6-1973

Population of Connecticut: Abridged Life Tables by Sex and Color 1959-61 and 1969-71, The

Thomas E. Steahr
University of Connecticut - Storrs

RESEARCH REPORT 41, JUNE 1973

The Population of Connecticut: Abridged LifeTables by Sex and Color 1959-61 and 1969-71

Thomas E. Steahr
Department of Rural Sociology

STORRS AGRICULTURAL EXPERIMENT STATION
COLLEGE OF AGRICULTURE AND NATURAL RESOURCES
THE UNIVERSITY OF CONNECTICUT, STORRS, CONNECTICUT 06268

Table of Contents

FOREWORD

The preparation of data required for the calculation of the life tables for Connecticut's population presented in this report involved the assistance and cooperation of several persons. Special thanks are due Mr. Edward Aubin, research analyst, Department of Health, State Vital Statistics, for providing data on the number of deaths by age intervals for 1971. At the time this study was under preparation, the State report containing these data was in the process of being printed but unready for public purchase. Mr. Aubins cooperation greatly facilitated the rapid analysis of current mortality in Connecticut's population. Special recognition is also due Mr. Vincent Bolduc and Miss Kathy Skambis -- research assistants, Department of Rural Sociology, The University of Connecticut -- for their help in preparation of age-specific death rates and in the development of a computer program for life table construction.

Life tables are presented for nonwhites in Connecticut based on the 1959-1961 and 1969-1971 periods. The reader should be advised that these tables are based on a relatively small number of nonwhites and specific life table values for nonwhites may change significantly with small changes in number of deaths by age. This instability is not the case for life tables for white persons since they were derived from a larger population. However, it would be appropriate to view the nonwhite life table values as suggestive of their mortality conditions but not as reliable as data in the life tables for the white population.

The research reported in this publication was supported in part by Federal funds may available through the provisions of the Hatch Act.

Received for publication March 30, 1973

THE POPULATION OF CONNECTICUT: ABRIDGED LIFE TABLES BY SEX AND COLOR 1959-61 and 1969-71

By Thomas E. Steahr*

PART I - INTRODUCTION TO LIFE TABLES

Types of Life Tables

A life table is one of several statistical techniques used to study mortality conditions in a population. Unlike the procedures involved in the calculation of crude rates, age-specific mortality rates, or various standardized rates of mortality, a life table is not influenced by the actual age distribution of a population nor does it involve the selection of some standard population for comparative purposes. It is a statistical model, based on certain assumptions that efficiently summarizes the mortality conditions of the population under investigation. Two important assumptions of the life tables in this report are that the original cohort be diminished by deaths only; e.g. in and out migration is not allowed, and that deaths are uniformly distributed throughout each age interval. Implications of these assumptions will become evident in the following section on interpretation of the life table.

Life tables fall into one of two categories, either current life tables or generation life tables. Current life tables or period life tables are based upon actual death statistics collected over a short period of time, usually one to three years. They assume that a hypothetical group of people born at the same time are subject to a fixed schedule of age-specific mortality rates which gradually diminish their numbers by death until all numbers of the original cohort are dead. Since the age-specific mortality rates are derived from an actual population experience, period life tables offer a concise description of mortality conditions during a brief time interval.

Generation life tables or cohort life tables are derived from mortality conditions experienced by a group of persons born at the same date, e.g. all persons born during 1900. This group would be followed throughout its lifetime until all persons of this cohort had died. Thus a generation life table requires data over a very long period of time, which is the primary reason why generation life tables are less common than period life tables. All of the life tables presented in this report are period life tables.

---

* Assistant Professor, Department of Rural Sociology.

Life tables are also classified according to the way the age intervals are presented. Complete or unabridged life tables present mortality rates by single years of age. Abridged life tables present mortality rates by age intervals of five or ten years. All the period life tables presented in this report are abridged tables using age intervals of under 1 year, 1 to 4 years, and 5-year intervals up to 85 years of age and over. Abridged tables are less accurate than unabridged tables but the differences are small and for most purposes abridged tables provide adequate results.

There are three common methods of constructing abridged life tables: the Reed-Merrell method, the Greville method, and the method of reference to a standard table. These techniques involve different ways of converting central death rates by age groups into age-specific probabilities of dying. All of the tables contained in this report were calculated using the Reed-Merrell method for abridged life tables.

The life tables presented here are comparable to those contained in an earlier report[1], with two major differences. First, life tables for whites and nonwhites in Connecticut were separately constructed for this report but in the previous publication they were constructed for the total population only. Secondly, central death rates by color and sex were directly calculated from the Reed-Merrell conversion formulae and not by extrapolations from a table of ${}_nq_x$ values for given central death rate values. For these two reasons abridged life tables by sex and color were prepared for two time periods: 1959-1961 and 1969-1971. The three year interval was selected to increase the stability of age-specific central death rates and the census data for 1960 and 1970 provided the needed information for rate conversions.[2] Also provided in this report are life tables for total males and total females in Connecticut at both time periods. A statistical summary of mortality trends is presented in Part III. All life tables were calculated by a computer with a special purpose program for the Reed-Merrell method.

