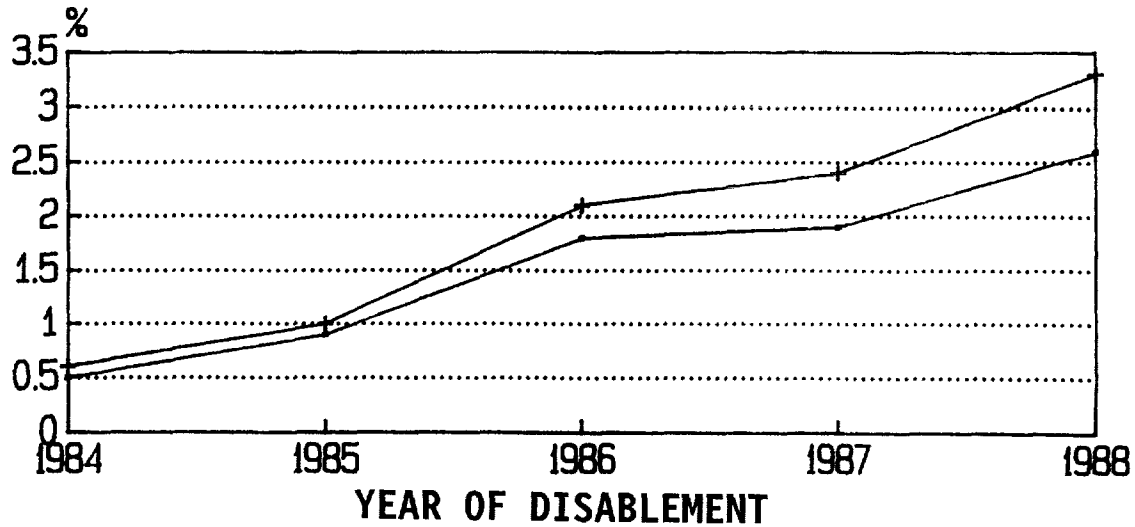
MR. STEIN: Thank you, Jon. Our third panelist now is Bob Beal, who will talk about disability pay.

MR. ROBERT W. BEAL: My assignment is to give the individual disability perspective of the AIDS risk. Over the last month in preparation for this, I've spoken to a number of people from individual disability carriers about their own emerging AIDS experience. It was not uncommon to hear that some of them (not a significant number of them) were underwhelmed by their AIDS experience, that the pattern of reported claims was leveling or even slowing down. One person offered the opinion that maybe AIDS was becoming a non-issue, or, at least, that there were bigger fish to fry in their company. I remain more pessimistic. There are no data to convince me that AIDS is not a major threat to individual disability, let alone, to the life and health insurance industry in general. I hope my thoughts will convince you of the seriousness of the epidemic, at least for my line of business.

Before getting into some specific issues around the AIDS risk, let's look at my company's experience a little bit. We've identified approximately one hundred individual disability AIDS claims over the last three years and paid over \$1.6 million in benefits during the last three years. This represents less than 1% of all our individual disability claims. It might be easy to conclude that the dire predictions are just not coming true.

But it takes only a little digging to discover some disconcerting trends. For instance, Graph 8 compares our AIDS claims to total individual disability claims by calendar year of disablement. In terms of the monthly indemnity, our AIDS claims represent 0.5% of all claims disabled in 1984, but jumped to 2.6% of all claims disabled in 1988. In terms of paid benefits, until September of this year, AIDS claims have gone from 0.6% in 1984 to 3.3% in 1988. Although this slope is somewhat skewed upward by our better or more improved ability to recognize an AIDS claim, I believe these numbers illustrate a significant acceleration in our AIDS experience.

# UNUM EXPERIENCE % OF AIDS CLAIMS TO TOTAL CLAIMS



—●— BY MONTHLY  
INDEMNITY

—+— BY PAID BENEFITS

GRAPH 8

OPEN FORUM

## AIDS: COPING WITH THE HEALTH BENEFIT PLAN IMPLICATIONS

Some people feel that the AIDS threat to disability insurance is reduced because of the "short-term" nature of AIDS claims, but are these claims really that short?

Graph 9 compares my company's average duration for AIDS claims and for all claims over the last five calendar years of disablement. The average duration is equal to the benefits paid to date since disablement for each cohort divided by the total monthly indemnity. In every calendar year, the AIDS-related claim durations are longer. I expect over time the gap will narrow for each cohort of claims as you get longer non-AIDS claims coming into the picture; but, these statistics demonstrate that one should no longer think of disability AIDS claims as short term.

I would like to touch upon a few specific issues regarding the impact of AIDS on individual disability insurance: (1) current blood testing; (2) disablement; (3) claim duration; and (4) the future cost of AIDS for this type of business.

