

AN ESTIMATE OF THE EXPECTATION OF LIFE IN THE UNITED STATES IN 1850

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LIFE tables for the United States, based on the mortality experienced in the country as a whole, are available only since 1929–1931. Official tables are also available for the Original Death Registration States since 1900–1902 and for the Death Registration States of 1920 since that year, but these relate only to the designated geographic areas of the country.

For the second half of the 19th Century, the existent life tables are even more restricted—being limited largely to Massachusetts (1a). Since the latter tables are available for a number of time periods starting with 1850, they have often been used to trace the course of the expectation of life in the United States during the past century. However, the 1850 life table for Massachusetts (2) is deficient for general use in that only values of ${}_n m_x$ and selected values of e_x have been published. Moreover, since Massachusetts was one of the most urbanized States in the country, the mortality from infectious diseases may have been higher there than in most other areas. In consequence, the expectation of life was probably lower in Massachusetts than in the country as a whole. Indicative of this is the fact that in 1900–1902, the earliest period with reasonably comparable data, the expectation of life at birth for white males in Massachusetts was about two years less than that in the Original Death Registration States (1b). Fortunately, 1850 mortality data are also available for Maryland (2), and these data averaged with those for Massachusetts appear to approximate the experience in the United States as a whole. For males, the resulting estimate of the expectation of life at birth in the United States exceeds that for Massachusetts by the same amount as in 1900–1902; for females, the differential in 1850 is 0.8 years greater than in the recent period.

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Data and Method. The values of ${}_n m_x$ for the white population in the United States were derived by taking the arithmetic average of the values for Maryland and Massachusetts. A short-cut method was then used to proceed from ${}_n m_x$ to ${}_n q_x$ at each age interval (3), and the values of q_x at single ages were then interpolated. In view of the imperfect nature of the basic data, the latter was accomplished by distributing the values of ${}_n d_x$ according to the values of d_x in other tables for approximately the same time period.

The Life Table for 1850. The approximated life table for white males and females in 1850 is summarized in Table 1. Several aspects are worthy of mention. First, with the ex-

Table 1. Approximate life table, white population by sex, United States, 1850.¹

AGE (x)	MORTALITY RATE (1,000 q_x)		NUMBER OF SURVIVORS (l_x)		EXPECTATION OF LIFE IN YEARS (e_x)	
	Male	Female	Male	Female	Male	Female
0	160.6	130.8	100,000	100,000	40.4	43.0
1	63.5	59.6	83,936	86,921	47.1	48.4
2	35.5	33.8	78,606	81,738	49.2	50.4
3	23.3	22.9	75,817	78,974	50.0	51.2
4	17.5	16.7	74,052	77,164	50.2	51.4
5	15.7	12.9	72,755	75,878	50.1	51.2
10	5.3	5.9	68,836	72,464	47.8	48.6
15	4.4	6.6	67,253	70,356	43.9	44.9
20	9.1	9.6	65,299	67,613	40.1	41.7
25	9.5	10.9	62,317	64,247	36.9	38.7
30	10.5	11.5	59,359	60,798	33.6	35.8
35	11.3	12.8	56,226	57,274	30.4	32.8
40	14.7	12.7	53,008	53,613	27.1	29.9
45	17.2	12.7	49,006	50,323	24.1	26.7
50	20.4	13.9	44,628	47,079	21.2	23.3
55	22.9	16.9	40,055	43,701	18.3	19.9
60	25.6	22.4	35,498	39,701	15.3	16.7
65	35.1	31.9	30,625	34,901	12.4	13.6
70	55.3	44.3	24,924	28,833	9.6	10.9
75	81.2	67.3	17,829	22,085	7.4	8.5
80	115.4	96.5	10,770	14,555	5.7	6.6
85	164.4	138.7	5,236	8,063	4.2	5.0

¹ Based on mortality experience in Maryland and Massachusetts.

tremely high mortality rate in infancy, only about five-sixths of the white male babies survived to their first birthday. In contrast, five-sixths of the babies currently born in the United States may expect to live beyond age 53. The 1850 record for females was not much better than that for the males. For both sexes, mortality was so high at the early ages that the expectation of life increased to a peak at age 4 and remained above the expectation of life at birth until the late teen-ages.

