

**REPORT OF THE INDIVIDUAL DISABILITY EXPERIENCE COMMITTEE
ANALYSIS OF EXPERIENCE FROM 1990 TO 1999**

January 7, 2005

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Section I: Introduction

In November of 1999, the NAIC Life and Health Actuarial Task Force (LHATF) formally requested that the Society of Actuaries (SOA) undertake a study of individual disability income (IDI) experience in the U.S. and the construction of new morbidity tables based on that experience. The responsibility for conducting the study and constructing new tables was assigned to the Individual Disability Experience Committee (IDEC) of the SOA. This report discusses the results of the experience study conducted by the IDEC, which will subsequently turn its attention to the construction of new morbidity tables.

The IDEC determined that the study would consist of a claim incidence study and a claim termination study. Because of the nature of the data collected, the committee was not able to produce a separate claim cost study in which claim incidence and termination experience would be combined. The experience was measured against the claim incidence and termination experience rates from the 1985 Commissioner's Individual Disability A (85 CIDA) tables¹. This table, which is the most recent industry based table of claim incidence and termination rates, was based on experience primarily from the 1970's.

The last report prepared by the IDEC was released in November 1998 and covered the 1986-91 period². These results followed an older format and did not measure experience relative to the 85 CIDA tables.

This study examines IDI experience in the U.S. from 1/1/1990 to 12/31/1999, which was a tumultuous period of time for the industry. IDI carriers in total suffered historically high statutory financial losses during the first half of this decade. As a result of actions taken by IDI carriers and a favorable economic environment, positive statutory profits for the industry started to re-emerge during the last few years of the decade. This study identifies and quantifies many of the significant trends occurring during this 10-year period. The aggregate experience in total represents a suitable basis for a new valuation table, since a wide range of results were experienced over the ten-year period. This report focuses on the experience trends relative to the 85 CIDA tables. It will be followed by another report by the IDEC that will describe the construction of experience claim incidence and termination tables based on the 1990-99 study period and appropriate loads to form a possible valuation table for consideration by the NAIC LHATF.

Twelve IDI carriers submitted data, which was collected between May 2002 and December 2002. Appendix A lists the contributors. In terms of premium inforce, these twelve companies combined represent approximately 64% of the U.S. IDI market in 1995.

¹ "Report of the Society of Actuaries Committee to Recommend New Disability Tables for Valuation," Transactions of the Society of Actuaries, Volume XXXVII (1985), p.449.

² Report of the Committee on Individual Disability Experience, "Experience Under Individual Disability Loss-Of-Time Policies, 1986-91, Society of Actuaries, November 1998.

The IDEC selected Solucient of Deerfield, Illinois to perform the data processing for the study. Solucient's responsibilities included data collection and review and development of the software to perform the claim incidence and termination studies, based upon specifications provided by the IDEC. The confidentiality of each contributor's data and results has been maintained.

Output from the studies were placed in Excel pivot tables, which allowed the IDEC to examine the incidence and termination experience based on a variety of combinations of the policy and claim characteristics represented in the data. The IDEC study explores claim incidence and/or termination experience for a wide range of policy and claim characteristics, which are listed in the following table.

| Table I.a Policy and Claim Characteristics Covered Discussed in Report | | |
|---|-----------------|-------------------|
| Characteristic | Incidence Study | Termination Study |
| Contract Type - A&S, OE, DBO, etc. | X | X |
| Attained Age at Disablement | X | X |
| Attained Age During Disablement | | X |
| Gender | X | X |
| 85 CIDA Occupation Class | X | X |
| Key Occupations - Physicians & Surgeons, Executives, Lawyers, etc. | X | X |
| Elimination Period | X | X |
| Benefit Period | X | X |
| Duration of Disablement | | X |
| Calendar Year of Incidence | X | X |
| Issue Year | X | |
| Underwriting Type - Normal, GSI, GTI, GI | X | X |
| Market - Individual, Employer Sponsored, Association | X | X |
| Total Disability Only vs. Total & Residual | X | X |
| Cost-of-Living Riders | X | X |
| Social Insurance Supplement Riders | X | X |

Supplemental reports by the IDEC, which will be published at a later date, will examine the effect of smoking on claim incidence and termination rates and evaluate claim termination rates by category of diagnosis.

Because of the nature of the data contributed to the study, we were unable to measure claims experience by different definitions of disablement, e.g., long term own occ, own occ and not working, etc.

Solucient reviewed the submitted data for consistency and addressed any issues with the contributing companies. Beyond this reasonableness review, no attempt was made to audit the data of any contributors.

The following points discuss specific aspects of the IDEC study:

- Only claims incidence or termination experience that occurred between 1/1/1990 and 12/31/1999 was included in the study. Not all contributors were able to provide claims experience for the full ten-year study period.
- The study measures experience in terms of count and amount. In general, claims experience is worse when measured in terms of amount (i.e., higher incidence and lower terminations). Except for several initial tables in Sections III and IV of this report, most results in this report are presented in terms of amount, since this measure reflects the financial impact of the claims experience more closely.
- As a rule, no cells of data were displayed in the various tables in this report if they reflected the results of fewer than 10 claims in the case of incidence results and fewer than 10 claim terminations in the case of termination results. We made no attempt to assign any credibility measure to the results that are displayed in these tables.
- In the claim termination portion of the study, the duration of disablement in which a claim terminated was measured in terms of the period of time between the date of disablement (i.e., the beginning of the elimination period) and the last paid-to date of the paid benefits. Because contributors could not consistently provide the necessary information on partial or residual disability benefits, our claim termination analysis was not able to measure the financial impact of paying less than the maximum monthly benefit for claims with residual or partial disability benefits.
- Because all contributors were not able to consistently distinguish between terminations due to expired benefits (i.e., expiries) and terminations due to recovery or death, the IDEC developed a rule for identifying expiries. For each claim in the termination study, the length of the maximum benefit period was calculated. For claims where the maximum benefit was 60 months or less, a claim termination was labeled an expiry if the last paid-to date was within 3 months prior to the end of the maximum benefit period. For claims where the maximum benefit period was longer than 60 months, a claim termination was labeled an expiry if the last paid-to date was within 6 months prior to the end of the maximum benefit period. The claims labeled as expiries were not counted as claim terminations.
- The impact of claim settlements was problematic in the termination study. A claim settlement is a claim termination in which the carrier has reached an agreement with the claimant to terminate the claim prior to the date the claimant has recovered or benefits expire. In such cases, the carrier typically pays a lump-sum amount (or in some cases, a new schedule of benefits not contingent upon continued disablement) that represents in some fashion the economic value of the future disability benefits should the claimant remain on claim. Claim settlements should not be treated as normal claim terminations since the financial impact associated with claim settlements with the lump-sum benefit is different than normal claim terminations

where there is no benefit paid beyond the date of recovery or death. Two issues arise with claim settlements when performing a claim termination study:

1. *Identifying claim settlements from normal claim terminations.*

Contributors were not able to consistently identify claim settlements. Further, contributors could possibly have different definitions of what constituted claim settlements. For example, claims for which the carriers had advanced two or three months of benefits to facilitate a claimant's return to work may have been labeled as claim settlements by some contributors. For our purposes, such "advance-pay-and-close" terminations should not be treated as claim settlements, provided the last paid-to date reflected the end of the period for which benefits were advanced. Additionally, contributors may not have identified claim settlements consistently throughout the study period.

2. *Handling identified claim settlements.*

Assuming that a claim could be appropriately identified as a claim settlement, it is not clear how to treat the claim termination within the study. For the most part, claims that are settled in this fashion should represent longer-term claims. In other words, such claims should have a lower chance of recovery. The IDEC considered recalculating the last paid-to date of claim settlements to reflect a claim duration that was equivalent to the total benefit payout, including the lump-sum benefit. This approach proved difficult because (a) the total benefit payout often included cost-of-living benefits, residual benefits and other types of benefits that would distort any derived claim duration based on the total benefit payout or (b) the lump-sum benefit at time of settlement often reflected the interest rate environment at that time or each contributor's own claim settlement guidelines.

As a result, the IDEC developed a rule for identifying claim settlements consistently among all contributed claim terminations. The rule is as follows:

- a. The total of all claims payments on a terminated claim was divided by the maximum monthly benefit.
- b. The number of months between the end of the elimination period and the last paid-to date of a terminated claims was calculated/
- c. An X-ratio equal to the value from (a) divided by the value from (b) was calculated.
- d. If the X-ratio was greater than 1.50, then the terminated claim was considered a claim settlement for the purpose of performing the claim termination study.
- e. A claim settlement in the claim termination study contributed exposure from the end of the elimination period to the earlier of the end of the benefit period or the

end of the study period, but was not counted as a claim termination within the study.

The X-ratio of 1.50 was selected after considering the actual-to-expected claim termination experience under a range of alternative thresholds. We concluded that setting the X-ratio at 1.50 did not significantly increase the average actual-to-expected claim termination ratios above the average ratios at lower thresholds, and that increasing the X-ratio materially higher than 1.50 would produce significantly higher average actual-to-expected claim termination ratios.

Although the rules regarding the identification of claim settlements are less than perfect, i.e., they may not identify all claim settlements or incorrectly labels some normal claim terminations as settlements, the rules were applied consistently to all contributed data. Furthermore, the IDEC believes that the resulting claim termination results relative to the 85 CIDA table appear reasonable.

- The NAIC has adopted adjustments to the 85 CIDA claim termination rates for the purpose of calculating statutory minimum claim reserves. The resulting table of claim termination rates is called the CIDC table. The claim termination analysis in this report does not measure experience relative to the CIDC table. However, the reader is welcome to make that comparison. Table II.b provides the claim termination rate adjustments used to derive the CIDC table:

| <p style="text-align: center;"><u>Table II.b</u> CIDC Table Percentages of 85 CIDA Claim Termination Rates</p> | | | |
|--|-------------------|----------|-------------------|
| Duration | Adjustment Factor | Duration | Adjustment Factor |
| Week | | Month | |
| 1-4 | 0.366 | 15 | 0.888 |
| 5-8 | 0.365 | 16 | 0.932 |
| 9-13 | 0.370 | 17 | 0.976 |
| Month | | 18 | 1.020 |
| 4 | 0.391 | 19 | 1.049 |
| 5 | 0.371 | 20 | 1.078 |
| 6 | 0.435 | 21 | 1.107 |
| 7 | 0.500 | 22 | 1.136 |
| 8 | 0.564 | 23 | 1.165 |
| 9 | 0.613 | 24 | 1.195 |
| 10 | 0.663 | Year | |
| 11 | 0.712 | 3 | 1.369 |
| 12 | 0.756 | 4 | 1.204 |
| 13 | 0.800 | 5 | 1.199 |
| 14 | 0.844 | 6+ | 1.000 |

The results of the IDEC study represent average industry IDI experience during the 1990's as represented by the twelve contributing companies. The study identifies and quantifies many claim trends and relationships that have never been developed at the industry level. Readers should use caution in assuming that these results will apply to their own companies' experience. Companies are encouraged to measure their own experience to determine whether such claim trends and relationships are applicable to their blocks of IDI business.

Members of the Individual Disability Experience Committee

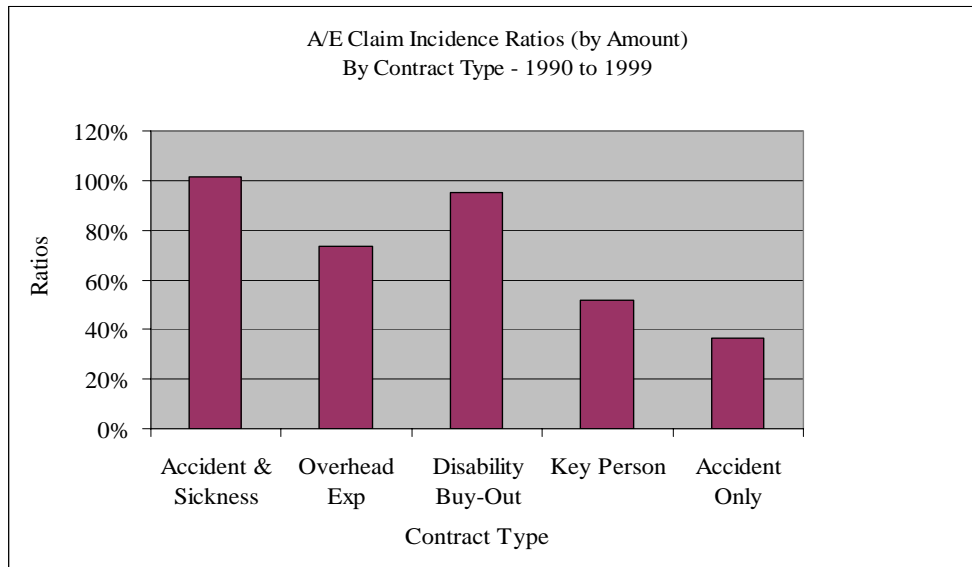
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Section II: Summary of Results

This section summarizes some of the more significant results from the IDEC study. References to occupation class refer to the four 85 CIDA occupation classes, which are described in Section III. Most of the analyses are based on the (face) amount of policies and claims and not on count for reasons discussed in Section III.

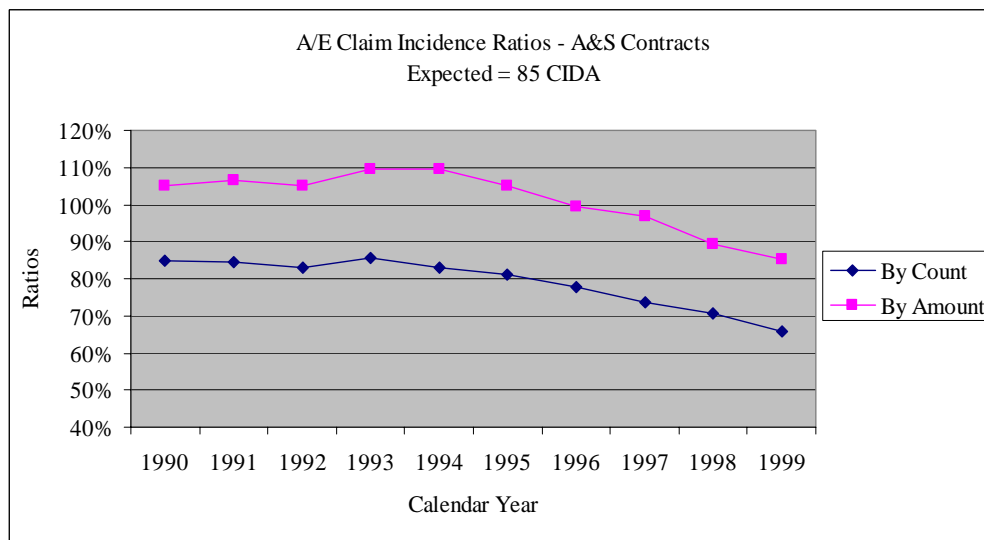
1. In general, average claim incidence experience over the 1990-99 time period was equivalent to or lower than 85 CIDA claim incidence.

Chart 1



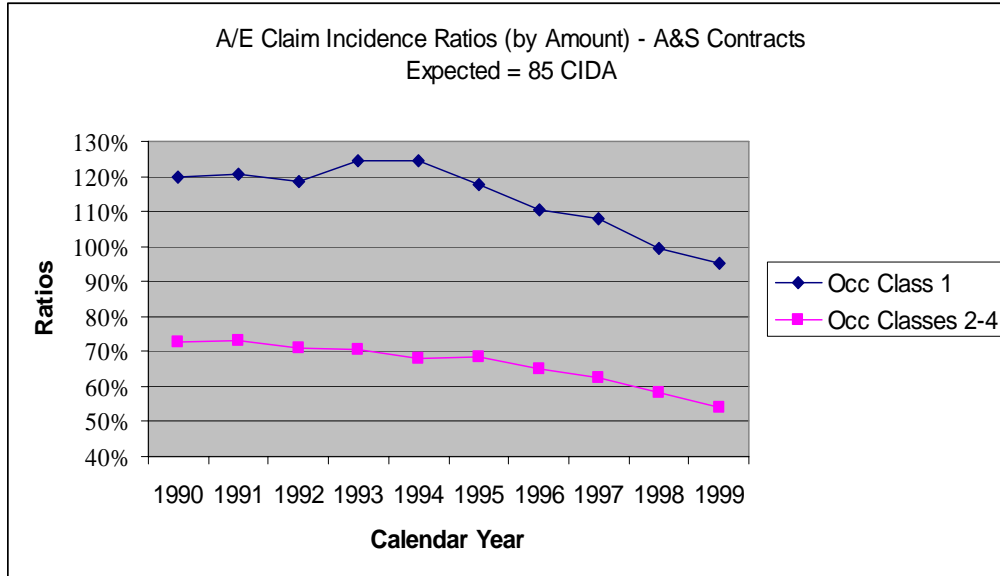
2. Claim incidence rates improved steadily after 1994 relative to 85 CIDA incidence.

Chart 2



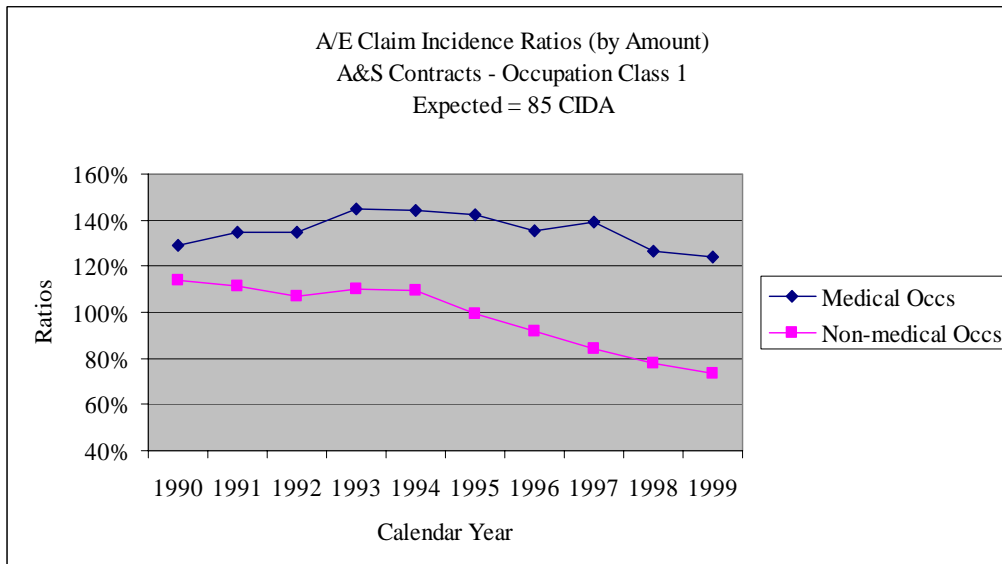
- Blue/grey collar occupations experienced significantly better claim incidence experience relative to 85 CIDA than the white collar/ professional/ executive occupations.

Chart 3



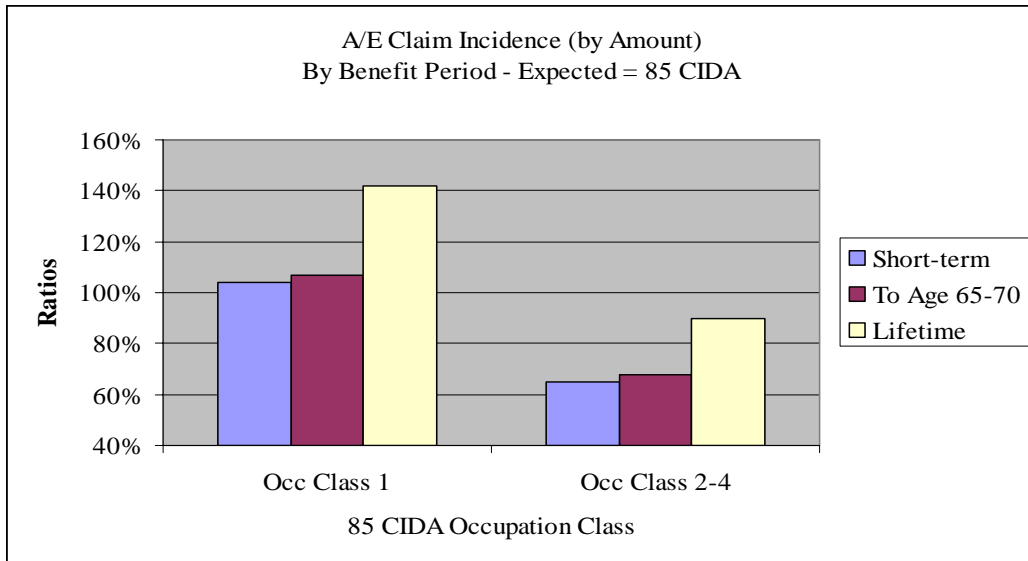
- Non-medical occupations experienced a 35% drop in claim incidence rates between 1990 and 1999. Medical occupations experienced increasing claim incidence ratios between 1990 and 1995 and moderately decreasing claim incidence thereafter.

Chart 4



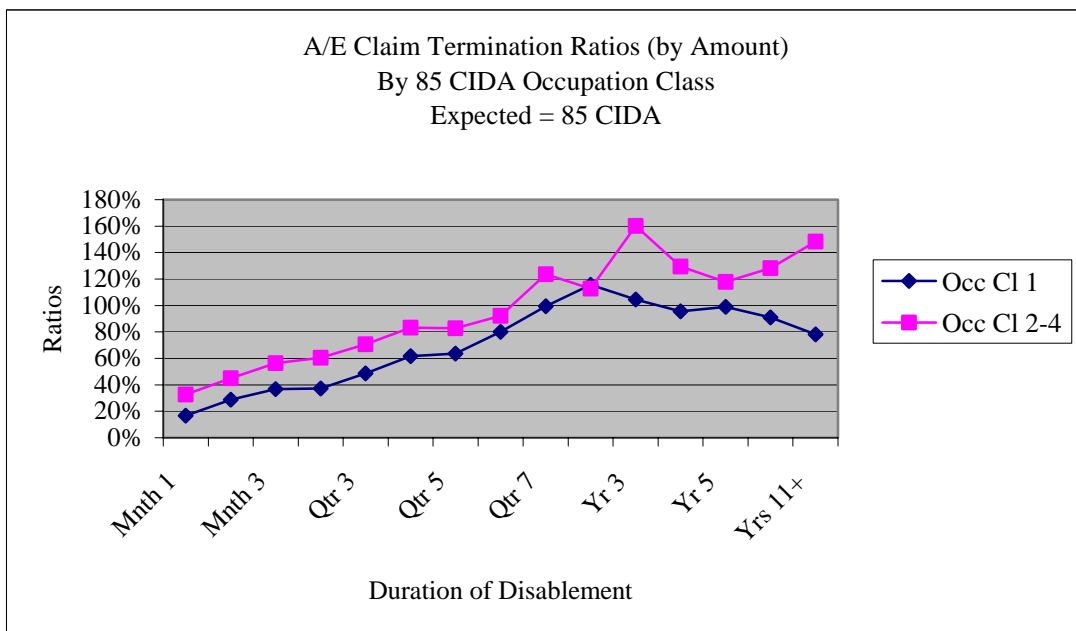
- Claims with lifetime benefit periods have significantly higher claim incidence than claims with either short-term or To Age 65-70 benefit periods.

Chart 5



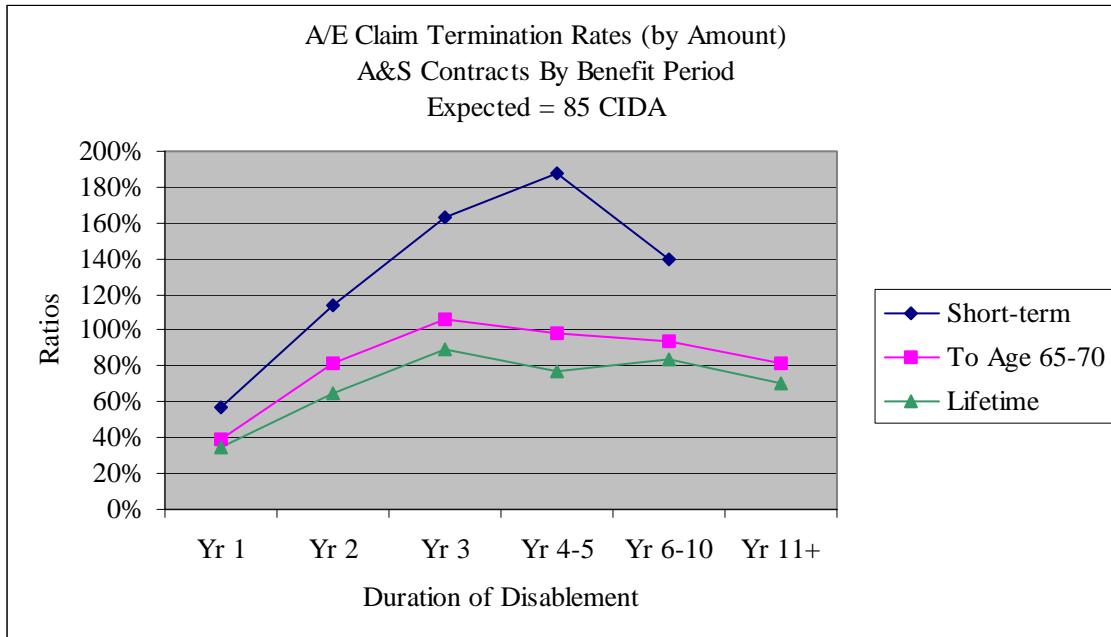
- Claim termination rates are generally below 85 CIDA termination rates for the first 18 months of disablement. For Occupation Class 1, claim terminations fall below 100% of 85 CIDA termination rates after year 3.

