Report

of the

Society of Actuaries

Preferred Underwriting

Survey Subcommittee

March 2005

The attached report presents the results of our survey on preferred risk underwriting practices as of July 2002 of U.S. life insurance companies on their U.S. life insurance business. This is the third such survey completed by the Society of Actuaries. The first survey was based on practices in July 1995 and the second, on practices as of April 1997.

Similar to the 1997 Survey, we asked for information related to a company's most popular ten-year level premium term offering. The 1995 Survey was based on the most popular preferred risk class product for each company, which typically was a term product, but not necessarily a ten-year level term product.

Fifty-four companies responded to our survey. Of these, 26 also participated in one or both of the previous surveys. In the report, we have made some comparisons between the results of the various surveys, and where possible have made specific comparisons among this group of 26 companies. The report points out similarities and differences between the two surveys, including discussions of perceived trends in the data.

The intent of the survey was to gather information on the many variations in preferred risk underwriting. The Survey Committee believes the results of this survey will be of interest to a diverse audience, as the material is of interest to various disciplines. There may also be international interest in the results. With that in mind, the Survey Committee tried to keep the report simple, while still providing the needed detail. Please note the Survey Committee did not try to offer explanations or interpretations of the respondents' answers.

The report describes the results of the survey that the Society of Actuaries Mortality and Underwriting Survey Committee sent to U.S. life insurance companies. It describes the preferred risk criteria being used, their prevalence, related assumptions, and how accurate some of these assumptions have proven to be. This latter item, unfortunately, has not been fully developed in this report as the required experience is still lacking in many areas.

The intent of this report is to provide an objective observation of what companies are doing with respect to preferred risk underwriting classes.

While we anticipate and hope that the results prove useful for the industry, there are several caveats that must be made:

- The data the Survey Committee received, while fairly comprehensive, is by no means a look at the whole industry or all preferred risk class products in the marketplace.

- The results are indicative of the preferred risk criteria in 2002. However, this is a constantly changing environment. Criteria used and qualification requirements appear to change frequently.

- Terminology varies from company to company and even product to product. Some common names for the preferred risk class are preferred, select, elite and super- preferred. There is no common definition. Preferred risk class rates on one company's product may be lower than super-preferred risk class rates on another company's product.

- The Survey Committee relied on the data the respondents provided to be accurate.

The Survey Committee thanks all of the companies who participated in this survey. We want to apologize for the delay in getting the responses compiled into this report. The Survey Committee also thanks Lab One for providing recent laboratory data, which can be used to help evaluate some of the survey data. The Survey Committee also thanks those who helped us review this document and offered helpful suggestions and comments. Finally, the Survey Committee thanks a number of the Society of Actuaries staff for their help in completing this project, especially Jack Luff and Korrel Crawford, without whose help this could not have been completed.

Comments on this report and suggestions for the next survey are welcome and can be addressed to the Mortality and Underwriting Survey Committee c/o The Society of Actuaries.

Disclaimer

This survey is published by the Society of Actuaries (the SOA) and contains information based on input from companies engaged in the U.S. life insurance industry. The information published in this survey was developed from actual historical information and does not include any projected information. The SOA and the participating companies do not recommend, encourage or endorse any particular use of the information reported in this survey. The SOA makes no warranty, guarantee or representation whatsoever and assumes no liability or responsibility in connection with the use or misuse of this survey.

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OF THE
SOCIETY OF ACTUARIES'
MORTALITY AND UNDERWRITING SURVEY COMMITTEE
ON
PREFERRED UNDERWRITING

EXECUTIVE SUMMARY

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

- The Society of Actuaries Mortality and Underwriting Survey Committee developed a survey of preferred underwriting practices and sent it to actuaries at U.S. life insurance companies requesting data on policies written in the U.S. This is the third survey of its kind. The first survey of preferred underwriting practices was completed in July, 1995 and published in June, 1996; the second survey was based on practices in April, 1997 and published in September, 1998. This survey was based on practices in early 2002.

- Fifty-four companies responded to the survey based on data from their 10-year level term life insurance product(s) with preferred risk classes. Of these, 26 also participated in one or both of the previous surveys.

- When comparing to the results of prior surveys, the data indicates a trend toward using more preferred risk classes. Thirty-four, or 69%, of the respondents use five or more total risk classes, versus the four and three class structures that were most prevalent in the 1997 and 1995 Surveys, respectively.

- The most common risk class structure was 3 Nontobacco (NT) and 2 Tobacco (T) classes, next followed by 4 NT and 2 T classes versus the 2 NT and 1 T class structure most prevalent in the prior surveys.

- The most common definition for an applicant to be considered a NT risk was no tobacco use of any kind within the past 60 months for companies with 4 or more NT classes, and no tobacco use of any kind within the past 36 months for companies with 3 NT classes. Over half of the respondents, regardless of the number of NT classes they have, do allow an applicant occasional cigar use and still qualify for their best NT class.

- For the best NT class among companies with 3 or more NT classes, the percentage of applicants expected to qualify in that class ranged from a low of less than 10% to a high of about 45%. The respondents generally experienced more applicants qualifying for the preferred NT risk class than they expected and less applicants qualifying for the preferred Tobacco risk class than expected.

- As a percentage of the SOA 1975-80 Basic Select and Ultimate Tables, the majority of respondents do not vary their mortality assumption by age or duration. Sixteen percent of the respondents included mortality improvement in their pricing assumption for their preferred risks.

- For those respondents that track their mortality experience by preferred class, 30% had experience better than expected, 22% had mortality in line with that expected and 7% had actual mortality worse than expected. The remaining 41% indicated it was too early to tell or they did not know.

- The most common criteria used by at least 98% of the respondents to define a preferred risk are listed below.
  - ✓ A personal history of: internal cancer, heart disease, diabetes (Type I and Type II), and melanoma;
  - ✓ A family history of heart disease;
  - ✓ Alcohol abuse;
  - ✓ Use of illegal drugs;
  - ✓ Avocation and hazardous sports; and
  - ✓ Aviation.

- All of the respondents used a personal history of internal cancers (other than melanoma), a family history of heart disease, alcohol abuse, and use of illegal drugs. A personal history of stroke, hypertension and treatment for hypertension, as well as hazardous occupation were also used by more than 90% of the respondents in their preferred criteria. History of elevated cholesterol and treatment for cholesterol were the next most common criteria used, by 86% and 83% of the respondents, respectively. This was down from the previous Surveys.

- For those respondents that use Total Cholesterol as a criterion for their best preferred risk class, the total cholesterol levels permitted ranged from a low of 200 to a high of 274, depending on the number of NT classes. Regardless of the number of NT risk classes, nearly half the respondents viewed cholesterol readings for an individual under treatment for cholesterol differently than for those not under treatment.

- For those respondents that use the Total Cholesterol/HDL ratio as a criterion for their best preferred risk class, the ratios permitted ranged from a low of just under 4.0 to a high of 6.5, depending on the number of NT classes. More than half of the respondents, regardless of the number of NT risk classes, did not consider a Total Cholesterol/HDL ratio differently for an individual under treatment for cholesterol than for one not under treatment.

- For those respondents that use a personal history of hypertension as a criterion for their best preferred risk class, the maximum untreated blood pressure limits for a male risk to qualify for the best preferred risk class at age 45 ranged from a low of 120/80 under the 4 or more NT class system to a high of 150/90 in a 2 NT class system. The low readings in this Survey were nearly identical to those in the 1997 Survey; however, the high readings reduced slightly.

- Forty-two percent of the respondents indicated that any treatment for hypertension would preclude an individual from a preferred class. For those respondents allowing treatment for hypertension in their preferred qualifications, all but one allowed the same maximum reading as for an untreated individual.

- Only eighteen percent of the respondents indicated they allow no exceptions in their preferred risk qualifications. For those that do allow some level of exceptions to their preferred risk criteria, the two most common are for cholesterol and build. Seventy-two percent of the respondents do allow some level of underwriting judgment in their preferred risk qualification. This is a reduction from the 90% that reported allowing underwriter judgment in the 1997 Survey.

Section 1 - Company Characteristics

Fifty-four companies responded to the Survey that they had at least one preferred risk class. Not all companies answered all of the questions; therefore, the number of respondents may vary by question. Appendix A lists the 54 respondents. Of these, 40 were stock companies, eight were mutual companies, and six were fraternals.

The size of the responding companies based on face amount of life insurance in force and the estimated amount of term insurance sales for 2001 is shown in Appendix B.

Twenty-six respondents also participated in one or both of the prior surveys (11 participated in both the 1997 and 1995 Surveys, seven indicated only the 1997 Survey, and eight indicated only the 1995 Survey). Note, for comparison purposes, the 1997 Survey asked for results based on the most restrictive preferred nonsmoker risk class and the 1995 Survey asked for results based on a preferred class, while this survey asked for responses based on the most popular ten-year level term offering. Where possible, we have made comparisons of results between the two surveys overall, as well as between the 11 companies that responded to both preferred surveys.

Respondents were asked to indicate all distribution channels they market through and, of these, which one is considered their primary channel. Several respondents indicated more than one primary distribution channel, and several others indicated no primary channel. Table 1.1 below indicates that the three most common and primary distribution channels reported by the respondents were Career Agent, Independent Broker, and PPGA. For example, of the 54 respondents, 63% distribute through a career agent distribution channel and of these, 79% consider this channel their primary distribution channel. For the remaining 21% that distribute through a career agent channel but where that channel is not their primary distribution channel, 57% use the same rates and underwriting for their preferred class as in their primary distribution channel.

Table 1.1 – Distribution Channels

Distribution Channel	% of Respondents Distribute Through	If distribute through, % considering channel primary	For Respondents Considering Channel Non-Primary	
			% Using Same Rates as Primary Channel	% Using Same UW as Primary Channel
Career Agent	63%	79%	57%	57%
Independent Broker	54	45	100	88
PPGA	39	48	82	73
Bank Platform	22	0	67	67
Stockbroker	19	10	78	67
Internet	15	0	63	100
Other Financial Institutions	15	13	57	57
Direct Mail	13	29	20	20
Worksite Marketing	9	0	60	60
Company Direct to Consumer	6	33	50	100
Other	11	33	75	100
# of Respondents	**54**			

Comments regarding "Other":

Five respondents indicated they used one of the following distribution channels: Disability Income Sales Office, Fee-based planners, Financial planners, Mgroup / Producer group, and National Marketing Organizations.

Section 2 – General Information

The Survey asked respondents to indicate how many preferred and residual standard classes they had, as of December 2001, for both nontobacco (NT) users and tobacco (T) users. The results are in Table 2.1a below. The most common class structure reported was 3 NT and 2 T classes at 43%, followed by 4 NT and 2 T classes at 16%, and 3 NT classes with 1 T class at 14%. In total, 83% of the respondents had three or more NT classes and 26% had four or more NT classes. No company had more than 3 T classes.

Table 2.1a - Number of Nontobacco and Tobacco Classes

Category	% of Responses
2NT, 1T	12%
3NT, 1T	14
4NT, 1T	4
2NT, 2T	4
3NT, 2T	**43**
4NT, 2+T	18
5+NT, 2+T	4
# of Respondents	**49**

Table 2.1b - Risk Class Comparison to Previous Surveys

# Classes	1995	1997	2002
2NT	94%	77%	16%
3NT	2	16	57
4+NT	4	7	26
Prevalent Structure	2NT, 1T	2NT, 1T	3NT, 2T
# of Respondents	51	61	49

In the 1995 Survey, more than half the respondents had three total risk classes, while in the 1997 Survey, the majority had at least four risk classes. In this Survey, 34 of the respondents (69%) indicated having five or more risk classes, compared to only three and nine respondents in the 1995 and 1997 Surveys, respectively.

The Survey asked how the number of risk classes in the current risk class structure compared to the number of classes as of December 31, 1999. There were 48 respondents to this question. The responses are summarized in Table 2.2.

Table 2.2 - Change in Number of Nontobacco and Tobacco Classes
Between 12-31-99 and 12-31-01

Change in # of Classes	% Nontobacco	% Tobacco
Fewer	4%	4%
More	35	15
Same	60	81
# of Respondents	48	48

The majority of respondents indicated that the total number of classes had not changed since December 31, 1999. Note that most of the changes occurred in the NT classes.

The Survey asked respondents to describe each of their risk classes. The answers varied dramatically, in part, depending on how many classes a company had. For example, for the best preferred class, two companies required an applicant to have never used tobacco and another six companies required only a 12-month abstinence. Three-year and five-year requirements were common for the best preferred class. A more comprehensive comparison of underwriting requirements is addressed in Section 4 of this report.

The Survey asked respondents to provide issue age limits for each of their nontobacco risk classes. There were 44 respondents to this question. The maximum qualifying age for companies' best preferred classes ranged from 50 to 90, with 61% of the respondents indicating an age 70 or 75 threshold. Most companies used a common maximum issue age for all risk classes. A few companies used higher maximum ages for some of the less preferred risk classes.

Table 2.3 - Maximum Issue Age for the Best Preferred Nontobacco Risk Class (Class 1)

Maximum Issue Age	% of Respondents
< 70	18%
70	34
75	27
> 75	20
# of Respondents	**44**

For Class 2, 23% of respondents reported a maximum issue age greater than 75. Two companies reported a maximum issue age of 90.

The Survey asked respondents to indicate the minimum and maximum face amount limits for each of their nontobacco and tobacco classes. There were 43 respondents to this question. Ninety-three percent of the respondents indicated a minimum issue amount of $100,000 or higher to qualify for the best class; the minimum amounts ranged from $50,000 to $1 million. Seventy-three percent of the respondents required exactly $100,000. No respondent indicated a minimum amount less than $50,000 for Class 1 or Class 2. The results for the best tobacco class paralleled those of the nontobacco class, except that no respondent required a minimum amount of $1 million. The responses for the minimum face amount limits for the best preferred nontobacco risk classes are shown in Table 2.4.

Table 2.4 - Minimum Face Amount for Best Preferred Nontobacco Risk Class (Class 1)

Minimum Face ($000)	% of Responses
50	7%
100-249	75
250-499	11
500+	7
# of Respondents	**44**

Twenty-three percent of the respondents indicated a maximum amount that could be written in the best nontobacco and tobacco classes. For other than the best class, both the minimum and maximum amounts dropped for a few respondents. For Class 2, 14% of respondents had a minimum of $50,000, 69% reported $100,000, and 17% reported $250,000.

The Survey asked respondents to indicate the percentage of applicants expected to qualify for the various risk classes. There were up to 42 respondents to this question; however, the number of responses to each part of the question varied between 24 and 42.

The percentage of applicants expected to qualify varied widely, in part depending on how many classes companies had. For example, the range was from 4% to 65% for the best preferred class. Six respondents (16%) indicated no more than 20% would qualify and two (5%) indicated more than 50% would qualify. The median was about 33%. When asked about the percent expected to be issued and paid, and the percentage actually issued, the same ranges were reported for the best NT class, but there was variation between the actual and expected by company (see Charts 2.1 through 2.3). The median for risk class 2 qualification was about 27%, and for risk classes 3 and 4, the medians were about 33% and 20%, respectively.

Table 2.5a - Expected to Qualify – 4+ NT Classes

Risk Class	High	Low	Median
Best	47%	4%	33%
Class 2	30	3	22
Class 3	50	12	17
Class 4	69	9	20

Table 2.5b - Expected to Qualify – 3 NT Classes

Risk Class	High	Low	Median
Best	44%	8%	29%
Class 2	40	7	30
Class 3	85	28	35

Table 2.5c - Expected to Qualify – 2 NT Classes

Risk Class	High	Low	Median
Best	65%	45%	50%
Class 2*	50	35	50

*The respondent with the lowest qualification of 45% for the best NT class did not provide a qualification expectation for their Class 2.

For respondents with more than one tobacco risk class, the median for the percent expected to qualify for the best class was 50%, with a range from 2%-71%. Table 2.6 shows the expected and actual qualification percentages for the respondents' best preferred nontobacco and tobacco classes.

Table 2.6 - Respondents' Range of Expected Qualifying and Actually Issued Percentages for the Best Preferred Class

Range (%)	Nontobacco Risk Class Best Class		Tobacco Risk Class Best Class	
	% Expected	% Actual Paid	% Expected	% Actual Paid
≤ 10	14%	7%	16%	7%
11 - 20	3	17	8	10
21 - 30	27	21	0	3
31 - 40	30	19	8	14
41 - 50	22	24	36	10
51 - 60	3	2	16	41
61+	3	10	16	14
Low	4%	3%	2%	5%
High	65	66	71	67
Median	33	33	50	51
# of Respondents	37	42	25	29

Charts 2.1 and 2.2 graphically depict the actual versus expected percentages qualifying (issued & paid) for the most restrictive preferred nontobacco class. Chart 2.1 shows data from respondents with four or more nontobacco classes. Chart 2.2 shows data from respondents with three nontobacco classes. Similarly, Chart 2.3 shows the actual versus expected percentages

qualifying (issued & paid) for the most restrictive tobacco class for those respondents with two or more tobacco classes.

