Report

of the

Society of Actuaries

Preferred Underwriting (Reinsurance)

Survey Subcommittee

August 2003

Table of Contents

Introduction

In 1995 and 1997, the Task Force on Preferred Underwriting completed surveys on the preferred risk underwriting practices on U.S. life insurance business. A third survey was sent out in August 2002. In addition to that survey, it was decided that it would be important to get the opinions of the reinsurance market on preferred risk underwriting.

The attached report presents the results of the first preferred underwriting survey compiling reinsurance information from U.S. and Canadian reinsurers on U.S. Life business.

Twenty-five surveys were mailed with 15 reinsurers responding to the survey. A list of the companies who participated in the survey can be found at the end of the report in Appendix 1.

The Subcommittee would like to thank all of the companies who participated in the survey. We would also like to thank a number of our peers for their review of this document and thoughtful comments. Finally, the Subcommittee would like to thank the Society of Actuaries staff for their help in completing this project. Particular thanks go to Jack Luff and Korrel Crawford for all their help.

The results of the direct writer's survey and comparisons to this survey are being compiled and will be distributed in the next few months.

Comments on this report are welcome and can be addressed to the Preferred Underwriting (Reinsurance) Subcommittee c/o The Society of Actuaries.

Preferred Underwriting Reinsurance Survey Subcommittee
Connie Dewar, Chair
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Mark Swanson

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SoA Research Liaison: Korrel Crawford

Executive Summary

The following summary highlights some of the more significant observations in this report. We recommend reading the full report to better appreciate the statements below.

- The Society of Actuaries Subcommittee on Preferred Underwriting (Reinsurance) developed a survey of preferred underwriting practices and sent it to U.S. and Canadian reinsurers in August of 2002. Reinsurers were asked to answer based on U.S. quote requests from 2001.

- 25 surveys were mailed, with 15 companies responding. The 13 reinsurers that participated accounted for 77.4% of the 2001 direct life recurring new business market share and the 2 retrocessionaires who participated represented 78.5% of the retrocession new business 2001 market share (SoA/Munich 2001 survey).

- For 10-year level term products, the most common combination of underwriting classes from responding reinsurers' quote requests was 3 non-tobacco and 2 tobacco classes. Quote requests with 4 non-tobacco and 2 tobacco classes were the second most common.

- Reinsurers were given four sample sets of underwriting criteria each with a different number of preferred classes and were asked to provide their expected percentage to qualify and the related expected mortality based on the SoA 1975-80 Basic Select and Ultimate Table for each of the underwriting classes.

  - When there were 2 non-tobacco classes, respondents expected (median) 62.5% of risks to qualify as preferred based on given sample Underwriting Guideline 1.

  - When there were 3 non-tobacco classes, respondents expected (median) 64% of risks to qualify in the top 2 preferred classes based on given sample Underwriting Guideline 2, with 35% in the best class.

  - When there were 4 non-tobacco classes, respondents expected (median) 68% of risks to qualify in the top 3 preferred classes based on given sample Underwriting Guideline 3, with 29% in the best class.

  - When there were 2 tobacco classes, respondents expected 63% of risks to qualify as preferred based on given sample Underwriting Guideline 4. This is consistent with the expected distribution from Underwriting Guideline 1, which has the same preferred underwriting criteria.

- The median expected mortality for non-tobacco classes varied slightly by issue age and to a lesser extent by duration.

  - For preferred classes, the median also varied depending on the number of preferred classes:

    - For Underwriting Guideline 1 with 1 preferred class, respondents reported 29% - 32% of the SoA '75-80 Table.

    - For Underwriting Guideline 2 with 2 preferred classes, respondents reported 25% - 27% of the SoA '75-80 Table for the best-preferred class and 33% - 36% for the next best class.

    - For Underwriting Guideline 3 with 3 preferred classes, respondents reported 23% - 26% of the SoA '75-80 Table for the best-preferred class, 28% - 31% for the second best class and 35% - 38% for the third best-preferred class.

  - For the three non-tobacco standard scenarios, expected mortality was 45% - 48% of the SoA 1975-80 Basic Select and Ultimate Table.

- For all four of the samples, 7 of the 13 responding reinsurers used a level percentage of the SoA 1975-80 Basic Select and Ultimate Table for all issue ages (25,45,65) over the first 10 durations. The remaining 6 reported a variety of slopes by issue age and durations.

- Most responding reinsurers expected qualification percentages to vary by issue age. Half of the responding reinsurers expected qualification percentages to vary by sex.

- Most responding reinsurers reported that most products they see include a preferred class in the rate structure. In fact, UL, ART, VUL and term (other than 10-year term) had generally the same number of preferred classes as 10-year term.

- "Based on internal underwriting recommendations" and "use experience from mortality studies" were the two most common sources used to divide mortality into preferred classifications.

- Thirteen of the 15 responding reinsurers incorporated future mortality improvements into their pricing in the preferred marketplace. For those that used improvements, the majority varied improvement factors by duration and sex and reported improvements of about 1% per year.

- When evaluating a client's distribution of business, "client provided data" was ranked the most important consideration. When evaluating a client's mortality experience, "your (the reinsurer's) internal information" and the "quality of client's underwriting" were ranked the most important consideration. When evaluating the quality of a client's underwriting, "published underwriting requirements" was ranked the most important consideration.

- The two most important preferred criteria according to the responding reinsurers were blood lipids and blood pressure for both non-tobacco and tobacco classes.

- All responding reinsurers considered:

  - "hypertension", "treatment for hypertension" and "time since last smoked" when evaluating personal history criteria;

  - "total cholesterol", "chol/HDL ratio" and "treatment for hypertension" when evaluating personal medical history;

  - "heart disease", "cancer" and "specified age when family member died" when evaluating family history criteria; and

  - "aviation", "moving violations" and "DUI" when evaluating lifestyle considerations.

- Responding reinsurers indicated that their "Pricing Actuaries" had the primary responsibility for setting mortality assumptions for preferred classes.

- When asked what other criteria would the reinsurer like to see used to classify a risk as preferred that is not commonly used today, half of the respondents suggested ADLs for older insureds.

- Fourteen of the responding reinsurers had a quote request in 2001 for products utilizing simplified underwriting. Six of these responding reinsurers reported the simplified product had a preferred risk class.

Preferred Survey - Reinsurance

Section 1 – General Information

The Survey focused on 10-year level term quote requests from 2001 to ensure consistency among reinsurers and to allow for comparisons to the direct company preferred underwriting survey, undertaken concurrently.

The first question asked the reinsurers to provide the distribution by category of underwriting class listed in Table 1 of the 10-year level term quote requests in 2001. For each category, the average response was calculated. The most common at 38% was the 3 non-tobacco and 2 tobacco class category followed by the category with 4 non-tobacco and 2 tobacco classes at 18%. On average 65% of the quote requests had 2 tobacco classes, while 27% had only 1 tobacco class. Quotes for other (unidentified) categories averaged 8%.

Not all responding reinsurers saw quotes for all categories. Only 4 of the responding reinsurers reported quotes from all of the categories.

Table 1
10-Year Level Quote Distribution

Category	Average
1 NT, 1T	8%
2 NT, 1T	7%
3 NT, 1T	4%
4 NT, 1T	7%
2NT, 2T	9%
3NT, 2T	38%
4NT, 2T	18%
Other	8%
Number of Responses	**13**

For those same quote requests, the Survey asked for the average expected distribution of business between non-tobacco and tobacco classes. Fourteen reinsurers responded to this question resulting in an average distribution of 88% for non-tobacco and 12% for tobacco classes.

Table 2
Expected Distribution Between Non-Tobacco and Tobacco

	Low	Average	High
Non-Tobacco	75%	88%	93%
Tobacco	25%	12%	7%
Number of Responses		**14**	

Section II – Sample Underwriting Guidelines

This section asked for expected distributions of percentage qualifying and corresponding mortality rates by age and duration for each of 4 sets of sample underwriting guidelines for brokerage term products. There were 2 additional questions; one relating to qualifying percentages varying by age and sex and the other eliciting information about preferred on other products.

The first three guidelines use non-tobacco guidelines (2, 3 and 4 class) and the fourth guideline uses two tobacco classes. The guidelines are samples and do not knowingly represent any particular company's guidelines. Guideline 1 and 4 are the same for all criteria except the non-tobacco criteria. Guidelines 1, 2 and 3 used the same 'standard tobacco' definition but the preferred criteria vary for each guideline. A copy of each guideline is included and the results are included in a series of tables. Observations precede the corresponding tables.

For each underwriting guideline, 12 reinsurers provided percentages they expected to qualify for the given classes and 13 provided their expected mortality for the given classes. Responses that seemed to vary significantly with the norm were checked by asking the SoA to verify the results. While minimum, maximum, mean and median values are shown in the tables, our analysis focused on median values, as we believe this reduced the effect of one or two reinsurers' results, which differed significantly.

