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## Session 39TS

### Report of the Individual Disability Experience Committee

**Track:** Health Disability Insurance

**Moderator:** ROBERT W. BEAL

**Instructors:** DAVID MORGAN ANDREAE  
ROBERT W. BEAL  
DOUGLAS W. TAYLOR

*Summary: The Individual Disability Experience Committee of the Society of Actuaries has been gathering data from companies with the goal of performing industry-wide experience studies relative to the 1985 Commissioner's Individual Disability Table (1985 CIDA) and ultimately developing a new industry table. In this session, the chair of the committee provides an update on their progress. This update includes the initial results of incidence rate studies based on the contributed data. Although the results are not yet final, this session is an excellent opportunity for attendees to get an early look at the experience and to offer their thoughts and observations on the direction of the study.*

**MR. ROBERT BEAL:** The Individual Disability Experience Committee has two objectives. First, to study the claim incidence and termination trends during the 1990's relative to the 1985 Commissioner's Individual Disability Table (CIDA); second to develop a new industry table to replace the 1985 CIDA. We're well into the first objective, but haven't started the second one yet. We have reached a point where we want to share some preliminary results with you.

My responsibility today is to give an overview of our study, but the most interesting part is going to be what Doug Taylor and David Andreae have to say. Doug is going to talk about claim incidence trend results, and David will talk about the claim termination trend results.

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I'll start with a quick overview as an introduction to this study. The committee consists of 10 people: David M. Andreae, Robert W. Beal, Brenda L. Lodermeier, Jane Lovett, Jack Luff, William A. Obert, Timothy P. Swankey, Douglas W. Taylor, Paul Ziobrowsky and Christopher D. Zuiker. We started as a committee in January 2000.

One of our early tasks was to formulate preliminary study specifications. We needed to determine how to approach this study. To do that, we had to anticipate the kind of data we were going to get and who the potential contributors might be. We then prepared a request for proposal (RFP) to select a data manager for this project.

Concurrently, we proceeded to determine the contributors who could provide the type of data we needed. The companies that have contributed data are: Berkshire Life, Paul Revere, Illinois Mutual, Principal Financial Group, Mass Casualty, Provident, Mass Mutual, Trustmark, Monarch, Union Central, Northwest Mutual and Unum. We tried to talk to a number of different individual DI carriers to see if they were first interested in sharing their data. If they said yes, we had to find out what kind of data they had and if it was something that we could really use. We narrowed our selection to this group of 12 companies. The group is comprised of a variety of sizes and in total represent an excellent sampling of the industry.

We selected a Chicago-based company called Solucient to be the data manager. We've been very pleased with our choice. Next, we requested policy and claim data from the 12 companies. We formally requested data in May 2001 and received the last contribution sometime in the fall of 2002. In the end, we received in total 4.6 million policy records and 300,000 claim records. Solucient conducted a very comprehensive review of the data for completeness and quality.

One thing I want to mention is that company confidentiality has been the highest priority here. Even as the Chair, I do not see any one company's actual experience, so if they talk about Company A, B or C, with respect to their results, I have no idea who they may be.

We finalized the study specifications. Our study period for both incidence and termination was January 1, 1990 to December 31, 1999. Some companies contributed for shorter periods of time within that, but that was the longest period of time that we had.

The specifications run about 12 pages long, so this presentation is abbreviated. Claim incidence in the study was based on full policy years. For example, if 1995 is the calendar year, the full policy year begins in 1995 and ends in 1996. We look at each calendar year period individually and track trends.

The claim termination study was based on the date of disability and the last paid-to-date. We typically received the total amount of benefits paid per claim, but a lot of

companies were unable to break the total down into benefit types, etc., so we relied on these dates to establish the exposure that each claim contributed.

We are trying to measure experience relative to the following risk characteristics: calendar year of experience, policy year for incidence, issue year for incidence, age, gender, of course, elimination period, benefit period, cost of living for both incidence and termination, occupation class as defined in the 1985 CIDA. Companies did provide us with the own occupation classes, but, as you know, a lot of times occupations were moved from one class to the other, making it difficult to understand what occupations actually comprised each company's classes.

Companies were able to differentiate between multi-life and individually issued policies. I think we'll get some interesting results out of that. We are also able to evaluate experience by state and by smoker status.

Next, we had to review the initial results that we were getting from Solucient and identify any data issues. The biggest issue we have had to deal with is the impact of claim settlements on claim terminations, how to identify them and, once we identified them, what to do with them. We're still haggling over that, and that's one of the areas where David will talk discuss. How we ultimately decide to handle claim settlements in our study could materially change the results that we show today.

Benefit expiries were another issue—trying to identify expiries and making sure we don't treat them as claim terminations. Another issue involved a couple of companies whose incidence experience was either much worse or much better than anyone else. We've taken them out of the data we're showing you today until Solucient can work with these companies to determine whether their data is valid or not.

Remaining tasks include extending the list of measurable risk characteristics. One area involves differentiating experience between policies and claims that have residual-type benefits and those that don't. Another involves differentiating experience by key occupations. We're hoping to get some experience by occupation versus occupation class, particularly physicians and lawyers—the big occupations. That's going to be somewhat of a difficult task, but we might be able to get something by this fall.

In addition to residual and occupation, we are also planning to look at experience by the type of underwriting, i.e., standard, guaranteed standard issue, guaranteed to issue and by diagnosis code.

After this I want to prepare a written report from the committee once we fine-tune these results for this fall, probably some time this fall and then begin working on a new table. So that's what we have lined up.

One caution: All of these results presented today should be considered preliminary and subject to change. However, keep in mind that the data we have and what we're showing you is just the very top level. We really haven't had a lot of time to dig below this level.

**MR. DOUGLAS TAYLOR:** Again, this is a work in progress. We're still cleaning up the data. As Bob mentioned, there are two outliers—the one had really good incidence, the other one had really poor incidence compared to everybody else. There are other things in the data that we want to make sure about, and you'll see some things where you'll say, "Huh? Is that right?" Maybe it's not, maybe it is, we'll discover over time.

The study includes exposures from 1990 to 1999. This is a U.S.-only study. We pulled out all the Canadian data and any other foreign country data. We pulled out anything else that looked questionable. We had disability dates prior to issue dates and we thought, "Well, how does that happen?" So we pulled stuff like that out. And I'll show you some sample combinations of things that we looked at.

Chart 1 will give you an idea of the magnitude of the data we're looking at. The blue line represents the amount of exposure years that we have in the incidence study, and it's based on the numbers on the left side. So you have exposure year of a million and a half, going up to two million. The number of actual claims based on the right side starts around the 25,000 level way back and then actually decreases over time. [Referencing the trend in improving incidence] This was a little surprising to us. We thought there were actions being taken in the industry to improve morbidity, but we're just not sure that they've done this great a job.