The first concerns current blood testing, which is the most effective tool we have right now for controlling the cost of AIDS. For this meeting, I surveyed twelve companies that sold the most noncancellable business in 1988. All twelve are presently AIDS testing, although one company is doing it in only a few states. All twelve companies are also obtaining full blood studies along with the AIDS test. The most common blood test limit is around \$3,000 of monthly indemnity. The highest limit among the twelve companies is \$5,000, and the lowest is \$2,000.

There is considerable variation between companies on the definition of the amount used in the limit. Some take into account all inforce business plus the amounts applied for. Others consider only the amounts issued or applied for since the last negative blood test. Only three of the twelve companies take business from other companies into account. Consequently, it is easy for an infected applicant to avoid blood testing by spreading his business among multiple companies.

The next issue is when infected insureds will become disabled. Insureds are disabled when they are unable to perform the material duties of their occupations. For infected insureds, disablement may occur long before the development of full clinical AIDS as a result of such symptoms as fatigue, loss of sleep and lack of concentration. This situation cracks another level of uncertainty around the impact of AIDS disability insurance.

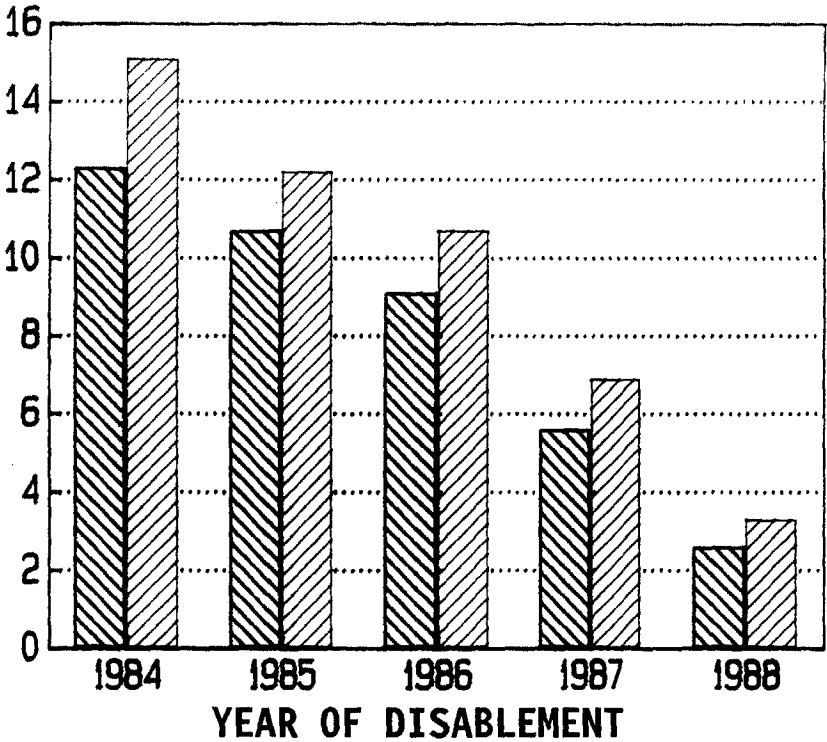
Potentially more threatening to disability insurers is the HIV asymptomatic risk by which insureds may be either unable to practice their professions or ethically restrained from doing so, simply due to being infected. This situation will more likely occur in the doctor and dentist professions which make up a large percentage of the individual disability inforce in many companies.

The third issue is claim duration. Last year in order to evaluate mortality of AIDS claims, I accumulated data on almost 500 AIDS individual disability claims from 16 companies. My study indicated a mortality pattern very similar to the Cowell-Hoskins mortality rates for AIDS victims. The expected claim duration based upon these mortality rates is roughly two years beyond the elimination period. With my own company's statistics, I earlier demonstrated that AIDS claims should no longer be considered short term. Additionally, we can expect the average duration of claims to lengthen significantly with a greater utilization of AZT. However, it is not yet known how much the life expectancy of AIDS

GRAPH 9

### UNUM EXPERIENCE INDIVIDUAL DISABILITY AVERAGE CLAIM DURATION

MONTHS



 TOTAL CLAIMS  AIDS CLAIMS



## AIDS: COPING WITH THE HEALTH BENEFIT PLAN IMPLICATIONS

victims will increase. As a rough measure Mike Cowell believes that the first-year annual mortality rate may be already closer to 40% than the 45% that he and Walter Hoskins used in their report.

The last of my four issues is the toughest. What will be the future financial impact of AIDS on individual disability insurance? Of course, no one knows. Not only is the course of the epidemic difficult to estimate, but for this line of business we are not sure when infected insureds will progress to disablement; and once they are disabled, how long they will remain there.