Observations revealed that reinsurers took different positions with respect to expressing mortality rates by age and duration as a percentage of the SoA 75-80 Basic Select and Ultimate table. Seven reinsurers expressed their mortality as a level percentage by age and duration, while 6 reinsurers varied the percentage. The results are shown for the 13 companies combined and for each of the 2 groups (level, non-level) separately. Considerable variation was found.

Underwriting Guideline 1

Underwriting Guideline 1 illustrates a product with 1 preferred and 1 standard non-tobacco class.

	Preferred Non-Tobacco	Standard Non-Tobacco
Tobacco	No tobacco use for 24 months.	No tobacco use for 12 months.
Cholesterol (both must apply)	Cholesterol of 240 or less; cholesterol/HDL ratio of 5.5 or less.	Cholesterol of 300 or less; cholesterol/HDL ratio of 8.0 or less.
Blood pressure	Blood pressure average not to exceed 140/90, treated or untreated.	Blood pressure average not to exceed 150/95.
Personal medical history	No personal history of heart disease, diabetes or cancer (except certain types of skin cancer.)	Personal history not ratable.
Family medical history	No death of a parent or sibling prior to age 60 due to heart disease, diabetes or cancer.	N/A
Alcohol or drug abuse	No history of alcohol or drug abuse, treatment or counseling.	No ratable history of alcohol or drug abuse.
Driving record	No DWI or DUI convictions in the past 5 years. No more than 3 moving violations in the past 3 years.	Driving record not ratable.
Aviation	No private aviation, except with exclusion rider.	No ratable aviation risk.
Avocation	No participation in any hazardous avocation, occupation or sport.	Avocation not ratable.
Criminal record	No felony convictions in the past 10 years.	N/A
Lab profile	All parameters of blood and urine profile/HOS within standard (non-ratable) range.	All parameters of blood and urine profile/HOS within standard (non-ratable) range.
Weight (see attached build tables)	Weight does not exceed weight allowed for height listed in build table.	Weight does not exceed weight allowed for height listed in build table.
Foreign residence/travel	Must be U.S. or Canadian resident.	Must be U.S. or Canadian resident.

	Preferred Non-Tobacco	Standard Non-Tobacco
BMI	30	35
Height	Weight*	Weight*
4'4"	115	135
4'8"	134	156
5'0"	154	179
5'4"	175	204
5'8"	197	230
6'0"	221	258
6'4"	246	288
6'8"	273	319

*Weight is solved for based on given BMI and height

Expected Qualification Percentages for Underwriting Guideline 1

Table 3 shows the distribution, mean and median of the expected qualification percentages for Underwriting Guideline 1.

- For the preferred non-tobacco class, the percentages varied from 45% to 75% with a median of 62.5%. Five of the 12 responding reinsurers expected the percentage qualifying to be between 65% and 69%.
- For the standard non-tobacco class, the percentages varied from 25% to 55% with a median of 37.5%.

Table 3
Qualification Percentages - 2 Non-Tobacco Classes

% Qualifying	Preferred Non-Tobacco	Standard Non-Tobacco
<30		1
30-34		2
35-39		3
40-44		3
45-49	2	
50-54	1	2
55-59	1	1
60-64	2	
65-69	5	
70-74		
75-79	1	
80+		
Minimum	45%	25%
Maximum	75%	55%
Mean	60.6%	39.4%
Median	62.5%	37.5%
Number of Responses	**12**	

Expected Mortality for Underwriting Guideline 1

Tables 4 and 5 show the expected mortality percentage based on the SoA 1975-80 Select and Ultimate Basic Table for each of the 2 classes by issue age and duration. The ranges, means and medians by age and duration are also presented.

The median expected mortality varied only slightly by issue age and even less by duration.

- 29% - 32% for the preferred non-tobacco class; and
- 45% - 47% for the standard non-tobacco class.

Table 4
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Preferred Non-Tobacco

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
<20												
20 - 24								1	1	1		
25 – 29	4	4	3	4	7	7	6	4	4	4	4	4
30 – 34	4	6	7	4	5	5	6	5	5	5	6	5
35 – 39	3	2	2	3	1	1	1	3	3	3	2	3
40 – 44	2			1								
45 – 49											1	
50 – 54		1										
55 – 59												1
60 – 64			1									
65 – 69				1								
70 – 74												
75 – 79												
80+												
Minimum	28.0%	27.8%	27.3%	26.7%	26.0%	26.0%	27.0%	26.7%	23.0%	24.0%	26.0%	26.7%
Maximum	40.0%	50.0%	60.0%	65.0%	35.0%	35.0%	35.0%	36.0%	38.1%	38.1%	45.0%	55.0%
Mean	32.6%	32.7%	33.5%	34.8%	29.5%	29.4%	30.0%	30.6%	30.5%	30.6%	32.1%	33.2%
Median	32.0%	32.0%	32.0%	32.0%	29.0%	29.0%	30.0%	30.0%	30.0%	30.0%	31.0%	32.0%
Number of Responses (13)												

Table 5
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Standard Non-Tobacco

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
<30												
30 – 34												
35 – 39			1	2		1	2	2	1		1	1
40 – 44	3	3	3	2	6	5	4	3	3	4	3	3
45 – 49	4	5	4	4	5	5	5	5	4	4	4	4
50 – 54	5	3	3	2	1	1	1	2	4	4	3	2
55 – 59	1	1	1	1	1	1	1	1	1	1	1	2
60– 64		1									1	
65 – 69				1								
70 – 74												
75 – 79												1
80+												
Minimum	40.7%	40.2%	39.5%	39.6%	40.0%	39.0%	38.9%	38.6%	39.0%	40.0%	39.5%	38.6%
Maximum	58.0%	60.0%	70.0%	80.0%	58.0%	58.0%	58.0%	58.0%	58.0%	58.0%	60.0%	75.0%
Mean	48.0%	48.7%	49.5%	50.7%	45.6%	45.2%	45.1%	45.9%	47.2%	47.4%	48.5%	49.6%
Median	47.0%	47.0%	46.0%	46.0%	46.0%	45.0%	45.0%	45.0%	46.0%	46.0%	46.0%	46.0%
Number of Responses (13)												

Seven of the 13 responding reinsurers expressed their expected mortality as a level percentage of the table by age and duration. For these 7, the percentage of SoA 1975-80 Select and Ultimate Basic Table ranged from:

- 28% to 35% for the preferred non-tobacco class, with a median of 30%; and
- 44% to 58% for the standard non-tobacco class, with a median of 45%.

The other 6 reinsurers varied their expected mortality by age and duration. The minimums, medians and maximums reported for each age and duration are presented in Tables 6 and 7.

The pattern of the expected mortality percentages by duration varied by age and reinsurer. Three of the reinsurers indicated increasing percentages by duration for all ages, while the remainder reported variations of decreasing, "U' shaped and inverted "U" shaped patterns for the three ages.

Table 6
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Preferred Non-Tobacco
Reinsurers Using Non-Level Percentage

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
Minimum	28.1%	27.8%	27.3%	26.7%	26.0%	26.0%	27.0%	26.7%	23.0%	24.0%	26.0%	26.7%
Maximum	40.0%	50.0%	60.0%	65.0%	30.0%	30.0%	33.0%	36.0%	38.1%	38.1%	45.0%	55.0%
Median	35.6%	33.4%	32.5%	37.5%	27.5%	27.4%	28.4%	28.7%	29.0%	29.4%	32.0%	34.0%
Number of Responses (6)												

Table 7
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Standard Non-Tobacco
Reinsurers Using Non-Level Percentage

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
Minimum	40.7%	40.2%	39.5%	38.6%	40.0%	39.0%	38.9%	38.6%	39.0%	40.0%	39.5%	38.6%
Maximum	50.0%	60.0%	70.0%	80.0%	47.0%	47.0%	47.0%	50.0%	51.5%	51.6%	60.0%	75.0%
Median	50.0%	48.6%	50.0%	50.0%	42.3%	40.1%	40.0%	43.0%	48.5%	48.5%	49.9%	48.9%
Number of Responses (6)												

Underwriting Guideline 2

Underwriting Guideline 2 illustrates a product with 2 preferred non-tobacco classes and 1 standard non-tobacco class.