We compared against the CIDA Table both on a count basis and on an indemnity-weighted basis. So, in a lot of the graphs I have both of these side-by-side. If I don't have them side-by-side, it usually means it didn't matter. If you looked at count or indemnity, the conclusions were the same. But if you look at the actual-to-expected ratios over time, we have data for both of them that appears flat for the first few years and then an up-tick around 1993, 1994.

I think this period [1993-94] is around the time when the industry started to see problems in their business, particularly in the physician business. It's not too surprising that the incidence rates went up during this time. But what's happened since then is a gradual improvement, not only on the count side but on the indemnity side as well. And there's actually been a merging of incidence relative to count and indemnity. You're probably thinking, "Well, the higher indemnity policies should have worse experience. It should make the indemnity actual expected (AE) higher." So it was a little surprising to us to see them come closer together over time.

We broke the results down into different issue-year groups, looking at count versus indemnity A/E ratios to see what was going on. If you look at the pre-1989 issues,

there is not a lot of convergence between count and indemnity results, but chances are that the higher indemnity policies had worse morbidity than the lower indemnity policies—not a big surprise considering the business issued by the industry during that period.

Improvements in the A/E incidence for business issued pre-1989 are probably due in large part to improved claims management practices during the 1990's.

**FROM THE FLOOR:** Couldn't some of this improved incidence be due to group companies dropping many of their group LTD physician cases so physicians might not have had as much coverage in force that they had prior to 1995?

**MR. TAYLOR:** Possibly. Physician groups have had their group policies in place for a long time by the time this kicked in, so that's possible.

The next set of issue years is 1990 to 1992. The count and indemnity A/E experience started to come together. In the first few years the typical underwriting selection tends to wear off, plus the physician block was at its best or worst depending on how you look at it. And then things started to improve since then, a little more quickly in the count side than indemnity, until recently.

Looking at the 1993 to 1995 issues, we started to run into credibility issues a little bit, but there's not a lot of difference between the count and indemnity A/E ratios at this point in time. The indemnity experience tends to bounce around, but there is a little bit of underwriting selection there, although not as much as in the prior issue year groups. I have some numbers later that actually stack up the A/E ratio by duration and issue-year groups.

When we get to the 1996 issues and plus issues, things flip-flop, which is new for me. We typically think high indemnity policies should be performing worse. What's happened here? It raises questions like, "Is this because of multi-life business? Are we getting a lot of guaranteed standard issue business or indemnities that's cause the count A/E to be higher than indemnity? Or is something else going on? Is it just tighter underwriting of the high-indemnity policies that is almost overdone and to the point where the smaller policies have worse experience than the high indemnity policies? This is something that we need to take a look at.

We further broke out the 1996-99 issue year group between multi-life and individual business. The question is, "Is the improved result driven by multi-life?" Stretch out the graph a little and get 1996 to 1999 years, the multi-life business does have improvement going on. It does have indemnity-weighted A/Es a little bit better than the count.

**MR. DAVID ANDREAE:** Multi-life has better incidence than the individual business over the full 10 years.

The indemnity-weighted results show a mixed picture. You can see the multi-life business performed much better than the individual in the early 1990s and then deteriorated pretty sharply. This may be due to the earlier multi-life business having much higher indemnities. Surprisingly, on the backside, multi-life business improved in a much faster way than the individual? So, again, here is another surprising result that we need to dig into.

**MR. BEAL:** It's interesting that the difference between multi-life and individual A/E's started in the 20 percent range in the early 1990s, then they converged, and now it looks like the difference is getting back to that level now.

**MR. TAYLOR:** I had started to show you some other breakdowns that we looked at. Chart 2 shows the A/E's by policy year, regardless of the issue year it came from, making sure that the effect of underwriting does actually appear in the first couple of durations, and it does. You can see policy duration one and two, and things started to pick up by the time we get to three. Beyond three, there's gradual improvement on the count side and a little less on the indemnity side. That could just be because the prior indemnity policies had a greater chance of over insurance once they get out a few years past underwriting. Maybe the people's income has gone down, but the indemnity amounts stayed level.

The next tables I compare A/E results by looking at policy year versus issue year. We can look at the effects of underwriting within specific issue year groups. There are some deterioration in year three, right after the contestable period and then later the incidence comes down. The improvements in durations 11+ are surprising and difficult to explain.

Table 1

### Incidence – Count A/E By Policy Year & Issue Year

Expected from 1985 CIDA

pol dur	89 + prior	1990-92	1993-95	1996+
1		83%	93%	65%
2	98%	92%	98%	81%
3	103%	105%	104%	84%
4-5	102%	99%	92%	81%
6-10	91%	83%	85%	
11+	67%			

Table 2

### Incidence – Indemnity A/E By Policy Year & Issue Year

Expected from 1985 CIDA

pol dur	89 + prior	1990-92	1993-95	1996+
1		79%	94%	47%
2	97%	93%	84%	63%
3	108%	123%	89%	76%
4-5	118%	106%	92%	63%
6-10	110%	91%	81%	
11+	84%			

Incidence experience in the 1990-92 period deteriorates as the effects of underwriting wear off and the contestability period wears off. It seems to show

improvements, and that's consistent with everything else showing improvement over the last few study years.

For 1993 to 1995 there are some strange results here. We would have thought that in going from 1992 to 1993 to 1995 companies were getting smarter and tighter about risk management practices and that we would have seen improvements in results. But we actually see deterioration on a count basis in the first couple of years before things catch up. So this is a surprising result that we need to look at more closely.

When you look at 1996, the A/E ratio in the first year is well below where it is in the other years. This must be when companies really "got it right," so they say. There is quite a bit of underwriting selection. It does deteriorate, but these don't approach the levels that the prior year's worth of issues hit. So, hopefully, the industry has it right on the new issues. I know there's not a lot that can be done with the older business, but we'll hope that the experience on the newer issued business continues to remain low.

These are the similar breakdowns in Table 2, but on an indemnity-weighted basis. All A/E's are generally higher except for the 1996-plus group. There is the same type of thing where there's underwriting selection, it peaks around the third duration, and then starts to improve a little. Again, the 1993 to 1995 block is a mystery. On the indemnity basis, it actually looks like anti-selection. I don't know why this is happening in the early durations before experience flattens out.

And then on the 1996-plus block, we see an A/E that's below 50 percent in the first year, and that's much better than prior years, so this further reaffirms that maybe companies really have it right now.

