

*Projecting Workers Compensation Losses Using
Open Claim Count and Average Loss Payment,
and Application to Analysis of California
Workers Compensation Loss Development*

Michael T. S. Teng, FCAS, MAAA

***PROJECTING WORKERS COMPENSATION LOSSES USING OPEN CLAIM
COUNT AND AVERAGE LOSS PAYMENT, AND APPLICATION TO ANALYSIS
OF CALIFORNIA WORKERS COMPENSATION LOSS DEVELOPMENT***

Michael Teng

Abstract

This paper presents a model for projecting Workers Compensation losses based on the number of open claims and the average payment on open claims. In California, where the loss trend is growing and the claim closure rate appears to have slowed down, one can put different trend and claim closure assumptions into the model to study their impact on ultimate losses.

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INTRODUCTION

In recent years Workers Compensation results have deteriorated significantly for a number of California carriers, resulting in earning hits, rating downgrades, stock price depreciation, and even bankruptcies. In their synopsis of the California WC market, Moody's Investors Service pointed out three forces driving the bad results in California: Low price, "inexpensive, naïve reinsurance capital", and adverse loss development [1]. The situation improved somewhat in 2000. Most carriers increased rates substantially because of profitability concerns and the disappearance of reinsurance capital. Loss development, on the other hand, remained an area of great uncertainty.

One major reason for the loss development is claim severity trend, which has grown from less than 1% per year in the early 90's to about 12% in the late 90's [2]. Since benefit changes were relatively modest during this period, this large trend was primarily driven by a changing pattern of benefit utilization in California, which impacts calendar year claim cost across claims of all ages.

This presents a challenge to actuarial loss projection models that are based on accident year age-to-age link ratios. When loss trend is growing on a calendar year basis across all accident years, the link ratios will likely increase. This may explain the increasing

medical loss link ratios in the California Workers' Compensation Insurance Rating Bureau's (WCIRB) analysis [3]. In projecting losses, actuaries have to select link ratios that represent future loss development. Unfortunately, in the case of California WC, the actual link ratios have consistently trended beyond the actuarial selections, resulting in adverse development in the loss ratio estimates. For example, the estimate for the 1999 loss ratio increased from 0.996 to 1.148 in just six months [3].

This paper presents an alternative loss projection model that is based on the number of claims staying open over time and the average payment made on open claims. Different claim closure and inflation assumptions can be put into the model to test their impact on link ratios and ultimate losses. So, rather than using judgment to select link ratios, one can explicitly account for trend and claim closure rate in projecting losses.

LOSS PROJECTION

Historical claims data are used to project the number of open claims for each accident year at each future valuation period. Exhibits 1, 2, and 3 show how this can be done. First, one projects reported claims at future valuation points, using age-to-age reported claim link ratios. Next, one projects the closed claim counts using claim closure ratios. The difference of the two is the open claim count. Exhibit 3 shows the average open claim count for each future valuation period. Average open claim count can be interpreted as the number of claims for which loss payments are made during that period.

Ideally, one would use total claim count in this analysis. But sometimes only the indemnity claim count is available, as is the case for some rating bureaus. In this instance, using just indemnity claim count will probably suffice, since medical-only claims are usually closed quickly, which means they do not significantly impact open claim volume. Moreover, medical-only claims account for only about 6% of total losses [4], so their impact on average payment is small as well.

The next step is to estimate average payment per open claim. One can look at average loss payment per open claim during historical periods, and project these payments forward. Average loss payments are calculated separately for indemnity and medical losses. Average indemnity payments are shown in Exhibit 4, where payment in each period is divided by the average open claim count in that period to arrive at average loss payment.

To project future average loss payments, one can look at how historical average payments have developed over time. This is shown in Exhibit 5, Page 1. Ratios of average payment from one period to the next are also shown. A pattern is selected at the bottom of the exhibit.

Historical average payment development factors may be unstable. One way to validate whether the selections are reasonable is to successively multiply the selected development factors to get “cumulative” factors, and compare these against historical cumulative factors for each accident year. The chart on Exhibit 5, Page 2 shows that the

selected cumulative factors are in line with the historical cumulative factors, which validates the selections.

The next step is to project future average payments for each accident year. For each accident year, future average payments are based on historical average payments projected forward using the selected development factors in Exhibit 5, Page 1. For example, for accident year 1997, the next payment period to be forecasted is the 24-36 month period (see Exhibit 5, Page 1). To estimate the average payment for the 24-36 month period, one can develop the average payments in the 0-12 and 12-24 month periods. The average payment for the 0-12 month, \$7,156, is multiplied by the development factor from 0-12 to 12-24 month period, 1.281, and again by the development factor from 12-24 to 24-36 month period, 1.579. This product comes to \$14,483, which represents an estimate for the 24-36 month average payment based on data for the 0-12 month period. This is shown in Exhibit 6 in the 0-12 month column for 1997. Throughout this paper, some rounding errors may develop in certain calculations, as in this case. This should not distract the reader from the intent of the calculations.

Likewise, the average payment for the 12-24 month period is projected forward to the 24-36 month period to provide another estimate. The average payment during the 12-24 month period is \$10,834. To project this to the 24-36 month period, one multiplies \$10,834 by the 1.579 development factor to get \$17,111, shown in Exhibit 6 in the 12-24 month column for 1997. So for accident year 1997, there are two estimates for the 24-36 month payment period: \$14,483 and \$17,111. The selected payment is \$15,797 based on

the average of two estimates. Exhibit 6 shows the results of this process for all accident years. Note that the top portion of Exhibit 6 represents estimates for future average payments. For example, the 12-24 month period data are the future payment estimates based on payments made during this period, and not actual payments during the 12-24 month period.

The next step is to project average payments for all future payment periods using the selected development factors in Exhibit 5, Page 1. For example, for accident year 1998, the average payment for the 12-24 month period is selected at \$10,634. For the 24-36 month period, the average payment is $\$10,634 \times 1.579$, or \$16,795. For the 36-48 month period, the average payment is $\$16,795 \times 1.050$, or \$17,634. Projected average payments for all future periods are shown at the bottom of Exhibit 6.

Finally, the forecasted average payments in Exhibit 6 are multiplied by the average open claim counts in Exhibit 3 to arrive at the projected payments for all future payment periods. This is shown in Exhibit 7. For example, for accident year 1996 at the 36-48 month period, the projected number of open claims is 544 (Exhibit 3), and the projected average payment per open claim is \$13,884 (Exhibit 6), so the total payment is $544 \times \$13,884 = \$7,556,000$ (Exhibit 7). Payments for all future periods are aggregated for each accident year and added to losses already paid to arrive at projected loss payments through 120 months. Finally, a tail factor is applied to losses at 120 months to get ultimate losses.

Exhibits 8 through 11 perform the same calculation for medical losses.

AN ALTERNATIVE METHOD FOR CALCULATING AVERAGE PAYMENTS

An alternative method for calculating average loss payments is by trending historical payments for each payment period. Exhibit 12 shows the average payment trend by accident year by payment period. This data shows that in a real world scenario, trends can be quite erratic, and one often needs to select a smooth trend factor. In this example, a 5.0% trend is selected for all payment periods.

Next, for each payment period, all historical average payments are trended to the first year for which a projection is to be made (see Exhibit 13). For example, for the 24-36 month payment period, the first average payment forecast is for accident year 1997. So all historical average payments for the 24-36 month payment period are trended to 1997. The trended average for accident year 1996 is \$3,753 (Exhibit 12) \times (1+5.0%), or \$3,940. The trended average for 1995 is $\$3,881 \times (1+5.0\%)^2$, or \$4,279. This calculation is repeated for all accident years, and \$3,808 is selected for 1997 at the 24-36 month period. \$3,808 is also used as the baseline from which the average payments for all subsequent years are calculated. For instance, the projected average payment for 1998 at 24-36 month period is $\$3,808 \times (1+5.0\%)$, or \$3,999.

In Exhibit 14, average payments are multiplied by average open claim counts to produce total payments for all future payment periods. The ultimate losses are calculated as the sum of losses already paid and all future loss payments, times a tail factor.

CONSIDERATIONS IN PROJECTING AVERAGE PAYMENTS

Selecting the appropriate method to project average payments involves a number of considerations. First, claim trends may follow either an accident year or calendar year pattern. General medical inflation tends to impact loss payments on a calendar year basis, while benefit changes may impact losses on either an accident year or calendar year basis (see Scott [5]). The best approach may be to forecast future average payments on a blended calendar / accident year basis.