Chart 6



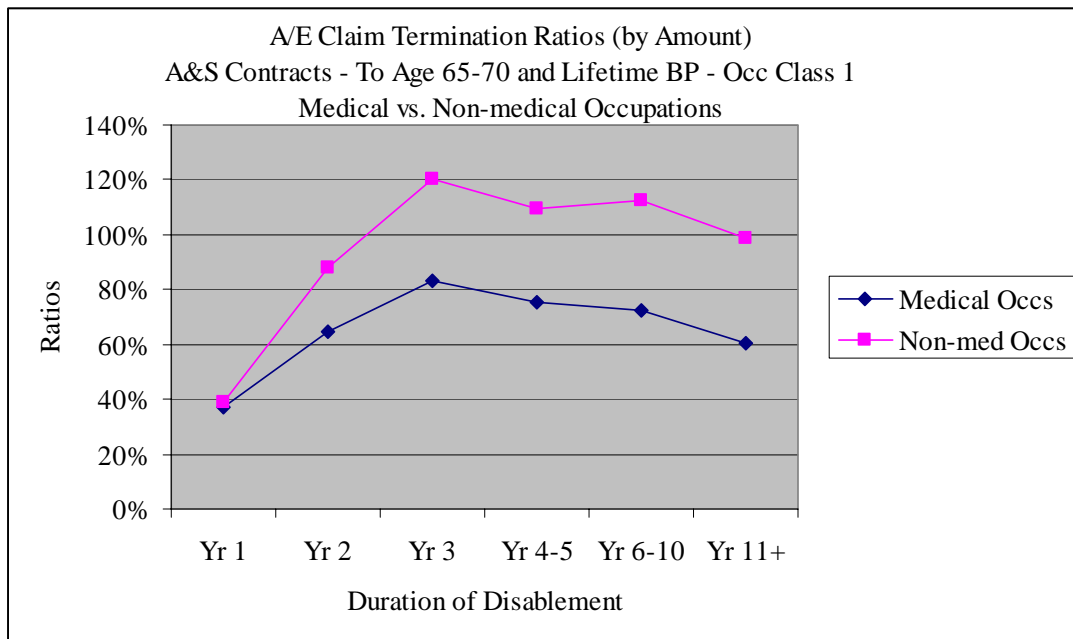
7. Longer benefit periods produced significantly lower claim termination experience.

Chart 7



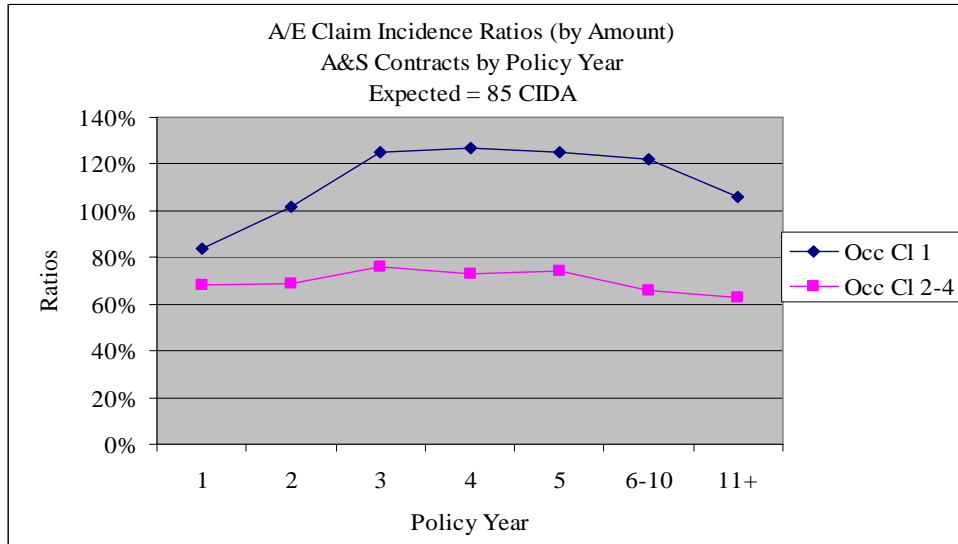
8. Medical occupations had significantly lower claim termination experience than non-medical occupations.

Chart 8



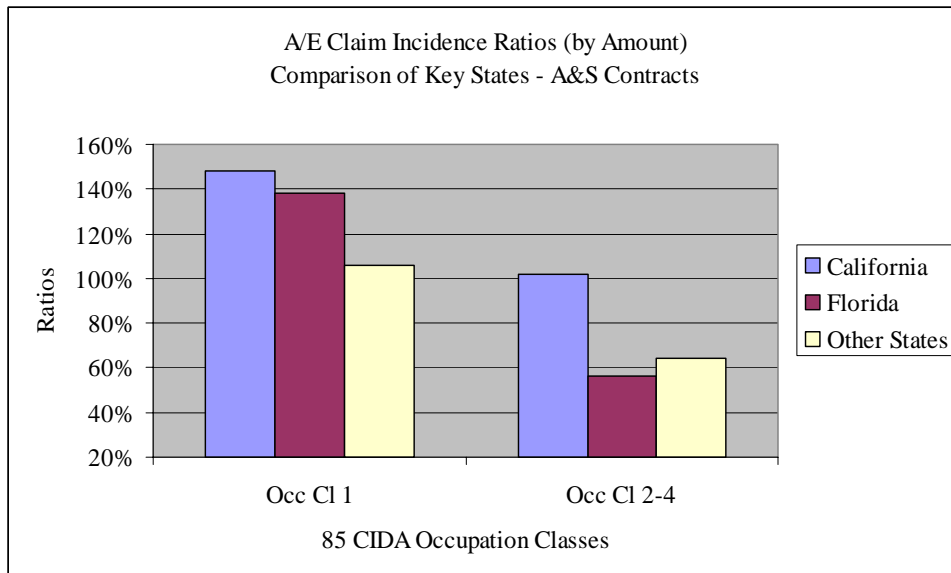
9. A/E claim incidence ratios by policy year in occupation class 1 (white collar, professional, executive occupations) reflect the impact of the 2-year contestable period, followed by higher incidence ratios that grade down gradually as a percent of 85 CIDA over at least the next 8 years. Claim incidence ratios by policy year in the other occupation classes are much flatter.

Chart 9



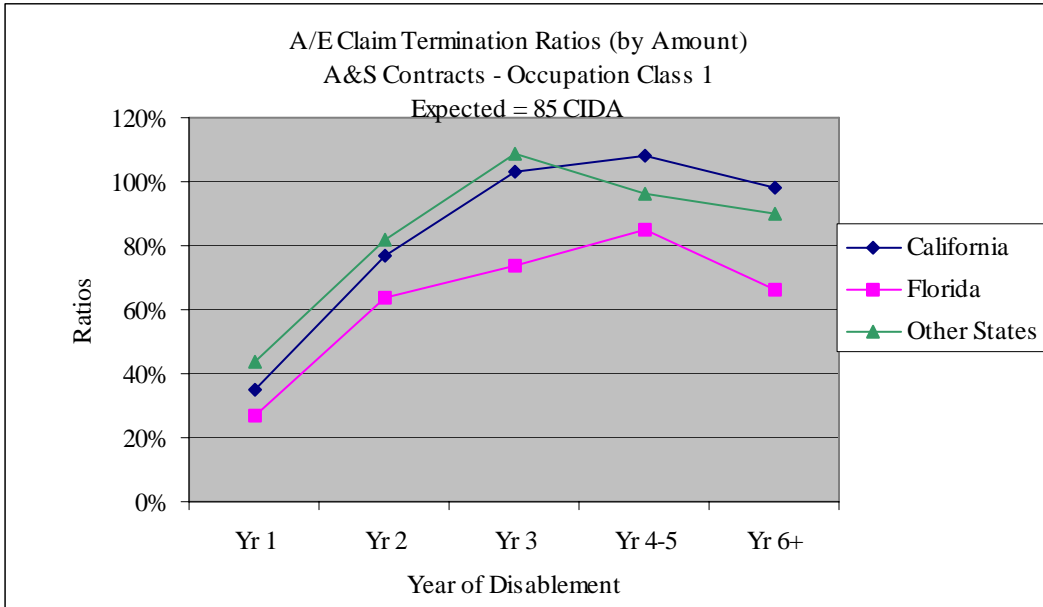
10. California and Florida have significantly higher claim incidence experience in Occupation Class 1 than all other states combined. In the other occupation classes, Florida claim incidence experience is somewhat better than the experience of other states combined, but California incidence remains relatively high.

Chart 10



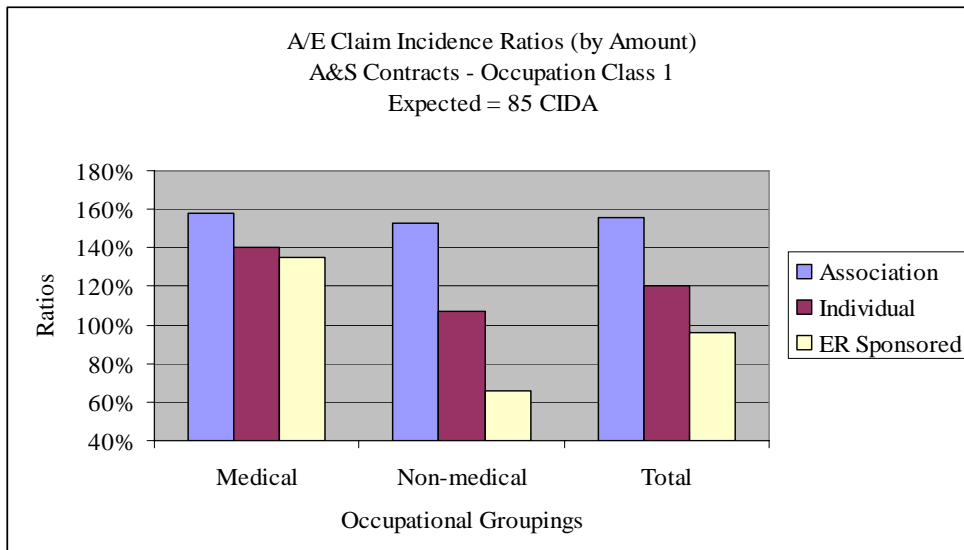
11. In general, claim termination experience in Florida is lower than claim termination experience in California or all other states combined. California claim termination experience is more consistent with that of all other states (excluding Florida) combined.

Chart 11



12. Significant differences in incidence experience exist among Individually Sold business, Employer Sponsored multi-life business, and business purchased through Association endorsements. In Occupation Class 1, Employer Sponsored claim incidence was 80% of Individual claim incidence: 62% for Non-medical occupations and 96% for Medical occupations. Overall, Association claim incidence for Occupation Class 1 was 130% of Individual claim incidence.

Chart 12

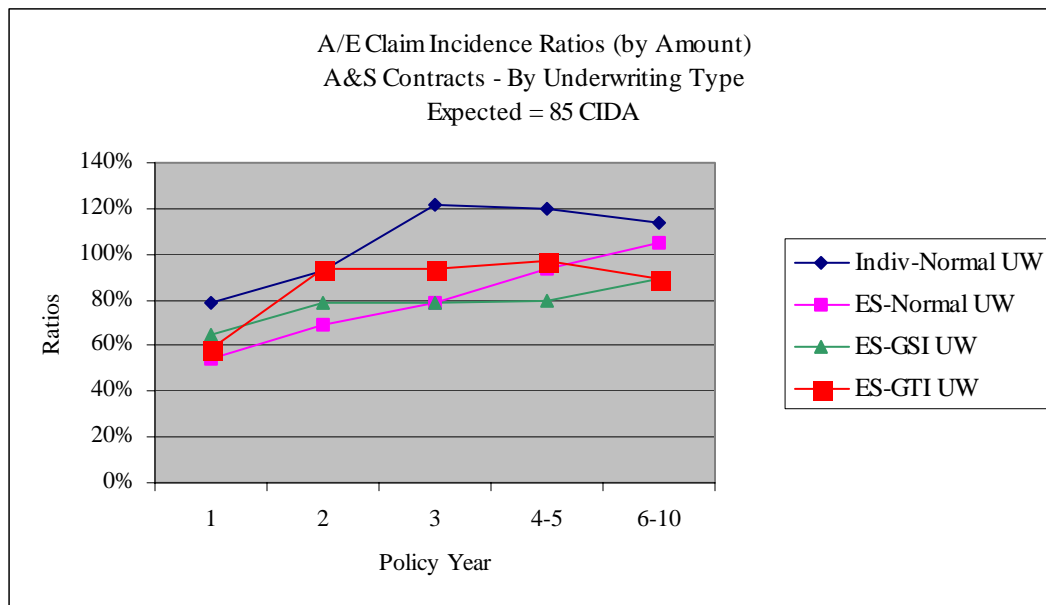


13. Guaranteed standard issue (GSI) underwritten business in the Employer Sponsored market produced claim incidence rates that were slightly worse claim incidence during the first three policy years than the incidence rates for normal underwritten business in the Employer Sponsored market. In policy years 4-10, GSI underwritten business had better experience than normal underwritten business in the Employer Sponsored market.

Both GSI and normal underwritten business in the Employer Sponsored market produced consistently lower claim incidence rates than normal underwritten business in the Individually Sold market. A large portion of the Employer Sponsored GSI business was employer paid (with 100% participation of eligible lives) versus voluntary employee paid (with less than 100% participation of eligible lives). The IDEC study was unable to distinguish between employer paid and employee paid Employer Sponsored business.

Guaranteed-to-Issue (GTI) underwritten business in the Employer Sponsored market produced claim incidence rates that were higher than claim incidence of either GSI or normal underwritten Employer Sponsored business, but were consistently lower than normal underwritten Individually Sold business.

Chart 13



Section III: Claim Incidence Results

This section explores claim incidence trends during the 1990-99 period relative to the parameters reflected in the 85 CIDA claim incidence rate tables, which are attained age, gender, occupation class and elimination period. Because of the significant impact of medical occupation experience during this time period, several of the sections also contain splits by medical and non-medical occupations.

The data was first split into five contract types for the experience analysis:

1. Accident & Sickness (A&S) Disability Income

These contracts provide disability benefits to cover the loss of earned income when an insured is disabled due to an accident or sickness. The benefits are typically paid monthly.

2. Overhead Expense (OE) Disability

These contracts provide disability benefits to cover overhead business expenses incurred while the insured is disabled due to an accident or sickness. The benefits are paid monthly and cover vouchered overhead expenses subject to the maximum monthly benefit for each contract.

3. Disability Buy Out (DBO)

These contracts provide funds to facilitate the transfer of ownership of a business of a disabled insured to his or her partners. The benefits are paid in the form of a lump-sum at the end of the elimination period or a scheduled plan of monthly payments.

4. Keyperson (KP)

These contracts pay benefits to a business to offset losses associated with having a key employee disabled. The benefits are paid monthly.

5. Accident Only (AO)

These contracts provide disability benefits to cover the loss of earned income when an insured is disabled due to an accident. The benefits are paid monthly.

Claim Incidence by Contract Type

Table III.a shows the overall A/E claim incidence ratios for the five contract types over the 1990-99 study period. Experience is measured by count and amount. In addition, total claims and exposures for the five contract types are provided. Exposure by count

for a policy is the number of years that the policy contributes during the specific study period. Exposure by amount is the exposure by count multiplied by the policy's amount. Amounts for AS, OE, KP, and AO contracts are in terms of the maximum monthly benefit or expense reimbursement, in the case of OE policies. Amount for DBO contracts is in terms of the total face amount typically paid as a lump-sum at the end of a long elimination period or spread out over a fixed period of time such as 60 months.

| Contract Type | Actual-to-Expected | | Claims | | Exposure | |
|---------------|--------------------|--------|---------|-------------|------------|----------------|
| | Count | Amount | Count | Amount | Count | Amount |
| AS | 79.8% | 101.6% | 210,485 | 353,058,424 | 18,172,196 | 39,954,929,059 |
| OE | 62.5% | 73.4% | 14,751 | 78,641,855 | 1,092,373 | 5,900,512,239 |
| DBO | 118.9% | 95.4% | 545 | 22,166,587 | 297,961 | 18,579,776,129 |
| KP | 51.4% | 51.7% | 32 | 164,909 | 9,747 | 51,965,610 |
| AO | 27.1% | 36.6% | 39 | 43,295 | 4,371 | 4,233,427 |

Most of the experience resides with the A&S contracts, which incurred an average A/E ratio of 79.8% by count and 101.6% by amount. The higher A/E ratio by amount compared to the A/E ratio by count indicates generally higher incidence for policies with larger indemnities.

OE policies experienced lower average A/E ratios (62.5% by count and 73.4% by amount) than A&S policies. The A/E claim incidence ratios for OE contracts are generally lower than the corresponding ratios for A&S contracts across the range of occupation classes and elimination periods. This is attributable to the following reasons:

- OE policies cover a specific business need and, generally experience less anti-selection than A&S contracts.
- OE policies have short benefit periods (12 months is typical), and experience shows that higher claim incidence is associated with policies with longer benefit periods.

The volume of DBO contracts in the study is quite small. In contrast to A&S and OE policies, the A/E ratio by amount for DBO contracts is lower than that the A/E ratio by count.

There are very few KP and AO policies, although they experienced low A/E ratios. Because of the lack of credible volumes of these types of contracts, there will be no additional analysis of KP and AO business in this report.

Table III.b provides the A/E ratios for A&S, OE and DBO policies by calendar year during the 1990-99 time period. Each calendar year represents the experience of full

policy years that began in the indicated calendar year and end in the following year. For example, experience for year 1992 consists of all policy years that began in 1992. The year 1999 represents only the portion of policy years in 1999 and excludes any portion falling in 2000.

| Table III.b A/E Claim Incidence Ratios by Calendar Year and Contract Type Study Period: 1/1/1990 – 12/31/1999 | | | | | | |
|---|--------------|--------|-------------|--------|--------------|--------|
| Study Period | A&S Policies | | OE Policies | | DBO Policies | |
| | Count | Amount | Count | Amount | Count | Amount |
| 1990 | 85.0% | 104.9% | 72.8% | 82.3% | 101.0% | 62.9% |
| 1991 | 84.5% | 106.5% | 72.6% | 87.0% | 101.8% | 26.3% |
| 1992 | 83.1% | 104.9% | 69.4% | 82.4% | 154.6% | 122.6% |
| 1993 | 85.5% | 109.7% | 68.0% | 82.9% | 124.4% | 132.6% |
| 1994 | 83.0% | 109.5% | 65.4% | 80.0% | 177.2% | 167.1% |
| 1995 | 81.0% | 105.2% | 63.9% | 74.6% | 135.4% | 111.8% |
| 1996 | 77.7% | 99.4% | 55.4% | 64.5% | 118.5% | 132.1% |
| 1997 | 73.6% | 97.0% | 54.5% | 64.8% | 123.6% | 93.3% |
| 1998 | 70.5% | 89.3% | 48.8% | 59.6% | 86.0% | 51.9% |
| 1999 | 65.8% | 85.2% | 46.8% | 56.3% | 45.0% | 12.7% |
| 1990-99 | 79.8% | 101.6% | 62.5% | 73.4% | 118.9% | 95.4% |

The A&S contracts experienced a moderate increase in the A/E ratios by amount in years 1993 and 1994 compared to the 1990-92 period. This reflects in part the increase in medical claims reported by many companies around the 1993-94 period, although it is not as apparent in the A/E ratios by count, or in the A/E ratios for OE contracts. In general, incidence experience improved steadily after 1994. Later in this section it will be shown that this improvement came primarily from non-medical occupations although there appears to have been some improvement from medical occupations in the late 1990's.

The annual A/E ratios for DBO contracts are more volatile due to their small volumes, large face amounts and long elimination periods. It appears that the A/E ratios for DBO contracts peaked in 1994. The very low A/E ratios in 1999 may not be fully developed because of the long elimination periods of DBO policies. In other words, there may be a significant number of DBO claims that were disabled in 1999 but had not been reported at the time the data for the study was collected.

Claim Incidence by Occupation Class

The 85 CIDA claim incidence rates vary by the following four occupation classes:

- Class 1: Professional, technical and managerial occupations that are generally office duties only.
- Class 2: Supervisory and other skilled clerical and skilled technical people.
- Class 3: Non-hazardous work with light manual workers.
- Class 4: Hazardous work with heavy manual labor or using heavy equipment.

Companies have generally developed expanded occupation classes, most notably splitting the 85 CIDA Class 1 into two or more additional classes. However, because of the lack of uniformity among companies in the construction of their occupation classes and the movement of certain occupations among the expanded occupation classes over time, the IDEC did not attempt to study any occupation classification (other than medical and non-medical) beyond the four used in the 85 CIDA tables. Each contributing company was asked to map their own occupation classes to the four 85 CIDA classes.

Table III.c shows the distribution of A&S, OE and DBO exposure in the study by occupation class and contract type. Clearly, Class 1 is the most prevalent occupation class.

| <u>Table III.c</u> Distribution of Exposure in the Study By Occupation Class and Contract Type Study Period: 1/1/1990 – 12/31/1999 | | | |
|---|-----------|--------|--------|
| Occupation Class | By Count | | |
| | A&S | OE | DBO |
| Class 1 | 81.1% | 89.5% | 95.5% |
| Class 2 | 9.0% | 6.6% | 3.2% |
| Class 3 | 6.6% | 2.9% | 0.6% |
| Class 4 | 3.3% | 0.9% | 0.8% |
| Total | 100.0% | 100.0% | 100.0% |
| Occupation Class | By Amount | | |
| | A&S | OE | DBO |
| Class 1 | 91.5% | 93.9% | 99.1% |
| Class 2 | 4.8% | 4.7% | 0.8% |
| Class 3 | 2.5% | 1.0% | 0.0% |
| Class 4 | 1.2% | 0.4% | 0.0% |
| Total | 100.0% | 100.0% | 100.0% |

Table III.d provides the A/E claim incidence (by amount) for calendar years 1990 through 1999 for Class 1 and for Classes 2-4 combined, for A&S and OE contracts. DBO contracts were not included because policies in Classes 2-4 represent less than 1% of the business.

| Table III.d | | | | |
|--|---------------|-------------|--------------|-------------|
| A/E Claim Incidence Ratios (by Amount) | | | | |
| For A&S and OE Contracts by Occupation Class | | | | |
| Study Period: 1/1/1990 – 12/31/1999 | | | | |
| Study Period | A&S Contracts | | OE Contracts | |
| | Class 1 | Classes 2-4 | Class 1 | Classes 2-4 |
| 1990 | 120.0% | 72.8% | 85.2% | 62.2% |
| 1991 | 120.8% | 73.2% | 89.2% | 69.2% |
| 1992 | 118.5% | 71.2% | 85.5% | 56.4% |
| 1993 | 124.6% | 70.4% | 84.1% | 71.9% |
| 1994 | 124.3% | 68.0% | 82.7% | 57.2% |
| 1995 | 117.7% | 68.6% | 76.3% | 60.3% |
| 1996 | 110.6% | 65.2% | 66.7% | 46.7% |
| 1997 | 108.0% | 62.4% | 65.5% | 59.2% |
| 1998 | 99.3% | 58.4% | 62.3% | 39.5% |
| 1999 | 95.4% | 54.0% | 58.6% | 41.8% |
| 1990-99 | 114.2% | 67.1% | 75.6% | 56.1% |

The average A/E claim incidence ratio over the ten-year period for A&S policies in Class 1 was 114%. However, after 1994, claim incidence for this business steadily improved and fell below 85 CIDA incidence in 1998 and 1999.

The average A/E claim incidence ratio over the ten-year period for A&S policies in Classes 2-4 combined was 67%, which was considerably more favorable than 85 CIDA incidence. This business also exhibited improving experience after 1994.

The average A/E claim incidence ratios by occupation class for OE policies were approximately 66% of the corresponding A&S ratios for Occupation Class 1 and 84% for Occupation Classes 2-4 combined. The OE business experienced a similar pattern of improving experience after 1994 as seen in the A&S business.

Section VII of this report discusses differences in morbidity experience by occupation. However, because of the significance of the medical occupations within the total exposure and the unfavorable morbidity trends during the 1990's, the analysis by occupation class in this section has been split between Medical and Non-medical Occupations.

The Medical Occupations grouping includes the following occupations:

| | |
|---------------|---------------|
| Physicians | Pharmacists |
| Surgeons | Psychiatrists |
| Dentists | Psychologists |
| Nurses | Veterinarians |
| Chiropractors | Other Medical |
| Podiatrists | |

The Non-medical Occupations grouping includes the following occupations:

| | |
|-------------|-----------------------|
| Executives | Actuaries |
| Managers | Insurance Sales |
| Lawyers | Other Sales |
| Accountants | Stockbrokers |
| Engineers | Teachers |
| Architects | All Other Occupations |

Because some of the contributors were unable to split their experience by occupation, the All Other Occupations group in the Non-medical Occupations category includes some unknown portion of medical occupations. However, indications suggest that the portion of unknown medical occupations included in the All Other Occupations category should be quite small.