This is not to say that I won't go out on the limb with a projection. Before getting into the results of my projection, I want to mention a few of my assumptions so that you can view these estimates with a critical eye. First, and very important, I relied on the Cowell-Hoskins model to estimate the spread of HIV disease throughout the insured population, the progression of AIDS to full clinical AIDS and the mortality rates thereafter. In addition to that and in addition to many lesser assumptions, I incorporated three key assumptions that I know are wrong:

1. There will be no material antiselection in decisions of infected applicants to purchase insurance.
2. AZT will not have a material impact on claim duration.
3. Disablement will occur only upon development of full clinical AIDS.

At least my comments before suggested that those are wrong. I chose these three assumptions because there are no data to make more realistic assumptions, and they serve to underestimate the cost of AIDS. In other words, I think the projected costs of AIDS are significant enough without more refined assumptions which could have increased my projected cost.

I relate the future cost of AIDS to the present value of future premiums for a block of new business. Graph 10 shows the future impact of AIDS by year of issue, assuming no blood testing. I separated the cost into the portions contributed by those infected at issue and those becoming infected subsequently.

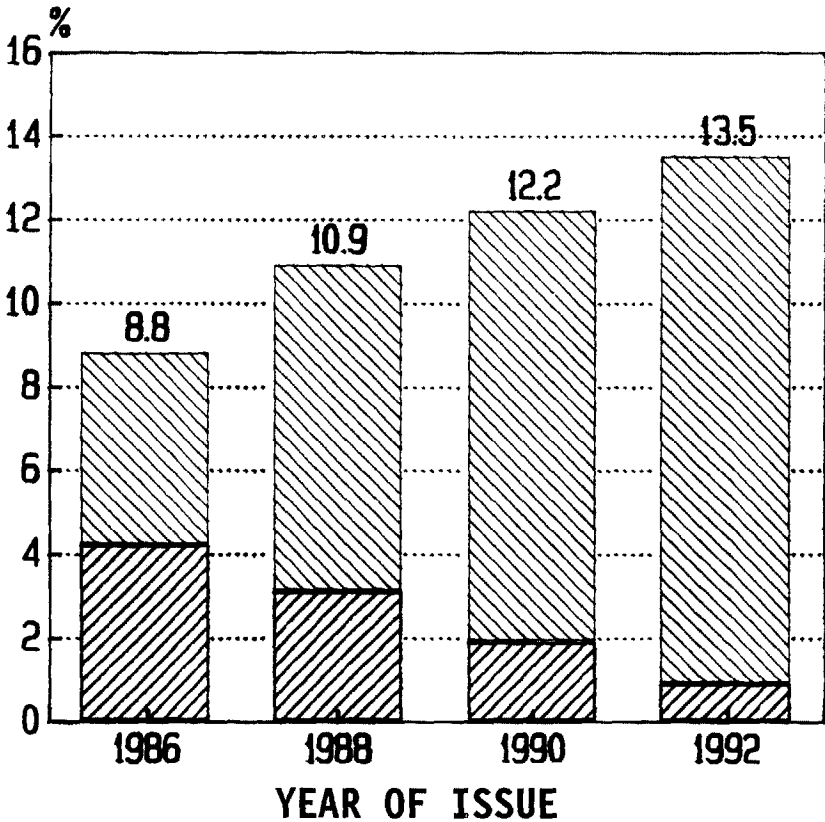
For business issued in 1988 for which no blood testing is required, my model suggests that the impact of AIDS will be at least 11% of future premiums. I think this could pretty well eliminate any anticipated profit margins in today's rates.

Graph 11 illustrates the impact of blood testing on reducing the cost of AIDS for business issued in 1988. It shows the cost of different blood test limits. The total cost is increased by the cost of blood testing. If all applicants are tested, the additional cost of the blood studies is about 1% of the present value of premiums.

Graph 11 makes two important points. First, if all applicants are tested, the cost of AIDS could still be over 4% of premium revenue due to new infections after issue. Second, a \$3,000 blood testing limit, which is the most common today, may not be as effective at controlling the impact of AIDS as many companies hope, primarily because well over 50% (probably closer to 60%) of the business coming in the door is not being tested. Adding this to the fact that it is easy for an infected person to avoid blood testing through spreading coverage