	Super Preferred Non-Tobacco	Preferred Non-Tobacco	Standard Non-Tobacco
Tobacco	No tobacco use for 36 months.	No tobacco use for 24 months.	No tobacco use for 12 months.
Cholesterol (both must apply)	Cholesterol of 220 or less; cholesterol/HDL ratio of 5.0 or less; no treatment.	Cholesterol of 240 or less; cholesterol/HDL ratio of 6.0 or less.	Cholesterol of 300 or less; cholesterol/HDL ratio of 8.0 or less.
Blood pressure	Blood pressure average not to exceed 135/85, no treatment.	Blood pressure average not to exceed 150/90.	Blood pressure average not to exceed 150/95.
Personal medical history	No personal history of heart disease, diabetes or cancer (except certain types of skin cancer.)	No personal history of heart disease, diabetes or cancer (except certain types of skin cancer.)	Personal history not ratable.
Family medical history	No death of a parent or sibling prior to age 60 due to heart disease, diabetes or cancer.	No death of a parent or sibling prior to age 60 due to heart disease, diabetes or cancer.	N/A
Alcohol or drug abuse	No history of alcohol or drug abuse, treatment or counselling.	No history of alcohol or drug abuse, treatment or counseling in the past 7 years.	No ratable history of alcohol or drug abuse.
Driving record	No DWI or DUI convictions in the past 5 years. No more than 2 moving violations in the past 5 years.	No DWI or DUI convictions in the past 5 years. No more than 3 moving violations in the past 3 years.	Driving record not ratable.
Aviation	No private aviation, except with exclusion rider.	No private aviation, except with exclusion rider.	No ratable aviation risk.
Avocation	No participation in any hazardous avocation, occupation or sport.	No participation in any hazardous avocation, occupation or sport.	Avocation not ratable.
Criminal record	No felony convictions in the past 10 years.	No felony convictions in the past 10 years.	N/A
Lab profile	All parameters of blood and urine profile/HOS within standard (non-ratable) range.	All parameters of blood and urine profile/HOS within standard (non-ratable) range.	All parameters of blood and urine profile/HOS within standard (non-ratable) range.
Height and weight (see attached build tables)	Weight does not exceed weight allowed for height listed in build table.	Weight does not exceed weight allowed for height listed in build table.	Weight does not exceed weight allowed for height listed in build table.
Foreign residence/travel	Must be U.S. or Canadian resident.	Must be U.S. or Canadian resident.	Must be U.S. or Canadian resident.

	Super Preferred Non-Tobacco	Preferred Non-Tobacco	Standard Non-Tobacco
BMI	28	30	35
Height	Weight*	Weight*	Weight*
4'4"	108	115	135
4'8"	125	134	156
5'0"	143	154	179
5'4"	163	175	204
5'8"	184	197	230
6'0"	206	221	258
6'4"	230	246	288
6'8"	255	273	319

*Weight is solved for based on given BMI and height

Expected Qualification Percentages for Underwriting Guideline 2

Table 8 shows the distribution, mean and median of the expected qualification percentages for Underwriting Guideline 2. There was considerable variation between the reinsurers within each class.

- For the super preferred non-tobacco class, the percentages varied from 25% to 61% with a median of 35%.
- For the preferred non-tobacco class, the percentages varied from 17% to 45% with a median of 29%.
- For the standard non-tobacco class, the percentages varied from 22% to 50% with a median of 33.8%.

Table 8
Qualification Percentages – 3 Non-Tobacco Classes

% Qualifying	Super Preferred Non-Tobacco	Preferred Non-Tobacco	Standard Non-Tobacco
<20		1	
20-24		2	1
25-29	2	3	2
30-34	3	3	3
35-39	3		3
40-44	3	2	
45-49		1	2
50-54			1
55-59			
60-64	1		
65+			
Minimum	25%	17%	22%
Maximum	61%	45%	50%
Mean	36.2%	29.3%	34.5%
Median	35%	29%	33.8%
Number of Responses	**12**		

Expected Mortality for Underwriting Guideline 2

Tables 9, 10 and 11 show the expected mortality percentage based on the SoA 1975-80 Select and Ultimate Basic Table for each of the 3 classes by issue age and duration. The ranges, means and medians by age and duration are also presented.

The median expected mortality varied only slightly by issue age and even less by duration.

- 25% - 27% for the super preferred non-tobacco class;
- 33% - 36% for the preferred non-tobacco class; and
- 45% - 48% for the standard non-tobacco class. This median level of expected standard mortality for Underwriting Guideline 2 is about the same as for Underwriting Guideline 1.

Table 9
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Super Preferred Non-Tobacco

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
<20		2										
20 – 24	2	7	2	4	5	5	4	4	4	4	3	2
25 – 29	7	2	7	4	6	7	6	6	6	6	6	8
30 – 34	2	1	2	2	2	1	3	2	2	2	3	2
35 – 39	1		1	2				1	1	1		
40 – 44	1										1	
45 – 49		1										
50 – 54												1
55 – 59												
60 – 64			1									
65 – 69				1								
70 – 74												
75 – 79												
80+												
Minimum	24.0%	24.0%	24.0%	23.0%	23.4%	23.0%	22.8%	23.2%	20.0%	21.0%	23.0%	24.0%
Maximum	40.0%	50.0%	60.0%	65.0%	33.0%	33.0%	33.0%	35.0%	35.0%	35.0%	40.0%	50.0%
Mean	23.9%	29.5%	30.0%	31.0%	26.0%	25.7%	26.6%	27.2%	26.8%	26.9%	28.0%	29.2%
Median	27.0%	27.0%	27.0%	27.0%	25.0%	25.0%	26.0%	26.0%	26.3%	26.0%	27.0%	27.0%
Number of Responses (13)												

Table 10
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Preferred Non-Tobacco

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
<20												
20 – 24												
25 – 29				1	1	2	1	1	2	2		
30 – 34	4	5	5	4	7	6	7	6	4	4	6	5
35 – 39	6	5	5	4	3	4	4	4	5	5	5	6
40 – 44	1	1	1		1			1	1			
45 – 49	1			2						1		
50 – 54	1	1	1	1	1	1	1	1	1	1	2	1
55 – 59		1										
60 – 64												
65 – 69			1									1
70 – 74				1								
75 – 79												
80+												
Minimum	32.0%	32.0%	32.0%	29.6%	29.0%	29.0%	29.4%	29.9%	26.0%	28.0%	30.0%	31.0%
Maximum	53.0%	55.0%	65.0%	70.0%	53.0%	53.0%	53.0%	53.0%	53.0%	53.0%	53.0%	65.0%
Mean	37.7%	37.8%	38.6%	40.0%	34.8%	34.5%	34.8%	35.6%	35.5%	36.0%	37.1%	38.6%
Median	36.0%	35.0%	35.0%	36.0%	33.0%	33.0%	33.4%	33.0%	35.0%	35.0%	35.0%	36.0%
Number of Responses (13)												

Table 11
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Standard Non-Tobacco

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
<30												
30 – 34												
35 – 39				2		1	1	2	1			1
40 – 44	2	2	3	1	5	4	3	2	2	3	3	2
45 – 49	5	6	5	5	6	6	7	6	5	5	5	5
50 – 54	4	2	2	1				1	3	3	2	1
55 – 59	2	2	2	2	2	2	2	2	2	2	2	3
60– 64		1									1	
65 – 69				1								
70 – 74												
75 – 79			1									1
80+				1								
Minimum	42.0%	41.5%	40.8%	38.9%	40.0%	39.0%	38.9%	39.6%	39.0%	41.0%	40.8%	39.9%
Maximum	59.0%	60.0%	75.0%	80.0%	59.0%	59.0%	59.0%	59.0%	59.0%	59.0%	60.0%	75.0%
Mean	48.8%	49.5%	50.6%	51.5%	46.3%	45.9%	46.2%	46.7%	48.0%	48.2%	49.3%	50.4%
Median	48.0%	47.0%	47.0%	47.0%	45.0%	45.0%	45.0%	46.0%	47.0%	47.0%	47.0%	47.0%
Number of Responses (13)												

Seven of the 13 responding reinsurers expressed their expected mortality as a level percentage of the table by age and duration. For these 7, the percentage of SoA 1975-80 Select and Ultimate Basic Table ranged from:

- 24% to 33% for the super preferred non-tobacco class, with a median of 26%;
- 32% to 53% for the preferred non-tobacco class, with a median of 35%; and
- 44% to 59% for the standard non-tobacco class, with a median of 47%.

The other 6 reinsurers varied their expected mortality by age and duration. The minimums, medians and maximums reported for each age and duration are presented in Tables 12, 13 and 14.

The pattern of the expected mortality responses for age 65 typically increased with duration. For age 25, increasing patterns were predominately reported by duration as well; however a "U" shaped pattern and a decreasing pattern were also reported. For age 45, a level pattern was predominately reported with a "U" shaped pattern by duration reported a couple of times.