Table III.e shows the distribution of the Medical and Non-medical Occupations amount exposure within each occupation class, separately for A&S contacts and OE contracts.

| <u>Table III.e</u> Distribution of Medical and Non-medical Occupations By Amount Exposure Within Each Occupation Class | | | |
|--|---------------|-------------|--------|
| Occupation Class | A&S Contracts | | |
| | Medical | Non-medical | Total |
| Class 1 | 41.4% | 58.6% | 100.0% |
| Class 2 | 28.8% | 71.2% | 100.0% |
| Class 3 | 4.1% | 95.9% | 100.0% |
| Class 4 | 0.9% | 99.1% | 100.0% |
| Total | 39.4% | 60.6% | 100.0% |
| Occupation Class | OE Contracts | | |
| | Medical | Non-medical | Total |
| Class 1 | 74.4% | 25.6% | 100.0% |
| Class 2 | 75.0% | 25.0% | 100.0% |
| Class 3 | 21.0% | 79.0% | 100.0% |
| Class 4 | 0.3% | 99.7% | 100.0% |
| Total | 73.6% | 26.4% | 100.0% |

The Medical Occupations grouping represents 41% of the A&S amount exposure in Class 1, 29% of the A&S amount exposure in Class 2, and very small percentages of the A&S amount exposure in Classes 3 and 4. The Medical Occupations grouping represents about 75% of the OE amount exposure by amount in Classes 1 and 2.

Table III.f shows the distribution of the amount exposure for the four Classes within the Medical and Non-medical Occupational groupings.

| Table III.f Distribution of the Occupation Classes by Amount Exposure Within Medical and Non-medical Occupational Groupings | | | |
|---|---------------|-----------------|--------|
| Occupation Class | A&S Contracts | | |
| | Medical | Non- medical | Total |
| Class 1 | 96.2% | 88.5% | 91.5% |
| Class 2 | 3.5% | 5.7% | 4.8% |
| Class 3 | 0.3% | 3.9% | 2.5% |
| Class 4 | 0.0% | 1.9% | 1.2% |
| Total | 100.0% | 100.0% | 100.0% |
| Occupation Class | OE Contracts | | |
| | Medical | Non- medical | Total |
| Class 1 | 94.9% | 91.0% | 93.9% |
| Class 2 | 4.8% | 4.4% | 4.7% |
| Class 3 | 0.3% | 3.0% | 1.0% |
| Class 4 | 0.0% | 1.5% | 0.4% |
| Total | 100.0% | 100.0% | 100.0% |

As expected, Class 1 is the most prominent occupation class for both the Medical and Non-medical Occupational groupings.

Table III.g shows the average A/E Claim Incidence Ratios (by amount) for the 1990-99 period by occupation class and Medical and Non-medical Occupational groupings. Note that if a cell's results are based on less than 10 claims, then an asterisk is displayed to indicate that there was insufficient experience for measuring incidence.

| Table III.g A/E Claim Incidence Ratios (by Amount) By Occupation Classes and Medical and Non-medical Occupational Groupings Study Period: 1/1/1990 – 12/31/1999 (* Insufficient experience for measuring incidence) | | | |
|--|---------------|-------------|--------|
| Occupation Class | A&S Contracts | | |
| | Medical | Non-medical | Total |
| Class 1 | 136.2% | 97.9% | 114.2% |
| Class 2 | 90.9% | 66.8% | 72.6% |
| Class 3 | 70.8% | 56.6% | 57.2% |
| Class 4 | 86.5% | 76.0% | 76.1% |
| Total | 131.8% | 85.9% | 101.6% |
| Occupation Class | OE Contracts | | |
| | Medical | Non-medical | Total |
| Class 1 | 78.5% | 66.3% | 75.6% |
| Class 2 | 49.0% | 60.0% | 51.8% |
| Class 3 | 76.4% | 51.2% | 55.6% |
| Class 4 | * | 94.6% | 95.6% |
| Total | 76.2% | 65.6% | 73.4% |

The average claim incidence in Table III.g for the Medical Occupations has been considerably higher than for the Non-medical Occupations in all four of the occupation classes. For A&S contracts in Classes 1 and 2, the ratio of Medical claim incidence to Non-medical claim incidence is 135-140%. These differences are not quite as pronounced for the OE contracts.

In contrast to the experience of A&S contracts in Class 1, the A/E claim incidence ratios for A&S contracts in Classes 2-4 are significantly below 100% in all elimination periods. These results suggest that claim incidence rates between Class 1 and the other classes are much closer than reflected in the 85 CIDA table.

Table III.h shows the A/E claim incidence calendar year trends (by amount) for A&S Contracts by the Medical and Non-Medical Occupational grouping.

| <p align="center">Table III.h A/E Claim Incidence Ratios (by Amount) Trends For A&S Contracts By Medical and Non-Medical Occupational Groupings Study Period: 1/1/1990 – 12/31/1999</p> | | | | |
|---|--------------------|-------------|------------------------|-------------|
| Study Period | Occupation Class 1 | | Occupation Classes 2-4 | |
| | Medical | Non-Medical | Medical | Non-Medical |
| 1990 | 129.1% | 113.9% | 93.7% | 71.0% |
| 1991 | 134.7% | 111.1% | 89.8% | 71.6% |
| 1992 | 134.8% | 106.7% | 86.0% | 69.6% |
| 1993 | 144.7% | 109.8% | 91.6% | 67.8% |
| 1994 | 144.2% | 109.6% | 93.2% | 64.5% |
| 1995 | 142.2% | 99.4% | 96.1% | 64.5% |
| 1996 | 135.6% | 91.8% | 87.3% | 61.9% |
| 1997 | 139.4% | 84.3% | 87.0% | 58.6% |
| 1998 | 126.6% | 78.2% | 78.2% | 55.1% |
| 1999 | 123.9% | 73.7% | 75.4% | 50.4% |
| 1990-99 | 136.2% | 97.9% | 88.0% | 64.3% |

For A&S contracts in Occupation Class 1, the Medical Occupation claim incidence trends in Table III.h show increases during the 1991-94 period and then slow improvements thereafter, returning in 1998-99 to approximately the same level of incidence in 1990. The Non-Medical Occupations for A&S contracts in Occupation Class 1 display claim incidence that was relatively stable during the 1990-94 period followed by steady improvements thereafter. For A&S contracts in Occupation Class 1, the ratio of Non-Medical to Medical claim incidence was 88% in 1990 and 59% in 1999. This difference is not the result of deterioration in the Medical Occupation incidence but rather steady improvements in the Non-medical Occupation incidence.

Similar trends are observed for A&S contracts in Occupation Classes 2-4, although the differences in recent years between Medical and Non-Medical claim incidence is not as significant as in Occupation Class 1.

Table III.i shows the A/E claim incidence trends (by amount) for OE contracts by the Medical and Non-Medical Occupational grouping.

| <p style="text-align: center;">Table III.i A/E Claim Incidence Ratios (by Amount) Trends For OE Contracts By Medical and Non-Medical Occupational Groupings Study Period: 1/1/1990 – 12/31/1999</p> | | | | |
|---|--------------------|-------------|------------------------|-------------|
| Study Period | Occupation Class 1 | | Occupation Classes 2-4 | |
| | Medical | Non-Medical | Medical | Non-Medical |
| 1990 | 84.6% | 87.3% | 60.8% | 63.3% |
| 1991 | 90.5% | 85.3% | 61.3% | 76.0% |
| 1992 | 86.9% | 81.9% | 54.5% | 58.4% |
| 1993 | 87.8% | 71.8% | 61.4% | 84.2% |
| 1994 | 83.9% | 78.4% | 57.4% | 56.9% |
| 1995 | 79.9% | 64.6% | 53.7% | 69.9% |
| 1996 | 71.5% | 51.1% | 40.4% | 56.2% |
| 1997 | 68.7% | 55.5% | 50.4% | 73.4% |
| 1998 | 66.9% | 48.5% | 45.1% | 30.0% |
| 1999 | 63.5% | 44.1% | 33.3% | 56.5% |
| 1990-99 | 78.5% | 66.3% | 51.0% | 62.7% |

The differences between Medical and Non-medical Occupation claim incidence for OE contracts are not as large as experienced by the A&S contracts. Both Occupational groupings in Occupation Class 1 showed improving claim incidence after 1994, although the improvements for the Non-medical Occupation incidence were greater than for the Medical Occupation incidence. Unlike A&S contracts and Occupation Class 1 for OE contracts, Medical Occupation claim incidence was actually lower than Non-medical Occupation claim incidence for OE contracts in Occupation Classes 2-4.

Claim Incidence by Elimination Period

Claim incidence experience by elimination period for A&S and OE contracts during the 1990's is discussed below. DBO contracts are not covered because most DBO elimination periods are 180 days or longer. Table III.j shows the distribution of the amount exposure by elimination period within each occupation class, separately for A&S and OE contracts.

| Table III.j Distribution of A&S and OE Contracts by Elimination Period Within Occupation Class – By Amount Study Period: 1/1/1990 – 12/31/1999 | | | | | |
|---|---------------|---------|---------|---------|--------|
| Elimination Period | A&S Contracts | | | | |
| | Class 1 | Class 2 | Class 3 | Class 4 | Total |
| Under 30 Days | 0.3% | 2.3% | 7.4% | 6.0% | 0.7% |
| 30 Days | 7.9% | 18.1% | 37.3% | 32.6% | 9.4% |
| 60 Days | 11.7% | 16.7% | 15.9% | 19.6% | 12.1% |
| 90 Days | 62.5% | 50.4% | 29.4% | 32.9% | 60.8% |
| 180+ Days | 17.5% | 12.5% | 10.0% | 9.0% | 17.0% |
| | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| Elimination Period | OE Contracts | | | | |
| | Class 1 | Class 2 | Class 3 | Class 4 | Total |
| Under 30 Days | 0.6% | 2.7% | 4.2% | 1.6% | 0.7% |
| 30 Days | 61.0% | 57.8% | 56.4% | 43.6% | 60.7% |
| 60 Days | 21.5% | 23.8% | 20.7% | 30.5% | 21.6% |
| 90 Days | 17.0% | 15.7% | 18.4% | 24.2% | 16.9% |
| 180+ Days | 0.0% | 0.0% | 0.3% | 0.0% | 0.0% |
| | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Elimination periods of 90+ days' policies represent 78% of the A&S exposure. Companies during the 1980's and 1990's generally discouraged the purchase of lower elimination periods in A&S policies in Classes 1 and 2. On the other hand, the elimination periods of less than 90 days represent 82% of the OE exposure, which characteristically have low elimination periods.

Table III.k shows the A/E claim incidence ratios (by amount) by elimination period within each occupation class, separately for A&S and OE contracts:

| Table III.k A/E Claim Incidence Ratios (by Amount) for A&S and OE Contracts By Elimination Period and Occupation Class Study Period: 1/1/1990 – 12/31/1999 (* Insufficient experience for measuring incidence) | | | | | |
|--|---------------|---------|---------|---------|-------|
| Elimination Period | A&S Contracts | | | | |
| | Class 1 | Class 2 | Class 3 | Class 4 | Total |
| Under 30 Days | 136% | 63% | 56% | 71% | 85% |
| 30 Days | 110% | 73% | 60% | 82% | 94% |
| 60 Days | 79% | 56% | 42% | 62% | 73% |
| 90 Days | 137% | 90% | 63% | 80% | 129% |
| 180+ Days | 109% | 89% | 79% | 83% | 106% |
| All EPs | 114% | 73% | 57% | 76% | 102% |
| Elimination Period | OE Contracts | | | | |
| | Class 1 | Class 2 | Class 3 | Class 4 | Total |
| Under 30 Days | 73% | 66% | 52% | 52% | 69% |
| 30 Days | 76% | 54% | 55% | 117% | 74% |
| 60 Days | 60% | 38% | 63% | 59% | 58% |
| 90 Days | 124% | 60% | 52% | 92% | 117% |
| 180+ Days | * | | | | |
| All EPs | 76% | 52% | 56% | 96% | 73% |

The A/E claim incidence ratios for A&S contracts in Class 1 are generally higher than 100%. The 60-day A/E ratio (79%) appears relatively low compared to the other elimination periods because the 85 CIDA 60-day incidence rates are artificially high. The 85 CIDA table distinguishes incidence among 0, 7, 14, 30 and 90-day elimination periods but not the 60-day elimination period, since very few policies issued in the 1970's had 60-day elimination periods. Thus, for the purpose of this study, expected 60-day claim incidence rates were developed by multiplying the 85 CIDA 30-day incidence rates by claim continuance factors from the 30-day continuance table that represented the probabilities of remaining on claim from the 30th day to the 60th day of disablement. This approach generally overstates the 60-day incidence rates. People receiving disability benefits will remain disabled longer than disabled people who are in the elimination period but not receiving benefits. This can be observed by comparing 90-day incidence rates from the 85 CIDA table to 90-day incidence rates calculated from 30-day incidence rates and claim continuance factors from 30-days to 90-days.

A similar situation exists for elimination periods of 180 days or longer for which the 85 CIDA claim incidence rates were based on the 90-day elimination period experience. The lack of "true" expected incidence rates for 60 day and 180+ day elimination periods should be kept in mind when reviewing all of the A/E ratios by elimination period in this report.

Table III.l shows the average A/E claim incidence ratios by elimination periods for A&S and OE contracts, split between the Medical and Non-medical Occupational groupings.

| Table III.l A/E Claim Incidence Ratios (By Amount) For A&S and OE Contracts Split Between Medical and Non-medical Occupational Groupings Study Period: 1/1/1990 – 12/31/1999 (* Insufficient experience for measuring incidence) | | | | |
|--|--------------------|-------------|------------------------|-------------|
| A&S Contracts | | | | |
| Elimination Period | Occupation Class 1 | | Occupation Classes 2-4 | |
| | Medical | Non-medical | Medical | Non-medical |
| Under 30 Days | 87% | 142% | 77% | 60% |
| 30 Days | 115% | 106% | 86% | 67% |
| 60 Days | 91% | 70% | 62% | 51% |
| 90 Days | 175% | 107% | 112% | 72% |
| 180+ Days | 172% | 86% | 107% | 82% |
| All EPs | 136% | 98% | 88% | 64% |
| OE Contracts | | | | |
| Elimination Period | Occupation Class 1 | | Occupation Classes 2-4 | |
| | Medical | Non-medical | Medical | Non-medical |
| Under 30 Days | 73% | 75% | 69% | 52% |
| 30 Days | 79% | 66% | 50% | 69% |
| 60 Days | 62% | 55% | 42% | 49% |
| 90 Days | 140% | 95% | 72% | 54% |
| 180+ Days | * | * | * | * |
| All EPs | 79% | 66% | 51% | 63% |

Except for elimination periods less than 30 days and Occupation Classes 2-4 with OE contracts, the Medical Occupation claim incidence for OE contracts by elimination period is higher than the Non-medical Occupation claim incidence.

Claim Incidence by Gender

The 85 CIDA tables have different claim incidence rates by gender (i.e., the tables are sex distinct). The discussion below shows how experience by gender during the 1990's varied relative to the 85 CIDA table.

Table III.m shows the percentage of female A&S exposure within the various elimination period and occupation class groupings.

| Table III.m Percent of Female Exposure by Count and Amount For A&S Contracts by Elimination Period and Occupation Class | | | | | |
|---|-----------|---------|---------|---------|-------|
| Elimination Period | By Count | | | | |
| | Class 1 | Class 2 | Class 3 | Class 4 | Total |
| Under 30 Days | 25% | 15% | 5% | 2% | 14% |
| 30 Days | 22% | 32% | 13% | 8% | 21% |
| 60 Days | 22% | 39% | 19% | 8% | 23% |
| 90 Days | 20% | 39% | 18% | 8% | 21% |
| 180+ Days | 17% | 35% | 14% | 9% | 18% |
| All EPs | 20% | 35% | 13% | 7% | 20% |
| Elimination Period | By Amount | | | | |
| | Class 1 | Class 2 | Class 3 | Class 4 | Total |
| Under 30 Days | 31% | 16% | 6% | 3% | 18% |
| 30 Days | 19% | 32% | 13% | 7% | 19% |
| 60 Days | 18% | 34% | 16% | 6% | 19% |
| 90 Days | 15% | 32% | 15% | 5% | 16% |
| 180+ Days | 13% | 30% | 12% | 8% | 14% |
| All EPs | 16% | 32% | 13% | 6% | 16% |

Overall, females represent 20% by count and 16% by amount of all A&S exposure in the study. Within each occupation class, females are a higher representation in Class 2 (35% and 32%) than in the other occupation classes.

Table III.n compares the A/E claim incidence ratios (by amount) for A&S contracts by gender separated into elimination period and occupation class groupings. A comparable table for OE contracts is not provided because of the small volume of exposure.

| Table III.n A/E Claim Incidence Ratios (by Amount) for A&S Contracts By Elimination Period, Occupation Class and Gender Study Period: 1/1/1990 – 12/31/1999 | | | | | |
|--|------------------|---------|---------|---------|-------|
| Elimination Period | Male Contracts | | | | |
| | Class 1 | Class 2 | Class 3 | Class 4 | Total |
| Under 30 Days | 134% | 64% | 56% | 71% | 79% |
| 30 Days | 107% | 71% | 57% | 82% | 90% |
| 60 Days | 84% | 55% | 40% | 62% | 77% |
| 90 Days | 143% | 86% | 60% | 77% | 135% |
| 180+ Days | 114% | 91% | 76% | 79% | 111% |
| All EP's | 118% | 71% | 55% | 76% | 103% |
| Elimination Period | Female Contracts | | | | |
| | Class 1 | Class 2 | Class 3 | Class 4 | Total |
| Under 30 Days | 139% | 59% | 60% | 60% | 111% |
| 30 Days | 117% | 76% | 72% | 80% | 102% |
| 60 Days | 69% | 57% | 48% | 66% | 66% |
| 90 Days | 118% | 95% | 73% | 117% | 114% |
| 180+ Days | 86% | 85% | 97% | 125% | 86% |
| All EP's | 104% | 75% | 67% | 81% | 97% |

In general, female incidence experience reflects similar relationships to the 85 CIDA as the male experience does. This suggests that relative differences by gender observed in the more recent experience is still consistent with the experience included in the development of the 85 CIDA table. The relatively small volumes of female business may contribute to the variances among the various elimination period and occupation class groupings. Female business does show higher incidence relative to the 85 CIDA at the shorter eliminations periods and lower incidence at the longer eliminations periods. This may likely be attributed to the existence of pregnancy coverage in more recent contracts compared to the business included in the 85 CIDA table.

A comparable table for OE contracts is not provided because of the small volume of exposure. Overall, female OE incidence reflects similar relationships to the 85 CIDA as the male experience does (71% for female and 74% for male).

Table III.o provides the average A/E claim incidence ratios for A&S contracts by gender split between Medical and Non-medical Occupations, occupation class and elimination periods.

| Table III.o A/E Claim Incidence Ratios (By Amount) For A&S Contracts by Gender Split Between Medical and Non-medical Occupational Groupings Study Period: 1/1/1990 – 12/31/1999 | | | | |
|---|--------------------|-----------------|------------------------|-----------------|
| Males | | | | |
| Elimination Period | Occupation Class 1 | | Occupation Classes 2-4 | |
| | Medical | Non- medical | Medical | Non- medical |
| Under 30 Days | 87% | 143% | 86% | 60% |
| 30 Days | 107% | 107% | 75% | 67% |
| 60 Days | 94% | 75% | 55% | 51% |
| 90 Days | 183% | 110% | 100% | 73% |
| 180+ Days | 188% | 88% | 81% | 84% |
| All EPs | 140% | 101% | 80% | 64% |
| Females | | | | |
| Elimination Period | Occupation Class 1 | | Occupation Classes 2-4 | |
| | Medical | Non- medical | Medical | Non- medical |
| Under 30 Days | 83% | 140% | 55% | 60% |
| 30 Days | 136% | 104% | 91% | 70% |
| 60 Days | 83% | 59% | 66% | 50% |
| 90 Days | 147% | 97% | 121% | 72% |
| 180+ Days | 107% | 77% | 124% | 73% |
| All EPs | 125% | 91% | 93% | 65% |

In general, male and female incidence exhibit similar relationships to the 85 CIDA when separated by occupation class, medical and non-medical occupational groupings and elimination period

Claim Incidence by Attained Age

Tables III.p and III.q show the A/E claim incidence ratios (by amount) for A&S contracts by attained age groups for males and females, respectively, within the various elimination period and occupation class groups.

| Table III.p A/E Claim Incidence Ratios (by Amount) for A&S Contracts Male - By Attained Age Study Period: 1/1/1990 – 12/31/1999 | | | | | | |
|--|------------------------------------|---------|---------|---------|-------|--|
| | Elimination Period – Under 30 Days | | | | | |
| Attained Age | Class 1 | Class 2 | Class 3 | Class 4 | Total | |
| Under 30 | 233% | 61% | 46% | 51% | 95% | |
| 30 – 39 | 167% | 55% | 47% | 67% | 76% | |
| 40 – 49 | 126% | 64% | 58% | 73% | 78% | |
| 50 – 59 | 115% | 71% | 62% | 73% | 80% | |
| 60 - 64 | 109% | 55% | 63% | 75% | 79% | |
| | Elimination Period – 30 Days | | | | | |
| Attained Age | Class 1 | Class 2 | Class 3 | Class 4 | Total | |
| Under 30 | 123% | 80% | 47% | 75% | 69% | |
| 30 – 39 | 135% | 72% | 52% | 75% | 91% | |
| 40 – 49 | 106% | 68% | 56% | 83% | 90% | |
| 50 – 59 | 100% | 73% | 68% | 93% | 92% | |
| 60 - 64 | 96% | 72% | 65% | 76% | 90% | |
| | Elimination Period – 60 Days | | | | | |
| Attained Age | Class 1 | Class 2 | Class 3 | Class 4 | Total | |
| Under 30 | 75% | 91% | 37% | 65% | 67% | |
| 30 – 39 | 88% | 57% | 36% | 58% | 75% | |
| 40 – 49 | 83% | 49% | 36% | 66% | 76% | |
| 50 – 59 | 84% | 55% | 48% | 62% | 79% | |
| 60 – 64 | 80% | 74% | 71% | 61% | 79% | |
| | Elimination Period – 90 Days | | | | | |
| Attained Age | Class 1 | Class 2 | Class 3 | Class 4 | Total | |
| Under 30 | 95% | 73% | 47% | 65% | 82% | |
| 30 – 39 | 165% | 103% | 59% | 73% | 146% | |
| 40 – 49 | 156% | 85% | 61% | 78% | 146% | |
| 50 – 59 | 134% | 80% | 65% | 84% | 129% | |
| 60 – 64 | 113% | 60% | 55% | 91% | 110% | |
| | Elimination Period – 180+ Days | | | | | |
| Attained Age | Class 1 | Class 2 | Class 3 | Class 4 | Total | |
| Under 30 | 72% | 50% | 46% | 53% | 62% | |
| 30 – 39 | 143% | 93% | 71% | 81% | 127% | |
| 40 – 49 | 128% | 100% | 77% | 80% | 123% | |
| 50 – 59 | 109% | 87% | 88% | 80% | 107% | |
| 60 – 64 | 87% | 79% | 59% | 91% | 87% | |

| Table III.q A/E Claim Incidence Ratios (by Amount) for A&S Contracts Female - By Attained Age Study Period: 1/1/1990 – 12/31/1999 (* Insufficient experience for measuring incidence) | | | | | |
|---|------------------------------------|---------|---------|---------|-------|
| | Elimination Period – Under 30 Days | | | | |
| Attained Age | Class 1 | Class 2 | Class 3 | Class 4 | Total |
| Under 30 | 193% | 131% | 79% | 43% | 170% |
| 30 – 39 | 156% | 58% | 63% | 34% | 129% |
| 40 – 49 | 124% | 53% | 51% | 59% | 98% |
| 50 – 59 | 116% | 57% | 66% | 80% | 90% |
| 60 – 64 | 104% | 75% | 78% | 63% | 86% |
| | Elimination Period – 30 Days | | | | |
| Attained Age | Class 1 | Class 2 | Class 3 | Class 4 | Total |
| Under 30 | 194% | 126% | 87% | 62% | 148% |
| 30 – 39 | 166% | 92% | 75% | 76% | 138% |
| 40 – 49 | 90% | 65% | 72% | 93% | 83% |
| 50 – 59 | 93% | 63% | 67% | 71% | 83% |
| 60 – 64 | 88% | 61% | 64% | 47% | 78% |
| | Elimination Period – 60 Days | | | | |
| Attained Age | Class 1 | Class 2 | Class 3 | Class 4 | Total |
| Under 30 | 103% | 75% | 71% | 104% | 92% |
| 30 – 39 | 86% | 65% | 54% | 81% | 81% |
| 40 – 49 | 55% | 46% | 44% | 49% | 53% |
| 50 – 59 | 66% | 59% | 43% | 59% | 64% |
| 60 – 64 | 75% | 73% | 56% | 64% | 73% |
| | Elimination Period – 90 Days | | | | |
| Attained Age | Class 1 | Class 2 | Class 3 | Class 4 | Total |
| Under 30 | 144% | 128% | 101% | 96% | 137% |
| 30 – 39 | 164% | 122% | 86% | 127% | 156% |
| 40 – 49 | 95% | 75% | 59% | 88% | 92% |
| 50 – 59 | 101% | 75% | 71% | 149% | 97% |
| 60 – 64 | 122% | 97% | 86% | 199% | 119% |
| | Elimination Period – 180+ Days | | | | |
| Attained Age | Class 1 | Class 2 | Class 3 | Class 4 | Total |
| Under 30 | 57% | 102% | * | | 64% |
| 30 – 39 | 95% | 99% | 101% | 95% | 95% |
| 40 – 49 | 73% | 72% | 89% | 73% | 73% |
| 50 – 59 | 102% | 85% | 116% | 101% | 101% |
| 60 – 64 | 111% | 113% | * | | 111% |

For males in Class 1, the A/E claim incidence ratios by attained age are generally decreasing by age for ages 30 and higher, indicating a possible flattening of the incidence curves. For males in Classes 3 and 4, the A/E claim incidence ratios by attained age are increasing moderately with age, indicating a possible steepening of the incidence curves. The pattern of A/E claim incidence ratios by attained age for males in Class 2 generally forms a J-shape.

