

Life Expectancy

**Indicators of Child
and Youth Well-Being**

Recent years have seen steady gains in life expectancy overall; the life expectancy at birth of black males, in particular, has markedly improved. However, disparities by gender, race, and income persist.

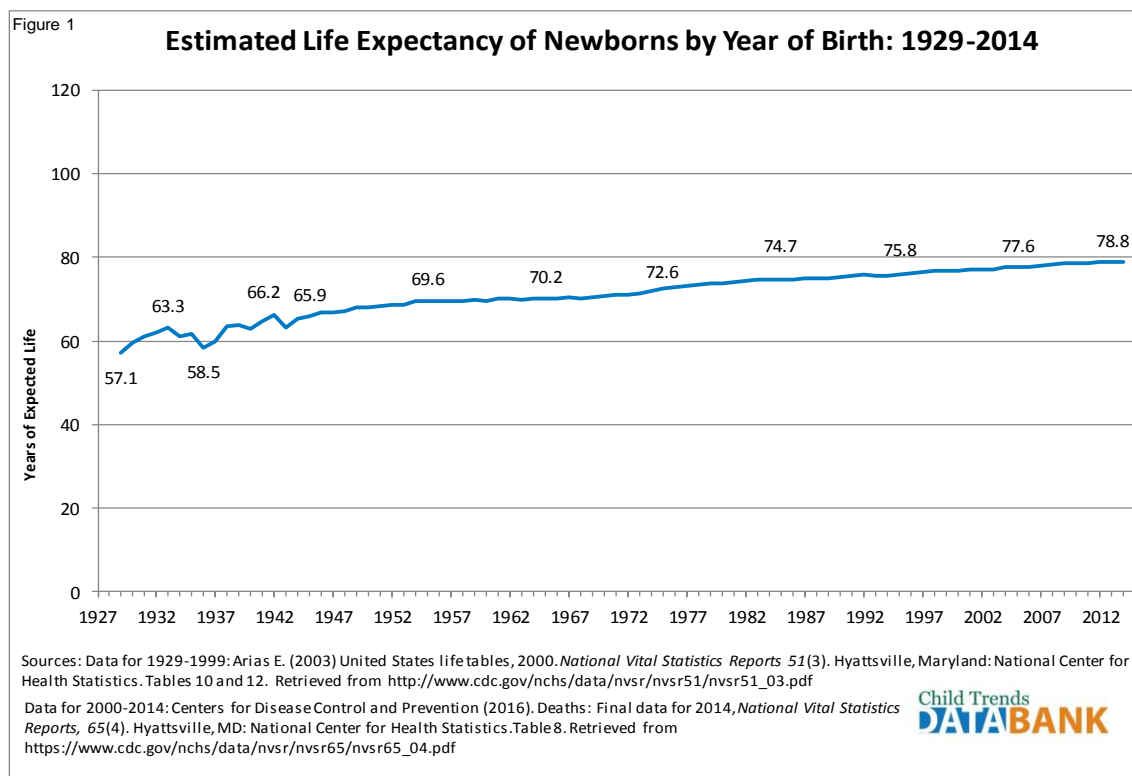
Importance

Life expectancy is a single measure used to take into account all the factors that contribute to a long life. Although many variables account for longevity, they cannot always be accounted for individually. While often used in reference to the elderly, a large portion of the increase in life expectancy over the last century is attributable to declines in childhood mortality. Overall, mortality rates for infants and for children older than age one fell considerably during the 20th century, due in large part to advances in medical technology, improved socioeconomic conditions, and progress in water and food safety and sanitation practices.¹

Despite this progress, children in the United States have a shorter life expectancy than those in about 30 other countries with populations of one million or more.² Additionally, there are large differences in life expectancy by gender, race, education, and income—further evidence of room for improvement.^{3,4}

