A Changing Kansas:

Implications for Health and Communities

KANSAS HEALTH
FOUNDATION

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Executive Summary

The population of Kansas is growing more slowly than the population of the U.S. as a whole, and it is aging, becoming increasingly diverse and concentrating in urban areas. Between 1960 and 2016, the population of the state increased by 33.4 percent, an addition of more than 728,000 Kansans. By contrast, the U.S. population increased by 80.2 percent over the same period.

Population growth in Kansas has not been uniform across the state—it has occurred primarily in more highly populated areas, while rural areas have experienced substantial population declines. Between 1960 and 2016, the population of Urban counties (those with a population density of 150 or more persons per square mile) increased by 80.8 percent (732,109) and the population of Semi-Urban counties (40 to 149.9 persons per square mile) increased by 24.2 percent (89,469). The population of Densely Settled Rural counties (20 to 39.9 persons per square mile) experienced a net increase of 11.6 percent (48,941) between 1960 and 2016; however, the population decreased in those counties by 1.1 percent between 2000 and 2010 and by 1.5 percent between 2010 and 2016. Between 1960 and 2016, the population of Rural counties (6 to 19.9 persons per square mile) decreased by 22.2 percent (66,046) and the population of Frontier counties (less than 6 persons per square mile) decreased by 41.1 percent (75,705). Between 2000 and 2016, 82 of the 105 counties in Kansas experienced a loss of population.

The median age of Kansans in 2000 was 35.2 years. By the year 2016, it had increased to 36.5 years. The proportion of Kansans who are age 65 and over is also increasing. In 2000, there were 356,229 Kansans age 65 and over, and they comprised 13.3 percent of the population. By 2016, the population of Kansans age 65 and over had increased to 436,993, or 15.0 percent of the population.

All the population growth in Kansas between 2000 and 2016 was among minority populations. The non-Hispanic White population in Kansas decreased from 2,260,288 in 2000 to 2,254,581 in 2016, a decline of 0.3 percent. Over this same time period, the non-Hispanic White population in the U.S. overall increased by 2.0 percent. Non-Hispanic Whites made up 84.1 percent of the population in Kansas in 2000; by 2016, non-Hispanic Whites made up only 77.5 percent of the population. By contrast, minority populations in Kansas—defined as any population group other than non-Hispanic White—increased from 428,130 in 2000 to 652,708 in 2016, a 52.5 percent increase. Minority populations in the U.S. increased by 44.8 percent during this period.

Projecting these demographic trends over the next 50 years, without considering potential major changes in immigration or economic development policies, technological advances or other factors that could have a significant impact on population patterns, yields a picture of an even older, more diverse and more urban Kansas. Overall, the population of the state of Kansas is projected to grow by 25.1 percent between 2016 and 2066, from 2,907,289 to 3,637,037. However, the projected growth rate among persons age 65 and over between 2016 and 2066 is 69.5 percent, from 436,993 to 740,715.

Given current growth patterns, the majority, non-Hispanic White population is projected to continue to decline, while minority populations are projected to increase substantially. By the year 2066, the non-Hispanic Black population is projected to grow by 47.1 percent, to 271,921. The non-Hispanic Other/Multiple Race population is projected to increase by 138.3 percent , to 289,622 by 2066. The Hispanic, Any Race population is projected to increase by nearly one million, to 1,309,513 by 2066, a growth rate of 286.9 percent, and comprise 36.0 percent of the total population. The current majority, non-Hispanic White population in Kansas is projected to shift to a minority population, (i.e., comprise less than 50.0 percent of the overall state population), between the years 2061 and 2066.

Projected population growth rates in urban areas of the state through the year 2066 vary substantially. While the Topeka Metropolitan Statistical Area is projected to grow by just 7.4 percent between 2016 and 2066, the Lawrence Metropolitan Statistical Area is projected to grow by 125.9 percent during this same period. Substantial population growth is also projected for the Manhattan-Junction City Combined Statistical Area through 2066, at 92.4 percent. The Kansas City, Kansas Metropolitan Region, which for this report includes only the Kansas counties in the Kansas City, MO-KS Metropolitan Statistical Area plus Franklin County, is projected to increase by 44.5 percent, and the Wichita Metropolitan Statistical Area is projected to grow by 28.4 percent between 2016 and 2066.

By contrast, the combined population of rural counties in the western part of the state is projected to decrease by 19.9 percent by the year 2066. In the eastern part of the state, rural counties are projected to experience a combined population decrease of 32.1 percent by the year 2066.

These changing demographics have had, and will continue to have, important implications. There are considerable racial and ethnic disparities in the state regarding health status and related

social determinants of health such as poverty and education. Per capita income in the state is highest among non-Hispanic Whites. Minority groups in Kansas experience substantially higher rates of poverty. Data from the most recent American Community Survey demonstrated that, for both non-Hispanic Blacks and Hispanics, Any Race, one in four (25.3 percent) of each group was living in poverty in Kansas, while the rate among non-Hispanic Other/Multiple Races was 19.6 percent. By contrast, the poverty rate among non-Hispanic Whites was 10.6 percent. Longitudinal analysis demonstrates that these disparities have persisted for many years.

Considerable disparities also exist regarding educational attainment, an important determinant of health intrinsically linked to socioeconomic status. While only 6.4 percent of non-Hispanic White adults age 25 and over in Kansas had attained less than a high school education, the rate among non-Hispanic Blacks was twice as high, at 12.8 percent. The rate among Hispanics, Any Race was 38.7 percent. Similar disparities are reflected in four-year high school graduation rates reported by the Kansas State Department of Education. Among non-Hispanic Whites, the four-year graduation rate in 2016–2017 was 91.3 percent for females and 87.2 percent for males. The four-year graduation rate in 2016–2017 among non-Hispanic Black males was 72.8 percent, the lowest of any group.

Minority groups in Kansas also experience disparities in access to health care. The uninsured rate among non-Hispanic Whites was 8.7 percent, while rates among minority groups were 16.5 percent among non-Hispanic Blacks, 14.0 percent among non-Hispanic Other/Multiple Races, and 26.9 percent among Hispanics, Any Race.

Poor nutritional behaviors, inadequate physical activity and tobacco use are major contributing factors to chronic disease and premature death in the United States. More than 86.0 percent of adults in Kansas report not eating enough fruits and vegetables in the last month, and this was the case among all racial and ethnic groups. More than one in four (25.3 percent) adults reported not engaging in any physical activity or exercise outside their regular job in the last month. And, nearly one in five (19.5 percent) Kansas adults reported currently smoking.

Finally, as a measure of civic and community engagement, Kansas has 13.9 social associations—civic organizations, bowling centers, golf clubs, fitness centers, sports organizations, religious organizations, political organizations, labor organizations, business organizations and professional organizations—per 10,000 population. The rate of social associations varies considerably by county, but rates are generally higher in rural counties in the western part of the state.

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1.0 Introduction

The population of Kansas is aging, becoming increasingly diverse and concentrating in urban areas. Overall, the population increased from 2.7 million in 2000 to an estimated 2.9 million in 2016, representing a growth rate of approximately 8.1 percent. However, the growth occurred only in urban and more highly populated areas of the state. Using population density county peer groups defined by the Kansas Department of Health and Environment (KDHE),[1] populations in Urban and Semi-Urban counties increased by 17.0 percent and 7.1 percent, respectively, from 2000 to 2016, while substantial declines were observed in Frontier (-15.0 percent), Rural (-7.2 percent) and Densely Settled Rural (-2.5 percent) counties. Overall, 82 of Kansas' 105 counties experienced population declines from 2000 to 2016.[2]

At the state level, minority populations (defined as any racial or ethnic group other than non-Hispanic White) increased by 52.5 percent, from 428,130 in 2000 to 652,708 in 2016. During this same period, the non-Hispanic White population declined by 0.3 percent, from 2,260,288 in 2000 to 2,254,581 in 2016. Despite the overall population declines in the rural counties of the state, these counties have become substantially more diverse. Minority populations grew by 63.3 percent in Frontier counties, 63.8 percent in Rural counties, and 36.2 percent in Densely Settled Rural counties.[3]

In 2000, the median age of Kansans was 35.2 years, and there were 356,229 Kansans age 65 and over, comprising 13.3 percent of the population.[4] By 2016, the estimated median age had increased to 36.5 years and the population of Kansans age 65 and over had increased to 436,993, comprising an estimated 15.0 percent of the population.[5] According to previous population projection research in Kansas, as baby boomers age, a projected 24.2 percent of the population in Kansas will be age 65 and over by the year 2034.[6]

Previous research has projected the U.S. population to increase by 29.6 percent between 2015 and 2060, while the growth rate in Kansas from 2014 to 2064 has been projected to be just 21.8 percent. The annual growth rate in the working age population in Kansas is projected to be half that of the U.S. (0.2 percent versus 0.4 percent, respectively).[7]

These trends and projections will likely have substantial impacts on public health, and highlight some potential challenges for governments, health and human services organizations, and education systems throughout the state. Governments, particularly in rural areas, will face

increasing pressure on local budgets to fund basic infrastructure and essential programs. Hospitals and other health care providers will be challenged to care for larger numbers of patients with chronic diseases and complex medical conditions associated with older populations, and to be adequately compensated for providing that care. Rural school districts will be confronted with the challenges of providing high-quality education in an environment of dwindling state aid based on per-pupil funding formulas as their student populations decrease. Across all these sectors, and others, there will be cross-cutting challenges of workforce recruitment and retention and other components of economic development.

This report builds on previous work and reflects new research to describe the changes in Kansas' population since 1960 and population projections through the year 2066 and presents information and data in the areas of poverty, education, access to care, healthy food access, physical activity, tobacco and civic and community engagement. This report draws heavily from the 2017 *Chartbook: Racial and Ethnic Health Disparities in a Changing Kansas*, published by the Kansas Health Institute.[8]

2.0 Population Patterns

2.1 Historical Population Patterns in the United States

Population patterns—growth and decline, age distribution, racial and ethnic characteristics and other factors—have important implications not only for public health, but for education, business and other major sectors of a community. In this section, demographic patterns related to overall population change, changes in age distribution and changes in racial/ethnic populations in the U.S. are presented.

2.1.1 Population Change in the United States Between 1960 and 2016

From 1960 to 2016, the population of the U.S. increased from 179,323,175 to 323,127,513, an increase of 80.2 percent (143,804,338). In each 10-year interval, there was an increase in the total population ranging from 13.3 percent (1960 to 1970) to 9.7 percent (2000 to 2010). See *Figure 2.2.1a* and *Figure 2.2.1b* (page 4).

Figure 2.1.1a. **Population Change (Percent) in the United States, 1960 to 2016**

Source: KHI analysis of U.S. Census Bureau Census Counts for 1960 to 2010 and the U.S. Census Bureau's June 2017 Vintage 2016 Population Estimates.

Figure 2.1.1b. **Population Patterns by Decade in the United States, 1960 to 2016**

Year	Population	Population Change from Previous Decade	Percent Change from Previous Decade	Population Change from 1960	Percent Change From 1960
1960	179,323,175	-	-	-	-
1970	203,211,926	23,888,751	13.3%	23,888,751	13.3%
1980	226,545,805	23,333,879	11.5%	47,222,630	26.3%
1990	248,709,873	22,164,068	9.8%	69,386,698	38.7%
2000	281,421,906	32,712,033	13.2%	102,098,731	56.9%
2010	308,745,538	27,323,632	9.7%	129,422,363	72.2%
2016	323,127,513	14,381,975	4.7%	143,804,338	80.2%

Source: KHI analysis of U.S. Census Bureau Census Counts for 1960 to 2010 and the U.S. Census Bureau's June 2017 Vintage 2016 Population Estimates.

2.1.2 Population Change by Race/Ethnicity in the United States Between 2000 and 2016

Population growth patterns in the U.S. between 2000 and 2016 varied substantially by race and ethnicity (*Figure 2.1.2a*, page 5), resulting in a more diverse population (*Figure 2.1.2b*, page 6). The non-Hispanic White population increased by just 2.0 percent, from 197,324,684 to 201,324,760. By contrast, minority populations—defined as any population group other than non-Hispanic White—increased by 44.8 percent, from 84,097,222 to 121,802,753.

The non-Hispanic Black population increased by 20.1 percent, from 35,091,809 to 42,141,669. The non-Hispanic American Indian/Alaska Native population increased by 15.7 percent, from 2,344,042 to 2,711,067. The highest growth rate occurred among the non-Hispanic Asian/Pacific Islander population, which increased by 71.5 percent, from 11,355,553 to 19,479,730. The Hispanic, Any Race population increased by 62.8 percent, from 35,305,818 to 57,470,287.

Figure 2.1.2a. **Population Change (Percent) in the United States by Race/Ethnicity, Between 2000 and 2016**

	All US	White, Non-Hispanic	All Minorities	Black, Non-Hispanic	American Indian/ Alaska Native, Non-Hispanic	Asian/ Pacific Islander, Non-Hispanic	Hispanic, Any Race
United States Population: 2000	281,421,906	197,324,684	84,097,222	35,091,809	2,344,042	11,355,553	35,305,818
United States Population: 2016	323,127,513	201,324,760	121,802,753	42,141,669	2,711,067	19,479,730	57,470,287
Percent Change in Population: 2000 to 2016	14.8%	2.0%	44.8%	20.1%	15.7%	71.5%	62.8%

Source: KHI analysis of data from the National Center for Health Statistics' (NCHS) April 1, 2000 bridged-race population estimates and the NCHS's June 2017 Vintage July 1, 2016 bridged-race population estimates.

Figure 2.1.2b. **Racial/Ethnic Composition of the United States, 2000 and 2016**

Source: KHI analysis of data from the National Center for Health Statistics' (NCHS) April 1, 2000 bridged-race population estimates and the NCHS's June 2017 Vintage July 1, 2016 bridged-race population estimates.

2.1.3 Population Change by Rural and Urban Composition in the United States Between 1910 and 2010

Between 1910 and 2010, the rural and urban composition of the U.S. population has changed considerably (*Figure 2.1.3a)*. In 1910, the rural and urban population was split roughly in half, with the rural population having a slightly higher population (54.4 percent) than urban areas (45.6 percent). By 2010, the rural population represented only about one-fifth (19.3 percent) of the population of the U.S., while four-in-five Americans lived in urban areas.