GRAPH 10

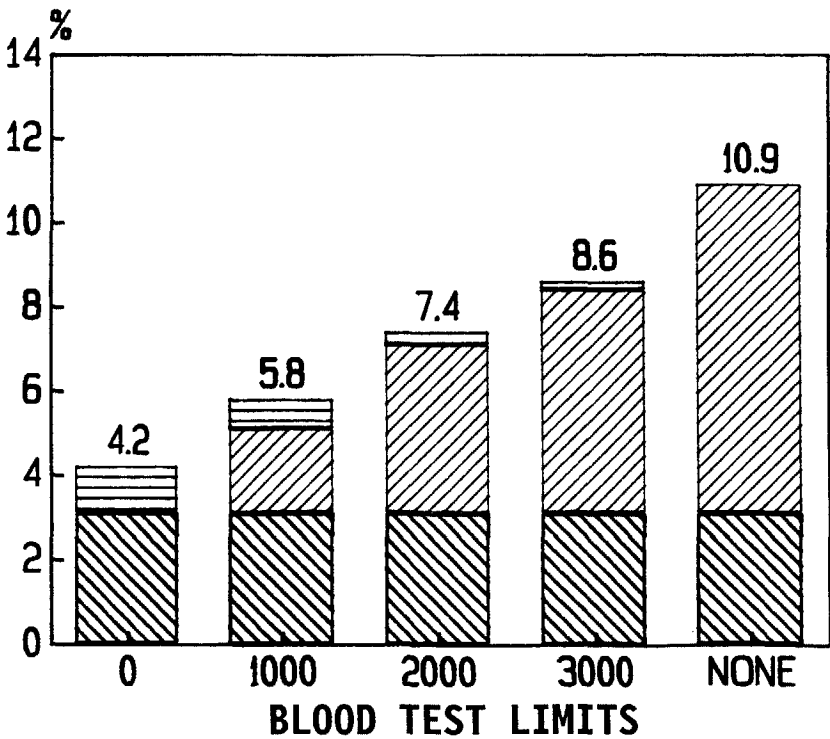
**FINANCIAL IMPACT OF AIDS  
% OF FUTURE PREMIUM  
(ASSUMING NO BLOOD TESTING)**






 **INFECTED AFTER ISSUE**     **INFECTED AT ISSUE**

GRAPH 11

**FINANCIAL IMPACT OF AIDS  
AS % OF FUTURE PREMIUM  
BUSINESS ISSUED IN 1988 ONLY**



-  **INFECTED AFTER ISSUE**
-  **INFECTED AT ISSUE**
-  **BLOOD TESTING COST**

## OPEN FORUM

among several companies, I think we have a strong case for companies to revisit their blood testing strategies.

MR. STEIN: The floor is open for discussion and questions.

MR. ROBERT M. CHMELY: I've gone to a couple of sessions at this meeting where AIDS was discussed; and I've seen it discussed from a perspective which I think is important. It's well-focused, but still rather narrow. The perspective has been the cost of AIDS. The perspective has been how to underwrite to avoid AIDS claims. There's a good reason for that, since it could have a very serious financial impact on the insurance industry. I think it's very appropriate for us as actuaries and for the insurance industry generally to be concerned about these costs and to take them into account in our pricing and reserving assumptions. I think it's also appropriate, given the statistics, that the insurance industry underwrite to avoid AIDS claims coming into the insured population, because there is no way to price today to cover the risk.

There is one major social impact that's being overlooked in this process, and that is the desperate need for adequate care for victims of AIDS. Some of these people are absolutely innocent. I'm talking about hemophiliacs and children of AIDS parents. Some of them may have had some complicity in the disease; nonetheless, there's a need for adequate health care and it's got to be provided somehow by the system. Given that the insurance industry doesn't have resources to pay for these claims, it seems pretty apparent that there's got to be a way found for the federal government's general revenues to help pay for AIDS claims. However, what I'd like to do at this point is address to you, the audience and the panel, this issue of how we might, as an industry and as a profession, enlist this part of the federal government in helping to pay for AIDS claims; and, at the same time, hopefully preserve the private health care industry as we know it.

MR. FUHRER: I would like to strongly take issue with your classification of AIDS victims between those who are innocent and those who are guilty. I think anybody who has the disease has no complicity in it, unless there are a few people who deliberately got it. I don't think we should classify people that way at all.

MR. CHMELY: I didn't really say they were guilty; I said that they were implicated.

MR. STEIN: Does one of our panel members wish to address Bob Chmely's question? I suspect that in this regard there must be many in the audience who are as able and willing to discuss the federal role as any of us. Those of us who are in the health business are finding an increasingly large part of our time spent dealing with legislative initiatives at the state level and are giving recognition to the growing course of care for AIDS victims and trying to keep the insurance business a participant as much as possible in the course of that treatment.

MR. DAVID J. CHRISTIANSON: I think one thing the insurance industry can do is to help find ways to bring the cost down, try to make the health system more effective and to find ways to help treat people outside of the hospital -- not necessarily through a hospice system, but something similar to that. I think the San Francisco model, where the average cost is something in that neighborhood of \$27,000-\$29,000, would be very helpful if that would spread across the

## AIDS: COPING WITH THE HEALTH BENEFIT PLAN IMPLICATIONS

U.S. I believe the ACLI has started to raise major funding to address some health care issues and to find more cost-effective and more humane ways to treat people. I think that's one way the insurance industry can help quite a bit.