In all three charts, points above the diagonal represent respondents that have actual qualifying percentages greater than expected. Points that fall below the line have actual qualifying percentages less than expected.

Chart 2.1 – Actual versus Expected Qualifying Percentages for Most Restrictive Preferred Nontobacco Risk Class. Includes respondents with four or more nontobacco classes.
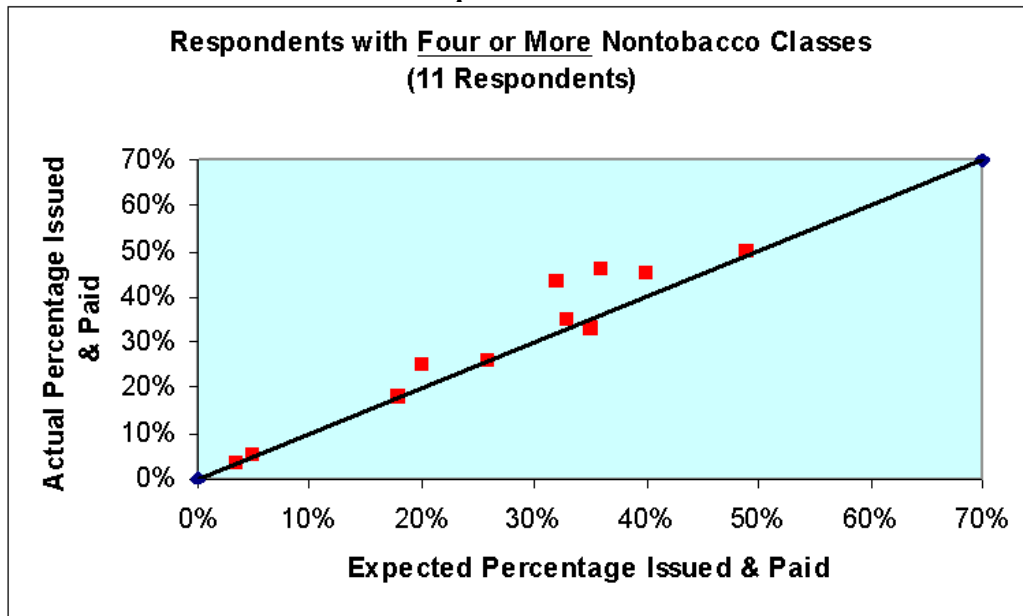
Chart 2.1 shows that half of respondents with four or more nontobacco classes had a higher percentage qualifying for their best class than expected. The magnitude of the differences was fairly narrow when compared to Chart 2.2.

Chart 2.2 – Actual versus Expected Qualifying Percentages for Most Restrictive Preferred Nontobacco Risk Class. Includes respondents with three nontobacco classes.
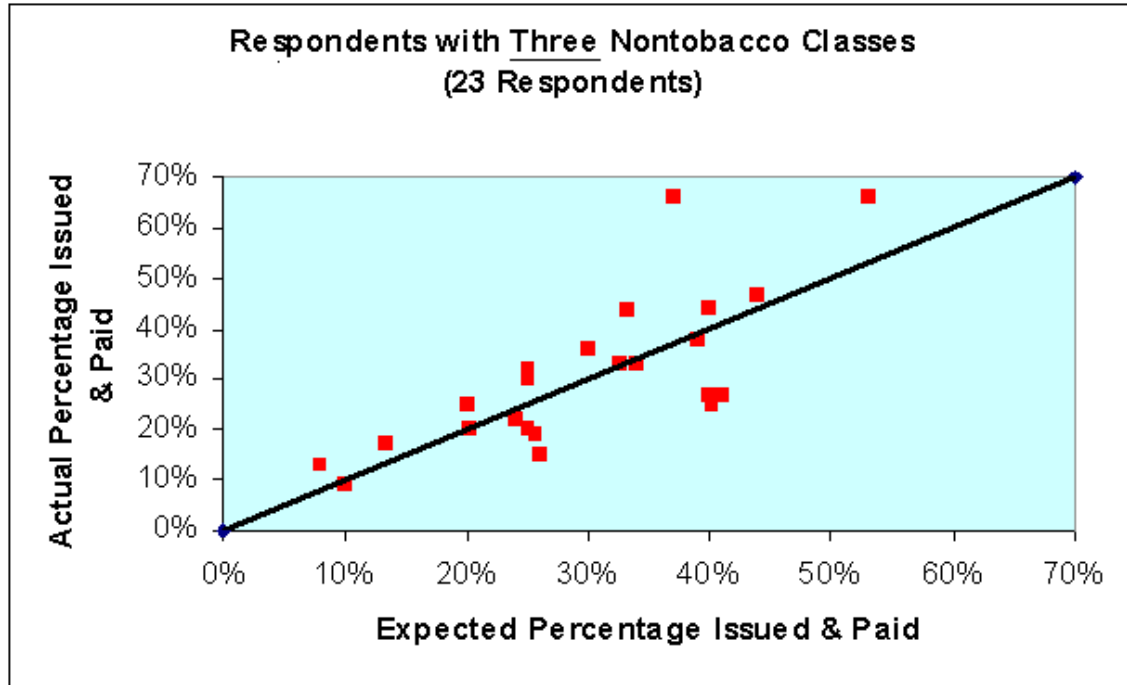
Chart 2.2 shows that nearly half of respondents with three nontobacco classes had a higher percentage qualifying for the best class than expected. However, the magnitude of these differences varied widely. Comparing Chart 2.2 with Chart 2.1, the arithmetic differences between expected and actual percentages are larger among respondents with three classes than those with four or more classes.

Chart 2.3 – Actual versus Expected Qualifying Percentages for Most Restrictive Tobacco Risk Class. Includes respondents with two or more tobacco classes.
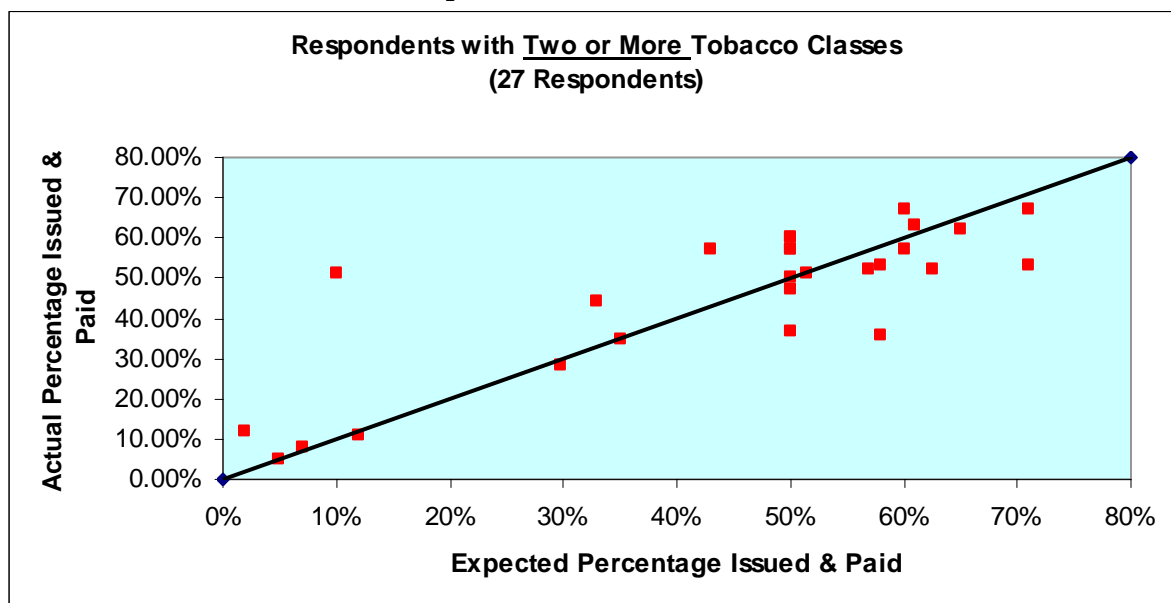
Chart 2.3 shows the results for the best tobacco class for respondents with two or more tobacco classes. More than half the respondents experienced at least a two-percentage point differential between what was issued in the tobacco class and that originally expected. For seven of the 27 respondents, the differential was 10 or more percentage points. One respondent expected 10% to be issued in the best tobacco class, but actually issued 51% in that class.

The Survey asked respondents to supply expected and actual percentage splits between tobacco and nontobacco classes to be issued and paid by policy count and face amount since January 1, 2001. The range of expected nontobacco users was 72-98%, with the median being about 90% for both the expected counts and face amounts. The actual ranges were 68-99.5% by count, with a median of 88%, and 71-99.6% by face amount, with a median of 90%.

Table 2.7 – Percent of Business Expected in Nontobacco Classes

	Maximum	Minimum	Median
Expected NT users	98%	72%	90%
Actual NT face amount	99.6	71	90
Actual NT policy count	99.5	68	88

The Survey asked respondents if the expected qualification percentages varied by issue age and / or gender. Of the 50 respondents, 16% indicated they vary percentages by issue age only and another 12% vary by issue age and gender; 4% varied by gender only.

The Survey also asked respondents whether they monitor discrepancies between expected to qualify and actually issued and paid by class. Of the 43 respondents, 27 (63%) indicated they do monitor discrepancies, 11 (26%) said they do not, and 5 (11%) did not know. When asked what their company policy was if a material discrepancy was found in a particular risk class, 53% of the respondents noted an action, which varied from repricing to adjusting underwriting criteria to revising expectations.

The Survey asked respondents selected questions about other products they currently offer, and whether or not they also sell those products with a preferred class. If they do, the Survey then asked if they applied the same underwriting guidelines and had the same number of classes as they used for the term product in this survey. Forty-seven respondents answered either all or part of this question. Table 2.8 shows the responses. Because the number of respondents varied by product, the results are shown in an X/Y format, where X represents the number of positive responses and Y represents the total number of responses (e.g., X/Y = Yes/ (Yes+No)).

Table 2.8 – Other Products with a Preferred Class

Other Products	Currently Offer for Sale?	Sell with Preferred?	Same Underwriting Guidelines or # of Classes?
First-to-Die	10/45	4/9	2/4
Second-to-Die	29/47	22/27	8/22
Variable Life/Variable Universal Life	27/45	24/27	10/24
Universal Life	43/47	38/43	18/38
Whole Life	36/45	18/35	7/18
Annual Renewable Term	30/45	21/30	16/21
Decreasing Term	15/45	4/15	1/4
Other Level Term	37/44	29/35	28/29

In some instances, respondents indicated how many classes they offered for each product. Among those providing this detail, the number of classes offered on the other products was less than those on the term.

Respondents were asked if they allow substandard risks into the preferred classifications. Fifteen of the 47 respondents indicated they did, with some providing multiple responses. Their responses are summarized in Table 2.9a below.

Table 2.9a – Form of Substandard Risk Allowed on Preferred Classification

Form	# of Respondents
Flat extras (Nonmedical)	13
Exclusion riders	7
Flat extras (Medical)	4
Table ratings	2
# of Respondents	**15**

Respondents were asked to describe the basis for a one table substandard rating.

Table 2.9b – Basis for One Table Substandard Rating

One Table Basis	# of Responses
Apply 25% of the residual standard class	60%
Apply 25% of the aggregate standard class	9
Apply 25% of an intermediate class	6
Other	26
# of Respondents	**35**

Comments regarding "Other":

- *Uses standard class;*
- *No substandard rating allowed on preferred classes;*
- *Use a percentage less than 25% of residual standard;*
- *Special table of substandard extra premiums;*
- *These are priced to the same IRR as other cells;* and
- *Use 25% of blended residual classes for nontobacco and tobacco.*

Section 3 – Mortality Expectations

The Survey asked respondents to express their company's expected mortality assumption for their nontobacco classes. For respondents that had more than four nontobacco classes, the Survey asked only for information on the top four (best) classes. Answers were expressed as a percent of the SOA 1975-80 Basic Select & Ultimate Male Table, Age Nearest Birthday. Forty-four respondents replied to either all or part of this question. Of the 44 respondents, 17 (39%) varied their mortality assumption by duration and 14 (32%) varied by age. Of these, 13 (29%) varied by both duration and age.

The duration one responses ranged from a low of 5% to a high of 56%. Seven percent of the respondents had an expected mortality rate in duration one less than 20% of the 1975-80 Table. Interestingly, the percentage of respondents with expected mortality below 20% of the SOA 1975-80 Table increases to 12% for issue age 65. Please note that the low and high figures for a particular issue age in Table 3.1 below do not necessarily represent the expected mortality assumption for the same respondent.

Table 3.1 - Expected Mortality for <u>Class 1</u> (Nontobacco)
% of SOA 1975-80 Select & Ultimate Male Table, ANB
All Respondents

% of 1975-80	Issue Age 25				Issue Age 45				Issue Age 65			
	1	3	6	10	1	3	6	10	1	3	6	10
< 20	7%	5%	5%	5%	7%	11%	9%	7%	12%	10%	5%	0%
20-24	20	14	14	14	30	25	20	18	14	14	17	20
25-29	25	30	18	16	27	27	32	27	21	29	24	17
30-34	25	32	36	32	25	27	30	25	26	21	24	32
35-39	14	5	11	11	5	2	5	16	17	19	17	12
40+	9	16	16	23	7	7	5	7	10	7	14	20
Low	9%	9%	9%	9%	5%	5%	5%	5%	18%	16%	18%	20%
High	56	56	62	69	47	49	47	47	52	53	62	64
Mean	29	30	31	32	27	27	28	29	30	29	30	31
Median	30	31	33	34	28	27	28	30	30	30	32	33
# of Respondents	44	44	44	44	44	44	44	44	42	42	42	41

The results from this Survey show a significant reduction (nearly 20 percentage points) in the level of expected mortality for the best nontobacco risk class from the 1997 Survey. For example, in the 1997 Survey, the low expected mortality assumption for a Male, Issue Age 45, ranged between 25% for duration 1 to 29% at duration 10; the average ranged from 41% to 45%, and the high ranged from 66% to 74%. Similar reductions occurred in the issue age 25 and 65 categories. Since the number of risk classes has increased from the 1997 Survey, this decrease may be due to more restrictive underwriting in the most restrictive classes.

The results are a little less disparate when comparing the results for respondents with a like number of nontobacco classes.

Table 3.2 - Expected Mortality for <u>Class 1</u> (Nontobacco)
% of SOA 1975-80 Select & Ultimate Male Table, ANB
Respondents with <u>Four or More</u> Nontobacco Classes

% of 1975-80	Issue Age 25				Issue Age 45				Issue Age 65			
	1	3	6	10	1	3	6	10	1	3	6	10
< 20	15%	15%	8%	8%	15%	23%	23%	15%	23%	23%	15%	0%
20-24	31	8	15	15	46	31	31	23	23	15	23	31
25-29	23	38	8	0	8	15	8	23	15	38	23	15
30-34	8	15	38	38	23	31	38	31	15	8	23	38
35-39	15	8	15	8	0	0	0	0	15	15	8	8
40+	8	15	15	31	8	0	0	8	8	0	8	8
Low	9%	9%	9%	9%	5%	5%	5%	5%	18%	16%	18%	20%
High	56	56	62	69	47	34	34	42	47	39	51	64
Mean	27	30	34	35	25	23	24	26	28	26	28	31
Median	27	29	32	33	24	21	23	26	28	28	28	30
# of Respondents	13	13	13	13	13	13	13	13	13	13	13	13

For respondents with four or more nontobacco classes, the range of responses for each class for issue age 45 is shown in Chart 3.1 below along with the median. The mean is not shown, but in the majority of cases, it was extremely close to the median. The lowest response for duration one among all respondents (indicated as a percentage of the SOA 1975-80 Table) was 5%, 22%, 26%, and 31% for Class 1, Class 2, Class 3, and Class 4, respectively; the highest response was 47%, 54%, 72%, and 91% for Class 1, Class 2, Class 3, and Class 4, respectively. For respondents with 4+ NT classes, four varied their assumption by duration and three varied by age. Of these, two varied by both age and duration.