Exhibits 15 through 17 demonstrate a blended calendar / accident year approach. In Exhibit 15, the medical cost indices are plotted for the entire data triangle. Calendar year cost indices are placed diagonally along the calendar year periods, which may reflect cost drivers such as general medical inflation and changes in utilization. Accident year indices may also be used to reflect trends that are not part of calendar year indices. These are shown at the right hand side of Exhibit 15, and may reflect accident year benefit changes. Indices used in Exhibit 15 are based on the WCIRB's pure premium filing [6]. Other publications such as the NCCI Annual Statistical Bulletin [7] also contain information that can be used to develop cost indices. The blended indices are the product of calendar and accident year cost indices.

The top part of Exhibit 16 shows the historical average payments trended to the next payment diagonal, and the bottom part of the exhibit shows the forecasted average

payments for all future payment periods. The following formula is used to trend historical average payments to the next payment diagonal.

$$\text{Average Payment for the Next Payment Diagonal} = \\ (\text{Historical Average Payment} \times \text{Blended Index for the Next} \\ \text{Payment Diagonal}) / \text{Blended Index for the Historical Period}$$

For example, for the 24-36 month period, the next payment to be projected is for accident year 1997. So all historical averages for the 24-36 month payment period are trended to 1997. The trended average payment for accident year 1996 is \$3,753, which is the actual average payment per Exhibit 15, times 1.000 (blended index for 1997 at the 24-36 period), divided by 0.989 (blended index for 1996 at the 24-36 period). This comes to \$3,796. As another example, the trended average for 1993 is \$2,643 x 1.000 / 0.951, or \$2,778.

Future average payments are selected based on these trended historical average payments. For the 24-36 month period, the selected average payment for accident year 1997 is \$3,536. This is the baseline average payment for the 24-36 month payment period. Average payments for subsequent years can be calculated as follows:

$$\text{Average Payment} = \\ (\text{Baseline Average Payment} \times \text{Subsequent Year's Blended} \\ \text{Index}) / \text{Blended Index for the Baseline Average Payment.}$$

Take 1998 for example. The projected average payment is $\$3,536 \times 1.012$ (blended index for 1998 at the 24-36 period) / 1.000 (blended index for 1997 at the 24-36 period), or $\$3,577$. Loss projections using these forecasted average payments are shown in Exhibit 17.

In this example, it is assumed that medical trends are the same regardless of the age of payment. But one can vary trend by age. Medical services rendered at later ages are usually follow-up visits and routine medical evaluations that are far less costly than the initial medical treatments, which may involve hospitalizations and surgeries. One can do a special study to quantify the trends for different categories of medical services, and use this information to refine the trend assumptions in the model.

In doing the analysis, one may notice aberrations in historical average payment data. Distortions may be caused by catastrophe claims or structured settlements. One way to mitigate these distortions is to select average payments based on multiple years of data, as is done in this paper. An alternative would be to remove large claims from the data, project losses based on “normal” losses, and then use a loading factor for large losses.

Another area to consider is change in claim settlement practices, which may alter future claim closure rates and average payments. If, for instance, the management decides to aggressively settle claims instead of keeping them open, one can speed up the claim closure rates in the model. One may also consider increasing some interim average

payment assumptions to reflect the impact of lump sum settlements on average payments. Raising closure rates will increase losses paid in the earlier periods because more claims are settled early at higher cost, but will reduce payments later because there will be fewer claims remaining open. Exhibit 18 provides an example. Here the claim closure rates are accelerated to reflect aggressive claim settlement. This reduces the number of open claims at later periods and hence ultimate losses (see Exhibit 19).

TESTING THE MODEL

The critical assumptions underlying this model are the open claim counts and the average payments. As actual data emerge over time, one can validate the claim count and average payment assumptions. This is shown in Exhibit 20. Column (5) compares actual open claims (Column (4)) at mid-year to projected open claims at the beginning and end of the year (Columns (2) and (3)). The actual claim volume appears to be halfway between the beginning and ending claim counts, which validates the model's claim count assumptions.

The average payment is a different story. Column (6) shows the average payment assumptions, and Column (9) shows actual average payments halfway through the year. One would expect the actual average payments to be about half of the targeted full year payments. But for accident years 1996-1998, the actual average payments have far exceeded the halfway mark (see Column (10)), which indicates the model may have understated average loss payments for those years.

To study the variance between actual and expected average payments, it may be helpful to break down average payments by benefit type. For example, historical data indicates that medical payments made during the 12-24 month period are split evenly between physician and non-physician payments. The expected 12-24 month average medical payment for accident year 1998 is \$5,467 (see Exhibit 20, Column (6)). This implies that the benchmark for physician payments is $\$5,467 \times 50\% = \$2,734$ and the same number for other types of medical payments. The actual payment, halfway through the year, was \$5,848. A further drill down of the data reveals that \$4,500 comes from physician payments. At this rate the annualized physician payment will be \$9,000, or over three times the expected average of \$2,734. On the other hand, the non-physician portion of the actual payment, halfway through the year, is $\$5,848 - \$4,500 = \$1,348$. This annualizes to \$2,696, which is close to the expected payment of \$2,734. This points to possible deterioration in the physician payment trend and should be studied further. This type of analysis not only helps the actuaries set appropriate trend assumptions, but also helps the claims department detect and mitigate areas of leakage.

APPLICATION TO CALIFORNIA WC

In California, a common explanation for the growing cost trend is the presumption of correctness of the primary treating physician. The California WC system gives the primary treating physician the rebuttable presumption of correctness in prescribing medical services and determining the claimant's disability rating, and at the same time limits a payor's ability to question the treating physician's opinions [8]. There is some evidence that physicians may be stepping up medical treatments because of this feature,

which may explain why California's WC medical cost trend has consistently exceeded general medical inflation by over 10 points each year.

One can use this model to test how sensitive the losses are to different inflation assumptions. Exhibit 21 shows the projected medical loss payments and link ratios using a 5% inflation assumption (see Exhibit 14). Exhibit 22 uses 10% inflation instead of 5%, and one can see a steeper increase in the link ratios and higher future loss payments.

One can also vary the assumptions in the claim closure pattern. The June, 2000 WCIRB study [3] showed that claim closure rates may be slowing down. Slower claim closure extends the claim payment duration, which increases the amount of losses paid and makes the ultimate losses more sensitive to inflation. Exhibit 23 shows a scenario where future claim closure ratios are reduced to reflect slower claim settlement. Exhibit 24 applies average payments with 10% inflation to the open claim counts in Exhibit 23. The resulting increases in the link ratios and future loss payments (Exhibit 23, Page 2) are even more pronounced than those shown in Exhibit 22.

CONCLUSION

In actuarial models that project losses using aggregate loss development triangles, it may be difficult to account for variables such as inflation and claim closure pattern. The model presented in this paper provides a tool to explicitly analyze the impact of inflation and claim closure pattern on ultimate losses. This model is useful for a line like WC where claims are reported quickly and losses are generally paid out over the lifetime of a

claim. By putting different inflation and claim closure assumptions into the model, one can see the impact on the link ratios and the ultimate losses. This type of sensitivity analysis is particularly useful in a situation like California WC, where recent cost trends and claim closure rates have not been stable.

REFERENCES

- [1] Wilt, William M., and Collins, T., "California Workers' Compensation: The Perfect Storm May Not Be Over", Moody's Investors Service Global Credit Research, August, 2000.
- [2] California Workers' Compensation Insurance Rating Bureau, *WCIRB Bulletin No. 2000-09 -- Summary of March 31, 2000 Experience*, July 31, 2000.
- [3] California Workers' Compensation Insurance Rating Bureau; *1/1/01 Filing -- 6/30/00 Review of Loss Development and Trending Methodologies*, September 7, 2000.
- [4] National Council on Compensation Insurance, *Annual Statistical Bulletin*, 2000 Edition, p. 318.
- [5] Scott, Jeffery J., "Workers Compensation Medical Reserving with Calendar Year Payments in a Cost Containment Environment", *Casualty Actuarial Society Forum*, Summer, 1996, pp. 185-215.
- [6] California Workers' Compensation Insurance Rating Bureau, *2000 Pure Premium Filing*, July 30, 1999, pp. A:A-13 and A:A-14.
- [7] National Council on Compensation Insurance, *Annual Statistical Bulletin*, 2000 Edition, pp 91 - 138.
- [8] California Workers' Compensation Institute, *Bulletin*, September 26, 2000.

