



# *Life Expectancy*

**in Rural Missouri**

# Introduction

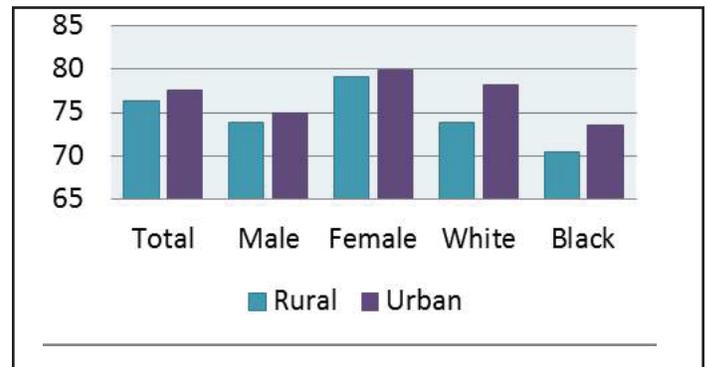
Life expectancy reflects the overall mortality level of a population, and is the average number of years that a newborn is expected to live if current mortality rates continue to apply. Life expectancy summarizes the mortality pattern that prevails across all age groups; children, adolescents, adults, and the elderly.<sup>7</sup> Years of potential life lost (YPLL) estimates the number of life years lost to premature deaths. YPLL is a good measure of the overall health of an area while emphasizing deaths of younger residents. The leading causes of death using YPLL calculations are often much different compared with age adjusted death rates.<sup>6</sup> Although most deaths occur at advanced ages, more years of potential life are

lost for deaths among younger age groups, especially for certain diseases (HIV/AIDS), external causes (accidents, suicides, homicides), and early life stage conditions, such as congenital anomalies. The impact of behavioral risks can also be evaluated using YPLLs, particularly regarding smoking and work-related injuries.<sup>6</sup> In addition to the effects of health determinants and medical conditions, socio-economic determinants have an impact on the life expectancy and YPLL of populations as a whole. Living in rural areas can result in a lower life expectancy and higher number of YPLL due to the limited access to health care, the tendency to have higher poverty levels, and lower educational and employment statuses.

## Life Expectancy in Rural Missouri<sup>3</sup>

- The total average life expectancy for rural Missouri residents is lower than urban residents based on birth, death, and population data between the years 2004-2012. (Figure 1/Table 1).
- Male life expectancy is lower than females in both urban and rural areas of the state by at least 5 years; 5.3 in rural and 5 years in urban Missouri.
- White residents in urban counties of Missouri have a life expectancy over 4 years longer than white individuals living in rural counties.
- Black residents in urban counties of Missouri have a life expectancy of 3.1 years longer than black individuals living in rural counties.
- The life expectancy of white rural residents is 3.4 years longer than that of black residents living in rural counties.
- White individuals living in urban Missouri are expected to live 7.7 years longer than black residents living in rural Missouri.
- Rural black Missourians have the lowest life expectancy in the state at 70.5 years.

**Figure 1. Comparison of the Average Life Expectancy for Rural and Urban Missourians, 2004-2012<sup>3</sup>**



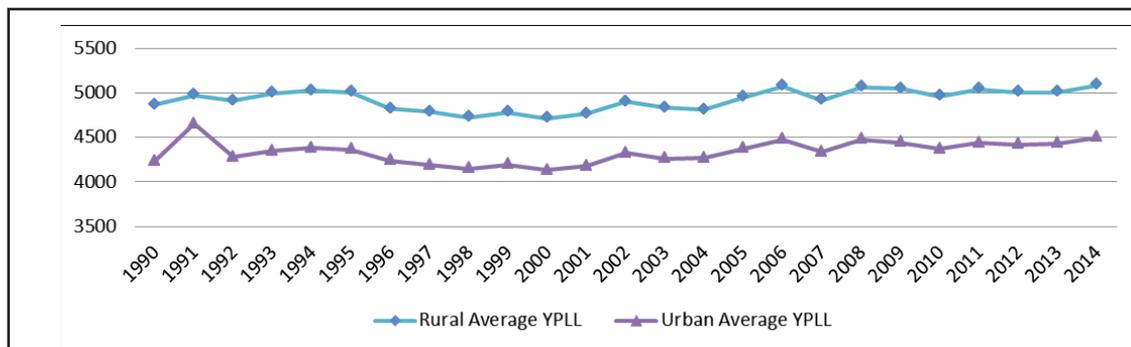
**Table 1. Comparison of the Average Life Expectancy for Rural and Urban Missourians, 2004-2012<sup>3</sup>**

