

## MORTALITY OF IMMEDIATE ANNUITANTS

### EXPERIENCE FOR 1975-78

22. The last report on the mortality experience of immediate annuitants related to the period 1971-74, and appeared in *C.M.I.R.* 3, 53. Since that report was published the new standard tables  $a(90)$  have become available.

23. The present report relates to the period 1975-78. As before, the data for those annuities which were purchased before 1957 have been kept separate on account of the apparent change in the class of life purchasing annuities after the Finance Act 1956; most of the 'before 1957' data are now in respect of the lives at the oldest ages.

24. It was observed in the last report that mortality tended to fluctuate randomly from period to period rather than following any secular trend, and this feature continued into 1975-78. A comparison of the latest experience with that of the two previous quadrennia is given in Table 14, which shows the ratio of actual to expected deaths calculated according to the *aeg* 1967-70 table. This report, for the first time, includes figures based on 'amounts' as well as 'lives', but the 'amounts' figures cannot be compared with previous quadrennia for which 'amounts' data were not collected; however, there is no clear indication that mortality varied according to the size of the annuity, the ratios by 'lives' being sometimes larger, sometimes smaller than those by 'amounts'; the differences between the 'lives' and 'amounts' ratios are only significant in a few instances.

25. The mortality of male annuitants in 1975-78 was broadly similar to that observed in 1971-74. That of female annuitants was higher at duration 0 than in either of the two previous quadrennia; at durations 1-4 it was higher than in the previous quadrennia at the ages over 80 but generally lower at the younger ages. At durations 5 and over, the trend is difficult to follow.

26. Table 15 gives the ratios of actual to expected deaths according to the two standard tables  $a(55)$  and  $a(90)$ . It is clear that mortality in 1975-78 was well below  $a(55)$  except at duration 0, and also excepting the 'before 1957' data. But mortality had not fallen as low as  $a(90)$  (nor was it expected to do so) and the latter standard table therefore still contains a substantial safety margin. Once again, the table demonstrates little difference between the ratios on the 'lives' and 'amounts' bases.

27. Table 16 compares the 1975-78 mortality experienced by the 'after 1956' annuitants with that expected by the projected rates of mortality published at the end of the  $a(90)$  tables. As the projection was on a 'lives' basis, this basis only has been used for this comparison, which shows that for the 'after 1956' data the forecast rates were closer for males than for females, but that in general the improvement in mortality had not followed the projection, particularly at ages over 80.

Table 14. *Immediate annuitants, 1975–78; actual and ratio of actual to expected deaths according to the aeg 1967–70 table (select for duration 0, ultimate for other durations) calculated according to both 'lives' and 'amounts' and compared with ratios for previous quadrennia*

Age group (nearest ages)	Males					Females				
	Actual deaths	1975–78 100 A/E 'Lives'	100 A/E 'Amounts'	1971–74 100 A/E 'Lives'	1967–70 100 A/E 'Lives'	Actual deaths	1975–78 100 A/E 'Lives'	100 A/E 'Amounts'	1971–74 100 A/E 'Lives'	1967–70 100 A/E 'Lives'
<i>Duration 0</i>										
–70	55	145	147	118	97	26	168	156	127	100
71–80	46	91	89	104	97	70	122	96	99	102
81–	52	101	103	95	107	112	116	126	112	99
All ages	153	109	105	105	100	208	123	119	109	100
<i>Durations 1–4</i>										
–60	6	120	37	195	125	10	140	130	53	91
61–65	32	82	60	90	75	26	75	81	82	87
66–70	168	91	85	81	112	73	85	68	84	107
71–75	162	88	86	89	85	140	77	78	93	89
76–80	191	101	111	93	92	255	88	96	95	95
81–85	201	100	110	92	82	312	100	112	98	91
86–90	155	103	101	106	88	284	104	110	100	98
91–95	59	77	59	93	82	146	116	112	104	101
96–	8	60	33	128	119	34	108	123	109	104
All ages	982	94	96	93	90	1,280	95	102	95	95