WC Reported Claims

Exhibit 1

Accident Year	12 mos.	24 mos.	36 mos.	48 mos.	60 mos.	72 mos.	84 mos.	96 mos.	108 mos.	120 mos.
1989	2,735	2,833	2,860	2,876	2,889	2,896	2,896	2,898	2,898	2,901
1990	3,019	3,133	3,172	3,191	3,206	3,210	3,216	3,218	3,220	
1991	3,534	3,736	3,790	3,810	3,825	3,831	3,836	3,839		
1992	4,873	5,061	5,119	5,145	5,160	5,174	5,178			
1993	6,711	6,917	6,961	6,987	7,006	7,011				
1994	8,241	8,479	8,549	8,584	8,601					
1995	8,113	8,349	8,410	8,446						
1996	9,748	9,974	10,031							
1997	10,687	10,958								
1998	6,944									

Selected Age-to-age Development Factor (Based on historical claims development)

Factor:	1.026	1.007	1.004	1.002	1.002	1.001	1.001	1.000	1.000	---
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Projected Future Reported Claims (Applying selected development factors to claim count data)

1989										2,901
1990									3,220	3,220
1991								3,839	3,839	3,839
1992							5,178	5,183	5,183	5,183
1993						7,011	7,018	7,025	7,025	7,025
1994					8,601	8,618	8,627	8,635	8,635	8,635
1995				8,446	8,463	8,480	8,488	8,497	8,497	8,497
1996			10,031	10,071	10,091	10,111	10,122	10,132	10,132	10,132
1997		10,958	11,035	11,079	11,101	11,123	11,134	11,145	11,145	11,145
1998	6,944	7,125	7,174	7,203	7,218	7,232	7,239	7,246	7,246	7,246

WC Closed Claims

Exhibit 2

Accident

<u>Year</u>	<u>12 mos.</u>	<u>24 mos.</u>	<u>36 mos.</u>	<u>48 mos.</u>	<u>60 mos.</u>	<u>72 mos.</u>	<u>84 mos.</u>	<u>96 mos.</u>	<u>108 mos.</u>	<u>120 mos.</u>
1989	2,158	2,423	2,637	2,733	2,813	2,851	2,872	2,885	2,886	2,894
1990	2,325	2,666	2,855	3,023	3,094	3,146	3,178	3,194	3,197	
1991	2,648	2,939	3,312	3,518	3,687	3,751	3,786	3,800		
1992	3,737	4,254	4,535	4,831	5,017	5,079	5,129			
1993	5,318	5,867	6,319	6,673	6,818	6,891				
1994	6,510	7,309	7,923	8,213	8,387					
1995	6,206	7,276	7,850	8,126						
1996	7,731	8,814	9,364							
1997	8,491	9,660								
1998	5,449									

Weighted Average Closure Ratio (Ratio of closed claims to reported claims)

Avg of 3	79.2%	87.9%	93.1%	95.8%	97.4%	98.2%	98.9%	99.2%	99.4%	99.8%
Avg of 5	78.6%	87.1%	92.1%	95.1%	97.1%	98.2%	98.9%	99.2%	99.4%	99.8%
Selected	79.2%	87.9%	93.1%	95.8%	97.4%	98.2%	98.9%	99.2%	99.4%	99.8%

Projected Future Closed Claims (Applying selected closure ratio to future reported claims)

1989										2,894
1990									3,197	3,212
1991								3,800	3,817	3,830
1992							5,129	5,144	5,154	5,171
1993						6,891	6,939	6,971	6,985	7,008
1994					8,387	8,459	8,530	8,570	8,586	8,615
1995				8,126	8,241	8,324	8,393	8,432	8,448	8,476
1996			9,364	9,650	9,826	9,925	10,008	10,054	10,074	10,107
1997		9,660	10,277	10,615	10,810	10,918	11,010	11,060	11,082	11,119
1998	5,449	6,265	6,682	6,902	7,028	7,099	7,158	7,191	7,205	7,229

Projected Average Open Claim

Exhibit 3

Accident Year	Projected Number of Claims Open (Reported claim in Exhibit 1 minus closed claim in Exhibit 2)									
	12 mos.	24 mos.	36 mos.	48 mos.	60 mos.	72 mos.	84 mos.	96 mos.	108 mos.	120 mos.
1989										7
1990									23	8
1991								39	22	9
1992							49	40	30	13
1993						120	79	54	40	17
1994					214	159	97	66	49	21
1995				320	222	156	95	65	49	21
1996			667	421	265	186	113	77	58	24
1997		1,298	758	464	291	205	125	85	64	27
1998	1,495	859	493	301	189	133	81	55	41	17

Accident Year	Average Number of Claims Open During Each Period								
	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120
1989									
1990									15
1991								30	16
1992							44	35	21
1993						99	66	47	29
1994						186	128	81	58
1995				271	189	126	80	57	35
1996			544	343	226	150	95	68	41
1997		1,028	611	377	248	165	105	74	45
1998	1,177	676	397	245	161	107	68	48	29

Average Indemnity Loss Payment Per Open Claim

Accident Year	Indemnity Losses Paid in Each Period (\$000)									
	0-12	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120
1989	1,050	1,472	2,518	1,301	725	400	181	195	34	38
1990	1,468	2,987	2,657	1,821	993	695	572	287	132	
1991	2,129	3,855	4,069	3,457	1,778	770	452	308		
1992	2,492	4,113	5,580	3,792	2,155	1,335	647			
1993	3,492	6,410	7,067	5,135	2,624	1,755				
1994	4,339	8,787	8,524	5,727	2,663					
1995	4,876	10,227	9,234	5,178						
1996	6,917	13,299	11,917							
1997	7,857	18,927								
1998	6,203									

Accident Year	Number of Claims Open									
	12 mos.	24 mos.	36 mos.	48 mos.	60 mos.	72 mos.	84 mos.	96 mos.	108 mos.	120 mos.
1989	577	410	223	143	76	45	24	13	12	7
1990	694	467	317	168	112	64	38	24	23	
1991	886	797	478	292	138	80	50	39		
1992	1,136	807	584	314	143	95	49			
1993	1,393	1,050	642	314	188	120				
1994	1,731	1,170	626	371	214					
1995	1,907	1,073	560	320						
1996	2,017	1,160	667							
1997	2,196	1,298								
1998	1,495									