**MR BEAL:** It looks to me like the 1989 and prior business and the 1990, 1992 business are tracking very similarly. I would say by duration it varies a little bit, but they bounce around about the same; 1992 and 1995 are a little bit better than that first year. That's kind of a question. And then 1996-plus does seem to be emerging much better than anyone else, which is a period of a very tight underwriting following the high losses that many companies experienced.

**MR. DAN SQUIRE:** I have one observation. In terms of the pattern you were seeing in 1993 to 1995; if you look at these with the premise that a lot of what was driving the results was, in fact, calendar-year trends, such as the deterioration of physicians in the 1994-95 period. That may explain why you have these high numbers on the diagonal starting up at 94 percent in the first duration for 1993 and 1995. Then, as you go down, it's in year three for the 1990 to 1992, and it's kind of in year four and five that were the worst for 1989 plus. So you definitely see some interesting trends here about selection by policy duration, but I think you're simultaneously getting some calendar-year experience that is creating some noise in the results.



**MR. TAYLOR:** Okay, good point.

**FROM THE FLOOR:** I think another thing, and my memory may not be right, but it seems like in 1992 and 1993 the first step that companies took was to raise premiums. I'm not sure if they changed the policies or the underwriting as much. It might have been another year or two before they said, "Oh, we can get a little more premium, but we're still getting a lot of claims," or something like that.

**MR. TAYLOR:** Looking at results by state in Table 3, we didn't look at every state to see if certain states stick out more than others. We just picked the two obvious ones and were not surprised to find that California and Florida have higher morbidity than the rest of the country, and more so when you look at it on an indemnity-weighted basis than a count-weighted basis.

Table 3

## Incidence – State

Expected from 1985 CIDA

	Count A/E	Indemnity A/E
California	98%	123%
Florida	86%	123%
US-Other	76%	87%
Aggregate	79%	94%

**MR. TAYLOR:** People have suspected that Florida has a claim termination problem. California and Florida definitely have the worst morbidity on the incidence side than the rest of the country combined. And, like I said, we haven't drilled down to see if there are other states in the U.S. that have problems. That's the next step, but we wanted to pick on the obvious ones first.

**MR BEAL:** We will try to break it out into regions as well, for example, the Midwest versus the East and the West, and so on. That will be interesting.

**MR. TAYLOR:** Chart 3 shows A/E results by gender and attained age. The expecteds here vary between male and female. The CIDA Table is built on experience in the 1970s; it was probably a more male-dominated experience than it is today, so not a lot of female business was in the CIDA Table as far as I can remember. So, it's a little tough to say the female business is doing better than the male business. Female business compared to the female CIDA Table is actually much better than the CIDA Table said it would be. The male experience is better as well, but not quite as much relatively. We did take a look at the raw incidence rates behind the A/E ratios, and there are distinct male and female differences, particularly under 40 and going right up to about age 55 and 60 attained age group. Morbidity actually flips around and female incidence after age 60 is better than that of males.

We looked at results by elimination period (EP) and benefit period (BP) combinations. Again, the CIDA Table is based on experience in the 1970s and the 90-day EP really hadn't taken off in terms of being a major seller back then. It might have even been more of a tool for substandard. Policies with lifetime benefit periods have higher A/Es than those with age 65 and 67 and the two-year, five-year benefit periods. It's probably somewhat of a surprise that lifetime would affect incidence when lifetime benefits won't be collected for many years, but one of the things we want to look at next is how stacking up the riders, that is combinations of lifetime and cost of living and own OCC and everything else that people used to throw on five years ago, can affect the A/E ratios. I'm not sure it's so much a function of lifetime as it is just loading up.

The other thing that was a little strange was the 90-day EP was at a pretty high AE ratio compared to the 60-day and 30-day and below 30-day. The 90-day and the 180-day are based on the CIDA. The 90-day tables, the 30 and 60 are based on 30-day tables and the EPs below 30-day, I think, consist of at least seven- and 14-day tables in the CIDA. Of course, nobody sells less than 30 days anymore and probably don't care to from a pricing point. We want to look at whether this a lifetime issue. Is something else going on here? And, what's going on in the 90-day EP business?

**MR BEAL:** I guess the point to walk away with is that claim incidence appears to increase when you have lifetime benefits. This should be recognized when you are pricing and looking at your assumptions and deciding whether to keep the same incidence assumptions for two-year own OCC or to age 65 or lifetime benefit periods. You may want to think twice about doing that.

**MR. TAYLOR:** The next slide looks at the A/E ratios by occupation class. These are the CIDA occupation classes where class one combines 5A, 4A, 3A. Class two has 2A, three has A, four has B. I'll jump to the right-hand side of the table. This shows the mix of exposure by class and the mix of the number of claims by class. You can see that the data we're dealing with is predominantly class one. One of our next steps is to try to break this out between 5A, 4A, 3A. I think companies have done a

pretty decent job of doing that already, but we want to make sure so when you go through our next generation of analysis, we've got that split up. It is predominantly a class-one study. The A/E ratios are higher for class one than for everything else, but everything else is compared to their own specific tables. I'm not sure if there are credibility issues with the other classes or if the CIDA Tables are just so far out of whack for these particular blocks.

We also looked at smoker status, and we're struggling a little with this one. We've had to drill a little deeper into this. We were expecting wider differences in aggregate than what we're seeing. We wouldn't have thought that smoker-nonsmoker A/E issues would have been so close. I suspect there are a lot of unknowns in here, so the people at Solucient need to take a look at how individual companies coded the smoker status to see what's going on there. I suspect the next time this is shown we'll have more accurate data. We have done a little digging in terms of what happens if you break this up a few different ways, see how things look to understand differences between smoker and nonsmoker experience. I'm surprised it didn't show up here.

**MR BEAL:** The males show wider differences between smoker and nonsmoker A/E's in the study than females in general. Class one has a wider difference, but the differences narrow down as you go down to classes two, three and four. In fact, in class four, the nonsmokers are worse than the smokers. Go figure. It also varies by benefit period somewhat, so there are differences. There are things going on that are worth investigating.

**MR. TAYLOR:** I want to leave you with some closing comments before you take a look at terminations. Again, we just scratched the surface. We still have much to verify. There are lots of things that we think we know about the industry, and we typically look at those first. Yes, it's really happening. We've got all the data here now and there are other things to learn. I pointed out a few things here that seem to be a little unexplainable.