Interpretation of Life Tables

The most common interpretation of a life table is to view it as showing the lifetime mortality experience of one cohort of persons. Since this hypothetical cohort of 100,000 persons, called the radix of the life table, is exposed to a set schedule of mortality rates based on actual death data, this interpretation stresses the implications the mortality schedule has for future populations. In other words, if there were 100,000 births in an actual population and if the age-specific mortality rates did not change throughout their lifetimes, that original cohort would be depleted at the rate shown in the life table.

---

1. Stockwell, Edward G., Abridged Life Tables, by Sex, For Connecticut, 1959-1961; Agricultural Experiment Station, The University of Connecticut, Storrs, Research Report 10 (July 1965), 44 pp.
2. For a more detailed discussion of life table methodology see Shryock, Henry S. and Jacob S. Siegel, The Methods and Materials of Demography, Vol. II, U. S. Bureau of the Census, U. S. Government Printing Office, Washington, D.C., 1971, pp. 429-461.

Following this interpretation, the separate columns of a life table mean the following. Column 1 is the age interval, age x to age x + n. For example, in Table 1, 10-14 years of age refers to persons between their 10th and 15th birthdays. Column 2, the ${}_nq_x$ values, refers to the probability that a person alive at the start of a given age interval will die before reaching the end of that interval. In Table 1, of the 97,713 males alive at exact age 10 years, 173 will die before reaching age 15 years because the probability of death is .001774 during that age interval. Column 3, the l_x values, shows the number of survivors alive at the beginning of each age interval. In Table 1, of the 100,000 Connecticut males there would be 97,713 survivors at exact age 10 years. Column 4, the ${}_nd_x$ values, show the total number of deaths that would occur within each age interval out of the total number of births of the original cohort. In Table 1, for example, there would be 173 male deaths in the age interval between 10 to 15 years of age. Column 5, the ${}_nL_x$ values, shows the number of person-years lived within each of the age intervals. For example in Table 1, for the 100,000 births there would be 488,206 person years lived between the ages of 10 to 15 years. Of the 97,713 persons who reach age 10, there are 97,540 who will survive to age 15 and they would live 5 years each (97,540 x 5 = 487,700 person years). Of the 173 persons who die during the interval, they will live on the average of 506 person years, as determined by the appropriate Reed-Merell linear equations. Column 6, the T_x values, indicates the total number of years lived after the start of a given age interval. In Table 1, for example, the 100,000 male births in Connecticut would live a total of 5,887,497 person years after their 10th birthday. The last column 7, the e_x values, shows the mean life expectancy for persons who survive to the start of the indicated age interval. Connecticut males in Table 1 who pass their 10th birthday have a mean expectation of life of 60.3 more years.

A second interpretation of a life table views it in terms of a stationary population i.e., as a population whose total number and age distribution does not change over time. A stationary population would be achieved if the total number of births each year was the same and if each birth cohort was exposed to the fixed schedule of age-specific mortality rates of the life table. Over a long period of time the annual number of deaths would equal the number of births and there would be no population growth. With this interpretation, columns 1 (age intervales, 2 (${}_nq_x$), and 7 (e_x) would mean the same as described above hut the other columns would be viewed differently. Column 3, the l_x values, now indicate the number of persons who reach a given age level. For example, Table 1 shows 97,713 males reaching their 10th birthday and, given a constant number of births, there would be that many males reaching that age every year. Column 4, the ${}_nd_x$ values, now indicates the number of deaths in each age interval that would occur each year in a stationary population. Thus, there would be 173 male deaths between 10 to 15 years of age every year assuming a constant number of births. Column 5, the ${}_nL_x$ values, now indicates the number of persons living within each age interval. In Table 1, there would be 488,206 males 10-14 years of age living in the stationary population at any time. Column 6, the T_x values, now mean the number of persons living within a certain age interval and all older age intervals. In Table 1, there would be 5,887,497 males 10 years of age and older living in the stationary population at any given time.

Use of Life Tables

Life tables have a wide variety of applications in the study of population. In addition to their utility in mortality studies and public health analysis (with the calculation of multiple decrement life tables), life table values are used in the construction of true rates of natural increase and in the determination of survival rates for analysis of population size, net migration, and fertility performance. An early, definitive study on mortality using life table techniques was published in 1936 by Dublin, Latka, and Spiegelman.[3] In this volume they discuss how life table values enter into the calculation of the true birth rate, the true death rate, and the true rate of natural increase which represents the inherent growth potential of a given population. The authors also illustrate how life table methodology may be used to compute the average years of married life remaining to a cohort of couples just married and techniques to calculate estimates of maternal or paternal orphans. In addition, economic applications are discussed in terms of life insurance problems, estimates of the money value of a man, amount of compensation for injury or death, and application to mortality of business enterprises. Such applications are suggestive of the wide utility of life tables for the analysis of many problems.