Chart 3.1 - Range of Expected Mortality by Nontobacco Risk Class
As a Percent of the SOA 1975-80 Select & Ultimate Table, ANB
Respondents with <u>Four or More</u> Nontobacco Classes
Issue Age 45

		Class 1				Class 2				Class 3				Class 4		
	1	3	6	10	1	3	6	10	1	3	6	10	1	3	6	10
High	47	34	34	42	54	41	41	46	72	52	50	53	91	66	63	67
Low	5	5	5	5	22	19	20	23	26	22	24	28	31	27	29	29
Median	24	21	23	26	28	28	28	28	35	35	35	35	46	40	42	49
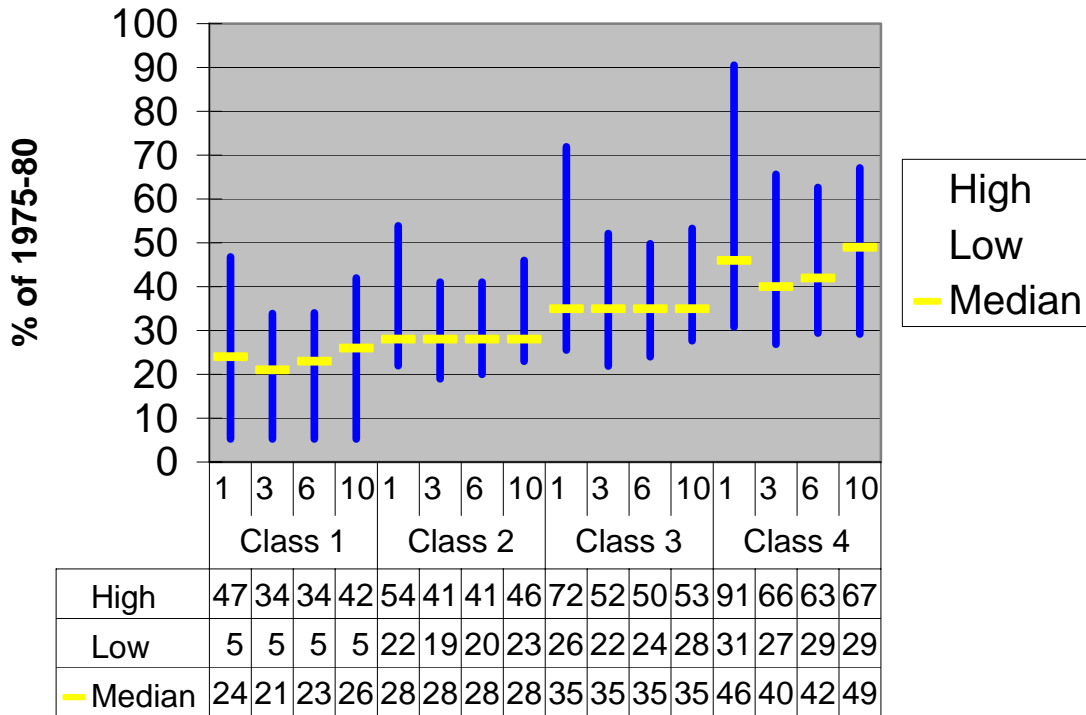
To understand the relationship between the classes, the ratio of expected mortality for Class 2 to Class 1, Class 3 to Class 2, and Class 4 to Class 3 for issue age 45 was reviewed. For the 13 respondents with four or more nontobacco classes, the ratios did not generally vary by duration. The Class 2 to Class 1 ratios ranged between 1.1 and 5.3, with the average 1.5. The Class 3 to Class 2 ratio is much closer and ranged between 1.1 and 1.3, with the average 1.2. The Class 4 to Class 3 ratios ranged between 1.1 and 1.6, with the average 1.3. The results are summarized in Table 3.3 below.

Table 3.3 - Ratio of Expected Mortality for Nontobacco Risks
Respondents with Four or More Nontobacco Classes

	Class 2 to Class 1	Class 3 to Class 2	Class 4 to Class 3
Low	1.1	1.1	1.1
High	5.3	1.3	1.6
Mean	1.5	1.2	1.3
Median	1.2	1.2	1.3
# of Respondents	**13**	**13**	**13**

For the 25 respondents with three nontobacco classes, the Class 1 expected mortality assumption in duration 1 ranged from a low of 16% to a high of 39%. The average expected percentage for the first class, in a three nontobacco class program, was generally two to three percentage points higher in any duration than for the best class in the four or more nontobacco class programs (with the exception of the later durations for issue age 25, which was two to three percentage points _less_ under the three nontobacco class programs). Of the 25 respondents with three nontobacco classes, 12 (48%) varied their assumption by duration only and 10 (40%) varied by age. Of these, 9 (36%) varied by both age and duration.

Table 3.4 - Expected Mortality for <u>Class 1</u> (Nontobacco)
% of SOA 1975-80 Select & Ultimate Male Table, ANB
Respondents with <u>Three</u> Nontobacco Classes

% of 1975-80	Issue Age 25				Issue Age 45				Issue Age 65			
	1	3	6	10	1	3	6	10	1	3	6	10
< 20	4%	0%	4%	4%	4%	8%	4%	4%	9%	4%	0%	0%
20-24	20	20	16	16	28	28	20	20	13	17	17	18
25-29	28	32	24	24	40	36	48	32	30	30	30	23
30-34	40	40	44	36	28	28	28	28	30	30	26	32
35-39	8	0	4	8	0	0	0	16	17	17	17	9
40+	0	8	8	12	0	0	0	0	0	0	9	18
Low	19%	20%	19%	16%	16%	16%	16%	16%	18%	19%	20%	21%
High	36	43	53	61	34	34	34	39	39	39	62	54
Mean	29	29	30	32	27	26	27	29	29	29	31	32
Median	30	30	30	31	27	27	28	29	30	30	30	31
# of Respondents	25	25	25	25	25	25	25	25	23	23	23	22

For respondents with three nontobacco classes, the range of responses, along with the median for each class for issue age 45, are shown in Chart 3.2 below. The lowest response for duration one among all respondents (indicated as percentage of the SOA 1975-80 Table) were 16%, 23%, and 30% for Class 1, Class 2, and Class 3, respectively. The highest responses were 34%, 51%, and 64% for Class 1, Class 2, and Class 3, respectively. The expected mortality percentage gets higher as the companies move from one class to another. The <u>range</u> of assumptions widens as you move from Class 1 to Class 2 and then to Class 3.

Chart 3.2 - Range of Expected Mortality by Nontobacco Risk Class
As a Percent of the SOA 1975-80 Select & Ultimate Male Table, ANB
Respondents with <u>Three</u> Nontobacco Classes
Issue Age 45

	Class 1				Class 2				Class 3			
	1	3	6	10	1	3	6	10	1	3	6	10
High	34	34	34	39	51	51	51	51	64	64	64	64
Low	16	16	16	16	23	23	25	26	30	29	30	30
— Median	27	27	28	29	35	35	35	35	47	47	47	50

To determine the relationship between the classes, the ratio of expected mortality for Class 2 to Class 1 and Class 3 to Class 2 for issue age 45 was reviewed. For the 24 respondents with three nontobacco classes, the ratios did not generally vary by duration. The Class 2 to Class 1 ratios ranged between 1.1 and 3.2, with the average 1.3. The Class 3 to Class 2 ratios were much closer and ranged between 1.2 and 1.5, with the average 1.4. The results are summarized in Table 3.5.

Table 3.5 - Ratio of Expected Mortality for Nontobacco Risks
Respondents with <u>Three</u> Nontobacco Classes

	Class 2 to Class 1	Class 3 to Class 2
Low	1.1	1.2
High	3.2	1.5
Mean	1.3	1.4
Median	1.2	1.4
# of Respondents	**25**	**25**

For the six respondents with two nontobacco classes, the Class 1 expected mortality assumption in duration 1 ranged from a low of 25% to a high of 54%, as shown in Table 3.6. Of the six, only one respondent varied the mortality assumption by age and duration. The other five used a constant percent across all ages and durations.

Table 3.6 - Expected Mortality for <u>Class 1</u> (Nontobacco)
% of SOA 1975-80 Select & Ultimate Male Table, ANB
Respondents with <u>Two</u> Nontobacco Classes

% of 1975-80	Issue Age 25				Issue Age 45				Issue Age 65			
	1	**3**	**6**	**10**	**1**	**3**	**6**	**10**	**1**	**3**	**6**	**10**
< 25	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
25-29	17	0	17	17	17	17	17	17	0	0	0	0
30-34	0	33	0	0	17	17	17	0	33	17	17	17
35-39	33	17	33	33	33	17	33	50	17	33	33	33
40-49	33	33	17	17	33	50	33	33	33	33	33	17
50+	17	17	33	33	0	0	0	0	17	17	17	33
Low	25%	32%	29%	27%	27%	27%	27%	29%	32%	32%	32%	33%
High	54	53	53	58	47	49	47	47	52	53	52	53
Mean	41	42	42	44	38	39	38	40	40	41	42	43
Median	43	43	43	43	38	40	39	39	40	41	43	42
# of Respondents	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**

For respondents with two nontobacco classes, the range of responses and the median for each class for issue age 45 are shown Chart 3.3 below. The lowest responses for duration one among all respondents with two nontobacco classes (indicated as percentage of the SOA 1975-80 Table) were 27% and 34% for Class 1 and Class 2, respectively. The highest responses were 47%, and 69% for Class 1 and Class 2, respectively.

Chart 3.3 - Range of Expected Mortality by Nontobacco Risk Class
As a Percent of the SOA 1975-80 Select & Ultimate Male Table, ANB
Respondents with <u>Two</u> Nontobacco Classes
Issue Age 45

	Class 1				Class 2			
	1	3	6	10	1	3	6	10
High	47	49	47	47	69	66	63	62
Low	27	27	27	29	34	34	35	37
─ Median	38	40	39	39	55	56	56	58

To determine the relationship between the classes, the ratio of expected mortality for Class 2 to Class 1 for issue age 45 was reviewed. For the six respondents with two nontobacco classes, the ratios did not generally vary by duration. The ratios ranged between 1.3 and 1.6, with the average 1.4. The results are summarized in Table 3.7.

Table 3.7 - Ratio of Expected Mortality for Nontobacco Risks
Respondents with <u>Two</u> Nontobacco Classes

	Class 2 to Class 1
Low	1.3
High	1.6
Mean	1.4
Median	1.4
# of Respondents	**6**

Comparing these results to those in the 1997 Survey, the high and mean ratios of expected mortality between a preferred and residual standard class are quite similar; however, the difference in expected mortality on the low end appears to have widened compared to 1.08 in the 1997 Survey.

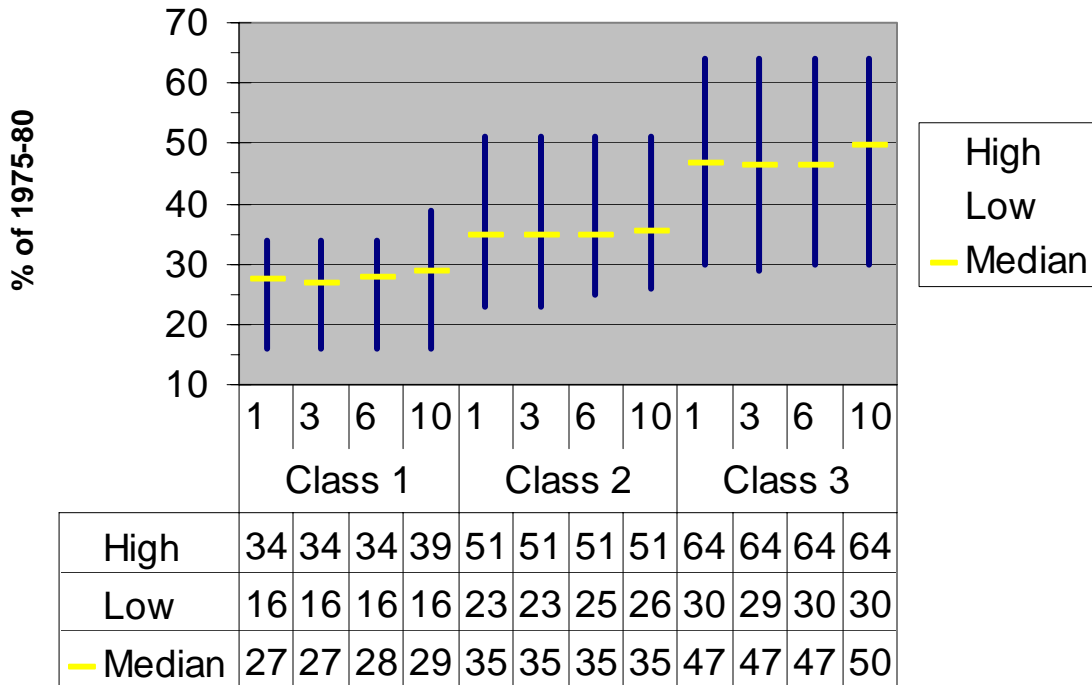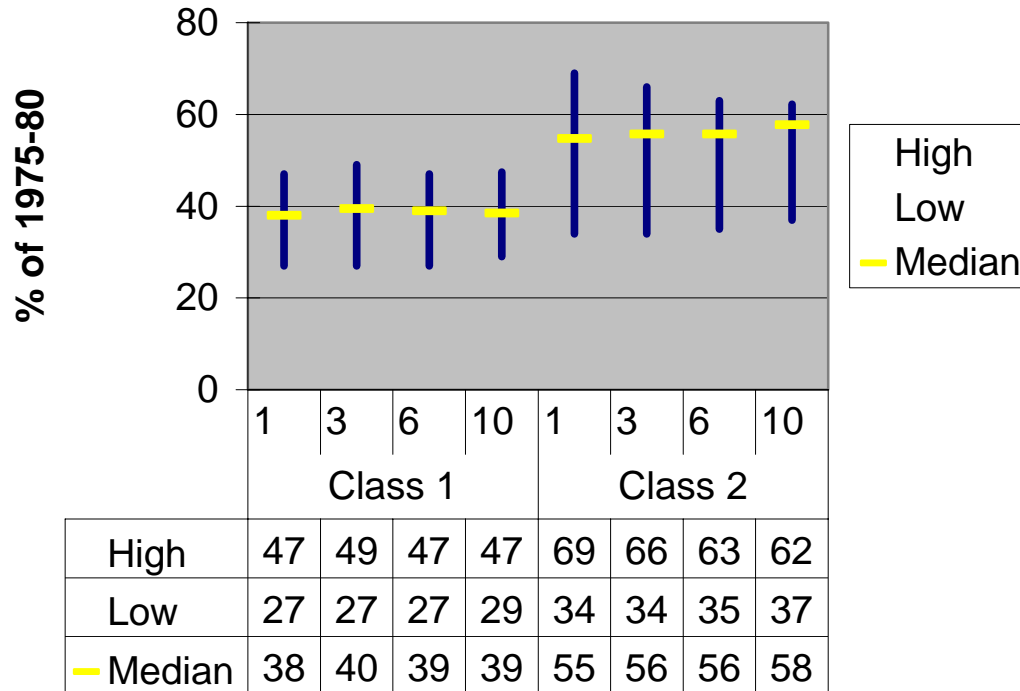The Survey also asked respondents to indicate their expected mortality assumption for their tobacco risk classes. For the 30 respondents with two or more tobacco classes, the Class 1 expected mortality assumption in duration one ranged from a low of 31% to a high of 131%. At least two carriers had a mortality assumption at age 45 that was more than double the mortality assumption at age 25. Of the 30 respondents, 12 (40%) indicated they varied their assumption by duration, 11 (37%) varied by age and, of these, nine (30% %) varied by both age and duration.

Table 3.8 - Expected Mortality for <u>Class 1</u> (Tobacco)
% of SOA 1975-80 Select & Ultimate Male Table, ANB
Respondents with <u>Two or More</u> Tobacco Classes

	Issue Age 25				Issue Age 45				Issue Age 65			
% of 1975-80	**1**	**3**	**6**	**10**	**1**	**3**	**6**	**10**	**1**	**3**	**6**	**10**
< 50	17%	17%	4%	0%	8%	9%	0%	0%	5%	5%	5%	5%
50-59	17	4	13	26	17	17	24	14	14	14	14	16
60-69	21	17	22	0	4	22	8	14	14	18	9	11
70-79	21	30	17	42	33	13	16	23	18	23	27	32
80-89	17	17	17	16	25	26	28	23	32	23	23	32
90-99	8	13	26	16	13	13	24	27	18	18	23	5
100-109	8	9	17	32	17	17	12	18	23	18	18	32
110-119	8	9	4	11	8	13	8	9	9	9	5	5
120+	8	13	9	16	0	0	0	9	0	5	9	11
Low	31%	40%	46%	55%	46%	44%	52%	53%	50%	50%	49%	46%
High	131	131	128	134	115	114	112	137	117	142	127	138
Mean	76	81	84	88	81	81	82	87	84	84	85	86
Median	76	79	85	85	79	82	86	89	85	86	83	84
# of Respondents	30	30	30	30	30	30	30	30	29	29	29	28

Compared to the 1997 Survey, the lowest response and mean of the responses for the expected mortality for respondents' best tobacco classes in a system with two or more tobacco classes has improved slightly. The highest expected mortality assumption has decreased by approximately 10 to 20 percentage points, with the exception of issue age 25, which has stayed at about the same level as in the 1997 Survey.

For respondents with two or more tobacco classes, the range of responses and the median for each class for issue age 45 are shown in Chart 3.4. The low point for duration one for all respondents (indicated as percentage of the SOA 1975-80 Table) was 46% and 65% for Class 1 and Class 2, respectively. The high point was 115% and 147% for Class 1 and Class 2, respectively.