Figure 2.1.3a. **Change in Rural and Urban Population Size in the United States, 1910–2010**

Note: The U.S. Census Bureau's definitions of urban and rural have changed across time. See the U.S. Census Bureau's 2010 Census Urban Area FAQs: Urban-Rural Classification Program for details.

Source: U.S. Census Bureau, 2016.

2.2 Historical Population Patterns in Kansas

2.2.1 Population Change in Kansas Between 1960 and 2016

From 1960 to 2016, the population of Kansas increased by 33.4 percent, from 2,178,611 to 2,907,289. However, there were dramatically different population change patterns between urban and rural counties. For analysis of population changes, this report uses the population density categories determined by KDHE (*Figures 2.2.1a* and *2.2.1b*, pages 9 and 10).

Between 1960 and 2016, population growth was highest in Urban counties, which increased by 80.8 percent, from 906,048 to 1,638,067. Semi-Urban counties increased by 24.2 percent, from 370,194 to 459,663. Densely Settled Rural counties experienced a net increase of 11.6 percent between 1960 and 2016, from 420,305 to 469,376. However, after a peak of 481,501, the population decreased in Densely Settled Rural counties by 1.1 percent between 2000 and 2010 and by 1.5 percent between 2010 and 2016. The population gains in these counties were offset by population decreases in less densely populated counties in the state. Rural counties decreased by 22.2 percent, from 297,531 to 231,485, and Frontier counties decreased by 41.1 percent, from 184,403 to 108,698.

Figure 2.2.1a. **Population by Year and County Population Density in Kansas, 1960 to 2016**

	1960	1970	1980	1990	2000	2010	2016
Kansas	2,178,611	2,246,578	2,363,679	2,477,574	2,688,418	2,853,118	2,907,289
Frontier	184,403	161,140	151,192	135,348	127,893	113,811	108,698
Rural	297,531	268,295	269,817	249,684	249,506	238,338	231,485
Densely Settled Rural	420,435	420,138	449,735	453,954	481,501	476,391	469,376
Semi-Urban	370,194	375,210	406,435	410,734	429,157	459,542	459,663
Urban	906,048	1,021,795	1,086,500	1,227,854	1,400,361	1,565,036	1,638,067

Source: KHI analysis of data from the Integrated Public Use Microdata Series' 1960–2010 National Historical Geographical Information Systems and the U.S. Census Bureau's June 2017 Vintage 2016 Population Estimates.

Figure 2.2.1b. **Population Change (Percent) by County Population Density in Kansas, Between 1960 and 2016**

Source: KHI analysis of data from the Integrated Public Use Microdata Series' 1960–2010 National Historical Geographical Information Systems and the U.S. Census Bureau's June 2017 Vintage 2016 Population Estimates.

2.2.2 Population Change by County Population Density in Kansas Between 1960 and 2016

Between each successive 10-year interval from 1960 to 2016, there was an increase in total population ranging from 3.1 percent (1960 to 1970) to 8.5 percent (1990 to 2000).

From 1960 to 2016, the growth in Kansas counties differed by population density (*Figure 2.2.2a*). Positive population growth in the state largely occurred in Semi-Urban and Urban counties, where populations grew during each time interval. Conversely, in Frontier and Rural counties, there were population declines across all intervals except from 1970 to 1980, when the population in Rural counties grew slightly. Densely Settled Rural counties fluctuated between positive and negative growth over time.

Figure 2.2.2a. **Population Change (Percent) Between Decades by County Population Density in Kansas, 1960 to 2016**

	1960 to 1970	1970 to 1980	1980 to 1990	1990 to 2000	2000 to 2010	2010 to 2016
Kansas	3.1%	5.2%	4.8%	8.5%	6.1%	1.9%
Frontier	-12.6%	-6.2%	-10.5%	-5.5%	-11.0%	-4.5%
Rural	-9.8%	0.6%	-7.5%	-0.1%	-4.5%	-2.9%
Densely Settled Rural	-0.1%	7.0%	0.9%	6.1%	-1.1%	-1.5%
Semi-Urban	1.4%	8.3%	1.1%	4.5%	7.1%	<0.1%
Urban	12.8%	6.3%	13.0%	14.0%	11.8%	4.7%

Source: KHI analysis of data from the Integrated Public Use Microdata Series' 1960–2010 National Historical Geographical Information Systems and the U.S. Census Bureau's June 2017 Vintage 2016 Population Estimates.

2.2.3 Population Change by Race/Ethnicity in Kansas Between 2000 and 2016

All the population growth in Kansas between 2000 and 2016 was among minority populations. The non-Hispanic White population decreased by 0.3 percent, from 2,260,288 to 2,254,581 (*Figure 2.2.3a*, page 14). Non-Hispanic Whites made up 84.1 percent of the population in Kansas in 2000; by 2016, non-Hispanic Whites made up only 77.5 percent of the population (*Figure 2.2.3b*, page 15). By contrast, minority populations—defined as any population group other than non-Hispanic White—increased by 52.5 percent, from 428,130 to 652,708.

The non-Hispanic Black population increased by 19.1 percent, from 161,766 to 192,710, and their share of the population increased from 6.0 percent to 6.6 percent. The non-Hispanic American Indian/Alaska Native population increased by 8.0 percent, from 26,757 to 28,896, although their share of the population did not change. The highest growth rate occurred among the non-Hispanic Asian/Pacific Islander population, which increased by 80.4 percent, from 51,355 to 92,621, while their share of the population increased from 1.9 percent to 3.2 percent. The Hispanic, Any Race population increased by 79.8 percent, from 188,252 to 338,481, and their share of the population increased from 7.0 percent to 11.6 percent.

Figure 2.2.3a. **Population Change (Percent) by Race/Ethnicity in Kansas, Between 2000 and 2016**

	All Kansans	White, Non-Hispanic	All Minorities	Black, Non-Hispanic	American Indian/ Alaska Native, Non-Hispanic	Asian/ Pacific Islander, Non-Hispanic	Hispanic, Any Race
Kansas Population: 2000	2,688,418	2,260,288	428,130	161,766	26,757	51,355	188,252
Kansas Population: 2016	2,907,289	2,254,581	652,708	192,710	28,896	92,621	338,481
Percent Change in Population: 2000 to 2016	8.1%	-0.3%	52.5%	19.1%	8.0%	80.4%	79.8%

Source: KHI analysis of data from the National Center for Health Statistics' (NCHS) April 1, 2000 bridged-race population estimates and the NCHS's June 2017 Vintage July 1, 2016 bridged-race population estimates.

Figure 2.2.3b. **Racial/Ethnic Composition of Kansas, 2000 and 2016**

Source: KHI analysis of data from the National Center for Health Statistics' (NCHS) April 1, 2000 bridged-race population estimates and the NCHS's June 2017 Vintage July 1, 2016 bridged-race population estimates.

2.2.4 Population Change by Age Distribution in Kansas Between 2000 and 2016

From 2000 to 2016, the median age in Kansas increased from 35.2 to 36.5, with the proportion of older Kansans increasing.

Examining the age distribution for All Kansans in 2000 and 2016, the population pyramids (*Figure 2.2.4a*) for the state indicate a slowing population growth and a growing proportion of older Kansans, matching the increase in median age.

Figure 2.2.4a. **Population Pyramid for All Kansans, 2000 and 2016**

Source: KHI analysis of data from the National Center for Health Statistics' (NCHS) April 1, 2000 bridged-race population estimates and the NCHS's June 2017 Vintage July 1, 2016 bridged-race population estimates.

2.2.4.1 Age Distribution by Race/Ethnicity

While all race/ethnicity groups had an increase in median age, the highest median age was for non-Hispanic Whites at 37.3 years in 2000, which increased to 40.0 years by 2016. In contrast, the All Minorities group had a median age that was 25.4 years in 2000 and 26.8 years in 2016.

As non-Hispanic Whites represent the majority population in the state, the population pyramids for this group (*Figure 2.2.4.1a*, page 18) mirrored age patterns in the state overall. For All Minorities in Kansas (*Figure 2.2.4.1b*, page 18), the base of the pyramid narrowed slightly from 2000 but was still much wider than for non-Hispanic Whites, indicating faster population growth for All Minorities in Kansas in both 2000 and 2016.

A comparison of the total non-Hispanic White and the All Minorities populations in 2000 and 2016 (*Figure 2.2.4.1c*, page 19) highlights the overall differences in the population structures for the two groups.

Figure 2.2.4.1a. **Population Pyramid for non-Hispanic Whites in Kansas, 2000 and 2016**

Source: KHI analysis of data from the National Center for Health Statistics' (NCHS) April 1, 2000 bridged-race population estimates and the NCHS's June 2017 Vintage July 1, 2016 bridged-race population estimates.

Figure 2.2.4.1b. **Population Pyramid All Minorities in Kansas, 2000 and 2016**

Source: KHI analysis of data from the National Center for Health Statistics' (NCHS) April 1, 2000 bridged-race population estimates and the NCHS's June 2017 Vintage July 1, 2016 bridged-race population estimates.

Figure 2.2.4.1c. **Population Pyramids for non-Hispanic Whites Versus All Minorities in Kansas, 2000 and 2016**

Source: KHI analysis of data from the National Center for Health Statistics' (NCHS) April 1, 2000 bridged-race population estimates and the NCHS's June 2017 Vintage July 1, 2016 bridged-race population estimates.

2.2.5 Population Change by Race/Ethnicity, County Population Density and County in Kansas Between 2000 and 2016

Population growth patterns among racial and ethnic groups between 2000 and 2016 differed substantially by county population density categories and counties. Although the non-Hispanic White population increased in Urban counties by 7.2 percent (80,424) and in Semi-Urban counties by 1.7 percent (4,874), these increases were offset by population decreases in less populated counties, resulting in a net decrease of 0.3 percent (5,707) at the state level. Racial/ethnic minority populations experienced growth across all population density categories in the state between 2000 and 2016. When considering all minority populations together (i.e., any racial or ethnic group that is not non-Hispanic White), growth rates were highest in Rural and Frontier counties (63.8 and 63.3 percent, respectively), followed by Urban counties at 56.1 percent and Semi-Urban counties at 51.0 percent. In Densely Settled Rural counties, the growth rate among all minorities was 36.2 percent (*Figure 2.2.5a*, page 20 and *Figure 2.2.5b*, page 21).

Figure 2.2.5a. **Population Change by Race/Ethnicity and County Population Density in Kansas, Between 2000 and 2016**

	All Kansans	White, Non-Hispanic	All Minorities	Black, Non-Hispanic	American Indian/ Alaska Native, Non-Hispanic	Asian/Pacific Islander, Non-Hispanic	Hispanic, Any Race
Kansas	218,871	-5,707	224,578	30,944	2,139	41,266	150,229
Frontier	-19,195	-24,334	5,139	729	206	342	3,862
Rural	-18,021	-27,435	9,414	1,229	181	852	7,152
Densely Settled Rural	-12,125	-39,236	27,111	3,251	267	1,964	21,629
Semi-Urban	30,506	4,874	25,632	3,482	405	4,176	17,569
Urban	237,706	80,424	157,282	22,253	1,080	33,932	100,017

Source: KHI analysis of data from the National Center for Health Statistics' (NCHS) April 1, 2000 bridged-race population estimates and the NCHS's June 2017 Vintage July 1, 2016 bridged-race population estimates.

Figure 2.2.5b. **Population Change (Percent) by Race/Ethnicity and County Population Density in Kansas, Between 2000 and 2016**

	All Kansans	White, Non-Hispanic	All Minorities	Black, Non-Hispanic	American Indian/ Alaska Native, Non-Hispanic	Asian/Pacific Islander, Non-Hispanic	Hispanic, Any Race
Kansas	8.1%	-0.3%	52.5%	19.1%	8.0%	80.4%	79.8%
Frontier	-15.0%	-20.3%	63.3%	117.6%	29.7%	114.4%	59.4%
Rural	-7.2%	-11.7%	63.8%	54.1%	8.6%	129.7%	73.6%
Densely Settled Rural	-2.5%	-9.6%	36.2%	36.3%	4.6%	38.8%	39.3%
Semi-Urban	7.1%	1.3%	51.0%	17.1%	8.9%	69.1%	91.5%
Urban	17.0%	7.2%	56.1%	17.2%	8.0%	86.4%	102.2%

Source: KHI analysis of data from the National Center for Health Statistics' (NCHS) April 1, 2000 bridged-race population estimates and the NCHS's June 2017 Vintage July 1, 2016 bridged-race population estimates.

Eighty-two (82) counties experienced population losses between 2000 and 2016 in Kansas (*Figure 2.2.5c*). The 23 counties with population growth resulted in the total Kansas population increasing between 2000 and 2016.

Figure 2.2.5c. **Total Population Change (Percent) by County in Kansas, Between 2000 and 2016**

Source: KHI analysis of data from the National Center for Health Statistics' (NCHS) April 1, 2000 bridged-race population estimates and the NCHS's June 2017 Vintage July 1, 2016 bridged-race population estimates.

Growth in the non-Hispanic White population between 2000 and 2016 was limited to counties in—or in close proximity to—three urban areas, including six counties in northeast Kansas around the Kansas City metropolitan area (excluding Wyandotte County), all three counties that make up the Manhattan-Junction City Combined Statistical Area, and three counties in the Wichita metropolitan area (*Figure 2.2.5d*, page 23). The 93 remaining counties in all other areas of the state experienced a decline in the non-Hispanic White population over that period.

The minority population grew in every county in the state (*Figure 2.2.5e*, page 23) between 2000 and 2016. It more than doubled in 30 counties, including the largest county in the state, Johnson County.

Figure 2.2.5d. **Non-Hispanic White Population Change (Percent) by County in Kansas, Between 2000 and 2016**

Source: KHI analysis of data from the National Center for Health Statistics' (NCHS) April 1, 2000 bridged-race population estimates and the NCHS's June 2017 Vintage July 1, 2016 bridged-race population estimates.