**FROM THE FLOOR:** I have a question on this smoker, nonsmoker issue. It occurred to me on the smoker, nonsmoker that a lot of the underlying difference in morbidity for smoker and non-smoker is probably highly concentrated in a few cells. For example, it seems to me it might be for some of the higher ages, for age 50 plus, perhaps, or for certain types of disabilities such as circulatory or respiratory disabilities. You could get some odd results comparing occupation classes. For example, from class to class you have a very different weighting by age or a very different distribution of types of disabilities. So what you see when you compare smoker morbidity by OCC class, might really be something else. You might be seeing the effect of a different weighting by age, so that's one area to investigate.

**MR. TAYLOR:** What things would you look at?

**FROM THE FLOOR:** Well, as I mentioned before, I would look at them by policy year. The like ratios were 71, 81 for policy year one. It went up to 81, 100 for two,

100, 131 for policy year three, similar for policy years four and five. And then it started narrowing from six to 10, and when I got up to 11 plus, it was 71, 77. So, it's something like that. It was interesting.

I mentioned that there was clearly a difference. The difference for females was narrower than it is for males and OCC class some clear differences.

**MR. BEAL:** Yes, by attained age. I haven't got to that yet, but I intend to.

**MR. TAYLOR:** We're continuing to clean up the data. Like Bob had said earlier, don't come running back and say, "Oh, we changed all our reserve assumptions and pricing based on this." We want to make sure the data is okay and consistent by company. That's Solucient's job, not our job. We want to make sure the data is all clean and consistent. Come back next time with some even better things and many more graphs.

I'll turn it over to Dave to talk about termination.

**MR. DAVID MORGAN ANDREAE:** There was a speaker in an earlier session today who said he had been working with disability insurance for 10 years and wasn't sure he understood it still. Every time I'm at a meeting and somebody asks: Why is that like that? I remind people of the comment that one of the best disability actuaries I ever knew always said at the meeting. He said, "Welcome to disability."

The termination study included termination experience for 1990 to 2000. There was a little bit of 2001 that variance contributed, which was originally strange. I think there were some issues with it and we threw it out. Again, it's the United States only. I'm not sure, if we ever come up with a new valuation table, if it should include Canada or not. I would think at some point the Canadians would be interested in looking at Canadian experience.

There are a lot of issues with the data contributed to the study. The first one is identifying settlements. The contributors to the study were extremely inconsistent in coding and defining settlements. Is the settlement just a litigated settlement, or is it a situation where you buy back the policy in exchange for a lump-sum payment? As a result, we took the data a couple of different ways and we ended up comparing the total payments on each claim to the length of time between the end of the elimination period and the termination date and multiplied that length of time by the monthly indemnity. If the payments were more than 1.5 times what you would have expected, then we assumed that claim was a settlement and that claim was thrown out of the study.

**MR. BEAL:** This probably is not what we're going to wind up with, but that's something we arbitrarily set on, David and I, for the purpose of presenting some trends. So, as you look at this data, you have to keep that in mind that we probably have stuff in there with claims that we don't want to have in or there are some claims that we do, ultimately, want to include.

**MR. ANDREAE:** There is another issue that relates to coding of terminations due to benefit period expirations. We think companies may have missed a lot of benefit period expirations because we were seeing huge spikes in the actual-to-expected termination rates around the end of the second year of disability and then again in the fifth year of disability.

What we did to, temporarily at least, correct that problem was to exclude any exposure on a claim within three months to the end of the benefit period for two-year and five-year benefit periods and within six months of the end of the benefit period for through age 65 or longer benefit periods.

Table 4 gives you an idea of the basic amount of exposure and number of terminations we had by duration of disability. As you can see, the exposure is fairly evenly distributed across durations, whereas the actual and expected numbers of terminations are much more heavily concentrated in the first six months in the first year of disability. That should be pretty obvious to everybody because the early duration termination rates are so much higher than the later duration termination rates. Seventy percent of the expected claims show up in the first six months of disability and over 90 percent of the expected terminations show up in the first year of disability. Obviously, the first year has a major influence on the overall actual to expected.

Table 4

## Termination – Study Volumes

Count Basis (in thousands)

Expected from 1985 CIDA

Duration of Disability	Months Exposed	Actual Terminations	Expected Terminations
1-6 mos	673	86.3	177.3
7-12 mos	601	36.2	49.7
13-18 mos	428	12.2	13.5
19-24 mos	351	6.3	4.5
25-30 mos	274	3.7	2.2
31-36 mos	233	2.3	1.9
4-5 years	725	4.9	3.9
6-10 year	848	4.2	3.4
11+ years	354	1.5	1.3
Grand Total	4,487	158	258

We have about \$10 million of monthly indemnity exposed versus the 4.5 million of policy months, claim months exposed. So there's an average of about \$2200 of monthly indemnity per claim, which seems about right.

And finally, we get into some actual-to-expected numbers. We start out by looking at actual-to-expected, by calendar year. We were comparing here against the Commissioners Individual Disability Table A (CIDA), and you can see that in the early 1990s there was a fairly consistent trend of actual to expected results. We are still a little skeptical about the results for 2000. Several of the contributors' data was gathered as of year-end 2000, and there may have been several claims that they called terminations during 2000 that would subsequently have reopened. I think we need a little more analysis of what kind of reopening experience we have and how much of a runoff period you need to be lapsed between the end of your study and the date the data was collected.

Regarding the actual-to-expected results by duration of disability, it was done on a count basis and on an indemnity basis. In the first year and a half, we're well under 100 percent of 1985 CIDA termination rates both in count and on an indemnity basis. The count basis is marginally better than the indemnity basis and they seem to track each other after that at rates that become well over 100 percent. I'm a little bit skeptical still about the spike you see where it goes up to 160 percent. I'm wondering if there are still some benefit period expirations that somehow snuck

through, or maybe the benefit period was coded wrong and the claim actually ran out of benefits and it got carried as a termination.

We did not get information on definition of disability, which is possibly a significant flaw, but that could contribute to the higher termination rates.

**MR. BEAL:** I suspect that the volume of that business, though, isn't so large as the cause the major part of that spike.

**MR. ANDREAE:** We only threw out terminations where the termination occurred within three or six months of the end of the benefit period. From my experience, I've seen very few terminations that close to the end of the benefit period.

Now, Chart 4 is the only chart where we relate the actual results to the CIDC Table, the modifications to CIDA that came out three or four years ago. As you can see, the overall results are much closer to 100 percent. They're very volatile duration by duration. In the aggregate, the indemnity base actual-to-expected relative to CIDC is 98 percent. On a count basis it's 122 percent. So, it appears to me that the modifications to the CIDA were fairly reasonable.

**FROM THE FLOOR:** Were you surprised by the pattern by duration and how volatile it was? I don't remember if the CIDC was supposed to be an exact match by duration or whether it was kind of smoothed out.