Life Expectancy	Rural	Urban
Total	76.4	77.5
Male	73.8	74.9
Female	79.1	79.9
White	73.9	78.2
Black	70.5	73.6

# Years of Potential Life Lost (YPLL) in Missouri<sup>5</sup>

- YPLL in Missouri is calculated using birth, death, and population data. Missouri uses the age 75 as a YPLL benchmark. For example, an individual who died at age 35 would be given a YPLL of 40 (75-35).
- Figure 2 displays the average YPLL of rural and urban Missouri counties between 1990 and 2014.
- The year 2014 had the highest average YPLL for rural Missouri counties at 5,088.
- In urban Missouri, the year 1991 had the highest average number of YPLL at 4,652; 2014 was a close second with 4,497 YPLL.
- The YPLL in rural counties was consistently higher than urban counties throughout the 24 year period.

**Figure 2. Comparison of Years of Potential Life Lost in Rural and Urban Missouri, 1990-2014<sup>5</sup>**



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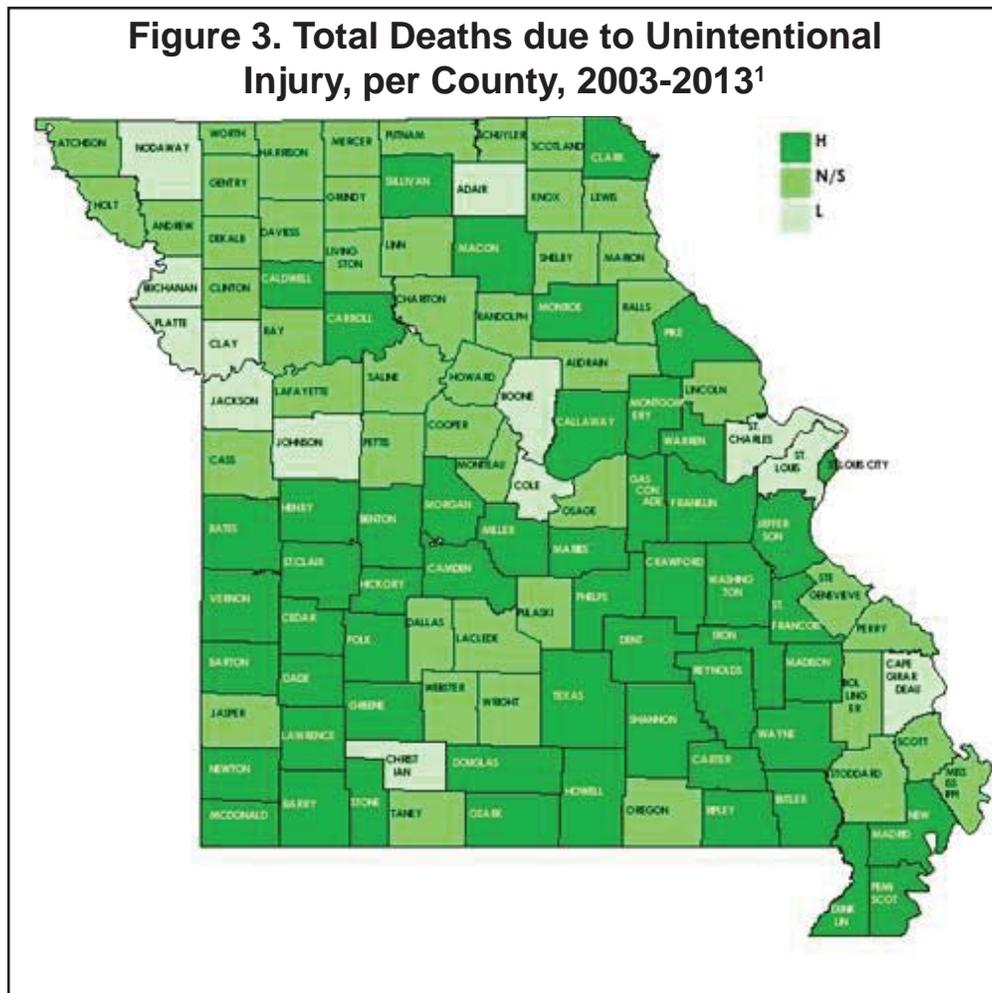
2014 had the highest average Years of Potential Life Lost for rural Missouri counties.