Figure 2.2.5e. **Minority Population Change (Percent) by County in Kansas, Between 2000 and 2016**

Source: KHI analysis of data from the National Center for Health Statistics' (NCHS) April 1, 2000 bridged-race population estimates and the NCHS's June 2017 Vintage July 1, 2016 bridged-race population estimates.

3.0 Population Projections

The U.S. population is projected to grow from approximately 323.1 million in 2016 to 403.7 million in 2060, an increase of 24.9 percent. The projected growth rate among adults age 65 and over (92.3 percent) is six to nearly 11 times higher than for children and adults through age 64 (8.4 to 15.1 percent). The non-Hispanic White population is projected to decrease by 9.6 percent, from approximately 198.0 million to 178.9 million, while the non-Hispanic Black population is projected to increase by 40.6 percent, from approximately 43.0 million to 60.5 million. The Hispanic, Any Race population is projected to increase by 93.2 percent, from approximately 57.5 million to 111.0 million.[9] By the year 2045, the United States is projected to shift to a majority, minority country, meaning that less than half of the population will be non-Hispanic Whites.[10]

The population of Kansas is also aging and becoming increasingly diverse. It is also becoming more concentrated in urban areas. To understand how the population in the state might continue to evolve, KHI engaged the Center for Economic Development and Business Research (CEDBR) at Wichita State University to develop population projections through the year 2066 by age group, gender, race and Hispanic ethnicity at the state and regional levels, using 2016 as a baseline year.

The population projections are based on a statistical model of population forecasting that uses recent trend data in Kansas for births and deaths (2005 to 2016) and migration patterns (between 2000 and 2010) by age and gender groups for each geographic area. This model assumes birth rates and mortality rates will continue their historical trends, and migration patterns will be constant. These projections do not account for potential future changes in immigration or economic development policies, technological advances or other factors that could influence birth, mortality or migration patterns, which could have substantial impacts on population patterns.

Sub-state geographic regions, as depicted in *Figure 3.0a*, page 25, were defined using the Kansas Department of Health and Environment Preparedness Healthcare Coalition region boundaries as a general guide.[11] Some of these regions were defined using micropolitan or metropolitan statistical areas as determined by the federal Office of Management and Budget and published by the U.S. Census Bureau.[12] Other regions were defined specifically for this report. Counties

not included in a micropolitan or metropolitan statistical area were classified as rural. Separate projections were calculated for Johnson County and Wyandotte County in the Kansas City, Kansas, Metropolitan Region, and for Sedgwick County in the Wichita Metropolitan Statistical Area. The Kansas and regional population projections use 2016 as a base year, with projections based on the age-cohort survival model of population forecasting.[13] A detailed description of the methodology is available in *Appendix B*.

Figure 3.0a. **Population Projection Regions in Kansas**

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

3.1 State-Level Projections

Figure 3.1a. **Population Projections by Total Population, Age Group and Race/Ethnicity in Kansas, 2016–2066**

Kansas	2016	2036	2016–2036 % Change	2066	2016–2066 % Change
Total Population	2,907,289	3,220,161	***10.8%***	3,637,037	***25.1%***
Age Group					
Age 14 and under	595,053	627,855	***5.5%***	694,996	***16.8%***
Age 15 to 24	417,031	424,321	***1.7%***	472,809	***13.4%***
Age 25 to 64	1,458,212	1,523,208	***4.5%***	1,728,517	***18.5%***
Age 65 and over	436,993	644,778	***47.5%***	740,715	***69.5%***
Race/Ethnicity					
White, Non-Hispanic	2,254,581	2,118,722	***-6.0%***	1,765,981	***-21.7%***
Black, Non-Hispanic	192,710	235,597	***22.3%***	271,921	***41.1%***
Other/Multiple Races, Non-Hispanic	121,517	185,141	***52.4%***	289,622	***138.3%***
Hispanic, Any Race	338,481	680,701	***101.1%***	1,309,513	***286.9%***

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

The population in Kansas is expected to increase 25.1 percent between 2016 and 2066, from 2,907,289 to 3,637,037. While the number of people in all age groups will increase over this period, the increase will be four to five times greater for those age 65 and over (69.5 percent) than for younger age groups (13.4 to 18.5 percent). While the non-Hispanic White population is projected to decrease by 21.7 percent, from 2,254,581 to 1,765,981, the non-Hispanic Black population is projected to increase by 41.1 percent, from 192,710 to 271,921. The Hispanic, Any Race population is projected to nearly quadruple, from 338,481 to 1,309,513, an increase of 286.9 percent. At some point between 2061 and 2066, Kansas is projected to become a majority, minority state, meaning that less than half of the population will be non-Hispanic Whites (*Figures 3.1a*, *3.1b* and *3.1c*, pages 26–27).

Figure 3.1b. **Population Projections by Age Group in Kansas, 2016–2066**

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

Figure 3.1c. **Population Projections by Race/Ethnicity in Kansas, 2016–2066**

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

3.2 Kansas City, Kansas, Metropolitan Region Projections

Figure 3.2a. **Population Projections by Total Population, Age Group, Race/Ethnicity in the Kansas City, Kansas, Metropolitan Region, 2016–2066**

Kansas City, Kansas Metropolitan Region	2016	2036	2016–2036 % Change	2066	2016–2066 % Change
Total Population	896,568	1,078,067	***20.2%***	1,295,724	***44.5%***
Age Group					
Age 14 and under	188,964	206,749	***9.4%***	241,187	***27.6%***
Age 15 to 24	110,377	126,203	***14.3%***	149,788	***35.7%***
Age 25 to 64	476,345	548,523	***15.2%***	638,797	***34.1%***
Age 65 and over	120,882	196,592	***62.6%***	265,951	***120.0%***
Race/Ethnicity					
White, Non-Hispanic	675,024	679,033	***0.6%***	603,654	***-10.6%***
Black, Non-Hispanic	78,824	95,226	***20.8%***	107,191	***36.0%***
Other/Multiple Races, Non-Hispanic	44,770	78,754	***75.9%***	124,275	***177.6%***
Hispanic, Any Race	97,950	225,053	***129.8%***	460,604	***370.2%***

Note: The Kansas City, Kansas, Metropolitan Region was defined for this report and consists of the following counties: Franklin, Johnson, Leavenworth, Linn, Miami and Wyandotte.

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

The population of the Kansas City, Kansas, Metropolitan Region is projected to increase 44.5 percent between 2016 and 2066, from 896,568 to 1,295,724. This growth rate is largely driven by growth in the most populous county in the region, Johnson County, which is discussed later in this report. Projected growth rates by age group show a pattern that is similar to the state, with growth rates among those age 65 and over (120.0 percent) four to five times higher than younger age groups (27.6 to 35.7 percent). While the non-Hispanic White population is projected to decrease by 10.6 percent during this period, from 675,024 to 603,654, the non-Hispanic Black population is projected to increase by 36.0 percent, from 78,824 to 107,191. The Hispanic, Any Race population is projected to increase by almost five times, from 97,950 to 460,604, an increase of 370.2 percent. At some point between 2056 and 2061, the Kansas City, Kansas, Metropolitan Region is projected to become a majority/minority region, meaning that less than half of the population will be non-Hispanic White (*Figures 3.2a*, *3.2b* and *3.2c*, pages 28–29).

Figure 3.2b. **Population Projections by Age Group in the Kansas City, Kansas, Metropolitan Region, 2016–2066**

Note: The Kansas City, Kansas, Metropolitan Region was defined for this report and consists of the following counties: Franklin, Johnson, Leavenworth, Linn, Miami and Wyandotte.

Source: Projections of population and race/ ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

Figure 3.2c. **Population Projections by Race/Ethnicity in the Kansas City, Kansas, Metropolitan Region, 2016–2066**

Note: The Kansas City, Kansas, Metropolitan Region was defined for this report and consists of the following counties: Franklin, Johnson, Leavenworth, Linn, Miami and Wyandotte.

Source: Projections of population and race/ ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

3.2.1 Johnson County Projections

Figure 3.2.1a. **Population Projections by Total Population, Age Group and Race/Ethnicity in Johnson County, 2016–2066**

Johnson County	2016	2036	2016–2036 % Change	2066	2016–2066 % Change
Total Population	584,451	729,782	***24.9%***	923,887	***58.1%***
Age Group					
Age 14 and under	119,949	140,056	***16.8%***	172,761	***44.0%***
Age 15 to 24	71,210	82,010	***15.2%***	104,961	***47.4%***
Age 25 to 64	313,487	380,213	***21.3%***	463,769	***47.9%***
Age 65 and over	79,805	127,503	***59.8%***	182,396	***128.6%***
Race/Ethnicity					
White, Non-Hispanic	477,101	499,740	***4.7%***	479,731	***0.6%***
Black, Non-Hispanic	30,959	47,962	***54.9%***	77,149	***149.2%***
Other/Multiple Races, Non-Hispanic	32,697	61,255	***87.3%***	99,123	***203.2%***
Hispanic, Any Race	43,694	120,825	***176.5%***	267,884	***513.1%***

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

Johnson County, which is included in the Kansas City, Kansas, Metropolitan Region, has experienced high population growth rates for many decades, and that trend is projected to continue. The population is projected to increase 58.1 percent between 2016 and 2066, from 584,451 to 923,887. This growth rate is more than twice that of the state rate. The projected growth rates are highest among those age 65 and over (128.6 percent) and are nearly three times higher than those among younger age groups (44.0 to 47.9 percent). The non-Hispanic White population is projected to increase by only 0.6 percent during this period, from 477,101 to 479,731, while the non-Hispanic Black population is projected to increase by 149.2 percent, from 30,959 to 77,149. The Hispanic, Any Race population is projected to increase by more than six times, from 43,694 to 267,884, an increase of 513.1 percent (*Figures 3.2.1a*, *3.2.1b* and *3.2.1c*, pages 30–31).

Figure 3.2.1b. **Population Projections by Age Group in Johnson County, 2016–2066**

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

Figure 3.2.1c. **Population Projections by Race/Ethnicity in Johnson County, 2016–2066**

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

3.2.2 Wyandotte County Projections

Figure 3.2.2a. **Population Projections by Total Population, Age Group and Race/Ethnicity in Wyandotte County, 2016–2066**

Wyandotte County	2016	2036	2016–2036 % Change	2066	2016–2066 % Change
Total Population	163,831	191,533	***16.9%***	246,004	***50.2%***
Age Group					
Age 14 and under	39,260	42,677	***8.7%***	52,407	***33.5%***
Age 15 to 24	21,186	25,717	***21.4%***	32,510	***53.4%***
Age 25 to 64	84,521	91,824	***8.6%***	118,452	***40.1%***
Age 65 and over	18,864	31,316	***66.0%***	42,636	***126.0%***
Race/Ethnicity					
White, Non-Hispanic	69,707	51,823	***-25.7%***	27,536	***-60.5%***
Black, Non-Hispanic	38,865	32,167	***-17.2%***	19,090	***-50.9%***
Other/Multiple Races, Non-Hispanic	8,868	13,090	***47.6%***	18,263	***105.9%***
Hispanic, Any Race	46,391	94,453	***103.6%***	181,115	***290.4%***

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

The population of Wyandotte County, which is included in the Kansas City, Kansas, Metropolitan Region, is projected to increase by 50.2 percent between 2016 and 2066, from 163,831 to 246,004. The projected growth rate among those age 65 and over (126.0 percent) is three to nearly four times higher than those among younger age groups (33.5 to 40.1 percent). The non-Hispanic White population is projected to decline by 60.5 percent, from 69,707 to 27,536. Rare among urban areas in the state, the non-Hispanic Black population is also projected to decline by 50.9 percent, from 38,865 to 19,090. The Hispanic, Any Race population is projected to nearly quadruple, from 46,391 to 181,115, an increase of 290.4 percent. Wyandotte County is already a majority/minority county, meaning that less than half of the population is non-Hispanic White (*Figures 3.2.2a*, *3.2.2b* and *3.2.2c*, pages 32–33).

Figure 3.2.2b. **Population Projections by Age Group in Wyandotte County, 2016–2066**

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

Figure 3.2.2c. **Population Projections by Race/Ethnicity in Wyandotte County, 2016–2066**

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

3.3 Lawrence Metropolitan Statistical Area Projections

Figure 3.3a. **Population Projections by Total Population, Age Group and Race/Ethnicity in the Lawrence Metropolitan Statistical Area, 2016–2066**

Lawrence Metropolitan Statistical Area	2016	2036	2016–2036 % Change	2066	2016–2066 % Change
Total Population	119,440	168,041	***40.7%***	269,802	***125.9%***
Age Group					
Age 14 and under	18,796	39,737	***111.4%***	59,735	***217.8%***
Age 15 to 24	32,269	31,886	***-1.2%***	49,089	***52.1%***
Age 25 to 64	54,975	74,560	***35.6%***	128,823	***134.3%***
Age 65 and over	13,400	21,857	***63.1%***	32,156	***140.0%***
Race/Ethnicity					
White, Non-Hispanic	96,304	117,948	***22.5%***	158,143	***64.2%***
Black, Non-Hispanic	6,371	8,978	***40.9%***	12,569	***97.3%***
Other/Multiple Races, Non-Hispanic	9,438	19,350	***105.0%***	45,723	***384.5%***
Hispanic, Any Race	7,278	21,751	***198.9%***	53,349	***633.0%***

Note: The Lawrence Metropolitan Statistical Area consists of Douglas County.

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

The population of the Lawrence Metropolitan Statistical Area is projected to increase by 125.9 percent between 2016 and 2066, from 119,440 to 269,802. In contrast to most other areas of the state, the highest growth rate is projected among children age 14 and under (217.8 percent). The non-Hispanic White population is projected to increase by 64.2 percent, from 96,304 to 158,143, while the non-Hispanic Black population is projected to increase by 97.3 percent, from 6,371 to 12,569. The non-Hispanic Other/Multiple Races population is projected to grow by 384.5 percent, from 9,438 to 45,723, while the Hispanic, Any Race population is projected to increase by more than seven times, from 7,278 to 53,349 (*Figures 3.3a*, *3.3b* and *3.3c*, pages 34–35).

Figure 3.3b. **Population Projections by Age Group in the Lawrence Metropolitan Statistical Area, 2016–2066**

Note: The Lawrence Metropolitan Statistical Area consists of Douglas County.