**MR. ANDREAE:** I think there was some smoothing done in the modifications. I don't know the actual experience on which modifications were based, but I think that's at least probably the volatility we're seeing.

**FROM THE FLOOR:** I was just wondering if this result was consistent with the study that produced the CIDC or if something changed since then.

**MR. ANDREAE:** I have not gone back and looked at what the actual CIDA results they got for that study were.

**MR. BEAL:** The CIDC results were developed from a survey of companies in terms of their own A-to-E experience. There wasn't a claims termination study done to produce the CIDC.

**MR. ANDREAE:** Going back to 1985 CIDA, with the results by elimination period, it's a little bit of a surprise to me that the 30-day elimination periods have better actual-to-expected results than the 60- and 90-day periods. That was something I hadn't expected and it compounds the effect that we saw in the incidence side. Thirty-day was a little bit better relative to CIDA than 60- and 90-day experience. But, of course, the patterns are very similar for the three elimination periods. I think after two years the 1985 CIDA eliminates any differences in the expected. It's not really clear to me that the differences remain beyond two years.

Regarding experience by benefit period, particularly as you move into the later durations, lifetime benefit periods have significantly worse actual-to-expected termination rates. The other benefit periods, of course, have very little exposure at all beyond five years. There may be a little bit, a few 10-year benefit period claims or some weird things in there, but once you get beyond five years, you're talking mostly to age 65 versus lifetime. You can see that as duration increases, the difference in termination rates is significantly different.

**MR. BEAL:** That spike suggests that we need to clean up the data some more. I think we've got some expired benefits in there.

**MR. ANDREAE:** Yes, and you still see a little spike for the to age 65 and the lifetime benefit periods, and that may well be the definition of disability influence.

**MR BEAL:** It does point out—I've seen some work I've done independently of this—that the termination experience for the short benefit periods is going to be better even if you can get all the expiries out. If you do your termination study where you combine all that experience, I think it's going to be unfavorably biased and could affect the adequacy of your reserves. If you use a study with the combined experience because when you're running out your claim reserves, the reserves that have the biggest financial impact today are the ones to age 65 and lifetime. If you're expecting those claims to run out based upon combined experience where there's a termination in the 18th month, whether it's on a two-year benefit period or to age 65, it has equal weighting. I think you've distorted your results. It makes sense to do a study and come up with a table for the long benefit periods versus the short benefit periods for your reserves. I've seen some companies do that, but that may be something we have to consider when we try to build a table.

**MR. ANDREAE:** Regarding the results by gender, you can say that the male and female results start out reasonably close and track each other pretty well up through the first couple years of disability. There's a significant separation beginning in year three and beyond. I'm not quite sure what's driving that. I think some of it may be a lack of data on female claims that old. But, given the fact that the difference remains all the way from the very beginning of year three all the way through the ultimate termination rates, I don't think it can be entirely a lack of data. It may be lack of data in the original CIDA Table because, at that time, I'm sure there was a much more smaller percentage of females underlying that table.

Now we get to geographical differences . Florida really jumps out as being significantly worse than either California or other U.S. We saw that California and Florida both had incidence problems, but for California versus other U.S., the differences really aren't very significant at all, but Florida seems to have significantly lower termination rates.



One thing I wonder about is whether the state breakdown is appropriate. In particular, in California, and maybe it doesn't relate here, but California is such a big state. Is it really a single issue as far as the state of California goes, or should we have different rates? Or, conversely, maybe we should look at rates regionally in trying to get a broader breakdown.

**MR. BEAL:** Unfortunately, we don't have the data to do that.

**MR. ANDREAE:** We don't have the data to do that. We have data to do by state only. So we cannot break it down any more finely.

**MR. BEAL:** I think maybe some of you can confirm this as well, but I have just seen studies from companies that would show that northern California has much better experience than the southern California, and the same thing with Florida—northern is better than southern Florida.

**MR. ANDREAE:** Now we get into the age of disability experience, and I wish I could have shown all five age breakdowns on the same slide. But you can see in Charts 5 and 6, when we get to the two older age brackets, the starting actual-to-expected is significantly lower than it is for the three younger age brackets.

There's a lot of jumping around on these charts, and it's pretty difficult to glean anything from them. I think, clearly, we have very little experience in the 60- to 65-year-olds, particularly beyond the year three of disability. If somebody was disabled at age 60-65, even if they bought a lifetime benefit period, typically they will not be paid a lifetime benefit because people usually just say after age 60 you get to age 65 benefit or less. So anything beyond three or four years from the 60- to 65-year-old is pretty meaningless.

Other than the point about the first year of disability and the people disabled at older ages having, I said, better, but they actually have significantly worse, significantly lower, termination rates than people disabled at younger ages relative to 1985 CIDA.

Occupation class one has somewhat lower actual-to-expected than the other three OCC classes. Again, there's a lot of jumping around once you get to the older ages. But in the first year and a half of disability OCC class one—and that's where the actual-to-expected really has the biggest impact—OCC class one has the lowest actual-to-expected rates. I think that probably has got a lot to do with definition of disability and occupation, particularly the fact that OCC class one includes doctors who typically have purer definitions of disability. One of the things we want to do is look at experience by finer occupation groupings, particularly looking at doctors, dentists, lawyers, etc.

**FROM THE FLOOR:** This can address a little bit of that issue Vincent brought up about the change in definition of disability because that often is correlated to the OCC class.

**FROM THE FLOOR:** Classes three and four will typically have two-year own OCC and so that may be what we're picking up there.

**FROM THE FLOOR:** Classes three and four probably typically also have shorter benefit periods.

**MR. ANDREAE:** One of the difficulties about all of this is with the termination rates—having to look at duration of disability in so many groupings and trying to add in more variables. It is difficult to look at more than two or three variables at a time and get any credibility at all. So, clearly, there's a real art as well as a science to doing these studies in figuring out which variables to combine and which ones not to.

We looked at termination rates by individual versus multi-life. In the first year of disability the individual has marginally higher actual-to-expected than the multi-life. So it makes up some of the difference from the incidence side, but I don't think the difference is enough to affect the overall claim cost differences dramatically, and then there are ways to get beyond the first year of disability. They bounce around each other. I don't think there's anything particular or unusual past year one.

Another variable we would like to look at is occupation, rather than OCC class, which I just mentioned. We would like to break claims down into diagnosis groupings: back claims, mental and nervous claims, cardiac, etc., to see if there's the impact of various diagnosis groupings on termination rates. There is some chance that different issue-year groups will have different termination experience, but as far as I'm concerned, the only reason that would be is because of different policy provisions built into the particular issue years. So looking at it by issue year would not tell us the underlying reason. In other words, if there are differences by issue year groupings, it's probably not the issue year, but it's more the fact of underwriting or the contract provisions that you're prevailing in those issue year groups.