Table 12
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Super Preferred Non-Tobacco
Reinsurers Using Non-Level Percentage

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
Minimum	26.3%	26.0%	25.5%	22.9%	23.4%	22.8%	22.8%	23.2%	20.0%	21.0%	23.0%	24.9%
Maximum	40.0%	50.0%	60.0%	65.0%	30.0%	26.0%	30.0%	35.0%	35.0%	35.0%	40.0%	50.0%
Median	31.6%	29.4%	29.5%	34.5%	24.5%	24.5%	25.8%	25.5%	26.6%	27.0%	29.0%	29.3%
Number of Responses (6)												

Table 13
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Preferred Non-Tobacco
Reinsurers Using Non-Level Percentage

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
Minimum	34.3%	33.0%	32.9%	29.6%	29.0%	29.0%	29.4%	29.9%	26.0%	28.0%	30.0%	31.0%
Maximum	45.0%	55.0%	65.0%	70.0%	40.0%	35.0%	35.0%	40.0%	40.0%	45.0%	50.0%	65.0%
Median	38.3%	35.5%	36.5%	41.5%	30.6%	31.5%	32.7%	32.8%	35.2%	35.0%	35.5%	38.1%
Number of Responses (6)												

Table 14
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Standard Non-Tobacco
Reinsurers Using Non-Level Percentage

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
Minimum	42.0%	41.5%	40.8%	38.9%	40.0%	39.0%	38.9%	39.6%	39.0%	41.0%	40.8%	39.9%
Maximum	51.0%	60.0%	75.0%	80.0%	47.0%	47.0%	47.0%	50.0%	51.5%	52.0%	60.0%	75.0%
Median	50.0%	48.6%	50.5%	50.5%	43.0%	40.8%	42.9%	43.0%	48.5%	48.5%	49.9%	48.9%
Number of Responses (6)												

Underwriting Guideline 3

Underwriting Guideline 3 illustrates a product with 3 preferred non-tobacco classes and one standard non-tobacco class.

	Super Preferred Plus Non-Tobacco	Preferred Plus Non-Tobacco	Preferred Non-Tobacco	Standard Non-Tobacco
Tobacco	No tobacco use for 36 months.	No tobacco use for 24 months.	No tobacco use for 12 months.	No tobacco use for 12 months.
Cholesterol (both must apply)	Cholesterol of 220 or less; cholesterol/HDL ratio of 4.5 or less; no treatment.	Cholesterol of 240 or less; cholesterol/HDL ratio of 5.0 or less; no treatment.	Cholesterol of 260 or less; cholesterol/HDL ratio of 6.5 or less.	Cholesterol of 300 or less; cholesterol/HDL ratio of 8.0 or less.
Blood pressure	Blood pressure average not to exceed 135/80, no treatment.	Blood pressure average not to exceed 140/85, no treatment.	Blood pressure average not to exceed 145/90, treated or untreated.	Blood pressure average not to exceed 150/95.
Personal history	No personal history of heart disease, diabetes or cancer (except certain types of skin cancer.)	No personal history of heart disease, diabetes or cancer (except certain types of skin cancer.)	No personal history of heart disease, diabetes or cancer (except certain types of skin cancer.)	Personal history not ratable.
Family history	No diagnosis of a parent or sibling prior to age 60 of heart disease, diabetes or cancer (except certain types of skin cancers.)	No death of a parent or sibling prior to age 60 due to heart disease, diabetes or cancer.	No death of a parent or sibling prior to age 60 due to heart disease, diabetes or cancer.	N/A
Alcohol or drug abuse	No history of alcohol or drug abuse, treatment or counseling.	No history of alcohol or drug abuse, treatment or counseling in the past 10 years.	No history of alcohol or drug abuse, treatment or counseling in the past 5 years.	No ratable history of alcohol or drug abuse.
Driving record	No DWI, DUI or reckless driving convictions in the past 10 years. No more than 2 moving violations in the past 5 years.	No DWI or DUI convictions in the past 5 years. No more than 2 moving violations in the past 3 years.	No DWI or DUI convictions in the past 5 years. No more than 3 moving violations in the past 3 years.	Driving record not ratable.
Aviation	No private aviation.	No private aviation, except with exclusion rider.	No private aviation, except with exclusion rider.	No ratable aviation risk.
Avocation	No participation in any hazardous occupation, avocation or sport.	No participation in any hazardous occupation, avocation or sport.	No participation in any hazardous occupation, avocation or sport.	Avocation not ratable.
Criminal record	No felony convictions in the past 10 years.	No felony convictions in the past 10 years.	No felony convictions in the past 10 years.	N/A
Lab profile	All parameters of blood profile/HOS within standard (non-ratable) range.	All parameters of blood profile/HOS within standard (non-ratable) range.	All parameters of blood profile/HOS within standard (non-ratable) range.	All parameters of blood profile/HOS within standard (non-ratable) range.
Height and weight (see attached build tables)	Weight does not exceed weight allowed for height listed in build table.	Weight does not exceed weight allowed for height listed in build table.	Weight does not exceed weight allowed for height listed in build table.	Weight does not exceed weight allowed for height listed in build table.
Foreign residence / travel	Must be U.S. or Canadian resident	Must be U.S. or Canadian resident	Must be U.S. or Canadian resident	Must be U.S. or Canadian resident

Height	Super Preferred Plus Non-Tobacco	Preferred Plus Non-Tobacco	Preferred Non-Tobacco	Standard Non-Tobacco
BMI	26	28	30	35
Height	Weight*	Weight*	Weight*	Weight*
4'4"	100	108	115	135
4'8"	116	125	134	156
5'0"	133	143	154	179
5'4"	151	163	175	204
5'8"	171	184	197	230
6'0"	192	206	221	258
6'4"	214	230	246	288
6'8"	237	255	273	319

*Weight is solved for based on given BMI and height

Expected Qualification Percentages for Underwriting Guideline 3

Table 15 shows the distribution, mean and median of the expected qualification percentages for Underwriting Guideline 3. Again, there was considerable variation between the reinsurers within each class.

- For the super preferred plus non-tobacco class, the percentages varied from 10% to 60% with a median of 29.3%.
- For the preferred plus non-tobacco class, the percentages varied from 5% to 30% with a median of 18.9%.
- For the preferred non-tobacco class, the percentages varied from 15% to 35% with a median of 22.3%. Half of the respondents expected the qualification percentage to be between 20% and 24%.
- For the standard non-tobacco class, the percentages varied from 10% to 45% with a median of 31.8%.

Table 15
Qualification Percentages - 4 Non-Tobacco Classes

% Qualifying	Super Preferred Plus Non-Tobacco	Preferred Plus Non-Tobacco	Preferred Non-Tobacco	Standard Non-Tobacco
<10		1		
10-14	1	1		1
15-19	1	5	2	1
20-24	3	2	6	2
25-29	1		1	1
30-34	4	3	2	2
35-39	1		1	2
40-44				1
45-49				2
50-54				
55-59				
60-64	1			
65+				
Minimum	10%	5%	15%	10%
Maximum	60%	30%	35%	45%
Mean	27.9%	18.9%	23.3%	30.0%
Median	29.3%	16.5%	22.3%	31.8%
Number of Responses	**12**			

Expected Mortality for Underwriting Guideline 3

Tables 16, 17, 18 and 19 show the expected mortality percentage based on the SoA 1975-80 Select and Ultimate Basic Table for each of the 4 classes by issue age and duration. The ranges, means and medians by age and duration are also presented.

The median expected mortality varied only slightly by issue age and even less by duration.

- 23% - 26% for the super preferred plus non-tobacco class;
- 28% - 31% for the super preferred non-tobacco class;
- 35% - 38% for the preferred non-tobacco class; and
- 46% - 48% for the standard non-tobacco class. This median level of expected standard mortality is about the same as for Underwriting Guidelines 1 and 2.