MR. STEIN: Do we have any other comments on the question of the federal role and on the insurance industry's obligation to help solve the AIDS victim's care problem?

MR. CHRIS LEE SIPES\*: I think there's a couple of things we can look at. I think in Jon's case, i.e., in New York where they do have a significant portion of the population, they possibly can approach it with a limited underwriting approach (where they do not get antiselected against that significantly); whereas, most carriers in any given area may have less than 5%. Therefore antiselection can be very detrimental to them in trying to approach it on that same guideline. Using that same rationale, if I go to the fact that the population as a whole is either insured through private insurance or Medicare/Medicaid except for some small portion percentage-wise, then whether expended by the U.S. government, state governments or the insurance industry, it basically is funded by the population. It's only because of our free enterprise approach and our concern that one is willing to have a pool, or rating for AIDS coverage versus one that is not doing so (and antiselecting to keep that business off their books), that forces us to look at the government playing that role. If, in fact, we had a high-risk pool on a national basis for AIDS, it could be done as a non-government entity and will not cost the population or the carriers any more than if it was funded through the government.

MR. STEIN: There are some people in the group insurance industry, in the large group area where the groups are in the hundreds or thousands, who are much more relaxed about the ultimate consequences of AIDS claims. Does anybody here feel that it is going to be a small increment to the total claims that they will be paying, and that rate adjustments will be sufficient to protect them and their financial stability against claims a very large employer is likely to get?

MS. BARBARA J. LAUTZENHEISER: There was a task force of the ACLI looking into the questions of how we could, in fact, provide benefits for the uninsurables and did reach the conclusion of recommending risk pools. The major difficulty is that we need to determine a funding that is broader based. As it stands now, the base in many of the states is only insurance companies; it doesn't cover the entire area (including self-insureds) as funding part of that uninsurable risk.

The second problem is that as you begin discussing the issue on a political basis, the concept of "uninsured" gets confused with the concept of "uninsurable"; and, of course, the uninsured group includes those people who can afford it, as well as our uninsurables who have chosen not to purchase it. So there are some clarification issues that need to be made. The industry itself is moving toward, and should move toward, pools at the state level for the uninsurable with broad-based funding -- not just for the AIDS cases, but for the uninsurable cases as well in order to maintain the voluntary risk classification system that we need.

\* Mr. Sipes, not a member of the Society, is Vice President and Actuary at Professional Administrators, Ltd., in Lexington, Kentucky.

## OPEN FORUM

MR. STEIN: I should note, for the benefit of some of you who might not know this, that several of the people participating here were and have been involved in a number of Society and industry studies and initiatives with regard to AIDS. For example, the committee that Dave Holland chaired that produced the Society's report on AIDS included participation by a number of the people here, including Dave Christianson, Barbara Lautzenheiser, Bob Beal and I'm sure others who are in the room.

I'd like to mention something in our own experience that confirms Jon's mention of the claims that come from people who were insured prior to the national consciousness of AIDS, versus those who probably know they are high risk and who may be seeking medical care insurance now. We have a large, but shrinking, block of business that was sold heavily throughout the 1970s. It's a product called coordinated health insurance program (CHIP), which is well known to the industry as having been the biggest seller in the market in its day. We stopped selling it at the end of 1981; and our inforce has been slowly but steadily shrinking. The percentage of total claim dollars that are identified as for the treatment of AIDS is far in excess of the percentage of claim dollars for AIDS treatment of any of the other medical care coverages that I am responsible for, and that includes a major medical type plan that we started selling in 1983 to individuals. It also includes our small group products, the smaller part (which are under ten lives) we have been underwriting, and the larger part (ten lives and over) we have been taking on a group basis. This indicates that, even with antiselection in more recent issues, the biggest claim dollars that we've been facing so far have been people who were insured before there was any consciousness of AIDS as a problem.

MR. MICHAEL L. ZURCHER: In much of the modelling work we do, we usually assume (especially for individual life) that we're not really insuring any of the intravenous (IV) drug users. I had a question for Jon and wonder, in the analysis of all his claims, if he's been able to identify which of his claimants are IV drug users; and, if so, what percent might that be?

DR. EISENHANDLER: We've been able to identify some IV drug users. We know of about 80 people who have had treatment for the use of an illegal substance. That's 80 out of a base of about 6,000. We also know about 12,000 others who have had treatment for an IV drug use or illegal drug use, but we're probably wrong to distinguish heroin from cocaine because the cocaine abusers of New York and the crack users are also a special risk for HIV infection. So far we've identified them, but we are not picking up all that many who are showing signs of AIDS at this point.