For females in Classes 1 and 2, the A/E claim incidence ratios are quite high for ages under 40 and then drop sharply for ages 40-49. This suggests that disabilities related to pregnancy are much higher than what was reflected in the 85 CIDA female incidence rates. There appears to be no prevailing pattern of A/E claim incidence ratios for female ages 40 and higher.

Section IV: Claim Termination Results

This section explores claim termination trends during the 1990-99 period relative to the parameters reflected in the 85 CIDA claim termination rate tables, which are attained age at disablement, gender, occupation class and elimination period. Because of the significant impact of medical occupation experience during this time period, several of the sections also contain splits by medical and non-medical occupations.

Claim Termination Experience by Contract Type

Table IV.a shows the total claim terminations over the full study period by duration of disablement in terms of count and amount represented in the A/E claim termination ratios in Table IV.b. The A&S claims are separated between long-term benefit periods (i.e., To Age 65 and longer) and short-term benefit periods. As a rule, if the results in subsequent tables would be based on fewer than 10 claim terminations, an asterisk is displayed indicating that there was not sufficient experience for measuring terminations.

| Table IV.a Actual Claim Terminations Study Period: 1/1/1990 – 12/31/1999 | | | | | | |
|--|--|------------|---|------------|-----------|------------|
| Duration of Disablement | A&S Claims Short-term Benefit Periods | | A&S Claims Long-term Benefit Periods | | OE Claims | |
| | By Count | By Amount | By Count | By Amount | By Count | By Amount |
| Quarter 1 | 36,706 | 22,869,007 | 12,702 | 16,793,646 | 2,857 | 9,962,260 |
| Quarter 2 | 23,136 | 18,779,073 | 19,855 | 39,242,905 | 3,688 | 15,518,189 |
| Quarter 3 | 9,124 | 8,951,350 | 13,149 | 27,855,556 | 2,273 | 10,473,734 |
| Quarter 4 | 3,912 | 4,379,757 | 6,702 | 14,947,510 | 781 | 3,835,223 |
| Quarter 5 | 2,446 | 2,625,045 | 4,345 | 9,963,239 | 329 | 1,653,180 |
| Quarter 6 | 1,401 | 1,689,271 | 3,048 | 7,334,278 | 159 | 815,214 |
| Quarter 7 | 1,029 | 1,260,383 | 2,208 | 5,145,110 | 121 | 833,268 |
| Quarter 8 | 676 | 914,914 | 1,773 | 3,980,908 | 29 | 212,047 |
| Year 3 | 1,557 | 1,799,742 | 4,001 | 9,471,025 | 9 | 11,300 |
| Year 4 – 5 | 1,085 | 1,496,483 | 3,418 | 8,150,414 | 5 | 5,300 |
| Years 6 - 10 | 152 | 116,279 | 3,105 | 5,944,661 | 1 | 1,250 |
| Years 11+ | | | 1,170 | 1,303,931 | | |

Table IV.b provides the A/E claim termination ratios (as percentages of the 85 CIDA claim termination rates) by duration of disablement for A&S and OE claims. The OE contracts generally have benefit periods that do not exceed 24 months.

| Table IV.b A/E Claim Termination Ratios by Duration of Disablement Study Period 1/1/1990 – 12/31/1999 | | | | | | |
|---|---------------------------------------|-----------|--------------------------------------|-----------|-----------|-----------|
| Duration of Disablement | A&S Claims Short-term Benefit Periods | | A&S Claims Long-term Benefit Periods | | OE Claims | |
| | By Count | By Amount | By Count | By Amount | By Count | By Amount |
| Quarter 1 | 57% | 52% | 36% | 28% | 29% | 23% |
| Quarter 2 | 77% | 63% | 43% | 35% | 56% | 45% |
| Quarter 3 | 84% | 74% | 56% | 47% | 95% | 78% |
| Quarter 4 | 94% | 92% | 69% | 59% | 88% | 74% |
| Quarter 5 | 105% | 95% | 69% | 61% | 84% | 69% |
| Quarter 6 | 110% | 111% | 83% | 77% | 129% | 106% |
| Quarter 7 | 141% | 146% | 106% | 96% | 275% | 299% |
| Quarter 8 | 135% | 156% | 125% | 109% | 116% | 137% |
| Year 3 | 210% | 180% | 111% | 103% | | |
| Year 4 – 5 | 188% | 184% | 95% | 92% | | |
| Years 6 – 10 | 229% | 148% | 103% | 93% | | |
| Years 11+ | | | 104% | 84% | | |

Table IV.b shows that A/E claim termination ratios are less than 100% during the first year of disablement but are increasing with duration during the first year. During the second year of disablement, the A/E claim termination ratios rise above 100%. This pattern is generally consistent with the adjustments to the 85 CIDA termination rates that produce the CIDC claim termination rates, at least during the first two years of disablement. Lower A/E claim termination ratios by amount compared to those by count suggest that claims with larger amounts have lower termination rates.

A/E claim termination ratios by amount in year 3 for the A&S claims with long-term benefit periods are over 100% but settle in the 90-95% range thereafter. On the other hand, for the same durations, the A/E claim termination ratios by amount for A&S claims with short-term benefit periods generally fall in the 175-200% range. Claims with short-term benefit periods, including OE claims, have higher A/E claim termination ratios throughout the durations of disablement than claims with long-term benefit periods, possibly reflecting a greater reluctance of claimants with more generous benefits to terminate their claims. These results illustrate the possibility of differentiating claim termination patterns by the length of benefit periods. This is emphasized again later in this report when the claim termination experience for long-term benefit periods is further split between claims with a To Age 65-70 benefit period and those with a lifetime benefit period.

Table IV.c shows the A/E claim termination ratios (by amount) for four calendar periods of claims incurrual: Pre-1990, 1990-92, 1993-95 and 1996 & Later. Each calendar period represents the years in which claims were incurred, i.e., the beginning of the elimination period.

| Table IV.c A/E Claim Termination Ratios (by Amount) By Calendar Period of Incurral Study Period: 1/1/1990 – 12/31/1999 (* Insufficient experience for measuring terminations) | | | | |
|---|--|---------|---------|--------------|
| Duration of Disablement | A&S Claims with Short-term Benefit Periods | | | |
| | Pre-1990 | 1990-92 | 1993-95 | 1996 & Later |
| Year 1 | 70% | 59% | 58% | 64% |
| Year 2 | 112% | 118% | 108% | 114% |
| Year 3 | 170% | 214% | 173% | 141% |
| Year 4 – 5 | 186% | 222% | 151% | 212% |
| Years 6 - 10 | 217% | 156% | * | |
| Duration of Disablement | A&S Claims with Long-term Benefit Periods | | | |
| | Pre-1990 | 1990-92 | 1993-95 | 1996 & Later |
| Year 1 | 48% | 42% | 38% | 36% |
| Year 2 | 82% | 82% | 70% | 75% |
| Year 3 | 107% | 103% | 99% | 107% |
| Year 4 – 5 | 88% | 93% | 90% | 110% |
| Years 6 - 10 | 82% | 94% | 130% | |
| Years 11+ | 84% | | | |
| Duration of Disablement | OE Claims | | | |
| | Pre-1990 | 1990-92 | 1993-95 | 1996 & Later |
| Year 1 | 59% | 46% | 41% | 36% |
| Year 2 | 112% | 105% | 79% | 109% |

There does not appear to be a consistent trend in claim termination experience by incurral year for the short-term benefit periods. However, terminations for claims incurred in years 1993-95 for the long-term benefit periods are significantly lower in the first two years of disablement than those experienced in the earlier periods of incurral. This may be attributable in part to a higher proportion of medical claims, which were incurred in the 1993-95 period, as discussed in Section III. Claim terminations for incurral years 1996-99 showed some slight improvements over the 1993-95 period after the first year of disablement.

Ultimate Claim Termination Experience by Attained Age (Duration Years 11+)

Claim termination rates in the 85 CIDA table for the first 10 years of disablement are based on age at disablement and duration of claim. After 10 years of disablement (i.e., the ultimate period), claim termination rates in the 85 CIDA table are based on attained age during the claim year regardless of the age at disablement.

Table IV.d shows the A/E claim termination ratios after ten years of disablement, by attained age during the claim.

| Table IV.d A/E Claim Termination Ratios Duration of Disablement – 11 Years and Later Study Period: 1/1/1990 – 12/31/1999 (* Insufficient experience for measuring terminations) | | | |
|---|-----------|--------|----------|
| Attained Age | By Count | | |
| | Male | Female | Combined |
| 30-34 | * | * | * |
| 35-39 | 394% | 528% | 425% |
| 40-44 | 198% | 139% | 187% |
| 45-49 | 189% | 154% | 184% |
| 50-54 | 128% | 147% | 130% |
| 55-59 | 105% | 144% | 108% |
| 60-64 | 73% | 107% | 75% |
| 65-69 | 61% | * | 65% |
| 70-74 | 70% | * | 67% |
| 75+ | * | * | * |
| Attained Age | By Amount | | |
| | Male | Female | Total |
| 30-34 | * | * | * |
| 35-39 | 340% | 514% | 382% |
| 40-44 | 128% | 133% | 129% |
| 45-49 | 133% | 129% | 133% |
| 50-54 | 102% | 178% | 108% |
| 55-59 | 83% | 137% | 86% |
| 60-64 | 58% | 71% | 59% |
| 65-69 | 40% | * | 43% |
| 70-74 | 57% | * | 56% |
| 75+ | * | * | * |

Table IV.d shows a decreasing slope in the pattern of the ultimate claim termination rates relative to 85 CIDA. In general, it appears that the ultimate A/E claim termination rates are converging to 60-70% of 85 CIDA by count and 45-60% of 85 CIDA by amount for attained ages over 60, both sexes combined. Table IV.e shows that the number of claim terminations that are reflected in Table IV.d is quite small, particularly for attained ages

65 and higher. Thus, the volume may be too light to draw firm conclusions, particularly at attained ages over 65.

| <u>Table IV.e</u> Claim Terminations Duration of Disablement – 11 Years and Later Study Period: 1/1/1990 – 12/31/1999 | | | |
|--|----------|--------|----------|
| Attained Age | By Count | | |
| | Male | Female | Combined |
| 30-34 | 4 | 0 | 4 |
| 35-39 | 27 | 11 | 38 |
| 40-44 | 76 | 12 | 88 |
| 45-49 | 194 | 25 | 219 |
| 50-54 | 240 | 29 | 269 |
| 55-59 | 265 | 25 | 290 |
| 60-64 | 244 | 24 | 268 |
| 65-69 | 58 | 6 | 64 |
| 70-74 | 28 | 0 | 28 |
| 75+ | 6 | 0 | 6 |

Claim Termination Experience by Elimination Period

The 85 CIDA claim termination rates differentiate by elimination period only in the first 6 months of disablement. Table IV.f compares the A/E claim termination ratios by elimination period. Short-term benefit periods include those that are shorter than To Age 65-70. Long-term benefit periods include To Age 65-70 and Lifetime.

| <u>Table IV.f</u> A/E Claim Termination Ratios (by Amount) By Elimination Period (Days) Study Period: 1/1/1990 – 12/31/1999 (* Insufficient experience for measuring terminations) | | | | | |
|--|--|------|------|------|------|
| Duration of Disablement | A&S Claims with Short-term Benefit Periods | | | | |
| | Under 30 | 30 | 60 | 90 | 180+ |
| Quarter 1 | 62% | 51% | 19% | | |
| Quarter 2 | 104% | 72% | 45% | 37% | |
| Quarter 3 | 108% | 84% | 63% | 64% | 33% |
| Quarter 4 | 109% | 96% | 80% | 92% | 77% |
| Quarter 5 | 147% | 92% | 88% | 94% | 89% |
| Quarter 6 | 137% | 117% | 104% | 109% | 89% |
| Quarter 7 | 158% | 161% | 134% | 127% | 183% |
| Quarter 8 | 106% | 117% | 158% | 200% | 181% |
| Year 3 | 240% | 227% | 128% | 175% | 158% |
| Year 4 – 5 | 176% | 211% | 132% | 191% | 206% |
| Years 6 – 10 | 415% | 222% | * | 84% | 199% |

| Duration of Disablement | A&S Claims with Long-term Benefit Periods | | | | |
|-------------------------|---|------|------|------|------|
| | Under 30 | 30 | 60 | 90 | 180+ |
| Quarter 1 | 35% | 33% | 16% | | |
| Quarter 2 | 65% | 49% | 35% | 29% | |
| Quarter 3 | 85% | 61% | 49% | 45% | 23% |
| Quarter 4 | 95% | 74% | 60% | 56% | 50% |
| Quarter 5 | 116% | 71% | 63% | 59% | 53% |
| Quarter 6 | 94% | 81% | 81% | 75% | 74% |
| Quarter 7 | 132% | 100% | 100% | 93% | 92% |
| Quarter 8 | 119% | 100% | 110% | 112% | 100% |
| Year 3 | 109% | 103% | 107% | 102% | 95% |
| Year 4 – 5 | 92% | 92% | 87% | 93% | 89% |
| Years 6 - 10 | 148% | 105% | 99% | 84% | 90% |
| Years 11+ | 158% | 88% | 77% | 73% | 87% |

| Duration of Disablement | OE Contracts | | | |
|-------------------------|--------------|------|------|-----|
| | Under 30 | 30 | 60 | 90 |
| Quarter 1 | 31% | 23% | 13% | |
| Quarter 2 | 85% | 48% | 34% | 34% |
| Quarter 3 | 120% | 78% | 84% | 61% |
| Quarter 4 | 117% | 77% | 62% | 66% |
| Quarter 5 | 161% | 69% | 58% | 80% |
| Quarter 6 | * | 113% | 133% | 45% |
| Quarter 7 | * | 287% | 430% | * |
| Quarter 8 | * | 56% | * | * |

Table IV.f shows that significant differences in termination experience among elimination periods occur beyond the first 6 months of disablement. The A/E claim termination ratios generally decrease as the elimination period becomes longer for at least the first year for short-term benefit periods and the first year and a half of disablement for long-term benefit periods. This indicates a somewhat worsening termination experience relative to the 85 CIDA table as the elimination period lengthens.

Claim Termination Experience by Occupation Class

The 85 CIDA table differentiates termination rates by occupation class through the first three months of disablement. Table IV.g shows the A/E claim termination ratios (by amount) for the A&S contracts by elimination period (under 90 days and 90 days & higher) within Occupation Class 1 and Occupation Classes 2-4 combined.

| Table IV.g A/E Claim Termination Ratios (by Amount) for A&S Claims By Elimination Period and Occupation Class Study Period: 1/1/1990 – 12/31/1999 | | | | |
|--|--------------------------------------|------------|---|------------|
| With Short-term Benefit Periods | | | | |
| Duration of Disablement | Elimination Periods Under 90 Days | | Elimination Periods 90 Days and Higher | |
| | Occ Cl 1 | Occ Cl 2-4 | Occ Cl 1 | Occ Cl 2-4 |
| Year 1 | 60% | 64% | 47% | 62% |
| Year 2 | 113% | 112% | 115% | 112% |
| Year 3 | 162% | 219% | 165% | 185% |
| Year 4 – 5 | 180% | 169% | 197% | 188% |
| Years 6 - 10 | 151% | 254% | 130% | 86% |
| With Long-term Benefit Periods | | | | |
| Duration of Disablement | Elimination Periods Under 90 Days | | Elimination Periods 90 Days and Higher | |
| | Occ Cl 1 | Occ Cl 2-4 | Occ Cl 1 | Occ Cl 2-4 |
| Year 1 | 39% | 48% | 37% | 47% |
| Year 2 | 80% | 78% | 73% | 76% |
| Year 3 | 101% | 142% | 100% | 121% |
| Year 4 – 5 | 88% | 106% | 93% | 96% |
| Years 6 - 10 | 101% | 129% | 83% | 122% |
| Years 11+ | 78% | 156% | 76% | 76% |

For claims with long-term benefit periods, the A/E claim termination ratios for Class 1 are generally lower in most durations of disablement than they are in Classes 2-4. This relationship is not as consistent for claims with short-term benefit periods.

Table IV.h splits the A/E claim termination ratios for Class 1 in Table IV.g between Medical and Non-medical Occupation groupings. The occupations comprising the Medical and Non-medical occupations are described in Section III.

| Table IV.h A/E Claim Termination Ratios (by Amount) for A&S Claims By Elimination Period - Occupation Class 1 Only Spit Between Medical and Non-medical Occupational Groupings Study Period: 1/1/1990 – 12/31/1999 (* Insufficient experience for measuring terminations) | | | | |
|--|--------------------------------------|-------------|---|-------------|
| With Short-term Benefit Periods | | | | |
| Duration of Disablement | Elimination Periods Under 90 Days | | Elimination Periods 90 Days and Higher | |
| | Medical | Non-medical | Medical | Non-medical |
| Year 1 | 48% | 63% | 43% | 48% |
| Year 2 | 97% | 117% | 99% | 121% |
| Year 3 | 155% | 147% | 108% | 177% |
| Year 4 – 5 | 214% | 161% | 155% | 191% |
| Years 6 - 10 | * | 135% | * | 129% |
| With Long-term Benefit Periods | | | | |
| Duration of Disablement | Elimination Periods Under 90 Days | | Elimination Periods 90 Days and Higher | |
| | Medical | Non-medical | Medical | Non-medical |
| Year 1 | 38% | 39% | 35% | 39% |
| Year 2 | 68% | 94% | 63% | 85% |
| Year 3 | 83% | 121% | 84% | 120% |
| Year 4 – 5 | 72% | 107% | 77% | 111% |
| Years 6 - 10 | 83% | 122% | 64% | 105% |
| Years 11+ | 61% | 100% | 60% | 98% |

The Medical Occupations in occupation class 1 generally have significantly lower A/E claim termination ratios than the Non-medical Occupations.

Table IV.i splits the A/E claim termination ratios for Classes 2-4 in Table IV.g between Medical and Non-Medical Occupation groupings.

| Table IV.i A/E Claim Termination Ratios (by Amount) for A&S Claims By Elimination Period - Occupation Classes 2-4 Combined Spit Between Medical and Non-medical Occupational Groupings Study Period: 1/1/1990 – 12/31/1999 (* Insufficient experience for measuring terminations) | | | | |
|--|--------------------------------------|-------------|---|-------------|
| With Short-term Benefit Periods | | | | |
| Duration of Disablement | Elimination Periods Under 90 Days | | Elimination Periods 90 Days and Higher | |
| | Medical | Non-medical | Medical | Non-medical |
| Year 1 | 68% | 64% | 65% | 61% |
| Year 2 | 95% | 113% | 84% | 115% |
| Year 3 | 128% | 218% | 125% | 187% |
| Year 4 – 5 | 82% | 174% | 138% | 184% |
| Years 6 - 10 | * | 268% | * | 93% |
| With Long-term Benefit Periods | | | | |
| Duration of Disablement | Elimination Periods Under 90 Days | | Elimination Periods 90 Days and Higher | |
| | Medical | Non-medical | Medical | Non-medical |
| Year 1 | 47% | 49% | 50% | 44% |
| Year 2 | 64% | 82% | 61% | 85% |
| Year 3 | 80% | 157% | 108% | 128% |
| Year 4 – 5 | 95% | 108% | 77% | 103% |
| Years 6 - 10 | 95% | 136% | 86% | 128% |
| Years 11+ | * | 175% | * | 89% |

As with Class 1, the Medical Occupations in occupation classes 2-4 generally have significantly lower A/E claim termination ratios than the Non-medical Occupations.

Claim Termination Experience By Gender

Tables IV.j (short-term benefit periods) and IV.k (long-term benefit periods) compare the A/E claim termination ratios for A&S claims by gender within occupation class and elimination period groupings.

| <p style="text-align: center;">Table IV.j A/E Claim Termination Ratios (by Amount) A&S Claims with Short-term Benefit Periods – By Gender Study Period: 1/1/1990 – 12/31/1999 (* Insufficient experience for measuring terminations)</p> | | | | |
|--|-----------------------------------|--------|--------------------------------------|--------|
| Duration of Disablement | Occupation Class 1 | | | |
| | Elimination Periods Under 90 Days | | Elimination Periods 90 Days & Longer | |
| | Male | Female | Male | Female |
| Year 1 | 54% | 69% | 47% | 46% |
| Year 2 | 113% | 111% | 118% | 105% |
| Year 3 | 161% | 164% | 161% | 182% |
| Year 4 – 5 | 174% | 203% | 193% | 214% |
| Years 6 - 10 | 157% | 114% | 140% | * |
| Duration of Disablement | Occupation Class 2-4 | | | |
| | Elimination Periods Under 90 Days | | Elimination Periods 90 Days & Longer | |
| | Male | Female | Male | Female |
| Year 1 | 63% | 68% | 62% | 61% |
| Year 2 | 117% | 91% | 112% | 110% |
| Year 3 | 232% | 161% | 172% | 235% |
| Year 4 – 5 | 169% | 170% | 177% | 243% |
| Years 6 - 10 | 267% | * | 97% | |

There are no consistent differences in A/E claim termination ratios by gender for A&S contracts with short-term benefit periods.

| <p style="text-align: center;">Table IV.k A/E Claim Termination Ratios A/E Claim Termination Ratios (by Amount) A&S Claims with Long-term Benefit Periods – By Gender Study Period: 1/1/1990 – 12/31/1999 (* Insufficient experience for measuring terminations)</p> | | | | |
|--|-----------------------------------|--------|--------------------------------------|--------|
| Duration of Disablement | Occupation Class 1 | | | |
| | Elimination Periods Under 90 Days | | Elimination Periods 90 Days & Longer | |
| | Male | Female | Male | Female |
| Year 1 | 34% | 50% | 34% | 49% |
| Year 2 | 78% | 88% | 72% | 77% |
| Year 3 | 97% | 117% | 97% | 120% |
| Year 4 – 5 | 84% | 111% | 90% | 117% |
| Years 6 - 10 | 91% | 174% | 77% | 144% |
| Years 11+ | 74% | 139% | 73% | 110% |
| Duration of Disablement | Occupation Class 2-4 | | | |
| | Elimination Periods Under 90 Days | | Elimination Periods 90 Days & Longer | |
| | Male | Female | Male | Female |
| Year 1 | 47% | 51% | 41% | 55% |
| Year 2 | 80% | 74% | 73% | 83% |
| Year 3 | 161% | 93% | 119% | 128% |
| Year 4 – 5 | 107% | 101% | 90% | 117% |
| Years 6 - 10 | 123% | 159% | 122% | 119% |
| Years 11+ | 152% | 211% | 79% | * |

For A&S claims with long-term benefit periods, the female A/E claim termination ratios for occupation class 1 are consistently higher than the corresponding male ratios. This relationship is most obvious in quarterly duration 6 and later where the female ratios are significantly over 100%. A similar relationship exists in occupation classes 2-4 for elimination periods of 90 days and longer, but not for the shorter elimination periods.