I looked at smoker, nonsmoker briefly before putting this presentation together and didn't see much of a difference, so I didn't include info on that, but that probably bears more looking into.

Finally, there are other issues that we might want to look into before coming up with a final report or a final table: One is the impact of residual policies with or without residual. Then, is experience different on residual claims versus total disability claims? There are significant issues about claims moving back and forth between residual and total. It's really hard to do a study of the type of claim. It's a

little bit easier to do a study of policies that have residual versus policies that don't have residual available.

We didn't consider gaps in disability at all, so the termination date that we're looking at on a claim is the final paid—to-date for that claim. If there are gaps in the middle, then the claim cost that the table comes up with will be somewhat overstated because it doesn't take into account the gaps.

I mentioned the reopen problem a little bit earlier. I think we need to consider requiring at least six months from the end of the study period to the date that the data is collected to account for reopens. I've actually seen reopens as much as one or two years. Whether we need to make adjustments or not, that's something that we need to consider.

We haven't looked at the impact of litigation in termination rates at all. I'm not sure where we can go with that, where we would go with that, but it's clearly becoming more important issue.

**FROM THE FLOOR:** How do you define the multi-life table?

**MR. ANDREAE:** Multilife was defined by the contributor. I think we gave them some instructions in the request for data. I'm not quite sure what it was. Do you remember that?

**MR. BEAL:** I can't remember exactly, but we tried to make it employer-sponsored multi-life. We asked to have associations split out from the multi-life business.

**FROM THE FLOOR:** Pure group? Group?

**MR. BEAL:** Well, groups, yes, employer-sponsored groups. It could be voluntary or employer-paid.

**MR. ANDREAE:** But it was experience on the individual policies.

**MR. BEAL:** Yes, individual experience. Not group, not on group contracts.

**MR. GARY MONNIN:** I should have asked this earlier, but I'm confused on how you developed your actual-to-expected by duration. For example, if you had 1,000...

**MR. BEAL:** Are you talking incidence or...

**MR. MONNIN:** No, continuance. For example, if you had 1,000 claims under this study, you might have 1,000 claims. And let's take an absurd situation in that you had 900 recoveries in the first period and, say, 50 recoveries in the second, okay? But under the 1985 study, let's say the recoveries were 50 in the first period and 900 in the second. Did you do ratios of expected claims like the 900 to 50 versus

the 50 to 900, which wouldn't make any sense that way? Or did you do it based on actual-to-expected based on recovery rates as opposed to expected claims based upon an initial number of claims incurred?

**MR. ANDREAE:** If I understand your question, we did it by recovery rates. We looked at the number of claims that made it from disability 10, say, which is how many of those were terminated, and then that was the rate we came up with for disability.

**MR. MONNIN:** Let's say you had 1,000 cases, 1,000 people who were disabled, and at the end of period 10 under your actual study you had 500 left. You would apply the 1985 CIDA recovery rate for month 10 to 11 to get the expected for that period?

**MR. ANDREAE:** We would apply the expected rate to the 500 claims that were left.

**MR. MONNIN:** Based on your study. So your actual-to-expected is a recovery rate to recovery rate expected?

**MR. ANDREAE:** Yes, yes, it has that continuance.

**MR. MONNIN:** So everything I'm seeing here is showing that your actual-to-expected in the early duration was very low.

**MR. ANDREAE:** Yes.

**MR. MONNIN:** And then the reason it came out it's after like a few quarters or so, then it became 120 percent.

**MR. ANDREAE:** Presumably there's some catch up, but one thing we ought to look at is the continuance. Given this new set of termination rates that is implied by this study of 1,000 claims disabled, what is the continuance at the end of the year three, the end of year five? And we haven't done that yet.

**MR. MONNIN:** Okay. But the general conclusion so far is that the recovery rates are much worse in the early durations and significantly better after three years or so.

**MR. ANDREAE:** But the fact that they're much better after three years does not come anywhere close to bringing the overall continuance down to the same level that it would have been at a flat 100 percent.

**MR. MONNIN:** Okay, one other thing to Bob Beal. You mentioned something about looking at actual occupational codes. Are you going to publish anything for occupational codes, because that comes up in lawsuits all the time in terms of

justifying or underwriting? So, will this study have any information on occupational codes?

**MR. BEAL:** It will be if we can do something that's credible. It's a bit of a task because the companies that did contribute data by occupation have their own codes. Sometimes "attorneys" is spelled with one "t" and sometimes with two "t's." So we have to go through and try and sort that out.

**MR. MONNIN:** Just take this as an encouragement to do what you can to produce occupational code information.

**MR. BEAL:** Yes. Okay, thank you very much.

**MR. DAVID FITZPATRICK:** I hear recovery and I hear terminations. Have you split the terminations between death and recovery? I'm looking like at the study by year and it looks like the actual-to-expecteds are going up, which if you thought about mortality improvement on disableds, you would almost expect it to go down. I know it's another data element.

**MR. BEAL:** We can't do that. The data doesn't support that. We don't have good data, consistent data that would indicate the cause of the termination. Ideally, we would have. We were hoping to get that, but it's one of those things where some companies were able to do it, but others can't, so we can't really build a whole study around the few that did.

**MR. MARK SULLIVAN:** First of all, this is all great stuff and I think the whole industry is indebted to the committee and your vendor. We certainly look forward to seeing the data. Just to follow up on the multi-life, I know you said that it was all self-reported, but one thing that would definitely be useful, if it's at all possible, is to get some kind of split on incidence and termination between guarantee, standard issue and non-guaranteed issue.

**MR. BEAL:** That was an original request. It's tough for companies to split that out. It's nice to have if we can get it, but I would be surprised if we can get it.

**MR. ROB HIMMELSTEIN:** Two questions. For the issue-year issues, have you considered getting rid of the companies that stopped selling, which probably were even at a high level and dropped off?

**MR. BEAL:** If we did that, we'd have a credibility issue with the data to see if we have enough data.

**MR. HIMMELSTEIN:** Are reserves included in that, or is that strictly a paid number?

**UNIDENTIFIED PANELIST:** Reserves are not included.

**MR. BEAL:** One of the original goals was to be able to combine incidence and terminations and get claims cost, but that's going to probably be impossible. Maybe we can get a hypothetical one based upon the dates and go from there. Everything else would be much more involved and probably cost the SOA a lot more money.