*Durations 5 and over (annuities purchased after 1956)*

-60	9	154	183	148	124	18	190	178	54	150
61-65	39	136	140	115	93	73	168	165	106	86
66-70	187	98	119	100	104	233	104	84	105	114
71-75	590	95	100	96	114	698	103	95	104	101
76-80	801	97	106	100	103	1,431	106	98	111	108
81-85	947	107	110	101	105	2,063	111	108	114	99
86-90	748	104	108	106	112	2,031	110	113	113	105
91-95	376	108	114	112	118	1,285	110	120	112	102
96-	86	85	98	91	78	386	113	119	105	101
All ages	3,783	102	108	102	108	8,218	109	109	111	104

*Durations 5 and over (annuities purchased before 1957)*

-60	2	*	144	152	126	2	196	136	186	111
61-65	6	237	210	177	204	3	70	248	147	109
66-70	5	92	39	154	232	16	92	117	82	130
71-75	24	138	79	128	127	88	140	98	140	139
76-80	41	113	96	147	123	258	140	134	117	137
81-85	106	129	126	121	123	657	126	147	121	120
86-90	150	119	142	109	124	1,063	117	111	119	122
91-95	115	100	126	101	130	982	116	114	118	121
96-	46	92	118	93	93	493	104	104	108	103
All ages	495	114	127	116	126	3,562	118	119	118	123

\* Expected deaths less than 1.

Table 15. *Immediate annuitants, 1975–78; ratios of actual to expected deaths according to the a(55) and a(90) tables (select for duration 0, ultimate for other durations) calculated according to both 'lives' and 'amounts'*

Age group (nearest ages)	Males				Females			
	100 A/E 'Lives'	100 A/E 'Amounts'	100 A/E 'Lives'	100 A/E 'Amounts'	100 A/E 'Lives'	100 A/E 'Amounts'	100 A/E 'Lives'	100 A/E 'Amounts'
	a(55)	a(55)	a(90)	a(90)	a(55)	a(55)	a(90)	a(90)
<i>Duration 0</i>								
–70	176	177	160	161	133	124	196	180
71–80	93	91	100	97	110	87	140	110
81–	83	84	110	112	110	119	132	143
All ages	143	99	120	115	112	109	140	135
<i>Durations 1–4</i>								
–60	124	38	136	42	128	118	181	165
61–65	87	64	90	66	77	85	93	100
66–70	92	86	100	93	74	60	95	76
71–75	84	82	97	94	65	66	84	84
76–80	91	100	111	122	74	80	96	104
81–85	86	95	109	121	86	96	112	125
86–90	87	85	112	110	91	97	118	125
91–95	65	50	83	64	104	100	131	126
96–	53	29	64	36	98	112	115	132
All ages	86	86	103	105	83	88	106	114

<i>Durations 5 and over (annuities purchased after 1956)</i>									
-60	159	192	174	207	173	165	243	229	
61-65	145	150	150	155	158	156	207	204	
66-70	99	120	108	131	91	74	117	95	
71-75	91	96	105	110	87	80	111	103	
76-80	88	95	107	116	91	84	116	107	
81-85	93	95	117	121	95	92	124	120	
86-90	88	91	113	117	96	99	125	128	
91-95	92	97	117	124	99	107	124	134	
96-	75	87	91	105	102	108	120	127	
All ages	91	96	111	118	95	94	122	121	
<i>Durations 5 and over (annuities purchased before 1957)</i>									
-60	*	151	*	163	180	126	*	176	
61-65	254	225	263	233	72	234	94	306	
66-70	93	40	101	43	80	103	103	131	
71-75	132	76	152	87	118	83	151	107	
76-80	102	87	124	106	120	115	153	147	
81-85	111	109	141	138	108	126	141	165	
86-90	101	120	130	154	103	98	133	126	
91-95	86	108	108	137	104	102	130	128	
96-	82	105	99	126	94	94	109	109	
All ages	99	110	124	138	104	105	131	132	

\* Expected deaths less than 1.

