CHANGES IN THE COMPLETE EXPECTATION OF LIFE AT DIFFERENT AGES IN CATTARAUGUS COUNTY 1926-1928 OVER 1920-1922

LIFE EXPECTANCY IN CATTARAUGUS COUNTY

1920-1922 *and* 1926-1928

THE complete expectation of life in Cattaraugus County was 59.79 years in 1926-1928 as against 57.57 in 1920-1922, gain of 2.22 years. This expression of the decline in the mortality rate has been arrived at by constructing life tables[1] for Cattaraugus County for the two periods indicated. It can be interpreted to mean that the average Cattaraugus baby at birth in 1926, 1927 or 1928

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[1] The graphic method of graduation or interpolation for single years of life was used in constructing these life tables. The method is described in detail by Arthur Newsholme and T. H. C. Stevenson in "The Graphic Method of Constructing a Life Table Illustrated by the Brighton Life Table, 1891-1900," *Journal of Hygiene*, 1903, Vol. 3, p. 297. The population for the period 1920-1922 was based on the age distribution of Cattaraugus County population shown by the 1920 Federal Census and the population used for the period 1926-1928 was based on the State Census of 1925. The distribution under 5 years for both periods was based on births and deaths. A more recent but briefer description of the general method is contained in "A Note on the Graphic Method of Graduation in the Construction of Life Tables" by Hilda M. Woods, *The Lancet*, May 4, 1929, p. 941.

could expect to live about two and one quarter more years of life than it could have expected had it been born in 1920, 1921 or 1922. Another way of putting it would be to say that the 1,400 babies born annually in the latter period could look forward to over 3,000 more years of life than they could have anticipated had they been born in the earlier period.
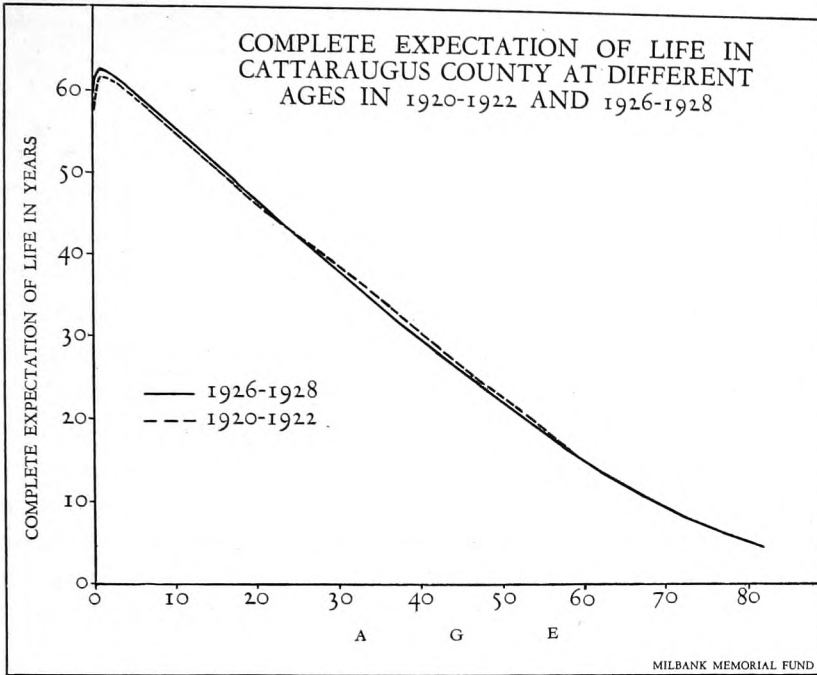
Similar "life table expressions," as they are termed, are not available for areas strictly comparable to Cattaraugus County, but it is interesting to note that although the complete expectancy of life at birth in Cattaraugus in 1920-1922 was about one-third of a year (0.38) less than that of the United States in 1921-1922, in 1926-1928 it was about one and one-third years (1.37) more than that of the United States in 1926 1927.[2] The expectancy of life at birth in the mortality registration area was a little less than 58 years in 1921-1922 and 58.4 years in 1926-1927. Thus the increase in life expectancy in Cattaraugus was nearly two years (1.75) greater than that in the United States during approximately the same period.

Complete expectation of life at various ages in Cattaraugus County for the period 1920-1922 and 1926-1928.

Age	Complete Expectation of Life	
	1920-1922	1926-1928
0	57.57	59.79
1	61.74	62.74
2	61.41	62.12
3	60.79	61.45
4	60.14	60.61
5	59.35	59.77
6	58.52	58.89
7	57.66	58.01
12	53.22	53.55
17	48.81	49.11
22	44.60	44.80
27	40.78	40.52
32	36.78	36.22
37	32.66	32.04
42	28.55	28.01
47	24.72	24.27
52	20.99	20.53
57	17.26	16.87
62	13.68	13.58
67	10.83	10.71
72	8.28	8.11
77	6.08	6.10
82	4.74	4.67

But in Cattaraugus, as in the country at large, this greater

[2] Death registration area. See *Statistical Bulletin*, Metropolitan Life Insurance Company, February, 1929, X: 2.

COMPLETE EXPECTATION OF LIFE IN
CATTARAUGUS COUNTY AT DIFFERENT
AGES IN 1920-1922 AND 1926-1928

Complete expectation of life at different ages in Cattaraugus County,
1920-1922 and 1926-1928.

expectancy of life by babies can not be shared by persons at
middle age. If one could assume for Cattaraugus County
that persons born in 1920-1922 will die exactly at the ages at
which people were dying in those three years and if we could
make a similar assumption for persons born in 1926-1928,
then we would find that a larger proportion of the latter group
actually would die after reaching the age of 25 years than the
former. Of course this is an absurd assumption; and for this
reason most "life table expressions," however useful they
may be for actuarial calculations, are confusing and poorly
suited for showing the mortality situation at a given time.
To put it in plain language we must revert to the simple
facts (1) that the death rate among persons 25 years of age
and older in Cattaraugus County was higher, and (2) that
the death rate among persons under 25 years of age was

lower, in 1926-1928 as compared with 1920-1922. This was particularly true of children and especially of babies. This is the reason why "the complete expectancy of life" at birth and at ages up to about 25 has increased, whereas in the older ages it has decreased as the accompanying diagrams and table show. As for the United States, the span of life as Dublin[3] has so clearly pointed out, is not any longer than it was. In fact it is somewhat shorter. But the *expectation of life*, or the *mean length of life*, has been considerably increased, chiefly by reason of the reduction in the death rate of infants and children. This fact is clearly shown for Cattaraugus County.

[3] Abstract of an address before the American Public Health Association, Minneapolis, October 3, 1929. *Statistical Bulletin*, Metropolitan Life Insurance Company, October, 1929. X:1.