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MORTALITY OF CHARTER BENEFICIARIES, 1970-1977

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The Old-Age, Survivors, and Disability Insurance program has been paying monthly benefits for more than 35 years, January 1940 being the first month for which benefits were paid. Only a few individuals who received benefits for that month are still alive. Their mortality experience, developed from a survey taken in 1965, was first analyzed in Actuarial Note No. 30.¹ In 1972 a second study was made of these so-called Charter Beneficiaries (persons who were aged 65 and over and were entitled to monthly benefits for January 1940 and who continue to be so entitled). The results are to be found in Actuarial Note No. 78.² This Note presents a further analysis based on data collected in early 1977.

The group of Charter Beneficiaries consists not only of old-age beneficiaries (retired workers), but also of wife beneficiaries, widow beneficiaries, and parent beneficiaries, who under the law in effect in 1940, had to be at least age 65. However, only the data for old-age beneficiaries are analyzed in this Note, since all other types of benefits to this group have been virtually terminated.

It should also be noted that because of technical procedural difficulties, a woman who was entitled to wife's benefits for January 1940 and who was subsequently widowed, is not classified now as a Charter Beneficiary, since according to administrative procedures, her wife's benefit was terminated and a widow's benefit was granted instead. The termination of her original benefit eliminates her from the Charter Beneficiaries group. This factor alone has had a very significant

effect in eliminating from the survey most women who were wife beneficiaries in January 1940. Properly speaking, this particular group of widows should be classified as Charter Beneficiaries, but it is virtually impossible—and definitely not administratively feasible—to locate them and to so designate them. There are other situations in which an original Charter Beneficiary loses his continuity of entitlement to the same benefits, but these are believed to involve only a few cases.

As can be seen from Table 1, all of the old-age Charter Beneficiaries were born in the period 1872-75. At the time they became entitled to benefits in January 1940, their age was 65-67,³ which required very careful verification. These old-age Charter Beneficiaries can be regarded as a cohort of individuals on which highly accurate age information is available and who can be traced through time for mortality analysis. It is estimated that on the average these beneficiaries were born in January 1874, which would make them exactly age 66 at entitlement to a benefit in January 1940. Similarly, their average age was 91 during the 1965 survey, 96 during the 1970 survey, and 103 during the 1977 survey. In brief, this Note, which covers the 1977 survey, can be seen as presenting highly accurate mortality data observed during the mid 1970's at the higher ages (late 90's to early centenarians), based on social security retired workers' experience.

Table 1 shows the estimated number of living old-age Charter Beneficiaries at various points in time by sex and year of birth.

Table 2 analyzes the data on the mortality experience

¹ Robert J. Myers, Actuarial Note No. 30, "Mortality Study of Charter Beneficiaries", Social Security Administration, July 1966.

² Francisco Bayo and Margaret A. Lannen, Actuarial Note No. 78, "Mortality of Charter Beneficiaries", Social Security Administration, August 1972.

³ Due to the fact that in the original 1935 Act coverage was limited to workers under age 65. It was not possible for workers born before 1872 to become eligible to old-age benefits for January 1940. Even those born in 1872 would have had to be under age 68 in that month. On the other hand, those born in 1875 had to be born in the month of January.

rienced by the old-age Charter Beneficiaries between January 1, 1970 and January 1, 1977. This is done by comparing the actual number of survivors with the projected number of beneficiaries for January 1, 1977, on the basis of two sets of mortality rates.

The first set of mortality rates are those of the 1969-71 United States Life Tables. The second set of mortality rates are based on Medicare experience for 1968-74.⁴

For both sexes combined the number of actual survivors on January 1, 1977 from the group alive in January 1, 1970 was 33% lower than projected on the basis of the 1969-71 United States Life Tables. For males it was 32% lower, while for females it was 37% lower. On this basis, it is estimated that the actual mortality of the male old-age Charter Beneficiaries during the mid 1970's was about 14% higher than the 1969-71 United States Life Tables mortality when measured in terms of the annual probability of death, q_x . For females, it was about 19% higher.