A couple things I'd like to point out is that the IV drug-using population is not homogenous; there's a great deal of variety in that population. The people who are especially at risk are the people who are the stereotypical drug users, two or three times a day injecting. Our people tend to hold steady jobs or are in some steady form of marital relationship. They probably use drugs once or twice a week and are not at the same level of risk. Chances are they use drugs in their own living room as opposed to a shooting gallery. So we do cover people, but the risk factors are not as great for our piece of that drug-using population as it is for the general image. A piece of information related to that: on the task force an estimate of drug users who are HIV positive is 55% to 60%. We estimated between 100,000 and 110,000 people in New York City who were drug users and who tested HIV positive are at obvious risk for developing AIDS in the next couple of years.

## AIDS: COPING WITH THE HEALTH BENEFIT PLAN IMPLICATIONS

MR. WALTER H. HOSKINS: In your simplifying assumption, which I agree with, for using claims starting at development of the full surveillance definition of AIDS, have you in any of your studies tried to track what stage of AIDS claimants were at when they filed for claims; and, as a secondary piece, how many of them would you call the presumptive type, where, they may just be HIV positive asymptomatic but have filed for a claim because they can't work anymore for whatever reason? Do you have any experience on that?

MR. BEAL: To answer the first question (the best that I have so far and it's probably not very good quality) is the study that I did last year. I asked the people who contributed if they could identify when they became first disabled, did they have AIDS-related complex (ARC) or was HIV just positive asymptomatic or was it full-blown AIDS. It was difficult. I got the impression that a lot of them didn't really have that data so they just put down full-blown AIDS. Several companies did have a distribution of AIDS and ARC; and for those that did, it was about 25% ARC. Now as far as when you get a bunch of disability income actuaries together and we start discussing the impact of AIDS, we always bring up the HIV asymptomatic risk. But, I have not heard of a specific situation; no one has ever said they have had that. The closest we came in my company was when the person filed it, but the doctor hadn't stopped working. Then we said we didn't want to tackle it at that point, and we could deny it because he really hadn't stopped working, but I think he was feeling us out a little bit.

MR. CHESTER M. LOZOWSKI: I know you can't transmit AIDS with casual contact, but if someone, for example, does share a needle or has sex or cuts himself and blood pours into an open sore, what is the probability of infection for a single event like that?

MR. FUHRER: I think that it's not actually known. There was some work done on that, but the only real way of telling would be to actually have volunteers try it. I don't think that's been done. It's been estimated that it's pretty high for a direct blood contact and considerably less than high for only sexual contact. Some people have argued that certain kinds of sexual contact have higher probability than other ones, but I don't think there are any real data on that at all. Does anybody else know of any?

MS. LAUTZENHEISER: This is one of those things that is so terribly unknown. It is suspected that possibly where the person is on the AIDS progression curve may in fact be part of the equation; that if you are higher on that curve and closer to actually having AIDS or showing some AIDS symptoms, your infectivity may be at a higher percentage -- but data range. There are people who have contracted AIDS with just one sexual contact, and others who have been having sexual intercourse with persons over a long period of time and haven't in fact contracted it. It's the same way with blood. There are lots of freak blood instances where there has not been a contraction; and there are other instances where it's entered through the eye and the fluids of the eye. There is some difficulty identifying it, but it may be a function of, again, where that person is on the progression curve and possibly even where that person got it from. There were some studies which indicated that it may be mutating in the body; and so, if the person is not only higher on the curve but got it from someone previously who was higher on the curve, it may be more infective. Just a lot of unknowns.

MR. FUHRER: Along that subject I have seen some studies in which researchers tried to identify the prevalence of the AIDS virus in the bloodstream and I did

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see the same thing you said, where somebody later in the stage of the disease (i.e., when they actually had full-blown AIDS) had more of the virus found in the blood. They also thought that there may have been more found immediately after infection and then it went down to practically zero within three to six months after that.

MS. DOROTHEA D. CARDAMONE: I have a question on AZT because I don't know very much about it. It seems like if we get people out of the hospitals, we'll still have to pay for the drug, especially with a drug card program on a comprehensive plan. Is the cost of that likely to go up or down? Obviously, someone who's in treatment longer will be getting AZT longer, but the cost on a unit basis seems to be very high and I don't quite understand why. I would ask if anyone could shed some light on it to do so.