Claim Termination Experience By Age at Disablement

Table IV.1 compares the A/E claim termination ratios for male claims with Short-term Benefit Periods by age at disablement.

| Table IV.1 A/E Claim Termination Ratios A/E Claim Termination Ratios (by Amount) A&S Claims with Short-term Benefit Periods – Males by Age at Disablement Study Period: 1/1/1990 – 12/31/1999 (* Insufficient experience for measuring terminations) | | | | |
|---|------------------------------------|---------|---------|---------|
| Occupation Class 1 | | | | |
| Duration of Disablement | Elimination Periods Under 90 Days | | | |
| | Under 40 | 40 – 49 | 50 - 59 | 60 – 64 |
| Year 1 | 59% | 51% | 53% | 58% |
| Year 2 | 95% | 92% | 130% | 163% |
| Year 3 | 149% | 104% | 174% | 405% |
| Year 4 – 5 | 156% | 120% | 179% | 502% |
| Years 6 - 10 | * | * | 204% | * |
| Duration of Disablement | Elimination Periods 90 Days & Over | | | |
| | Under 40 | 40 – 49 | 50 - 59 | 60 – 64 |
| Year 1 | 52% | 37% | 46% | 62% |
| Year 2 | 118% | 118% | 111% | 128% |
| Year 3 | 100% | 140% | 139% | 287% |
| Year 4 – 5 | 136% | 230% | 105% | 441% |
| Years 6 - 10 | * | * | * | * |
| Occupation Class 2-4 | | | | |
| Duration of Disablement | Elimination Periods Under 90 Days | | | |
| | Under 40 | 40 – 49 | 50 - 59 | 60 – 64 |
| Year 1 | 64% | 63% | 62% | 64% |
| Year 2 | 98% | 129% | 131% | 122% |
| Year 3 | 210% | 266% | 175% | 398% |
| Year 4 – 5 | 175% | 171% | 135% | 251% |
| Years 6 - 10 | 315% | 198% | 314% | * |
| Duration of Disablement | Elimination Periods 90 Days & Over | | | |
| | Under 40 | 40 – 49 | 50 - 59 | 60 – 64 |
| Year 1 | 64% | 60% | 61% | 68% |
| Year 2 | 97% | 114% | 143% | 108% |
| Year 3 | 157% | 186% | 165% | 224% |
| Year 4 – 5 | 142% | 164% | 182% | 444% |
| Years 6 - 10 | * | * | * | * |

Table IV.m compares the A/E claim termination ratios for female claims with Short-term Benefit Periods by age at disablement.

| Table IV.m A/E Claim Termination Ratios A/E Claim Termination Ratios (by Amount) A&S Claims with Short-term Benefit Periods – Females by Age at Disablement Study Period: 1/1/1990 – 12/31/1999 (* Insufficient experience for measuring terminations) | | | | |
|--|------------------------------------|---------|---------|---------|
| Occupation Class 1 | | | | |
| Duration of Disablement | Elimination Periods Under 90 Days | | | |
| | Under 40 | 40 – 49 | 50 - 59 | 60 – 64 |
| Year 1 | 74% | 67% | 61% | 60% |
| Year 2 | 108% | 105% | 134% | 100% |
| Year 3 | 129% | 156% | 240% | 260% |
| Year 4 – 5 | 150% | 308% | 78% | * |
| Years 6 - 10 | * | * | * | * |
| Duration of Disablement | Elimination Periods 90 Days & Over | | | |
| | Under 40 | 40 – 49 | 50 - 59 | 60 – 64 |
| Year 1 | 63% | 35% | 40% | 51% |
| Year 2 | 110% | 82% | 135% | 111% |
| Year 3 | 159% | 147% | 241% | * |
| Year 4 – 5 | 123% | 182% | 292% | * |
| Years 6 - 10 | * | * | * | * |
| Occupation Class 2-4 | | | | |
| Duration of Disablement | Elimination Periods Under 90 Days | | | |
| | Under 40 | 40 – 49 | 50 - 59 | 60 – 64 |
| Year 1 | 72% | 66% | 62% | 67% |
| Year 2 | 80% | 90% | 117% | 132% |
| Year 3 | 153% | 171% | 141% | 313% |
| Year 4 – 5 | 180% | 184% | * | * |
| Years 6 - 10 | * | * | * | * |
| Duration of Disablement | Elimination Periods 90 Days & Over | | | |
| | Under 40 | 40 – 49 | 50 - 59 | 60 – 64 |
| Year 1 | 71% | 55% | 48% | 59% |
| Year 2 | 99% | 93% | 154% | 103% |
| Year 3 | 116% | 165% | 620% | * |
| Year 4 – 5 | 234% | 311% | * | * |
| Years 6 - 10 | * | * | * | * |

Table IV.n compares the A/E claim termination ratios for male claims with Long-term Benefit Periods by age at disablement.

| <p align="center"><u>Table IV.n</u> A/E Claim Termination Ratios A/E Claim Termination Ratios (by Amount) A&S Claims with Long-term Benefit Periods – Males By Age at Disablement Study Period: 1/1/1990 – 12/31/1999 (* Insufficient experience for measuring terminations)</p> | | | | |
|--|------------------------------------|---------|---------|---------|
| Occupation Class 1 | | | | |
| Duration of Disablement | Elimination Periods Under 90 Days | | | |
| | Under 40 | 40 - 49 | 50 - 59 | 60 – 64 |
| Year 1 | 36% | 33% | 35% | 38% |
| Year 2 | 71% | 77% | 90% | 75% |
| Year 3 | 96% | 98% | 95% | 104% |
| Year 4 – 5 | 87% | 83% | 86% | 62% |
| Years 6 - 10 | 119% | 97% | 69% | 21% |
| Years 11+ | 110% | 66% | 49% | * |
| Duration of Disablement | Elimination Periods 90 Days & Over | | | |
| | Under 40 | 40 - 49 | 50 - 59 | 60 – 64 |
| Year 1 | 40% | 34% | 30% | 32% |
| Year 2 | 63% | 73% | 76% | 76% |
| Year 3 | 83% | 106% | 96% | 89% |
| Year 4 – 5 | 93% | 92% | 91% | 55% |
| Years 6 - 10 | 131% | 80% | 61% | 21% |
| Years 11+ | 90% | 87% | 45% | * |
| Occupation Class 2-4 | | | | |
| Duration of Disablement | Elimination Periods Under 90 Days | | | |
| | Under 40 | 40 - 49 | 50 - 59 | 60 – 64 |
| Year 1 | 44% | 45% | 54% | 51% |
| Year 2 | 76% | 66% | 113% | 113% |
| Year 3 | 100% | 237% | 147% | 158% |
| Year 4 – 5 | 115% | 116% | 84% | 103% |
| Years 6 - 10 | 179% | 130% | 73% | * |
| Years 11+ | 244% | 119% | 76% | * |
| Duration of Disablement | Elimination Periods 90 Days & Over | | | |
| | Under 40 | 40 - 49 | 50 - 59 | 60 – 64 |
| Year 1 | 42% | 40% | 43% | 40% |
| Year 2 | 72% | 74% | 74% | 83% |
| Year 3 | 106% | 136% | 127% | * |
| Year 4 – 5 | 109% | 60% | 116% | * |
| Years 6 - 10 | 176% | 86% | 126% | * |
| Years 11+ | 165% | 50% | * | * |

Table IV.o compares the A/E claim termination ratios for female claims with Long-term Benefit Periods by age at disablement.

| Table IV.o A/E Claim Termination Ratios A/E Claim Termination Ratios (by Amount) A&S Claims with Long-term Benefit Periods – Females By Age at Disablement Study Period: 1/1/1990 – 12/31/1999 (* Insufficient experience for measuring terminations) | | | | |
|---|------------------------------------|---------|---------|---------|
| Occupation Class 1 | | | | |
| Duration of Disablement | Elimination Periods Under 90 Days | | | |
| | Under 40 | 40 – 49 | 50 – 59 | 60 – 64 |
| Year 1 | 62% | 40% | 35% | 34% |
| Year 2 | 79% | 88% | 117% | 130% |
| Year 3 | 108% | 116% | 139% | * |
| Year 4 – 5 | 111% | 123% | 89% | * |
| Years 6 - 10 | 185% | 177% | 140% | * |
| Years 11+ | 147% | 176% | * | * |
| Duration of Disablement | Elimination Periods 90 Days & Over | | | |
| | Under 40 | 40 - 49 | 50 – 59 | 60 – 64 |
| Year 1 | 69% | 35% | 35% | 37% |
| Year 2 | 76% | 78% | 82% | 76% |
| Year 3 | 98% | 139% | 133% | * |
| Year 4 – 5 | 98% | 136% | 112% | 165% |
| Years 6 - 10 | 169% | 137% | 123% | * |
| Years 11+ | 100% | 153% | * | * |
| Occupation Class 2-4 | | | | |
| Duration of Disablement | Elimination Periods Under 90 Days | | | |
| | Under 40 | 40 - 49 | 50 – 59 | 60 – 64 |
| Year 1 | 57% | 44% | 47% | 37% |
| Year 2 | 69% | 82% | 79% | * |
| Year 3 | 91% | 101% | 92% | * |
| Year 4 – 5 | 64% | 138% | 129% | * |
| Years 6 - 10 | 168% | 177% | 110% | * |
| Years 11+ | * | 217% | * | * |
| Duration of Disablement | Elimination Periods 90 Days & Over | | | |
| | Under 40 | 40 - 49 | 50 – 59 | 60 – 64 |
| Year 1 | 66% | 45% | 42% | 34% |
| Year 2 | 77% | 88% | 89% | * |
| Year 3 | 102% | 151% | 151% | * |
| Year 4 – 5 | 63% | 135% | 159% | * |
| Years 6 - 10 | 226% | * | * | * |
| Years 11+ | * | * | * | * |

Section V: Incidence Experience by Policy Year and Issue Year

This section examines claim incidence experience by issue year and policy year. Mortality rates for individually underwritten life insurance have a select period of 20 years. The 85 CIDA claim incidence rates are aggregate rates, i.e., they do not assume a select period of any length. This study examines the existence of a select period for claim incidence. However, to study claim incidence patterns by policy year, it is important to consider cohorts of issue years, since industry underwriting and marketing practices have changed over time.

In this section, policy years are separated into years 1, 2, 3, 4, 5, 6-10, 11+. Issue years are separated into 4 periods: Pre-1990, 1990-92, 1993-95, and 1996-99.

By Contract Type

Table V.a shows the A/E claim incidence ratios by combinations of policy year and issue year for A&S contracts. Table V.b shows comparable A/E claim incidence ratios for OE contracts.

| Table V.a | | | | | |
|--|------------------------|---------|---------|---------|-------|
| A/E Claim Incidence Ratios by Issue Year and Policy Year | | | | | |
| A&S Contracts | | | | | |
| Study Period: 1/1/1990 – 12/31/1999 | | | | | |
| Policy Year | Issue Year (By Count) | | | | |
| | Pre-1990 | 1990-92 | 1993-95 | 1996-99 | Total |
| 1 | | 76% | 86% | 67% | 77% |
| 2 | 91% | 86% | 93% | 78% | 87% |
| 3 | 98% | 96% | 98% | 83% | 96% |
| 4 | 96% | 92% | 92% | 82% | 93% |
| 5 | 94% | 91% | 84% | | 91% |
| 6-10 | 85% | 79% | 82% | | 84% |
| 11+ | 73% | | | | 73% |
| Total | 78% | 84% | 90% | 74% | 80% |
| Policy Year | Issue Year (By Amount) | | | | |
| | Pre-1990 | 1990-92 | 1993-95 | 1996-99 | Total |
| 1 | | 83% | 87% | 63% | 79% |
| 2 | 106% | 95% | 93% | 74% | 93% |
| 3 | 120% | 116% | 110% | 78% | 112% |
| 4 | 122% | 112% | 105% | 90% | 113% |
| 5 | 122% | 111% | 94% | | 112% |
| 6-10 | 112% | 103% | 98% | | 109% |
| 11+ | 93% | | | | 93% |
| Total | 104% | 102% | 98% | 71% | 102% |

| Table V.b A/E Claim Incidence Ratios by Issue Year and Policy Year OE Contracts Study Period: 1/1/1990 – 12/31/1999 | | | | | |
|--|------------------------|---------|---------|---------|-------|
| Policy Year | Issue Year (By Count) | | | | |
| | Pre-1990 | 1990-92 | 1993-95 | 1996-99 | Total |
| 1 | | 55% | 43% | 32% | 47% |
| 2 | 76% | 63% | 50% | 41% | 58% |
| 3 | 75% | 66% | 52% | 42% | 63% |
| 4 | 81% | 61% | 44% | 52% | 64% |
| 5 | 78% | 55% | 43% | | 63% |
| 6-10 | 69% | 48% | 43% | | 63% |
| 11+ | 64% | | | | 64% |
| Total | 67% | 55% | 46% | 38% | 62% |
| Policy Year | Issue Year (By Amount) | | | | |
| | Pre-1990 | 1990-92 | 1993-95 | 1996-99 | Total |
| 1 | | 70% | 55% | 29% | 57% |
| 2 | 80% | 78% | 58% | 42% | 67% |
| 3 | 80% | 86% | 61% | 51% | 75% |
| 4 | 96% | 73% | 53% | 57% | 75% |
| 5 | 92% | 66% | 49% | | 73% |
| 6-10 | 86% | 63% | 53% | | 78% |
| 11+ | 74% | | | | 74% |
| Total | 82% | 70% | 55% | 39% | 73% |

For A&S contracts, A/E claim incidence ratios increase during the first three years and then generally decrease thereafter. This pattern is observed in each of the four issue year groups, although the slope of the ratios is not as dramatic in the 1996-99 period. However, these results suggest that a long select period, which is observed in individual life mortality, most likely does not exist for individual disability insurance. One of the key distinctions between individual life and individual disability income experience is that the latter typically reflects a significant anti-selection effect. The impact of anti-selection can be observed in the jump in the A/E claim incidence ratios after the 2-year contestable period observed in Table V.a followed by a general downward trend. As a result of this anti-selection effect, it becomes difficult to observe and measure the selective effect of individual underwriting on claim incidence. Section X explores claim incidence experience under various types of underwriting.

A similar pattern of A/E claim incidence ratios can be observed for OE contracts within the various issue year groups, although when these issue year groups are combined, the A/E ratios after policy year 2 appear to remain relatively flat.

The above tables also show that incidence experience has improved even within specific policy years. Contracts issued in 1996-99 have claim incidence ratios that are 70-80% of those issued in the previous periods, which reflects the general tightening of new

contracts and underwriting in this most recent issue year period as a reaction to the poor financial results experienced earlier in the 1990's.

Table V.c displays the A/E claim incidence ratios (by amount) for A&S contracts by the same combinations of policy year and issue year, additionally split by occupation class.

| <u>Table V.c</u> A/E Claim Incidence Ratios (by Amount) by Issue Year and Policy Year A&S Contracts – By Occupation Class Study Period: 1/1/1990 – 12/31/1999 | | | | | |
|--|----------------------|---------|---------|---------|-------|
| Policy Year | Occupation Class 1 | | | | |
| | Pre-1990 | 1990-92 | 1993-95 | 1996-99 | Total |
| 1 | | 89% | 93% | 63% | 84% |
| 2 | 123% | 104% | 101% | 79% | 102% |
| 3 | 135% | 129% | 123% | 82% | 125% |
| 4 | 138% | 126% | 115% | 101% | 127% |
| 5 | 138% | 122% | 101% | | 125% |
| 6-10 | 126% | 114% | 106% | | 122% |
| 11+ | 106% | | | | 106% |
| Total | 118% | 113% | 106% | 74% | 114% |
| Policy Year | Occupation Class 2-4 | | | | |
| | Pre-1990 | 1990-92 | 1993-95 | 1996-99 | Total |
| 1 | | 69% | 71% | 62% | 68% |
| 2 | 67% | 70% | 70% | 63% | 69% |
| 3 | 82% | 76% | 71% | 68% | 76% |
| 4 | 78% | 70% | 73% | 58% | 73% |
| 5 | 75% | 74% | 70% | | 74% |
| 6-10 | 68% | 60% | 66% | | 66% |
| 11+ | 63% | | | | 63% |
| Total | 66% | 68% | 71% | 63% | 67% |

The pattern of A/E claim incidence ratios (by amount) increasing during the first three policy years and then slowly declining is more evident in Occupation Class 1, but less so in the other occupation classes.

Table V.d. compares the A/E claim incidence ratios (by amount) for the Medical Occupations and Non-medical Occupations by Issue Year and Policy Year.

| Table V.d A/E Claim Incidence Ratios (by Amount) by Issue Year and Policy Year A&S Contracts – Medical vs. Non-medical Occupations Study Period: 1/1/1990 – 12/31/1999 | | | | | |
|---|------------------------------------|---------|---------|---------|-------|
| Policy Year | Medical – Occupation Class 1 | | | | |
| | Pre-1990 | 1990-92 | 1993-95 | 1996-99 | Total |
| 1 | | 97% | 102% | 81% | 96% |
| 2 | 126% | 118% | 116% | 95% | 116% |
| 3 | 143% | 149% | 147% | 100% | 144% |
| 4-5 | 160% | 150% | 139% | 143% | 152% |
| 6-10 | 147% | 148% | 142% | | 147% |
| 11+ | 125% | | | | 125% |
| Total | 138% | 138% | 130% | 93% | 136% |
| Policy Year | Non-medical Occupation Class 1 | | | | |
| | Pre-1990 | 1990-92 | 1993-95 | 1996-99 | Total |
| 1 | | 84% | 88% | 58% | 78% |
| 2 | 121% | 95% | 92% | 74% | 94% |
| 3 | 129% | 114% | 108% | 75% | 112% |
| 4-5 | 121% | 103% | 88% | 86% | 106% |
| 6-10 | 108% | 85% | 79% | | 101% |
| 11+ | 92% | | | | 92% |
| Total | 103% | 94% | 91% | 67% | 98% |
| Policy Year | Medical - Occupation Classes 2-4 | | | | |
| | Pre-1990 | 1990-92 | 1993-95 | 1996-99 | Total |
| 1 | | 80% | 99% | 71% | 84% |
| 2 | 85% | 98% | 101% | 71% | 93% |
| 3 | 113% | 93% | 103% | 81% | 99% |
| 4-5 | 93% | 100% | 110% | 85% | 102% |
| 6-10 | 81% | 84% | 101% | | 84% |
| 11+ | 71% | | | | 71% |
| Total | 80% | 90% | 104% | 73% | 88% |
| Policy Year | Non-medical Occupation Classes 2-4 | | | | |
| | Pre-1990 | 1990-92 | 1993-95 | 1996-99 | Total |
| 1 | | 67% | 63% | 60% | 64% |
| 2 | 65% | 65% | 61% | 61% | 63% |
| 3 | 79% | 73% | 61% | 65% | 71% |
| 4-5 | 74% | 66% | 58% | 51% | 68% |
| 6-10 | 67% | 55% | 54% | | 64% |
| 11+ | 62% | | | | 62% |
| Total | 65% | 63% | 60% | 61% | 64% |

Similar patterns of A/E ratios by policy year emerge for the various groupings in Table V.d, although the overall levels of ratios are clearly different. Each of the four groupings, except non-medical occupations in Occupation Classes 2-4, show markedly improved claim experience for business issued in 1996 and later.

Section VI: Impact of Benefit Provisions on Incidence and Termination Experience

This section discusses the impact of various product provisions on claim incidence and terminations. Specifically, it examines the impact on claim incidence and termination experience from lifetime benefit periods, cost-of-living adjustment benefits, total and residual disability benefits, and social insurance supplement benefits.

Lifetime Benefit Period

Table VI.a shows A/E claim incidence ratios by benefit period within the four occupation classes and five elimination period groups. The long-term benefit periods, which were combined in the earlier sections of this report, have been separated into To Age 65-70 and Lifetime benefit period groupings.

| Table VI.a A/E Claim Incidence Ratios (by Amount) For A&S Contracts by Benefit Period Study Period: 1/1/1990 to 12/31/1999 (* Insufficient experience for measuring incidence) | | | |
|--|----------------------|--------------|----------|
| Elimination Period | Occupation Class 1 | | |
| | Short-term | To Age 65-70 | Lifetime |
| Under 30 | 142% | 85% | 97% |
| 30 | 103% | 105% | 130% |
| 60 | 64% | 75% | 98% |
| 90 | 116% | 127% | 180% |
| 180+ | 102% | 101% | 164% |
| Total | 104% | 107% | 142% |
| Elimination Period | Occupation Class 2-4 | | |
| | Short-term | To Age 65-70 | Lifetime |
| Under 30 | 62% | 35% | 93% |
| 30 | 68% | 68% | 99% |
| 60 | 52% | 53% | 56% |
| 90 | 74% | 83% | 124% |
| 180+ | 82% | 87% | 96% |
| Total | 65% | 68% | 90% |

The increases in A/E claim incidence ratios between To Age 65-70 benefit periods and the Lifetime benefit period demonstrate the material impact that lifetime benefit periods may have on the decision to file a disability claim. On average, claim incidence for policies with lifetime benefits increased by 32% over incidence for policies with To Age 65-70 benefit periods.

Table VI.b splits the results in Table VI.a for Occupation Class 1 between Medical and Non-medical occupations.

| <p align="center"><u>Table VI.b</u> A/E Claim Incidence Ratios (by Amount) For A&S Contracts by Benefit Period – Occ Class 1 Split Between Medical and Non-medical Occupational Groupings Study Period: 1/1/1990 to 12/31/1999</p> | | | |
|--|-------------------------|--------------|----------|
| Elimination Period | Medical Occupations | | |
| | Short-term | To Age 65-70 | Lifetime |
| Under 30 | 92% | 74% | 120% |
| 30 | 105% | 108% | 132% |
| 60 | 69% | 87% | 103% |
| 90 | 146% | 164% | 208% |
| 180+ | 137% | 158% | 242% |
| Total | 109% | 131% | 156% |
| Elimination Period | Non-medical Occupations | | |
| | Short-term | To Age 65-70 | Lifetime |
| Under 30 | 145% | 94% | 84% |
| 30 | 102% | 102% | 127% |
| 60 | 62% | 66% | 88% |
| 90 | 102% | 100% | 141% |
| 180+ | 91% | 81% | 115% |
| Total | 102% | 90% | 122% |

Table VI.b shows that the higher claim incidence for policies with lifetime benefits occurs in both medical (19% higher) and non-medical occupations (36% higher). The non-medical occupations show very little difference in claim incidence ratios between short-term and To Age 65-70 benefit periods, except at the Under 30 Day elimination periods, where there is higher claim incidence for the short-term benefit periods.

Table IV.c in Section IV compares A/E claim termination ratios for A&S contracts between short-term benefit periods and long-term benefit periods. Table VI.c below shows A/E claim termination rates for the long-term A&S claims split between To Age 65-70 and Lifetime benefit periods.

| Table VI.c A/E Claim Termination Ratios (by Amount) A&S Claims with Long-term Benefit Periods Study Period 1/1/1990 to 12/31/1999 | | | | |
|--|--------------------|----------|------------------------|----------|
| Duration of Disablement | Occupation Class 1 | | Occupation Classes 2-4 | |
| | To Age 65-70 | Lifetime | To Age 65-70 | Lifetime |
| Year 1 | 39% | 35% | 49% | 45% |
| Year 2 | 81% | 65% | 81% | 63% |
| Year 3 | 106% | 90% | 148% | 72% |
| Year 4 – 5 | 99% | 77% | 107% | 81% |
| Years 6 - 10 | 95% | 86% | 120% | 157% |
| Years 11+ | 81% | 76% | 122% | 205% |

The lower A/E claim termination ratios associated with lifetime benefits is clearly evident for all durations of disablement in Occupation Class 1, but only during the first 5 years of disablement in the other occupation classes.

Cost-of-living Adjustment (COLA) Benefits

COLA benefit riders annually increase the base benefit during a period disablement. The increases are based on a fixed rate or the U.S. inflation rate (CPI-U) subject to maximum amounts. This study looks at the differences in claim incidence and claim termination rates between policies and claims with and without COLA riders.

The IDEC was not able to collect data on the annual percentage increases among the various COLA benefit riders or on type of COLA increase (fixed or based on the Consumer Price Index). Thus, the experience of all types of COLA benefit riders was combined for the purpose of this study.

Table VI.d compares the A/E claim incidence ratios (amount) for A&S contracts with long-term benefit periods between those that have COLA riders and those that don't. COLA riders are generally not available on policies with short-term benefit periods.

| Table VI.d A/E Claim Incidence Ratios (by Amount) A&S Contracts with Long-term Benefit Periods With and Without COLA Benefits Study Period 1/1/1990 to 12/31/1999 | | | | |
|---|----------------------|-----------|-------------------|--------------|
| Elimination Period (Days) | Occupation Class 1 | | | |
| | To Age 65-70 | | Lifetime Benefits | |
| | Without COLA | With COLA | Without COLA | With COLA |
| Under 30 | 86% | 41% | 99% | 83% |
| 30 | 107% | 101% | 126% | 137% |
| 60 | 71% | 80% | 96% | 101% |
| 90 | 127% | 130% | 172% | 190% |
| 180+ | 102% | 99% | 165% | 163% |
| Total | 106% | 110% | 135% | 153% |
| Elimination Period (Days) | Occupation Class 2-4 | | | |
| | To Age 65-70 | | Lifetime Benefits | |
| | Without COLA | With COLA | Without COLA | With COLA |
| Under 30 | 34% | 54% | 95% | |
| 30 | 68% | 69% | 104% | 75% |
| 60 | 54% | 45% | 57% | 52% |
| 90 | 82% | 89% | 130% | 114% |
| 180+ | 94% | 68% | 86% | 118% |
| Total | 68% | 70% | 93% | 82% |

Except in Occupation Class 1 with lifetime benefits, the presence of COLA does not appear to have a significant impact on incidence rates.

Table VI.e shows that the presence of COLA benefits lowers the claim termination rates in all durations for all occupation classes.

| Table VI.e A/E Claim Termination Ratios (by Amount) A&S Contracts with Long-term Benefit Periods Study Period 1/1/1990 to 12/31/1999 | | | | |
|---|--------------------|-----------|------------------------|-----------|
| Duration of Disablement | Occupation Class 1 | | Occupation Classes 2-4 | |
| | Without COLA | With COLA | Without COLA | With COLA |
| Quarter 1 | 28% | 23% | 41% | 32% |
| Quarter 2 | 44% | 35% | 53% | 40% |
| Quarter 3 | 58% | 50% | 64% | 58% |
| Quarter 4 | 73% | 59% | 70% | 60% |
| Quarter 5 | 70% | 61% | 68% | 58% |
| Quarter 6 | 85% | 76% | 83% | 71% |
| Quarter 7 | 109% | 93% | 97% | 74% |
| Quarter 8 | 119% | 89% | 78% | 133% |
| Year 3 | 111% | 81% | 158% | 69% |
| Year 4 – 5 | 93% | 79% | 109% | 97% |
| Years 6 - 10 | 110% | 88% | 133% | 111% |

To illustrate the impact of COLA and lifetime benefits together on claim terminations, Table VI.f splits the A/E claim termination ratios for Occupation Class 1 in Table VI.e between claims with and without lifetime benefits.

| Table VI.f A/E Claim Termination Ratios (by Amount) A&S Claims with Long-term Benefit Periods – Occupation Class 1 Study Period 1/1/1990 to 12/31/1999 | | | | |
|---|------------------------------|-----------|--------------------------|-----------|
| Duration of Disablement | To Age 65-70 Benefit Periods | | Lifetime Benefit Periods | |
| | Without COLA | With COLA | Without COLA | With COLA |
| Quarter 1 | 30% | 26% | 25% | 20% |
| Quarter 2 | 45% | 37% | 42% | 33% |
| Quarter 3 | 63% | 56% | 50% | 43% |
| Quarter 4 | 79% | 71% | 64% | 46% |
| Quarter 5 | 77% | 74% | 61% | 49% |
| Quarter 6 | 87% | 85% | 82% | 69% |
| Quarter 7 | 126% | 107% | 86% | 80% |
| Quarter 8 | 135% | 94% | 98% | 83% |
| Year 3 | 126% | 93% | 93% | 71% |
| Year 4 – 5 | 99% | 101% | 86% | 61% |
| Years 6 - 10 | 125% | 89% | 92% | 86% |

The presence of both COLA and lifetime benefits in claims produces a severe dampening effect on claim terminations in all durations.