Chart 3.4 - Range of Expected Mortality by Tobacco Risk Class
As a Percent of the SOA 1975-80 Select & Ultimate Male Table, ANB
Respondents with <u>Two or More</u> Tobacco Classes
Issue Age 45

		Class 1				Class 2		
High	115	114	112	137	147	144	144	165
Low	46	44	52	53	65	60	70	77
Median	79	82	86	89	110	105	109	116
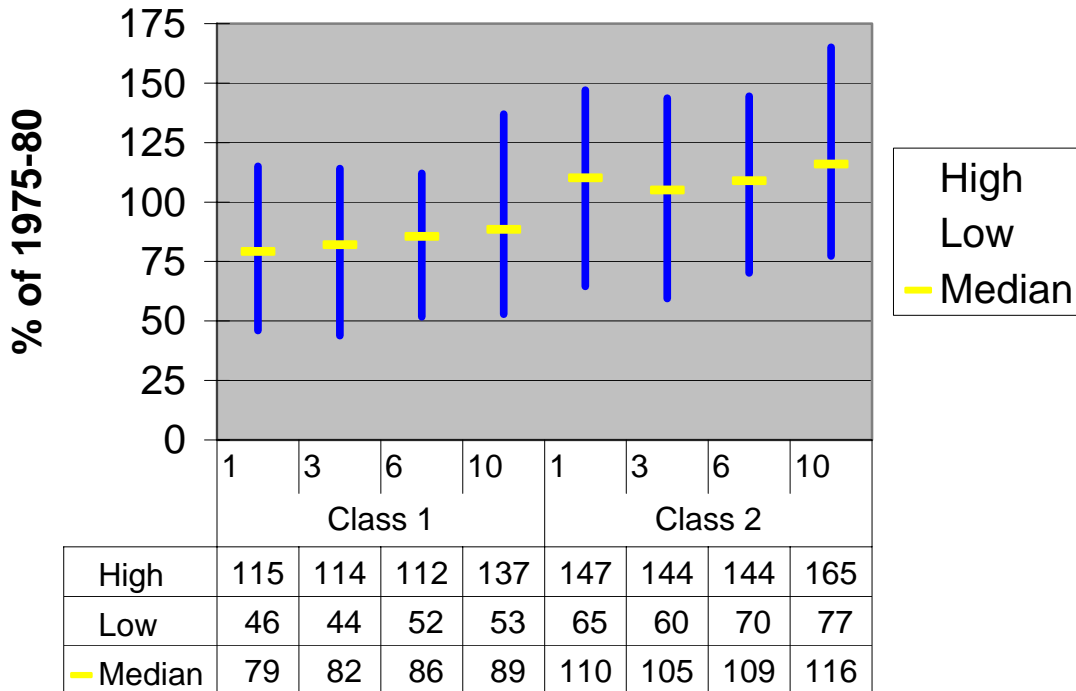
To determine the relationship between the classes, the ratio of expected mortality for Class 2 to Class 1 for issue age 45 was reviewed. For the 30 respondents with two or more tobacco classes, the ratios ranged between 1.1 and 1.8, with an average of 1.4. The results are summarized in Table 3.9.

Table 3.9 – Ratio of Expected Mortality for Tobacco Risks
Respondents with <u>Two or More</u> Tobacco Classes

	Class 2 to Class 1
Low	1.1
High	1.8
Mean	1.4
Median	1.3
# of Respondents	**30**

The Survey asked respondents to indicate the date of their most recent mortality study. Of the 45 respondents, 44% had completed a study in either the first or second quarter of 2002 and 31% had completed a study in either the third or fourth quarter of 2001 (please note this Survey was conducted in the third quarter of 2002). Total results are summarized in Chart 3.5.

Chart 3.5 – Date of Most Recent Mortality Study
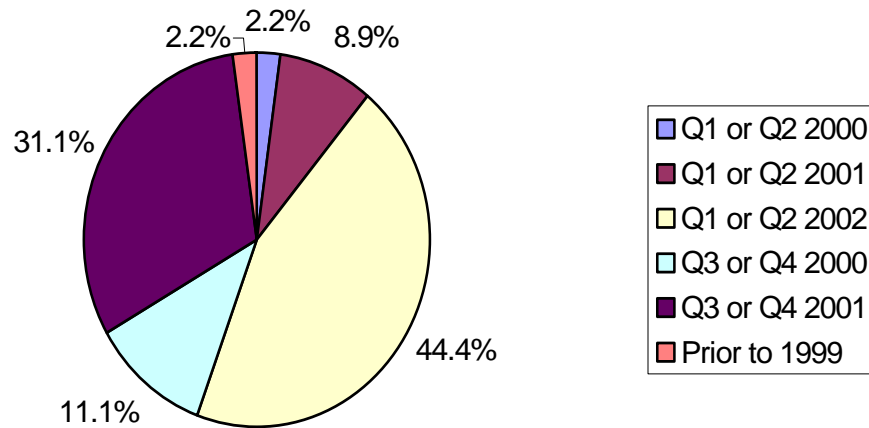
The Survey asked respondents to indicate the number of experience years that were included in their study. Of the 39 respondents, 41% used five experience years in their most recent study, 20% used three years, 13% used four years, and 5% of the respondents had 10 years of experience in their most recent mortality study.

Table 3.10 – Years of Experience in Respondents' Most Recent Mortality Study

Experience Years	% of Respondents
1	5%
2	3
3	20
4	13
5	41
6	5
9	5
10	5
5 and 15 years	3
# of Respondents	**39**

The Survey asked respondents the basis they use for determining expected mortality. Respondents were allowed to have more than one response. Of the 48 respondents, 50% indicated they use the SOA 1975-80 Table as a basis. The next most often indicated basis was an internally created table based on their own company's experience at 27%. Both an internally created table based on industry experience and "Other" were indicated as a basis at 19%. Within "Other," four of the respondents indicated they used some form of reinsurance mortality. The responses are in Table 3.11.

Table 3.11 - Basis Used for Determining Expected Mortality

Mortality Basis	% of Respondents
SOA 1975-80 Table	50%
Internally created table based on own company experience	27
Internally created table based on industry experience	19
SOA 1990-95 Table	12
SOA 1985-90 Table	6
2001 Valuation Basic Table	4
Bragg	2
Other	19
# of Respondents	**48**

Comments regarding "Other" include:

- *1980 CSO;*
- *1980 CSO with XXX Select Factors;*
- *Canadian Institute of Actuaries 86-9* (3)*;*
- *Gender and smoker distinct age nearest birthday;*
- *Lincoln Mortality System;*
- *Reinsurer's experience* (4)*;*
- *Underwriting Criteria, Type of Distribution, Average Face Amount*; and
- *Sister company experience*.

The Survey asked respondents whether or not they tracked their actual to expected mortality experience by preferred classification and, if so, whether the experience on their best preferred class was better than, about the same as, or worse than expected, or whether it was too early to tell.

Of the 46 respondents, 27 (59%) indicated they do track their experience by preferred classification. For those that do track their experience, about 30% indicated their experience was better than expected and another 22% indicated it was about the same; 37% of the respondents indicated it was too early to tell.

Table 3.12 – Actual to Expected Mortality Experience for Best Preferred Class

Experience	% of Respondents
Too early to tell	37%
Better than expected	30
About the same as expected	22
Worse than expected	7
Don't know	4
# of Respondents	**27**

The Survey asked respondents to express their company's actual to expected mortality ratios for their nontobacco classes. The Survey specifically requested experience for durations one, three, six, ten, and all durations combined. For respondents that had more than four nontobacco classes, the Survey asked only for the best four classes. Answers were expressed as a percent of the SOA 1975-80 Basic Select & Ultimate Male Table, Age Nearest Birthday, and were duration-specific, but not age-specific. In general, there were 20 respondents to this question; however, not all responded to each part of the question.

The duration one responses for Class 1 ranged from a low of 0% to a high of 100%, with the median at 23%. For all durations combined, 25% of the respondents experienced mortality less than 20% of the SOA 1975-80 Table and 25% experienced mortality at 40% or more of the SOA 1975-80 Table. This variability may be attributable to a lack of credibility in the actual claims. This compares to less than 15% that indicated they expected their Class 1 mortality to be in excess of 40%. Table 3.13a shows the breakdown of the actual mortality experience, as a percentage of the SOA 1975 Basic Select & Ultimate Male Table for all issue ages combined.

Please note that the low and high figures for a particular duration in Tables 3.13a and 3.13b below do not necessarily represent the actual to expected mortality ratio for the same respondent. Also note, not all respondents provided values for individual durations and some provided values only in the aggregate ("All" in the tables below). One respondent indicated their actual to expected mortality ratio was 100% for all ages and durations. However, this respondent also indicated that it was too early to tell in response to the previous question. The Survey did not ask respondents to indicate the level of credibility they would associate with the above tables.

Table 3.13a - Actual to Expected Mortality Ratio for <u>Class 1</u> and <u>Class 2</u> (Nontobacco)
% of SOA 1975-80 Select & Ultimate Male Table, ANB
All Respondents

% of 1975-80	Class 1					Class 2				
	1	3	6	10	All	1	3	6	10	All
< 20	35%	6%	0%	0%	**25%**	6%	19%	0%	0%	**19%**
20-24	12	18	8	8	**15**	18	6	7	0	**5**
25-29	12	12	8	8	**15**	6	0	0	0	**0**
30-34	6	0	8	0	**0**	0	0	7	0	**5**
35-39	6	6	0	0	**10**	12	38	7	8	**19**
40+	12	35	8	15	**25**	41	19	27	23	**43**
N/A	18	24	69	69	**10**	18	19	53	69	**10**
Low	0%	11%	21%	21%	**0%**	18%	2%	23%	39%	**0%**
High	100	125	100	100	**219**	769	100	100	100	**247**
Mean	25	47	45	47	**39**	106	40	54	57	**46**
Median	23	35	29	33	**25**	42	38	47	44	**39**
# of Respondents	17	17	13	13	**20**	17	16	15	13	**21**

Table 3.13b - Actual to Expected Mortality Ratio for <u>Class 3</u> and <u>Class 4</u> (Nontobacco)
% of SOA 1975-80 Select & Ultimate Male Table, ANB
All Respondents

% of 1975-80	Class 3					Class 4				
	1	3	6	10	All	1	3	6	10	All
< 20	13%	20%	0%	0%	**10%**	29%	29%	29%	29%	**38%**
20-24	0	0	0	0	**0**	14	0	0	0	**0**
25-29	6	0	0	0	**0**	0	0	0	0	**0**
30-34	6	0	0	0	**5**	0	14	0	0	**0**
35-39	6	0	7	7	**5**	14	0	0	0	**0**
40+	56	60	43	36	**70**	43	43	14	14	**50**
N/A	13	20	50	57	**10**	0	14	57	57	**13**
Low	0%	0%	39%	39%	**0%**	0%	0%	0%	0%	**0%**
High	121	108	100	100	**108**	68	62	56	56	**78**
Mean	60	61	64	67	**54**	36	32	19	19	**36**
Median	63	75	58	64	**51**	38	37	0	0	**44**
# of Respondents	16	15	14	14	**20**	7	7	7	7	**8**

The Survey also asked respondents to express their company's actual to expected mortality ratios for their tobacco classes. For respondents that had more than two tobacco classes, the Survey asked only for the top two classes. Answers were expressed as a percent of the SOA 1975-80 Basic Select & Ultimate Male Table, Age Nearest Birthday, and were duration-specific, but not age-specific.

There were 20 respondents to this question, but not all responded to each part of the question. The duration one responses for Class 1 ranged from a low of 0% to a high of 153%, with the median at 92%. For all durations combined, 25% of the respondents experienced mortality less than 50% of the SOA 1975-80 Table, and 35% experienced mortality at 100% or more of the SOA 1975-80 Table. These results compare to the approximately 33% of respondents that indicated they expected their Class 1 tobacco mortality to be in excess of 100%. Please note that the low and high figures for a particular issue age in Table 3.14 below do not necessarily represent the expected mortality assumption for the same respondent. Also note, not all respondents provided values for individual durations and some provided values only in the aggregate ("All" in the tables below).

Table 3.14 - Actual to Expected Mortality Ratio for <u>Class 1</u> and <u>Class 2</u> (Tobacco)
% of SOA 1975-80 Select & Ultimate Male Table, ANB
All Respondents

% of 1975-80	Class 1					Class 2				
	1	3	6	10	All	1	3	6	10	All
0	20%	13%	8%	8%	**15%**	0%	0%	9%	0%	**6%**
1-49	7	7	8	0	**10**	8	8	9	9	**0**
50-89	7	13	0	0	**15**	15	0	0	0	**13**
90-99	20	7	8	0	**10**	0	17	0	0	**19**
100-109	13	13	15	17	**25**	23	17	9	9	**13**
110+	13	13	0	0	**10**	38	42	27	27	**44**
N/A	20	33	62	75	**15**	15	17	45	55	**6**
Low	0%	0%	0%	0%	**0%**	27%	20%	0%	30%	**0%**
High	153	176	109	109	**153**	329	363	131	139	**361**
Mean	73	82	70	70	**73**	128	129	83	103	**129**
Median	92	85	91	100	**91**	107	113	108	116	**107**
# of Respondents	**15**	**15**	**13**	**12**	**20**	**13**	**12**	**11**	**11**	**16**

The Survey asked respondents to indicate whether their overall experience, when compared to prior mortality studies, improved, stayed about the same, or worsened. Of the 42 respondents, 50% indicated their experience stayed about the same, 38% indicated it had improved, and 12% indicated it had worsened. Respondents also had the opportunity to add comments. These comments are shown below Chart 3.6.

Chart 3.6 – Overall Mortality Experience vs. Previous Studies
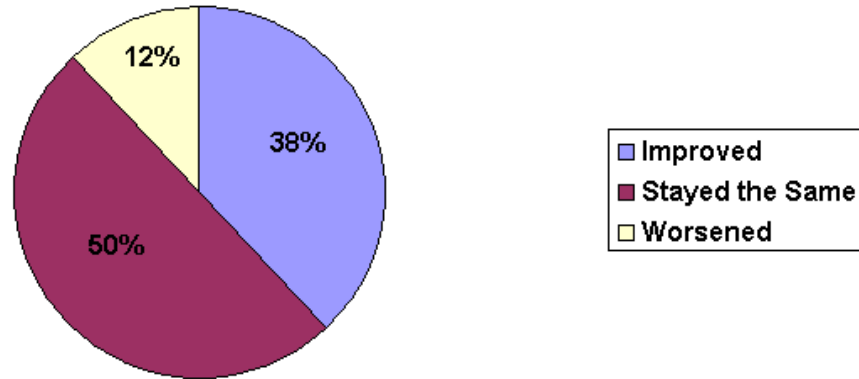
Additional comments included:

- *Actual to expected results are not credible;*
- *Have studied this and have found no pervasive reason for worsening;*
- *No prior mortality study to compare against* (2)*;*
- *Too early to tell or actual to expected results are not credible* (6)*;*
- *Regarding questions 7 and 8, our system does not provide for "dropping in" an alternative table for expected deaths* (2)*;*
- *Study for 5 years is very consistent with prior year's 5-year study;*

- *The A/E ratio has improved in total from 1996 to 2001;*
- *Total A/E = 92%;* and
- *We are currently looking at this.*

The Survey asked respondents to indicate how they divide their standard mortality into multiple preferred classifications. Respondents were able to indicate more than one method. Of the 44 respondents, the most common response was by "Reinsurer Input" at 91%. The distribution of responses for the other methods is shown in Table 3.15.

Table 3.15 – Approach to Dividing Standard Mortality into Multiple Preferred Classifications

Method	% of Respondents
Reinsurer input	91%
Internal underwriter recommendations	43
Experience from mortality studies	39
Mathematical formula based on distribution of business and assumptions about the relationships between mortality classes	36
Industry experience	16
Educated guess	14
Results from past SOA Preferred Underwriting Surveys	2
Other	2
# of Respondents	**44**

The Survey asked respondents to indicate whether they incorporate any degree of future mortality improvement in their pricing assumptions for the preferred marketplace and, if so, how the degree of improvement varied. Of the 45 respondents, seven (16%) indicated they do incorporate future mortality improvement in their pricing assumptions. For these respondents, more than half varied improvement by duration; less than half varied improvement by age, gender or smoking status. Three respondents varied improvement factors by two or more variables.

The Survey asked those respondents indicating they used mortality improvement to describe the improvement factor for issue ages 25, 45, and 65 from date of issue. Four respondents provided details and their comments included:

- *1% per year for 10 years, no further improvement or deterioration;*
- *1% reduction for 15 years;*
- *1.5% for 5 years, then 1.0% for 5 years, then 0.5% for 5 years;* and
- *Based on LMS [Life Mortality System] system.*

Section 4 – Preferred Underwriting Criteria

The Survey asked respondents to indicate all of the underwriting requirements / criteria that their company uses for preferred classes for each age and face amount. More detailed descriptions regarding the various underwriting criteria discussed in this section can be found in Appendix C.

