## TRANSACTIONS OF SOCIETY OF ACTUARIES 1985-87 REPORTS

## DISCUSSION OF PRECEDING REPORT

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The annual reports on intercompany experience under Standard Ordinary life policies provide much useful information. This discussion presents data in groupings and formats not shown in the committee report. We hope the results will enable the reader to gain additional insights about the level of recent mortality and the relationships by age and underwriting class.

## Aggregate Experience between 1981 and 1986 Anniversaries

Table 8 in the report gives select experience. We grouped certain of the issue ages together to reduce the number of cells to smooth the data somewhat.

Tables 15 and 17 give ultimate experience. We first grouped the data into decennial attained age groups. Then we split the data into medical/nonmedical and male/female components. To do this, we assumed that the ratio of medical to nonmedical mortality for a given age group would be the same for females as for males.

Table A summarizes the results. The mortality ratios are based on the 1975-80 tables and are footnoted to indicate the amount of actual deaths in that age group, as follows:

* $\$ 1-10$ million actual deaths
$\dagger \$ 10-100$ million actual deaths
$\ddagger>\$ 100$ million actual deaths.
For groups with less than $\$ 1$ million actual deaths, the ratios are not shown. The intent of showing the amount of deaths is to indicate the relative statistical validity of the various numbers.


## Smoker/Nonsmoker Experience between 1985 and 1986 Anniversaries

Using data in the supplementary tables available from the Society of Actuaries, we analyzed the smoker/nonsmoker data by issue age. Table B summarizes the results. Again, we used the footnotes for the mortality ratios that were used in Table A.

Table C shows smoker policies as a percentage of total issue for 1985.

TABLE A
Mortality Experience for 1981-86
As a Percentage of Expected Based on 1975-80 Select and Ultimate Ratios: Select/Ultimate ${ }^{1}$

| Issuc Ages/Attained Agcs | Medical | Paramedical | Nonmedical |
| :---: | :---: | :---: | :---: |
| Male |  |  |  |
| 0-9/15-24 | * $64 \% / 63 \% *$ | -/NA | +81\%/86\% ${ }^{\text {+ }}$ |
| 10-19/25-34 | *86/105* | *80\%/NA | †94/106 ${ }^{\dagger}$ |
| 20-29/35-44 | $\dagger 90 / 86 \dagger$ | $\dagger 85 / \mathrm{NA}$ | $\ddagger 92 / 96 \dagger$ |
| 30-39/45-54 | $\ddagger 88 / 85 \ddagger$ | $\ddagger 77 / \mathrm{NA}$ | $\pm 96 / 96 \pm$ |
| 40-49/55-64 | $\ddagger 89188 \pm$ | $\ddagger 96 / \mathrm{NA}$ | $\dagger 104 / 108 \ddagger$ |
| $50-165-74$ | $\ddagger 90 / 88 \ddagger$ | $\ddagger 108 / \mathrm{NA}$ | $\dagger 109.106 \dagger$ |
| 175-84 | 92 |  | $101+$ |
| 85-94 | $196 \ddagger$ |  | $96+$ |
| Female |  |  |  |
| (1-9/15-24 | ---- | - NA | $\div 74 \%_{6} 92 \%{ }^{*}$ |
| 10-19:25-3: | * $81 \%$ - | - NA | -90.105* |
| 20-29/35-44 | *941720. | * $106 \%$ NA | +82/86 $\dagger$ |
| 30-39/45-54 | $\div 85 / 85 \%$ | $\dagger 78 / \mathrm{NA}$ | +80,96 ${ }^{\text {+ }}$ |
| 40-49155-64 | +105/87 $\dagger$ | +89/NA | +99/106 ${ }^{+}$ |
| 30-65-74 | $\ddagger 11395 \%$ | $\because 122 \mathrm{NA}$ | * 146115* |
| , 75-S4 | 190 | NA | 198* |
| 185-94 | $99 \%$ | NA | $199 *$ |

The first ratio is applicable for the first 15 policy years for the issue ages shown. The second ratio is for the attained ages shown. For example, for male, medical, issue age 25 , the ratio is $90 \%$ for the first 15 policy years, $86 \%$ for attained ages $40-44,85 \%$ for attained ages $45-54$, and so on.