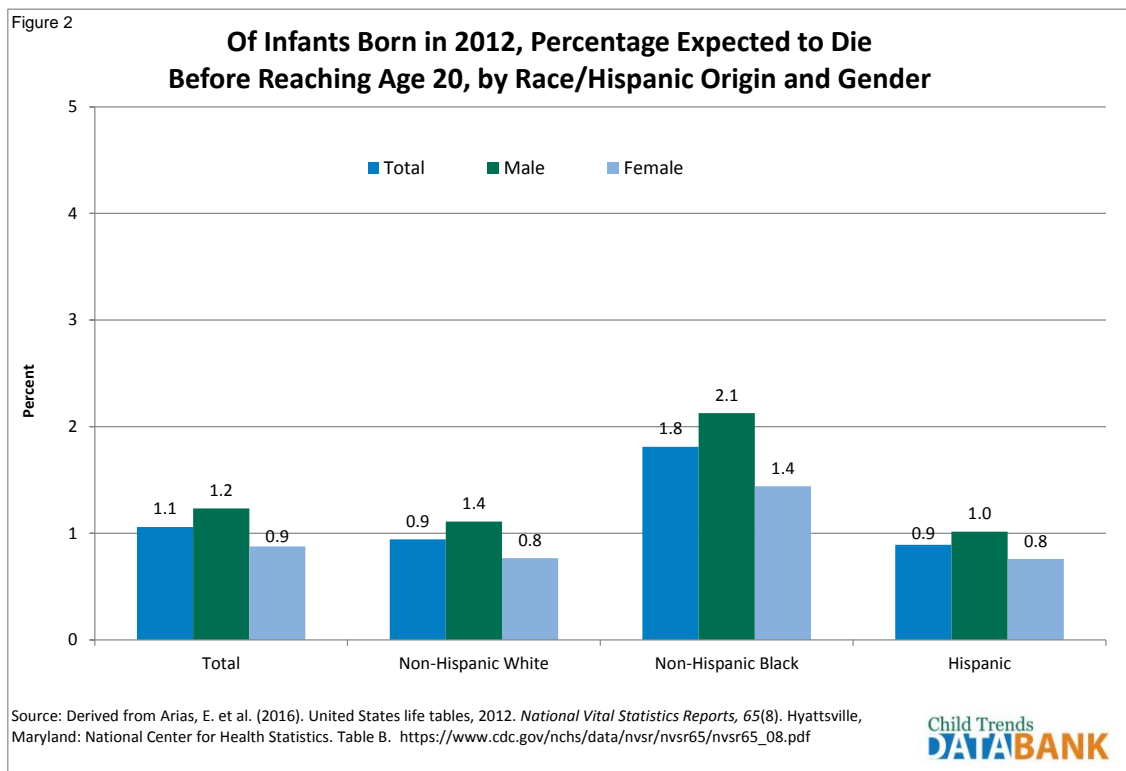
Trends

Life expectancy for newborns has increased substantially over the past 80 years, from 57.1 years for infants born in 1929, to 78.8 years for babies born in 2014. (Figure 1) It is estimated that 1.1 percent of children born in 2012 (the latest year for which such estimates are available) will die before they reach the age of 20, compared with 10.9 percent of children born in the early 1930s. (Appendix 2)



Differences by Gender

Females have a greater life expectancy at birth than do males, although the gender gap has narrowed since its peak in 1979, when men were expected to live an average of 70.0 years, and women an average of 77.8 years.⁵ In 2014, the gender gap was 4.8 years, with men and women expected to live, on average, 76.4 and 81.2 years, respectively. (Figure 3) Females are also less likely than males to die before reaching age 20 (0.9 versus 1.2 percent, respectively, in 2012, the latest year for which such estimates are available). (Figure 2) This gap (between the percentage of males and females who died before age 20) widened between the early 1930s and the early 1990s, from a 16 to a 35 percent gap. Since then, the gap has narrowed, and in 2012 boys were 29 percent more likely to die young than girls. (Appendix 2)