From age 10 through most of the childbearing period, females experienced a higher mortality rate than men. As a result, the expectation of life at age 10 for women exceeded that for men by less than one year. Moreover, their proportion surviving from birth to age 40 was about the same as for the men.

After mid-life, as in the first decade of life, white females experienced lower mortality rates than males. Nevertheless, at no period of life did the women enjoy an advantage in longevity of as much as three years. Currently, by contrast, their advantage over men amounts to as much as six years in early life and does not fall below three years until old age (4).

Comparison with Other 19th Century Tables for the United States. In 1850, the expectation of life at birth in the United States, computed on the basis described, was 40.4 years for white males and 43.0 years for the females; at age 5, the respective figures were 50.1 and 51.2 years. Two other tables for approximately the same period show fairly comparable figures. For example, data gathered by Jaffe and Lourie (5) from several sources indicate that the expectation of life at age 5 was 52.4 years for white persons in the United States in 1830. A table by Meech (6), based only on population statistics from the United States census enumerations for 1830 to 1860, showed the expectation of life at birth as 41.0 years for white males and 42.9 years for white females; at age 5, the respective figures were 51.1 and 51.6 years.

Comparison with Foreign Countries. Conditions in the United States were apparently not unlike those which prevailed in much of Western Europe. This is evident from Table 2,

which shows the expectation of life at selected ages for the United States and for several European nations at periods around 1850. Thus, the expectation of life at birth in the United States was about the same as in Denmark and Scotland, but averaged about one and a half years less than in Sweden and four and a half years less than in Norway. On the other hand, the record for the United States was more favorable than that for England, France, The Netherlands, and Iceland.

Several of the characteristics already noted for the United States are also evident for the other countries. For example, the expectation of life was greater at age 5 than at birth. However, the table also makes evident one new feature; in areas with poor longevity records the expectation of life was higher at age 20 than at birth, and the more so the lower the figure at birth. It is noteworthy that this pattern is still found today in countries with relatively unfavorable health conditions (7).

Comment. Considering the poor state of sanitary conditions and the other health hazards of generations ago, it is remarkable that mortality rates were not higher than they were. A century ago, there was still little or no provision for safeguarding food and water supplies or for disposal of refuse or other

Table 2. Expectation of life in years for males and females at specified ages, selected countries, around 1850.

COUNTRY ¹ AND PERIOD	MALE				FEMALE			
	At Birth	Age 5	Age 20	Age 40	At Birth	Age 5	Age 20	Age 40
Norway (1846-55)	44.9	52.4	42.0	28.0	47.9	55.0	44.5	29.7
Sweden (1841-55)	41.3	49.4	38.6	24.3	45.6	53.0	42.1	27.2
Denmark (1840-49)	40.9	50.8	40.1	25.8	43.5	51.6	41.8	27.8
United States (1850) ²	40.4	50.1	40.1	27.1	43.0	51.2	41.7	29.9
Scotland (1861-70)	40.3	48.9	38.8	•	43.9	51.0	41.1	•
England and Wales (1838-54)	39.9	49.7	39.5	26.1	41.9	50.3	40.3	27.3
France (1861-65)	39.1	51.8	41.2	27.3	40.6	51.8	41.6	28.2
Netherlands (1850-59)	36.4	48.3	38.0	24.7	38.2	48.9	38.9	26.1
Iceland (1850-60)	31.9	45.9	36.4	24.1	37.9	52.6	43.5	29.2

• Not available.

¹ Ranked according to the expectation of life at birth for males.

² White population only, from Table 1.

waste products. Moreover, there were no controls against the infectious diseases, with the result that epidemics of smallpox, yellow fever, cholera, typhoid fever and other contagions recurred at intervals and took a heavy toll of life. The records for a number of our cities (8) and states (9) provide ample evidence of the high level of mortality, and the marked annual fluctuations, during the 19th Century.

Under the circumstances, most persons born around 1850 encountered during their lifetime much the same health and mortality conditions that prevailed at the time of their birth. In consequence, the actual average lifetime for a cohort of persons born a century ago did not differ to any considerable extent from their expectation of life at birth. In fact, the indications are that they lived only about one year longer, on an average, than that expected when they were born.

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