Life table values are also used by demographers to estimate net migration by age and sex for a given geographic area and a given time period. This method is also particularly useful for areas lacking data on births and deaths by age and sex. The forward survival rate method, the reverse survival rate method, or an average of the two results provides good estimates of net migration in a population by age groups. Life table survival rates may also be used to estimate population of an area during intercensal years.

In the area of mortality research, life table methodology may be employed to study mortality levels by specific cause of death. In the area of health and morbidity analysis, life table methodology has been used to calculate the probabilities of contracting a specific disease, to determine the chances of survival or recovery from the disease, or to estimate the length of hospitalization time. Other types of multiple decrement life table techniques have been used to estimate working life of male persons and to estimate the average number of years of school life for a population.[4] In brief, life table values and techniques are powerful analytical tools in the study of population.

Life tables for Connecticut presented here by sex, color, and age for two points in time will allow such applications to be made in the study of Connecticut's population. With these data the researcher does not have to make the assumption that life table values computed for the nation as a whole apply to Connecticut's population -- an assumption which may be responsible for error in substantive results.

---

3. Dublin, Louis I.; Alfred J. Latka; and Martimer Spiegelman. Length of Life: A Study of the Life Table. (Revised Edition). New York: The Ronald Press Company, 1949, pp. 379.
4. Shyrock, Henry S. and Jacob S. Siegel, The Methods and Materials of Demography, Vols. I and II, U. S. Bureau of the Census, U. S. Government Printing Office, Washington, D.C., 1971, for a detailed coverage of life table applications.

PART II - CONNECTICUT ABRIDGED LIFE TABLES

Table 1--Abridged Life Table for Total Connecticut Males: 1969-1971

(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Number of years lived		
Age interval x to $x + n$	Probability of dying during age interval $_nq_x$	Number of survivors alive at beginning of each age interval l_x	Number dying during age interval $_nd_x$	During this interval $_nL_x$	During this & all subsequent intervals T_x	Mean years of life remaining to survivors at beginning of each interval $\mathring{e}_x$
Under 1 year	.018741	100,000	1,874	98,643	6,863,378	68.6
1-4	.002293	98,126	225	391,088	6,764,735	68.9
5-9	.001918	97,901	188	486,151	6,373,648	65.1
10-14	.001774	97,713	173	488,206	5,887,497	60.3
15-19	.005740	97,540	560	486,420	5,399,291	55.4
20-24	.007842	96,980	761	483,035	4,912,871	50.7
25-29	.007653	96,219	736	479,267	4,429,836	46.0
30-34	.008571	95,483	818	475,440	3,950,569	41.4
35-39	.011410	94,664	1,080	470,805	3,475,129	36.7
40-44	.018127	93,584	1,696	464,027	3,004,324	32.1
45-49	.029886	91,888	2,746	453,083	2,540,297	27.7
50-54	.046452	89,142	4,141	436,213	2,087,214	23.4
55-59	.080652	85,001	6,856	408,925	1,651,001	19.4
60-64	.118068	78,145	9,227	368,808	1,242,076	15.9
65-69	.179462	68,919	12,368	314,696	873,268	12.7
70-74	.249953	56,550	14,135	247,951	558,572	9.9
75-79	.352314	42,415	14,944	174,444	310,621	7.3
80-84	.466501	27,472	12,816	83,793	136,178	5.0
85 and over	1.000000	14,656	14,656	52,385	52,385	3.6

Table 2--Abridged Life Table for Total Connecticut Males: 1959-1961

(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Number of years lived		
Age interval x to $x + n$	Probability of dying during age interval $_nq_x$	Number of survivors alive at beginning of each age interval l_x	Number dying during age interval $_nd_x$	During this interval $_nL_x$	During this & all subsequent intervals T_x	Mean years of life remaining to survivors at beginning of each interval $\mathring{e}_x$
Under 1 year	.024180	100,000	2,418	98,249	6,786,310	67.9
1-4	.003210	97,582	313	388,474	6,688,061	68.5
5-9	.002258	97,269	220	482,964	6,299,587	64.8
10-14	.002153	97,049	209	484,771	5,816,623	59.9
15-19	.004620	96,840	447	483,176	5,331,852	55.1
20-24	.006848	96,393	660	480,330	4,848,676	50.3
25-29	.005476	95,733	524	477,353	4,368,346	45.6
30-34	.007022	95,208	669	474,463	3,890,993	40.9
35-39	.010231	94,540	967	470,522	3,416,530	36.1
40-44	.019513	93,572	1,826	463,689	2,946,008	31.5
45-49	.031091	91,747	2,853	452,205	2,482,319	27.1
50-54	.053121	88,894	4,722	433,504	2,030,114	22.8
55-59	.081809	84,172	6,886	404,746	1,596,610	19.0
60-64	.129547	77,286	10,012	362,645	1,191,864	15.4
65-69	.191367	67,274	12,874	305,066	829,219	12.3
70-74	.261904	54,400	14,248	236,699	524,153	9.6
75-79	.358858	40,152	14,409	164,453	287,454	7.2
80-84	.500242	25,743	12,878	75,684	123,000	4.8
85 and over	1.000000	12,865	12,865	47,316	47,316	3.7