Table 16
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Super Preferred Plus Non-Tobacco

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
<20									1			
20 - 24	5	6	7	7	9	10	9	8	6	8	7	7
25 – 29	4	3	2	1	2	2	1	2	4	3	3	3
30 – 34	2	3	3	3	2	1	3	3	2	1	2	2
35 – 39	2			1						1		
40 – 44											1	
45 – 49		1										
50 – 54												1
55 – 59			1									
60 – 64				1								
65 – 69												
70 – 74												
75 – 79												
80+												
Minimum	22.0%	22.0%	22.0%	21.1%	21.6%	21.0%	21.0%	21.3%	19.0%	20.0%	22.0%	22.0%
Maximum	37.0%	45.0%	55.0%	60.0%	31.5%	31.5%	31.5%	33.0%	31.5%	35.0%	40.0%	50.0%
Mean	27.4%	27.9%	28.4%	29.6%	24.6%	24.2%	25.1%	25.4%	24.8%	25.4%	26.6%	27.7%
Median	26.0%	26.0%	24.5%	24.0%	23.0%	24.0%	24.0%	24.0%	24.0%	24.0%	24.5%	24.0%
Number of Responses (13)												

Table 17
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Super Preferred Non-Tobacco

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
<20												
20 - 24									1	1		
25 – 29	4	4	5	5	8	8	7	7	5	5	5	5
30 – 34	5	6	5	4	3	4	4	4	5	5	5	6
35 – 39	2	1	1		1		1				1	
40 – 44	1			2				1	1	1		
45 – 49	1	1	1	1	1	1	1	1	1	1	1	1
50 – 54		1									1	
55 – 59												
60 – 64												1
65 – 69			1									
70 – 74				1								
75 – 79												
80+												
Minimum	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	22.0%	24.0%	25.0%	25.0%
Maximum	45.0%	50.0%	65.0%	70.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	50.0%	60.0%
Mean	32.8%	33.0%	34.2%	35.4%	29.9%	29.5%	30.5%	31.0%	30.8%	31.0%	32.5%	33.4%
Median	31.0%	31.0%	31.0%	31.0%	28.0%	28.0%	29.0%	29.0%	30.0%	30.0%	31.0%	31.0%
Number of Responses (13)												

Table 18
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Preferred Non-Tobacco

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
<30					1	1			2	1		
30 – 34	2	3	3	3	5	5	5	5	2	3	3	3
35 – 39	8	7	6	6	5	6	7	6	6	6	7	6
40 – 44	1	1	2		1				1	1	1	2
45 – 49	1			2				1	1	1		
50 – 54												
55 – 59	1	2	1	1	1	1	1	1	1	1	2	1
60– 64												
65 – 69			1									1
70 – 74												
75 – 79				1								
80+												
Minimum	32.0%	32.0%	32.0%	31.4%	28.0%	27.0%	31.0%	31.0%	28.0%	28.0%	31.0%	32.0%
Maximum	56.0%	56.0%	65.0%	75.0%	56.0%	56.0%	56.0%	56.0%	56.0%	56.0%	56.0%	65.0%
Mean	39.1%	39.2%	40.1%	41.6%	36.1%	35.6%	36.2%	37.1%	37.4%	37.5%	39.1%	40.0%
Median	38.0%	37.0%	37.0%	37.0%	35.0%	35.0%	35.0%	35.0%	37.0%	37.0%	37.0%	37.0%
Number of Responses (13)												

Table 19
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Standard Non-Tobacco

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
<30												
30 – 34												
35 – 39				2		1	1	2				1
40 – 44	2	2	3	1	5	4	3	2	3	3	3	2
45 – 49	7	6	5	5	6	6	7	6	5	5	5	5
50 – 54	2	1	1					1	3	3	2	1
55 – 59	2	3	3	3	2	2	2	2	2	2	2	3
60– 64		1									1	
65 – 69				1								
70 – 74												
75 – 79			1									1
80+				1								
Minimum	42.0%	41.5%	40.8%	39.6%	40.0%	39.1%	39.0%	39.6%	41.0%	41.5%	40.8%	39.9%
Maximum	59.0%	60.0%	75.0%	80.0%	59.0%	59.0%	59.0%	59.0%	59.0%	59.0%	60.0%	75.0%
Mean	49.1%	49.9%	51.0%	52.0%	46.5%	46.2%	46.5%	47.0%	48.3%	48.5%	49.5%	50.6%
Median	48.0%	47.6%	47.0%	47.0%	46.0%	46.0%	46.0%	46.0%	47.0%	47.0%	47.0%	47.0%
Number of Responses (13)												

Seven of the 13 responding reinsurers expressed their expected mortality as a level percentage of the table by age and duration. For these 7, the percentage of SoA 1975-80 Select and Ultimate Basic Table ranged from:

- 22% to 31.5% for the super preferred plus non-tobacco class, with a median of 24%;
- 25% to 45% for the super preferred non-tobacco class, with a median of 29%;
- 32% to 56% for the preferred non-tobacco class, with a median of 37%; and
- 44% to 59% for the standard non-tobacco class, with a median of 47%.

The other six reinsurers varied their expected mortality by age and duration. The minimums, medians and maximums reported for each age and duration are presented in Tables 20, 21, 22 and 23.

The most common pattern of the expected mortality responses for age 65 was a pattern that increased with duration. For ages 25 and 45, both increasing and decreasing patterns were reported.

Table 20
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate B asic Tables
Super Preferred Plus Non-Tobacco
Reinsurers Using Non-Level Percentage

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
Minimum	25.2%	24.9%	23.5%	21.1%	21.6%	21.0%	21.0%	21.3%	19.0%	20.0%	22.0%	24.0%
Maximum	37.0%	45.0%	55.0%	60.0%	30.0%	25.0%	30.0%	33.0%	30.0%	35.0%	40.0%	50.0%
Median	29.9%	29.3%	29.0%	33.5%	23.0%	23.5%	24.3%	24.5%	25.6%	26.0%	27.7%	27.7%
Number of Responses (6)												

Table 21
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Super Preferred Non-Tobacco
Reinsurers Using Non-Level Percentage

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
Minimum	31.0%	31.0%	29.5%	26.6%	26.0%	25.0%	26.4%	26.8%	22.0%	24.0%	25.0%	27.0%
Maximum	40.0%	50.0%	65.0%	70.0%	35.0%	32.5%	35.0%	40.0%	40.0%	40.0%	50.0%	60.0%
Median	34.9%	32.4%	33.0%	38.0%	27.6%	27.5%	30.5%	30.1%	32.5%	32.3%	32.5%	34.0%
Number of Responses (6)												

Table 22
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Preferred Non-Tobacco
Reinsurers Using Non-Level Percentage

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
Minimum	34.7%	34.0%	33.7%	31.4%	28.0%	27.0%	31.0%	31.0%	28.0%	28.0%	31.0%	32.9%
Maximum	45.0%	55.0%	65.0%	75.0%	40.0%	35.0%	35.0%	45.0%	45.0%	45.0%	55.0%	65.0%
Median	39.4%	37.1%	37.5%	41.0%	32.0%	31.6%	33.3%	33.0%	35.8%	35.6%	37.0%	38.5%
Number of Responses (6)												

Table 23
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Standard Non-Tobacco
Reinsurers Using Non-Level Percentage

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
Minimum	42.0%	41.5%	40.8%	39.6%	40.0%	39.1%	39.0%	39.6%	41.0%	41.5%	40.8%	39.9%
Maximum	54.0%	60.0%	75.0%	80.0%	47.0%	47.0%	47.0%	50.0%	51.5%	52.0%	60.0%	75.0%
Median	49.4%	48.8%	50.5%	52.0%	43.0%	41.8%	43.5%	44.0%	48.5%	48.5%	49.9%	48.9%
Number of Responses (6)												

Underwriting Guideline 4

Underwriting Guideline 4 illustrates a product with 1 preferred and 1 standard tobacco class. With the exception of tobacco usage, the criteria are the same as for Underwriting Guideline 1.

	Preferred Tobacco	**Standard Tobacco**
Tobacco	Current tobacco user.	Current tobacco user.
Cholesterol (both must apply)	Cholesterol of 240 or less; cholesterol/HDL ratio of 5.5 or less.	Cholesterol of 300 or less; cholesterol/HDL ratio of 8.0 or less.
Blood pressure	Blood pressure average not to exceed 140/90, treated or untreated.	Blood pressure average not to exceed 150/95.
Personal medical history	No personal history of heart disease, diabetes or cancer (except certain types of skin cancer.)	Personal history not ratable.
Family medical history	No death of a parent or sibling prior to age 60 due to heart disease, diabetes or cancer.	N/A
Alcohol or drug abuse	No history of alcohol or drug abuse, treatment or counseling.	No history of drug abuse.
Driving record	No DWI or DUI convictions in the past 5 years. No more than 3 moving violations in the past 3 years.	Driving record not ratable.
Aviation	No private aviation, except with exclusion rider.	No rateable aviation risk.
Avocation	No participation in any hazardous avocation, occupation or sport.	Avocation not ratable.
Criminal record	No felony convictions in the past 10 years.	N/A
Lab profile	All parameters of blood and urine profile/HOS within standard (non-ratable) range.	All parameters of blood and urine profile/HOS within standard (non-ratable) range.
Weight (see attached build tables)	Weight does not exceed weight allowed for height listed in build table.	Weight does not exceed weight allowed for height listed in build table.
Foreign residence/travel	Must be U.S. or Canadian resident	N/A

	Preferred Tobacco	**Standard Tobacco**
BMI	**30**	**35**
Height	**Weight***	**Weight***
4'4"	115	135
4'8"	134	156
5'0"	154	179
5'4"	175	204
5'8"	197	230
6'0"	221	258
6'4"	246	288
6'8"	273	319

Expected Qualification Percentages for Underwriting Guideline 4

Table 24 shows the distribution, mean and median of the expected qualification percentages for Underwriting Guideline 4.