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

Figure 3.3c. **Population Projections by Race/Ethnicity in the Lawrence Metropolitan Statistical Area, 2016–2066**

Note: The Lawrence Metropolitan Statistical Area consists of Douglas County.

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

3.4 Topeka Metropolitan Statistical Area Projections

Figure 3.4a. **Population Projections by Total Population, Age Group and Race/Ethnicity in the Topeka Metropolitan Statistical Area, 2016–2066**

Topeka Metropolitan Statistical Area	2016	2036	2016–2036 % Change	2066	2016–2066 % Change
Total Population	233,068	241,587	***3.7%***	250,224	***7.4%***
Age Group					
Age 14 and under	46,060	45,387	***-1.5%***	47,068	***2.2%***
Age 15 to 24	28,758	28,856	***0.3%***	30,255	***5.2%***
Age 25 to 64	117,755	110,844	***-5.9%***	117,898	***0.1%***
Age 65 and over	40,495	56,499	***39.5%***	55,003	***35.8%***
Race/Ethnicity					
White, Non-Hispanic	185,726	163,931	***-11.7%***	121,257	***-34.7%***
Black, Non-Hispanic	17,296	20,451	***18.2%***	22,092	***27.7%***
Other/Multiple Races, Non-Hispanic	6,780	8,415	***24.1%***	10,885	***60.6%***
Hispanic, Any Race	23,266	48,790	***109.7%***	95,989	***312.6%***

Note: The Topeka Metropolitan Statistical Area consists of the following counties: Jackson, Jefferson, Osage, Shawnee and Wabaunsee.

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

Overall, the Topeka Metropolitan Statistical Area is projected to have relatively moderate population growth in comparison to other metropolitan areas in the state. The total population is projected to increase 7.4 percent between 2016 and 2066, from 233,068 to 250,224. Projected growth among adults age 25 to 64 is nearly flat (0.1 percent) and is also low among children and adolescents (2.2 to 5.2 percent). The projected growth rate among people age 65 and over (35.8 percent) is substantially higher. The non-Hispanic White population is projected to decrease by 34.7 percent, from 185,726 to 121,257, while the non-Hispanic Black population is projected to increase by 27.7 percent, from 17,296 to 22,092. The Hispanic, Any Race population is projected to more than quadruple, from 23,266 to 95,989, an increase of 312.6 percent. At some point between 2061 and 2066, the Topeka Metropolitan Statistical Area is projected to become a majority/minority region, meaning that less than half of the population will be non-Hispanic White (*Figures 3.4a*, *3.4b* and *3.4c*, pages 36–37).

Figure 3.4b. **Population Projections by Age Group in the Topeka Metropolitan Statistical Area, 2016–2066**

Note: The Topeka Metropolitan Statistical Area consists of the following counties: Jackson, Jefferson, Osage, Shawnee and Wabaunsee.

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

Figure 3.4c. **Population Projections by Race/Ethnicity in the Topeka Metropolitan Statistical Area, 2016–2066**

Note: The Topeka Metropolitan Statistical Area consists of the following counties: Jackson, Jefferson, Osage, Shawnee and Wabaunsee.

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

3.5 Manhattan-Junction City Combined Statistical Area Projections

Figure 3.5a. **Population Projections by Total Population, Age Group and Race/Ethnicity in the Manhattan-Junction City Combined Statistical Area, 2016–2066**

Manhattan-Junction City Combined Statistical Area	2016	2036	2016–2036 % Change	2066	2016–2066 % Change
Total Population	132,590	172,476	***30.1%***	255,060	***92.4%***
Age Group					
Age 14 and under	26,223	41,901	***59.8%***	57,760	***120.3%***
Age 15 to 24	35,189	35,100	***-0.3%***	47,469	***34.9%***
Age 25 to 64	58,585	79,904	***36.4%***	122,774	***109.6%***
Age 65 and over	12,593	15,570	***23.6%***	27,057	***114.9%***
Race/Ethnicity					
White, Non-Hispanic	100,038	115,958	***15.9%***	148,811	***48.8%***
Black, Non-Hispanic	12,808	12,978	***1.3%***	11,950	***-6.7%***
Other/Multiple Races, Non-Hispanic	6,974	13,184	***89.0%***	26,312	***277.3%***
Hispanic, Any Race	12,770	30,355	***137.7%***	67,987	***432.4%***

Note: The Manhattan-Junction City Combined Statistical Area includes the following counties: Geary, Pottawatomie and Riley.

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

The Manhattan-Junction City Combined Statistical Area is projected to increase 92.4 percent between 2016 and 2066, from 132,590 to 255,060. The highest growth rate will be among children age 14 and under (120.3 percent), although similar growth rates are projected for adults age 25 to 64 and age 65 and over (109.6 percent and 114.9 percent, respectively). While the non-Hispanic White population is projected to increase by 48.8 percent, from 100,038 to 148,811, the non-Hispanic Black population is projected to decline by 6.7 percent, from 12,808 to 11,950. The non-Hispanic Other/Multiple Races population is projected to increase by 277.3 percent, from 6,974 to 26,312. The Hispanic, Any Race population is projected to increase by more than five times, from 12,770 to 67,987, an increase of 432.4 percent (*Figures 3.5a*, *3.5b* and *3.5c*, pages 38–39).

Figure 3.5b. **Population Projections by Age Group in the Manhattan-Junction City Combined Statistical Area by Age Group, 2016–2066**

Note: The Manhattan-Junction City Combined Statistical Area includes the following counties: Geary, Pottawatomie and Riley.

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

Figure 3.5c. **Population Projections by Race/Ethnicity in the Manhattan-Junction City Combined Statistical Area, 2016–2066**

Note: The Manhattan-Junction City Combined Statistical Area includes the following counties: Geary, Pottawatomie and Riley.

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

3.6 Wichita Metropolitan Statistical Area Projections

Figure 3.6a. **Population Projections by Total Population, Age Group and Race/Ethnicity in the Wichita Metropolitan Statistical Area, 2016–2066**

Wichita Metropolitan Statistical Area	2016	2036	2016–2036 % Change	2066	2016–2066 % Change
Total Population	644,672	727,234	***12.8%***	827,832	***28.4%***
Age Group					
Age 14 and under	138,810	145,224	***4.6%***	160,181	***15.4%***
Age 15 to 24	87,593	92,693	***5.8%***	102,894	***17.5%***
Age 25 to 64	327,140	346,592	***5.9%***	391,191	***19.6%***
Age 65 and over	91,129	142,725	***56.6%***	173,566	***90.5%***
Race/Ethnicity					
White, Non-Hispanic	476,367	443,636	***-6.9%***	348,537	***-26.8%***
Black, Non-Hispanic	53,796	65,095	***21.0%***	72,447	***34.7%***
Other/Multiple Races, Non-Hispanic	32,301	40,873	***26.5%***	52,490	***62.5%***
Hispanic, Any Race	82,208	177,631	***116.1%***	354,358	***331.1%***

Note: The Wichita Metropolitan Statistical Area consists of the following counties: Butler, Harvey, Kingman, Sedgwick and Sumner.

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

The population in the Wichita Metropolitan Statistical Area is projected to increase by 28.4 percent between 2016 and 2066, from 644,672 to 827,832. Much of that will be driven by projected growth in Sedgwick County, discussed below. The projected growth rate in the Wichita Metropolitan Statistical Area among those age 65 and over (90.5 percent) is four to nearly six times higher than for younger age groups (15.4 to 19.6 percent). The non-Hispanic White population is projected to decrease by 26.8 percent, from 476,367 to 348,537, while the non-Hispanic Black population is projected to increase by 34.7 percent, from 53,796 to 72,447. The Hispanic, Any Race population is projected to more than quadruple, from 82,208 to 354,358, an increase of 331.1 percent. At some point between 2051 and 2056, the Wichita Metropolitan Statistical Area is projected to become a majority/minority region, meaning that less than half of the population will be non-Hispanic White (*Figures 3.6a*, *3.6b* and *3.6c*, pages 40–41).

Figure 3.6b. **Population Projections by Age Group in the Wichita Metropolitan Statistical Area, 2016–2066**

Note: The Wichita Metropolitan Statistical Area consists of the following counties: Butler, Harvey, Kingman, Sedgwick and Sumner.

Source: Projections of population and race/ ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

Figure 3.6c. **Population Projections by Race/Ethnicity in the Wichita Metropolitan Statistical Area, 2016–2066**

Note: The Wichita Metropolitan Statistical Area consists of the following counties: Butler, Harvey, Kingman, Sedgwick and Sumner.

Source: Projections of population and race/ ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

3.6.1 Sedgwick County Projections

Figure 3.6.1a. **Population Projections by Total Population, Age Group and Race/Ethnicity in Sedgwick County, 2016–2066**

Sedgwick County	2016	2036	2016–2036 % Change	2066	2016–2066 % Change
Total Population	511,995	591,305	***15.5%***	697,312	***36.2%***
Age Group					
Age 14 and under	111,827	121,867	***9.0%***	138,624	***24.0%***
Age 15 to 24	69,888	75,243	***7.7%***	87,037	***24.5%***
Age 25 to 64	261,376	284,168	***8.7%***	331,753	***26.9%***
Age 65 and over	68,904	110,027	***59.7%***	139,898	***103.0%***
Race/Ethnicity					
White, Non-Hispanic	357,961	331,623	***-7.4%***	259,311	***-27.6%***
Black, Non-Hispanic	50,991	61,092	***19.8%***	66,904	***31.2%***
Other/Multiple Races, Non-Hispanic	29,531	37,140	***25.8%***	47,128	***59.6%***
Hispanic, Any Race	73,512	161,449	***119.6%***	323,969	***340.7%***

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

The population of Sedgwick County, which is included in the Wichita Metropolitan Statistical Area, is projected to increase 36.2 percent between 2016 and 2066, from 511,995 to 697,312. The projected growth rate among those age 65 and over (103.0 percent) is approximately four times higher than those for younger age groups (24.0 to 26.9 percent). The non-Hispanic White population is projected to decline by 27.6 percent, from 357,961 to 259,311, while the non-Hispanic Black population is projected to increase by 31.2 percent, from 50,991 to 66,904. The Hispanic, Any Race population is projected to more than quadruple, from 73,512 to 323,969, an increase of 340.7 percent. At some point between 2041 and 2046, Sedgwick County will become a majority/minority county, meaning the non-Hispanic White population will make up less than half of the total population (*Figures 3.6.1a*, *3.6.1b* and *3.6.1c*, pages 42–43).

Figure 3.6.1b. **Population Projections by Age Group in Sedgwick County, 2016–2066**

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

Figure 3.6.1c. **Population Projections by Race/Ethnicity in Sedgwick County, 2016–2066**

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

3.7 Eastern Micropolitan Region Projections

Figure 3.7a. **Population Projections by Total Population, Age Group and Race/Ethnicity in the Eastern Micropolitan Region, 2016–2066**

Eastern Micropolitan Region	2016	2036	2016–2036 % Change	2066	2016–2066 % Change
Total Population	144,913	139,888	***-3.5%***	124,556	***-14.0%***
Age Group					
Age 14 and under	27,540	27,337	***-0.7%***	23,092	***-16.1%***
Age 15 to 24	25,522	20,335	***-20.3%***	16,974	***-33.5%***
Age 25 to 64	67,722	60,265	***-11.0%***	55,950	***-17.4%***
Age 65 and over	24,129	31,951	***32.4%***	28,540	***18.3%***
Race/Ethnicity					
White, Non-Hispanic	120,789	107,486	***-11.0%***	79,153	***-34.5%***
Black, Non-Hispanic	6,360	6,877	***8.1%***	6,412	***0.8%***
Other/Multiple Races, Non-Hispanic	5,055	6,608	***30.7%***	9,811	***94.1%***
Hispanic, Any Race	12,709	18,917	***48.8%***	29,179	***129.6%***

Note: The Eastern Micropolitan Region consists of the following Micropolitan Statistical Areas: Atchison (Atchison County), Emporia (Chase and Lyon Counties), Pittsburg (Crawford County), Coffeyville (Montgomery County) and Parsons (Labette County). Chase County was included with the Emporia Micropolitan Statistical Area until January 2012.

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

The total population of the Eastern Micropolitan Region is projected to decrease 14.0 percent between 2016 and 2066, from 144,913 to 124,556. Population decreases are projected across all age groups (-16.1 to -33.5 percent) over this period except among those age 65 and over, which is projected to increase through the year 2036, and then decrease. The net population increase among those age 65 and over is projected to be 18.3 percent. The non-Hispanic White population is projected to decrease 34.5 percent, from 120,789 to 79,153. The non-Hispanic Black population is projected to increase through 2036 and then decline, resulting in a small net increase (0.8 percent). The Hispanic, Any Race population is projected to more than double, from 12,709 to 29,179, an increase of 129.6 percent (*Figures 3.7a*, *3.7b* and *3.7c*, pages 44–45).

Figure 3.7b. **Population Projections by Age Group in the Eastern Micropolitan Region, 2016–2066**

The Eastern Micropolitan Region consists of the following counties: Atchison, Chase, Crawford, Labette, Lyon and Montgomery. Chase County was included until January 2012.

Source: Projections of population and race/ ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

Figure 3.7c. **Projection Projections by Race/Ethnicity in the Eastern Micropolitan Region, 2016–2066**

The Eastern Micropolitan Region consists of the following counties: Atchison, Chase, Crawford, Labette, Lyon and Montgomery. Chase County was included until January 2012.

