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U.S. Population Mortality Improvement

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Earlier this year the CDC National Center for Health Statistics released “Deaths: Preliminary Data for 2003,” which received some press coverage because it showed new record life expectancies for the United States. I have summarized some of the death rates from 1987 through 2003 (the latest year for which data is available) and calculated mortality improvement rates for various periods.

Projection Scale G rates (one-half for females) are shown in the far right column as

a basis for comparison. These improvement factors are commonly used for annuity pricing. They also were used for creating the Annuity 2000 valuation table. These appear to be roughly consistent with the experience data, except that the improvement in the past several years has been lower for males ages 45-54 and for females ages 35-54. I would be interested in hearing theories for what is happening at these ages, especially for males, since I fit within this age category. □

TABLE 1.1
Annual Mortality Improvement (Males) – U.S. Population

Death Rates per 100,000		Annual Rates of Improvement								
Males										
Age	1987	1993	1997	2001	2003	1987-2003	1993-2003	1997-2003	2001-2003	Scale G
25-34	189	212	163	143	140	1.9%	4.1%	2.5%	1.1%	0.5%
35-44	290	329	275	259	252	0.9	2.6	1.4	1.4	2.0
45-54	638	603	548	544	548	0.9	1.0	0.0	-0.4	1.8
55-64	1,626	1,480	1,343	1,192	1,160	2.1	2.4	2.4	1.4	1.5
65-74	3,636	3,411	3,170	2,914	2,771	1.7	2.1	2.2	2.5	1.4
75-84	8,206	7,700	7,055	6,842	6,633	1.3	1.5	1.0	1.5	1.2

Population death rates are from the National Center for Health Statistics.

TABLE 1.2
Annual Mortality Improvement (Females) - U.S. Population

Death Rates per 100,000					Annual Rates of Improvement					
Females										
Age	1987	1993	1997	2001	2003	1987-2003	1993-2003	1997-2003	2001-2003	50% Scale G
25-34	74	74	68	68	64	0.9%	1.4%	1.0%	1.5%	0.5%
35-44	135	145	135	148	147	-0.5	-0.1	-1.4	0.3	1.1
45-54	367	334	310	316	317	0.9	0.5	-0.4	-0.2	0.9
55-64	910	868	806	754	731	1.4	1.7	1.6	1.5	0.9
65-74	2,070	2,010	1,937	1,892	1,821	0.8	1.0	1.0	1.9	0.9
75-84	5,102	4,824	4,832	4,764	4,676	0.5	0.3	0.5	0.9	0.8

Population death rates are from the National Center for Health Statistics.