Table 3--Abridged Life Table for Total Connecticut Females: 1969-1971

(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Number of years lived		
Age interval x to x + n	Probability of dying during age interval $_nq_x$	Number of survivors alive at beginning of each age interval l_x	Number dying during age interval $_nd_x$	During this interval $_nL_x$	During this & all subsequent intervals T_x	Mean years of life remaining to survivors at beginning of each interval $\mathring{e}_x$
Under 1 year	.013683	100,000	1,368	99,009	7,500,240	75.0
1-4	.001965	98,632	194	393,358	7,401,231	75.0
5-9	.001459	98,438	144	490,138	7,007,873	71.2
10-14	.001404	98,294	138	491,143	6,517,736	66.3
15-19	.002367	98,156	232	490,231	6,026,593	61.4
20-24	.003081	97,924	302	488,878	5,536,362	56.5
25-29	.003200	97,622	312	487,362	5,047,484	51.7
30-34	.004710	97,310	458	485,474	4,560,122	46.9
35-39	.006799	96,851	659	482,725	4,074,648	42.1
40-44	.010494	96,193	1,010	478,636	3,591,923	37.3
45-49	.016804	95,183	1,599	472,203	3,113,287	32.7
50-54	.025428	93,584	2,380	462,349	2,641,084	28.2
55-59	.037473	91,204	3,418	448,063	2,178,735	23.9
60-64	.059114	87,786	5,189	426,810	1,730,672	19.7
65-69	.090919	82,597	7,510	395,437	1,303,862	15.8
70-74	.147516	75,087	11,077	349,282	980,425	12.1
75-79	.232536	64,011	14,885	284,148	559,143	8.7
80-84	.353114	49,126	17,347	162,085	274,994	5.6
85 and over	1.000000	31,779	31,779	112,909	112,909	3.6

Table 4--Abridged Life Table for Total Connecticut Females: 1959-1961

(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Number of years lived		
Age interval x to x + n	Probability of dying during age interval $_nq_x$	Number of survivors alive at beginning of each age interval l_x	Number dying during age interval $_nd_x$	During this interval $_nL_x$	During this & all subsequent intervals T_x	Mean years of life remaining to survivors at beginning of each interval $\mathring{e}_x$
Under 1 year	.017602	100,000	1,760	98,726	7,355,074	73.6
1-4	.002714	98,240	267	391,480	7,256,349	73.9
5-9	.001544	97,973	151	487,962	6,864,869	70.1
10-14	.001479	97,822	145	488,747	6,376,907	65.2
15-19	.001564	97,677	153	488,021	5,888,160	60.3
20-24	.002372	97,524	231	487,081	5,400,139	55.4
25-29	.003464	97,293	337	485,671	4,913,058	50.5
30-34	.004809	96,956	466	483,682	4,427,387	45.7
35-39	.006953	96,489	671	480,886	3,943,705	40.9
40-44	.010677	95,819	1,023	476,750	3,462,819	36.1
45-49	.017960	94,795	1,703	470,046	2,986,069	31.5
50-54	.027798	93,093	2,588	459,441	2,516,023	27.0
55-59	.042448	90,505	3,842	443,644	2,056,582	22.7
60-64	.069933	86,663	6,061	419,196	1,612,938	18.6
65-69	.109051	80,603	8,790	382,390	1,193,742	14.8
70-74	.174775	71,813	12,551	329,233	811,352	11.3
75-79	.273649	59,262	16,217	256,922	482,119	8.1
80-84	.420445	43,045	18,098	132,717	225,197	5.2
85 and over	1.000000	24,947	24,947	92,480	92,480	3.7