Source: Projections of population and race/ ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

3.8 Western Micropolitan Region Projections

Figure 3.8a. **Population Projections by Total Population, Age Group and Race/Ethnicity in the Western Micropolitan Region, 2016–2066**

Western Micropolitan Region	2016	2036	2016–2036 % Change	2066	2016–2066 % Change
Total Population	337,909	331,172	***-2.0%***	313,488	***-7.2%***
Age Group					
Age 14 and under	71,483	64,637	***-9.6%***	58,921	***-17.6%***
Age 15 to 24	48,842	44,641	***-8.6%***	40,424	***-17.2%***
Age 25 to 64	164,847	148,438	***-10.0%***	144,394	***-12.4%***
Age 65 and over	52,737	73,455	***39.3%***	69,750	***32.3%***
Race/Ethnicity					
White, Non-Hispanic	245,609	201,132	***-18.1%***	127,730	***-48.0%***
Black, Non-Hispanic	10,598	14,426	***36.1%***	18,700	***76.5%***
Other/Multiple Races, Non-Hispanic	8,833	8,476	***-4.0%***	7,939	***-10.1%***
Hispanic, Any Race	72,869	107,137	***47.0%***	159,120	***118.4%***

Note: The Western Micropolitan Region consists of the following Micropolitan Statistical Areas: Great Bend (Barton County), Winfield (Cowley County), Hays (Ellis County), Garden City (Finney County), Dodge City (Ford County), McPherson (McPherson County), Hutchinson (Reno County), Salina (Ottawa and Saline Counties) and Liberal (Seward County).

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

The population in the Western Micropolitan Region is projected to decrease 7.2 percent, from 337,909 to 313,488. Population decreases are projected across all age groups (-12.4 to -17.6 percent) over this period except among those age 65 and over, which is projected to increase through the year 2036 and then decrease. The net population increase among those age 65 and over is projected to be 32.3 percent. The non-Hispanic White population is projected to decrease by 48.0 percent, from 245,609 to 127,730, while the non-Hispanic Black population is projected to increase by 76.5 percent, from 10,598 to 18,700. The Hispanic, Any Race population is projected to more than double, from 72,869 to 159,120, an increase of 118.4 percent. At some point between 2051 and 2056, the Western Micropolitan Region is projected to become a majority/minority region, meaning that less than half of the population will be non-Hispanic White (*Figures 3.8a, 3.8b* and *3.8c*, pages 46–47).

Figure 3.8b. **Population Projections by Age Group in the Western Micropolitan Region, 2016–2066**

Note: The Western Micropolitan Region consists of the following counties: Barton, Cowley, Ellis, Finney, Ford, McPherson, Ottawa, Reno, Saline and Seward.

Source: Projections of population and race/ ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

Figure 3.8c. **Population Projections by Race/Ethnicity in the Western Micropolitan Region, 2016–2066**

Note: The Western Micropolitan Region consists of the following counties: Barton, Cowley, Ellis, Finney, Ford, McPherson, Ottawa, Reno, Saline and Seward.

Source: Projections of population and race/ ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

3.9 Eastern Rural Region Projections

Figure 3.9a. **Population Projections by Total Population, Age Group and Race/Ethnicity in the Eastern Rural Region, 2016–2066**

Eastern Rural Region	2016	2036	2016–2036 % Change	2066	2016–2066 % Change
Total Population	152,487	136,166	***-10.7%***	103,539	***-32.1%***
Age Group					
Age 14 and under	29,524	20,223	***-31.5%***	14,822	***-49.8%***
Age 15 to 24	18,235	16,297	***-10.6%***	11,609	***-36.3%***
Age 25 to 64	73,415	57,149	***-22.2%***	42,799	***-41.7%***
Age 65 and over	31,313	42,497	***35.7%***	34,309	***9.6%***
Race/Ethnicity					
White, Non-Hispanic	140,668	118,393	***-15.8%***	75,387	***-46.4%***
Black, Non-Hispanic	2,760	3,939	***42.7%***	5,713	***107.0%***
Other/Multiple Races, Non-Hispanic	4,189	4,657	***11.2%***	4,735	***13.0%***
Hispanic, Any Race	4,870	9,178	***88.5%***	17,704	***263.5%***

Note: The Eastern Rural Region consists of the following counties: Allen (AL), Anderson (AN), Bourbon (BB), Brown (BR), Chautauqua (CQ), Cherokee (CK), Coffey (CF), Doniphan (DP), Elk (EK), Greenwood (GW), Marshall (MS), Morris (MR), Nemaha (NM), Neosho (NO), Washington (WS), Wilson (WL) and Woodson (WO).

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

The population in Eastern Rural Region is projected to decrease by 32.1 percent between 2016 and 2066, from 152,487 to 103,539. Population decreases are projected across all age groups (-36.3 to -41.7 percent), except among those age 65 and over, which is projected to increase through the year 2036 and then decrease. The net population increase among those age 65 and over is projected to be 9.6 percent. The non-Hispanic White population is projected to decrease by 46.4 percent, from 140,668 to 75,387, while the non-Hispanic Black population is projected to increase 107.0 percent, from 2,760 to 5,713. The Hispanic, Any Race population is projected to more than triple, from 4,870 to 17,704, an increase of 263.5 percent (*Figures 3.9a*, *3.9b* and *3.9c*, pages 48–49).

Figure 3.9b. **Population Projections by Age Group in the Eastern Rural Region, 2016–2066**

Note: The Eastern Rural Region consists of the following counties: AL, AN, BB, BR, CQ, CK, CF, DP, EK, GW, MS, MR, NM, NO, WS, WL and WO.

Source: Projections of population and race/ ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

Figure 3.9c. **Population Projections by Race/Ethnicity in the Eastern Rural Region, 2016–2066**

Note: The Eastern Rural Region consists of the following counties: AL, AN, BB, BR, CQ, CK, CF, DP, EK, GW, MS, MR, NM, NO, WS, WL and WO.

Source: Projections of population and race/ ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

3.10 Western Rural Region Projections

Figure 3.10a. **Population Projections by Total Population, Age Group and Race/Ethnicity in the Western Rural Region, 2016–2066**

Western Rural Region	2016	2036	2016–2036 % Change	2066	2016–2066 % Change
Total Population	245,642	225,530	***-8.2%***	196,814	***-19.9%***
Age Group					
Age 14 and under	47,653	36,658	***-23.1%***	32,230	***-32.4%***
Age 15 to 24	30,246	28,308	***-6.4%***	24,307	***-19.6%***
Age 25 to 64	117,428	96,932	***-17.5%***	85,892	***-26.9%***
Age 65 and over	50,315	63,632	***26.5%***	54,384	***8.1%***
Race/Ethnicity					
White, Non-Hispanic	214,056	171,205	***-20.0%***	103,309	***-51.7%***
Black, Non-Hispanic	3,848	7,613	***97.8%***	14,830	***285.4%***
Other/Multiple Races, Non-Hispanic	3,177	4,824	***51.8%***	7,452	***134.6%***
Hispanic, Any Race	24,561	41,889	***70.6%***	71,223	***190.0%***

Note: The Western Rural Region consists of the following Counties: Barber (BA), Cheyenne (CN), Clark (CA), Clay (CY), Cloud (CD), Comanche (CM), Decatur (DC), Dickinson (DK), Edwards (ED), Ellsworth (EW), Gove (GO), Graham (GH), Grant (GT), Gray (GY), Greeley (GL), Hamilton (HM), Harper (HP), Haskell (HS), Hodgeman (HG), Jewell (JW), Kearny (KE), Kiowa (KW), Lane (LE), Lincoln (LC), Logan (LG), Marion (MN), Meade (ME), Mitchell (MC), Morton (MT), Ness (NS), Norton (NT), Osborne (OB), Pawnee (PN), Phillips (PL), Pratt (PR), Rawlins (RA), Republic (RP), Rice (RC), Rooks (RO), Rush (RH), Russell (RS), Scott (SC), Sheridan (SD), Sherman (SH), Smith (SM), Stafford (SF), Stanton (ST), Stevens (SV), Thomas (TH), Trego (TR), Wallace (WA) and Wichita (WH).

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

The population of the Western Rural Region is projected to decrease by 19.9 percent between 2016 and 2066, from 245,642 to 196,814. Population decreases are projected across all age groups (-19.6 to -32.4 percent), except among those age 65 and over, which is projected to increase through 2031 (not shown) and then decrease. The net population increase among those age 65 and over is projected to be 8.1 percent. The non-Hispanic White population is projected to decrease 51.7 percent, from 214,056 to 103,309, while the non-Hispanic Black population is projected to nearly quadruple, from 3,848 to 14,830, a 285.4 percent increase. The Hispanic, Any Race population is projected to nearly triple, from 24,561 to 71,223, a 190.0 percent increase (*Figures 3.10a*, *3.10b* and *3.10c*, pages 50–51).

Figure 3.10b. **Population Projections by Age Group in the Western Rural Region, 2016–2066**

Note: The Western Rural Region consists of the following counties: BA, CN, CA, CY, CD, CM, DC, DK, ED, EW, GO, GH, GT, GY, GL, HM, HP, HS, HG, JW, KE, KW, LE, LC, LG, MN, ME, MC, MT, NS, NT, OB, PN, PL, PR, RA, RP, RC, RO, RH, RS, SC, SD, SH, SM, SF, ST, SV, TH, TR, WA and WH.

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

Figure 3.10c **Population Projections by Race/Ethnicity in the Western Rural Region, 2016–2066**

Note: The Western Rural Region consists of the following counties: BA, CN, CA, CY, CD, CM, DC, DK, ED, EW, GO, GH, GT, GY, GL, HM, HP, HS, HG, JW, KE, KW, LE, LC, LG, MN, ME, MC, MT, NS, NT, OB, PN, PL, PR, RA, RP, RC, RO, RH, RS, SC, SD, SH, SM, SF, ST, SV, TH, TR, WA and WH.

Source: Projections of population and race/ethnicity were commissioned for the Kansas Health Foundation and Kansas Health Institute report "A Changing Kansas: Implications for Health and Communities," and produced by the Center for Economic Development and Business Research, Wichita State University.

4.0 Determinants of Health

4.1 Income and Poverty

Socioeconomic status is a complex combination of factors that can have a strong influence on a person's daily life. Research has shown that people with low socioeconomic status are more likely to experience high disease burden and poor health outcomes.[14]

Research has found that higher income is associated with access to insurance and health care (medical and dental) and that where people live has a strong impact on health outcomes such as obesity and diabetes.[15,16] People with lower socioeconomic status are more likely to engage in poor health behaviors, contributing to higher mortality.[17]

Overall, racial/ethnic minorities (except Asians) are more likely to have lower socioeconomic status than non-Hispanic Whites in the United States. Research from the U.S. Census Bureau's 2011 American Community Survey 5-year estimates found that non-Hispanic Whites and Asians have the lowest poverty rates (i.e., the percentage of individuals living below federal poverty thresholds), while other racial groups and the Hispanic origin population all have higher rates of poverty.[18]

Data from the 2017 U.S. Census Bureau's Current Population Survey Annual Social and Economic Supplements showed that Black and Hispanic households had a consistently lower median household income than White households, while Asian households consistently have a median higher income than White households in the United States.[19]

The United States Department of Health and Human Services has included poverty among several socioeconomic factors that it tracks as measures of economic stability under its Social Determinants of Health objective in Healthy People 2020, a 10-year agenda for improving the health of the nation.[20]

4.1.1 Per Capita Income

The per capita income of all Kansans (*Figure 4.1.1a*, page 53) was $27,706 in 2015. Due to data limitations, the following values are provided based on population groups as defined in the methodology. The highest per capita income in Kansas in 2015 was $30,941 for non-Hispanic Whites. Compared to non-Hispanic Whites, the per capita income for Blacks was 60.7 percent

($18,785) that of non-Hispanic Whites; for American Indians/Alaska Natives it was 59.8 percent ($18,500) that of non-Hispanic Whites; for Asians it was 87.4 percent ($27,054) that of non-Hispanic Whites; for Native Hawaiians/Other Pacific Islanders it was 58.9 percent ($18,246) that of non-Hispanic Whites; for Some Other Race Kansans it was 48.5 percent ($14,999) that of non-Hispanic Whites; and for Two or More Race Kansans it was 40.3 percent ($12,500) that of non-Hispanic Whites. Hispanics, Any Race had a per capita income 45.8 percent ($14,157) of that for non-Hispanic Whites.

Figure 4.1.1a. **Per Capita Income by Population Group in Kansas, 2015**

Source: KHI analysis of data from the U.S. Census Bureau's American Community Survey 2015 (2011–2015) 5-Year Estimates.

4.1.2 Median Household Income

In 2015, the median household income (*Figure 4.1.2a*, page 54) in Kansas was $52,205. Due to data limitations, the following values are provided based on population groups as defined in the methodology. Non-Hispanics White households in Kansas had a median household income in 2015 of $55,420. Compared to non-Hispanic White households, the median household income

for Black households was 60.8 percent ($33,677) that of non-Hispanic White households; for American Indians/Alaska Natives it was 73.4 percent ($40,660) that of non-Hispanic White households. Median household income was 1.1 times higher for Asian and Native Hawaiians/Other Pacific Islander households compared to non-Hispanic White households ($59,365 and $61,250, respectively); for Some Other Race households, median household income was 72.3 percent ($40,069) that of non-Hispanic White households; and for Two or More Race households, median household income was 74 percent ($41,030) that of non-Hispanic White households. Hispanics, Any Race households had a median household income 72.4 percent ($40,117) that of non-Hispanic White households.

Figure 4.1.2a. **Median Household Income by Population Group in Kansas, 2015**

Source: KHI analysis of data from the U.S. Census Bureau's American Community Survey 2015 (2011–2015) 5-Year Estimates.

4.1.3 Poverty Rate

4.1.3.1 Poverty Rate by Race/Ethnicity

Overall, the poverty rate in Kansas was 13.6 percent in 2015 (*Figure 4.1.3.1a*). When analyzed by race/ethnicity, non-Hispanic Whites had a poverty rate of 10.6 percent. Compared to non-Hispanic Whites, the poverty rate for non-Hispanic Blacks and Hispanics, Any Race was 2.4 times higher (25.3 percent for both groups) and 1.8 times higher for non-Hispanic Other Race/Multiple Race (19.6 percent).

Figure 4.1.3.1a. **Poverty Rate by Race/Ethnicity in Kansas, 2015**

Source: KHI analysis of data from the U.S. Census Bureau's American Community Survey 2015 (2011–2015) 5-Year Estimates.

4.1.3.2 Poverty Rate by Population Density of County

In 2015, poverty rates in Frontier (12.2 percent) and Rural counties (12.1 percent) were similar to Urban (12.9 percent) counties, while rates were 1.2 times higher in Densely Settled Rural (15.3) and Semi-Urban (15.2 percent) counties (*Figure 4.1.3.2a*).