- For the preferred tobacco class, the percentages varied from 50% to 75% with a median of 63%.
- For the standard tobacco class, the percentages varied from 25% to 50% with a median of 37%.

These results are consistent with Underwriting Guideline 1.

Table 24
Qualification Percentages - 2 Tobacco Classes

% Qualifying	Preferred Tobacco	Standard Tobacco
<30		1
30-34		3
35-39		2
40-44		1
45-49		2
50-54	4	3
55-59	1	
60-64	2	
65-69	3	
70-74	1	
75-79	1	
80+		
Minimum	50%	25%
Maximum	75%	50%
Mean	61.6%	38.4%
Median	63%	37%
Number of Responses	**12**	

Expected Mortality for Underwriting Guideline 4

Tables 25 and 26 show the expected mortality percentage based on the SoA 1975-80 Select and Ultimate Basic Table for each of the 2 classes by issue age and duration. The ranges, means and medians by age and duration are also presented.

- For the preferred tobacco class, the median expected mortality was 80%, which was constant by age and duration.
- For the standard tobacco class, the median expected mortality varied by issue age and duration from 98% to 101.4%.

Table 25
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Preferred Tobacco

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
50 – 54									1	1	1	1
55 – 59	2				1	1	1	1				1
60 – 64	1	2	2	2	1	1	1	1	1	2	2	1
65 – 69	3	1	1	1	1	1	1	1	2	1	1	2
70 – 74		2	1		1	1	1	1				1
75 – 79		1	1	1		1			1	1	2	
80 – 84	5	5	5	6	7	6	6	6	6	6	5	5
85 – 89	1	1	1	1	2	1	2	1	1	1	1	1
90 – 94						1	1	1				
95 – 99			1									
100 – 104	1	1	1									
105 – 109									1	1		
110 – 114								1				
115 – 119				2							1	
120 – 124												
125 – 129												1
130 – 134												
135 – 139												
140+												
Minimum	55.0%	60.6%	61.7%	62.9%	55.0%	56.0%	57.0%	57.0%	51.0%	52.0%	52.0%	52.0%
Maximum	100.0%	101.0%	104.0%	115.0%	89.0%	90.0%	91.0%	110.0%	105.0%	105.0%	115.0%	125.0%
Mean	74.9%	77.1%	79.4%	82.7%	77.2%	76.8%	77.8%	79.7%	77.7%	77.3%	77.4%	77.0%
Median	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%
Number of Responses (13)												

Table 26
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Standard Tobacco

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
60 – 64												
65 – 69	1											
70 – 74												
75 – 79												1
80 – 84	1	1										
85 – 89	1	1	1	1	1				1	1	2	1
90 – 94	1	2				2	1	1	1	1		2
95 – 99	3	3	5	3	3	3	3	4	3	3	3	3
100 – 104	3	3	3	5	5	4	4	3	4	4	5	3
105 – 109					1	1	1	1	1	1		
110 – 114			1		1		1					
115 – 119	1	1	1	1	1	2	2	2	1	1	1	1
120 – 124	1	1	1	1	1	1	1	1	1	1	1	1
125 – 129	1	1										
130 – 134			1	1					1	1		
135 – 139								1				
140+				1							1	
Minimum	65.0%	84.1%	85.8%	87.4%	88.0%	90.0%	91.0%	91.0%	86.0%	86.0%	85.5%	79.6%
Maximum	127.0%	129.0%	133.0%	148.0%	121.0%	121.0%	121.0%	135.0%	130.0%	130.0%	145.0%	155.0%
Mean	98.6%	100.9%	104.0%	107.6%	103.2%	102.5%	104.2%	106.1%	103.8%	103.3%	103.6%	102.6%
Median	98.0%	98.0%	100.0%	101.4%	100.0%	100.0%	100.6%	100.0%	100.0%	100.0%	100.0%	98.0%
Number of Responses (13)												

Seven of the 13 responding reinsurers expressed their expected mortality as a level percentage of the table by age and duration. For these 7, the percentage of SoA 1975-80 Select and Ultimate Basic Table ranged from:

- 63% to 86% for the preferred tobacco class, with a median of 80%;
- 97% to 121% for the standard tobacco class, with a median of 100%.

The other 6 reinsurers varied their expected mortality by age and duration. The minimums, medians and maximums reported for each age and duration are presented in Tables 27 and 28.

For both the Preferred Tobacco and Standard Tobacco classes, the most common pattern by duration was increasing for issue age 25, flat or close to flat for age 45, and decreasing for age 65.

Table 27
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Preferred Tobacco
Reinsurers Using Non-Level Percentage

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
Minimum	55.0%	60.6%	61.7%	62.9%	55.0%	56.0%	57.0%	57.0%	51.0%	52.0%	52.0%	52.0%
Maximum	100.0%	101.0%	104.0%	115.0%	89.0%	90.0%	91.0%	110.0%	105.0%	105.0%	115.0%	125.0%
Median	67.9%	73.0%	77.5%	81.0%	77.3%	76.9%	76.2%	75.4%	79.5%	78.7%	77.1%	71.0%
Number of Responses (6)												

Table 28
Expected Mortality as a Percentage of SoA 1975-80 Select and Ultimate Basic Tables
Standard Tobacco
Reinsurers Using Non-Level Percentage

% of SoA 1975-80 Basic Table	Age 25				Age 45				Age 65			
	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10	Dur 1	Dur 3	Dur 6	Dur 10
Minimum	65.0%	84.1%	85.8%	87.4%	88.0%	90.0%	91.0%	91.0%	86.0%	86.0%	85.5%	79.6%
Maximum	127.0%	129.0%	133.0%	148.0%	114.0%	115.0%	116.0%	135.0%	130.0%	130.0%	145.0%	155.0%
Median	88.8%	92.4%	96.8%	102.2%	101.8%	98.7%	104.3%	103.9%	100.0%	98.9%	97.5%	92.3%
Number of Responses (6)												

Additional Questions

The Survey asked reinsurers to indicate if they expected qualification percentages to generally vary by age and sex. The results indicated that 80% of responding reinsurers expected qualification percentages to vary by issue age and about half expected qualification percentages to vary by sex.

Table 29
Do Qualification Percentages Vary by Age and Sex?

Vary by	Yes	No
Issue Age	12	3
Sex	8	7
Number of Responses	**15**	

The Survey asked reinsurers if their quotes on products other than 10-year level term included preferred classes and, if so, whether the same guidelines and number of classes as the 10-year term plans were used.

- Almost all responding reinsurers quoted on universal life, variable life, last-to-die, ART, other term and whole life plans that included preferred underwriting classes.

- For UL, ART, other term, decreasing term, variable life and whole life, the majority of companies use the same guidelines as they do for 10-year level term.

- For last-to-die plans, a large majority reported to have fewer preferred classes than 10-year term plans. None of the responding reinsurers reported seeing more preferred classes for these product types compared to 10-year level term plans.

- Only 4 of the responding reinsurers reported seeing quote requests on decreasing term and first-to-die plans with preferred classes. This could indicate these types of products were not as common as the other products listed and thus were less likely to be quoted on by reinsurers compared to other product types.

Table 30
Preferred for Other Products

Other Product	Do some companies sell with a preferred class?			Do they use the same underwriting guidelines and number of classes as for the 10-year term plans?		
	Yes	No	N/A	Same	Same/Fewer	Fewer
Universal life	14		1	12	1	1
Variable life	13	1	1	9	1	3
Last to die	13		2	2		11
Annual renewable term	12		3	10		2
Other term	12		3	11		1
Whole life	11	1	3	6	1	4
First to die	4	2	9	2		2
Decreasing term	4	4	7	3		1
Number of Responses	**15**					

Section 3 - Mortality Expectations

The Survey asked reinsurers which of the items listed in Table 31 were used to divide standard mortality into multiple preferred classifications. Reinsurers were asked to check all that applied to them. The most commonly used criteria when dividing standard mortality into multiple preferred classes were "based on internal underwriting recommendations" and "use experience from mortality studies," each at 93%. The next most popular response at 80% was using the "mathematical formula" described in Table 31.

Two additional responses were mentioned as write-in answers:

- *proprietary preferred risk analysis system*, and
- *x-factor relationships.*

Table 31
Split of Standard Mortality into Multiple Preferred Classifications

	Responses	
	Number	Percentage
Based on internal underwriting recommendations	14	93%
Use experience from mortality studies	14	93%
Mathematical formula based on distribution of business and assumptions about the relationships between mortality classes	12	80%
Educated guess	9	60%
Direct company's assumptions	7	47%
Industry experience	5	33%
Other	2	13%
Number of Responses	**15**	

The Survey asked if any degree of future mortality improvements was incorporated into the reinsurer's pricing assumptions for the preferred marketplace. Thirteen out of 15 reinsurers reported using future mortality improvement in pricing.