Total and Residual Disability Benefits

Many IDI policies cover residual disabilities in addition to total disabilities. In general, total disability benefits are paid when the insured is unable to perform all of the important duties of his or her occupation due to an accident or sickness, whereas residual benefits are paid when the insured is unable to perform some of the important duties or unable to perform the important duties for as long a time due to an accident or sickness and as a result incurs at least a minimum (e.g., 20%) loss of income.

There are many variations in the types of residual benefits offered by IDI carriers, which this study is unable to explore. However, the study does differentiate between contracts that do not have residual benefits (Total Only) and those that do have residual benefits (Total & Residual) either in the base contract or through the addition of residual riders.

Table VI.g shows the percentage of contracts (in terms of exposed amount in the study) having Total & Residual benefits among A&S contracts that have either Total Only or Total & Residual benefits. The table is split by benefit period (short-term, long-term), elimination period (30, 60, 90, and 180+), Occupation Class (1 and 2-4) and gender.

| Table VI.g A&S Contracts with Total Only or Total & Residual Disability Percentage of Contracts (by Amount) with Total & Residual | | | | |
|--|----------------------------|--------|------------------------|--------|
| | Short-term Benefit Periods | | | |
| | Occupation Class 1 | | Occupation Classes 2-4 | |
| Elimination Period (Days) | Male | Female | Male | Female |
| 30 | 49% | 35% | 10% | 12% |
| 60 | 68% | 62% | 21% | 28% |
| 90 | 68% | 64% | 27% | 34% |
| 180+ | 66% | 56% | 19% | 21% |
| Total | 62% | 52% | 17% | 23% |
| | Long-term Benefit Periods | | | |
| | Occupation Class 1 | | Occupation Classes 2-4 | |
| Elimination Period (Days) | Male | Female | Male | Female |
| 30 | 77% | 77% | 32% | 46% |
| 60 | 89% | 85% | 54% | 55% |
| 90 | 90% | 88% | 65% | 59% |
| 180+ | 87% | 86% | 58% | 52% |
| Total | 89% | 87% | 57% | 56% |

Except for contracts with short-term benefit periods in Occupation Classes 2-4, Total & Residual benefits represent a majority of contracts. They represent well over 80% of the contracts for contracts with long-term benefit periods in Occupation Class 1.

Table VI.h compares the A/E claim incidence ratios on A&S contracts with Total Only (TO) benefits to those with Total & Residual (T&R) benefits. The T&R/TO ratios measure the T&R incidence relative to TO incidence.

Note that claim incidence is calculated in terms of the full or maximum monthly amount, not reduced for the effects of residual. In other words, even if the first payment was for less than the full monthly amount, the full amount is used to calculate the claim incidence. The study did not have the information available to it to do this any other way.

| <p style="text-align: center;"><u>Table VI.h</u> A/E Claim Incidence Ratios (by Amount) Comparison – A&S Contracts Total Only vs. Total & Residual Study Period: 1/1/1990 to 12/31/1999</p> | | | | | | |
|--|---|---------------------|--------|------------|---------------------|--------|
| Elimination Period (Days) | Short-term Benefit Periods - Occupation Class 1 | | | | | |
| | Male | | | Female | | |
| | Total Only | Total & Residual | T&R/TO | Total Only | Total & Residual | T&R/TO |
| 30 | 116% | 85% | 0.73 | 111% | 92% | 0.83 |
| 60 | 62% | 68% | 1.09 | 57% | 63% | 1.10 |
| 90 | 114% | 123% | 1.08 | 96% | 111% | 1.16 |
| 180+ | 95% | 109% | 1.15 | 114% | 82% | 0.72 |
| Total | 114% | 95% | 0.83 | 112% | 88% | 0.79 |
| Elimination Period (Days) | Short-term Benefit Periods - Occupation Classes 2-4 | | | | | |
| | Male | | | Female | | |
| | Total Only | Total & Residual | T&R/TO | Total Only | Total & Residual | T&R/TO |
| 30 | 67% | 64% | 0.95 | 72% | 71% | 0.98 |
| 60 | 53% | 49% | 0.92 | 49% | 64% | 1.30 |
| 90 | 70% | 70% | 1.00 | 82% | 97% | 1.18 |
| 180+ | 84% | 55% | 0.65 | 96% | 85% | 0.88 |
| Total | 65% | 60% | 0.93 | 68% | 75% | 1.09 |
| Elimination Period (Days) | Long-term Benefit Periods - Occupation Class 1 | | | | | |
| | Male | | | Female | | |
| | Total Only | Total & Residual | T&R/TO | Total Only | Total & Residual | T&R/TO |
| 30 | 114% | 106% | 0.93 | 120% | 124% | 1.03 |
| 60 | 80% | 87% | 1.09 | 63% | 72% | 1.15 |
| 90 | 144% | 146% | 1.01 | 102% | 122% | 1.20 |
| 180+ | 127% | 114% | 0.89 | 82% | 85% | 1.04 |
| Total | 119% | 121% | 1.02 | 96% | 106% | 1.11 |

| Elimination Period (Days) | Long-term Benefit Periods - Occupation Classes 2-4 | | | | | |
|---------------------------|--|------------------|--------|------------|------------------|--------|
| | Male | | | Female | | |
| | Total Only | Total & Residual | T&R/TO | Total Only | Total & Residual | T&R/TO |
| 30 | 65% | 70% | 1.08 | 80% | 91% | 1.14 |
| 60 | 50% | 51% | 1.02 | 51% | 64% | 1.26 |
| 90 | 74% | 88% | 1.18 | 77% | 108% | 1.39 |
| 180+ | 97% | 80% | 0.83 | 102% | 72% | 0.70 |
| Total | 64% | 72% | 1.13 | 71% | 87% | 1.23 |

Claimants with T&R benefits are typically allowed to satisfy the elimination period while totally or residually disabled. Thus, it might be expected that T&R contracts would have higher claim incidence. However Table VI.h does not appear to validate this expectation since the T&R/TO ratios are not consistently greater than 1.00.

Table VI.i breaks down the T&R/TO ratios for occupation class 1 with long-term benefit periods by attained age, gender and elimination period to identify any differences by attained age.

| Table VI.i T&R/TO Claim Incidence Ratios by Attained Age, Gender and Elimination Period (Days) – A&S Contracts Occupation Class 1 – Long-term Benefit Periods Study Period: 1/1/1990 to 12/31/1999 | | | | | |
|--|--------|------|------|------|------|
| Attained Age | Male | | | | |
| | 30 | 60 | 90 | 180+ | All |
| <30 | 1.07 | 1.15 | 1.31 | 2.83 | 1.28 |
| 30-39 | 0.79 | 1.10 | 1.03 | 0.78 | 0.95 |
| 40-49 | 0.95 | 1.16 | 1.06 | 1.00 | 1.08 |
| 50-59 | 0.91 | 1.03 | 0.94 | 0.78 | 0.96 |
| 60-64 | 0.86 | 1.04 | 0.90 | 0.91 | 0.94 |
| Attained Age | Female | | | | |
| | 30 | 60 | 90 | 180+ | All |
| <30 | 1.27 | 1.84 | 1.83 | 1.50 | 1.51 |
| 30-39 | 1.18 | 1.16 | 1.32 | 1.16 | 1.19 |
| 40-49 | 0.86 | 1.05 | 1.07 | 1.10 | 0.99 |
| 50-59 | 0.72 | 1.09 | 1.09 | 1.02 | 0.97 |
| 60-64 | 0.89 | 0.90 | 0.85 | 0.66 | 0.88 |

The T&R/TO ratios for attained ages under 30 appear to be generally higher than the ratios at the other ages. It also appears that the relatively low T&R/TO ratios at ages 60-64 suggest that the residual benefit is not being abused as a vehicle for transitioning into retirement as once feared when the benefit was introduced in the late 1970's. Other than

for these observations, there are no consistent trends by attained age emerging in the T&R/TD ratios in Table VI.i. In general, it cannot be concluded from these results that the combination of total and residual disability contract provisions consistently increases the incidence rates.

The claim termination experience for total only and total & residual claims could be expected to show somewhat different patterns. Claimants with total & residual benefits may return to work and still receive benefits in proportion to the loss of income if the loss is attributable to the accident or sickness that caused the disability. As a result, a claimant with total & residual benefits may be expected to stay on claim longer since returning to work may not terminate the claim. On the other hand, returning to work in some capacity while residually disabled may accelerate a full recovery.

Table VI.j compares the A/E claim termination ratios between claims with Total Only benefits and those with Total & Residual benefits. This claim termination experience is based on the length of time on claim and does not reflect the level of benefits (relative to the maximum benefit) being paid. Data among the study contributors could not be obtained in sufficient detail to measure ratios of the actual benefits paid on Total & Residual claims to the maximum benefits that could be paid, which is a significant component in fully understanding the difference between Total Only and Total & Residual claims.

| <p style="text-align: center;">Table VI.j A/E Claim Termination Ratio (Amount) Comparison Total Only vs. Total & Residual Disability All Elimination Periods Combined Study Period: 1/1/1990 – 12/31/2003</p> | | | | | | |
|---|---------------------------|------------------|-------------|------------------------|------------------|-------------|
| Duration of Disablement | Long-term Benefit Periods | | | | | |
| | Occupation Class 1 | | | Occupation Classes 2-4 | | |
| | Total Only | Total & Residual | T&R/TO | Total Only | Total & Residual | T&R/TO |
| Quarter 1 | 31% | 25% | 0.82 | 45% | 30% | 0.66 |
| Quarter 2 | 42% | 33% | 0.79 | 55% | 37% | 0.68 |
| Quarter 3 | 48% | 46% | 0.96 | 62% | 53% | 0.87 |
| Quarter 4 | 67% | 59% | 0.88 | 75% | 63% | 0.84 |
| Quarter 5 | 67% | 60% | 0.89 | 76% | 57% | 0.75 |
| Quarter 6 | 79% | 78% | 0.99 | 76% | 71% | 0.93 |
| Quarter 7 | 83% | 96% | 1.16 | 103% | 107% | 1.04 |
| Quarter 8 | 117% | 109% | 0.93 | 82% | 99% | 1.20 |
| Year 3 | 100% | 100% | 1.00 | 171% | 98% | 0.57 |
| Year 4 – 5 | 89% | 93% | 1.05 | 101% | 103% | 1.01 |
| Years 6 - 10 | 92% | 92% | 1.00 | 122% | 132% | 1.08 |

| Duration of Disablement | Short-term Benefit Periods | | | | | |
|-------------------------|----------------------------|------------------|-------------|------------------------|------------------|-------------|
| | Occupation Class 1 | | | Occupation Classes 2-4 | | |
| | Total Only | Total & Residual | T&R/TO | Total Only | Total & Residual | T&R/TO |
| Quarter 1 | 47% | 22% | 0.47 | 55% | 32% | 0.58 |
| Quarter 2 | 61% | 37% | 0.60 | 73% | 45% | 0.62 |
| Quarter 3 | 72% | 59% | 0.82 | 81% | 79% | 0.98 |
| Quarter 4 | 92% | 83% | 0.91 | 93% | 105% | 1.13 |
| Quarter 5 | 100% | 85% | 0.85 | 99% | 95% | 0.95 |
| Quarter 6 | 126% | 105% | 0.83 | 103% | 125% | 1.22 |
| Quarter 7 | 159% | 145% | 0.91 | 135% | 161% | 1.19 |
| Quarter 8 | 150% | 198% | 1.32 | 122% | 171% | 1.40 |
| Year 3 | 205% | 145% | 0.71 | 228% | 134% | 0.59 |
| Year 4 – 5 | 212% | 178% | 0.84 | 175% | 172% | 0.99 |

The T&R/TO ratios in Table VI.j are the ratios of the A/E claim termination ratios for Total & Residual claims to the A/E claim termination ratios for Total Only claims. The T&R/TO ratios for long-term benefit periods are generally less than 1.00 for the first 6-7 quarters of disablement and then are moderately above 1.00 thereafter. This pattern could indicate that during the first year and half of disablement a portion of the claimants with Total & Residual benefits are returning to work in some partial capacity and, thus, extending the time on claim. The subsequent T&R/TO ratios, which are generally higher than 1.00, suggest that going back to work early in some partial capacity in the claim may have a favorable impact on the later claim terminations.

This pattern of T&R/TO claim termination ratios is similar for claims with short-term benefit periods during the first two years of disablement. In contrast to claims with the long-term benefit periods, the T&R/TO ratios for short-term benefit periods are significantly lower than 1.00 after two years of disablement.

Social Insurance Supplement Benefits

Social Insurance Supplement (SIS) riders are optional benefits offered by most IDI carriers. These riders allow the contracts to integrate with Social Security, Worker's Compensation and other social insurance disability benefits. In general, base IDI contracts do not integrate with social insurance disability benefits.

IDI carriers will typically offer higher issue and participation limits (i.e., the maximum benefits that can be purchased relative to an applicant's earned income) when an SIS rider is purchased. However, many carriers have allowed their professional and executive occupation classes to purchase the higher level of benefits without requiring the addition of an SIS rider.

A common SIS rider will pay the rider's monthly benefit if the claimant does not qualify for social insurance disability benefits and pay a portion, or no benefit, if the claimant

does qualify for social insurance disability benefits. Other SIS riders simply offset the rider benefit dollar-for-dollar with any social insurance disability benefits received.

Table VI.k compares claim incidence rates with and without SIS riders. It shows the A/E claim incidence ratios for policies with SIS riders divided by the A/E claim incidence ratios for policies without SIS riders.

| Table VI.k Comparison of A/E Claim Incidence Ratios (by Amount) – A&S Contracts With SIS Riders/Without SIS Riders Study Period:1/1/1990 – 12/31/1999 | | | | | | |
|--|----------------------------------|-----------------------------|-------------------------|----------------------------------|-----------------------------|-------------------------|
| Attained Age | Long-term Benefit Periods | | | | | |
| | Occupation Class 1 | | | Occupation Classes 2-4 | | |
| | Elimination Period Under 90 Days | Elimination Period 90+ Days | All Elimination Periods | Elimination Period Under 90 Days | Elimination Period 90+ Days | All Elimination Periods |
| <30 | 0.91 | 0.81 | 0.89 | 1.05 | 0.87 | 0.99 |
| 30-39 | 0.68 | 0.88 | 0.73 | 1.01 | 0.81 | 0.98 |
| 40-49 | 0.85 | 0.91 | 0.85 | 1.00 | 0.82 | 0.97 |
| 50-59 | 0.81 | 0.83 | 0.80 | 0.85 | 0.83 | 0.86 |
| 60-64 | 0.94 | 0.80 | 0.83 | 0.79 | 0.96 | 0.86 |
| Attained Age | Short-term Benefit Periods | | | | | |
| | Occupation Class 1 | | | Occupation Classes 2-4 | | |
| | Elimination Period Under 90 Days | Elimination Period 90+ Days | All Elimination Periods | Elimination Period Under 90 Days | Elimination Period 90+ Days | All Elimination Periods |
| <30 | 0.97 | 0.60 | 0.87 | 1.31 | 1.21 | 1.32 |
| 30-39 | 0.92 | 0.79 | 0.90 | 1.12 | 0.92 | 1.13 |
| 40-49 | 0.86 | 0.72 | 0.84 | 1.13 | 0.88 | 1.10 |
| 50-59 | 0.81 | 0.85 | 0.85 | 0.89 | 0.94 | 0.94 |
| 60-64 | 1.02 | 1.24 | 1.12 | 0.78 | 1.08 | 0.88 |

For the most part in Occupation Class 1, the A/E incidence ratios for policies with SIS riders are consistently lower than those for policies without SIS riders. Since policies in Occupation Class 1 were not generally required by IDI carriers to purchase SIS riders to obtain the higher amounts of monthly benefit, those that chose the SIS riders may have been less likely to anti-select against the companies.

In Occupation Classes 2-4, there are more occurrences where the A/E incidence ratios for policies with SIS riders are higher than those for policies without SIS riders. These cases are more evident at attained ages under 50 and the short-term benefit periods.

Table VI.l compares claim termination rates with and without SIS riders. It shows the A/E claim termination ratios for claims with SIS riders divided by the A/E claim incidence ratios for claims without SIS riders.

| Table VI.1 Comparison of A/E Claim Termination Ratios – A&S Contracts With SIS Riders/Without SIS Riders Study Period 1/1/1990 – 12/31/1999 | | | | |
|--|---------------------------|------------|----------------------------|------------|
| Duration of Disablement | Long-term Benefit Periods | | Short-term Benefit Periods | |
| | Occ Cl 1 | Occ Cl 2-4 | Occ Cl 1 | Occ Cl 2-4 |
| Quarter 1 | 0.94 | 0.91 | 0.87 | 0.75 |
| Quarter 2 | 0.95 | 0.96 | 0.87 | 0.78 |
| Quarter 3 | 1.00 | 0.88 | 0.92 | 0.91 |
| Quarter 4 | 1.18 | 1.26 | 0.93 | 1.05 |
| Quarter 5 | 1.37 | 1.29 | 1.58 | 0.81 |
| Quarter 6 | 1.17 | 1.23 | 1.20 | 0.92 |
| Quarter 7 | 1.23 | 1.09 | 0.99 | 0.82 |
| Quarter 8 | 1.12 | 0.92 | 1.08 | 1.26 |
| Year 3 | 1.11 | 0.98 | 1.26 | 0.80 |
| Year 4 – 5 | 1.23 | 1.47 | 1.12 | 1.07 |
| Years 6 - 10 | 1.24 | 0.93 | | |

The impact of SIS riders on claim termination patterns is evident in Table VI.1. During the first 3 quarters of the duration of disablement, claim termination rates are somewhat lower for claims with SIS riders than those for claims without SIS riders. This period is prior to qualifying for any social insurance disability benefits. In the later durations of disablement, the claim termination rates for claims with SIS riders are in general significantly higher than claim termination rates for claims without SIS riders. In this period, more claims are qualifying for social insurance benefits. Those that do not have SIS riders and qualify for social insurance disability are receiving generally higher benefits and, thus, have less financial incentive to go return to work.

Section VII: Incidence and Termination Experience by Occupation

Most contributors were able to assign specific occupation codes to their policies and claims. Although there is no consistent coding system for occupations, the IDEC manually reviewed the occupational codes of the contributors and assigned them into the following occupations:

| <u>Medical Occupations</u> | <u>Non-medical Occupations</u> |
|-------------------------------|----------------------------------|
| Chiropractors | Accountants & Actuaries |
| Dentists | Engineers & Architects |
| Nurses | Executives & Managers |
| Physicians & Surgeons | Insurance Sales |
| Podiatrists | Lawyers |
| Psychologists & Psychiatrists | Other Sales |
| Pharmacists | Stockbrokers & Commodity Traders |
| Veterinarians | Teachers |
| Other Medical Occupations | Other Occupations |

The “Other Occupation” category consists mainly of occupations not included in the specific occupation groups. Since some contributors were not able to identify their policies and claims by occupation or at least not in this level of detail, the “Other Occupations” also includes policies that would have otherwise fallen in the specified occupations.

Incidence Experience by Occupation

Table VII.a shows the percent of the A&S and OE exposure in terms of count and amount represented by the occupational groups. The average face amount for each occupation is also provided. Physicians and surgeons comprise the largest segment in both A&S and OE policies, followed by executives and managers.

Table VII.a
Percent of Total Exposure and Average Face Amount per Policy
By Occupation

| Occupational | A&S Policies | | | OE Policies | | |
|----------------------------------|----------------|----------------|---------------------|----------------|----------------|---------------------|
| | Policies | Amount | Average Face/Policy | Policies | Amount | Average Face/Policy |
| Physicians & Surgeons | 17.42% | 29.16% | 3,678 | 33.21% | 45.54% | 7,406 |
| Executives & Managers | 11.78% | 14.29% | 2,665 | 2.96% | 3.32% | 6,052 |
| Lawyers | 6.87% | 8.01% | 2,563 | 9.07% | 8.22% | 4,895 |
| Other Sales | 4.44% | 4.00% | 1,981 | 1.32% | 0.95% | 3,861 |
| Dentists | 3.48% | 3.96% | 2,502 | 17.84% | 17.15% | 5,190 |
| Accountants & Actuaries | 2.55% | 2.13% | 1,833 | 1.95% | 1.60% | 4,455 |
| Insurance Sales | 2.49% | 1.96% | 1,733 | 3.86% | 1.99% | 2,782 |
| Engineers & Architects | 2.13% | 1.88% | 1,942 | 0.76% | 0.71% | 5,072 |
| Other Medical Occupations | 1.97% | 1.72% | 1,916 | 4.06% | 3.85% | 5,121 |
| Psychologists, etc. | 1.11% | 1.29% | 2,556 | 2.20% | 1.22% | 3,006 |
| Nurses | 1.75% | 1.19% | 1,494 | 0.06% | 0.04% | 3,615 |
| Stockbrokers & Commodity Traders | 0.50% | 0.89% | 3,937 | 0.15% | 0.15% | 5,496 |
| Pharmacists | 0.73% | 0.63% | 1,888 | 0.71% | 0.66% | 5,053 |
| Chiropractors | 0.46% | 0.55% | 2,674 | 2.61% | 2.22% | 4,605 |
| Teachers | 1.07% | 0.55% | 1,118 | 0.05% | 0.02% | 2,634 |
| Veterinarians | 0.50% | 0.47% | 2,061 | 1.50% | 1.54% | 5,547 |
| Podiatrists | 0.30% | 0.36% | 2,691 | 1.52% | 1.37% | 4,894 |
| Other | 40.46% | 26.94% | 1,463 | 16.17% | 9.44% | 3,153 |
| Total | 100.00% | 100.00% | 2,197 | 100.00% | 100.00% | 5,402 |

The average A/E claim incidence ratios (by amount) by occupation for A&S and OE policies are provided in Table VII.b.

| Table VII.b A/E Claim Incidence Ratios (by Amount) By Occupation Study Period: 1/1/90 to 12/31/99 (* Insufficient experience for measuring incidence) | | |
|---|--------------|-------------|
| Occupation | A&S Policies | OE Policies |
| Physicians & Surgeons | 135.1% | 76.5% |
| Executives & Managers | 83.4% | 69.1% |
| Lawyers | 89.4% | 57.8% |
| Other Sales | 103.9% | 64.1% |
| Dentists | 121.1% | 67.4% |
| Accountants & Actuaries | 78.1% | 60.3% |
| Insurance Sales | 157.6% | 99.6% |
| Engineers & Architects | 65.9% | 44.2% |
| Other Medical Occupations | 112.0% | 82.0% |
| Psychologists, etc. | 98.3% | 59.2% |
| Nurses | 134.0% | * |
| Stockbrokers & Commodity Traders | 160.1% | 69.4% |
| Pharmacists | 103.9% | 41.1% |
| Chiropractors | 235.2% | 143.1% |
| Teachers | 66.3% | * |
| Veterinarians | 111.8% | 56.0% |
| Podiatrists | 179.1% | 103.7% |
| Other | 81.8% | 65.8% |
| Total | 101.6% | 73.4% |

To appropriately compare the claim incidence and termination experience of each occupational grouping, it is necessary to take into account the 85CIDA occupational class assignments since each class has distinct expected incidence rates. Companies are not uniform in their classification of occupations into the 85 CIDA occupation classes. Companies often refine occupational definitions based on income, educational attainment or the existence of manual duties and, as a result, assign certain occupations to more than one class. Also, companies have occasionally moved occupations to higher or lower classes depending upon their claim experience.

Table VII.c shows how the various occupational groups are distributed among the 85 CIDA occupation classes within the study.

| Table VII.c Distribution of Exposure (by Amount) Among the 85 CIDA Occupation Classes Within Occupational Groups A&S and OE Policies Combined | | | | |
|--|-------------|-------------|-------------|-------------|
| Occupational Group | Occ Class 1 | Occ Class 2 | Occ Class 3 | Occ Class 4 |
| Physicians & Surgeons | 99.13% | 0.85% | 0.01% | 0.00% |
| Executives & Managers | 97.33% | 2.02% | 0.46% | 0.19% |
| Lawyers | 99.84% | 0.10% | 0.04% | 0.02% |
| Other Sales | 91.21% | 6.29% | 2.06% | 0.44% |
| Dentists | 90.41% | 9.58% | 0.01% | 0.00% |
| Accountants & Actuaries | 98.60% | 1.18% | 0.19% | 0.03% |
| Insurance Sales | 96.79% | 2.55% | 0.55% | 0.11% |
| Engineers & Architects | 97.61% | 1.72% | 0.53% | 0.14% |
| Other Medical Occupations | 85.47% | 13.00% | 1.31% | 0.21% |
| Psychologists, etc. | 96.44% | 3.20% | 0.35% | 0.01% |
| Nurses | 65.55% | 31.06% | 3.11% | 0.28% |
| Stockbrokers & Commodity Traders | 93.91% | 5.95% | 0.14% | 0.00% |
| Pharmacists | 96.15% | 2.91% | 0.94% | 0.00% |
| Chiropractors | 72.12% | 22.97% | 4.90% | 0.01% |
| Teachers | 87.79% | 10.56% | 1.46% | 0.19% |
| Veterinarians | 96.52% | 2.55% | 0.67% | 0.25% |
| Podiatrists | 96.60% | 3.27% | 0.13% | 0.00% |
| Other | 77.88% | 9.90% | 8.11% | 4.11% |
| Total | 91.84% | 4.80% | 2.29% | 1.07% |

The selected occupations are primarily Occupation Class 1 risks, although most have some representation in the other three 85 CIDA occupation classes.