Development in Average Indemnity Loss Payment

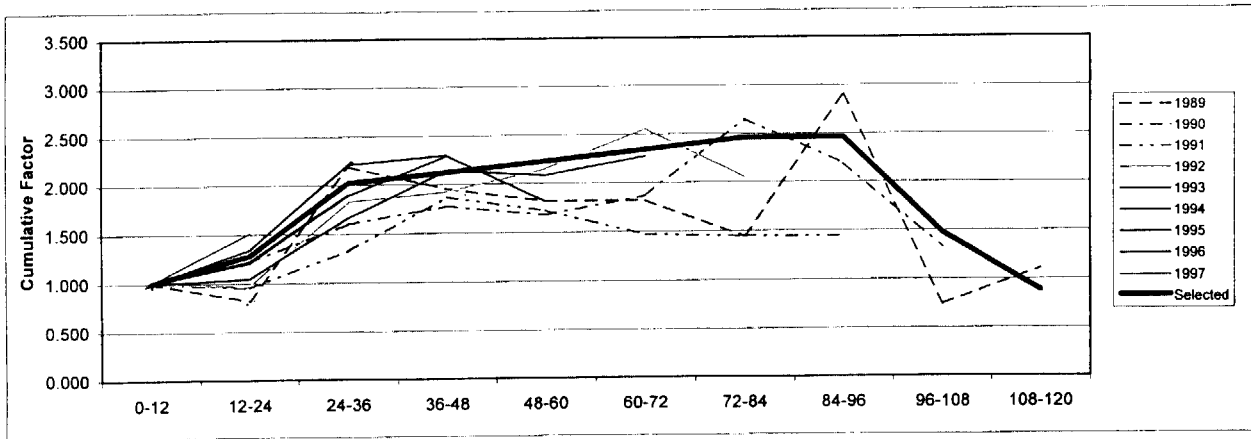
Exhibit 5
Page 1

Accident Year	Average Indemnity Loss Payment per Open Claim (From Exhibit 4)									
	0-12	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120
1989	3,640	2,983	7,956	7,109	6,618	6,614	5,243	10,560	2,698	4,034
1990	4,231	5,146	6,778	7,509	7,092	7,895	11,215	9,252	5,611	
1991	4,806	4,581	6,382	8,978	8,270	7,065	6,954	6,930		
1992	4,387	4,234	8,023	8,444	9,429	11,221	8,988			
1993	5,014	5,248	8,354	10,743	10,453	11,396				
1994	5,014	6,058	9,492	11,489	9,104					
1995	5,114	6,864	11,309	11,768						
1996	6,859	8,372	13,046							
1997	7,156	10,834								
1998	8,298									
	<u>Change in Average Indemnity Payment from Period to Period</u>									
1989	0.820	2.667	0.894	0.931	0.999	0.793	2.014	0.255	1.495	
1990	1.216	1.317	1.108	0.945	1.113	1.420	0.825	0.607		
1991	0.953	1.393	1.407	0.921	0.854	0.984	0.997			
1992	0.965	1.895	1.052	1.117	1.190	0.801				
1993	1.047	1.592	1.286	0.973	1.090					
1994	1.208	1.567	1.210	0.792						
1995	1.342	1.648	1.041							
1996	1.221	1.558								
1997	1.514									
<u>Averages</u>										
Avg of 3	1.359	1.591	1.179	0.961	1.045	1.069	1.279	0.431	1.495	
4 x Hi/Lo	1.281	1.579	1.131	0.947	1.102	0.893	0.997	0.431	1.495	
Selected	1.281	1.579	1.050	1.050	1.050	1.050	1.000	0.600	0.600	

Analysis of Selected Average Payment Development Pattern

Exhibit 5
Page 2

Year	0-12	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120
1989	1.000	0.820	2.186	1.953	1.818	1.817	1.441	2.902	0.741	1.108
1990	1.000	1.216	1.602	1.775	1.676	1.866	2.651	2.187	1.326	
1991	1.000	0.953	1.328	1.868	1.721	1.470	1.447	1.442		
1992	1.000	0.965	1.829	1.925	2.149	2.557	2.049			
1993	1.000	1.047	1.666	2.142	2.085	2.273				
1994	1.000	1.208	1.893	2.292	1.816					
1995	1.000	1.342	2.211	2.301						
1996	1.000	1.221	1.902							
1997	1.000	1.514								
Selected	1.000	1.281	2.024	2.125	2.231	2.343	2.460	2.460	1.476	0.886



Selected Future Average Indemnity Payment

Accident Year	Historical Average Indemnity Payment Developed to Subsequent Payment Period										Avg of Last 3	Avg of Last 5	Avg of 5 ex Hi/Lo	Selected Avg Pmt
	0-12	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120				
1990					2,815	2,984	4,037	3,331	3,367		3,578	3,307	3,227	3,227
1991				6,236	5,471	4,451	4,172	4,158			4,261	4,898	4,698	4,200
1992			9,752	9,775	10,396	11,782	8,988				10,389	10,139	9,974	9,974
1993		10,074	10,154	12,436	11,524	11,965					11,975	11,231	11,215	11,215
1994	11,746	11,076	10,988	12,666	9,559						11,071	11,207	11,270	11,270
1995	11,411	11,952	12,469	12,357							12,259	12,047	12,154	12,154
1996	14,575	13,884	13,698								14,052	14,052	13,884	13,884
1997	14,483	17,111									15,797	15,797	15,797	15,797
1998	10,634										10,634	10,634	10,634	10,634

371 Accident Year	Projected Future Average Indemnity Payment per Open Claim									
	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	
1989										3,227
1990										2,520
1991								4,200	2,520	
1992							9,974	5,985	3,591	
1993						11,215	11,215	6,729	4,037	
1994					11,270	11,834	11,834	7,100	4,260	
1995				12,154	12,762	13,400	13,400	8,040	4,824	
1996			13,884	14,578	15,307	16,072	16,072	9,643	5,786	
1997		15,797	16,587	17,416	18,287	19,201	19,201	11,521	6,912	
1998	10,634	16,795	17,634	18,516	19,442	20,414	20,414	12,248	7,349	

Projected Future Indemnity Losses Paid

Exhibit 7

Accident Year	Future Paid Indemnity Losses (In \$000, equals average payment in Exhibit 6 times average open claim in Exhibit 3)									
	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	Total
1989										
1990									50	50
1991								128	39	167
1992							442	207	76	725
1993						1,114	742	316	115	2,286
1994					2,100	1,511	962	409	150	5,132
1995				3,294	2,414	1,684	1,072	456	167	9,086
1996			7,556	5,002	3,452	2,408	1,533	652	238	20,842
1997		16,236	10,128	6,574	4,537	3,164	2,014	857	313	43,824
1998	12,517	11,351	7,001	4,544	3,136	2,187	1,392	593	217	42,937

Accident Year	Losses Already Paid	Projected Payments Through 120 Mos.	Projected Total Paid Thru 120 Mos.	Development Beyond 120 Mos.	Projected Ultimate Losses
	(1)	(2)	(3)+(4)	(5)	(4)x(5)
1989	7,914		7,914	1.020	8,072
1990	11,611	50	11,661	1.020	11,894
1991	16,818	167	16,985	1.020	17,325
1992	20,114	725	20,839	1.020	21,256
1993	26,483	2,286	28,769	1.020	29,345
1994	30,040	5,132	35,173	1.020	35,876
1995	29,515	9,086	38,601	1.020	39,373
1996	32,133	20,842	52,975	1.020	54,035
1997	26,784	43,824	70,609	1.020	72,021
1998	6,203	42,937	49,140	1.020	50,123

Average Medical Loss Payment Per Open Claim

Accident Year	Average Number of Open Claim During Each Period									
	0-12	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120
1989	289	494	317	183	110	61	35	19	13	10
1990	347	581	392	243	140	88	51	31	24	
1991	443	842	638	385	215	109	65	45		
1992	568	972	696	449	229	119	72			
1993	697	1,222	846	478	251	154				
1994	866	1,451	898	499	293					
1995	954	1,490	817	440						
1996	1,009	1,589	914							
1997	1,098	1,747								
1998	748									

Accident Year	Average Medical Loss Payment per Open Claim (Losses paid divided by average open claim)									
	0-12	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120
1989	9,137	4,006	2,869	1,984	1,673	1,085	1,386	2,166	2,525	4,037
1990	9,352	6,165	3,209	1,619	2,412	3,493	2,369	3,671	3,483	
1991	10,192	5,187	2,844	1,566	2,269	2,919	2,850	5,461		
1992	11,500	5,307	2,297	2,099	2,984	4,603	2,469			
1993	12,184	3,987	2,643	3,292	4,110	4,896				
1994	11,143	4,317	2,770	3,192	2,824					
1995	10,315	4,022	3,881	4,195						
1996	10,907	5,178	3,753							
1997	13,510	4,685								
1998	14,066									

Development in Average Medical Loss Payment

Exhibit 9

Accident Year	<u>Average Medical Loss Payment per Open Claim (From Exhibit 8)</u>									
	<u>0-12</u>	<u>12-24</u>	<u>24-36</u>	<u>36-48</u>	<u>48-60</u>	<u>60-72</u>	<u>72-84</u>	<u>84-96</u>	<u>96-108</u>	<u>108-120</u>
1989	9,137	4,006	2,869	1,984	1,673	1,085	1,386	2,166	2,525	4,037
1990	9,352	6,165	3,209	1,619	2,412	3,493	2,369	3,671	3,483	
1991	10,192	5,187	2,844	1,566	2,269	2,919	2,850	5,461		
1992	11,500	5,307	2,297	2,099	2,984	4,603	2,469			
1993	12,184	3,987	2,643	3,292	4,110	4,896				
1994	11,143	4,317	2,770	3,192	2,824					
1995	10,315	4,022	3,881	4,195						
1996	10,907	5,178	3,753							
1997	13,510	4,685								
1998	14,066									
	<u>Change in Average Medical Payment from Period to Period</u>									
1989		0.438	0.716	0.691	0.844	0.648	1.278	1.563	1.166	1.599
1990		0.659	0.521	0.505	1.490	1.449	0.678	1.549	0.949	
1991		0.509	0.548	0.551	1.449	1.286	0.976	1.916		
1992		0.462	0.433	0.914	1.422	1.543	0.536			
1993		0.327	0.663	1.246	1.249	1.191				
1994		0.387	0.642	1.153	0.885					
1995		0.390	0.965	1.081						
1996		0.475	0.725							
1997		0.347								
	<u>Averages</u>									
Avg of 3		0.404	0.777	1.160	1.185	1.340	0.730	1.676	1.057	1.599
4 x Hi/Lo		0.389	0.694	1.117	1.335	1.367	0.827	1.563	1.057	1.599
Selected		0.389	0.694	1.160	1.185	1.340	0.730	1.676	1.057	1.050