Table 32
Mortality Improvements Used in Pricing
Assumptions in the Preferred Marketplace

	Responses	
	Number	Percentage
Yes	13	87%
No	2	13%
Number of Responses	**15**	

For those 13 respondents that reported using mortality improvement, the improvement varied by duration and sex for the majority of responding reinsurers and by age and smoking status for some of the responding reinsurers, plus 2 other write-in answers:

- *duration is varied to the extent that improvement is included for a period of time;* and
- *medical vs. nonmedical underwriting.*

Table 33
Factors by which the Degree of Mortality Improvement
Varied in Pricing Assumptions in the Preferred Marketplace

	Responses	
	Number	Percentage
Duration	9	69%
Sex	8	62%
Age	5	38%
Smoking status	3	23%
Other	2	15%
Number of Responses	**13**	

For those 13 responding reinsurers who used mortality improvement, the Survey asked for a free form description of the improvement factor for issue ages 25, 45 and 65 from date of issue. The results below do not add up to 13 since some of the reinsurers' comments fell into more than one of the following groupings. All rates are annual.

- <u>Seven</u> of the responding reinsurers noted variation by duration:

  - six reported a 1% per year level of improvement over either 10, 15 or 20 years and
  - two reinsurers reported grading off by duration.

- <u>Four</u> of the responding reinsurers reported improvement factors that varied by sex with male factors greater than female factors:

  - males at 1.5% per year and females at 0.3% per year, offset by selection wear off factors, or
  - males at 1.0% and females at either 0.5% or 0.6% per year.

- <u>Three</u> responding reinsurers gave descriptions of how the values varied by issue age:

  - one reported improvement factors for the first 10 years that varied by issue age: about 1.75% per for age 25, about 1.5% per year for age 45 and about 0.75% per year for age 65, while
  - the others reported improvement level, increasing and/or decreasing patterns that varied with duration for each age.

Other comments:

- One re insurer reported assuming future mortality improvement for non-smokers only,
- One reinsurer varied improvement factors by medically vs. nonmedically underwritten business, and
- One reinsurer reported "proprietary" for this question.

The Survey asked reinsurers to rank the importance of several items, on a scale of 1 to 5 (with 5 being the most important) when evaluating a client's:

(a) distribution of business by premium class and
(b) mortality experience by premium class.

Based on the weighted average of the responses shown in Table 34, the most important consideration when evaluating a client's distribution of business by premium class was "client provided data", followed by "your (the reinsurer's) internal information" and "quality of a client's underwriting." Ranked least important was "client's handling of exceptions".

When evaluating a client's mortality experience by class "your (the reinsurers') internal information" and "quality of the client's underwriting" were ranked most important with "client provided data" following (see Table 35). Ranked least important were "client's handling of exceptions" and "audits."

Eleven out of the 15 responding reinsurers had slightly different rankings for part (a) and (b) of the question, while 4 responding reinsurers reported the same ranking for both parts.

Table 34
Importance When Evaluating a Client's Distribution of Business by Premium Class

	Percentage of Responses					weighted average score	implied rank
	1 – least important	2	3	4	5 - most important		
Client provided data	27%	0%	7%	13%	53%	3.7	1st
Your internal information	13%	13%	7%	47%	20%	3.5	2nd
Quality of client's underwriting	7%	20%	40%	27%	7%	3.1	3rd
Audits	33%	33%	13%	0%	20%	2.4	4th or 5th
Client's handling of exceptions	20%	33%	33%	13%	0%	2.4	5th or 4th
Number of Responses	**15**						

Table 35
Importance When Evaluating a Client's Mortality Experience by Premium Class

	Percentage of Responses					weighted average score	implied rank
	1 – least important	2	3	4	5 - most important		
Your internal information	7%	20%	20%	27%	27%	3.5	1st or 2nd
Quality of client's underwriting	7%	7%	40%	27%	20%	3.5	2nd or 1st
Client provided data	27%	13%	7%	27%	27%	3.1	3rd
Client's handling of exceptions	20%	27%	33%	13%	7%	2.6	4th
Audits	40%	33%	0%	7%	20%	2.3	5th
Number of Responses	**15**						

The Survey asked reinsurers to rank the relative importance of the specific items listed in Table 36 when evaluating the quality of a client's underwriting. Based on the weighted average score, "published underwriting requirements" was the most important, followed by "underwriters experience" and "client's handling of exceptions." Ranked least important was "whose manual client uses."

Table 36
Importance When Evaluating the Quality of a Client's Underwriting

	Percentage of Responses				weighted average score	implied rank
	1 – least important	2	3	4 – most important		
Published underwriting requirements	20%	20%	20%	40%	2.8	1st
Underwriters experience	20%	20%	33%	27%	2.7	2nd
Client's handling of exceptions	13%	40%	33%	13%	2.5	3rd
Whose manual client uses	47%	20%	13%	20%	2.1	4th
Number of Responses	**15**					

Section 4 – Preferred Underwriting Criteria

The Survey asked reinsurers to rate the relative importance of different categories of preferred criteria shown in the following table by assigning points to each category. Each reinsurer had two sets of 100 points to assign; one for preferred non-tobacco classes and one for preferred tobacco classes. The points assigned to each category were to correspond to the relative importance given by the reinsurer to that category when analyzing a direct writer's preferred criteria.

Here is the blank table from the survey questionnaire:

Category of Preferred Criteria	Non-Tobacco	Tobacco
Personal medical history		
Family history		
Time since last used tobacco (for non-tobacco only)		N/A
How often/how much use tobacco (for tobacco only)	N/A	
Foreign residence/travel/citizenship		
Occupation, aviation, avocation		
Alcohol and drug use		
Felonies, bankruptcies, credit reports		
Driving record (moving violations and DUI)		
Blood lipids		
Other blood work (PSA, liver enzymes)		
Blood pressure		
Build		
Fitness/exercise		
	100	**100**

First, points for each category were simply added together to give a measure of the average importance of each category for the group of responding reinsurers.

For both classes, blood lipids and blood pressure were easily the most important categories, with little measurable difference in importance between them. For both classes, build was third most important and family history was the fourth most important.

There were no significant differences between the two preferred classes. The principal difference was that for non-tobacco classes, the time since tobacco last used was the fifth most important category, while the category most closely related for tobacco risks, the frequency and intensity of current tobacco use, was the ninth most important category (out of 13 total categories).

Which category was ignored by the most responding reinsurers? Fitness and exercise – only one responding reinsurer said they considered this category when evaluating preferred criteria. The only other category ignored by over half of the responding reinsurers was "Felonies, bankruptcies and credit reports" – only 5 of 15 responding reinsurers considered such criteria.

Several categories were used by every reinsurer responding: family history, occupation/aviation/avocation, driving record, blood lipids, blood pressure, and build.

The average responding reinsurer considered 10 of the 13 categories listed. The most categories considered were all 13 and the least considered was 7.

Table 37
Relative Importance of Preferred Criteria

Non-Tobacco			Tobacco		
Category	**Total Points**	**% of Grand Total**	**Category**	**Total Points**	**% of Grand Total**
Blood lipids	230.0	16%	Blood lipids	248.3	18%
Blood pressure	224.0	16%	Blood pressure	245.3	18%
Build	188.5	13%	Build	194.8	14%
Family history	161.0	11%	Family history	166.3	12%
Time since last tobacco used	132.3	9%	Driving record	117.9	8%
Driving record	111.6	8%	Personal medical history	114.3	8%
Personal medical history	109.5	8%	Occupation, aviation, avocation	107.0	8%
Occupation, aviation, avocation	99.7	7%	Alcohol/drug use	61.5	4%
Alcohol & drug use	54.0	4%	How often/how much use tobacco	52.5	4%
Other blood work	46.0	3%	Other blood work	51.1	4%
Foreign residence/travel/citizenship	27.0	2%	Foreign residence/travel/citizenship	28.1	2%
Felonies, bankruptcies, credit reports	11.5	1%	Felonies, bankruptcies, credit reports	11.0	1%
Fitness/exercise	5.0	0%	Fitness/exercise	2.0	0%
Grand Total points	1400		Grand Total points	1400	

Percentages rounded to nearest whole number; may not add to 100% due to rounding.

The spread between the lowest weight given to a category and the highest weight given was used as a measure of how much disagreement there was among responding reinsurers as to how important a category was.