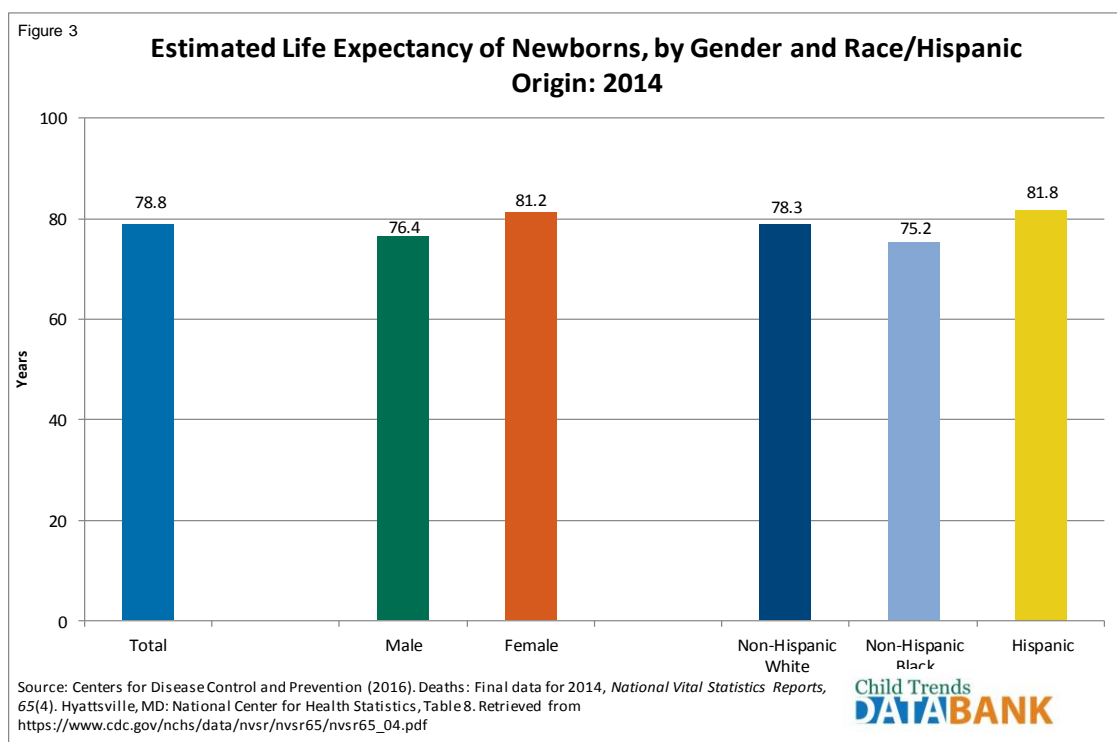


Differences by Race and Hispanic Origin⁶

Recent increases in life expectancy have been especially pronounced among black male infants, for whom the average increased from 64.5 years in 1990 to 72.5 years in 2014, following a slight decline in the late 1980s. (Figure 4) Some of this increase reflects declines in homicide rates among black males during the mid- and late 1990s. Despite these gains, however, non-Hispanic black children are still almost twice as likely as non-Hispanic white children to die before reaching age 20. 1.8 percent of non-Hispanic black children born in 2012 (the latest year for which such estimates are available) were expected to die before reaching age 20, compared with 0.9 percent of non-Hispanic white children born the same year. Hispanic children have risks similar to those for non-Hispanic white children. (Figure 2)

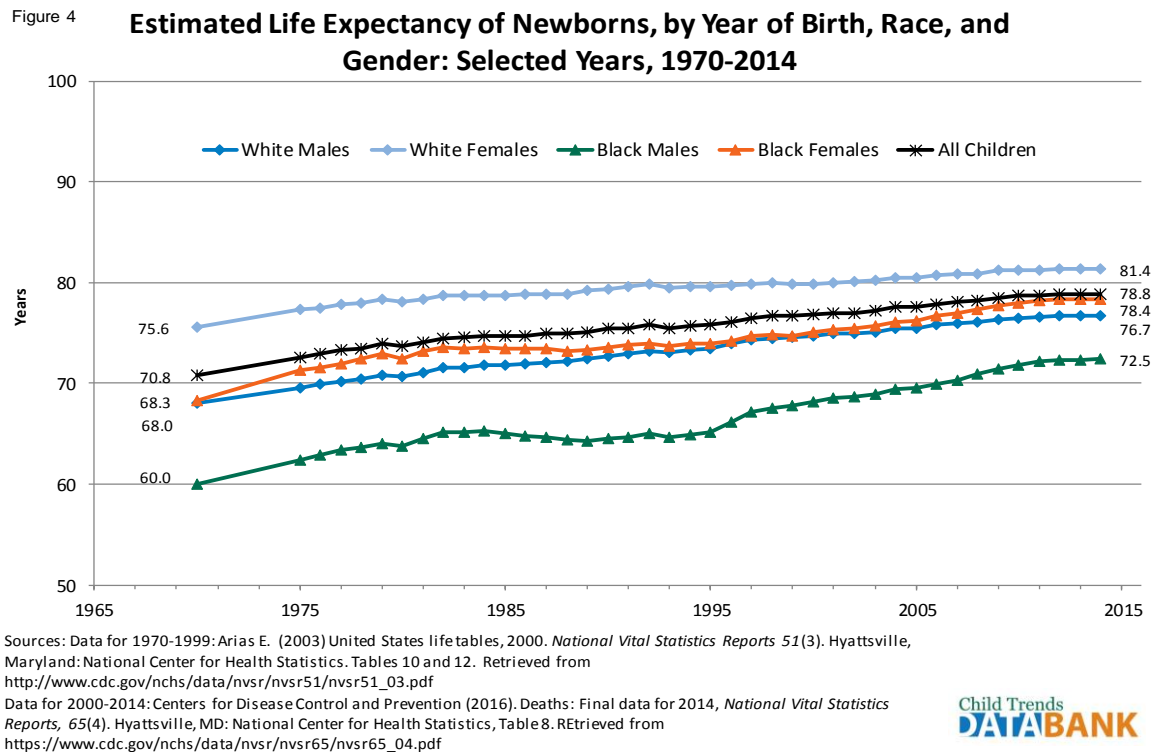
In addition to being more likely to survive to age 20, non-Hispanic white infants also have longer total life expectancies than non-Hispanic black infants. In 2014, non-Hispanic white newborns could be expected to

