The Past Trend of Government Annuity Mortality

A possible guide to the future trend of death rates among Canadian Government annuities is the past trend. Unfortunately, satisfactory statistics as to the past trend are not available to me. However, I have ascertained some facts about the government annuity death rates during the years 1908-36 which are somewhat helpful.

I have learned that over those years the aggregate actual deaths were 99 per cent of the a(m) ultimate table for males set back 1 year of age, and 100 per cent of the a(f) ultimate table for females set back 1 year of age, by numbers of lives. These may be compared with corresponding aggregate percentages over the years 1943-8 of 93 per cent for males and 99 per cent for females, including for males individual annuities only because, I presume, there was little, if any, group business during the years 1908-36. These percentages seem to indicate that death rates have decreased, but it should be noted that the earlier figures were calculated by numbers of lives whereas the later figures were based on amounts of annuity. Both Professor Mackenzie's 1937 report and some incidental figures for the years 1943-8 made available to me indicate that among government annuities death rates tend to be lower by amounts than by lives, so that the apparent decrease may not be real. In fact, if the 1908-36 percentages are adjusted downward by 7 per cent for males and 5 per cent for females (adjustments quoted by Professor Mackenzie) so as to obtain percentages based on amounts of annuity, the results are 92 per cent for males and 95 per cent for females. If these adjusted figures could be accepted, and were compared with the corresponding 1943-8 percentages of 93 per cent for males and 99 per cent for females, an increase of death rates would be indicated. I am of the opinion, however, that these percentages are not entirely reliable because of certain technical questions which I do not have the data to answer. But they do suggest (1) that, on the basis of amounts of annuity and all ages combined, death rates among government annuities probably did not change greatly between the periods 1908-36 and 1943-8, and (2) that, when gauged by amounts of annuity, the mortality basis adopted for government annuities in 1938 may not have been fully adequate to cover the then current death rates. As to the trends in the various age groups, I do not have sufficient information to comment.

However, three important considerations lead to the belief that the past trend of death rates among government annuities, as above indicated, should not be accepted as a reliable guide for the future. The first of these is the almost world-wide trend toward smaller death rates among populations, which has persisted, at times irregularly, for as far back as statistics are available. It is true that these decreases of mortality have been most marked at the infantile, juvenile, and young adult ages, have been less marked from middle-age to 60 or thereabouts, and small at older ages. Nevertheless, this trend among populations, even at the older ages, has been unmistakable and cannot be disregarded. Its causes are common knowledge: improvements in public health, sanitation, and medical practice. Volumes of tables show this trend in many countries; to be brief, I shall only quote, in Table 3, the mortality changes which have occurred in the Canadian population in the 14 years from 1931 to 1945, and remark that, in general, the changes shown for Canada in this table are rather similar to changes that occurred in other countries. During this particular period in Canada, the largest reduction of death rates occurred among females, but it should not be assumed that, in the long run, male death rates will not share in the reductions. In the United States, for example, during some periods one sex has shown greater improvement of mortality whereas during other periods the reverse has been true.