28. A persistent tendency can be observed for annuitants' mortality to be high at the youngest age groups when compared with the standard tables. Although in separate age and duration groups they are sometimes based on small numbers of deaths, taken as a whole they appear to be statistically significant, and a reference back to *C.M.I.R.* 2, 57, suggests that this is not due to any quirk of the graduation. The Committee proposes to give special consideration to this feature when the experience for 1979-82 has become available for analysis.

29. Table 17 shows the average amounts of annuity in both the exposed to risk and the deaths. While there was a regular increase in the average amount of annuity with age for all except the 'before 1957' female data, the average amounts amongst the deaths were slightly higher than the average amounts amongst the exposed to risk. This is the opposite to the experience for pensioners (see Table 22 on page 30), but the differences in the averages shown in the annuitants' experience may not be large enough to be significant of any appreciable difference in mortality according to size of annuity.

Table 16. *Immediate annuitants, 1975-78, durations 1 and over combined, annuities purchased after 1956 only; actual and ratio of actual to expected deaths according to the projected rates of mortality published at the end of the a(90) tables, calculated on a basis of 'lives'*

Age group (nearest ages)	Males		Females	
	Actual deaths	100 A/E	Actual deaths	100 A/E
-60	15	145	28	202
61-65	71	109	99	145
66-70	355	98	306	103
71-75	752	97	838	98
76-80	992	102	1,686	105
81-85	1,148	109	2,375	114
86-90	903	107	2,315	116
91-95	435	105	1,431	117
96-	94	84	420	113
All ages	4,765	103	9,498	111

Table 17. *Immediate annuitants, 1975-78, all durations combined; exposed-to-risk, deaths, and average amounts of annuity*

Age group (nearest ages)	Males						Females						Mortality of Immediate Annuitants
	Exposed-to-risk			Deaths			Exposed-to-risk			Deaths			
	Lives	Amounts	Average amount £ p.a.	Lives	Amounts	Average amount £ p.a.	Lives	Amounts	Average amount £ p.a.	Lives	Amounts	Average amount £ p.a.	
<i>Annuities purchased after 1956</i>													
-60	1,443	799,716	554	19	8,254	434	3,626	1,669,705	460	32	12,838	401	
61-65	4,202	2,396,815	570	86	42,947	499	8,057	3,624,866	450	104	43,144	415	
66-70	13,275	7,860,649	592	391	251,915	644	20,117	9,458,122	470	323	123,699	383	
71-75	18,032	12,068,051	669	769	525,456	683	34,748	16,273,942	468	870	372,609	428	
76-80	14,920	11,141,597	747	1,021	827,035	810	39,546	19,654,262	497	1,724	800,162	464	
81-85	10,599	8,602,776	812	1,172	982,161	838	31,413	16,567,968	527	2,427	1,277,777	526	
86-90	5,792	4,978,829	860	923	817,727	886	18,727	10,210,947	545	2,348	1,312,816	559	
91-95	2,016	1,639,458	813	443	342,190	772	7,423	3,868,585	521	1,452	793,628	547	
96-	377	426,837	1,131	94	110,592	1,177	1,466	772,989	527	426	236,313	555	
All ages	70,656	49,914,728	706	4,918	3,908,277	795	165,123	82,101,386	497	9,706	4,972,986	512	
<i>Annuities purchased before 1957</i>													
-70	376	38,461	102	13	961	74	1,618	158,297	98	21	3,190	152	
71-80	872	90,909	104	65	5,039	78	6,612	589,486	89	346	27,317	79	
81-	2,236	297,693	133	417	65,923	158	21,335	1,855,412	87	3,195	278,827	87	
All ages	3,484	427,063	123	495	71,923	145	29,565	2,603,195	88	3,562	309,334	87	