**MR. ALAN PARK:** So if we have this table developed out of this data, for getting what you're going to do to clean it up, and I priced, for instance, a five-year benefit between this versus the CIDA, the 1985 CIDA would I get a higher rate or a lower rate? What would you expect? I mean what am I to do with this? Do you have any feel? I start out feeling like it would be a lower rate and now I don't know what I feel.

**UNIDENTIFIED PANELIST:** I think if it's a product that looks more like the products we sold in the last three or four years, my guess is it would be a lower rate, but it's pretty clear to me if it's a product that looks like anything sold before 1994 and 1995, it would be a higher rate.

**MR. PARK:** Yes, so you don't really have a feel for it.

**UNIDENTIFIED PANELIST:** I don't have a feel.

**MR. BEAL:** Some things are up and some things are down. I don't know. Well, actually, say we publish a report and it gives you some of these trends that we feel more comfortable with. If you wanted to use it for pricing at your own risk, then at least you have a set of incidence assumptions you might feel comfortable with and a set of termination assumptions. It's up to you to do a few calculations and the answer will come out. But it's hard for us to combine incidence and termination at this point. Combine the incidence table with the termination table and ultimately, if you build a table, you have to do that.

What's the effect on pricing? You don't know because of that dynamic between incidence and termination is missing. We're building an incidence table independent from the termination tables and when you combine them, we don't know for various groups whether they combine to reflect that true underlying claim cost experience.

**FROM THE FLOOR:** You made a comment about throwing out a couple of companies on the incidence study pending further review of the data. Regarding the termination study from the various companies—can you say anything about how well that hangs together, or is there just an awful lot of dispersion there?

**UNIDENTIFIED PANELIST:** The individual committee members never saw any individual company data, but Solucient, the data manager, did tell us about significant outliers.