Tables 4.1a and 4.1b summarize the number of respondents who require specific underwriting requirements for issue ages 25, 45, and 65, and for amounts applied for of $50,000, $100,000, $250,000, and $1 million. Information was requested on each of the following underwriting requirements: oral fluid, blood profile, dried blood spot (DBS), oral fluid, urine, nonmedical evidence of insurability, paramedical / medical examination, motor vehicle report (MVR), resting electrocardiogram (ECG), personal history interview, teleunderwriting, and other. Respondents were given the opportunity to add additional underwriting criteria to the list.

Companies use various combinations of many of these requirements, depending on the applicant's age, the face amount of insurance requested, and admitted history. The choice of particular requirements to use in distinguishing preferred from standard risks varies considerably from company to company and reflects a myriad of factors, which include:

- Company's market;
- Competitive environment;
- Distribution system;
- Underwriting philosophy and expertise;
- The specific criteria that must be met to qualify on a preferred risk class basis;
- Mortality expectations; and
- Other financial objectives.

Table 4.1a shows how many of the 44 respondents use each of the specified requirements. Table 4.1b is a summary by face amount within issue ages.

Table 4.1a - Number of Respondents Using the Listed Underwriting Requirements by Issue Age

Requirement / Criteria	Age 25				Age 45				Age 65			
	$50K	$100K	$250K	$1M	$50K	$100K	$250K	$1M	$50K	$100K	$250K	$1M
Oral Fluid	3	4	2	1	2	1	1	1	0	0	0	0
Blood Profile	5	31	36	39	7	35	38	40	12	35	38	40
DBS	1	2	2	2	2	3	2	2	2	3	2	2
Urine	7	35	38	38	9	35	38	37	17	36	37	36
Nonmedical	12	13	10	3	11	11	6	3	4	4	3	3
Paramedical / Medical Exam	6	25	31	41	8	27	36	41	17	36	39	39
MVR	5	24	29	34	4	17	22	30	3	16	20	30
ECG	0	0	1	8	0	1	1	20	3	20	26	37
Teleunderwriting	4	8	8	8	4	8	8	8	4	8	8	8
Personal History Interview	1	6	9	17	2	6	9	18	1	6	8	18
Other	1	6	4	8	1	5	3	8	0	5	4	9

Table 4.1b - Number of Respondents Using the Listed Underwriting Requirements by Face Amount Issued

Requirement / Criteria	$50K			$100K			$250K			$1M		
	Age 25	Age 45	Age 65	Age 25	Age 45	Age 65	Age 25	Age 45	Age 65	Age 25	Age 45	Age 65
Oral Fluid	3	2	0	4	1	0	2	1	0	1	1	0
Blood Profile	5	7	12	31	35	35	36	38	38	39	40	40
DBS	1	2	2	2	3	3	2	2	2	2	2	2
Urine	7	9	17	35	35	36	38	38	37	38	37	36
Nonmedical	12	11	4	13	11	4	10	6	3	3	3	3
Paramedical / Medical Exam	6	8	17	25	27	36	31	36	39	41	41	39
MVR	5	4	3	24	17	16	29	22	20	34	30	30
ECG	0	0	3	0	1	20	1	1	26	8	20	37
Teleunderwriting	4	4	4	8	8	8	8	8	8	8	8	8
Personal History Interview	1	2	1	6	6	6	9	9	8	17	18	18
Other	1	1	0	6	5	5	4	3	4	8	8	9

Respondents were asked to indicate any *other* underwriting requirements that are used in the evaluation of preferred risks. Some respondents indicated they use more than one additional underwriting requirement.

Comments regarding "Other":

- *Financial statement* (2)*;*
- *APS (2);*
- *Inspection Report;*
- *Vital Signs;*
- *Short form exam;* and
- *Height-Weight-BP.*

Blood Profile Testing

Of the 46 respondents, 42 provided details of their underwriting requirements / criteria. Blood profile testing is required at $100,000 for 74% of the respondents at age 25 and 83% of the respondents at ages 45 and 65. Results of blood testing minimums were similar to the 1995 and 1997 Survey results.

Dried Blood Spot (DBS) Testing

Few respondents are currently testing with DBS. Only four respondents indicated they currently test with DBS at the age and amount limits specified. Peak usage (three respondents) is at issue age 45 and age 65 for $100,000. Usage appears to have remained at the 1997 Survey levels. In the 1997 Survey, three companies permitted DBS testing for some issue age and amount combinations.

Oral Fluid Testing (OFT)

Five respondents used Oral Fluid testing in the 2002 Survey. Most tested at $100,000 and a few tested above $100,000. Of those that tested above $100,000, two tested through $1 million.

Urine Testing

Urinalysis or Home Office Specimen (HOS) typically tests for cotinine, cocaine, indications of poorly controlled diabetes, and kidney disorder. Such testing may also indicate use of a diuretic (antihypertensive agent) and illegal drugs (e.g., marijuana, methamphetamines, heroin, and opium). The fluid may be collected by an agent or paramedical technician.

When companies have paramedics collect blood, they typically also have the paramedics collect urine. However, a few respondents have lower testing limits for urine than blood.

Cotinine and Cocaine Testing

The cotinine test is usually conducted on a specimen of blood, urine, or oral fluid to indicate recent use of tobacco or other forms of nicotine. All companies that collect urine or oral fluid test for cotinine. A test for recent usage of cocaine can be conducted on urine or oral fluid. Almost all companies that collect urine or oral fluid test for cocaine. This survey did not ask a separate question regarding either cotinine or cocaine testing.

Nonmedical Application

Among the respondents, nonmedical underwriting was more prevalent than paramedical / medical at ages 25 and 45 at $50,000 and less prevalent for all other requested age and amount combinations thereafter.

Paramedical / Medical Examination

Due to the direct out-of-pocket costs of the paramedical exam ($35 to $65, depending on services requested), most of the respondents generally will not obtain a paramedical for amounts of coverage under $100,000. However, the frequency of ordering paramedical exams increases significantly at issue ages of 65 and over for lower amounts of insurance applied for. Of the 44 respondents, for face amounts $100,000 up to $1 million, 57%, 61%, and 82% of all respondents indicated they ordered paramedical and / or medical exams at issue ages 25, 45, and 65, respectively. At face amounts of $1 million, between 89%-98% order either a paramedical or medical exam, depending on age.

Motor Vehicle Report (MVR)

Fifty-five percent of the respondents use the MVR on a routine basis at face amounts of $100,000 and over to evaluate applicants for a preferred risk class at issue age 25. However, less than 40% use the MVR at issue age 45 and older at $100,000. The 2002 Survey's findings parallel those of the 1997 Survey for those companies that responded to both.

Electrocardiogram (ECG)

Of the respondents that routinely require a resting ECG, they do so only for applicants at the older issue ages and at the higher face amounts. The survey responses indicated no usage of ECG below $100,000, except at issue age 65, more significant usage at issue age 65 for face amounts above $100,000, and general usage at issue ages 45 and above for face amounts of $1 million and higher. The Survey did not specifically ask about the usage of Stress ECG's as a routine requirement for preferred.

Attending Physician's Statement (APS)

This survey did not specifically ask about APS usage, however, five companies indicated they utilize an APS as an underwriting requirement at some non-defined age and amount level.

Prostate Specific Antigen (PSA) Test

The 2002 Survey did not ask specifically about PSA usage as a preferred underwriting criterion, unlike the 1995 and 1997 Surveys where 25% of survey respondents indicated routine usage by issue age 65 for face amounts greater than $100,000. The Survey did ask a general question regarding other test usage and not one company indicated that the PSA was routinely obtained for the assessment of preferred risks. As a defensive position, many insurers choose to routinely require such testing among males applying for amounts of insurance that would also require blood testing. In general, the higher the level of PSA over designated laboratory limits, the more likely the possibility of the presence of prostate cancer. Acceptable levels of PSA will vary by age, how quickly the levels rise over time, and the method used to determine the level.

Additional Underwriting Requirements

Respondents were asked to indicate any *other* underwriting requirements that are used in the evaluation of preferred risks. Respondents were given the opportunity to provide comments regarding their underwriting requirements. These are shown below.

- *Maximum issue age is 55 (age 65 is not available for a 30 year term plan);*
- *$50,000 face amount not available [for preferred]* (4)*;*
- *X-rays ordered for amounts over $2,000,000 at age 46 and over. ECG's ordered for amounts over $500,000 at ages 36 and over;*
- *Criminal records and credit reports are obtained for amounts over $1,000,000;*
- *Blood Pressure and build measured with any fluid. Term requires fluids at all amounts while permanent plans do not. Personal Interview and teleunderwriting available on any age or amount listed;*
- *Short form exam = ht, wt, BP readings;*
- *Minimum face amount for level term is $100,000, but $50,000 for permanent insurance products;* and
- *Commercial Inspection used at most ages for $1,000,001 and up.*

Indicators Being Used as Preferred Risk Criteria

The Survey asked, for each criterion, whether it was used in consideration for a preferred class. Respondents were also asked if having the condition, in and of itself, would preclude an applicant from *any* preferred risk class. If not, the best nontobacco class allowed was requested.

Criteria for underwriting preferred risks are based on information contained in the application, results from laboratory tests, and other screening procedures.

Application information items were divided into three broad categories:

- Personal History,
- Family History, and
- Lifestyle Considerations.

Some of the information critical to the risk classification process is often verified or discovered independently from the application itself (e.g., Driving while Under the Influence of alcohol or drugs (DUI)). Although the morbidity and mortality history of close family members is predictive of differentials in anticipated risk, this information may not always be elicited completely or accurately from the applicant. Even when details of family history are disclosed by the applicant, they may be incomplete, misstated, or misunderstood; also, such details are difficult to obtain or verify independently (e.g., age at diagnosis).

Sometimes, favorable information may be used to offset the unfavorable. For example, if the total cholesterol (Tot-C) level exceeds the stated maximum for a preferred class, the individual may still qualify for a preferred class if the high density lipoprotein cholesterol (HDL-C) is sufficiently high and the (Tot-C) / (HDL-C) ratio is favorable.

The most frequently used criteria for determining preferred risk classification are those that pertain to personal history (e.g., heart disease, diabetes, type I and II, cancer (melanoma and other skin or internal cancer), stroke, hypertension (diagnosis and treatment), mental and nervous, and elevated total cholesterol (diagnosis and treatment).

Both personal history and family history are used to evaluate a potential for premature death. Usually, however, personal history is considered to be more useful than family history in distinguishing preferred risks from other risks. Personal history data is used for evaluating histories of medical conditions such as diabetes, cancer, stroke, and hypertension. However, for evaluating the risk of heart disease, a positive family history may be more commonly encountered than a personal history of heart disease for applicants below about issue age 50.

Personal History

The Survey asked questions on the use of Personal History of medical disorders as criteria for a preferred class and, if the criterion is used, whether having a Personal History of that disorder would, in and of itself, preclude an applicant from any preferred class. Table 4.2 presents the Survey results on the use of Personal History criteria in underwriting preferred risk products. There were 43 respondents to all or part of this question.

At least 95% of respondents used the following criteria: other internal cancer (non-melanoma), diabetes type I and II, and heart disease. Melanoma and treatment for hypertension were utilized by 93% of respondents. Ninety-one percent utilized the criteria of stroke and hypertension (diagnosis and treatment).

A personal history of diabetes type I, stroke, and heart disease most often precluded an applicant from qualifying for any preferred class. About two-thirds of the respondents do not preclude an applicant from qualifying for a preferred class for a personal history of treatment for hypertension, treatment for cholesterol, history of elevated total cholesterol, and other skin cancer.

Table 4.2 - Personal History Preferred Risk Criteria

Criterion	Used for Preferred Risk Class? % of Total Respondents Using	Always Preclude from *Any* Preferred Risk Class? Of Yes Respondents, % Precluding
Other Internal Cancer	98%	83%
Diabetes Type I	98	93
Diabetes Type II	98	83
Heart Disease	95	88
Melanoma	93	82
Treatment for Hypertension	93	35
Stroke	91	90
Hypertension	91	44
Treatment for Cholesterol	86	30
History of Elevated Total Cholesterol	84	25
Mental and Nervous Disorder	63	48
Other Skin Cancer	60	35
# of Respondents	**43**	

Overall, the results regarding usage of Personal History criteria are very similar to both the 1997 and 1995 Surveys, except as indicated below. Please note this Survey and the 1995 Survey asked whether a history was considered for _any_ preferred class, whereas the 1997 Survey asked about the most popular preferred class.

- Treatment for hypertension was more frequently used in the 2002 Survey at 93% vs. 85% and 79% for the 1997 and 1995 Surveys, respectively.
- Treatment for cholesterol was more frequently used in the 2002 Survey at 86% vs. 82% and 69% for the 1997 and 1995 Surveys, respectively.
- History of elevated cholesterol was less frequently used in the 2002 Survey at 84% vs. 97% and 88% in the 1997 and 1995 Surveys, respectively.
- Mental and nervous disorder in the 2002 Survey at 63% was less than in the 1997 Survey at 85%, but consistent with the 1995 Survey at 64%.

Having a Personal History of diabetes Type I at 93%, stroke at 90%, and heart disease at 88% were the criteria most often to preclude an applicant from any preferred class. No criterion was used by all the respondents to preclude an applicant from any preferred class. Compared to results from previous surveys, there appears to be a trend toward allowing more applicants with a Personal History of diabetes, elevated total cholesterol, and treatment for cholesterol into a preferred class than in either of the two previous Surveys. Please note this Survey distinguished between Type I and Type II diabetes, whereas the previous two Surveys did not. Also note this Survey and the 1995 Survey asked about preclusion from _any_ preferred class, whereas the 1997 Survey asked about the most popular preferred class. The Committee also noted the following differences regarding preclusion of an applicant between the results from this Survey and the previous two surveys:

- A personal history of diabetes type I precluded an applicant 93% of the time, whereas a personal history of diabetes type II precluded an applicant 83% of the time. This compares to preclusion for diabetes (no type specified) 97% and 100% of the time from the 1997 and 1995 Surveys, respectively.
- Having had a stroke precluded an applicant less frequently in the 2002 Survey at 90% vs. 96% and 92% for the 1997 and 1995 Surveys, respectively.
- There was little change in the percent of respondents that precluded a personal history of heart disease at 88% vs. 87% in the1997 Survey. However, these results compare to 98% of the respondents from the 1995 Survey that always precluded an applicant with a history of heart disease from a preferred class.
- Melanoma precluded an applicant more frequently in the 2002 Survey at 82% vs. 79% for the 1997 Survey. The 1995 Survey did not specifically ask about melanoma.
- Treatment for hypertension precluded an applicant less frequently in the 2002 Survey at 35% vs. 61% and 54% for the 1997 and 1995 Surveys, respectively.
- Other skin cancer (non-melanoma) precluded an applicant much more often in the 2002 Survey at 35% than in the 1997 Survey at 4%. Note the 1995 Survey did not specifically ask about other skin cancer.
- Other internal cancer (non-melanoma) precluded an applicant more often in the 2002 Survey at 83% vs. the 1997 Survey at 67%, but was more consistent with the results of the 1995 Survey at 88%.
- Precluding an applicant with a history of treated cholesterol was significantly less common in the 2002 Survey at 31% than in either the 1997 or 1995 Surveys at 55% and 56%, respectively.
- Two criteria where preclusion has shown a steady decline since the 1995 Survey are a Personal History of Hypertension (44%, 50%, and 69%, in the 2002, 1997, and 1995 Surveys, respectively) and elevated cholesterol (25%, 38%, and 76%, in the 2002, 1997, and 1995 Surveys, respectively).

Additional comments regarding personal history criteria included:

- *Greater than 25 debits will prevent preferred class.*
- *Any history of coronary artery disease (CAD), diabetes mellitus, cerebrovascular disease (except hypertension or cholesterol) will prevent inclusion in best preferred.*
- *Any ratable impairment precludes preferred plus and preferred class.*

Family History

The Survey asked respondents to indicate whether specific criteria were used in consideration for their lowest-priced (best) preferred class. Please note the number of respondents varies by criterion. Some respondents left the answer blank. The Committee did not assume these responses were representative of a "do not use" response, although this may be a reasonable assumption. Table 4.3a below shows the total number of respondents to each criterion listed as well as the percentage of those respondents that use the criteria as a consideration for their lowest-priced preferred class.

Table 4.3a - Family History Preferred Risk Criteria

Criterion	Total Respondents	% of Total Respondents Using
Heart Disease	41	100%
Diabetes Type I	41	49
Diabetes Type II	39	44
Cancer	39	72
Stroke	39	59
Hypertension	39	18
Non-Accidental Early Death	39	13
Alcohol / Drug Abuse	36	6

Family history responses are generally used less often than personal history, probably due to difficulties in eliciting, verifying, or clarifying a family history. Consequently, somewhat less reliance may be placed on family history of a natural parent or sibling. An exception to this is information about family history of heart disease, which is considered by all of the respondents in selecting the preferred risk.