Selected Future Average Medical Payment

Exhibit 10

Accident Year	<u>Historical Average Medical Payment Developed to Subsequent Payment Period</u>									Avg of Last 3	Avg of Last 5	Avg of 5 ex Hi/Lo	Selected Avg Pmt	
	<u>0-12</u>	<u>12-24</u>	<u>24-36</u>	<u>36-48</u>	<u>48-60</u>	<u>60-72</u>	<u>72-84</u>	<u>84-96</u>	<u>96-108</u>					<u>108-120</u>
1990					4,392	4,747	4,409	4,075	3,657		4,047	4,256	4,292	4,292
1991				3,218	3,936	3,778	5,050	5,774			4,867	4,351	4,255	4,255
1992			5,179	4,080	4,895	5,635	4,138				4,889	4,785	4,737	4,737
1993		3,720	3,554	3,817	4,022	3,575					3,805	3,737	3,704	3,704
1994	5,533	5,515	5,100	5,069	3,785						4,651	5,000	5,228	5,228
1995	3,822	3,834	5,333	4,971							4,713	4,490	4,402	4,402
1996	3,410	4,166	4,352								3,976	3,976	4,166	4,166
1997	3,642	3,250									3,446	3,446	3,446	3,446
1998	5,467										5,467	5,467	5,467	5,467

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Accident Year	<u>Projected Future Average Medical Payment per Open Claim</u>								
	<u>12-24</u>	<u>24-36</u>	<u>36-48</u>	<u>48-60</u>	<u>60-72</u>	<u>72-84</u>	<u>84-96</u>	<u>96-108</u>	<u>108-120</u>
1989									
1990									4,292
1991								4,255	4,467
1992							4,737	5,009	5,259
1993						3,704	6,209	6,564	6,893
1994					5,228	3,818	6,400	6,766	7,105
1995				4,402	5,899	4,308	7,222	7,635	8,017
1996			4,166	4,936	6,615	4,831	8,098	8,562	8,990
1997		3,446	3,997	4,736	6,347	4,635	7,769	8,214	8,625
1998	5,467	3,792	4,398	5,211	6,984	5,100	8,549	9,039	9,490

Projected Future Medical Losses Paid

Exhibit 11

Accident Year	Future Paid Medical Losses (In \$000, equals average payment in Exhibit 10 times average open claim in Exhibit 3)									
	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	Total
1989										
1990									66	66
1991								130	70	199
1992							210	173	111	494
1993						368	411	308	197	1,283
1994					974	488	520	390	250	2,622
1995				1,193	1,116	541	578	433	277	4,138
1996			2,267	1,694	1,492	724	772	579	370	7,899
1997		3,542	2,440	1,788	1,575	764	815	611	391	11,926
1998	6,435	2,563	1,746	1,279	1,127	546	583	437	280	14,996

Accident Year	Losses Already Paid	Projected Payments Through 120 Mos.	Projected Total Paid Thru 120 Mos. (2)+(3)	Development Beyond 120 Mos.	Projected Ultimate Losses (4)x(5)
(1)	(2)	(3)	(4)	(5)	(6)
1989	6,291		6,291	1.040	6,542
1990	9,436	66	9,502	1.040	9,882
1991	12,530	199	12,730	1.040	13,239
1992	15,636	494	16,130	1.040	16,775
1993	18,951	1,283	20,234	1.040	21,043
1994	20,811	2,622	23,433	1.040	24,370
1995	20,843	4,138	24,981	1.040	25,980
1996	22,653	7,899	30,552	1.040	31,774
1997	23,019	11,926	34,945	1.040	36,343
1998	10,514	14,996	25,510	1.040	26,531

Trending of Average Medical Loss Payment

Accident Year	Average Medical Loss Payment per Open Claim (From Exhibit 8)									
	0-12	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120
1989	9,137	4,006	2,869	1,984	1,673	1,085	1,386	2,166	2,525	4,037
1990	9,352	6,165	3,209	1,619	2,412	3,493	2,369	3,671	3,483	
1991	10,192	5,187	2,844	1,566	2,269	2,919	2,850	5,461		
1992	11,500	5,307	2,297	2,099	2,984	4,603	2,469			
1993	12,184	3,987	2,643	3,292	4,110	4,896				
1994	11,143	4,317	2,770	3,192	2,824					
1995	10,315	4,022	3,881	4,195						
1996	10,907	5,178	3,753							
1997	13,510	4,685								
1998	14,066									
	<u>Trend in Average Medical Loss Payment</u>									
1989-90	2.3%	53.9%	11.9%	-18.4%	44.1%	222.1%	71.0%	69.5%	38.0%	
1990-91	9.0%	-15.9%	-11.4%	-3.3%	-5.9%	-16.4%	20.3%	48.8%		
1991-92	12.8%	2.3%	-19.2%	34.0%	31.5%	57.7%	-13.4%			
1992-93	5.9%	-24.9%	15.0%	56.8%	37.7%	6.4%				
1993-94	-8.5%	8.3%	4.8%	-3.0%	-31.3%					
1994-95	-7.4%	-6.8%	40.1%	31.4%						
1995-96	5.7%	28.8%	-3.3%							
1996-97	23.9%	-9.5%								
1997-98	4.1%									
	<u>Average Trend</u>									
Avg of all	6.6%	5.2%	14.2%	29.8%	8.0%	67.4%	26.0%	59.1%	38.0%	
Ex. Hi/Lo	4.9%	0.7%	9.9%	32.7%	12.8%	32.0%	20.3%	48.8%	0.0%	
Selected	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%

Selecting Future Average Medical Loss Payment

Exhibit 13

Accident Year	Historical Average Medical Payment Trended to Subsequent Payment Period						84-96	96-108	108-120
	12-24	24-36	36-48	48-60	60-72	72-84			
1989					1,384	1,684	2,507	2,784	4,239
1990				3,078	4,246	2,743	4,047	3,657	
1991			1,999	2,758	3,379	3,142	5,734		
1992		2,932	2,551	3,454	5,075	2,592			
1993	5,089	3,212	3,810	4,531	5,141				
1994	5,247	3,206	3,520	2,965					
1995	4,656	4,279	4,405						
1996	5,709	3,940							
1997	4,920								
1998									
Average of Last 3	5,095	3,808	3,912	3,650	4,532	2,826	4,096	3,221	4,239
Average of Last 5	5,124	3,514	3,257	3,357	3,845	2,540	4,096	3,221	4,239
Avg of 5 ex Hi/Lo	5,085	3,453	3,294	3,166	4,233	2,667	4,047	3,221	4,239
Selected Avg Pmt	5,095	3,808	3,912	3,650	4,532	2,826	4,096	3,221	4,239

Accident Year	Projected Future Average Medical Payment per Open Claim						84-96	96-108	108-120
	12-24	24-36	36-48	48-60	60-72	72-84			
1989									4,239
1990									
1991								3,221	4,451
1992							4,096	3,382	4,673
1993						2,826	4,301	3,551	4,907
1994					4,532	2,967	4,516	3,728	5,152
1995				3,650	4,758	3,115	4,742	3,915	5,410
1996			3,912	3,833	4,996	3,271	4,979	4,110	5,680
1997		3,808	4,107	4,024	5,246	3,434	5,228	4,316	5,964
1998	5,095	3,999	4,312	4,226	5,508	3,606	5,489	4,532	6,263

Projected Future Medical Losses Paid (Using Trend Method)

Exhibit 14

Accident Year	Future Paid Medical Losses (In \$000, equals average payment in Exhibit 13 times average open claim in Exhibit 3)									Total
	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	
1989										
1990									65	65
1991								98	69	168
1992							181	117	99	397
1993						281	284	167	140	872
1994					845	379	367	215	181	1,986
1995				989	900	391	379	222	187	3,069
1996			2,129	1,315	1,127	490	475	278	234	6,048
1997		3,914	2,508	1,519	1,302	566	548	321	270	10,949
1998	5,997	2,703	1,712	1,037	889	386	374	219	185	13,502