live an average of 78.8 years, compared with 75.2 years for black newborns. Hispanics had the longest life expectancy, at 81.8 years. (Figure 3) The black-white gap in 2014 was the smallest ever recorded.



Differences by Socio-economic Status

In contrast to the narrowing gaps in life expectancy between males and females, and between whites and blacks, there have been widening disparities in the U.S. by income and educational attainment. In 2000, the gap between the highest and lowest socio-economic groups in life expectancy at birth was 4.5 years, up from 2.8 years in 1980.⁷ Similarly, at age 25, the gap between individuals with any college education and those with a high school education or less grew by 30 percent between 1990 and 2000.⁸ Between 2001 and 2014, life expectancy inequality between the richest and poorest Americans increased. During this time period, the gap between the life expectancy of the richest 1 percent and the poorest 1 percent was nearly 15 years for men, and over 10 years for women.⁹



State and Local Estimates

2013-14 data for states, Congressional Districts, and the 10 most populous metro areas are available from the American Human Development Project, Mapping the Measure of America website:

<http://www.measureofamerica.org/maps/>

Life expectancy and survivorship to age 20 for infants born in the period 1999-2001, by state, are available in: Wei, R., Anderson, R. N., Curtin, L. R., Arias, E. (2012). U. S. decennial life tables for 1999-2001: State life tables. *National Vital Statistics Reports*, 60 (9). Hyattsville, MD: National Center for Health Statistics.

Retrieved from http://www.cdc.gov/nchs/data/nvsr/nvsr60/nvsr60_09.pdf.



International Estimates

The Population Reference Bureau publishes life expectancy rates for most countries in its *DataFinder* tool, available at <http://www.prb.org/DataFinder/Topic/Rankings.aspx?ind=6>.

Estimates of the healthy life expectancy (the number of years of life spent in good health) for each of the member states of the World Health Organization are available for the year 2015 from *World Health Statistics 2016*. Available at http://www.who.int/gho/publications/world_health_statistics/2016/en/

National Goals

Through its *Healthy People 2020* initiative, the federal government has set a number of national goals to increase life expectancy and improve the quality of life for individuals of all ages.

More information is available at: www.healthypeople.gov/2020/topicsobjectives2020/default.aspx

Related Indicators

- Infant, Child, and Teen Mortality: www.childtrends.org/?indicators=infant-child-and-teen-mortality

Definition

According to the National Center for Health Statistics, "Life expectancy is the average number of years of life remaining to a person at a particular age and is based on a given set of age-specific death rates, generally the mortality conditions existing in the period mentioned. Life expectancy may be determined by race, sex, or other characteristics using age-specific death rates for the population with that characteristic."

For more information, see <http://www.cdc.gov/nchs/data/hus/hus11.pdf>

Data Sources

- Life expectancy data for 1940-2014: Centers for Disease Control and Prevention. (2016). Deaths: Final data for 2014. *National Vital Statistics Reports*, 65(4). Hyattsville, MD: National Center for Health Statistics. Table 8. Retrieved from https://www.cdc.gov/nchs/data/nvsr/nvsr65/nvsr65_04.pdf
- Survivorship data for 1929-2012: Arias E. et al. (2016). United States life tables, 2012. *National Vital Statistics Reports*, 65(8). Hyattsville, Maryland: National Center for Health Statistics. Retrieved from https://www.cdc.gov/nchs/data/nvsr/nvsr65/nvsr65_08.pdf
- Life expectancy data for 1930: Arias E. (2003). United States life tables, 2000. *National Vital Statistics Reports*, 51(3). Hyattsville, Maryland: National Center for Health Statistics. Tables 10 and 12. Retrieved from http://www.cdc.gov/nchs/data/nvsr/nvsr51/nvsr51_03.pdf