Figure 4.1.3.2a. **Poverty Rate by Population Density in Kansas, 2015**

Source: KHI analysis of data from the U.S. Census Bureau's American Community Survey 2015 (2011–2015) 5-Year Estimates.

4.1.3.3 Poverty Rate by County

While there were no large differences in poverty rates by population density, poverty rates showed more distinctive patterns by geographic region in 2015 (*Figure 4.1.3.3a*). The largest concentration of higher poverty rates (16 percent or greater) was in the southeast corner of Kansas, and the poverty rate was more varied in other regions of the state.

Figure 4.1.3.3a. **Poverty Rate by County in Kansas, 2015**

Source: KHI analysis of data from the U.S. Census Bureau's American Community Survey 2015 (2011–2015) 5-Year Estimates.

4.1.3.4 Poverty Rate by Race/Ethnicity from 2000 to 2017

Due to the smaller sample size of the CPS data, there was considerable variability in poverty rates for racial/ethnic minorities across time (*Figure 4.1.3.4a*). Therefore, no distinctive trends for these groups were identified. Overall, however, racial/ethnic minorities had a higher poverty rate than non-Hispanic Whites through time. A dramatic dip for non-Hispanics Other/Multiple Races in 2014 was due to a methodology change and sample size issues.

Figure 4.1.3.4a. **Poverty Rates by Race/Ethnicity in Kansas, 2000–2017**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
All	12.2%	8.0%	10.1%	9.9%	10.8%	11.4%	12.5%	12.8%	11.7%	12.7%	13.7%	14.5%	14.3%	14.0%	11.4%	12.1%	14.2%	11.2%
White, non-Hispanic	8.6%	6.4%	8.3%	8.0%	7.5%	9.3%	10.0%	9.9%	9.6%	9.7%	10.1%	10.3%	9.4%	8.2%	10.2%	9.8%	11.1%	7.8%
Black, non-Hispanic	28.9%	20.3%	19.9%	22.7%	24.3%	27.0%	35.9%	21.2%	19.5%	19.8%	32.3%	28.4%	32.4%	36.3%	27.8%	26.3%	27.0%	20.1%
Other/Multiple Races, non-Hispanic	21.8%	15.0%	16.1%	11.1%	24.8%	14.5%	12.6%	15.1%	13.8%	18.2%	23.2%	20.1%	20.9%	26.2%	1.1%	16.4%	20.7%	22.9%
Hispanic, Any Race	35.9%	16.8%	22.4%	22.4%	24.5%	24.7%	24.5%	37.1%	25.6%	32.1%	29.7%	36.2%	39.5%	38.5%	19.0%	17.1%	23.5%	19.8%

Source: KHI analysis of data from the U.S. Census Bureau's Integrated Public Use Microdata Series' 2000–2009 and 2011–2017 Current Population Survey Annual Social and Economic Supplement data, and the U.S. Census Bureau's 2010 Current Population Survey Annual Social and Economic Supplement.

4.2 Education

Education is recognized as an important component of health at the individual, community and social/cultural levels.[21] Research has consistently identified higher educational attainment as a protective factor against poor health outcomes and negative health behaviors.

In 1996, remaining life expectancy at age 25 in the United States among those who had attained a bachelor's degree or higher was 54 for males and 59 for females. Among those with no high school diploma, remaining life expectancy was just 47 for males and 53 for females. By 2006, remaining life expectancy at age 25 for males who had attained a bachelor's degree or higher had increased to 56 years. However, for males without a high school diploma, remaining life expectancy at age 25 had not changed. Among females with a bachelor's degree or higher, remaining life expectancy at age 25 increased to 60 in 2006, but decreased to 52 among those without a high school diploma.[22]

The relationship between educational attainment and mortality is not strictly linear. There is a significant reduction in mortality among those who attain at least a high school diploma when compared to those without a high school diploma. But even among those with at least a high school diploma, there is a steep linear decline in mortality rates with increasing levels of educational attainment.[23]

To address educational attainment as a key determinant of health, the U.S. Department of Health and Human Services has included four-year high school graduation rates as a Leading Health Indicator in Healthy People 2020, a 10-year agenda for improving the health of the nation.[24]

This section presents Kansas-specific data on educational attainment among adults from the U.S. Census Bureau's American Community Survey and four-year high school graduation rates from the Kansas State Department of Education.

4.2.1 Educational Attainment Among Adults Age 25 and Over

Based on data from the 2015 U.S. Census Bureau's American Community Survey (2011–2015 five-year estimates), 9.8 percent of Kansas adults age 25 and over had less than a high school education. Educational attainment varied substantially by county of residence based on population density, with higher percentages of adults without a high school education among

residents of less-populated counties. While 8.8 percent of adults age 25 and over living in Urban counties and 8.7 percent of adults living in Semi-Urban counties had less than a high school education, the highest rate was observed in Densely Settled Rural counties, at 13.3 percent. Among adults age 25 and over in Frontier counties, 10.6 percent had less than a high school education; the rate in Rural counties was 10.7 percent (*Figure 4.2.1a*).

Figure 4.2.1a. **Percent of Adults Age 25 and Over with Less Than High School Education by Population Density in Kansas, 2015**

Source: KHI analysis of data from the U.S. Census Bureau's American Community Survey 2015 (2011–2015) 5-Year Estimates.

Substantial disparities in educational attainment by population group also exist. Among non-Hispanic Whites, 6.4 percent of adults age 25 and over had less than a high school education, compared to 12.8 percent of Blacks, 12.6 percent of American Indians/Alaska Natives, 17.5 percent of Asian/Pacific Islanders and 27.9 percent of Other/Multiple Races. Among Hispanics, Any Race, 38.7 percent of adults age 25 and over had less than a high school education (*Figure 4.2.1b*, page 61).

Figure 4.2.1b. **Percent of Adults Age 25 and Over with Less Than High School Education by Race/Ethnicity in Kansas, 2015**

Note: Percentages are for the population with less than a high school education. African American, American Indian/Alaska Native, Asian/Pacific Islander, and Other are not broken out by ethnicity in this dataset, so these groups should be compared to non-Hispanic White only and not to Hispanic, Any Race. Other includes Some Other Race and Two or More Races. Non-Hispanic White, African American, American Indian/Alaska Native, Asian/Pacific Islander and Some Other Race are based on those reporting those races alone and not in combination. Two or More Races captures persons reporting more than one race.

Source: KHI analysis of data from the U.S. Census Bureau's American Community Survey 2015 (2011–2015) 5-Year Estimates.

When examining educational attainment by both race/ethnicity and geographic population density, even greater disparities are observed. Among non-Hispanic White adults age 25 and over living in Urban counties, 5.1 percent had less than a high school education, compared to 8.9 percent of those living in Rural counties. However, among Black adults age 25 and over, 12.1 percent living in Urban counties, 24.9 percent living in Densely Settled Rural counties and 21.7 percent living in Rural counties had less than a high school education. Among Hispanics, Any Race, 36.3 percent of adults age 25 and over living in Urban counties had less than a high school education compared to 47.8 percent living in Frontier counties, 43.0 percent living in Rural

counties and 47.7 percent living in Densely Settled Rural counties. In Semi-Urban counties, more than one in four (27.6 percent) Hispanic adults age 25 and over of any race had less than a high school education (*Figure 4.2.1c*).

Figure 4.2.1c. **Percent of Adults Age 25 and Over with Less Than High School Education by Race/Ethnicity and Population Density in Kansas, 2015**

	All Kansans		Non-Hispanic White		African American		American Indian/ Alaska Native		Asian/ Pacific Islander		Other		Hispanic, Any Race	
Geographic Area	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Kansas	182,906	9.8%	98,328	6.4%	12,680	12.8%	1,795	12.6%	8,448	17.5%	19,179	27.9%	59,834	38.7%
Frontier	8,348	10.6%	5,795	8.1%	46	10.2%	73	15.9%	36	9.8%	936	38.1%	2,308	47.8%
Rural	17,294	10.7%	13,147	8.9%	260	21.7%	270	18.4%	107	17.7%	1,515	35.2%	3,390	43.0%
Dense Rural	40,480	13.3%	20,638	8.1%	1,269	24.9%	406	12.7%	1,111	33.4%	5,809	39.5%	16,789	47.7%
Semi-Urban	24,976	8.7%	17,996	7.2%	1,207	11.2%	249	12.0%	756	14.8%	1,756	19.8%	4,472	27.6%
Urban	91,808	8.8%	40,752	5.1%	9,898	12.1%	797	11.2%	6,438	16.6%	9,163	23.9%	32,875	36.3%

Note: Percentages are for the population with less than a high school education. African American, American Indian/Alaska Native, Asian/Pacific Islander, and Other are not broken out by ethnicity in this dataset, so these groups should be compared to non-Hispanic White only and not to Hispanic, Any Race. Other includes Some Other Race and Two or More Races. Non-Hispanic White, African American, American Indian/Alaska Native, Asian/Pacific Islander and Some Other Race are based on those reporting those races alone and not in combination. Two or More Races captures persons reporting more than one race.

Source: KHI analysis of data from the U.S. Census Bureau's American Community Survey 2015 (2011–2015) 5-Year Estimates.

4.2.2 Four-Year High School Graduation Rates

The Kansas State Department of Education tracks high school graduation rates and other educational statistics for all public, private and state schools in Kansas. The overall four-year graduation rate in Kansas has generally increased from 80.9 percent in the 2009–2010 academic year to 86.9 percent in the 2016–2017 academic year, although there was a slight decrease between the 2013–2014 and 2014–2015 academic years. Graduation rates for females were consistently higher than those for males (*Figure 4.2.2a*, page 63).

Figure 4.2.2a. **Four-Year Graduation Rate by Academic Year and Gender in Kansas, 2009–2010 to 2016–2017**

Source: KHI analysis of data from Kansas State Department of Education.

While four-year graduation rates for most racial and ethnic groups have generally increased, considerable disparities remain. Based on data from the 2016–2017 academic year, the highest four-year graduation rates were among non-Hispanic Asian females (94.3 percent) and males (92.8 percent) (*Figure 4.2.2b*, page 64). Among non-Hispanic Whites, the four-year graduation rates in 2016–2017 were 91.3 percent for females and 87.2 percent for males. The lowest four-year graduation rate in 2016–2017 was among non-Hispanic Black males, at 72.8 percent.

Figure 4.2.2b. **Four-Year Graduation Rate by Gender, Race and Ethnicity in Kansas, 2016–2017**

Source: KHI analysis of data from Kansas State Department of Education.

Gender-specific, four-year graduation rate trend graphs from the 2009–2010 to 2016–2017 academic years are presented separately by race and ethnicity in *Figures 4.2.2b–4.2.2i*, pages 64–71.

Figure 4.2.2c. **Four-Year Graduation Rate Among Non-Hispanic Whites by Academic Year and Gender in Kansas, 2009–2010 to 2016–2017**

Source: KHI analysis of data from Kansas State Department of Education.

Figure 4.2.2d. **Four-Year Graduation Rate Among Non-Hispanic Blacks by Academic Year and Gender in Kansas, 2009–2010 to 2016–2017**

Source: KHI analysis of data from Kansas State Department of Education.

Figure 4.2.2e. **Four-Year Graduation Rate Among Non-Hispanic American Indians or Alaska Natives by Academic Year and Gender in Kansas, 2009–2010 to 2016–2017**

Source: KHI analysis of data from Kansas State Department of Education.

Figure 4.2.2f. **Four-Year Graduation Rate Among Non-Hispanic Native Hawaiian or Other Pacific Islanders by Academic Year and Gender in Kansas, 2009–2010 to 2016–2017**

Source: KHI analysis of data from Kansas State Department of Education.

Figure 4.2.2g. **Four-Year Graduation Rate Among Non-Hispanic Asians by Academic Year and Gender in Kansas, 2009–2010 to 2016–2017**

Source: KHI analysis of data from Kansas State Department of Education.

Figure 4.2.2h. **Four-Year Graduation Rate Among Non-Hispanic Multiple Races by Academic Year and Gender in Kansas, 2009–2010 to 2016–2017**

Source: KHI analysis of data from Kansas State Department of Education.

Figure 4.2.2i. **Four-Year Graduation Rate Among Hispanics by Academic Year and Gender in Kansas, 2009–2010 to 2016–2017**

Source: KHI analysis of data from Kansas State Department of Education.

As noted in *Figure 4.2.2j*, considerable disparities in four-year graduation rates also are observed at the county level. Although geographic patterns in graduation rates are not evident from examining a single academic year, some of the highest rates were observed in sparsely populated counties. For the 2016–2017 academic year, seven counties (Comanche, Graham, Greenwood, Hodgeman, Lane, Phillips and Stanton) all reported four-year graduation rates of 100 percent. Four counties (Pawnee, Cloud, Wyandotte and Kiowa) had four-year graduation rates of less than 80 percent. Nearly one-third (31) of counties had four-year graduation rates that were lower than the state rate of 86.9 percent in 2016–2017.

Figure 4.2.2j. **Four-Year Graduation Rates by County in Kansas, 2016–2017**

Source: KHI analysis of data from Kansas State Department of Education.