Table 5--Abridged Life Table for Connecticut Nonwhite Males: 1969-1971

(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Number of years lived		
Age interval x to x + n	Probability of dying during age interval $_nq_x$	Number of survivors alive at beginning of each age interval l_x	Number dying during age interval $_nd_x$	During this interval $_nL_x$	During this & all subsequent intervals T_x	Mean years of life remaining to survivors at beginning of each interval $\mathring{e}_x$
Under 1 year	.033702	100,000	3,370	97,560	6,329,359	63.3
1-4	.004008	96,630	387	384,197	6,231,800	64.5
5-9	.002936	96,243	283	476,436	5,847,604	60.8
10-14	.002322	95,960	223	479,353	5,371,168	56.0
15-19	.008502	95,737	814	476,928	4,891,815	51.1
20-24	.016390	94,923	1,556	470,874	4,414,887	46.5
25-29	.016351	93,367	1,527	463,102	3,944,013	42.2
30-34	.021249	91,841	1,952	454,505	3,480,911	37.9
35-39	.026613	89,889	2,392	443,873	3,026,406	33.7
40-44	.044684	87,497	3,910	428,275	2,582,533	29.5
45-49	.061116	83,587	5,109	405,439	2,154,258	25.8
50-54	.066724	78,479	5,236	379,974	1,748,819	22.3
55-59	.113792	73,242	8,334	346,314	1,368,845	18.7
60-64	.150232	64,908	9,751	300,470	1,022,531	15.8
65-69	.178065	55,157	9,821	251,443	722,061	13.1
70-74	.237750	45,335	10,778	200,307	470,618	10.4
75-79	.364475	34,557	12,595	140,335	270,311	7.8
80-84	.280740	21,962	6,166	79,976	129,976	5.9
85 and over	1.000000	15,796	15,796	50,000	50,000	3.2

Table 6--Abridged Life Table for Connecticut White Males: 1969-1971

(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Number of years lived		
Age interval x to $x+n$	Probability of dying during age interval $_nq_x$	Number of survivors alive at beginning of each age interval l_x	Number dying during age interval $_nd_x$	During this interval $_nL_x$	During this & all subsequent intervals T_x	Mean years of life remaining to survivors at beginning of each interval $\mathring{e}_x$
Under 1 year	.017097	100,000	1,710	98,762	6,909,843	69.1
1-4	.002117	98,290	208	391,838	6,811,081	69.3
5-9	.001823	98,082	179	487,170	6,419,244	65.5
10-14	.001734	97,903	170	489,164	5,932,075	60.6
15-19	.005546	97,734	542	487,422	5,442,911	55.7
20-24	.007186	97,191	698	484,239	4,955,489	51.0
25-29	.006968	96,493	672	480,789	4,471,250	46.3
30-34	.007494	95,821	718	477,372	3,990,461	41.7
35-39	.010345	95,103	984	473,228	3,513,089	36.9
40-44	.016582	94,119	1,561	467,032	3,039,861	32.3
45-49	.028329	92,558	2,622	456,765	2,572,829	27.8
50-54	.045652	89,936	4,106	440,217	2,116,064	23.5
55-59	.075442	85,830	6,475	414,040	1,675,847	19.5
60-64	.116985	79,355	9,283	374,836	1,261,807	15.9
65-69	.179512	70,071	12,579	319,975	886,971	12.7
70-74	.250333	57,493	14,392	252,023	566,996	9.9
75-79	.352046	43,100	15,173	177,316	314,973	7.3
80-84	.471866	27,927	13,178	84,702	137,657	4.9
85 and over	1.000000	14,749	14,749	52,955	52,955	3.6

Table 7--Abridged Life Table for Connecticut Nonwhite Females: 1969-1971

(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Number of years lived		
Age interval x to x + n	Probability of dying during age interval $_nq_x$	Number of survivors alive at beginning of each age interval l_x	Number dying during age interval $_nd_x$	During this interval $_nL_x$	During this & all subsequent intervals T_x	Mean years of life remaining to survivors at beginning of each interval $\mathring{e}_x$
Under 1 year	.026264	100,000	2,626	98,098	6,964,944	69.7
1-4	.003778	97,374	368	387,514	6,866,846	70.5
5-9	.001928	97,006	187	482,240	6,479,332	66.8
10-14	.001918	96,819	186	483,655	5,997,093	61.9
15-19	.003459	96,633	334	482,425	5,513,438	57.1
20-24	.006739	96,299	649	479,951	5,031,013	52.2
25-29	.007583	95,650	725	476,598	4,551,062	47.6
30-34	.015119	94,924	1,435	471,212	4,074,464	42.9
35-39	.017006	93,489	1,590	463,653	3,603,252	38.5
40-44	.025100	91,899	2,307	454,018	3,139,599	34.2
45-49	.033318	89,592	2,985	440,987	2,685,581	30.0
50-54	.053625	86,607	4,644	422,082	2,244,594	25.9
55-59	.074921	81,963	6,141	394,891	1,822,512	22.2
60-64	.088350	75,822	6,699	362,892	1,427,621	18.8
65-69	.125570	69,123	8,680	324,404	1,064,729	15.4
70-74	.149504	60,443	9,037	280,556	740,326	12.3
75-79	.255660	51,407	13,143	224,244	459,770	8.9
80-84	.244454	38,264	9,354	138,805	235,526	6.2
85 and over	1.000000	28,910	28,910	96,721	96,721	3.3