Raw Data Source

Mortality Data, National Vital Statistics System

<http://www.cdc.gov/nchs/deaths.htm>



Appendix 1 - Estimated Life Expectancy (in Years) of Newborns, by Race and Gender: Selected Years, 1930-2014

	1930	1940	1950	1960	1970	1975	1980	1985	1990	1995	2000
All Races	59.7	62.9	68.2	69.7	70.8	72.6	73.7	74.7	75.4	75.8	76.8
Male	58.1	60.8	65.6	66.6	67.1	68.8	70.0	71.1	71.8	72.5	74.1
Female	61.6	65.2	71.1	73.1	74.7	76.6	77.4	78.2	78.8	78.9	79.3
White	61.4	64.2	69.1	70.6	71.7	73.4	74.4	75.3	76.1	76.5	77.3
Male	59.7	62.1	66.5	67.4	68.0	69.5	70.7	71.8	72.7	73.4	74.7
Female	63.5	66.6	72.2	74.1	75.6	77.3	78.1	78.7	79.4	79.6	79.9
Black	-	-	-	-	64.1	66.8	68.1	69.3	69.1	69.6	71.8
Male	-	-	-	-	60.0	62.4	63.8	65.0	64.5	65.2	68.2
Female	-	-	-	-	68.3	71.3	72.5	73.4	73.6	73.9	75.1

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
All Races	77.6	77.8	78.1	78.2	78.5	78.7	78.7	78.8	78.8	78.8
Male	75.0	75.2	75.5	75.6	76.0	76.2	76.3	76.4	76.4	76.4
Female	80.1	80.3	80.6	80.6	80.9	81.0	81.1	81.2	81.2	81.2
White	78.0	78.3	78.5	78.5	78.8	78.9	79.0	79.1	79.1	79.0
Male	75.5	75.8	76.0	76.1	76.4	76.5	76.6	76.7	76.7	76.7
Female	80.5	80.7	80.9	80.9	81.2	81.3	81.3	81.4	81.4	81.4
Black	73.0	73.4	73.8	74.3	74.7	75.1	75.3	75.5	75.5	75.6
Male	69.5	69.9	70.3	70.9	71.4	71.8	72.2	72.3	72.3	72.5
Female	76.2	76.7	77.0	77.3	77.7	78.0	78.2	78.4	78.4	78.4



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Non-Hispanic white	-	78.2	78.4	78.4	78.7	78.8	78.8	78.9	78.9	78.8
Male	-	75.7	75.9	76.0	76.3	76.4	76.4	76.6	76.5	76.5
Female	-	80.6	80.8	80.7	81.1	81.1	81.1	81.2	81.2	81.1
Non-Hispanic black	-	73.1	73.5	73.9	74.3	74.7	74.9	75.1	75.1	75.2
Male	-	69.5	69.9	70.5	70.9	71.4	71.7	71.8	71.8	72.0
Female	-	76.4	76.7	77.0	77.4	77.7	77.8	78.1	78.1	78.1
Hispanic	-	80.3	80.7	80.8	81.1	81.2	81.4	81.6	81.6	81.8
Male	-	77.5	77.8	78.0	78.4	78.5	78.8	79.1	79.1	79.2
Female	-	82.9	83.2	83.3	83.5	83.8	83.7	83.9	83.8	84.0

Sources: Data for 1930: Arias E. (2003) United States life tables, 2000. *National Vital Statistics Reports 51(3)*. Hyattsville, Maryland: National Center for Health Statistics. Tables 10 and 12. Retrieved from http://www.cdc.gov/nchs/data/nvsr/nvsr51/nvsr51_03.pdf

Data for 1940-2014: Centers for Disease Control and Prevention (2016). Deaths: Final data for 2014, *National Vital Statistics Reports, 65(4)*. Hyattsville, MD: National Center for Health Statistics, Table 8. Retrieved from https://www.cdc.gov/nchs/data/nvsr/nvsr65/nvsr65_04.pdf



Appendix 2 - Percentage of Infants Expected to Die Before Reaching Age 20, by Race and Gender: Selected Birth Years, 1929-2012