DR. EISENHANDLER: The cost has gone down although not dramatically. It's Burroughs who reduced the cost from \$10,000 to \$8,000 per year. The drug is not simply the drug; it's a drug therapy. You should think not just in terms of drug costs, but in terms of the monitoring of the person. It's an extremely toxic drug and its costs are somewhat higher. Now whether the price of the drug goes down is as much a political question as it is anything else. From what I understand, AZT was developed with government grant money, tested with government grant money and passed off; and Burroughs has been selling it. Obviously there's room in there to insist on lower price. Part of the justification for the initial high price is that someone would come out with another drug fairly quickly, which would then make it so Burroughs couldn't recoup its money.

MR. BEAL: That's obviously not happening. This is as much a political question as it is anything else, as there are no competitors in the market at this time.

MR. CHRISTIANSON: I have two questions for Jon. The first question: the cost that you gave which started at \$46,000 in 1982 and about \$20,000 in 1988, would that include AZT?

DR. EISENHANDLER: The costs are institutional costs only and do not include drugs given outside of the hospital. If AZT therapy is started in the hospital, it would cover that; but, once you leave the hospital beyond your day's supply or whatever they give you, then it would not include it. One thing to note about those numbers is that those numbers in later cohorts are still not complete. That's what we have paid out to date. At the end of 1988 we would probably almost double that when all the dust settles.

MR. CHRISTIANSON: The second question then is in life insurance. Once a person has died, as I understand it, the doctor is supposed to label it as an AIDS death if he can; nevertheless, there are severe problems in trying to identify all the AIDS deaths. It seems that there's confidentiality issues in both disability insurance and medical insurance. How well and how early can you identify an AIDS claim?

DR. EISENHANDLER: We identify AIDS claims. Over half the claims are identified in their first hospitalization, first inpatient stay. Looking at both institutional and non-institutional data is the best data we get. So we identify most of them fairly early. The problem is that no one identifies a lot of the claims before that. A lot of the diseases we see cropping up among people (which will



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eventually show up as having AIDS) are things like pneumonias, abscesses and coming into the emergency room with a high fever and staying for a couple of days. These types of claims are hard to distinguish between a normal run-of-the-mill illness. They are not uncommon to the general population. It's only afterwards, a year or two or maybe three, that we realize they are HIV-related. Due to issues of confidentiality, we don't keep a list. We just have the program generate a list and then it disappears at the end of a running.

MR. BEAL: I think for disability, because of the nature of claim management, we have to get more information right up front. Now it may be difficult to determine whether patients are disabled when all of the symptoms are not obvious situations where someone just comes out and says, "It's AIDS." Our company's doctor is an expert in disability insurance specifically, and he has spent a lot of time training our disability benefits specialists to tie all the various symptoms together, so I think we have a relatively good handle. I'm not saying it's perfect, but given that type of training and given the fact that we have to get a lot of information right up front, we can review the claim.

MR. CHRISTIANSON: Jon, let me see if I understood what you said on that. I think you said once these patients get in the hospital you can readily identify them; but, until they do, it's fairly difficult to identify them?

DR. EISENHANDLER: It's fairly difficult because, when we looked at our non-institutional claims, the diagnostic data are rather poor. We have individuals or doctors filling out claim forms which generally do not include a diagnosis; they just include a treatment code. Treatment from most opportunistic infections is the treatment from the same type of infection in someone who does not have AIDS. Consequently, you don't see it as anything more than just a run-of-the-mill medical claim. When they get into the hospitals, we get much better diagnostic data. In New York State and also in our surrounding areas, we've gone to DRG, which means we get excellent data now. Starting January 1, 1988, we went to DRG and the hospitals will tell us if someone had an HIV-related illness very quickly because they get more money that way.

MR. CHRISTIANSON: Would you then assume, as you march towards middle America, away from the coast, that this would even get harder to identify, just because of less frequency, less exposure to it? I mean, you have a lot of exposure to a disease in New York and maybe can more readily identify it?

DR. EISENHANDLER: That's a leading question. I think when you move away from the coast at this point in the course of the epidemic, you probably won't have the same identification problems we have, because everyone now knows about AIDS. There are readily available blood tests. The new blood tests (which would be used for Africa) which we can use cost \$2; or whatever it is, it's a nominal charge. I think you'll be able to identify AIDS fairly quickly. The problems you might have as insurers is whether your claims area is able to handle those data in an unambiguous way. One of our problems is some of the data from the early stages of the disease are fairly ambiguous. I mean the diagnostic lists of what we call our tertiary diagnoses that would show up as being AIDS related are fairly common. The fact that someone has an unspecified pneumonia does not necessarily mean they have AIDS. It's only later that you realize that it is AIDS related. I don't think you'll have the same identification problems simply because people are more knowledgeable. What you might have is a lag in identification caused by the fact that the earlier stages of the disease

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are not particularly unusual. They are just exaggerations of common ailments, common infections.