Accident Year	Losses Already Paid	Projected Payments Through 120 Mos.	Projected Total Paid Thru 120 (2)+(3)	Development Beyond 120 Mos.	Projected Ultimate Losses (4)x(5)
(1)	(2)	(3)	(4)	(5)	(6)
1989	6,291		6,291	1,040	6,542
1990	9,436	65	9,501	1,040	9,881
1991	12,530	168	12,698	1,040	13,206
1992	15,636	397	16,033	1,040	16,674
1993	18,951	872	19,823	1,040	20,615
1994	20,811	1,986	22,797	1,040	23,709
1995	20,843	3,069	23,912	1,040	24,868
1996	22,653	6,048	28,701	1,040	29,849
1997	23,019	10,949	33,968	1,040	35,326
1998	10,514	13,502	24,016	1,040	24,977

Trending of Average Medical Loss Payment Using Calendar and Accident Year Approach

Exhibit 15

Accident Year	Average Medical Loss Payment per Open Claim (Exhibit 8, Page 2)									
	0-12	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120
1989	9,137	4,006	2,869	1,984	1,673	1,085	1,386	2,166	2,525	4,037
1990	9,352	6,165	3,209	1,619	2,412	3,493	2,369	3,671	3,483	
1991	10,192	5,187	2,844	1,566	2,269	2,919	2,850	5,461		
1992	11,500	5,307	2,297	2,099	2,984	2,984	2,469			
1993	12,184	3,987	2,643	3,292	4,110	4,896				
1994	11,143	4,317	2,770	3,192	2,824					
1995	10,315	4,022	3,881	4,195						
1996	10,907	5,178	3,753							
1997	13,510	4,685								
1998	14,066									

Cost Index on Calendar Year Basis

1989						0.948	0.960	0.971	0.980	0.989	0.991
1990					0.948	0.960	0.971	0.980	0.989	1.000	0.991
1991				0.948	0.960	0.971	0.980	0.989	1.000	1.012	0.991
1992			0.948	0.960	0.971	0.980	0.989	1.000	1.012	1.023	0.991
1993		0.948	0.960	0.971	0.980	0.989	1.000	1.012	1.023	1.035	0.991
1994	0.948	0.960	0.971	0.980	0.989	1.000	1.012	1.023	1.035	1.047	1.000
1995	0.960	0.971	0.980	0.989	1.000	1.012	1.023	1.035	1.047	1.059	1.000
1996	0.971	0.980	0.989	1.000	1.012	1.023	1.035	1.047	1.059	1.072	1.000
1997	0.980	0.989	1.000	1.012	1.023	1.035	1.047	1.059	1.072	1.084	1.000
1998	0.989	1.000	1.012	1.023	1.035	1.047	1.059	1.072	1.084	1.097	1.000

Blended Calendar Year / Accident Year Cost Index

1989						0.940	0.951	0.963	0.971	0.980	
1990					0.940	0.951	0.963	0.971	0.980	0.991	
1991				0.940	0.951	0.963	0.971	0.980	0.991	1.003	
1992			0.940	0.951	0.963	0.971	0.980	0.991	1.003	1.014	
1993		0.940	0.951	0.963	0.971	0.980	0.991	1.003	1.014	1.026	
1994	0.948	0.960	0.971	0.980	0.989	1.000	1.012	1.023	1.035	1.047	
1995	0.960	0.971	0.980	0.989	1.000	1.012	1.023	1.035	1.047	1.059	
1996	0.971	0.980	0.989	1.000	1.012	1.023	1.035	1.047	1.059	1.072	
1997	0.980	0.989	1.000	1.012	1.023	1.035	1.047	1.059	1.072	1.084	
1998	0.989	1.000	1.012	1.023	1.035	1.047	1.059	1.072	1.084	1.097	

Cost
Index on
Acc. Yr
Basis

Selecting Future Average Medical Loss Payment

Exhibit 16

Accident Year	<u>Historical Average Medical Payment Trended to Subsequent Payment Period</u>								
	<u>12-24</u>	<u>24-36</u>	<u>36-48</u>	<u>48-60</u>	<u>60-72</u>	<u>72-84</u>	<u>84-96</u>	<u>96-108</u>	<u>108-120</u>
1989					1,154	1,444	2,230	2,577	4,084
1990				2,566	3,672	2,439	3,746	3,524	
1991			1,666	2,386	3,032	2,908	5,524		
1992		2,444	2,206	3,099	4,740	2,497			
1993	4,242	2,778	3,419	4,232	4,997				
1994	4,498	2,851	3,258	2,857					
1995	4,140	3,961	4,243						
1996	5,284	3,796							
1997	4,740								
1998									
Average of Last 3	4,722	3,536	3,640	3,396	4,256	2,615	3,834	3,050	4,084
Average of Last 5	4,581	3,166	2,959	3,028	3,519	2,322	3,834	3,050	4,084
Avg of 5 ex Hi/Lo	4,493	3,142	2,961	2,841	3,815	2,468	3,746	3,050	4,084
Selected Avg Pmt	4,722	3,536	3,640	3,396	4,256	2,615	3,834	3,050	4,084
Accident Year	<u>Projected Future Average Medical Payment per Open Claim</u>								
	<u>12-24</u>	<u>24-36</u>	<u>36-48</u>	<u>48-60</u>	<u>60-72</u>	<u>72-84</u>	<u>84-96</u>	<u>96-108</u>	<u>108-120</u>
1989									
1990									4,084
1991								3,050	4,131
1992							3,834	3,086	4,179
1993						2,615	3,878	3,121	4,228
1994					4,256	2,669	3,958	3,186	4,315
1995				3,396	4,306	2,700	4,004	3,223	4,365
1996			3,640	3,435	4,356	2,731	4,051	3,260	4,416
1997		3,536	3,682	3,475	4,406	2,763	4,098	3,298	4,467
1998	4,722	3,577	3,725	3,516	4,457	2,795	4,145	3,336	4,519

Projected Future Medical Losses Paid (Using Calendar / Accident Year Trend Approach)

Exhibit 17

Accident Year	Future Paid Medical Losses (In \$000, equals average payment in Exhibit 16 times average open claim in Exhibit 3)									
	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	Total
1989										
1990									63	63
1991								93	64	157
1992							170	107	88	365
1993						260	256	146	121	783
1994					793	341	322	184	152	1,791
1995				920	814	339	320	183	151	2,728
1996			1,981	1,179	982	409	386	221	182	5,340
1997		3,634	2,248	1,312	1,093	455	430	245	202	9,621
1998	5,558	2,418	1,479	863	719	299	283	161	133	11,913

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Accident Year	Losses Already Paid	Projected Payments Through 120 Mos.	Projected Total Paid Thru 120 (2)+(3)	Development Beyond 120 Mos.	Projected Ultimate Losses (4)x(5)
(1)	(2)	(3)	(4)	(5)	(6)
1989	6,291		6,291	1.040	6,542
1990	9,436	63	9,499	1.040	9,879
1991	12,530	157	12,688	1.040	13,195
1992	15,636	365	16,000	1.040	16,640
1993	18,951	783	19,734	1.040	20,523
1994	20,811	1,791	22,602	1.040	23,506
1995	20,843	2,728	23,571	1.040	24,514
1996	22,653	5,340	27,993	1.040	29,113
1997	23,019	9,621	32,640	1.040	33,945
1998	10,514	11,913	22,427	1.040	23,324