Table 8--Abridged Life Table for Connecticut White Females: 1969-1971

(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Number of years lived		
Age interval x to x + n	Probability of dying during age interval $_nq_x$	Number of survivors alive at beginning of each age interval l_x	Number dying during age interval $_nd_x$	During this interval $_nL_x$	During tbis & all subse-quent intervals T_x	Mean years of life re-maining to survivors at beginning of each interval $\mathring{e}_x$
Under 1 year	.012235	100,000	1,224	99,114	7,539,604	75.4
1-4	.001766	98,777	174	394,026	7,440,490	75.3
5-9	.001414	98,602	139	491,020	7,046,464	71.5
10-14	.001364	98,463	134	491,994	6,555,444	66.6
15-19	.002283	98,328	225	491,104	6,063,450	61.7
20-24	.002756	98,104	270	489,851	5,572,346	56.8
25-29	.002791	97,833	273	488,502	5,082,495	52.0
30-34	.003699	97,560	361	486,964	4,593,993	47.1
35-39	.005993	97,199	583	484,657	4,107,029	42.3
40-44	.009597	96,617	927	480,963	3,622,372	37.5
45-49	.015952	95,689	1,526	474,913	3,141,409	32.8
50-54	.024226	94,163	2,281	465,483	2,666,496	28.3
55-59	.035990	91,882	3,307	451,737	2,201,013	24.0
60-64	.058035	88,575	5,141	430,893	1,749,276	19.8
65-69	.089631	83,434	7,478	399,738	1,318,383	15.8
70-74	.147464	75,956	11,201	353,351	918,645	12.1
75-79	.232062	64,755	15,027	287,559	565,294	8.7
80-84	.355576	49,728	17,682	163,681	277,736	5.6
85 and over	1.000000	32,046	32,046	114,055	114,055	3.6

Table 9--Abridged Life Table for Connecticut Nonwhite Males: 1959-1961

(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Number of years lived		
Age interval x to x + n	Probability of dying during age interval $_nq_x$	Number of survivors alive at beginning of each age interval l_x	Number dying during age interval $_nd_x$	During this interval $_nL_x$	During this & all subsequent intervals T_x	Mean years of life remaining to survivors at beginning of each interval $\mathring{e}_x$
Under 1 year	.045063	100,000	4,506	96,737	6,200,939	62.0
1-4	.005600	95,494	535	378,916	6,104,202	63.9
5-9	.003549	94,959	337	469,988	5,725,287	60.3
10-14	.003385	94,622	320	472,353	5,255,300	55.5
15-19	.005829	94,302	550	470,306	4,782,947	50.7
20-24	.012310	93,752	1,154	465,990	4,312,641	46.0
25-29	.011944	92,598	1,106	460,361	3,846,651	41.5
30-34	.019846	91,492	1,816	453,138	3,386,290	37.0
35-39	.024035	89,676	2,155	443,445	2,933,152	32.7
40-44	.045676	87,521	3,998	427,934	2,489,707	28.5
45-49	.044507	83,523	3,717	408,833	2,061,773	24.7
50-54	.080865	79,806	6,454	383,781	1,652,940	20.7
55-59	.108790	73,352	7,980	347,684	1,269,159	17.3
60-64	.162951	65,372	10,652	301,321	921,475	14.1
65-69	.241684	54,720	13,225	240,854	620,154	11.3
70-74	.293555	41,495	12,181	176,532	379,299	9.1
75-79	.371110	29,314	10,879	118,920	202,767	6.9
80-84	.543136	18,435	10,013	51,592	83,847	4.6
85 and over	1.000000	8,422	8,422	32,255	32,255	3.8