As compared with Medicare beneficiary's mortality, both male and female old-age charter beneficiaries showed even higher mortality. The actual survivors were lower than "expected" by 50% for both sexes combined as well as for each of the sexes separately.

When measured in terms of the annual probability of death, q_x , the above results imply that the mortality of male old-age Charter Benefici-

aries in the mid 1970's was about 19% higher than Medicare mortality, while for females it was about 13% higher.

Another point of interest is the differential by sex in the mortality experience. It will be observed from Table 3 that according to the survival ratios of old-age Charter Beneficiaries, the mortality of females was substantially lower (survival ratio substantially higher) than for males in the period 1940-70. This period covers an average age range of 66 to 96 throughout which it is well known that females hold an advantage in mortality. The Charter Beneficiaries corroborate this fact.

At the higher ages the mortality differential by sex is not so well established. Although Medicare data indicate higher mortality for males, in most cases, mortality tables are still being ended according to the preferences of the researcher. The values in Table 3 indicate that for the period 1970 to 1977 covering the average ages 96 to 103, the old-age Charter Beneficiaries experienced a mortality differential by sex. It is estimated that, as measured by the probability of death, q_x , the mortality rates for females were about 6% lower than for males. However, it should be noted that the smallness of the groups coupled with this relatively minor differential would not allow us to conclude that females have lower mortality.

It would be of interest to study the survival experience of this Charter Beneficiary group in the future as its members reach the most advanced ages.

⁴ The results of the analysis of this Medicare experience will be published in detail in the near future.

TABLE 1

**Number of Living Old-Age Charter Beneficiaries
at Various Dates**

Date	Year of Birth				
	1872	1873	1874	1875 ¹	1872-1875
MALES					
February 1, 1940 -----	2,656	11,006	13,536	751	27,949
December 1, 1964 -----	94	523	786	36	1,439
January 1, 1970 -----	20	96	161	8	285
January 1, 1974 -----	5	22	24	3	54
January 1, 1975 -----	4	16	15	2	37
January 1, 1976 -----	2	6	12	1	21
January 1, 1977 -----	0	6	6	1	13
FEMALES					
February 1, 1940 -----	257	1,447	1,774	130	3,608
December 1, 1964 -----	25	158	228	24	435
January 1, 1970 -----	3	31	51	3	88
January 1, 1974 -----	0	6	14	0	20
January 1, 1975 -----	0	5	8	0	13
January 1, 1976 -----	0	3	5	0	8
January 1, 1977 -----	0	1	4	0	5

¹ Born in January 1875 only.

TABLE 2

**Comparison of Actual Estimated Number of Old-Age
Charter Beneficiaries Surviving
From January 1, 1970 to January 1, 1977**

Sex	Actual Survivors	Estimated Survivors ¹ Based on Mortality of			
		U.S. ² Population	Medicare ³ Beneficiaries	Col (1) as Percentage of Col (2)	Col (1) as Percentage of Col (3)
	(1)	(2)	(3)	(4)	(5)
Male -----	13	19	26	68	50
Female -----	5	8	10	63	50
Total -----	18	27	36	67	50

¹ See text for description of estimation.

² Based on the 1969-71 United States Life Tables.

³ Based on Medicare 1968-74 experience.

TABLE 3**Survival Ratios of Old-Age Charter Beneficiaries**

<u>Period</u>	<u>Year of Birth</u>				
	<u>1872</u>	<u>1873</u>	<u>1874</u>	<u>1875</u>	<u>1872-1875</u>
MALES					
Jan. 1940 to Dec. 1964 -----	.0354	.0475	.0581	.0479	.0515
Dec. 1964 to Jan. 1970 -----	.2128	.1836	.2048	.2222	.1981
Jan. 1970 to Jan. 1977 -----	.0000	.0625	.0373	.1250	.0456
FEMALES					
Jan. 1940 to Dec. 1964 -----	.0973	.1092	.1285	.1846	.1206
Dec. 1964 to Jan. 1970 -----	.1200	.1962	.2237	.1250	.2023
Jan. 1970 to Jan. 1977 -----	.0000	.0323	.0784	.0000	.0568

Note: These ratios are calculated from the values shown in Table 1.