Table VII.d shows the distribution of the exposure by occupational grouping within each 85 CIDA occupational class.

| Table VII.d Distribution of Exposure (By Amount) Among the Occupational Groups Within 85 CIDA Occupation Class A&S and OE Policies Combined | | | | |
|--|-------------|-------------|-------------|-------------|
| Occupational Group | Occ Class 1 | Occ Class 2 | Occ Class 3 | Occ Class 4 |
| Physicians & Surgeons | 33.76% | 5.57% | 0.14% | 0.04% |
| Executives & Managers | 13.65% | 5.42% | 2.59% | 2.29% |
| Lawyers | 8.74% | 0.17% | 0.16% | 0.13% |
| Other Sales | 3.58% | 4.72% | 3.25% | 1.47% |
| Dentists | 5.57% | 11.29% | 0.02% | 0.00% |
| Accountants & Actuaries | 2.21% | 0.51% | 0.17% | 0.05% |
| Insurance Sales | 2.06% | 1.04% | 0.47% | 0.20% |
| Engineers & Architects | 1.84% | 0.62% | 0.40% | 0.23% |
| Other Medical Occupations | 1.86% | 5.41% | 1.15% | 0.39% |
| Psychologists, etc. | 1.34% | 0.85% | 0.20% | 0.01% |
| Nurses | 0.75% | 6.76% | 1.42% | 0.27% |
| Stockbrokers & Commodity Traders | 0.82% | 0.99% | 0.05% | 0.00% |
| Pharmacists | 0.66% | 0.38% | 0.26% | 0.00% |
| Chiropractors | 0.60% | 3.68% | 1.65% | 0.01% |
| Teachers | 0.46% | 1.05% | 0.31% | 0.08% |
| Veterinarians | 0.64% | 0.32% | 0.18% | 0.14% |
| Podiatrists | 0.52% | 0.34% | 0.03% | 0.00% |
| Other | 20.94% | 50.88% | 87.55% | 94.67% |
| Total | 100.00% | 100.00% | 100.00% | 100.00% |

The “Other” group represents a growing percent of each 85 CIDA occupation class, 21% of Class 1 increasing to 95% of Class 4.

Table VII.e shows the average A/E claim incidence ratios by specific occupations (split between medical and non-medical) for Occupation Class 1.

| Table VII.e A/E Claim Incidence Ratios (by Amount) – By Occupation A&S Contracts – Occupation Class 1 Study Period 1/1/1990 to 12/31/1999 | | | |
|--|-------------------------|-------------|-------------|
| | Medical Occupations | | |
| | Under 90 Days | 90+ Days | Total |
| Physicians & Surgeons | 96% | 171% | 136% |
| Dentists | 102% | 195% | 129% |
| Psychologists | 74% | 136% | 102% |
| Nurses | 163% | 173% | 166% |
| Pharmacists | 92% | 138% | 109% |
| Chiropractors | 218% | 579% | 296% |
| Veterinarians | 99% | 153% | 118% |
| Podiatrists | 119% | 365% | 183% |
| Other Medical Occupations | 109% | 167% | 127% |
| Total Medical Occupations | 103% | 174% | 136% |
| | Non-medical Occupations | | |
| | Under 90 Days | 90+ Days | Total |
| Executives & Managers | 87% | 84% | 85% |
| Lawyers | 73% | 102% | 90% |
| Other Sales | 117% | 119% | 118% |
| Accountants | 75% | 84% | 79% |
| Engineers | 63% | 69% | 67% |
| Insurance Sales | 139% | 205% | 166% |
| Stockbrokers | 122% | 185% | 162% |
| Teachers | 67% | 71% | 69% |
| Other Occupations | 95% | 109% | 100% |
| Total Non-medical Occupations | 93% | 103% | 98% |
| Total All Occupations | 97% | 133% | 114% |

Table VII.f shows the average A/E claim incidence ratios by specific occupations (split between medical and non-medical) for Occupation Classes 2-4 combined.

| Table VII.f A/E Claim Incidence Ratios (by Amount) – By Occupation A&S Contracts – Occupation Class 2-4 Combined Study Period 1/1/1990 to 12/31/1999 | | | |
|---|-------------------------|-------------|------------|
| | Medical Occupations | | |
| | Under 90 Days | 90+ Days | Total |
| Physicians & Surgeons | 78% | 95% | 87% |
| Dentists | 55% | 72% | 62% |
| Psychologists | 49% | 61% | 53% |
| Nurses | 89% | 125% | 100% |
| Pharmacists | 50% | 54% | 51% |
| Chiropractors | 101% | 220% | 139% |
| Veterinarians | 48% | 110% | 60% |
| Podiatrists | 78% | 67% | 73% |
| Other Medical Occupations | 65% | 114% | 80% |
| Total Medical Occupations | 76% | 112% | 88% |
| | Non-medical Occupations | | |
| | Under 90 Days | 90+ Days | Total |
| Executives & Managers | 57% | 68% | 61% |
| Lawyers | 63% | 58% | 63% |
| Other Sales | 65% | 66% | 65% |
| Accountants | 64% | 55% | 62% |
| Engineers | 59% | 50% | 57% |
| Insurance Sales | 96% | 131% | 101% |
| Stockbrokers | 105% | 165% | 142% |
| Teachers | 61% | 51% | 57% |
| Other Occupations | 62% | 74% | 64% |
| Total Non-medical Occupations | 62% | 74% | 64% |
| Total All Occupations | 64% | 81% | 67% |

Termination Experience by Occupation

Table VII.g compares the A/E claim termination ratios (by amount) for A&S contracts by specific occupations within Occupation Class 1. The comparison is limited to claims with long-term benefit periods (i.e., To Age 65 or longer).

Table VII.g
A/E Claim Termination Ratios (by Amount) by Occupation
A&S Contracts – Occupation Class 1 – Long-term Benefit Periods
Study Period 1/1/1990 to 12/31/1999
(* Insufficient experience for measuring terminations)

| | Duration of Disablement | | | | | |
|--------------------------------------|-------------------------|------------|-------------|-------------|-------------|------------|
| | Year 1 | Year 2 | Year 3 | Year 4-5 | Yr 6-10 | Yr 11+ |
| Physicians & Surgeons | 35% | 65% | 83% | 76% | 69% | 55% |
| Podiatrists | 24% | 42% | 46% | 39% | 59% | * |
| Dentists | 42% | 62% | 80% | 65% | 61% | 60% |
| Chiropractors | 23% | 56% | 58% | 61% | 92% | * |
| Nurses | 56% | 77% | 113% | 95% | 148% | * |
| Pharmacists | 56% | 89% | 170% | 97% | 97% | * |
| Psychologists | 35% | 81% | 108% | 146% | 143% | 96% |
| Veterinarians | 55% | 84% | 115% | 73% | * | * |
| Other Medical Occupations | 39% | 60% | 84% | 71% | 76% | 65% |
| Total Medical Occupations | 37% | 65% | 83% | 75% | 72% | 61% |
| Lawyers | 39% | 87% | 128% | 114% | 119% | 99% |
| Executives & Managers | 38% | 95% | 135% | 112% | 115% | 83% |
| Engineers & Architects | 42% | 122% | 158% | 89% | 117% | * |
| Accountants & Actuaries | 44% | 108% | 125% | 126% | 82% | * |
| Insurance Sales | 37% | 104% | 119% | 116% | 111% | 82% |
| Stockbrokers & Commodity Traders | 25% | 61% | 57% | 95% | 114% | * |
| Other Sales | 43% | 86% | 125% | 106% | 108% | 131% |
| Teachers | 57% | 98% | 159% | 100% | 171% | * |
| Others | 39% | 82% | 113% | 108% | 111% | 106% |
| Total Non-medical Occupations | 39% | 88% | 120% | 110% | 112% | 99% |
| All Occupations | 38% | 76% | 100% | 91% | 92% | 79% |

Among the medical occupations, certain occupations such as nurses, pharmacists and psychologists have noticeably better claim termination experience than the other specific medical occupations. Among the non-medical occupations, stockbrokers and commodity traders have noticeably worse claim termination experience than the other specific non-medical occupations.

Section VIII: Geographic Differences in Incidence and Termination Experience

This section looks at differences in claim incidence and termination experience among key states (California, Florida and All Others) and geographic regions in the U.S. The analysis by geographic differences has been limited to A&S contracts only.

Claim Incidence Experience by Key States

Table VIII.a shows the relative exposure by amount among California, Florida and All Other states and their respective A/E claim incidence ratios (by amount) over the 1990-99 study period.

| Table VIII.a Exposure Percent and A/E Claim Incidence Ratios (by Amount) A&S Contracts By Key State Study Period: 1/1/1990 – 12/31/1999 | | |
|--|---------------|------|
| State | % of Exposure | A/E |
| California | 11.0% | 138% |
| Florida | 6.2% | 124% |
| All Other | 82.8% | 94% |
| Total | 100.0% | 102% |

The A/E claim incidence ratios for California and Florida are 25-40% higher than All Other states, which is consistent with the results that have been described by many companies over the years.

Table VIII.b breaks the A/E claim incidence ratios by Key State into occupation class and elimination period subgroups.

| Table VIII.b A/E Claim Incidence Ratios (by Amount) - By Key State By Occupation Class and Elimination Period Study Period: 1/1/1990 – 12/31/1999 | | | |
|--|----------------------|---------|-----------|
| Elimination Period (Days) | Occupation Class 1 | | |
| | California | Florida | All Other |
| <30 | 161% | 111% | 134% |
| 30 | 143% | 105% | 103% |
| 60 | 110% | 99% | 71% |
| 90 | 181% | 186% | 127% |
| 180+ | 144% | 161% | 102% |
| Total | 148% | 138% | 106% |
| Elimination Period (Days) | Occupation Class 2-4 | | |
| | California | Florida | All Other |
| <30 | 78% | 53% | 60% |
| 30 | 106% | 54% | 65% |
| 60 | 78% | 44% | 49% |
| 90 | 135% | 77% | 75% |
| 180+ | 134% | 69% | 83% |
| Total | 102% | 56% | 64% |

Table VIII.b shows that the California A/E claim incidence ratios are consistently worse than the All Other States by elimination period and occupation class. In comparison, the Florida A/E claim incidence ratios are only worse than All Other States in occupation class 1 with elimination periods greater than 30 days.

Table VIII.c compares the A/E Claim incidence ratios by key state within issue year groups.

| Table VIII.c A/E Claim Incidence Ratios (by Amount) A&S Contracts - By Key State By Occupation Class and Issue Year Study Period: 1/1/1990 – 12/31/1999 | | | |
|---|----------------------|---------|-----------|
| Issue Year | Occupation Class 1 | | |
| | California | Florida | All Other |
| Prior to 1990 | 148% | 143% | 111% |
| 1990 - 92 | 155% | 130% | 105% |
| 1993 - 95 | 142% | 141% | 100% |
| 1996 & later | 91% | 82% | 72% |
| Total | 148% | 138% | 106% |
| Issue Year | Occupation Class 2-4 | | |
| | California | Florida | All Other |
| Prior to 1990 | 93% | 55% | 63% |
| 1990 - 92 | 115% | 67% | 63% |
| 1993 - 95 | 153% | 45% | 66% |
| 1996 & later | 122% | 43% | 61% |
| Total | 102% | 56% | 64% |

The relative differences between the A/E claim incidence ratios for California and Florida and those for all other states in Occupation Class 1 appears to have narrowed considerably for business issued in 1996 and later. This may be due in large part to the tighter underwriting implemented in those states. The relative differences between the A/E claim incidence ratios for California and those for all other states for Occupation Classes 2-4 do not appear to have narrowed. In comparison, the Florida A/E claim incidence ratios for Occupation Classes 2-4 are for the most part lower than those for all other states.

Claim Termination Experience by Key State

Table VIII.d compares the average A/E claim termination ratios by key state.

| Table VIII.d A/E Claim Termination Ratios (by Amount) By Key State Study Period: 1/1/1990 – 12/31/1999 | | | |
|---|----------------------|---------|-----------|
| Year of Disablement | Occupation Class 1 | | |
| | California | Florida | All Other |
| Year 1 | 35% | 27% | 44% |
| Year 2 | 77% | 64% | 82% |
| Year 3 | 103% | 74% | 109% |
| Year 4-5 | 108% | 85% | 96% |
| Year 6+ | 98% | 66% | 90% |
| Year of Disablement | Occupation Class 2-4 | | |
| | California | Florida | All Other |
| Year 1 | 48% | 45% | 61% |
| Year 2 | 96% | 64% | 96% |
| Year 3 | 154% | 125% | 164% |
| Year 4-5 | 121% | 127% | 126% |
| Year 6+ | 72% | 131% | 144% |

In the first year of disablement, termination rates for both California and Florida are significantly lower than termination rates for all other states. After the first year, California claim termination rates are more in line with the termination rates for all other states (except for years 6+ for Occupation Classes 2-4), even exceeding them in years 4 and later for Occupation Class 1. On the other hand, the Florida termination rates are generally lower in all durations than the termination rates for California and all other states.

Claim Incidence Experience by Geographic Region

The United States was split into the following 6 regions for the purpose of this study:

| Geographic Regions | | | | | |
|--------------------|-----------------|------------------|--------------|------------------|-------------|
| <u>Midwest</u> | <u>Mountain</u> | <u>Northeast</u> | <u>South</u> | <u>Southwest</u> | <u>West</u> |
| AR | CO | CT | AL | AZ | AK |
| IA | ID | DC | FL | NM | CA |
| IL | MT | DE | GA | OK | HI |
| IN | NV | MA | KY | TX | OR |
| KS | UT | MD | LA | | WA |
| MI | WY | ME | MS | | |
| MN | | NH | NC | | |
| MO | | NJ | SC | | |
| ND | | NY | TN | | |
| NE | | PA | VA | | |
| OH | | RI | WV | | |
| SD | | VT | | | |
| WI | | | | | |

Table VIII.e compares the A/E claim incidence rates by geographic region, excluding California and Florida.

| Table VIII.e A/E Claim Incidence Ratios (by Amount) By Geographic Region, Excluding California and Florida Study Period: 1/1/1990 – 12/31/1999 | | | | | | |
|---|------------------------|----------|-----------|-----------|-----------|------|
| Issue Year | Occupation Class 1 | | | | | |
| | Midwest | Mountain | Northeast | Southeast | Southwest | West |
| Prior to 1990 | 103% | 109% | 115% | 114% | 113% | 100% |
| 1990 - 92 | 95% | 115% | 106% | 106% | 126% | 93% |
| 1993 - 95 | 82% | 105% | 107% | 101% | 112% | 102% |
| 1996 & later | 64% | 59% | 82% | 62% | 76% | 74% |
| Total | 97% | 108% | 111% | 108% | 115% | 97% |
| Issue Year | Occupation Classes 2-4 | | | | | |
| | Midwest | Mountain | Northeast | Southeast | Southwest | West |
| Prior to 1990 | 50% | 57% | 76% | 61% | 58% | 52% |
| 1990 - 92 | 47% | 53% | 83% | 63% | 64% | 52% |
| 1993 - 95 | 45% | 61% | 87% | 69% | 80% | 67% |
| 1996 & later | 44% | 52% | 84% | 48% | 95% | 51% |
| Total | 49% | 56% | 78% | 62% | 65% | 54% |

The range of A/E claim incidence ratios by region (excluding California and Florida) do not vary as much as the ratios do in the key state comparison. Generally, the Midwest and West regions have the lowest overall claim incidence, and the Northeast and Southwest have the highest overall claim incidence.

Table VIII.f compares the A/E claim termination ratios (by amount) by geographic region, excluding California and Florida.

| Table VIII.f A/E Claim Termination Ratios (by Amount) By Geographic Region, Excluding California and Florida Study Period: 1/1/1990 – 12/31/1999 | | | | | | |
|---|------------------------|----------|-----------|-----------|-----------|------|
| Duration of Disablement | Occupation Class 1 | | | | | |
| | Midwest | Mountain | Northeast | Southeast | Southwest | West |
| Year 1 | 46% | 33% | 47% | 42% | 37% | 43% |
| Year 2 | 86% | 72% | 86% | 80% | 65% | 80% |
| Year 3 | 113% | 72% | 116% | 106% | 101% | 99% |
| Years 4-5 | 98% | 82% | 104% | 85% | 85% | 96% |
| Years 6+ | 87% | 78% | 98% | 81% | 95% | 75% |
| Duration of Disablement | Occupation Classes 2-4 | | | | | |
| | Midwest | Mountain | Northeast | Southeast | Southwest | West |
| Year 1 | 66% | 50% | 62% | 57% | 52% | 55% |
| Year 2 | 100% | 75% | 99% | 89% | 83% | 105% |
| Year 3 | 140% | 171% | 191% | 140% | 111% | 162% |
| Years 4-5 | 125% | 125% | 131% | 100% | 138% | 152% |
| Years 6+ | 193% | 129% | 135% | 101% | 100% | 101% |

In Occupation Class 1, the Northeastern states have the highest A/E claim termination ratios of the six regions, followed closely by the Midwestern states. The Mountain states have the lowest A/E claim termination ratios, followed by the Western states.

In Occupation Classes 2-4, the Midwestern and Northeastern states appear to have the highest overall A/E claim termination ratios, and the Southeastern and the Southwestern states have the overall lowest A/E claim termination ratios.

Section IX: Incidence and Termination Experience by Market

Many contributors were able to separate their experience into three distinct markets:

1. Individual Market – Policies are sold to individuals with no employer and association/affinity sponsorship.
2. Employer Sponsored Market – Policies are sold to individuals through some form of employer sponsorship. The premiums for this business can be paid either by employers, employees or shared between employers and employees.
3. Association Market – Policies are sold to individuals through sponsorship by professional associations or affinity groups.

This section examines the difference in claim incidence and termination experience in these three markets. The scope of the discussion is limited to A&S contracts.

Distribution of Exposure by Market and Occupation Class

Table IX.a shows the distribution of exposures (by amount) among the markets within the occupation classes. Note that some study contributors were unable to separate their experience by market and thus 14% of the total exposure has been assigned to the Unknown Market category.

| Table IX.a Distribution of Exposure (by Amount) by Market and Occupation Class A&S Contracts Only Study Period: 1/1/1990 – 12/31/1999 | | | | | |
|---|------------|--------------------|-------------|---------|--------|
| Occupation Class | Individual | Employer Sponsored | Association | Unknown | Total |
| Class 1 | 52.0% | 28.7% | 7.3% | 12.0% | 100.0% |
| Class 2 | 51.3% | 13.0% | 2.6% | 33.1% | 100.0% |
| Class 3 | 63.7% | 8.1% | 1.2% | 27.0% | 100.0% |
| Class 4 | 59.0% | 9.9% | 0.3% | 30.8% | 100.0% |
| Total | 52.3% | 27.2% | 6.8% | 13.6% | 100.0% |

Table IX.b shows the distribution of exposures (by amount) among the occupation classes among the Individual, Employer Sponsored and Association markets, excluding the unknowns.

| Table IX.b Distribution of Exposure (by Amount) by Market and Occupation Class Unknown Market Excluded - A&S Contracts Only Study Period: 1/1/1990 – 12/31/1999 | | | | |
|--|------------|--------------------|-------------|--------|
| Occupation Class | Individual | Employer Sponsored | Association | Total |
| Class 1 | 59.1% | 32.6% | 8.3% | 100.0% |
| Class 2 | 76.7% | 19.5% | 3.8% | 100.0% |
| Class 3 | 87.2% | 11.1% | 1.7% | 100.0% |
| Class 4 | 85.3% | 14.3% | 0.4% | 100.0% |
| Total | 60.6% | 31.5% | 7.9% | 100.0% |

Table IX.b shows that among the exposure that could identify the markets, 61% of the exposure is in the Individual Market, 31% is in the Employer Sponsored Market, and 8% is in the Association Market. In occupation classes 2-4, the percentage of the exposure in the Individual Market is much higher.

Table IX.c shows the distribution of exposures (by amount) among the occupation classes within the markets.

| Table IX.c Distribution of Exposure (by Amount) - By Occupation Class Within Market A&S Contracts Only Study Period: 1/1/1990 – 12/31/1999 | | | | | |
|---|------------|--------------------|-------------|---------|--------|
| Occupation Class | Individual | Employer Sponsored | Association | Unknown | Total |
| Class 1 | 90.9% | 96.5% | 97.7% | 80.7% | 91.5% |
| Class 2 | 4.7% | 2.3% | 1.8% | 11.7% | 4.8% |
| Class 3 | 3.0% | 0.7% | 0.5% | 4.9% | 2.5% |
| Class 4 | 1.3% | 0.4% | 0.1% | 2.6% | 1.2% |
| Total | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

The Employer Sponsored and Association markets are more concentrated in Occupation Class 1.

Claim Incidence Experience by Market

Table IX.d provides the A/E claim incidence ratios by market and occupation class.

| Table IX.d A/E Claim Incidence Ratios (by Amount) by Market and Occupation Class A&S Contracts Only Study Period: 1/1/1990 – 12/31/1999 | | | | | |
|--|------------|--------------------|-------------|---------|-------|
| Occupation Class | Individual | Employer Sponsored | Association | Unknown | Total |
| Class 1 | 120% | 96% | 156% | 98% | 114% |
| Class 2 | 72% | 48% | 101% | 77% | 73% |
| Class 3 | 52% | 46% | 102% | 67% | 57% |
| Class 4 | 76% | 56% | 92% | 79% | 76% |
| Total | 105% | 91% | 151% | 88% | 102% |

From Table IX.d, the Employer Sponsored Market has consistently the lowest A/E claim incidence ratios, while the Association Market has consistently the highest ratios. The Employer Sponsored overall A/E claim incidence ratio is 87% of the Individual overall ratio, the Association ratio is 144% of the Individual overall ratio.

The remaining incidence analysis by market concentrates on occupation class 1. Table IX.e shows the average A/E claim incidence ratios by market and elimination period, split between non-medical and medical occupations.

| Table IX.e A/E Claim Incidence Ratios (by Amount) by Market and Elimination Period A&S Contracts Only – Occupation Class 1 Non-medical vs. Medical Occupations Study Period: 1/1/1990 – 12/31/1999 | | | | | |
|--|-------------------------|--------------------|-------------|---------|-------|
| Elimination Period | Individual | Employer Sponsored | Association | Unknown | Total |
| | Non-medical Occupations | | | | |
| EP<90 | 96% | 62% | 163% | 76% | 93% |
| EP>=90 | 119% | 69% | 117% | 123% | 103% |
| All EP | 107% | 66% | 153% | 92% | 98% |
| | Medical Occupations | | | | |
| EP<90 | 108% | 98% | 110% | 90% | 103% |
| EP>=90 | 186% | 153% | 192% | 169% | 174% |
| All EP | 140% | 135% | 158% | 108% | 136% |
| | All Occupations | | | | |
| EP<90 | 101% | 78% | 140% | 82% | 97% |
| EP>=90 | 144% | 105% | 176% | 137% | 133% |
| All EP | 120% | 96% | 156% | 98% | 114% |

The favorable claim incidence experience in the Employer Sponsored market compared to the Individual market is evident in Table IX.e. For all elimination periods combined, the A/E claim incidence ratio for non-medical occupations in the Employer Sponsored market is 62% of the corresponding ratio in the Individual market; whereas for the medical occupations, the A/E claim incidence ratio in the Employer Sponsored market is 96% of the corresponding ratio in the Individual market. Looking just at the elimination periods of 90 days or longer, the A/E claim incidence ratio for the non-medical occupations in the Employer Sponsored market is 58% of the corresponding ratio in the Individual market; whereas for the medical occupations, the A/E claim incidence ratio in the Employer Sponsored market is 82% of the ratio in the Individual market.

The claim incidence experience in the Association market is overall significantly worse than the claim incidence experience in the Individual market. The differences between medical and non-medical experience in the Association market is much narrower than the respective differences in the Individual market.

Table IX.f compares the annual trends in the A/E claim incidence ratios between the Individual market and the Employer Sponsored market from 1990 to 1999. The comparison is split between elimination periods under 90 days and elimination periods of 90 days and over, and between medical and non-medical occupations.

Table IX.f
A/E Claim Incidence Ratio Trends (by Amount) by Market and Elimination Period
A&S Contracts Only – Occupation Class 1
Non-medical vs. Medical Occupations
Study Period: 1/1/1990 – 12/31/1999

| Year | Elimination Periods Under 90 Days | | | | | |
|---------|------------------------------------|--------------------|-----------------------------------|-------------------------|--------------------|-----------------------------------|
| | Medical Occupations | | | Non-medical Occupations | | |
| | Individual | Employer Sponsored | Employer Sponsored/ Individual | Individual | Employer Sponsored | Employer Sponsored/ Individual |
| 1990 | 125% | 78% | 0.63 | 118% | 78% | 0.66 |
| 1991 | 121% | 86% | 0.70 | 121% | 62% | 0.51 |
| 1992 | 116% | 95% | 0.81 | 111% | 67% | 0.60 |
| 1993 | 120% | 115% | 0.96 | 108% | 59% | 0.55 |
| 1994 | 109% | 109% | 1.00 | 103% | 60% | 0.59 |
| 1995 | 107% | 109% | 1.02 | 93% | 64% | 0.69 |
| 1996 | 101% | 93% | 0.92 | 89% | 59% | 0.66 |
| 1997 | 95% | 95% | 1.00 | 73% | 60% | 0.83 |
| 1998 | 92% | 97% | 1.05 | 64% | 47% | 0.74 |
| 1999 | 85% | 96% | 1.13 | 60% | 50% | 0.83 |
| Overall | 108% | 98% | 0.90 | 96% | 62% | 0.64 |
| Year | Elimination Periods 90 Days & Over | | | | | |
| | Medical Occupations | | | Non-medical Occupations | | |
| | Individual | Employer Sponsored | Employer Sponsored/ Individual | Individual | Employer Sponsored | Employer Sponsored/ Individual |
| 1990 | 166% | 134% | 0.81 | 153% | 84% | 0.55 |
| 1991 | 205% | 129% | 0.63 | 151% | 78% | 0.51 |
| 1992 | 179% | 144% | 0.81 | 133% | 78% | 0.59 |
| 1993 | 192% | 171% | 0.89 | 129% | 82% | 0.64 |
| 1994 | 204% | 167% | 0.82 | 136% | 75% | 0.55 |
| 1995 | 188% | 166% | 0.88 | 125% | 66% | 0.53 |
| 1996 | 193% | 153% | 0.79 | 108% | 64% | 0.60 |
| 1997 | 186% | 168% | 0.91 | 102% | 65% | 0.64 |
| 1998 | 170% | 136% | 0.80 | 93% | 59% | 0.64 |
| 1999 | 166% | 134% | 0.81 | 89% | 52% | 0.59 |
| Overall | 186% | 153% | 0.82 | 119% | 69% | 0.58 |

For the non-medical occupations, Table IX.f shows a slight narrowing in the differences in the A/E claim incidence ratios during the more recent years between Employer Sponsored and Individual markets. This trend is more the result of improving incidence experience in the Individual market rather than worsening experience in the Employer Sponsored market.