If a criterion is used for Family History, the Survey asked for the maximum age at which the history applies. Forty-one companies responded to all or part of this question.

Table 4.3b – Family History Preferred Risk Criteria Prior to What Age?

Criterion	% Using	60	65	70	Any	Other
Heart Disease	100%	83%	10%	2%	2%	65/60 – 2%
Diabetes Type I	49	70	15	0	5	30 – 5% 40 – 5%
Diabetes Type II	44	76	18	0	6	0
Cancer	72	83	7	3	3	50 – 3%
Stroke	59	83	9	0	4	65/60 – 4%
Hypertension	18	86	0	0	14	0
Alcohol / Drug Abuse	6	50	0	0	50	0
Non-Accidental Early Death	13	80	0	0	20	0

The respondent indicating 65/60 in the "prior to what age" portion of the family history question has different age limits depending on number of parents who died of heart disease or stroke. Age 65 refers to two parents and age 60 refers to one.

With respect to Family History requirements, the Survey asked whether they were based on death or diagnosis. In some cases, the percentage of responses totals to more than 100% because some respondents answered they used both death <u>and</u> diagnosis in their requirement.

The majority of respondents that use age limits for a positive family history use age based on the occurrence of death rather than when the disease was diagnosed. Information about cause of death and age at death is more likely to be known by the applicant than whether or when a particular disease was diagnosed on a natural parent or sibling.

The responses are summarized in Table 4.3c. The number in parenthesis represents the number of respondents indicating they used this requirement.

Table 4.3c – Basis for Family History Requirements

Requirement (# of Respondents)	Age Limit Basis	
	Death	Diagnosis
Heart Disease (41)	71%	46%
Diabetes Type I (20)	60	45
Diabetes Type II (17)	71	35
Cancer (29)	69	48
Stroke (23)	65	48
Hypertension (7)	86	29
Alcohol / Drug Abuse (2)	50	0
Non-Accidental Early Death (5)	80	20

The Survey asked the number of parents and / or siblings that need to have a particular history in order to preclude an applicant from the preferred class. For each requirement, the majority of respondents indicated that any death of a parent or sibling prior to a specified age precluded them from the best preferred NT class. For the majority of respondents, both parents and siblings were considered. In a few cases, some companies considered only family history of parents in this requirement.

For the 31 respondents that used family history of cancer in their preferred criteria, the Survey asked whether they exclude the following types of cancer from consideration:

- Lung Cancer for nontobacco / nonsmoker applicants
- Prostate or testicular cancer for Female applicants
- Breast, cervical, or uterine cancer for Male applicants

The results are summarized below in Table 4.3d.

Table 4.3d – Exclusion of Certain Types of Cancers

Family History of Cancer	% that Exclude from Consideration
Lung Cancer for nontobacco / nonsmoker applicants	35%
Prostate or testicular cancer for Female applicants	58
Breast, cervical, or uterine cancer for Male applicants	55
# of Respondents	**31**

Lifestyle Preferred Risk Criteria

The Survey asked about underwriting practices and items that are included on most life insurance applications pertaining to lifestyle. Respondents were asked to indicate if specified criteria were used in consideration for any preferred class. They were also asked if having the condition, in

and of itself, would preclude an applicant from any preferred class. There were 45 respondents to this question.

Drug and alcohol abuse were taken into account by 100% of the respondents in consideration of preferred risk classification. In fact, 78% of the affirmative respondents said these criteria would *always* preclude an applicant from the preferred risk class.

Except for bankruptcies and poor credit history, the majority of lifestyle criteria were regularly used by the respondents in determining qualification for the preferred risk class.

Table 4.4a shows survey findings for lifestyle criteria.

Table 4.4a - Lifestyle Preferred Risk Criteria

Criterion	Used for Preferred Risk Class? % of Total Respondents Using	Always Preclude from Preferred Risk Class? Of Yes Respondents, % Precluding
Alcohol Abuse	100%	78%
Illegal Drugs	100	82
Hazardous Occupation	91	78
Avocation / Hazardous Sport	98	65
Aviation (private pilot)	98	58
Foreign Res. (other than Canada)	73	75
Foreign Travel	73	45
Foreign National	68	57
Felony Conviction	69	77
Bankruptcies	38	19
Poor Credit History	30	15

Respondents were also asked specific questions regarding the use of exercise, fitness, and diet as preferred criteria. All of the respondents stated that this criterion was not used. Respondents were also asked whether a private pilot may be eligible for a preferred class with an aviation exclusion. Fifty-eight percent of respondents indicated a private pilot would not be eligible to qualify for any preferred class, even with an aviation exclusion.

Additional Comments Regarding Lifestyle Criteria:

- *Felony convictions, bankruptcies and poor credit history, it depends on significance and timing of the event. If rated (or rejected), preferred is not available.*
- *"Foreign travel" is a precluding factor only for underdeveloped or politically unstable countries (UPUC). Similarly, "foreign national" is a precluding factor only for temporary residents (or for permanent residents with citizenship in a UPUC). "Avocations" are relative, for instance a shallow water (< 30 ft) scuba diver could get up to Preferred Plus, but no way for a deep water diver.*

Summary of All Criteria

Table 4.4b ranks the criteria, including the broad categories, by frequency of use in classifying an applicant in the best preferred nontobacco risk. This table repeats the information from Tables 4.2a, 4.3a and 4.4a. The purpose of this table is to present the most commonly used criteria in order of usage.

Table 4.4b - Criteria by Category and Frequency of Use in the Preferred Decision

Criterion	Category	% of Total Respondents Using
Other Internal Cancer (non-melanoma)	Personal History	100%
Heart Disease	Family History	100
Alcohol Abuse	Lifestyle	100
Illegal Drugs	Lifestyle	100
Heart Disease	Personal History	98
Diabetes Type I	Personal History	98
Diabetes Type II	Personal History	98
Melanoma	Personal History	98
Avocation / Hazardous Sports	Lifestyle	98
Aviation (private pilot)	Lifestyle	98
Stroke	Personal History	93
Hypertension	Personal History	93
Treatment for Hypertension	Personal History	93
Hazardous Occupation	Personal History	91
History of Elevated Cholesterol	Personal History	88
Treatment for Cholesterol	Personal History	86
Foreign Residence (other than Canada)	Lifestyle	73
Foreign Travel	Lifestyle	73
Diabetes Type I	Family History	72
Felony Conviction	Lifestyle	69
Foreign National	Lifestyle	68
Mental and Nervous	Personal History	66
Other Skin Cancer	Personal History	65
Diabetes Type II	Family History	59
Cancer	Family History	49
Stroke	Family History	44
Bankruptcies	Lifestyle	37
Poor Credit History	Lifestyle	30
Hypertension	Family History	18
Non accidental early death	Family History	13
Alcohol / drug abuse	Family History	6

The title box above the table reads: **Used for Preferred Risk Class?**

Driving Record

Respondents were asked if driving record was used as a consideration for the preferred risk class. They were also asked the maximum number of moving violations allowed and over what time period they were considered. There were 45 respondents to this question, all of whom indicated they use driving record. Of these, 96% allow a certain number of moving violations within a specified period, without indicating the type of violation. For respondents with two or three nontobacco classes or two or more tobacco classes, the most prevalent response was no more than two moving violations within three years. For respondents with four or more nontobacco classes, the criteria was slightly more restrictive with no more than one violation in three years and no more than two violations in five years being the most prevalent responses.

Tables 4.5a through 4.5c show the number of respondents that consider a specific number of moving violations within a specified time period as distinct criteria for their best preferred nontobacco risk class for respondents with four or more nontobacco classes, three nontobacco classes, and two nontobacco classes, respectively. Table 4.5d shows the results for the respondents' best tobacco risk class for those with two or more tobacco classes.

Table 4.5a - Number of Moving Violations Allowed for Class 1 (Nontobacco)
Respondents with four or more NT classes

Number of Years	Number of Moving Violations		
	One	Two	Three
3	3	2	2
5	1	3	1
# of Respondents	12		

Table 4.5b - Number of Moving Violations Allowed for Class 1 (Nontobacco)
Respondents with three NT classes

Number of Years	Number of Moving Violations			
	Zero	One	Two	Three
9 months	0	1	0	0
2	1	6	0	0
3	0	4	12	0
5	0	0	3	0
# of Respondents	26			

Note: One company permitted a different number of moving violations for different lengths of time and is counted twice in the table above.

Table 4.5c - Number of Moving Violations Allowed for Class 1 (Nontobacco)
Respondents with two NT classes

Number of Years	Number of Moving Violations			
	Zero	One	Two	Three
1	0	0	1	0
2	0	0	0	1
3	2	0	2	0
5	0	0	1	0
# of Respondents	7			

Table 4.5d - Number of Moving Violations Allowed for Class 1 (Tobacco)
Respondents with two or more T classes

Number of Years	Number of Moving Violations			
	Zero	One	Two	Three
9 months	0	1	0	0
1	0	1	0	0
2	0	1	1	0
3	0	3	19	5
5	0	0	0	1
# of Respondents	31			

Note: One company permitted a different number of moving violations for different lengths of time and is counted twice in the table above.

Respondents were asked if driving record was verified with an MVR. Forty-seven percent of the respondents indicated they always verified, while 53% indicated "sometimes." Since motor vehicle reports generally do not go back more than three years, it may be more difficult to verify information beyond three years.

DUI

The Survey asked if DUI was used as part of the preferred criteria and, if so, how many incidents over what time period would eliminate an applicant from a preferred risk class. There were 45 respondents to this question. Of these, all indicated they use DUI in their preferred criteria for their best risk class. While all specified a number of DUIs allowed, 42 reported a specific time period. Of the 45 respondents, only four respondents allowed an applicant to have a DUI and still qualify for their best nontobacco or tobacco class.

Tables 4.5e through 4.5h show the number of respondents that consider a specific number of DUIs within a specified time period as distinct criteria for their best preferred risk class for respondents with four or more nontobacco classes, three nontobacco classes, two nontobacco classes, and two or more tobacco classes, respectively. None of the respondents allow for more than one violation, regardless of the number of years that have elapsed. The most prevalent response, regardless of the number of nontobacco classes, was no DUIs within a five-year period. For respondents with more than one tobacco class, only one allowed for any DUI.

Table 4.5e – Time Horizon for DUI Criteria for Class 1
Respondents with four or more NT classes

Number of DUIs	Time Period (years)		
	Three	Five	Ten
0	1	7	4
# of Respondents	12		

Table 4.5f – Time Horizon for DUI Criteria for Class 1
Respondents with three NT classes

Number of DUIs	Number Period (years)				
	Three	Five	Seven	Ten	Ever
0	1	14	3	4	1
1	0	1	0	0	1
# of Respondents	25				

Table 4.5g – Time Horizon for DUI Criteria for Class 1
Respondents with two NT classes

Number of DUIs	Time Period (years)
	Five
0	3
1	2
# of Respondents	5

Table 4.5h – Time Horizon for DUI Criteria for Class 1
Respondents with two T classes

Number of DUIs	Time Period (years)		
	Three	Five	Ten
0	2	25	2
1	0	1	0
# of Respondents	30		

Cigarette and Other Tobacco Use

The Survey asked respondents a series of questions related to tobacco usage for the first four nontobacco classes and first two tobacco classes. Respondents were asked to indicate the basis for **no usage** (i.e., cigarettes only vs. any tobacco products) and over what timeframe lack of usage is measured. The Survey also asked if an applicant would still qualify for the class if there was occasional usage of cigars or other tobacco products. There were 44 respondents to this question.

All respondents indicated they consider Tobacco use in their preferred risk criteria. No respondents defined usage as "cigarettes only" for their best class regardless of the number of nontobacco classes.

40

Tables 4.6a and 4.6b summarize tobacco usage and cessation requirements, respectively, for the best nontobacco class. The numbers in parenthesis indicate the number of respondents in the particular category.

Table 4.6a – Tobacco Usage Permitted by Companies for Class 1 (Nontobacco)

# of Nontobacco Classes	No Usage of		% Allowing occasional cigar usage in class	% Allowing occasional usage of other tobacco products in class?
	All Tobacco	Cigarettes Only		
4 or more NT (12)	100%	0%	50%	17%
3 NT (25)	100	0	60	0
2 NT (7)	100	0	57	14

Table 4.6b – Tobacco Cessation Requirement for Class 1 (Nontobacco)

# of Nontobacco Classes	Time Period				
	12 months	24 months	36 months	60 months	Ever
4 or more NT (12)	8%	0%	25%	50%	17%
3 NT (25)	8	8	48	36	0
2 NT (7)	57	14	29	0	0

For the tobacco classes, the Survey asked if the basis for usage was any tobacco, cigarettes only, pipes and cigars, chewing tobacco and snuff, a patch, or an ex-smoker within the past 12 months. The Survey limited the definition to only one selection. Respondents were also asked if there was a limit on the amount of usage over a certain time period. There were 39 respondents to this question. Regardless of the number of tobacco classes, the most common definition for usage was any tobacco.

Table 4.6c – Tobacco Requirement for Class 1 (Tobacco)

Number of Tobacco Classes	Usage of						% that limit amount of usage
	Any Tobacco	Cigarettes Only	Pipes and Cigars	Chewing Tobacco and Snuff	Patch	Ex-smoker <12 months	
2 or more T (27)	63%	11%	0%	4%	4%	18%	22%
1 T (12)	58	0	0	0	0	42	17

Differences in Criteria by Age

The Survey asked if companies vary their preferred criteria by age and, if so, at what age. There were 44 respondents to this question. Of these, 16 (36%) indicated they vary their criteria by age. The most common ages where criteria were modified were 45 and 50. The age ranges at which respondents begin to vary criteria are shown in Table 4.7.

Table 4.7 – Age At Which Preferred Criteria is Modified

Age at Which Criteria is Modified	Number of Respondents
40-49	4
50-59	6
60-64	3
Other	3
# of Respondents	**16**

Comments regarding "Other":

- *20-80;*
- *70-80 on Universal Life only;* and
- *varies.*

Although the Survey did not ask for this information, some respondents provided specific details regarding how their criteria varied:

- *45 Chol and BP;*
- *BP at age 50 (2);* and
- *61 by Hypertension only.*

The Survey asked respondents to indicate if they employed different preferred criteria for underwriting in the senior market and, if so, at what age these criteria were employed. There were 45 respondents to this question. Eight respondents (18%) indicated they do use different criteria. Some also provided the age they began varying their criteria for the senior market, as follows:

- 50
- 60
- 70-80
- 71
- varies

For those that varied their criteria to underwrite the elderly or to classify the senior applicant as preferred, respondents were asked which of the criteria listed in Table 4.8 below were used.

Table 4.8 - Other Criteria Used for Qualifying Elderly or Senior Applicants for Preferred Class

Criteria	Number of Respondents
ADLs*	4
IADLs*	3
Social interaction	0
Exercise	2
Pet ownership	0
Senior-specific PHI	1
Cognitive Testing	3
Other	4
# of Respondents	8

*ADL stands for Activities of Daily Living; IADL stands for Independent Activities of Daily Living.

Comments regarding "Other":

- *Medical Records;*
- *Medical Testing;* and
- *None (2).*

Ranges of Criteria in Use

The Survey asked respondents to provide information on the following risk criteria: Total Cholesterol (treated and untreated), Total Cholesterol / HDL ratio, and PSA (over age 50). Respondents were asked to provide the published maximum levels that will still qualify a male applicant for preferred at issue ages 25, 45, and 65. The respondents were then asked whether having a reading above the published maximum, in and of itself, would always exclude an applicant from the preferred class.

Total Cholesterol

Respondents were asked to provide the maximum Total Cholesterol reading (measured in milligrams per/deciliter (mg/dl)) that would qualify an applicant for a preferred class. There were 43 respondents to this question. The maximum Total Cholesterol limits for a male issue age 45 to qualify for the respondents' best preferred classes are shown in Table 4.9a below. The Survey also asked whether having a reading above the published maximum would, in and of itself, always exclude an applicant from this class. These responses are also summarized in Table 4.9a. Please note that not all of those that responded to the question regarding the maximum Total Cholesterol limit also responded to the question about whether a higher reading would always exclude an applicant from a preferred class. Lastly, the Survey asked, if an applicant is currently under treatment for cholesterol, would the cholesterol level be considered any differently than if it were untreated.

For the respondents' best nontobacco class, 33% indicated a maximum of exactly 220. The next most prevalent response was a maximum of 210 at 19%. For the tobacco classes, the most prevalent responses were 240, 250, and 260.

Only respondents with three or more nontobacco classes varied their maximum by age. Five respondents used a lower maximum for issue age 25 than 45. The difference in the readings between age 25 and 45 for these five companies ranged between five and 40 mg. / dl., with 20 being the most prevalent. Six respondents allowed a higher maximum reading for issue age 65. The difference in the readings between age 45 and 65 for these six companies ranged between ten and 30 mg. / dl., with ten being the most prevalent. Even so, the most common maximum for issue ages 25 and 65 was still 220 mg. / dl. For the tobacco risks, fewer respondents varied the maximum by age, with three varying between 25 and 45 and only two varying between 45 and 65.