Claim Closure Pattern Reflecting Earlier Claim Settlement

Exhibit 18

Accident Year	Accelerated Claim Closure Rate									
	12 mos.	24 mos.	36 mos.	48 mos.	60 mos.	72 mos.	84 mos.	96 mos.	108 mos.	120 mos.
1989					97.4%	98.4%	99.2%	99.6%	99.6%	99.8%
1990				94.7%	96.5%	98.0%	98.8%	99.3%	99.3%	99.8%
1991			87.4%	92.3%	96.4%	97.9%	98.7%	99.0%	99.4%	99.8%
1992		84.1%	88.6%	93.9%	97.2%	98.2%	99.1%	99.2%	99.4%	99.8%
1993	79.2%	84.8%	90.8%	95.5%	97.3%	98.3%	98.9%	99.2%	99.4%	99.8%
1994	79.0%	86.2%	92.7%	95.7%	97.5%	98.2%	98.9%	99.2%	99.4%	99.8%
1995	76.5%	87.1%	93.3%	96.2%	97.4%	98.2%	98.9%	99.2%	99.4%	99.8%
1996	79.3%	88.4%	93.4%	96.2%	97.4%	98.2%	98.9%	99.2%	99.4%	99.8%
1997	79.5%	88.2%	93.4%	96.2%	97.4%	98.2%	98.9%	99.2%	99.4%	99.8%
1998	78.5%	88.4%	93.4%	96.2%	97.4%	98.2%	98.9%	99.2%	99.4%	99.8%

Projected Number of Claims Open (Projected claims reported times the complement of closure rate)

1989										7
1990									23	8
1991								39	22	9
1992							49	40	30	13
1993						120	79	54	40	17
1994					214	159	97	66	49	21
1995				320	222	156	95	65	49	21
1996			667	383	265	186	113	77	58	24
1997		1,298	728	421	291	205	125	85	64	27
1998	1,495	826	474	274	189	133	81	55	41	17

Average Number of Claims Open During Each Period

	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120
1989									15
1990									16
1991								30	21
1992							44	35	29
1993						99	66	47	35
1994					186	128	81	58	35
1995				271	189	126	80	57	41
1996			525	324	226	150	95	68	45
1997		1,013	575	356	248	165	105	74	29
1998	1,161	650	374	232	161	107	68	48	

Projected Future Indemnity Losses Paid, Reflecting Earlier Claim Settlement

Exhibit 19

Accident Year	Future Paid Indemnity Losses (In \$000, equals average payment in Exhibit 6 times average open claim in Exhibit 18)									Total
	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	
1989										50
1990									50	50
1991								128	39	167
1992							442	207	76	725
1993						1,114	742	316	115	2,286
1994					2,100	1,511	962	409	150	5,132
1995				3,294	2,414	1,684	1,072	456	167	9,086
1996			7,287	4,720	3,452	2,408	1,533	652	238	20,291
1997		16,005	9,532	6,203	4,537	3,164	2,014	857	313	42,626
1998	12,343	10,916	6,588	4,288	3,136	2,187	1,392	593	217	41,660

Accident Year	Losses Already Paid	Projected Payments Through 120 Mos.	Projected Total Paid Thru 120 Mos.	Development Beyond 120 Mos.	Projected Ultimate Losses
(1)	(2)	(3)	(2)+(3)	(4)	(4)x(5)
1989	7,914		7,914	1.020	8,072
1990	11,611	50	11,661	1.020	11,894
1991	16,818	167	16,985	1.020	17,325
1992	20,114	725	20,839	1.020	21,256
1993	26,483	2,286	28,769	1.020	29,345
1994	30,040	5,132	35,173	1.020	35,876
1995	29,515	9,086	38,601	1.020	39,373
1996	32,133	20,291	52,424	1.020	53,473
1997	26,784	42,626	69,410	1.020	70,798
1998	6,203	41,660	47,863	1.020	48,821

Testing the Model at June 30, 1999

Exhibit 20

Accident Year	Open Claim Inventory @ 12/98	Projected Open Inventory @ 12/99	Actual Open Inventory @ 6/99	% Toward 12/99	Projected Average Med Paid In 1999	Actual Med Paid Thru 6/99 (\$000)	Average Open Claim Thru 6/99	Actual Average Payment	Ratio to Target
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1990	23	8	23	0%	4,292	51	23	2,217	52%
1991	39	22	30	53%	4,255	182	35	5,275	124%
1992	49	40	44	53%	4,737	86	47	1,849	39%
1993	120	79	101	46%	3,704	414	111	3,747	101%
1994	214	159	177	67%	5,228	486	196	2,486	48%
1995	320	222	258	63%	4,402	670	289	2,318	53%
1996	667	421	506	66%	4,166	1,551	587	2,645	63%
1997	1,298	758	989	57%	3,446	3,540	1,144	3,096	90%
1998	1,495	859	1,194	47%	5,467	5,848	1,345	4,350	80%
Total	4,225	2,567	3,322	54%					

Notes:

- (2),(3) From Exhibit 3.
- (4),(7) Actual data through 6/99.
- (5) $= [(2)-(4)] / [(2)-(3)]$.
- (6) From Exhibit 10.
- (8) Average of (2) and (4).
- (9) $= (7) \times 1000 / (8)$.
- (10) $= (9) / (6)$.

Paid Medical Losses

Exhibit 21

Accident Year	Cumulative Medical Losses Paid (\$000)										
	12 mos.	24 mos.	36 mos.	48 mos.	60 mos.	72 mos.	84 mos.	96 mos.	108 mos.	120 mos.	
1989	2,636	4,613	5,521	5,884	6,067	6,133	6,181	6,221	6,252	6,291	
1990	3,245	6,824	8,082	8,475	8,812	9,120	9,240	9,354	9,436	9,501	
1991	4,515	8,880	10,693	11,296	11,784	12,102	12,287	12,530	12,629	12,698	
1992	6,532	11,688	13,286	14,228	14,910	15,458	15,636	15,817	15,934	16,033	
1993	8,486	13,356	15,592	17,165	18,197	18,951	19,231	19,516	19,682	19,823	
1994	9,644	15,906	18,393	19,985	20,811	21,655	22,034	22,401	22,616	22,797	
1995	9,836	15,828	18,997	20,843	21,832	22,732	23,124	23,503	23,725	23,912	
1996	10,999	19,225	22,653	24,782	26,097	27,224	27,714	28,189	28,467	28,701	
1997	14,834	23,019	26,933	29,441	30,960	32,262	32,828	33,376	33,697	33,968	
1998	10,514	16,511	19,214	20,926	21,963	22,852	23,238	23,612	23,832	24,016	

Age-to-Age Development Factor										
1989	1.750	1.197	1.066	1.031	1.011	1.008	1.006	1.005	1.006	
1990	2.103	1.184	1.049	1.040	1.035	1.013	1.012	1.009	1.007	
1991	1.967	1.204	1.056	1.043	1.027	1.015	1.020	1.008	1.006	
1992	1.789	1.137	1.071	1.048	1.037	1.011	1.012	1.007	1.006	
1993	1.574	1.167	1.101	1.060	1.041	1.015	1.015	1.009	1.007	
1994	1.649	1.156	1.087	1.041	1.041	1.017	1.017	1.010	1.008	
1995	1.609	1.200	1.097	1.047	1.041	1.017	1.016	1.009	1.008	
1996	1.748	1.178	1.094	1.053	1.043	1.018	1.017	1.010	1.008	
1997	1.552	1.170	1.093	1.052	1.042	1.018	1.017	1.010	1.008	

Note: Numbers below the line show projected losses and loss development based on Exhibit 14.

Future Average Medical Loss Payment at 10% Inflation Rate

Exhibit 22

Page 1

Accident Year	Projected Future Average Medical Payment per Open Claim (Using Exhibit 13 as Base)								
	<u>12-24</u>	<u>24-36</u>	<u>36-48</u>	<u>48-60</u>	<u>60-72</u>	<u>72-84</u>	<u>84-96</u>	<u>96-108</u>	<u>108-120</u>
1989									
1990									4,239
1991								3,221	4,663
1992							4,096	3,543	5,129
1993						2,826	4,506	3,897	5,642
1994					4,532	3,108	4,957	4,287	6,206
1995				3,650	4,985	3,419	5,452	4,715	6,827
1996			3,912	4,015	5,483	3,761	5,997	5,187	7,509
1997		3,808	4,303	4,417	6,032	4,137	6,597	5,705	8,260
1998	5,095	4,189	4,733	4,858	6,635	4,551	7,257	6,276	9,086

Future Paid Medical Losses (In \$000, equals average payment in this Exhibit times open claim in Exh 3)

1989									
1990									65
1991								98	73
1992							181	123	108
1993						281	298	183	161
1994					845	397	403	247	218
1995				989	943	430	436	268	236
1996			2,129	1,378	1,237	563	572	351	309
1997		3,914	2,627	1,667	1,496	682	692	425	374
1998	5,997	2,831	1,879	1,192	1,070	488	495	304	268