MS. CARDAMONE: I have a question for Dr. Eisenhandler. Maybe you went over this, but I'm not sure. You said you had 6,000 claimants now. Have you done any projections on your estimation of the future?

DR. EISENHANDLER: Well, right now we're in kind of a state of flux. We have a methodology designed to identify cases. The methodology was based on data coming in. When we went to DRG it put a crimp in our style; we're not really sure what the impact of the DRG is -- if we are identifying people we missed, if we are identifying people earlier, or what exactly is going on. So we really hesitate to project with hard numbers. Early on we were looking at about 2,200 to 2,400 this year, maybe about 2,800 the year after. What we've seen so far looks like we will be running about 2,600 or 2,700. My impression of the numbers is that we are catching up on all those missing cases. We're getting to identify people even sooner rather than identifying them a year or two or three years later. After they've had a claim we identify them on the earlier claim. That will produce a temporary bump in the numbers as we identify people that we wouldn't have identified until, say, 1990. We have done some projections. We are looking at a round figure. We'll hit 3,000 new cases in about two years. Beyond that we hesitate to project, but we think we are leveling off. That's a question of how many people in the gay community are still out there who will develop the disease. We haven't seen the disease move out into the more generally insured population. It's moving now in the direction of the uninsured population, the IV drug users.

MR. STEIN: Perhaps relevant here is our analysis of our medical claim experience. We've defined a case for analysis purposes as being an AIDS case when there is either a doctor's diagnosis or a claim or treatment with an AIDS-related drug like AZT. We analyzed a number of cases. The statistical validity of this might be very suspect (my own panel might not consider this a valid study), but we studied a number of such diagnosed people who later died. We analyzed their complete claim history over the past several years, counting only claims prior to diagnosis by our definition which seem to have some likely relationship to HIV infection. We would exclude a broken leg because of an automobile accident, for example. It appeared that for every dollar of claim after identification we paid at least another dollar in claim prior to identification. That's our rough rule of thumb until we do another similar analysis.

MR. STEPHEN C. CARLSON: A question for Bob Beal. Have you looked at your data by geography or region?

MR. BEAL: We get regular reports by state and a lot of it is dependent upon which states we write in (but it also correlates very well to CDC reports), which is New York, California, Florida, Texas. Those are the key ones.

MR. CARLSON: How about the actual weight of your claims? Are you mostly on the east coast, for example?

MR. BEAL: No, we're spread out across the country, but in those states as well. Those are key production states. My point is we correlate to our geographic inforce as well as the CDC.

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MR. CARLSON: Second question. How about with regard to your group LTD? I assume they must have been making the same kind of studies with it? Does that correlate at all with your individual?

MR. BEAL: I don't really have all the specific numbers on the group side.

MS. LAUTZENHEISER: I just came up with another question for Dr. Eisenhandler. Do you have any kind of a feel for whether as those inpatient costs have been going down, that the outpatient costs have been coming up and equalizing; or is there actually a true decrease in the cost because of the way we are treating it?

DR. EISENHANDLER: It's a true decrease in costs. The outpatient costs are negligible depending on the cohort year you are looking at. If it's 97%, 98% or 99% inpatient costs, any increase in outpatient utilization is lost. In fact, the number of claims stays about the same.

MR. STEIN: Jon, that doesn't include things like treatment by AZT.

DR. EISENHANDLER: That's only institutional; we'll be doing some non-institutional next. Actually, when we get back to New York we'll be starting it.

MS. CARDAMONE: Dr. Eisenhandler, had you just taken raw claim dollars in that diagram by cohort to show the amount that had been paid out, or is that trend adjusted?

DR. EISENHANDLER: No, those are raw dollars.

MS. CARDAMONE: Trend adjusted would be even less in later durations?

DR. EISENHANDLER: That's right.

MS. CARDAMONE: We've noted that, too, in terms of what we're paying, what it's costing us per actual day. In fact, the costs are not going up as quickly as we would expect, which we find interesting. We're not sure what to make of it, but it's nice. Still, there are incomplete data for the later cohort?

DR. EISENHANDLER: For 1987 and 1988, it's fairly incomplete. For 1986 at this point, the cohorts are fairly complete. The next time I get data, there will be very few members of the cohort of 1986 still active. If the trends hold, about 95% of them will no longer be active.

MS. CARDAMONE: Do you have those data available for different calendar periods -- the same diagram done one year ago or two years ago? In other words, you did one as of June 1988. Had you done that as of June 1987, would you have a lower runoff?

DR. EISENHANDLER: I've had similar ones done on that. What we looked at last year was the days . . . We can, to a certain extent, reconstruct the past. We haven't bothered to because it hasn't come up as an issue.