Table 10--Abridged Life Table for Connecticut White Males: 1959-1961

(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Number of years lived		
Age interval x to x + n	Probability of dying during age interval $_nq_x$	Number of survivors alive at beginning of each age interval l_x	Number dying during age interval $_nd_x$	During this interval $_nL_x$	During this & all subsequent intervals T_x	Mean years of life remaining to survivors at beginning of each interval $\mathring{e}_x$
Under 1 year	.022587	100,000	2,259	98,365	6,817,013	68.2
1-4	.003050	97,741	298	389,189	6,718,649	68.7
5-9	.002188	97,443	213	483,904	6,329,460	65.0
10-14	.002098	97,230	204	485,685	5,845,557	60.1
15-19	.004570	97,026	444	484,108	5,359,872	55.2
20-24	.006491	96,582	627	481,354	4,875,764	50.5
25-29	.005028	95,956	483	478,566	4,394,410	45.8
30-34	.006292	95,473	601	475,951	3,915,844	41.0
35-39	.009548	94,872	906	472,335	3,439,893	36.3
40-44	.018540	93,967	1,742	465,877	2,967,558	31.6
45-49	.030639	92,224	2,826	454,669	2,501,681	27.1
50-54	.052283	89,399	4,674	436,147	2,047,012	22.9
55-59	.080958	84,724	6,859	407,587	1,610,865	19.0
60-64	.128658	77,865	10,018	365,542	1,203,278	15.5
65-69	.190281	67,847	12,910	307,865	837,736	12.4
70-74	.261284	54,937	14,354	239,143	529,871	9.7
75-79	.358639	40,583	14,555	166,246	290,728	7.2
80-84	.499382	26,028	12,998	76,596	124,482	4.8
85 and over	1.000000	13,030	13,030	47,886	47,886	3.7

Table 11--Abridged Life Table for Connecticut Nonwhite Females: 1959-1961

(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Number of years lived		
Age interval x to x + n	Probability of dying during age interval $_nq_x$	Number of survivors alive at beginning of each age interval l_x	Number dying during age interval $_nd_x$	During this interval $_nL_x$	During this & all subsequent intervals T_x	Mean years of life remaining to survivors at beginning of each interval $\mathring{e}_x$
Under 1 year	.030103	100,000	3,010	97,820	6,763,540	67.6
1-4	.005774	96,990	560	385,259	6,665,720	68.7
5-9	.001784	96,430	172	479,015	6,280,462	65.1
10-14	.003758	96,258	362	480,382	5,801,447	60.3
15-19	.001744	95,896	167	479,085	5,321,065	55.5
20-24	.005003	95,729	479	477,585	4,841,980	50.6
25-29	.008809	95,250	839	474,290	4,364,395	45.8
30-34	.012181	94,410	1,150	469,395	3,890,105	41.2
35-39	.020195	93,260	1,883	461,804	3,420,710	36.7
40-44	.023717	91,377	2,167	451,626	2,958,906	32.4
45-49	.029653	89,210	2,645	440,014	2,507,280	28.1
50-54	.057131	86,564	4,946	421,343	2,067,266	23.9
55-59	.084481	81,619	6,895	391,563	1,645,923	20.2
60-64	.111539	74,724	8,335	353,492	1,254,360	16.8
65-69	.155356	66,389	10,314	306,907	900,868	13.6
70-74	.212595	56,075	11,921	251,367	593,961	10.6
75-79	.320052	44,154	14,132	185,564	342,594	7.8
80-84	.416924	30,022	12,517	92,544	157,030	5.2
85 and over	1.000000	17,505	17,505	64,486	64,486	3.7

Table 12--Abridged Life Table for Connecticut White Females: 1959-1961

(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Number of years lived		
Age interval x to $x+n$	Probability of dying during age interval $_nq_x$	Number of survivors alive at beginning of each age interval l_x	Number dying during age interval $_nd_x$	During this interval $_nL_x$	During this & all subsequent intervals T_x	Mean years of life remaining to survivors at beginning of each interval $\mathring{e}_x$
Under 1 year	.016661	100,000	1,666	98,794	7,382,219	73.8
1-4	.002512	98,334	247	391,938	7,283,426	74.1
5-9	.001529	98,087	150	488,592	6,891,488	70.3
10-14	.001369	97,937	134	489,345	6,402,897	65.4
15-19	.001559	97,803	153	488,646	5,913,552	60.5
20-24	.002173	97,650	212	487,752	5,424,906	55.6
25-29	.003096	97,438	302	486,481	4,937,154	50.7
30-34	.004401	97,136	428	484,678	4,450,673	45.8
35-39	.006326	96,709	612	482,130	3,965,995	41.0
40-44	.010197	96,097	980	478,255	3,483,865	36.3
45-49	.017537	95,117	1,668	471,733	3,005,610	31.6
50-54	.026848	93,449	2,509	461,404	2,533,877	27.1
55-59	.041135	90,940	3,741	446,079	2,072,473	22.8
60-64	.068960	87,199	6,013	422,012	1,626,394	18.7
65-69	.108125	81,186	8,778	385,356	1,204,382	14.8
70-74	.174037	72,408	12,602	332,105	819,027	11.3
75-79	.272878	59,806	16,320	259,415	486,921	8.1
80-84	.420505	43,486	18,286	134,078	227,506	5.2
85 and over	1.000000	25,200	25,200	93,428	93,428	3.7

PART III - SUMMARY OF LIFE TABLES

Summary of Mortality by Sex and Color

While the preceeding life tables are useful for a detailed study of mortality conditions, a summary view would be valuable in detecting major trends in these data. Table 13 summarizes changes in mortality of the state population by selected life table measures from the 1959-1961 period to the 1969-1971 period by sex and color.