**MR. BEAL:** Okay, thank you very much.



Chart 1

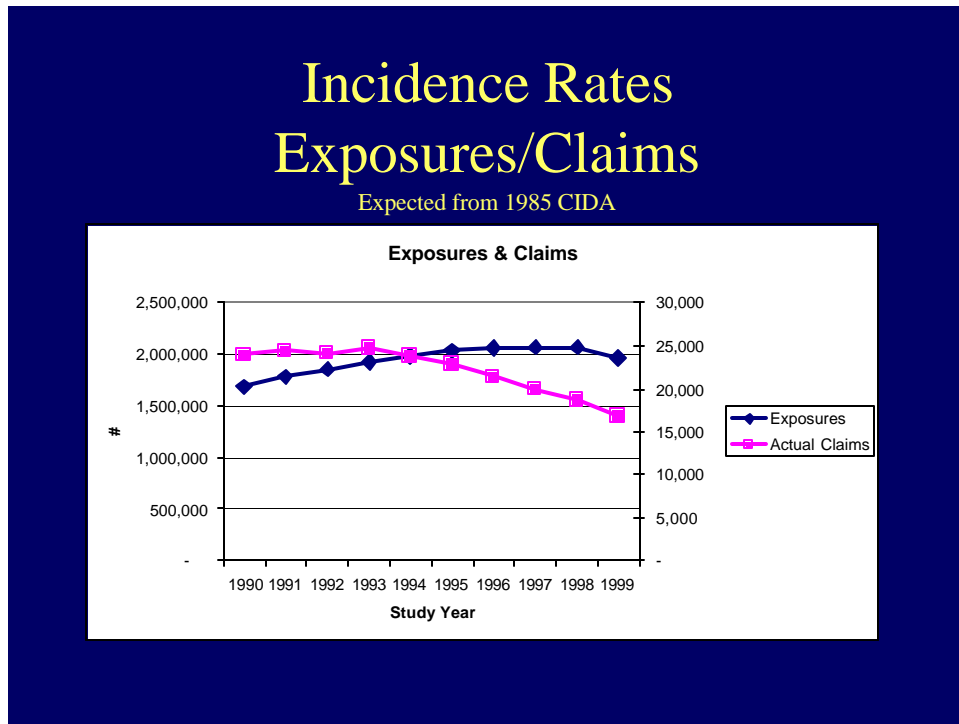


Chart 2

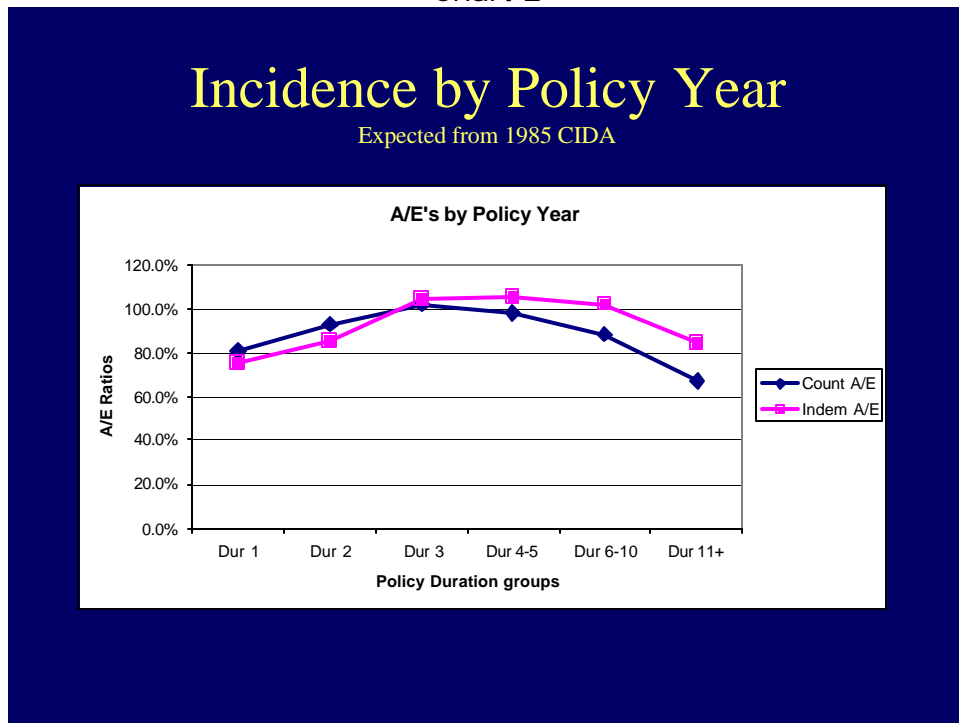




Chart 3

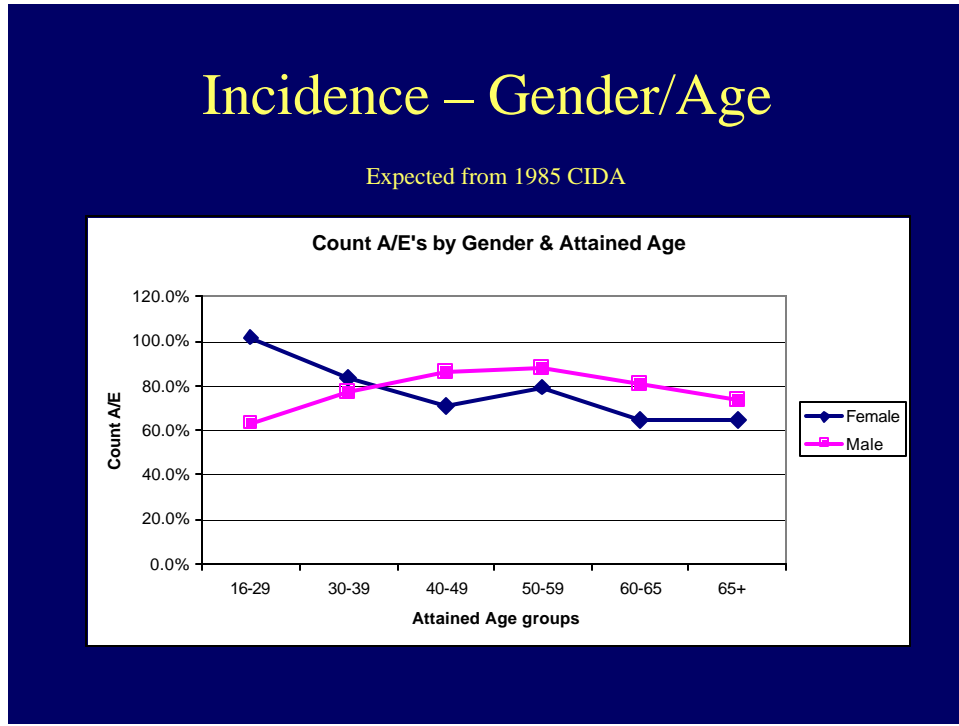


Chart 4

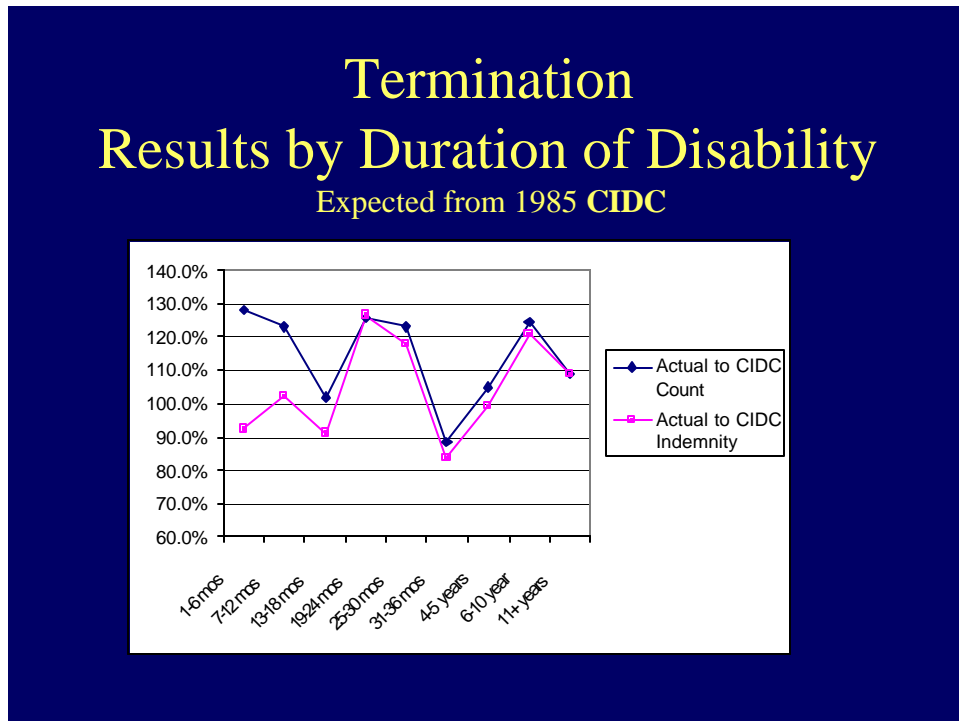


Chart 5

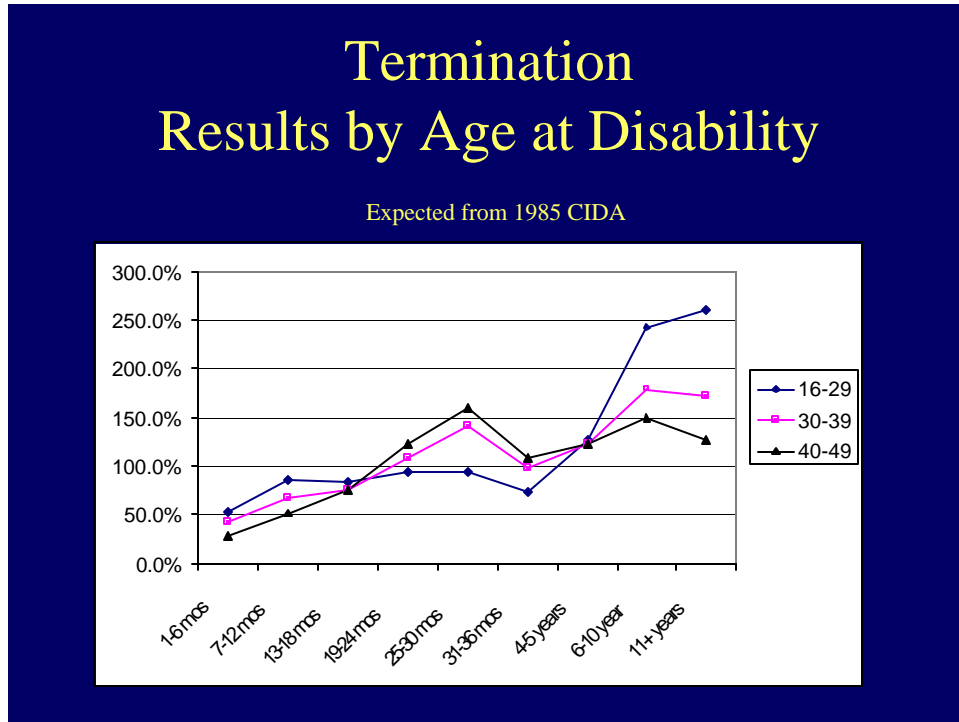


Chart 6

