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## United States Life Tables, 2010

by Elizabeth Arias, Ph.D., Division of Vital Statistics

### Abstract

**Objectives**—This report presents complete period life tables for the United States by race, Hispanic origin, and sex, based on age-specific death rates in 2010.

**Methods**—Data used to prepare the 2010 life tables are 2010 final mortality statistics; April 1, 2010 population estimates based on the 2010 decennial census; and 2010 Medicare data for persons aged 66-99. The methodology used to estimate the 2010 life tables was first implemented with data year 2008. The methodology used to estimate the life tables for the Hispanic population remains unchanged from that developed for the publication of life tables by Hispanic origin for data year 2006.

**Results**—In 2010, the overall expectation of life at birth was 78.7 years. Between 2009 and 2010, life expectancy at birth increased for all groups considered. Life expectancy increased for both males (from 76.0 to 76.2) and females (80.9 to 81.0) and for the white population (78.8 to 78.9), the black population (74.7 to 75.1), the Hispanic population (81.1 to 81.4), the non-Hispanic white population (78.7 to 78.8), and the non-Hispanic black population (74.4 to 74.7).

**Keywords:** life expectancy, survival, death rates, race, Hispanic origin

### Introduction

There are two types of life tables: the cohort (or generation) life table and the period (or current) life table. The cohort life table presents the mortality experience of a particular birth cohort—all persons born in the year 1900, for example—from the moment of birth through consecutive ages in successive calendar years. Based on age-specific death rates observed through consecutive calendar years, the cohort life table reflects the mortality experience of an actual cohort from birth until no lives remain in the group. To prepare just a single complete cohort life table requires data over many years. It is usually not feasible to construct cohort life tables entirely on the basis of observed data for real cohorts due to data unavailability or incompleteness (1). For example, a life table representation of the mortality experience of a cohort of persons born in 1970 would

require the use of data projection techniques to estimate deaths into the future (2,3).

Unlike the cohort life table, the period life table does not represent the mortality experience of an actual birth cohort. Rather, the period life table presents what would happen to a hypothetical cohort if it experienced throughout its entire life the mortality conditions of a particular period in time. For example, a period life table for 2010 assumes a hypothetical cohort that is subject throughout its lifetime to the age-specific death rates prevailing for the actual population in 2010. The period life table may thus be characterized as rendering a “snapshot” of current mortality experience and shows the long-range implications of a set of age-specific death rates that prevailed in a given year. In this report the term “life table” refers only to the period life table and not to the cohort life table.

Life tables can be classified in two ways according to the length of the age interval in which data are presented. A complete life table contains data for every single year of age. An abridged life table typically contains data by 5- or 10-year age intervals. A complete life table, of course, can easily be aggregated into 5- or 10-year age groups (refer to the [Technical Notes](#) at the end of this report for instructions). Other than the decennial life tables, U.S. life tables based on data prior to 1997 are abridged life tables constructed by reference to a standard table (4). This report presents complete period life tables by race, Hispanic origin, race for the non-Hispanic population, and sex. The life tables by Hispanic origin are based on death rates that were adjusted for Hispanic origin misclassification (See [Technical Notes](#) for a detailed description of the methodology used to estimate Hispanic origin life tables).

### Data and Methods

The data used to prepare the U.S. life tables for 2010 are final numbers of deaths for the year 2010, April 1, 2010 population estimates based on the 2010 decennial census, and age-specific death and population counts for Medicare beneficiaries aged 66-99 for the year 2010 from the Centers for Medicare & Medicaid Services (CMS). Data from the Medicare program are used to supplement vital statistics and census data for ages 66 and over. (See [Technical Notes](#) for a detailed description of the data sets used.)