Table 4.9a - Maximum Total Cholesterol for Male, age 45, to Qualify for Class 1

mg. / dl.	# of Nontobacco Classes			# of Tobacco Classes
	Four or more	**Three**	**Two**	**Two or more**
< 200	0	0	0	0
200 - 219	6	5	0	0
220 – 239	4	15	1	4
240 – 259	2	5	2	17
260 – 299	0	1	2	8
300 – 350	0	0	0	0
351+	0	0	0	0
Low	200	210	230	220
High	250	260	274	280
Mean	218	227	251	248
Median	220	220	250	250
Higher Reading Always Excludes	5 of 11	18 of 25	3 of 6	13 of 27
Treated Cholesterol Considered Differently	6 of 12	11 of 25	3 of 6	4 of 25
# of Respondents	**12**	**26**	**5**	**29**

In the 1997 Survey, the average Total Cholesterol reading at age 45 was 249 for the most popular preferred nontobacco class. While the 1997 results are not directly comparable to this Survey, it does appear that the average is now lower.

Table 4.9b provides actual laboratory test range results on U.S. applicants for the calendar year 2002 for Total Cholesterol. These results were provided by LabOne and are included for information only. Please note this data shows results across all lines of business and all risk classes.

The Committee did not attempt to correlate laboratory findings with specific respondent criteria. Each respondent, however, may want to do this to verify that the preferred risk qualification percentages assumed are reasonable given their own specific criteria.

Table 4.9b - Laboratory Results (LabOne 2002) - Total Cholesterol Readings for Male Risks by Age Group

Total Cholesterol	Issue Age		
	20 - 29	40 - 49	60 - 69
< 200	64%	41%	40%
200 - 249	29	44	44
250 - 300	6	13	14
301+	1	2	2

Total Cholesterol / HDL Ratio

Respondents were also asked to provide the maximum Total Cholesterol / HDL ratio that would qualify an applicant for a preferred class. There were 44 respondents to this question. The maximum Total Cholesterol / HDL ratios for a male issue age 45 to qualify for the respondents' best preferred class are shown in Table 4.9c below. The Survey also asked whether having a reading above the published maximum would, in and of itself, exclude an applicant from this class. These responses are also summarized in Table 4.9c. Please note that the number of respondents to this question differed from the number providing the maximum Total Cholesterol / HDL ratio. Lastly, the Survey asked, if an applicant is currently under treatment for cholesterol, whether the ratio is considered any differently than if cholesterol were untreated.

For the respondents' best nontobacco class, 45% indicated using a maximum ratio of exactly 5.0. The next most prevalent responses were 4.5 at 16% and 5.5 at 14%. For the tobacco classes, there were 37 respondents. The most prevalent responses were 6.0 and 6.5, both at 27%.

Only respondents with three or more nontobacco classes varied their maximum ratio by age. Four respondents used a lower ratio for issue age 25 than 45. Three of these four used a ratio that is 0.5 less for age 25 than 45. Four respondents allowed a higher maximum ratio for issue age 65. Even so, the most common ratio for issue ages 25 and 65 was still 5.0. For the tobacco risks, only three respondents varied the ratio by age between 25 and 45 and between 45 and 65.

Table 4.9c- Maximum Total Cholesterol / HDL Ratio for Male, age 45, to Qualify for Class 1

Ratio	# of Nontobacco Classes			# of Tobacco Classes
	Four or more	Three	Two	Two or more
< 4.0	1	0	0	0
4.0 - 5.0	10	19	1	3
5.1 - 6.0	1	6	5	15
6.1 - 7.4	0	0	1	10
7.5 - 10.0	0	0	0	0
10.1+	0	0	0	0
Low	<4.0	4.0	5.0	4.0
High	5.5	6.5	6.5	6.5
Mean	4.7	5.1	5.8	6.0
Median	4.5	5.0	5.9	6.0
Higher Reading Always Excludes	8 of 11	19 of 25	4 of 7	17 of 26
Ratio with Treated Cholesterol Considered Differently	5 of 12	10 of 24	3 of 7	5 of 26
# of Respondents	12	25	7	28

In the 1997 Survey, the average Total Cholesterol / HDL ratio at age 45 was 5.83 for the most popular preferred nontobacco class. While the 1997 results are not directly comparable to this Survey, it does appear that the average is now lower. However, in the 1997 Survey, the lowest ratio was 3.0 compared to almost 4.0 in this Survey.

Table 4.9d provides actual laboratory test range results on U.S. applicants for the calendar year 2002 for Total Cholesterol/HDL ratios. These results were provided by LabOne and are included for information only. Please note this data shows results across all lines of business and all risk classes.

Table 4.9d - Laboratory Results (LabOne 2000) - Total Cholesterol / HDL Ratios for Male Risks by Age Group

Ratio	Issue Age		
	20 - 29	40 - 49	60 - 69
< 4.0	51%	37%	44%
4.1 – 5.0	23	26	27
5.1 - 7.5	22	31	25
7.6 - 9.9	3	5	3
10.0+	1	1	1

This Survey asked respondents to indicate the Total Cholesterol and Total Cholesterol / HDL ratios used to qualify applicants into *each* of their preferred classes. The responses for the best preferred class are detailed above. The responses for the second best preferred class for respondents with three or more nontobacco classes are summarized in Table 4.9e below.

Table 4.9e – Maximum Total Cholesterol and Total Cholesterol/HDL Ratio for Male Age 45, to Qualify for Class 2

# of NT Classes	Total Cholesterol		Total Cholesterol / HDL Ratio	
	Four or more	**Three**	**Four or more**	**Three**
Low	210	230	<4.5	4.5
High	260	300	6.0	7.0
Mean	237	252	5.5	6.2
Median	240	250	5.5	6.5

Prostate Specific Antigen (PSA)

The Survey asked respondents to provide the maximum PSA level that would qualify an applicant for a preferred class. There were 20 respondents to this question; however, not all provided values for all ages. The maximum PSA level for a male issue ages 25, 45, and 65 to qualify for the respondents' best preferred classes are shown in Table 4.9f below.

For all issue ages, a PSA level of 4.0 was the most prevalent for the respondents' best nontobacco class. For ages 25 and 45, no other level was prevalent. For age 65, the next most prevalent response was 5.0. For the tobacco classes, the most prevalent response was also 4.0.

Table 4.9f - Maximum Level of PSA to Qualify for Class 1 (Nontobacco)

ng. / ml.	PSA		
	Age 25	**Age 45**	**Age 65**
2.5	1	1	0
3.0	1	1	0
3.5	0	1	1
4.0	5	6	11
4.5	0	0	1
5.0	1	1	4
N/A	6	5	3
Low	2.5	2.5	3.5
High	5.0	5.0	5.0
Median	4.0	4.0	4.0
# of Respondents	**14**	**15**	**20**

The Survey also asked whether having a reading above the published maximum would, in and of itself, exclude an applicant from this class. Eight of 15 respondents indicated a PSA limit above the published maximum would exclude an applicant from their best preferred nontobacco class.

In the 1997 Survey, the average PSA limit at age 45 was 4.5 for the most popular preferred nontobacco class. While the 1997 results are not directly comparable to this Survey, it does appear that the average is now lower.

Table 4.9g provides actual laboratory test range results on U.S. applicants for PSA for calendar year 2002. These results were provided by LabOne and are included for information purposes only. Please note this data shows results across all lines of business and all risk classes.

Table 4.9g - Laboratory Results (LabOne 2002) -– PSA Readings by Age Group

ng. / ml.	PSA		
	Ages 20 - 29	Ages 40 - 49	Ages 60 - 69
≤ 4.0	97%	98%	91%
4.1 - 10.0	2	2	8
10.1+	1	0	1

Other Blood Test Criteria

The Survey asked if respondents' published criteria included blood tests other than cholesterol (e.g., GGT, SGOT, SGPT). Of the 41 respondents, only five at 12% indicated their criteria did include these other tests. Six respondents provided the following clarification and comments:

Comments

- *Although answered no some clarification is necessary. Any borderline health impairments not specifically addressed by underwriting guidelines would prevent and applicant from qualifying for Class 1 or 2 as determined by underwriting.*
- *At age 71+ serum albumin is used.*
- *Blood profile results have to be within NL limits for NT Class 1. For other categories results have to be non-ratable.*
- *Normal blood / urine or OFT / HIV (we look at everything).*
- *Values must be within normal range.*
- *We consider SGPT, SGOT, GGT, ALP, bilirubin, hepatitis screening, and alcohol marker test (CDT).*

Blood Pressure

Blood pressure is the force expended on the arterial walls by the flow of blood from the heart. Such pressure fluctuates in response to changes in physical activity, stress and other factors.

Readings of blood pressure (measured in millimeters of mercury (mm.Hg.)) are taken by a nurse or other paramedical technician as part of the medical or paramedical examination used in underwriting to evaluate and classify risk. Each reading includes a measurement in the systolic phase (i.e., pressure when the heart contracts) and one in the diastolic phase (i.e., pressure when the heart is at rest).

Sustained elevations of blood pressure usually require treatment and eventually can lead to organ damage (e.g., enlargement of the heart, congestive heart failure, kidney failure, stroke, etc.). Blood pressure is considered a coronary risk factor (along with cigarette smoking habits, pulse rate, height and weight, serum cholesterol, family history of cardiovascular disease prior to age

60, etc.) and is routinely used along with other information in screening individuals to determine the likelihood of increased risk of death.

Respondents were asked about maximum treated and untreated blood pressure readings to qualify a male for the best preferred risk classification at issue ages 25, 45 and 65. Table 4.10 below is a summary of the maximum untreated values.

There were a total of 45 respondents to this question. Although systolic/diastolic values varied somewhat, approximately one-half of the respondents designated between 130/85 - 140/89 as the maximum untreated blood pressure for a 45-year old male to qualify for best preferred NT risk class. Twenty respondents (44%) used the same blood pressure reading for all issue ages, while 20 (44%) used the same only for issue ages 25 and 45 (issue age 65 was higher). Four respondents (9%) used the same reading for issue ages 45 and 65 (issue age 25 was lower).

Table 4.10 - Maximum Untreated Blood Pressure to Qualify for Class 1 (Nontobacco) at Age 45

Maximum Untreated Blood Pressure	# of Classes			
Systolic/Diastolic (mm.Hg.)	4+NT	3NT	2NT	2T
< 130/85	5	0	0	5
130/85 to 140/89	5	18	1	18
Exactly 140/90	1	8	3	6
141/90 to 150/90	0	0	3	0
> 150/90	0	0	0	0
Other (Mixed)	1	0	0	2
Low	120/80	130/85	140/85	120/80
High	140/90	140/90	150/90	145/95
# of Respondents	12	26	7	31

The low readings in this Survey were nearly identical to the 1997 Survey, while the high readings decreased slightly.

Nineteen respondents (42%) in the NT classes said that any treatment for hypertension (regardless of the treated blood pressure reading) would preclude an individual from a preferred risk class. For the remaining 26 respondents (58%) that allowed treated hypertensives into a preferred risk class, nearly all allowed the same maximum reading as untreated to qualify for preferred. Eleven respondents answered the question regarding treated blood pressure.

Thirty-one respondents with two or more tobacco classes provided answers to the untreated blood pressure question and eight answered the treated blood pressure section. Of these, 18 (58%) indicated the maximum reading allowed would be between 130/85 – 140/89. Nearly all allowed the same reading for the treated as untreated.

There were 26 respondents that answered this question in both the 1995 and 1997 Surveys. Of these, 12 had a maximum untreated blood pressure reading that was the same in both surveys, four had a higher maximum reading in the 1997 Survey, and three had a lower maximum reading in the 1997 Survey. The remaining seven had results that were not readily comparable.

Additional Comments regarding Blood Pressure:

- *Criteria varies for classes other than our Preferred nontobacco;*
- *Treatment for blood pressure disqualifies applicant from best class;*
- *For NS Class 2, and Smoker class1 treatment is acceptable if only on one medication;*
- *BP question impossible to answer for non-preferred. Preferred is easy because it's an "or" situation. Applicant does not qualify if systolic is >140/90 OR if diastolic is >90;*
- *No current or history of blood pressure may qualify for Class 1;*
- *Our class 1 has specific criteria. Other than that the ratio decision is based on points. Total points determine rating;*
- *Readings in excess of the BP levels shown above for class 1 will totally disqualify the applicant from the preferred status. This does not imply that readings equal to the levels shown are desirable. Readings will incur a slight penalty under;*
- *Standard varies on systolic and diastolic relationship;*
- *The remaining categories rely on our normal BP charts and result in "+0" or "+10" debits maximum;*
- *There is no published blood pressure maximum for the worst Nontobacco and tobacco classes;*
- *Treatment for blood pressure - Never - negative screen;*
- *Treatment for high blood pressure would preclude an applicant from the preferred class (2);* and
- *When treated blood pressure allowed must be controlled for 2 years.*

Height and Weight

The Survey asked respondents for the maximum build that would qualify a 45-year old applicant for a preferred class. Build is defined as weight for a specific height. Maximum weights (in pounds) at various heights are shown separately for males and females. Table 4.11a is a summary of the 45 responses. Note that 5'6" refers to 5 feet 6 inches.

Of the 45 respondents answering this question, 40% (18) used the same maximum build for both males and females.

In the 4+NT Best Class, maximum weights for a 5' 10" male ranged from 170 to 207, with an average of 194. For a 5' 6" female, maximum weights ranged from a low of 147 to a high of 179, with an average of 165. For 4+NT Class 2, the average maximum weight was 5% higher for males and 7% higher for females than the Class 1 average maximum.

In the 3NT Best Class, maximum weights for a 5' 10" male ranged from 180 to 210, with an average of 195. For a 5' 6" female, maximum weights ranged from a low of 140 to a high of 187, with an average of 163. Note that the averages for both sexes were virtually identical for respondents with a 4+NT Best Class and for respondents with a 3NT Best Class. For 3NT Class 2, the average maximum weight for a 5'10" male was 211, which is 4% higher than the 4+NT

Class 2. For a 5'6" female, the average maximum weight was 178, which is 1% higher than the 4+NT Class 2.

As there were only six respondents with a 2NT Class system, no analysis was performed on this set.

Table 4.11a - Maximum Weight to Qualify a 45-year old for Preferred Risk Class by Sex and Height (4+NT Best class)

	Male			Female		
	Low	**High**	**Mean**	**Low**	**High**	**Mean**
5'2"	n/a	n/a	n/a	128	163	147
5'6"	153	190	173	147	179	165
5'10"	170	207	194	168	202	185
6'2"	190	230	217	185	225	206
6'5"	205	247	234	n/a	n/a	n/a

(4+NT Class 2)

	Male			Female		
	Low	**High**	**Mean**	**Low**	**High**	**Mean**
5'2"	n/a	n/a	n/a	142	168	156
5'6"	168	194	181	152	191	176
5'10"	191	216	203	172	215	198
6'2"	213	241	227	190	241	220
6'5"	230	262	244	n/a	n/a	n/a

(4+NT Best Tobacco class)

	Male			Female		
	Low	**High**	**Mean**	**Low**	**High**	**Mean**
5'2"	n/a	n/a	n/a	145	183	162
5'6"	172	208	186	162	208	182
5'10"	191	234	208	183	234	204
6'2"	215	263	232	204	263	228
6'5"	232	283	250	n/a	n/a	n/a

Table 4.11b - Maximum Weight to Qualify a 45-year old for Preferred Risk Class by Sex and Height

(3 NT Best class)

	Male			Female		
	Low	**High**	**Mean**	**Low**	**High**	**Mean**
5'2"	n/a	n/a	n/a	131	159	143
5'6"	160	187	174	140	187	163
5'10"	180	210	195	157	210	183
6'2"	205	234	217	169	234	204
6'5"	221	254	235	n/a	n/a	n/a

(3 NT Class 2)

	Male			Female		
	Low	**High**	**Mean**	**Low**	**High**	**Mean**
5'2"	n/a	n/a	n/a	137	179	157
5'6"	170	203	189	154	203	178
5'10"	193	226	211	172	226	198
6'2"	216	254	233	187	254	219
6'5"	227	274	252	n/a	n/a	n/a

(3 NT Best Tobacco class)

	Male			Female		
	Low	**High**	**Mean**	**Low**	**High**	**Mean**
5'2"	n/a	n/a	n/a	133	294	170
5'6"	170	314	201	145	314	191
5'10"	193	342	223	157	342	211
6'2"	212	375	247	169	375	233
6'5"	227	405	267	n/a	n/a	n/a

For both males and females, the maximum builds were slightly higher than the maximums from the 1997 Survey.