- For non-tobacco risks, the largest difference of opinion was on the importance of blood pressure: one responding reinsurer gave it 25 points, and one gave it only 5. The least difference was on felonies/bankruptcies/credit reports: weights ranged from 0 to 3 points.

- For tobacco risks, the largest difference of opinion was on blood pressure, with one responding reinsurer assigning 27 points, another only 6. The least difference was on fitness/exercise, where scores ranged from 0 to 2 points.

Finally, Table 38 provides more detail about the four most important types of criteria. Maximum Score means the most points out of a possible 100 assigned by any responding reinsurer, and Minimum Score refers to the least number of points assigned to the category by any responding reinsurer.

Table 38
Range of Top Four Preferred Criteria

Criteria Type	Non-Tobacco		Tobacco	
	Maximum Score	**Minimum Score**	**Maximum Score**	**Minimum Score**
Blood Lipids	25	10	30	10
Blood Pressure	25	5	27	6
Build	20	10	21	10
Family History	22.5	5	22.5	5

The next 5 questions had the same format: the reinsurers were asked whether they considered a ceding company's practice with respect to the given criteria. For each of these questions, the answers are ranked by the number of reinsurers indicating that they considered the criteria.

Table 39 shows the ranking of the personal history criteria considered by responding reinsurers.

Table 39
Personal History Criteria

Type of Criteria	"Yes" Responses	
	Number	Percentage
Hypertension	14	100%
Treatment for hypertension	14	100%
Time since last smoked	14	100%
Heart disease	13	93%
Melanoma	13	93%
Treatment for cholesterol	13	93%
Whether non-cigarette tobacco products are allowed	13	93%
Type I diabetes	12	86%
Type II diabetes	12	86%
Other internal cancer	12	86%
Stroke	12	86%
History of elevated total cholesterol	9	64%
COPD	6	43%
Other skin cancer	5	36%
Mental or nervous disorder	5	36%
Asthma	4	29%
Number of Responses	**14**	

While the definition of family history for preferred underwriting varies in the industry, it typically includes the same components stated in a structure similar to the following: any [parent(s)/siblings] have [died/been diagnosed] with [specific disease] before [age X]. Therefore, we asked two related questions on family history criteria. Table 40 shows the ranking of family history criteria relative to considered diseases.

Table 40
Family History Criteria

Type of Criteria	"Yes" Responses	
	Number	Percentage
Heart disease	15	100%
Cancer	15	100%
Stroke	12	80%
Type I diabetes	11	73%
Type II diabetes	10	67%
Hypertension	6	40%
Non-accidental early death	3	20%
Alcohol/drug use	2	13%
Number of Responses	**15**	

Table 41 shows the ranking of additional related components of the family history definition.

Table 41
Additional Considerations for Family History Criteria

Type of Criteria	"Yes" Responses	
	Number	Percentage
Specified age when family member died	15	100%
Specified age when family member was diagnosed	13	87%
Whether the criterion refers to one parent only	12	80%
Whether the criterion refers to two parents	12	80%
Whether the criterion refers to both parents and siblings	12	80%
Number of Responses	**15**	

Table 42 shows the ranking of the lifestyle considerations considered by responding reinsurers.

Table 42
Lifestyle Considerations

Type of Criteria	"Yes" Responses	
	Number	Percentage
Aviation	15	100%
Moving violations	15	100%
DUI	15	100%
Avocations/hazardous sports	14	93%
Alcohol abuse	13	87%
Illegal drugs	13	87%
Hazardous occupation	13	87%
Foreign residence	12	80%
Foreign travel	12	80%
Foreign national	8	53%
Felony conviction	6	40%
Bankruptcies	5	33%
Poor credit history	3	20%
Exercise/fitness/diet	2	13%
Number of Responses	**15**	

Table 43 shows the ranking of the personal medical history criteria considered by responding reinsurers.

Table 43
Personal Medical History Criteria

Type of Criteria	"Yes" Responses	
	Number	Percentage
Total cholesterol	15	100%
Chol/HDL ratio	15	100%
Treatment for hypertension	15	100%
Treatment for high cholesterol	13	87%
Minimum weight for height	10	67%
Liver enzymes	7	47%
PSA	5	33%
ADLs	5	33%
Number of Responses	**15**	

The Survey asked whether there were any other important kinds or categories of preferred criteria the reinsurer considered which had not been listed above.

Additional criteria mentioned once unless otherwise noted:

- *does maximum height vary by sex;*
- *criteria explicitly require risks to be standard* (mentioned twice);
- *military service;*
- *EKG;*
- *timed vital capacity;* and
- *ages where MVR is acquired.*

The Survey asked who was primarily responsible at the reinsurer for setting mortality assumptions for preferred classes. The choices were:

Underwriting
Pricing Actuaries
Medical Director
Senior Management
Research and Development
Other

"Pricing Actuaries" were responsible for setting mortality assumptions for preferred classes at 13 of 15 responding reinsurers. At 3 of those 13, the responsibility was shared with:

- "Underwriting";
- "Research and Development"; and
- both.

Of the 2 responding reinsurers that did not report "Pricing Actuaries" as primarily responsible, one said a pricing committee was responsible, and one said that *"corporate actuarial approval"* was *"required"* for pricing assumptions.

"Medical Director" and "Senior Management" were not selected by any of the responding reinsurers. The Survey asked which criteria the reinsurer would like to see used to classify a risk as preferred that is not commonly used today. Each was mentioned once unless otherwise noted.

- Lab results:
  - LDL
  - Timed vital capacity
  - CRP
  - Homocysteine
  - Serum albumin (for older insureds)

- Other criteria:
  - ADLs for older insureds (mentioned four times)
  - Hospitalization (for older insureds)
  - Loss of spouse (for older insureds)
  - BMI
  - Exercise
  - Credit history

One responding reinsurer replied that, although driving record for younger insureds was currently used, this reinsurer believed it deserved more emphasis than it currently received fro m direct writers.

Section 5 - Alternative Techniques and Future Preferred Programs

The Survey asked if the reinsurers had seen any quote requests from companies that offered products with simplified underwriting. Fourteen of the 15 responding reinsurers indicated that they had.

Table 44
Quote Request With Simplified Underwriting

	Responses	
	Number	**Percentage**
Yes	14	93%
No	1	7%
Number of Responses	**15**	

The Survey asked whether the simplified underwriting products included a preferred class. Six of the 14 responding reinsurers had indicated seeing a simplified underwriting quote that included a preferred class.

Table 45
Quote Request Including a
Preferred Class for Simplified Underwriting

	Responses	
	Number	**Percentage**
Yes	6	43%
No	8	57%
Number of Responses	**14**	

The Survey asked the reinsurers to indicate the factors/tools that they have seen used to distinguish a preferred from a standard risk. Table 46 shows the results.

Other responses included:
- *lab tests*
- *blood profile; paramedical*

Table 46
Factors/Tools Used to Distinguish a Preferred from a Standard Risk

Factor / Tool	Responses	
	Number	**Percentage**
Family history	13	87%
Driving record	13	87%
Non-tobacco usage	13	87%
Admitted health history	12	80%
Admitted build	12	80%
APS	7	47%
MIB	5	33%
Annual income	2	13%
Other	2	13%
Currently at work	1	7%
Credit profile	0	0%
Number of Responses	**15**	

Thank you for your interest and taking the time to read this survey. Please feel free to submit any comments to the Preferred Underwriting Reinsurance Survey Subcommittee c/o The Society of Actuaries.

Appendix 1
Contributing Companies

Annuity & Life Re
Annuity & Life Re America
American United Life
Business Men's Assurance Company
Canada Life Assurance Company
Clarica Life Insurance Company
ERC Life Insurance Company
Manulife Re
Munich American Reassurance Company
Optimum Re Insurance Company
RGA Re Canada
RGA Reinsurance Company
Scor Life Re
Swiss Re
Transamerica Re

Appendix 2
Glossary of Acronyms

ADL – Activities of Daily Living
APS – Attending Physician Statement
ART – Annual Renewable Term
BMI – Body Mass Index
COPD – Chronic Obstructive Pulmonary Disease
CRP – C-Reactive Protein
DUI – Driving Under the Influence of drugs or alcohol
DWI – Driving While Intoxicated
EKG – Electrocardiograms or ECG
HDL – High Density Lipoprotein ("good" cholesterol)
HOS – Home Office Specimen
PNT – Preferred Non-Tobacco
LDL – Low Density Lipoprotein ("bad" cholesterol)
MIB – Medical Information Bureau
MVR – Motor Vehicle Record
N/A – Not Applicable
NT – Non-Tobacco
PSA – Prostate Specific Antigen
SoA – Society of Actuaries
SNT – Standard Non-Tobacco
T – Tobacco
UL – Universal Life