**Table 11. Life table for Hispanic males: United States, 2010**Spreadsheet version available from: [ftp://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/63\\_07/Table11.xlsx](ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/63_07/Table11.xlsx)

Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	q(x)	l(x)	d(x)	L(x)	T(x)	e(x)
0-1	0.005685	100,000	568	99,503	7,871,743	78.7
1-2	0.000340	99,432	34	99,415	7,772,240	78.2
2-3	0.000277	99,398	28	99,384	7,672,826	77.2
3-4	0.000211	99,370	21	99,360	7,573,442	76.2
4-5	0.000182	99,349	18	99,340	7,474,082	75.2
5-6	0.000138	99,331	14	99,324	7,374,742	74.2
6-7	0.000117	99,317	12	99,312	7,275,417	73.3
7-8	0.000100	99,306	10	99,301	7,176,106	72.3
8-9	0.000081	99,296	8	99,292	7,076,805	71.3
9-10	0.000062	99,288	6	99,285	6,977,513	70.3
10-11	0.000049	99,282	5	99,279	6,878,229	69.3
11-12	0.000054	99,277	5	99,274	6,778,949	68.3
12-13	0.000092	99,271	9	99,267	6,679,675	67.3
13-14	0.000171	99,262	17	99,254	6,580,409	66.3
14-15	0.000279	99,245	28	99,231	6,481,155	65.3
15-16	0.000397	99,218	39	99,198	6,381,923	64.3
16-17	0.000508	99,178	50	99,153	6,282,726	63.3
17-18	0.000611	99,128	61	99,097	6,183,573	62.4
18-19	0.000698	99,067	69	99,033	6,084,475	61.4
19-20	0.000774	98,998	77	98,960	5,985,443	60.5
20-21	0.000850	98,921	84	98,879	5,886,483	59.5
21-22	0.000925	98,837	91	98,792	5,787,604	58.6
22-23	0.000980	98,746	97	98,697	5,688,812	57.6
23-24	0.001008	98,649	99	98,599	5,590,115	56.7
24-25	0.001016	98,550	100	98,500	5,491,515	55.7
25-26	0.001017	98,449	100	98,399	5,393,016	54.8
26-27	0.001018	98,349	100	98,299	5,294,616	53.8
27-28	0.001022	98,249	100	98,199	5,196,317	52.9
28-29	0.001031	98,149	101	98,098	5,098,118	51.9
29-30	0.001045	98,048	102	97,996	5,000,020	51.0
30-31	0.001061	97,945	104	97,893	4,902,023	50.0
31-32	0.001078	97,841	105	97,789	4,804,130	49.1
32-33	0.001099	97,736	107	97,682	4,706,341	48.2
33-34	0.001125	97,628	110	97,574	4,608,659	47.2
34-35	0.001157	97,519	113	97,462	4,511,086	46.3
35-36	0.001196	97,406	116	97,348	4,413,624	45.3
36-37	0.001243	97,289	121	97,229	4,316,276	44.4
37-38	0.001306	97,168	127	97,105	4,219,047	43.4
38-39	0.001388	97,042	135	96,974	4,121,942	42.5
39-40	0.001490	96,907	144	96,835	4,024,968	41.5
40-41	0.001604	96,762	155	96,685	3,928,133	40.6
41-42	0.001730	96,607	167	96,524	3,831,448	39.7
42-43	0.001873	96,440	181	96,350	3,734,925	38.7
43-44	0.002035	96,260	196	96,162	3,638,575	37.8
44-45	0.002215	96,064	213	95,957	3,542,413	36.9
45-46	0.002411	95,851	231	95,735	3,446,456	36.0
46-47	0.002625	95,620	251	95,494	3,350,721	35.0
47-48	0.002859	95,369	273	95,232	3,255,226	34.1
48-49	0.003117	95,096	296	94,948	3,159,994	33.2
49-50	0.003404	94,800	323	94,638	3,065,046	32.3
50-51	0.003716	94,477	351	94,301	2,970,408	31.4
51-52	0.004058	94,126	382	93,935	2,876,106	30.6
52-53	0.004443	93,744	417	93,536	2,782,171	29.7
53-54	0.004879	93,327	455	93,100	2,688,636	28.8
54-55	0.005367	92,872	498	92,623	2,595,536	27.9
55-56	0.005920	92,374	547	92,100	2,502,913	27.1
56-57	0.006522	91,827	599	91,527	2,410,813	26.3
57-58	0.007132	91,228	651	90,903	2,319,286	25.4
58-59	0.007713	90,577	699	90,228	2,228,383	24.6
59-60	0.008268	89,879	743	89,507	2,138,155	23.8
60-61	0.008844	89,135	788	88,741	2,048,648	23.0
61-62	0.009480	88,347	838	87,928	1,959,907	22.2