Paid Medical Losses at 10% Inflation Rate

Exhibit 22

Page 2

Accident Year	Cumulative Medical Losses Paid (\$000)									
	12 mos.	24 mos.	36 mos.	48 mos.	60 mos.	72 mos.	84 mos.	96 mos.	108 mos.	120 mos.
1989	2,636	4,613	5,521	5,884	6,067	6,133	6,181	6,221	6,252	6,291
1990	3,245	6,824	8,082	8,475	8,812	9,120	9,240	9,354	9,436	9,501
1991	4,515	8,880	10,693	11,296	11,784	12,102	12,287	12,530	12,629	12,701
1992	6,532	11,688	13,286	14,228	14,910	15,458	15,636	15,817	15,940	16,048
1993	8,486	13,356	15,592	17,165	18,197	18,951	19,231	19,529	19,712	19,873
1994	9,644	15,906	18,393	19,985	20,811	21,655	22,052	22,455	22,702	22,920
1995	9,836	15,828	18,997	20,843	21,832	22,775	23,205	23,641	23,908	24,144
1996	10,999	19,225	22,653	24,782	26,159	27,396	27,960	28,531	28,882	29,192
1997	14,834	23,019	26,933	29,560	31,228	32,724	33,406	34,098	34,523	34,897
1998	10,514	16,511	19,343	21,222	22,414	23,484	23,972	24,467	24,771	25,038

Age-to-Age Development Factor

1989	1.750	1.197	1.066	1.031	1.011	1.008	1.006	1.005	1.006
1990	2.103	1.184	1.049	1.040	1.035	1.013	1.012	1.009	1.007
1991	1.967	1.204	1.056	1.043	1.027	1.015	1.020	1.008	1.006
1992	1.789	1.137	1.071	1.048	1.037	1.011	1.012	1.008	1.007
1993	1.574	1.167	1.101	1.060	1.041	1.015	1.015	1.009	1.008
1994	1.649	1.156	1.087	1.041	1.041	1.018	1.018	1.011	1.010
1995	1.609	1.200	1.097	1.047	1.043	1.019	1.019	1.011	1.010
1996	1.748	1.178	1.094	1.056	1.047	1.021	1.020	1.012	1.011
1997	1.552	1.170	1.098	1.056	1.048	1.021	1.021	1.012	1.011

Note: Numbers below the line show projected losses and loss development based on Exhibit 22, Page 1.

Claim Closure Pattern Reflecting Slower Claim Settlement

Exhibit 23

Accident Year	Projected Claim Closure Rate									
	12 mos.	24 mos.	36 mos.	48 mos.	60 mos.	72 mos.	84 mos.	96 mos.	108 mos.	120 mos.
1989					97.4%	98.4%	99.2%	99.6%	99.6%	99.8%
1990				94.7%	96.5%	98.0%	98.8%	99.3%	99.3%	99.8%
1991			87.4%	92.3%	96.4%	97.9%	98.7%	99.0%	99.4%	99.8%
1992		84.1%	88.6%	93.9%	97.2%	98.2%	99.1%	99.2%	99.4%	99.8%
1993	79.2%	84.8%	90.8%	95.5%	97.3%	98.3%	98.5%	99.2%	99.4%	99.8%
1994	79.0%	86.2%	92.7%	95.7%	97.5%	98.0%	98.5%	99.2%	99.4%	99.8%
1995	76.5%	87.1%	93.3%	96.2%	96.5%	98.0%	98.5%	99.2%	99.4%	99.8%
1996	79.3%	88.4%	93.4%	95.0%	96.5%	98.0%	98.5%	99.2%	99.4%	99.8%
1997	79.5%	88.2%	91.0%	95.0%	96.5%	98.0%	98.5%	99.2%	99.4%	99.8%
1998	78.5%	86.0%	91.0%	95.0%	96.5%	98.0%	98.5%	99.2%	99.4%	99.8%

Projected Number of Claims Open (Projected claims reported times the complement of closure rate)

1989										7
1990										23
1991								39		22
1992							49	40		30
1993						120	105	54		40
1994					214	172	129	66		49
1995				320	296	170	127	65		49
1996			667	504	353	202	152	77		58
1997		1,298	993	554	389	222	167	85		64
1998	1,495	997	646	360	253	145	109	55		41

Average Number of Claims Open During Each Period

	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120
1989									
1990									15
1991								30	16
1992							44	35	21
1993						113	79	47	29
1994					193	151	98	58	35
1995				308	233	148	96	57	35
1996			585	428	278	177	115	68	41
1997		1,146	774	471	305	195	126	74	45
1998	1,246	822	503	306	199	127	82	48	29

Future Average Medical Loss Payment at 10% Inflation Rate and Slower Claim Closure

Exhibit 24
Page 1

Accident Year	Projected Future Average Medical Payment per Open Claim (Exhibit 22, Page 1)								
	<u>12-24</u>	<u>24-36</u>	<u>36-48</u>	<u>48-60</u>	<u>60-72</u>	<u>72-84</u>	<u>84-96</u>	<u>96-108</u>	<u>108-120</u>
1989									4,239
1990									4,663
1991								3,221	5,129
1992							4,096	3,543	5,642
1993						2,826	4,506	3,897	6,206
1994					4,532	3,108	4,957	4,287	6,827
1995				3,650	4,985	3,419	5,452	4,715	7,509
1996			3,912	4,015	5,483	3,761	5,997	5,187	8,260
1997		3,808	4,303	4,417	6,032	4,137	6,597	5,705	9,086
1998	5,095	4,189	4,733	4,858	6,635	4,551	7,257	6,276	

Future Paid Medical Losses (In \$000, equals average payment in this Exhibit times open claim in Exh 23)

1989									65
1990									73
1991								98	108
1992							181	123	161
1993						318	358	183	218
1994					875	469	484	247	236
1995				1,125	1,161	508	524	268	309
1996			2,289	1,720	1,523	666	687	351	374
1997		4,363	3,328	2,081	1,843	806	832	425	268
1998	6,349	3,442	2,380	1,489	1,318	576	595	304	

Paid Medical Losses at 10% Inflation Rate and Slower Claim Closure

Exhibit 24
Page 2

Accident Year	Cumulative Medical Losses Paid (\$000)									
	12 mos.	24 mos.	36 mos.	48 mos.	60 mos.	72 mos.	84 mos.	96 mos.	108 mos.	120 mos.
1989	2,636	4,613	5,521	5,884	6,067	6,133	6,181	6,221	6,252	6,291
1990	3,245	6,824	8,082	8,475	8,812	9,120	9,240	9,354	9,436	9,501
1991	4,515	8,880	10,693	11,296	11,784	12,102	12,287	12,530	12,629	12,701
1992	6,532	11,688	13,286	14,228	14,910	15,458	15,636	15,817	15,940	16,048
1993	8,486	13,356	15,592	17,165	18,197	18,951	19,269	19,627	19,810	19,971
1994	9,644	15,906	18,393	19,985	20,811	21,686	22,155	22,639	22,886	23,104
1995	9,836	15,828	18,997	20,843	21,967	23,128	23,636	24,160	24,427	24,663
1996	10,999	19,225	22,653	24,942	26,662	28,185	28,851	29,538	29,889	30,198
1997	14,834	23,019	27,382	30,710	32,791	34,634	35,440	36,271	36,696	37,070
1998	10,514	16,864	20,305	22,686	24,174	25,492	26,068	26,663	26,967	27,235

Age-to-Age Development Factor

1989	1.750	1.197	1.066	1.031	1.011	1.008	1.006	1.005	1.006
1990	2.103	1.184	1.049	1.040	1.035	1.013	1.012	1.009	1.007
1991	1.967	1.204	1.056	1.043	1.027	1.015	1.020	1.008	1.006
1992	1.789	1.137	1.071	1.048	1.037	1.011	1.012	1.008	1.007
1993	1.574	1.167	1.101	1.060	1.041	1.017	1.019	1.009	1.008
1994	1.649	1.156	1.087	1.041	1.042	1.022	1.022	1.011	1.010
1995	1.609	1.200	1.097	1.054	1.053	1.022	1.022	1.011	1.010
1996	1.748	1.178	1.101	1.069	1.057	1.024	1.024	1.012	1.010
1997	1.552	1.190	1.122	1.068	1.056	1.023	1.023	1.012	1.010

Note: Numbers below the line show projected losses and loss development based on Exhibit 24, Page 1.