	1929-31	1939-41	1949-51	1959-61	1969-71	1979-81	1989-91	1999-01	2005	2006	2007	2008	2009	2010	2011	2012
All Races	10.9	7.6	4.6	3.9	3.3	2.3	1.8	1.3	1.3	1.2	1.2	1.2	1.2	1.1	1.1	1.1
Male	11.8	8.4	5.3	4.5	3.9	2.7	2.1	1.6	1.5	1.5	1.5	1.4	1.3	1.3	1.3	1.2
Female	9.9	6.7	3.9	3.2	2.7	1.8	1.4	1.1	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.9
White	10.0	6.9	4.2	3.5	3.0	2.1	1.5	1.2	1.1	1.1	1.1	1.1	1.0	1.0	1.0	0.9
Male	11.1	7.7	4.9	4.1	3.5	2.5	1.9	1.4	1.3	1.3	1.3	1.2	1.2	1.1	1.1	1.1
Female	9.1	6.0	3.5	2.9	2.4	1.6	1.2	1.0	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8
Black*	15.6	12.2	7.3	6.1	5.1	3.3	3.1	2.3	2.2	2.1	2.1	2.0	1.9	1.8	1.8	1.8
Male	16.4	13.0	8.1	6.9	5.9	3.9	3.7	2.7	2.6	2.5	2.5	2.4	2.3	2.1	2.1	2.1
Female	14.9	11.3	6.5	5.3	4.3	2.8	2.4	1.9	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.4
Non-Hispanic white	-	-	-	-	-	-	-	-	-	1.1	1.1	1.1	1.0	1.0	1.0	0.9
Male	-	-	-	-	-	-	-	-	-	1.3	1.3	1.2	1.2	1.1	1.1	1.1
Female	-	-	-	-	-	-	-	-	-	0.9	0.9	0.9	0.8	0.8	0.8	0.8
Non-Hispanic black	-	-	-	-	-	-	-	-	-	2.2	2.1	2.0	2.0	1.8	1.8	1.8
Male	-	-	-	-	-	-	-	-	-	2.5	2.5	2.4	2.3	2.2	2.1	2.1
Female	-	-	-	-	-	-	-	-	-	1.8	1.7	1.6	1.6	1.5	1.5	1.4
Hispanic	-	-	-	-	-	-	-	-	-	1.1	1.0	1.0	1.0	0.9	0.9	0.9
Male	-	-	-	-	-	-	-	-	-	1.3	1.2	1.2	1.1	1.1	1.1	1.0
Female	-	-	-	-	-	-	-	-	-	0.8	0.8	0.8	0.8	0.8	0.8	0.8

*For 1939-1941 and 1949-1951, the "black" population includes all non-whites.

Sources: Data for 1929-2012: Arias E. et al. (2016) United States life tables, 2012. *National Vital Statistics Reports*, 65(8). Hyattsville, Maryland: National Center for Health Statistics.

Retrieved from https://www.cdc.gov/nchs/data/nvsr/nvsr65/nvsr65_08.pdf

Endnotes

¹ Guyer, B., Freedman, M. A., Strobino, D. M., & Sondik, E. J. (2000). Annual summary of vital statistics: Trends in the health of Americans during the 20th century. *Pediatrics*, 106(6), 1307-1317.

² Population Reference Bureau. (2016) Life expectancy at birth, by gender, 2014. *Datafinder Online Tool*. Retrieved from <http://www.prb.org/DataFinder/Topic/Rankings.aspx?ind=6>.

³ U.S. Department of Health and Human Services. (2012). *Health, United States, 2011*. With special focus on socio-economic disparities. Retrieved from [http://www.cdc.gov/nchs/data/11.pdf](http://www.cdc.gov/nchs/data/hus/11.pdf)

⁴ U.S. Congressional Budget Office. (2008). *Growing disparities in life expectancy*. CBO Economic and Budget Issue Brief, April 17, 2008. Retrieved from http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/91xx/doc9104/04-17-lifeexpectancy_brief.pdf

⁵ Arias, E. (2007). United States life tables, 2004. *National Vital Statistics Reports* 56(9). Retrieved from [http://www.cdc.gov/nchs/data/nvsr/nvsr51_03.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr51/nvsr51_03.pdf). Table 12.

⁶ Hispanics may be any race.

⁷ Singh, G. K., & Siahpush, M. (2006). Widening socioeconomic inequalities in U.S. life expectancy, 1980-2000. *International Journal of Epidemiology*, 35, 969-979.

⁸ Meara, E. R., Richards, S., & Cutler, D. M. (2008). The gap gets bigger: Changes in mortality and life-expectancy , by education, 1981-2000. *Health Affairs*, 27(2), 350-360.

⁹ Chetty, R., Stepner, M., Abraham, S., et al. (2016). The association between income and life expectancy in the United States, 2001-2014. *JAMA*, 315(16), 1750-1766.