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	q(x)	l(x)	d(x)	L(x)	T(x)	e(x)
62-63	0.010178	87,510	891	87,064	1,871,979	21.4
63-64	0.010973	86,619	950	86,144	1,784,914	20.6
64-65	0.011893	85,669	1,019	85,159	1,698,770	19.8
65-66	0.012939	84,650	1,095	84,102	1,613,611	19.1
66-67	0.014113	83,554	1,179	82,965	1,529,509	18.3
67-68	0.015429	82,375	1,271	81,740	1,446,544	17.6
68-69	0.016846	81,104	1,366	80,421	1,364,805	16.8
69-70	0.018336	79,738	1,462	79,007	1,284,383	16.1
70-71	0.019901	78,276	1,558	77,497	1,205,377	15.4
71-72	0.021598	76,718	1,657	75,890	1,127,880	14.7
72-73	0.023467	75,061	1,761	74,180	1,051,990	14.0
73-74	0.025586	73,300	1,875	72,362	977,809	13.3
74-75	0.027988	71,424	1,999	70,425	905,447	12.7
75-76	0.030555	69,425	2,121	68,365	835,023	12.0
76-77	0.033308	67,304	2,242	66,183	766,658	11.4
77-78	0.036583	65,062	2,380	63,872	700,475	10.8
78-79	0.040445	62,682	2,535	61,414	636,603	10.2
79-80	0.044903	60,147	2,701	58,796	575,188	9.6
80-81	0.049945	57,446	2,869	56,012	516,392	9.0
81-82	0.055892	54,577	3,050	53,052	460,380	8.4
82-83	0.061891	51,527	3,189	49,932	407,329	7.9
83-84	0.068186	48,338	3,296	46,690	357,396	7.4
84-85	0.077539	45,042	3,492	43,295	310,707	6.9
85-86	0.086673	41,549	3,601	39,749	267,412	6.4
86-87	0.096694	37,948	3,669	36,113	227,663	6.0
87-88	0.107644	34,279	3,690	32,434	191,550	5.6
88-89	0.119555	30,589	3,657	28,760	159,116	5.2
89-90	0.132450	26,932	3,567	25,148	130,356	4.8
90-91	0.146338	23,365	3,419	21,655	105,208	4.5
91-92	0.161210	19,945	3,215	18,338	83,553	4.2
92-93	0.177041	16,730	2,962	15,249	65,215	3.9
93-94	0.193785	13,768	2,668	12,434	49,966	3.6
94-95	0.211377	11,100	2,346	9,927	37,532	3.4
95-96	0.229727	8,754	2,011	7,748	27,605	3.2
96-97	0.248729	6,743	1,677	5,904	19,856	2.9
97-98	0.268255	5,066	1,359	4,386	13,952	2.8
98-99	0.288163	3,707	1,068	3,173	9,566	2.6
99-100	0.308299	2,639	813	2,232	6,393	2.4
100 and over	1.000000	1,825	1,825	4,161	4,161	2.3

**Table 12. Life table for Hispanic females: United States, 2010**Spreadsheet version available from: [ftp://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/NVSR/63\\_07/Table12.xlsx](ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/63_07/Table12.xlsx)