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# Effects on Life Expectancy and YPLL in Rural Missouri

- Life expectancy is impacted by several health determinants and medical conditions.<sup>7</sup>
- Changes in the morbidity of a population may have an effect on the overall life expectancy.
- Between the years 1991 and 2013 the rate of death caused by all cancers in rural Missourians, apart from fluctuations, has decreased from 206.7 to 187.3.<sup>4</sup>
- Lung cancer, specifically, has decreased in rural areas. Per 100,000 residents a rate of 80.3 were diagnosed with a new case of lung cancer between 1998 and 2000 compared with a rate of 78.1 between 2010 and 2012.<sup>4</sup>
- The decreased prevalence of lung cancer may be attributed to a decrease in the prevalence of current smokers in Missouri; 25.4% (2007) compared with 23.1% (2011).<sup>1</sup>
- The prevalence of Missourians reporting that they have no leisure time physical activity has decreased from 27.1% in 2007 to 23.7% in 2011.<sup>1</sup>
- Between the years 1991 and 2013 the rate of heart disease deaths in rural Missourians, apart from fluctuations, has decreased from 334.2 to 278.3.<sup>1</sup>
- Figure 3 displays the geographical distribution of the significance of the total deaths due to unintentional injury between 2003 and 2013. Premature death due to injury has significant affects on the YPLL of an area.1 (H-High significance, N/S- No significance, L- Low significance)<sup>1</sup>

\*The County Level Study was last conducted in 2011



# Sources

- <sup>1</sup>Missouri Department of Health and Senior Services.. County Level Study. Accessed May 26, 2016 at <http://health.mo.gov/data/mica/ASPsUnintentional/mapHiLo.php?&cod=011173&qtile=3&yr=2003-2013>.
- <sup>2</sup>Missouri Department of Health and Senior Services. Health in Rural Missouri: Biennial 2014-2015. Accessed May 15, 2016.
- <sup>3</sup>Missouri Department of Health and Senior Services. Life Expectancy 2004-2012. Accessed May 18, 2016 at <http://health.mo.gov/data/lifeexpectancy/>.
- <sup>4</sup>Missouri Department of Health and Senior Services.. MICA. Accessed May 24, 2016 at <http://health.mo.gov/data/mica/MICA/>.
- <sup>5</sup>Missouri Department of Health and Senior Services. Years of Potential Life Lost (YPLL) 2014. Accessed May 19, 2016 at <http://health.mo.gov/data/ypll/>.
- <sup>6</sup>NAPHSIS. Years of Potential Life Lost (YPLL). Accessed May 23, 2016 at <https://naphsis-web.sharepoint.com/about/Documents/YPLL.pdf>.
- <sup>7</sup>World Health Organization. Life Expectancy at Birth. Accessed May 20, 2016 at <http://www.who.int/whosis/whostat2006DefinitionsAndMetadata.pdf>.



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