While this survey did not specifically ask respondents if weight outside the maximum for an individual would automatically preclude an individual from a preferred risk class, several of the comments indicated that there were exceptions. These respondents allowed a preferred risk to be from five to ten pounds overweight, as long as all other criteria were met, or else they let their underwriters have some discretion.

Respondents were also asked if their height/weight guidelines varied by issue age. Of the 44 respondents, 40 (91%) indicated they did not vary their guidelines by issue age. For the four respondents who answered yes, their comments and explanations are below.

Comments:

- *Except for standard/residual class, we allow 5-10 extra pounds for ages 15-29*
- *Fewer debits are assigned at age 50, and fewer still at age 70 and above*
- *For class 2 we have two charts - 20-55 and 56-70*
- *More liberal height and weight limits for ages 60+*
- *Tables are unisex – ages 18-64 & 65+*

Other Criteria

The Survey asked if any criteria other than those listed in this survey were regularly considered for preferred class(es). Of the 43 respondents, 21% indicated there were other criteria, with some providing further explanation as shown below. The most common consideration was military rank or status.

- *Any risk item that is 25 debits or more excludes applicant from all preferred classes;*
- *EKG findings;*
- *Evidence of cerebrovascular disease;*
- *Military and US citizenship;*
- *Military rank/status* (2)*;*
- *Must be a standard risk without use of credits;* and
- *The overall risk.*

Exceptions to Published Guidelines

The Survey asked respondents to describe the three most common exceptions from the published requirements / guidelines that were used in underwriting the preferred classes. There were 33 responses, which are summarized in Table 4.12. The two most prevalent exceptions were cholesterol and weight / build, both at over 50%. Eighteen percent indicated they allowed no exceptions. The Survey also asked if written internal guidelines were used to determine when exceptions are made. Of the 43 respondents, 42% indicated they do follow written internal guidelines to determine when exceptions are made.

The Survey also asked if exceptions are allowed based on underwriting judgment. There were 42 respondents to this question. Seventy-two percent indicated they allow their underwriters to use judgment in making exceptions to qualification for the preferred risk class. This is a change from the 1997 Survey when 98% allowed their underwriters to use judgment. When exceptions are allowed, underwriting judgment still plays a major role in the decision.

Table 4.12 – Most Common Exceptions to Preferred Risk Criteria

Exception	% of Respondents
Cholesterol	67%
Weight / Build	57
Blood Pressure	26
Family History	24
No Exceptions Allowed	18
Tobacco / Occasional Cigar Use	9
Other	39

Comments regarding "Other":

- *Lipids / Treated Lipids (2);*
- *Liver Enzymes (2);*
- *Urinalysis Abnormalities;*
- *Aviation / Avocation;*
- *Asthma / COPD lung disorders;*
- *MVR records;*
- *Distant medical history for certain types of cancers;*
- *Lab findings;*
- *3 point rule* {no further explanation provided}*;*
- *Offsetting positives;* and
- *Close, and competitive pressure.*

Additional Criteria

The Survey asked respondents what other criteria they would like to see used to classify a risk as preferred that is not commonly used today. Fifteen respondents provided specific criteria. Nearly half the respondents noted exercise/fitness. The next most common criterion noted was body mass index (BMI). Other criteria included lifestyle, ADLs for elderly, asthma, C-Reactive Protein, frailty index, history of depression, liver function, seat belt use, variation by age and waist to hip ratio.

Section 5 – Alternative Techniques and Future Preferred Programs

The following information relates to alternative underwriting and emerging techniques to distinguish preferred risks. There were 48 respondents to this section.

Alternative Underwriting Techniques

The Survey asked respondents whether they offered any products with simplified underwriting and further asked whether they offered a simplified product with a preferred class. The question defined simplified underwriting as underwriting where no fluids are collected other than non-paramedically collected oral fluid. Of the 48 respondents, 71% indicated they offered a product with simplified underwriting. Of these, only four said they offered a preferred risk class on the product.

The four companies that offered a simplified product with a preferred risk class were asked to indicate the underwriting factors or tools used to distinguish a preferred risk from a standard risk. Their responses are shown in Table 5.1. Respondents could indicate more than one factor.

Table 5.1 – Factors used to distinguish preferred from standard with simplified underwriting

Factor	# of Respondents
Nontobacco Usage	4
Family History	3
Driving Record	3
Admitted Health History	2
APS	2
Admitted Build (not verified)	1
Annual Income	0
Currently at Work	0
Credit Profile	0
Other	2
# of Respondents	**4**

Comments Regarding "Other":

- *Exam, MVR, Build, BP, Cholesterol, HDL, aviation, avocation, travel, residency;* and
- *special products.*

Respondents were asked to indicate if they currently used, or had considered using, any of the listed types of underwriting techniques in the underwriting process. Table 5.2 summarizes the responses. While few respondents are currently using pharmaceutical databases or expert underwriting systems that make decisions, nearly two-thirds of respondents were, at the time of this Survey, considering using these tools in underwriting the preferred risk. It was more common for respondents to have expert underwriting systems that support the underwriter (at 23%) than it was to have systems that make the decisions without underwriter involvement (at 8%).

For the purpose of this analysis, a blank response was considered the same as answering "no."

Table 5.2 – Use of Alternative Underwriting Techniques

Underwriting Technique*	% of Respondents	
	Currently Use*	Have Considered Using*
Pharmaceutical database	8%	65%
Expert underwriting systems that make decisions w/o underwriter involvement	8	65
Expert underwriting systems that support the underwriter	23	50
Credit Reports	33	23
Other	2	-
# of Respondents	**48**	

*Note, it was intended that those who answered "yes" to current use of a particular underwriting technique would answer "no" to whether they were considering using the technique and visa versa. However, six respondents answered yes to both for one or more underwriting technique. These responses were included in the column "Currently Use," but excluded in the column "Have Considered Using."

Comment Regarding "Other":

- *Teleunderwriting*

Review of Preferred Risk Criteria

The Survey asked how often respondents reviewed their preferred risk criteria. Table 5.3 summarizes the responses. Seventeen (35%) of the respondents review their criteria at least once per year; the extent or depth of the review is not known.

Table 5.3 - Frequency of Preferred Risk Criteria Review

Frequency	% of Respondents*
As Needed	58%
Annually	29
Occasionally	10
Semi-annually	6
Quarterly	-
Monthly	-
# of Respondents	**48**

**Percentages add to more than 100% as two respondents indicated they reviewed their criteria both annually and as needed.

The 1997 Survey asked a similar question with slightly different choices for frequency of review. In the 1997 Survey, 58% of respondents reviewed criteria at least once per year; 28% indicated they reviewed criteria more than once per year (monthly, quarterly or semi-annually). Respondents in the 2002 Survey were much more likely to review on an as needed basis than was the case with the 1997 Survey, where 25% of respondents said they reviewed criteria as needed.

Changes in Preferred Criteria

The Survey asked respondents which preferred risk criteria they expected to change during the next 12 months. They were asked to further indicate if the changed criteria would be more restrictive, less restrictive, or equally restrictive after the change. Sixteen (33%) of the respondents indicated they expected to change one or more of their preferred criteria in some way during the next year by either being more or less restrictive. Twenty-six (54%) of the respondents left the question blank.

Table 5.4 summarizes the responses for the 16 respondents who stated they expected to change one or more of their preferred criteria during the next year. Foreign Travel was the most commonly cited criteria expected to change, with nearly half the respondents expecting to make this criterion more restrictive.

Table 5.4 – Plans to Change Preferred Criteria in the Next 12 Months

Measure	Expect to change to be MORE RESTRICTIVE	Expect to change to be LESS RESTRICTIVE
Alcohol / drug abuse	2	0
Aviation / avocation	0	3
Blood Pressure	1	2
Build	2	2
Cholesterol (Total)	3	2
Cholesterol / HDL ratio	2	1
Family History	1	3
Foreign travel	7	1
Motor vehicle history	3	1
Personal History	2	0
Tobacco - time since last used	3	0
# of Respondents	**16**	

One respondent provided the following write-in response: *Total cholesterol treated with statins*. This respondent did not indicate whether they expected this criterion to be more or less restrictive after the change.

Reviewing Preferred Criteria

The Survey asked who had responsibility for reviewing preferred criteria. Respondents were allowed to choose more than one option. Table 5.5 summarizes the responses.

The responsibility was frequently shared. Forty-two (88%) of the respondents indicated responsibility was shared by at least two parties. Twenty-one (44%) responded that more than three parties shared responsibility. All but two respondents indicated the Underwriting department had some responsibility.

"Reinsurer(s)" was a write-in answer for seven companies. If "Reinsurer" had been included in the list of choices for this question, it is likely more respondents may have selected this as a response.

Table 5.5 – Parties Responsible for Reviewing Preferred Criteria

Responsible Party	% of Respondents
Underwriting	96%
Product Actuary	81
Medical Director	60
Marketing	35
Senior Management	27
Valuation Actuary	10
Other	21
# of Respondents	**48**

Comments Regarding "Other":

- *Reinsurer(s) (7);*
- *Chief Actuary:*
- *Formally approved by senior management committee;* and
- *Unspecified.*

The Survey asked what factors were considered in the review of preferred criteria. Respondents were allowed to choose more than one option. There were 47 respondents to this question. All indicated more than one factor was considered. Table 5.6 summarizes the responses.

If "Reinsurer" had been included in the list of choices for this question, it is likely that more respondents may have chosen this as a response.

Table 5.6 – Factors Considered in the Review of Preferred Criteria

Factor	% of Respondents
Competitor Criteria	85%
Mortality Experience	85
Results of published medical research	67
Qualification percentages	65
Results of internal research	48
Not-taken rates	19
X-factors	10
Other (reinsurer)	15
# of Respondents	**47**

Appendix A
Participating Companies

Allianz Life Insurance Company of North America
Allstate Financial
American Family Life Insurance Company
Ameritas Life Insurance Corp.
Banner Life Insurance Company
Beneficial Life Insurance Company
Boston Mutual Insurance Company
Canada Life - U.S.
Canada Life
Catholic Order of Foresters
CGU Life Insurance Company
Columbus Life Insurance Company
Country Insurance & Financial Services
CUNA Mutual Life Insurance Company
Desjardins Financial Security
Empire General Life Assurance Corp.
Erie Family Life Insurance Company
Farm Bureau Life Insurance Company of MI
Farm Bureau Life Insurance Company
Federated Life Insurance Company
FIC Insurance Group
Great American Life Insurance Company
Guardian Life Insurance Company
GuideOne Life Insurance Company
Hartford Life Insurance Company
Horace Mann Life Insurance Company
Independent Order of Foresters
ING Insurance Company
Jackson National Life Insurance Company
Jefferson Pilot Financial Insurance Company
John Hancock Financial Services Group
Kansas City Life Insurance Company
Lafayette Life Insurance Company
London Life Insurance Company
Manulife Financial Group
MassMutual Financial Group
Midland National Life Insurance Company
Modern Woodmen of America
North American Company for Life & Health
Pacific Guardian Life Insurance Company
Pacific Life Insurance Company

Penn Mutual Life Insurance Company
Provident Mutual Life Insurance Company
Prudential Financial
Security Financial Life Insurance Company
Shelter Life Insurance Company
State Farm Life Insurance Company
Thrivent Financial for Lutherans
TIAA-CREF Life Insurance Company
Transamerica Reinsurance
United of Omaha Life Insurance Company
USAA Life Insurance Company
Western-Southern Life Insurance Company
Woodmen of the World Life Insurance Society

Appendix B

Size of responding companies based on face amount of life insurance in force as of December 31, 2001:

Total Life In-force	Total Cos.
Less than $5.5 billion	4
$5.5 billion to $13.9 billion	14
$14 billion to $49.9 billion	13
$50 billion +	23
Grand Total	**54**

Amount of term insurance sales estimated for 2001 for responding companies:

Term Sales	Total Cos.
<$100 million	3
$100 million - $249.9 million	3
$250 million - $499.9 million	4
$500 million - $999.9 million	7
$1 billion - $4.9 billion	18
$5 billion - $9.9 billion	10
$10 billion - $14.9 billion	2
$15 billion +	7
Grand Total	**54**

Appendix C

Attending Physician's Statement (APS) - The APS has historically been one of the most valuable tools used in the risk classification process. However, it is rarely used as a routine preferred underwriting requirement because of its cost (e.g., $35 to $100+) and delay in processing the application. It is primarily used to clarify and supplement medical history disclosed by the applicant, and is used more often in the standard / substandard risk class decision than the preferred / standard risk class decision. The APS is requested most frequently for cause, at larger amounts, and for older age applicants.

Blood Profile Testing - Standard blood profile testing provides information that can be used to assess the relative risk of mortality with respect to indications of coronary artery and other cardiovascular diseases, diabetes, liver disease, antibodies to HIV infection, and other impairments. Based on the results of the standard blood tests and other requirements, companies may choose to perform additional tests (called reflex tests) for such things as hepatitis B, hepatitis C, and alcohol abuse. Over 20 tests may be performed on a single blood sample collected via syringe by paramedical technicians or nurses.

Cotinine and Cocaine Testing - The cotinine test is usually conducted on a urine or oral fluid specimen to indicate recent use of tobacco or other forms of nicotine. All companies collecting urine or oral fluid test for cotinine. A test for recent usage of cocaine may also be conducted on urine or oral fluid specimens.

Dried Blood Spot (DBS) Testing - The DBS test provides information that can be used to assess the relative risk of mortality with respect to indications of cardiovascular disease, diabetes, liver disease, antibodies to HIV, and alcohol abuse. The specimen of blood is collected by finger stick onto filter paper and then forwarded to a laboratory for analysis.

Electrocardiogram (ECG) - The resting ECG is a test used to screen applicants for evidence of coronary heart disease (CHD). By recording electrical impulses from the conduction system of the heart, the test helps identify heart rate and rhythm disorders, coronary blood vessel blocks, and heart enlargement. The test may also indicate a prior heart attack (myocardial infarction) and other underlying diseases of the heart. The stress test, or exercise ECG, is a noninvasive test used to screen applicants for evidence of coronary heart disease (CHD). The most common stress test performed is the treadmill, which provides a continuous recording of an ECG during exercise on a motorized treadmill. The treadmill provides the underwriter with far more diagnostic and prognostic information than the resting ECG. In particular, the treadmill shows the effect of exercise on the heart via blood pressure, chest pain, shortness of breath, arrhythmias (irregular heart rhythm), and level of exercise attained. The medical community uses the stress test for both screening and diagnostic procedures; for example, it can be used to screen for the presence of undiagnosed CHD and to evaluate whether chest pain may be related to CHD.

Motor Vehicle Report (MVR) - The MVR is often used as a reflex to help clarify an applicant's driving record. The MVR may also be requested routinely among both younger and older applicants applying for significant amounts of coverage. The modest costs of the report (e.g., $5

to $12) and turnaround time are counterbalanced by the potential benefits from clarifying some of the violent death aspects of the risk. The cost of an MVR has increased since 1997, and there are new State regulations that have slowed the turnaround time.

Nonmedical Application - The nonmedical application provides less medical information than an examination performed by either a paramedical technician or physician. It is the minimum level of information needed for an application to be considered on a regularly underwritten (i.e., not guaranteed-issue or simplified-issue) basis. However, nonmedicals with laboratory testing (but no paramedical exam) are often classified as nonmedicals even if an APS is ordered.

Oral Fluid Testing (OFT) - Oral Fluid Testing involves the collection of mucosal transudate, which has properties more similar to serum than saliva, and can be used to test for evidence of HIV infection. It can also be used to test for cotinine, (a metabolite of nicotine, which is an indicator of recent tobacco usage), and cocaine. The fluid may be collected by an agent or paramedical technician using a noninvasive oral collection device.

Paramedical/Medical Examination - The paramedical examination became popular during the 1970's when insurers' confidence in the information obtained from medical examinations was deteriorating, and there were concerns about the balance between the costs, time service, and benefits associated with such exams. Paramedical exams are performed by trained nurses and other paramedical technicians. Medical exams are performed by licensed physicians. Both exams include taking physiologic measurements (e.g., height and weight, blood pressure, and pulse rate). An electrocardiogram, a pulmonary function test, and/or a blood, urine or oral fluid sample may be obtained by the paramedical technician. The information obtained may include the applicant's medical history. This history may alternatively be obtained by an agent or through a teleunderwriting facility.

Prostate Specific Antigen (PSA) Test - PSA is a type of protein produced by the prostate gland tissue. An elevated PSA level in the bloodstream may be a marker for prostate cancer. In general, the higher the level of PSA over designated laboratory limits, the more likely the possibility of the presence of prostate cancer. Acceptable levels of PSA will vary by age, how quickly the levels rise over time, and the method used to determine the level.

Urine Testing - Urinalysis or Home Office Specimen (HOS) typically test for cotinine, cocaine, indications of poorly controlled diabetes, and kidney disorder. Such testing may also indicate use of a diuretic (antihypertensive agent), other prescription medication and illegal drugs (e.g., marijuana, methamphetamines, heroin, and opium). The fluid may be collected by an agent or paramedical technician.