* \$1-\$10 million actual deaths. t $\$ 10-5100$ million actual deaths. $\ddagger>\$ 100$ million actual deaths.

TABLE B
Smoker/Nonsmoker Mortality Experience for 1985-86

| $\begin{aligned} & \text { Issuc } \\ & \text { Ages } \\ & \hline \end{aligned}$ | Nonsmoker ${ }^{1}$ |  |  |  | Smoker ${ }^{\text { }}$ |  |  |  | Ratios: Smoker/Nonsmoker |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Medical | Paramedical | Nonmedical | Total | Medical | Paramedical | Nonmedical | Total | Medical | Paramedical | Nonmedica! | Total |
| Mate |  |  |  |  |  |  |  |  |  |  |  |  |
| 20-29. | 60\%** | 46\%** | 74\%* | 69\% $\dagger$ | - | - | 150\%* | 142\%* | - | - | 202\%* | 205\%** |
| 30-39. | $78+$ | $51+$ | $76 \dagger$ | $68 \dagger$ | 152\%* | 99\%** | $150 \dagger$ | $133 \dagger$ | 195\%* | 194\%** | $196 \dagger$ | 196 |
| 40-49. | $62 \dagger$ | $66 \dagger$ | $66 \dagger$ | $64+$ | 128* | $147 \dagger$ | 199** | $150 \dagger$ | 208* | $221 \dagger$ | 301* | $235 \dagger$ |
| $50+$ | $64 \dagger$ | $81 \dagger$ | $79 \dagger$ | $70 \dagger$ | 152 $\dagger$ | $210 \dagger$ | $231 \dagger$ | $180 \dagger$ | $238 \dagger$ | $259 \dagger$ | 291* | 237* |
| Total... | $66 \% 1$ | $65 \% \dagger$ | 75\% $\dagger$ | $68 \% \dagger$ | 142\% $\dagger$ | 154\% $\dagger$ | 165\% $\dagger$ | 153\% $\dagger$ | 216\% $\dagger$ | $236 \% \dagger$ | 221\% $\dagger$ | 225\% $\dagger$ |
| Femate |  |  |  |  |  |  |  |  |  |  |  |  |
| 20-29 | - | - | 67\%* | 70\%* | - | - | 112\%* | 104\%* | - | - | 167\%* | 149\%* |
| 30-39 | - | 50\%* | 69** | 59* | - | 140\%** | 96** | $110^{*}$ | - | 279* | 138** | 185** |
| 40-49. | 91\%* | $58 *$ | 77* | 74* | - | 135** | 176** | 153** | - | 232* | $228 *$ | 207* |
| $50+$ | 122* | 97* | $110{ }^{+}$ | $110 \dagger$ | 91\%** | 295* | 377* | 223* | 75\%** | 304* | 341* | 202* |
| Total... | 98\% $\dagger$ | $69 \% \dagger$ | $72 \% \dagger$ | 77\% $\dagger$ | 106\%* | 200\%* | $147 \%{ }^{*}$ | 154\%* | 108\%* | 289\%** | 204\%* | 200\%* |

${ }^{1}$ As a percentage of $1975-80$ Sclect.

* $\$ 1-\$ 10$ million actual deaths.
$\$ \$ 10-\$ 100$ million actual deaths.

TABLE C
Smoker Policies As a Percentage of Total Issues for 1985

| Issue <br> Ages | Male |  |  | Female |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Medical | Paramedical | Nonmedical | Medical | Paramedical | Nonmedical |
| $30-39 \ldots$ | $12 \%$ | $12 \%$ | $17 \%$ | $12 \%$ | $14 \%$ | $17 \%$ |
| $40-49 \ldots$ | 14 | 14 | 20 | 16 | 15 | 16 |
| $50-59 \ldots$ | 12 | 18 | 22 | 19 | 19 | 21 |
| $60-69 \ldots$ | 9 | 18 | 25 | 15 | 21 | 25 |
| Total... | 13 | 17 | 15 | 16 | 20 | 19 |