4.3 Access to Care

In 2011, the Office of the Surgeon General released *National Prevention Strategy: American's Plan for Better Health and Wellness* which stressed the importance of preventive care for reducing health care costs.[25] The lack of access to care stands as a barrier to receiving timely care that can impact both the health care system and the patient through more costly procedures and more advanced health issues. Evidence suggests that improving health insurance coverage improves access to care and is associated with a wide range of improved health outcomes.[26]

While research suggests that access to care has improved for all populations following the implementation of the Affordable Care Act (ACA), differences exist between racial/ethnic groups, with minority groups generally lagging behind non-Hispanic Whites in the U.S. Further, these patterns also differ across states with larger improvements for racial/ethnic minority groups in states that expanded Medicaid than those that did not expand (including Kansas).[27]

At the same time, access to dental care remains limited for adults (children are required to have dental care under the ACA). With growing difficulty in finding providers for dental care, adults age 19–64 have largely seen a decrease in utilization.[28] While adults, overall, are disadvantaged in access to dental care, evidence also suggests that racial/ethnic minority populations are less likely than Whites to utilize dental services.[29]

Healthy People 2020 has identified access to comprehensive, quality health services as one of its goals for improving health in the United States. To achieve this goal, several indicators have been identified including medical and dental insurance rates, decreased delay of necessary medical or dental care, and usual source of care. Medical insurance and a usual source of care have been identified as Leading Indictors by Healthy People 2020.[30]

4.3.1 Lacked Health Insurance Coverage

In the American Community Survey Public Use Microdata Sample (ACS PUMS), 11.5 percent of Kansans had no health insurance coverage (*Figure 4.3a*, page 74). Non-Hispanic Whites had the lowest uninsured rate at 8.7 percent, followed by non-Hispanic Other/Multiple Races at 14.0 percent. Compared to non-Hispanic Whites, non-Hispanic Blacks were almost two times as likely to be uninsured (16.5 percent), and Hispanics, Any Race were more than three times as likely to be uninsured (26.9 percent).

Figure 4.3a. **Percent Uninsured by Race/Ethnicity in Kansas, 2015**

Source: KHI analysis of data from the U.S. Census Bureau's American Community Survey 2015 (2011–2015) 5-Year Public Use Microdata Survey Estimates.

4.3.2 Lacked Dental Insurance Coverage

Nearly one in three (32.7 percent) of adult Kansans lacked dental coverage, according to data from the Kansas Behavioral Risk Factor Surveillance System (BRFSS) conducted by KDHE (*Figure 4.3.2a*). Data for dental coverage was based on KDHE classifications, with ethnicity and race presented as separate groups. Ethnicity variables should not be compared to race variables due to overlap in populations.

Hispanics, Any Race were much more likely to report lacking dental insurance (51.1 percent) compared to non-Hispanics, Any Race (30.9 percent). Among race groups, Multiple Races, Any Ethnicity (39.2 percent) was the most likely to report lacking dental insurance, followed by White, Any Ethnicity (31.8 percent), Black, Any Ethnicity (31.4 percent), and Other Races, Any Ethnicity (30.1 percent).

Figure 4.3.2a. **Percent Lacking Dental Coverage by Ethnicity and Race in Kansas, 2015**

Source: Kansas Behavioral Risk Factor Surveillance System, 2015.

4.3.3 No Usual Source of Care

One in five adult Kansans (20.3 percent) reported not having a usual source of care (*Figure 4.3.3a*). Examination of the data by race/ethnicity showed that Hispanics, Any Race were almost three times as likely to report no usual source of care (45.4 percent) than were non-Hispanic Whites (16.3 percent). Other groups also were more likely than non-Hispanic Whites to report no usual source of care: non-Hispanic Asian/Pacific Islanders (29.3 percent); non-Hispanic Blacks (29.1 percent); non-Hispanic Other/Multiple Races (28.0 percent); and non-Hispanic American Indians/Alaska Natives (25.9 percent).

Figure 4.3.3a. **Percent of Population Without a Usual Source of Care by Race/Ethnicity in Kansas, 2011–2015 (Combined)**

Source: KHI analysis of the Kansas Behavioral Risk Factor Surveillance System, 2011–2015.

4.3.4 Avoided Medical Care Due to Cost

In the 2011–2015 Kansas BRFSS, 13.3 percent of adult Kansans reported they had avoided medical care due to cost (*Figure 4.3.4a*). Non-Hispanic Blacks (24.1 percent), Hispanics, Any Race (23.9 percent), non-Hispanic Other/Multiple Races (23.6 percent) and non-Hispanic American Indians/Alaska Natives (22.3 percent) were all more than two times as likely to report avoiding care due to cost than were non-Hispanic Whites (11.0 percent). Non-Hispanic Asian/Pacific Islanders (12.5 percent) had a rate similar to non-Hispanic White Kansans.

Figure 4.3.4a. **Percent Avoiding Medical Care Due to Cost in Kansas, 2011–2015 (Combined)**

Source: KHI analysis of the Kansas Behavioral Risk Factor Surveillance System, 2011–2015.

4.3.5 Avoided Dental Care Due to Any Reasons

According to data from the 2015 Kansas BRFSS, 12.9 percent of adults reported that they needed dental care but did not get it. Of those Kansans, 76.8 percent reported they avoided care because of cost. Based on this, an estimated 9.9 percent of Kansans avoided dental care due to cost. KDHE did not provide data for race or ethnicity for this variable in its data tables, so only the overall percentage not seeking care due to cost could be reported. To provide additional context around ethnicity and race, the percent avoiding dental care for any reason was examined.

Overall, 12.9 percent of Kansans reported avoiding dental care for any reason. Hispanics, Any Race (23.1 percent) were almost twice as likely to report avoiding dental care than were non-Hispanics, Any Race (11.9 percent). Whites, Any Ethnicity (11.7 percent) were the least likely race to report avoiding dental care, followed by Other Races, Any Ethnicity (15.3 percent), Blacks, Any Ethnicity (20.9 percent), and Multiple Races, Any Ethnicity (23.7 percent) (*Figure 4.3.5a*).

Figure 4.3.5a. **Percent Needing Dental Care in the Past 12 Months That Did Not Get It for Any Reason by Ethnicity and Race in Kansas, 2015**

Source: Kansas Behavioral Risk Factor Surveillance System, 2015.

4.4 Health Behaviors

Poor nutritional behaviors, inadequate physical activity and tobacco use are major contributing factors to chronic diseases and premature deaths in the United States. While some progress has been made in reducing premature deaths attributable to tobacco use, it accounted for 15 percent of deaths before the age of 80 in 2010. Eighteen percent of premature deaths (before age 80) were attributed to poor diet and lack of exercise in 2010, up from 14 percent in 1990.[31] This section briefly summarizes state-level data regarding these three risk factors in Kansas.

4.4.1 Healthy Food Access

Healthy food access for this report is represented by the percent of adults not eating enough fruits and vegetables based on the most recent data from the Kansas BRFSS.

Overall, more than 86 percent of adults in Kansas reported not eating enough fruits and vegetables in the last month, defined as less than five servings per day. While the highest rates of not eating enough fruits and vegetables were reported among non-Hispanic American Indians and Alaska Natives (88.6 percent) and the lowest rates were reported among non-Hispanic Asians and Pacific Islanders (82.7 percent), there was little variation among race and ethnic groups (*Figure 4.4.1a*, page 80).

Figure 4.4.1a. **Percent of Adults Not Eating Enough Fruits/Vegetables by Race/Ethnicity in Kansas, 2011, 2013 and 2015 (Combined)**

Note: Based on all respondents (age 18 and older) who reported eating less than five servings of fruits and vegetables per day for the last month, not meeting the Healthy People 2010 objective.

Source: KHI analysis of the Kansas Behavioral Risk Factor Surveillance System, 2011, 2013 and 2015.

4.4.2 Physical Activity

Adult Kansans also reported high rates of physical inactivity. Overall, more than one in four adults (25.3 percent) reported not participating in any physical activity or exercise outside of their regular job during the past month. Rates were highest among Hispanics, Any Race (32.5 percent) and non-Hispanic American Indians/Alaska Natives (32.3 percent), while the lowest rate, at 21.0 percent, was reported among non-Hispanic Asian/Pacific Islanders (*Figure 4.4.2a*).

Figure 4.4.2a. **Percent of Adults Not Engaging in Physical Activity in the Last Month by Race/Ethnicity in Kansas, 2011–2015 (Combined)**

Note: Based on all respondents (age 18 and older) who reported not participating in any physical activity or exercise outside of their regular job during past month.

Source: KHI analysis of the Kansas Behavioral Risk Factor Surveillance System, 2011–2015.

The *2008 Physical Activity Guidelines for Americans* suggests at least 150 minutes a week of moderate-intensity aerobic physical activity, or 75 minutes a week of vigorous-intensity activity, or an equivalent combination of moderate- and vigorous-intensity aerobic activity. More than half (51.4 percent) of Kansas adults reported that they did not meet those aerobic activity recommendations. The highest rates of not meeting aerobic activity guidelines were reported by Hispanics, Any Race (60.1 percent) and non-Hispanic Blacks (58.2 percent), but there was little variation by race and ethnicity (*Figure 4.4.2b*).

Figure 4.4.2b. **Percent of Adults Not Meeting Aerobic Recommendations by Race/Ethnicity in Kansas, 2011, 2013 and 2015 (Combined)**

Note: Based on all respondents (age 18 and older) whose physical activities did not meet aerobic recommendations in the 2008 Physical Activity Guidelines for Americans. Adults should do at least 150 minutes a week of moderate-intensity, or 75 minutes a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic activity.

Source: KHI analysis of the Kansas Behavioral Risk Factor Surveillance System, 2011, 2013 and 2015.

4.4.3 Tobacco Use

Nearly 1 in 5 (19.5 percent) Kansas adults reported current smoking (*Figure 4.4.3a*). Rates were highest among non-Hispanic American Indians/Alaska Natives (38.3 percent). Rates also were generally higher among other minority groups, with 30.5 percent of non-Hispanic Other/Multiple Races, 26.4 percent of non-Hispanic Blacks and 16.0 percent of Hispanics, Any Race reporting current smoking. The lowest rates were reported among non-Hispanic Asian/Pacific Islanders (12.9 percent).

Figure 4.4.3a. **Percent of Adults Reporting Current Smoking by Race/Ethnicity in Kansas, 2011–2015 (Combined)**

Note: Based on all respondents (age 18 and older) who reported they have smoked at least 100 cigarettes in their lifetime and currently smoke.

Source: KHI analysis of the Kansas Behavioral Risk Factor Surveillance System, 2011–2015.

4.5 Civic and Community Engagement (Social Associations)

In its 2016 report, *2016 Kansas Civic Health Index*, the Kansas Health Foundation identified key measures to assess civic and political engagement in Kansas.[32] The Civic Health Index includes 20 measures across the domains of social connection, confidence in institutions, community engagement and political involvement. Taken together, these measures provide a picture of the quality of life, resilience and governance in a community.

The *County Health Rankings and Roadmaps*, a collaborative project between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, employ a variety of population health measures for nearly every county in the United States. These include such measures as high school graduation rates, obesity, smoking, unemployment, access to healthy foods, the quality of air and water, income inequality and teen births.[33]

One measure related to civic and community engagement that is included in the *County Health Rankings and Roadmaps* is *Social Associations*—the number of associations per 10,000 population. These associations are defined to include civic organizations, bowling centers, golf clubs, fitness centers, sports organizations, religious organizations, political organizations, labor organizations, business organizations and professional organizations.

Overall, Kansas had 13.9 associations per 10,000 population in 2014 (the most recent data available). However, there was a wide range in rates by county, from a low of 7.6 per 10,000 in Geary County to a high of 55.7 per 10,000 in Kiowa County. Rates were generally higher in rural counties, particularly in the western part of the state (*Figure 4.5a*, page 85).

Figure 4.5a. **Association Rate per 10,000 Population by County in Kansas, 2014**

Source: KHI analysis of data from the 2017 County Health Rankings.

5.0 Conclusion

Kansas has changed considerably since it became the 34th state in 1861. Although approximately 90 percent of the state's land area is still used for agricultural purposes, Kansas is becoming increasingly urban. In 1960, 41.6 percent of the state's population resided in Urban counties with population densities of at least 150 persons per square mile. By 2016, more than 56.3 percent of the population was concentrated in such Urban counties.

And while the population in urban areas of the state have continued to grow, rural areas of the state have experienced substantial population declines over the decades. From 1960 to 2016, Frontier counties, those with fewer than six persons per square mile, have seen their populations decrease by 41.1 percent. Rural counties, those with six to less than 20 persons per square mile, experienced a decline of 22.2 percent during this same period.

How will Kansas look over the next 20 to 50 years? Based on recent trends, Kansas will look very different than it does today. While the overall population of the state is projected to increase by 25.1 percent by the year 2066, that growth will be concentrated in urban areas of the state. And, nearly every part of the state will be much more racially and ethnically diverse than it is today.

These trends and projections will have substantial impacts on every aspect of our society. As the population ages, rates of chronic disease such as heart disease and diabetes will likely increase and put additional strain on the public health and health care systems. Local governments in rural communities will find it increasingly difficult to fund and provide essential services to their residents as they see their tax bases continue to shrink. Small, local school districts will struggle to recruit and retain qualified teachers and staff to educate their students.

Further complicating matters, Kansas must grapple with the considerable disparities that exist in determinants of health. These extend beyond health behaviors such as healthy eating, physical activity and tobacco use. Addressing these behavioral issues to improve public health must be done within the larger context of social and environmental factors such as poverty and education. Minority populations experience higher poverty rates, lower high school graduation rates and educational attainment, have lower access to health care in Kansas, and are projected to experience substantial population growth and make up a larger proportion of our state.

It is our hope that the information provided in this report will highlight these challenges and help state and local leaders engage with communities on how to address them.

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Appendix A: Methods

Historical Population Patterns in the U.S. and in Kansas

To assess population patterns for the United States and Kansas, 1) for the U.S., KHI analyzed U.S. Census Bureau Decennial Census Data (i.e., ten-year intervals) for a 50-year period (1960 to 2010) and the U.S. Census Bureau's June 2017 Vintage 2016 population estimates, and 2) for Kansas, KHI analyzed Integrated Public Use Microdata Series National Historic Geospatial Information System Decennial Census Data (i.e., 10-year intervals) for an approximately 60-year period (1960 to 2016), and the U.S. Census Bureau's 2016 population estimates.

Population count was the sum of the population at the national level for the U.S. and, for Kansas, aggregated at the state level and by county population density, respectively. As noted in the Introduction, for Kansas, county population density groups are defined by KDHE. To calculate percent change in population over time by county population density group, counties were classified based on their population according to the 2010 census.

Based on population count, the percent change in population was calculated between 1960 and 2016 and between each successive 10-year period (e.g., 1960 to 1970, 1970 to 1980, … 2010 to 2016) for the U.S., Kansas, and by county population density, respectively.