For the medical occupations with the lower elimination periods (under 90 days), the relationship between A/E incidence ratios for the Employer Sponsored market and the

Individual market has reversed itself, with the Employer Sponsored market generally having higher A/E claim incidence ratios after 1993. For medical occupations with the higher elimination periods, the A/E claim incidence ratios between the Individual market and the Employer Sponsored market have bounced around the average 82% from year to year with no obvious trend.

Table IX.g looks at the impact of lifetime benefit period on the average A/E claim incidence ratios for the various markets split between medical occupations and non-medical occupations.

| Table IX.g A/E Claim Incidence Ratio Trends (by Amount) by Market and Elimination Period A&S Contracts Only – Occupation Class 1 – To Age 65-70 Benefit Periods Only Non-medical vs. Medical Occupations Study Period: 1/1/1990 – 12/31/1999 | | | | | | |
|--|------------------------------------|----------|-----------------------|-------------------------|----------|-----------------------|
| Market | Elimination Periods Under 90 Days | | | | | |
| | Medical Occupations | | | Non-medical Occupations | | |
| | To Age 65-70 | Lifetime | Lifetime/To Age 65-70 | To Age 65-70 | Lifetime | Lifetime/To Age 65-70 |
| Individual | 100% | 121% | 1.20 | 90% | 122% | 1.36 |
| ER Sponsored | 94% | 112% | 1.20 | 61% | 72% | 1.17 |
| Association | 96% | 125% | 1.30 | 70% | 130% | 1.85 |
| Unknown | 88% | 105% | 1.20 | 76% | 96% | 1.28 |
| Total | 97% | 117% | 1.20 | 82% | 108% | 1.31 |
| Market | Elimination Periods 90 Days & Over | | | | | |
| | Medical Occupations | | | Non-medical Occupations | | |
| | To Age 65-70 | Lifetime | Lifetime/To Age 65-70 | To Age 65-70 | Lifetime | Lifetime/To Age 65-70 |
| Individual | 174% | 224% | 1.29 | 112% | 153% | 1.37 |
| ER Sponsored | 142% | 187% | 1.32 | 64% | 89% | 1.39 |
| Association | 182% | 220% | 1.21 | 102% | 186% | 1.83 |
| Unknown | 158% | 212% | 1.35 | 113% | 200% | 1.77 |
| Total | 163% | 210% | 1.29 | 96% | 138% | 1.43 |

Table IX.g shows that the higher incidence associated with lifetime benefit periods observed in Section VI exists in each market and occupational grouping.

Claim Termination Experience by Market

Table IX.h compares the A/E claim termination ratios by market. The results for Occupation Class 1 are split between Medical and Non-medical occupations.

| <u>Table IX.h</u> A/E Claim Termination Ratios (by Amount) A&S Contracts Only – By Market Study Period: 1/1/1990 – 12/31/1999 (* Not Sufficient Experience) | | | | | |
|---|------------|--------------------|-------------|---------|-------|
| Occupation Class 1 - Medical Occupations | | | | | |
| Duration of Disablement | Individual | Employer Sponsored | Association | Unknown | Total |
| Year 1 | 40% | 32% | 31% | 39% | 37% |
| Year 2 | 66% | 63% | 59% | 71% | 65% |
| Year 3 | 92% | 70% | 84% | 74% | 83% |
| Year 4 | 79% | 74% | 69% | 64% | 75% |
| Year 5 | 80% | 69% | 78% | 68% | 75% |
| Years 6 - 10 | 82% | 63% | 51% | 51% | 71% |
| Years 11+ | 64% | 37% | 143% | 52% | 59% |
| Occupation Class 1 - Non-medical Occupations | | | | | |
| Duration of Disablement | Individual | Employer Sponsored | Association | Unknown | Total |
| Year 1 | 41% | 39% | 32% | 35% | 39% |
| Year 2 | 88% | 81% | 79% | 96% | 88% |
| Year 3 | 126% | 100% | 186% | 110% | 120% |
| Year 4 | 103% | 117% | 134% | 121% | 110% |
| Year 5 | 113% | 77% | 113% | 133% | 111% |
| Years 6 - 10 | 115% | 100% | 131% | 107% | 111% |
| Years 11+ | 99% | 81% | 304% | 92% | 95% |
| Occupation Classes 2-4 | | | | | |
| Duration of Disablement | Individual | Employer Sponsored | Association | Unknown | Total |
| Year 1 | 49% | 53% | * | 45% | 47% |
| Year 2 | 87% | 91% | * | 66% | 77% |
| Year 3 | 179% | 139% | * | 94% | 133% |
| Year 4 | 119% | 150% | * | 98% | 108% |
| Year 5 | 116% | 136% | * | 76% | 95% |
| Years 6 - 10 | 169% | 89% | * | 95% | 128% |
| Years 11+ | 186% | 70% | * | 92% | 139% |

For Medical occupations in Occupation Class 1, claim termination experience in the Employer Sponsored market is generally lower than in the Individual market in all years of disablement. This observation can be seen in general in the Non-medical occupations, except the claim termination experience for the Association market is somewhat below that of the Employer Sponsored market in the first two years of disablement.

Two possible reasons why the claim termination experience for Occupation Class 1 is lower in the Employer Sponsored market are

- a. The significantly lower claim incidence in the Employer Sponsored market (see Table IX.e) suggests that the typical claims in this market may be more severe or long-term. Higher claim incidence often is associated with more short-term claims.
- b. Claimants in the Employer Sponsored market may more likely have additional disability benefits from other sources (e.g., group LTD coverage).

Relative differences in claim termination rates by market on Occupation Classes 2-4 are not as consistent as in Occupation Class 1. During the first two years of disablement, claim termination experience for Occupation Classes 2-4 in the Employer Sponsored market is somewhat better than in the Individual market, but reverses in disablement years 3+.

Section X: Claim Incidence Experience by Underwriting Type

This section analyzes differences in claim incidence experience related to different types of underwriting. The specific types of underwriting that are reviewed are as follows:

- Normal underwriting – this involves regular medical underwriting with no guaranteed issue rules applied.
- Guaranteed standard issue (GSI) underwriting– this involves issuing policies to employer sponsored cases on a standard basis to all applications under a specified monthly amount limit. Given the time period of the study, we expect that a large percentage of the GSI underwriting involve 100% participation of all eligible employees within each case. However, there is probably some portion of voluntary GSI included. Unfortunately, most contributors were unable to distinguish between the two types of GSI underwriting in their data.
- Guaranteed to issue (GTI) underwriting – this involves normal underwriting of policies in employer sponsored cases, with a guarantee that policies will be issued to eligible employees, albeit rated or with waived impairments.
- Guaranteed insurability (GI) underwriting – this involves issuing coverage as a result of electing options within guaranteed insurability riders.

Claim Incidence Experience for Normal Underwriting

Table X.a compares A/E claim incidence ratios (by amount) for business issued via normal underwriting among the various markets.

| Table X.a A/E Claim Incidence Ratios (by Amount) Normal Underwriting by Market Study Period: 1/1/1990 – 12/31/1999 | | | | | |
|---|------------|--------------------|-------------|---------|-------|
| Policy Year | Individual | Employer Sponsored | Association | Unknown | Total |
| 1 | 79% | 54% | 120% | 93% | 79% |
| 2 | 93% | 69% | 154% | 90% | 93% |
| 3 | 122% | 79% | 162% | 103% | 114% |
| 4-5 | 120% | 94% | 162% | 99% | 116% |
| 6-10 | 114% | 105% | 158% | 88% | 112% |
| 11+ | 93% | 105% | 135% | 83% | 94% |
| All Years | 104% | 92% | 152% | 89% | 103% |

For all policy years combined, the A/E claim incidence ratio for the Employer Sponsored and Association markets are 88% and 146%, respectively of the ratio for the Individual market. In years 11+, the A/E claim incidence ratio for the Employer Sponsored market exceeds the ratio for the Individual market,

The A/E claim incidence ratios for the Individual and Employer Sponsored markets exhibit materially different patterns by policy year. The A/E claim incidence ratios for the Individual market increase in the first three years (with a notably large jump in year 3) and then gradually decrease with the ultimate ratio in years 11+ not much higher than those in the first two years. The A/E claim incidence ratios for the Employer Sponsored market increase steadily each year, appearing to reach an ultimate ratio by the 6th year.

Table X.b further splits the comparison by occupation groupings and occupation class.

| <p align="center"><u>Table X.b</u> A/E Claim Incidence Ratios (by Amount) Normal Underwriting by Market and Occupational Groups Study Period: 1/1/1990 – 12/31/1999</p> | | | | | |
|--|------------|--------------------|-------------|---------|-------|
| Policy Year | Individual | Employer Sponsored | Association | Unknown | Total |
| Medical Occupations – Occupation Class 1 | | | | | |
| 1 | 96% | 88% | 115% | 107% | 98% |
| 2 | 124% | 106% | 123% | 98% | 117% |
| 3 | 167% | 120% | 153% | 111% | 147% |
| 4-5 | 166% | 144% | 166% | 127% | 156% |
| 6-10 | 150% | 151% | 173% | 113% | 150% |
| 11+ | 123% | 136% | 149% | 111% | 125% |
| All Years | 140% | 137% | 158% | 113% | 138% |
| Non-medical Occupations – Occupation Class 1 | | | | | |
| 1 | 82% | 44% | 135% | 90% | 78% |
| 2 | 100% | 55% | 192% | 114% | 97% |
| 3 | 129% | 61% | 183% | 139% | 115% |
| 4-5 | 121% | 68% | 165% | 111% | 109% |
| 6-10 | 112% | 73% | 137% | 97% | 103% |
| 11+ | 95% | 78% | 125% | 92% | 93% |
| All Years | 107% | 67% | 154% | 101% | 100% |
| Medical Occupations – Occupation Class 2-4 | | | | | |
| 1 | 91% | 43% | 60% | 97% | 81% |
| 2 | 100% | 62% | 108% | 88% | 92% |
| 3 | 114% | 54% | 89% | 90% | 99% |
| 4-5 | 107% | 85% | 94% | 91% | 99% |
| 6-10 | 87% | 50% | 67% | 89% | 84% |
| 11+ | 66% | 48% | 71% | 74% | 71% |
| All Years | 95% | 58% | 82% | 85% | 87% |
| Non-medical Occupations – Occupation Class 2-4 | | | | | |
| 1 | 61% | 35% | 93% | 88% | 63% |
| 2 | 56% | 46% | 132% | 77% | 62% |
| 3 | 68% | 45% | 127% | 89% | 72% |
| 4-5 | 65% | 46% | 117% | 82% | 69% |
| 6-10 | 61% | 46% | 101% | 72% | 64% |
| 11+ | 59% | 56% | 80% | 72% | 63% |
| All Years | 61% | 46% | 108% | 75% | 65% |

For the Individual Market in Occupation Class 1, both Medical and Non-medical occupations, A/E claim incidence ratios for normal underwriting show the jump in claim incidence in policy years 3-5. The jump is less apparent for the Individual Market in Occupation Classes 2-4. Except for Medical – Occupation Class 1, the Employer Sponsored Market exhibits no such jump in incidence in policy years 3-5, indicating less anti-selection arising in the Employer Sponsored Market than the Individual Market.

Normal Underwriting in the Association Market exhibits its own pattern of claim incidence by policy year. Generally, the jump in incidence occurs in policy year 2. Except for Medical – Occupation Class 1, there appears to be a general improvement in the claim incidence after year 2.

Table X.c shows the claim incidence experience of normally underwritten business in the Individual Market (Occupation Class 1 only) by year of issue.

| <p style="text-align: center;">Table X.c A/E Claim Incidence Ratios (by Amount) Normal Underwriting – Individual Market - Occupation Class 1 Only By Issue Year Study Period: 1/1/1990 – 12/31/1999</p> | | | | | |
|---|----------|---------|---------|---------|-------|
| Policy Year | Pre-1990 | 1990-92 | 1993-95 | 1996-99 | Total |
| Medical Occupations | | | | | |
| 1 | | 101% | 103% | 66% | 96% |
| 2 | 145% | 124% | 126% | 81% | 124% |
| 3 | 175% | 171% | 161% | 113% | 167% |
| 4-5 | 174% | 157% | 159% | 202% | 166% |
| 6-10 | 150% | 149% | 153% | | 150% |
| 11+ | 123% | | | | 123% |
| All Years | 139% | 144% | 143% | 90% | 140% |
| Non-medical Occupations | | | | | |
| 1 | | 95% | 87% | 52% | 82% |
| 2 | 142% | 106% | 86% | 66% | 100% |
| 3 | 158% | 126% | 121% | 69% | 129% |
| 4-5 | 149% | 112% | 84% | 70% | 121% |
| 6-10 | 122% | 90% | 85% | | 112% |
| 11+ | 95% | | | | 95% |
| All Years | 113% | 102% | 92% | 61% | 107% |
| All Occupations | | | | | |
| 1 | | 97% | 92% | 56% | 87% |
| 2 | 143% | 113% | 99% | 70% | 108% |
| 3 | 165% | 143% | 135% | 81% | 143% |
| 4-5 | 159% | 130% | 111% | 105% | 138% |
| 6-10 | 135% | 113% | 111% | | 128% |
| 11+ | 107% | | | | 107% |
| All Years | 124% | 118% | 109% | 68% | 120% |

Claim incidence of policies issued to Medical Occupations through normal underwriting in the Individual Market was very similar for business issued pre-1990, 1990-92 and 1993-95. The Medical Occupation claim incidence appears to have significantly improved for business issued in 1996-99. Note that the 202% ratio for Medical Occupations issued in 1996-99 in policy years 4-5 represents the results of business issued only in one calendar year (1996) and may not be indicative of how the results on this generation of Medical business will ultimately emerge.

Claim incidence of policies issued to Non-medical Occupations through normal underwriting in the Individual Market showed improvements among each successive issue year grouping.

Table X.d shows the claim incidence experience of normally underwritten business in the Employer Sponsored Market (Occupation Class 1 only) by year of issue.

| <p style="text-align: center;">Table X.d A/E Claim Incidence Ratios (by Amount) Normal Underwriting – Employer Sponsored Market – Occupation Class 1 Only By Issue Year Study Period: 1/1/1990 – 12/31/1999</p> | | | | | |
|---|-------------------------|---------|---------|---------|-------|
| Policy Year | Pre-1990 | 1990-92 | 1993-95 | 1996-99 | Total |
| | Medical Occupations | | | | |
| 1 | | 82% | 97% | 87% | 88% |
| 2 | 123% | 100% | 106% | 113% | 106% |
| 3 | 96% | 143% | 121% | 65% | 120% |
| 4-5 | 150% | 153% | 122% | 123% | 144% |
| 6-10 | 154% | 150% | 130% | | 151% |
| 11+ | 136% | | | | 136% |
| All Years | 144% | 136% | 116% | 93% | 137% |
| | Non-medical Occupations | | | | |
| 1 | | 46% | 51% | 32% | 44% |
| 2 | 60% | 60% | 55% | 39% | 55% |
| 3 | 78% | 58% | 61% | 40% | 61% |
| 4-5 | 79% | 65% | 59% | 64% | 68% |
| 6-10 | 80% | 64% | 48% | | 73% |
| 11+ | 78% | | | | 78% |
| All Years | 78% | 60% | 56% | 38% | 67% |
| | All Occupations | | | | |
| 1 | | 59% | 67% | 42% | 58% |
| 2 | 84% | 75% | 73% | 54% | 72% |
| 3 | 85% | 92% | 83% | 45% | 83% |
| 4-5 | 110% | 102% | 84% | 76% | 99% |
| 6-10 | 116% | 103% | 82% | | 110% |
| 11+ | 109% | | | | 109% |
| All Years | 111% | 92% | 78% | 49% | 98% |

Claim incidence of policies issued to both Medical and Non-medical Occupations through normal underwriting in the Individual Market showed general improvements among each successive issue year grouping.

Table X.e shows the claim incidence experience of normally underwritten business in the Association Market (Occupation Class 1 only) by year of issue.

| Table X.e A/E Claim Incidence Ratios (by Amount) Normal Underwriting – Association Market – Occupation Class 1 Only By Issue Year Study Period: 1/1/1990 – 12/31/1999 | | | | | |
|---|-------------------------|---------|---------|---------|-------|
| Policy Year | Pre-1990 | 1990-92 | 1993-95 | 1996-99 | Total |
| | Medical Occupations | | | | |
| 1 | | 119% | 113% | 98% | 115% |
| 2 | 98% | 114% | 141% | 143% | 123% |
| 3 | 134% | 161% | 162% | 103% | 153% |
| 4-5 | 180% | 161% | 158% | 102% | 166% |
| 6-10 | 177% | 172% | 148% | | 173% |
| 11+ | 149% | | | | 149% |
| All Years | 165% | 156% | 147% | 114% | 158% |
| | Non-medical Occupations | | | | |
| 1 | | 119% | 154% | 120% | 135% |
| 2 | 189% | 173% | 203% | 201% | 192% |
| 3 | 156% | 183% | 190% | 197% | 183% |
| 4-5 | 152% | 163% | 174% | 181% | 165% |
| 6-10 | 133% | 141% | 152% | | 137% |
| 11+ | 125% | | | | 125% |
| All Years | 136% | 153% | 176% | 162% | 154% |
| | All Occupations | | | | |
| 1 | | 119% | 139% | 116% | 127% |
| 2 | 135% | 138% | 177% | 187% | 159% |
| 3 | 143% | 170% | 177% | 172% | 167% |
| 4-5 | 170% | 162% | 165% | 162% | 165% |
| 6-10 | 162% | 162% | 150% | | 161% |
| 11+ | 139% | | | | 139% |
| All Years | 155% | 155% | 162% | 152% | 156% |

Claim incidence of policies issued to Medical Occupations through normal underwriting in the Association Market showed general improvements among each successive issue year grouping. However, for Non-medical Occupations in the Association Market, the trend is reversed, with an apparent deterioration in claim incidence observed in the more recently issued business.

Claim Incidence Experience for GSI and GTI Underwriting

Table X.f compares the A/E claim incidence ratios from normally underwritten business in the Individual and Employer Sponsored Markets to those from business in the Employer Sponsored Market issued under GSI and GTI underwriting. Results are split between the Medical and Non-medical Occupations.

| Table X.f A/E Claim Incidence Ratios (by Amount) Comparison of Normal, GSI and GTI Underwriting By Market Study Period: 1/1/1990 – 12/31/1999 | | | | |
|---|--------------------------|---------------------------|------|------|
| Medical Occupations | | | | |
| Policy Year | Individual Mkt Normal UW | Employer Sponsored Market | | |
| | | Normal | GSI | GTI |
| 1 | 95% | 82% | 70% | 85% |
| 2 | 119% | 101% | 102% | 141% |
| 3 | 158% | 115% | 97% | 135% |
| 4-5 | 158% | 141% | 109% | 132% |
| 6-10 | 146% | 149% | 124% | 123% |
| 11+ | 122% | 136% | 115% | 95% |
| All Years | 136% | 133% | 101% | 123% |
| Non-medical Occupations | | | | |
| Policy Year | Individual Mkt Normal UW | Employer Sponsored Market | | |
| | | Normal | GSI | GTI |
| 1 | 73% | 42% | 63% | 48% |
| 2 | 83% | 53% | 66% | 72% |
| 3 | 106% | 59% | 66% | 71% |
| 4-5 | 102% | 65% | 56% | 72% |
| 6-10 | 96% | 70% | 53% | 61% |
| 11+ | 80% | 74% | 52% | 69% |
| All Years | 89% | 64% | 61% | 65% |
| All Occupations | | | | |
| Policy Year | Individual Mkt Normal UW | Employer Sponsored Market | | |
| | | Normal | GSI | GTI |
| 1 | 79% | 54% | 65% | 59% |
| 2 | 93% | 69% | 79% | 94% |
| 3 | 122% | 79% | 79% | 94% |
| 4-5 | 120% | 94% | 80% | 97% |
| 6-10 | 114% | 105% | 89% | 89% |
| 11+ | 93% | 105% | 90% | 80% |
| All Years | 104% | 92% | 77% | 87% |

Claim incidence for Medical Occupations in the Employer Sponsored Market issued under GSI underwriting is lower than claim incidence for such policies issued under GTI underwriting, which is lower than normally underwritten Medical Occupation business in the Employer Sponsored Market.

Claim incidence for Non-medical Occupations in the Employer Sponsored Market issued under GSI underwriting is lower than claim incidence for such policies issued under GTI underwriting. However the GTI incidence is generally comparable to the incidence of normally underwritten Non-medical Occupation business in the Employer Sponsored Market. Table X.g compares the A/E claim incidence ratios in the Employer Sponsored Market under GSI underwriting for occupation class 1 only, by year of issue.

| <u>Table X.g</u> A/E Claim Incidence Ratios (by Amount) GSI Underwriting – Employer Sponsored Market – Occupation Class 1 Only By Issue Year Study Period: 1/1/1990 – 12/31/1999 | | | | | |
|--|-------------------------|---------|---------|---------|-------|
| Policy Year | Pre-1990 | 1990-92 | 1993-95 | 1996-99 | Total |
| | Medical Occupations | | | | |
| 1 | | 83% | 71% | 73% | 74% |
| 2 | 82% | 147% | 121% | 71% | 109% |
| 3 | 72% | 57% | 146% | 70% | 102% |
| 4-5 | 87% | 115% | 122% | 82% | 112% |
| 6-10 | 94% | 150% | 143% | | 124% |
| 11+ | 115% | | | | 115% |
| All Years | 98% | 119% | 116% | 72% | 105% |
| | Non-medical Occupations | | | | |
| 1 | | 86% | 70% | 56% | 62% |
| 2 | 82% | 50% | 57% | 68% | 63% |
| 3 | 72% | 64% | 80% | 54% | 67% |
| 4-5 | 26% | 33% | 72% | 106% | 58% |
| 6-10 | 50% | 58% | 46% | | 54% |
| 11+ | 50% | | | | 50% |
| All Years | 49% | 56% | 68% | 61% | 61% |
| | All Occupations | | | | |
| 1 | | 85% | 70% | 59% | 66% |
| 2 | 82% | 95% | 87% | 68% | 80% |
| 3 | 72% | 61% | 110% | 59% | 82% |
| 4-5 | 59% | 69% | 94% | 98% | 83% |
| 6-10 | 75% | 103% | 105% | | 91% |
| 11+ | 93% | | | | 93% |
| All Years | 78% | 85% | 91% | 63% | 79% |

For Medical occupations, the A/E claim incidence ratios in the Employer Sponsored Market under GSI underwriting worsened somewhat for business issued between 1993 and 1995, but improved significantly for business issued in the 1996 – 99 period to be more consistent with the incidence experienced by the Pre-1990 issued business. For Non-medical occupations, the A/E claim incidence ratios in the Employer Sponsored

Market under GSI underwriting worsened for business issued between 1993 and 1995, but improved only moderately for business issued in the 1996 – 99 period.

Claim Incidence Experience of Guaranteed Insurability Options

Table X.h shows the A/E claim incidence ratios for business issued as the result of elections of options under guaranteed insurability riders.

| <u>Table X.h</u> A/E Claim Incidence Ratios (by Amount) - A&S Contracts Only Guaranteed Insurability Elections Study Period: 1/1/1990 – 12/31/1999 | | | |
|---|---------------------|-------------------------|-----------------|
| Policy Year | Medical Occupations | Non-medical Occupations | All Occupations |
| 1 | 255% | 180% | 217% |
| 2 | 214% | 146% | 180% |
| 3 | 214% | 132% | 174% |
| 4-5 | 172% | 132% | 153% |
| 6-10 | 150% | 100% | 124% |
| 11+ | 138% | 88% | 98% |

The patterns of A/E claim incidence ratios for both Medical and Non-medical Occupations in Table X.h represent classic examples of anti-selection, wearing off over ten years.

Appendix A:

Contributing Companies

Berkshire Life Insurance Company

Illinois Mutual

Massachusetts Casualty

Massachusetts Mutual

Monarch Life Insurance Company

Northwestern Mutual

Paul Revere Life Insurance Company

Principal Financial Group

Provident Life & Accident

Trustmark Life Insurance Company

Union Central Life Insurance Company

Unum Life Insurance Company