Table 13--Change in Mortality of Connecticut Population by Selected Life Table Measures, by Sex and Race, 1959-1961 and 1969-1971

Race, Sex and Years	Expectation of Life at... Birth	Age 1	Age 65	Probability of Surviving to Age 65	Median Age of Death
1969-1971					
White Males	69.1	69.3	12.7	.701	72.6
White Females	75.4	75.3	15.8	.824	79.9
Nonwhite Males	63.3	64.5	13.1	.552	67.6
Nonwhite Females	69.6	70.5	15.4	.691	75.5
1959-1961					
White Males	68.1	68.7	12.3	.678	71.7
White Females	73.8	74.1	14.8	.812	78.0
Nonwhite Males	62.0	63.9	11.3	.547	66.8
Nonwhite Females	67.6	68.7	13.6	.664	72.5

In terms of changes in the expectation of life at birth, both sexes and racial categories have made improvements during the past decade. White females in 1969-1971 have an expectation of life at birth of 75.4 years compared to 73.8 years in the 1959-61 period. Nonwhite males have an expectation of life at birth of 63.3 years in the 1969-1971 period compared to the 62.0 year life expectancy during the 1959-1961 period. A general pattern at both time intervals is that females, regardless of race, have a longer expectation of life at birth than do males. The one exception to that pattern was during the 1959-1961 period when nonwhite women had a slightly lower life expectancy (67.6 years) than did white men (68.1 years).

A second summary indicator of changing mortality conditions of Connecticut's population is the expectation of life at age 1 year. The reason expectation of life at age 1 is longer than expectation of life at birth is that the latter is strongly affected by the infant mortality rate, but the former is not. Thus, expectation of life at age 1 shows mortality conditions affecting persons who have survived

that first hazardous year of life. Life expectancy after the first birthday by race and sex exhibits the same patterns previously described, namely improvements during the ten-year interval were achieved by both groups, but females have a longer life expectancy than males. It should also be noted that life expectancy after the first birthday is longer for both sex and race categories in the 1969-1971 period, except for white females whose life expectancy declines slightly. This means the white female infant mortality rate is low and does not retard the average life expectancy when calculated from birth as it does for the other categories.

A third indicator of mortality conditions in a population is expectation of life at age 65. Mortality of the elderly account for the majority of deaths in Connecticut and changes in their life expectancy reflect improvements in medical and socioeconomic conditions responsible for death rate levels. The following list shows gains in years of life expectancy from 1959-1961 period to the 1969-1971 period by race and sex at age 1 and age 65:

	Age 1	Age 65
White males	.6 years	.4 years
White females	1.2 years	1.0 years
Nonwhite males	.6 years	1.8 years
Nonwhite females	2.8 years	1.8 years

These data indicate that gains in life expectancy of the elderly have been smaller than those for life expectancy at birth. The single exception is nonwhite males. This pattern means that improvements in conditions affecting mortality have been most pronounced at the younger ages while mortality conditions for the elderly have improved less. For the most recent period, white males have an average life expectancy of 12.7 more years after reaching their 65th birthday. The usual pattern of females, regardless of racial category, having a longer life expectancy than males is also present for persons 65 years of age.

A fourth way of summarizing mortality levels from life table data is to examine the proportion of persons in the original cohort of 100,000 births surviving to age 65. As shown in Table 13, the probability or proportion of persons reaching their 65th birthday has increased for both sex and racial categories during the ten-year interval. White females have the highest probability of reaching that age (.824) and nonwhite males have the lowest (.552). The changes of nonwhite males surviving to age 65 has not improved substantially during the ten-year interval.

A final summary measure of life table mortality is the median age at death of the initial cohort of 100,000 births. The median age at death is the age corresponding to the l_x value of 50,000 in the life tables presented previously. It is the age at which half of the original cohort will have died. In both sex and racial categories, the median age at death is higher than the expectation of life at birth, the mean age of death, because the median is the mid-point of all deaths and is less influenced by deaths at the younger ages. Therefore, as shown in Table 13, one half of the 100,000 white male cohort born in 1969 to 1971 can expect to survive to age 72.6 years. White females have a median age of death of 79.9 years; nonwhite males have a median

age of death of 67.6 years compared to 75.5 years for their female counterparts.

In conclusion, mortality conditions for males and females in both racial categories have improved during the ten-year interval. However, this improvement has been more pronounced at the younger ages as compared to 65 years and over. Females in Connecticut have maintained their lead in longevity over males, with white females exhibiting the most favorable mortality. Nonwhite males continue to exhibit the least favorable mortality levels by having substantially shorter life expectancy than the other categories.