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	q(x)	l(x)	d(x)	L(x)	T(x)	e(x)
0-1	0.004729	100,000	473	99,588	8,382,303	83.8
1-2	0.000354	99,527	35	99,510	8,282,715	83.2
2-3	0.000194	99,492	19	99,482	8,183,206	82.2
3-4	0.000153	99,473	15	99,465	8,083,724	81.3
4-5	0.000111	99,457	11	99,452	7,984,259	80.3
5-6	0.000096	99,446	10	99,442	7,884,807	79.3
6-7	0.000079	99,437	8	99,433	7,785,365	78.3
7-8	0.000069	99,429	7	99,425	7,685,932	77.3
8-9	0.000066	99,422	7	99,419	7,586,507	76.3
9-10	0.000068	99,416	7	99,412	7,487,088	75.3
10-11	0.000077	99,409	8	99,405	7,387,676	74.3
11-12	0.000089	99,401	9	99,397	7,288,271	73.3
12-13	0.000103	99,392	10	99,387	7,188,875	72.3
13-14	0.000118	99,382	12	99,376	7,089,488	71.3
14-15	0.000133	99,370	13	99,364	6,990,111	70.3
15-16	0.000149	99,357	15	99,350	6,890,748	69.4
16-17	0.000168	99,342	17	99,334	6,791,398	68.4
17-18	0.000188	99,325	19	99,316	6,692,064	67.4
18-19	0.000211	99,307	21	99,296	6,592,748	66.4
19-20	0.000236	99,286	23	99,274	6,493,452	65.4
20-21	0.000265	99,262	26	99,249	6,394,178	64.4
21-22	0.000293	99,236	29	99,222	6,294,929	63.4
22-23	0.000313	99,207	31	99,192	6,195,707	62.5
23-24	0.000323	99,176	32	99,160	6,096,515	61.5
24-25	0.000323	99,144	32	99,128	5,997,355	60.5
25-26	0.000323	99,112	32	99,096	5,898,227	59.5
26-27	0.000325	99,080	32	99,064	5,799,131	58.5
27-28	0.000328	99,048	33	99,031	5,700,068	57.5
28-29	0.000333	99,015	33	98,999	5,601,036	56.6
29-30	0.000341	98,982	34	98,965	5,502,037	55.6
30-31	0.000349	98,949	35	98,931	5,403,072	54.6
31-32	0.000361	98,914	36	98,896	5,304,141	53.6
32-33	0.000382	98,878	38	98,859	5,205,245	52.6
33-34	0.000415	98,841	41	98,820	5,106,385	51.7
34-35	0.000459	98,800	45	98,777	5,007,565	50.7
35-36	0.000510	98,754	50	98,729	4,908,788	49.7
36-37	0.000565	98,704	56	98,676	4,810,059	48.7
37-38	0.000622	98,648	61	98,617	4,711,383	47.8
38-39	0.000680	98,587	67	98,553	4,612,766	46.8
39-40	0.000742	98,520	73	98,483	4,514,212	45.8
40-41	0.000809	98,447	80	98,407	4,415,729	44.9
41-42	0.000888	98,367	87	98,323	4,317,322	43.9
42-43	0.000988	98,280	97	98,231	4,218,999	42.9
43-44	0.001115	98,183	109	98,128	4,120,768	42.0
44-45	0.001261	98,073	124	98,011	4,022,640	41.0
45-46	0.001417	97,949	139	97,880	3,924,628	40.1
46-47	0.001577	97,811	154	97,734	3,826,748	39.1
47-48	0.001744	97,656	170	97,571	3,729,015	38.2
48-49	0.001921	97,486	187	97,393	3,631,443	37.3
49-50	0.002107	97,299	205	97,196	3,534,051	36.3
50-51	0.002316	97,094	225	96,981	3,436,854	35.4
51-52	0.002536	96,869	246	96,746	3,339,873	34.5
52-53	0.002738	96,623	265	96,491	3,243,127	33.6
53-54	0.002903	96,359	280	96,219	3,146,636	32.7
54-55	0.003045	96,079	293	95,933	3,050,417	31.7
55-56	0.003182	95,787	305	95,634	2,954,484	30.8
56-57	0.003353	95,482	320	95,322	2,858,850	29.9
57-58	0.003588	95,162	341	94,991	2,763,528	29.0
58-59	0.003919	94,820	372	94,634	2,668,537	28.1
59-60	0.004335	94,449	409	94,244	2,573,903	27.3
60-61	0.004807	94,039	452	93,813	2,479,659	26.4
61-62	0.005310	93,587	497	93,339	2,385,846	25.5

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Age	Probability of dying between ages x to x+1	Number surviving to age x	Number dying between ages x to x+1	Person-years lived between ages x to x+1	Total number of person-years lived above age x	Expectation of life at age x
	q(x)	l(x)	d(x)	L(x)	T(x)	e(x)
62-63	0.005849	93,090	545	92,818	2,292,508	24.6
63-64	0.006423	92,546	594	92,248	2,199,690	23.8
64-65	0.007047	91,951	648	91,627	2,107,441	22.9
65-66	0.007772	91,303	710	90,948	2,015,814	22.1
66-67	0.008601	90,594	779	90,204	1,924,866	21.2
67-68	0.009477	89,814	851	89,389	1,834,662	20.4
68-69	0.010353	88,963	921	88,503	1,745,273	19.6
69-70	0.011237	88,042	989	87,547	1,656,771	18.8
70-71	0.012156	87,053	1,058	86,524	1,569,223	18.0
71-72	0.013203	85,995	1,135	85,427	1,482,699	17.2
72-73	0.014462	84,859	1,227	84,246	1,397,272	16.5
73-74	0.016023	83,632	1,340	82,962	1,313,027	15.7
74-75	0.017892	82,292	1,472	81,556	1,230,065	14.9
75-76	0.019943	80,820	1,612	80,014	1,148,509	14.2
76-77	0.022163	79,208	1,755	78,330	1,068,495	13.5
77-78	0.024689	77,452	1,912	76,496	990,165	12.8
78-79	0.027586	75,540	2,084	74,498	913,669	12.1
79-80	0.030762	73,456	2,260	72,326	839,171	11.4
80-81	0.034114	71,197	2,429	69,982	766,844	10.8
81-82	0.037966	68,768	2,611	67,462	696,862	10.1
82-83	0.042470	66,157	2,810	64,752	629,400	9.5
83-84	0.047749	63,347	3,025	61,835	564,648	8.9
84-85	0.054184	60,323	3,269	58,688	502,813	8.3
85-86	0.061104	57,054	3,486	55,311	444,125	7.8
86-87	0.069014	53,568	3,697	51,719	388,814	7.3
87-88	0.077805	49,871	3,880	47,931	337,094	6.8
88-89	0.087538	45,991	4,026	43,978	289,164	6.3
89-90	0.098268	41,965	4,124	39,903	245,186	5.8
90-91	0.110042	37,841	4,164	35,759	205,283	5.4
91-92	0.122896	33,677	4,139	31,607	169,524	5.0
92-93	0.136851	29,538	4,042	27,517	137,917	4.7
93-94	0.151910	25,496	3,873	23,559	110,400	4.3
94-95	0.168054	21,623	3,634	19,806	86,840	4.0
95-96	0.185241	17,989	3,332	16,323	67,034	3.7
96-97	0.203404	14,657	2,981	13,166	50,712	3.5
97-98	0.222448	11,675	2,597	10,377	37,546	3.2
98-99	0.242253	9,078	2,199	7,979	27,169	3.0
99-100	0.262676	6,879	1,807	5,976	19,190	2.8
100 and over	1.000000	5,072	5,072	13,215	13,215	2.6