Percent change is calculated by taking the difference between the current population count and the previous population count, divided by the previous population count in an interval of interest. For example, the percent change from 1960 to 1970 would be:

$$\frac{(1970\ population - 1960\ population)}{1960\ population} * 100\%$$

Data and figures for age and racial/ethnic population patterns for the U.S. and Kansas were based on data for the years 2000 and 2016 using the National Center for Health Statistics bridged-race estimates. Data and figures for the U.S. were based on calculations by KHI while data and figures were derived from work completed for KHI's *Chartbook: Racial and Ethnic Health Disparities in a Changing Kansas*. Bridged-race estimates allow for comparison of populations in census years and postcensal estimates.

For Kansas, age patterns were analyzed using population pyramids and racial/ethnic patterns were analyzed based on population counts and percent change similar to the approach outlined for the total population.

Population pyramids are graphical representations of proportions of age groups within a population, and they represent the overall distribution of a population. The proportion of the population at each age group was calculated for 17 five-year categories from age 0–4 to age 80–84, and one top-coded category for age 85 and older. More rectangular age pyramids indicate limited population growth and a larger older adult population, while more triangular pyramids (wider-based) represent higher population growth and a larger proportion of younger population. Age pyramids were calculated for the total population, the non-Hispanic White population, and the All Minorities population in Kansas.

For race/ethnicity, population counts and population change were aggregated and calculated as described for the total population of the United States and Kansas using only the values for 2000 and 2016.

All Minorities was defined as racial/ethnic populations except non-Hispanic White. Racial/ethnic groups are mutually exclusive categories that can be compared to one another but should not be compared to the All Minorities group due to overlaps (excluding non-Hispanic Whites).

For population counts and population percent change in Kansas, counties were grouped based on their population density designation from the 2010 Census to examine urban-rural differences in population patterns.

Population Projections

Forecasts for each five-year, age-gender cohort were developed by region, race and Hispanic ethnicity (i.e., non-Hispanic White, non-Hispanic Black, non-Hispanic Other/Multiple Races and Hispanic, Any Race) in five-year increments through the year 2066, using estimated birth, mortality and migration rates for each cohort. Estimated birth and mortality rates were based on 2005 to 2016 data published by KDHE Bureau of Epidemiology and Public Health Informatics. Detailed projections methodology provided by the Center for Economic Development and Business Research at Wichita State University is in *Appendix B*.

Income and Poverty

Per capita income was defined as the average income for every person in an area. It was calculated by taking the combined income of a population divided by the count for that population.

Median household income was defined as the midpoint of the distribution of income for households in an area. In other words, half of the households had income that fell below that level and half of the households had income above that level.

Per capita income and median household income were both inflation-adjusted so that income values captured in the survey period matched values in the final year of the sample period, 2015.

Poverty rate was defined as the percentage of individuals with incomes below 100 percent of the federal poverty level in an area. It was based on the population with available income information.

Single-year estimates for per capita income, median household income and poverty rate were derived from the 2015 American Community Survey (ACS) 5-year estimates (2011–2015). KHI also analyzed the Integrated Public Use Microdata Series Current Population Survey (CPS) data to examine the poverty trend from 2000–2017. However, there was a methodology change in 2014 for the CPS data, so caution should be taken in comparing information before and after the change. The methods used in CPS also differ from the ACS, so caution should be taken in comparing the two data sources.

The CPS data were more susceptible to variations for racial and ethnic groups across time due to small sample sizes for each year. Although the ACS 5-year estimates provide more stable estimates of poverty rates, they do not allow for examination of a longer historical trend since the first ACS five-year estimate for poverty status was not available until 2009.

Racial and ethnic categories varied between data sources. Therefore, the groupings differed across measures. The measures for per capita income and median household income were derived from KHI's *Chartbook: Racial and Ethnic Health Disparities in a Changing Kansas*, and race and ethnicity were mutually exclusive variables at the time of analysis. This did not allow KHI to create mutually exclusive race/ethnicity categories, except for non-Hispanic White, which was already reported separately in the ACS. The per capita income and median household income

were presented by non-Hispanic White, race for any ethnicity, and Hispanic origin. However, no comparison is made between race and ethnicity (Hispanic) since they were not mutually exclusive.

For ACS poverty status and CPS poverty status, race/ethnicity were available as mutually exclusive categories for analysis. In addition to the racial/ethnic disparities in poverty, KHI also investigated area variations in poverty. County was used as the geographic unit for the analysis. Additionally, counties were grouped based on their population density as defined by KDHE to examine urban-rural differences in poverty.

Education

For this report, graduation rates are presented using the four-year adjusted cohort formula as defined by the federal Elementary and Secondary Education Act, stratified by gender, race and ethnicity. This rate is defined as the number of students who graduate in four years with a regular high school diploma divided by the number of students who form the adjusted cohort for the graduating class. From the beginning of ninth grade (or the earliest high school grade), students who are entering that grade for the first time form a cohort that is adjusted by adding any students who subsequently transfer into the cohort and subtracting any students who subsequently transfer out, emigrate to another country or die.[34]

Access to Care

For health insurance coverage, *percent uninsured* was calculated as the population reporting no health insurance coverage divided by the total population of interest based on data from the 2015 American Community Survey Public Use Microdata Sample (ACS PUMS) 5-year period estimate.

For dental insurance coverage, *lacked dental coverage* was calculated as the number of individuals reporting no dental insurance coverage divided by the total sample population derived from 2015 single-year Kansas BRFSS tables from KDHE.

No usual source of care was defined as the percentage of individuals reporting that they had no one person they think of as their doctor or health care provider based on a five-year (2011–2015) combined BRFSS sample constructed by KHI.

Avoided medical care due to cost was defined as the percentage of individuals reporting that they needed medical care in the past 12 months, but did not seek care due to cost based on a five-year (2011–2015) combined BRFSS sample constructed by KHI.

Avoided dental care due to cost was defined as the percentage of individuals reporting that they needed dental care in the past 12 months, but did not seek care due to cost. However, racial/ethnic classification for this measure was unavailable. To provide further context, KHI also examined *avoided dental care due to any reasons* which allowed the investigation of racial/ethnic disparities. These measures were based on 2015 single-year Kansas BRFSS tables from KDHE.

Racial/ethnic classifications varied across data sources (i.e., ACS PUMS, single-year Kansas BRFSS, and combined-year Kansas BRFSS).

- ACS PUMS: Four racial/ethnic categories including non-Hispanic White; non-Hispanic Black; non-Hispanic, Other/Multiple Races; and Hispanic, Any Race.
- KDHE single-year BRFSS: Race and ethnicity were two separate variables and did not allow KHI to create mutually exclusive race/ethnicity categories. These measures were presented by Hispanic origin and by race, respectively. No comparison was made between ethnicity (Hispanic) and race since they were not mutually exclusive.
- Combined-year Kansas BRFSS: Data were based on a combined five-year sample (2011–2015) constructed by KHI and used six racial/ethnic classifications including non-Hispanic White; non-Hispanic Black; non-Hispanic, American Indians/Alaska Natives; non-Hispanic, Asians/Pacific Islanders; non-Hispanic, Other/Multiple Races; and Hispanic, Any Race.

Social Associations

Social associations is the number of associations per 10,000 population. Associations include membership organizations such as civic organizations, bowling centers, golf clubs, fitness centers, sports organizations, religious organizations, political organizations, labor organizations, business organizations, and professional organizations. These associations are identified by NAICS codes 813410, 713950, 713910, 713940, 711211, 813110, 813940, 813930, 813910 and 813920.[35] The data source for this measure is the U.S. Census Bureau County Business Patterns, 2014.[36]

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Appendix B: Detailed Population Projection Methodology

Note: The following methodology was provided by Wichita State University's Center for Economic Development and Business Research.

The Kansas regional population projections for 2016 to 2066, prepared by Wichita State University's Center for Economic Development and Business Research, are based on the age-cohort survival model of population forecasting. Each five-year, age-gender cohort was forecast by region, race and ethnic origin in five-year increments, using estimated mortality and migration rates for each cohort. Estimated birth rates by age and race cohort were used to forecast the births for each five-year period forecasted.

The U.S. Census Bureau's bridged-race population estimates were used as the base for the population forecast. These population estimates are calculated annually for each county in Kansas, by gender, five-year age cohort, race and Hispanic origin. The bridged-race estimates contain five single-race categories, and the mixed-race population in the unbridged population estimates is assigned to one of the five single-race categories in the bridged-race estimates. The bridged-race estimates were used to match the population, birth and mortality data by race as best possible.

Birth rates and mortality rates were calculated from the Kansas Information for Communities database, which compiles birth and death statistics from birth and death certificates filed in the state. Both birth and mortality data are categorized into three race categories and by Hispanic origin. The birth, morality, and population data were then aggregated into four race and ethnic origin categories, by age and sex: non-Hispanic White, non-Hispanic Black, non-Hispanic Other,

and total Hispanic. Birth and mortality rates were then forecasted using historical trends for each group.

Net migration patterns were estimated based on age, gender and race-specific migration rates estimated by the Applied Population Laboratory at the University of Wisconsin. Their migration estimates are based on migration between the 2000 and 2010 Census. The rates were then interacted with trends from subsequent U.S. Census Bureau's population estimates to create the net migration patterns used in the forecast.

The regions used in the population forecast follow the outlines of the of the Kansas Healthcare Coalitions and the micropolitan and metropolitan statistical areas defined by the Office of Management and Budget. The Western Rural forecast region includes all non-micropolitan, non-metropolitan counties in the Northwest Coalition, Southwest Coalition, North Central Coalition, and South Central Coalition areas. The Eastern Rural forecast region includes all non-micropolitan, non-metropolitan counties in the Northeast Coalition and Southeast Coalition areas. The Western Micropolitan region includes the following micropolitan statistical areas: Great Bend, Winfield, Hays, Garden City, Dodge City, McPherson, Hutchinson, Salina and Liberal. The Eastern Micropolitan region includes the following micropolitan statistical areas: Atchison, Emporia, Pittsburg, Coffeyville and Parsons.

Appendix C: Endnotes

[1] Kansas Department of Environment. (2012). Annual Summary of Vital Statistics, Kansas, 2011. Retrieved from http://www.kdheks.gov/hci/as/2011/AS_2011.pdf

[2] Kansas Health Institute. (2017). Chartbook: Racial and Ethnic Health Disparities in a Changing Kansas. Retrieved February 13, 2018 from http://www.khi.org/assets/uploads/news/14806/tl-web-chartbook-disparities-all.pdf

[3] Ibid.

[4] United States Census Bureau. American FactFinder. (n.d.) Profile of General Demographic Characteristics: 2000. Retrieved March 8, 2018 from https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF

[5] Kansas Health Institute. (2017). Chartbook: Racial and Ethnic Health Disparities in a Changing Kansas. Retrieved February 13, 2018 from http://www.khi.org/assets/uploads/news/14806/tl-web-chartbook-disparities-all.pdf

[6] Wichita State University Center for Economic Development and Business Research. (2016). Kansas Population Projections, 2014-2064: Elderly Population. Retrieved February 13, 2018 from http://www.cedbr.org/content/2016/eConnection/Kansas%20Elderly%20Population%20Article.pdf

[7] Wichita State University Center for Economic Development and Business Research. (2016). Kansas Population Projections, 2014-2064: Comparison to United States Projections. Retrieved February 13, 2018 from http://www.cedbr.org/content/2017/eConnection/Kansas%20US%20Comparison%20Article.pdf

[8] Kansas Health Institute. (2017). Chartbook: Racial and Ethnic Health Disparities in a Changing Kansas. Retrieved February 13, 2018 from http://www.khi.org/assets/uploads/news/14806/tl-web-chartbook-disparities-all.pdf

[9] United States Census Bureau. Demographic Turning Points for the United States: Population Projections for 2020 to 2060. Retrieved March 20, 2018 from https://www.census.gov/content/dam/Census/library/publications/2018/demo/P25_1144.pdf

[10] Ibid.

[11] Kansas Department of Health and Environment. Healthcare Coalitions. Retrieved January 25, 2018 from http://www.kdheks.gov/cphp/hcc.htm

[12] United States Census Bureau. Kansas – Core Based Statistical Areas (CBSAs) and Counties. Retrieved February 16, 2018 from https://www2.census.gov/geo/maps/metroarea/stcbsa_pg/Feb2013/cbsa2013_KS.pdf

[13] MEASURE Evaluation. Lesson 8: The Cohort Component Population Projection Method. Retrieved January 25, 2018 from https://www.measureevaluation.org/resources/training/online-courses-and-resources/non-certificate-courses-and-mini-tutorials/population-analysis-for-planners/lesson-8

[14] Schanzenbach, D., Mumford, M., Nunn, R., & Bauer, L. (2016). Money Lightens the Load (Report). The Hamilton Project, Brookings Institute. Retrieved February 21, 2018 from http://www.hamiltonproject.org/assets/files/money_lightens_the_load_updated.pdf

[15] Williams, D. R., Mohammed, S. A., Leavell, J., & Collins, C. (2010). Race, Socioeconomic Status and Health: Complexities, Ongoing Challenges and Research Opportunities. *Annals of the New York Academy of Sciences*, *1186*, 69—101. https://doi.org/10.1111/j.1749-6632.2009.05339.x

[16] Ludwig, J., Sanbonmatsu, L., Gennetian, L., Adam, E., Duncan, G. J., Katz, L. F., … McDade, T. W. (2011). Neighborhoods, Obesity, and Diabetes — A Randomized Social Experiment. *New England Journal of Medicine*, *365(16)*, 1509—1519. https://doi.org/10.1056/NEJMsa1103216

[17] Nandi, A., Glymour, M. M., & Subramanian, S. V. (2014). Association among socioeconomic status, health behaviors, and all-cause mortality in the United States. *Epidemiology*, *25(2)*, 170—177. https://doi.org/10.1097/EDE.0000000000000038

[18] Macartney, S., Bishaw, A., & Fontenot, K. (2013). Poverty Rates for Selected Detailed Race and Hispanic Groups by State and Place: 2007—2011 (American Community Survey Briefs No. ACSBR/11-17). U.S. Census Bureau.

[19] Semega, J. L., Fontenot, K. R., & Kollar, M. A. (2017). Income and Poverty in the United States: 2016 (Current Population Reports No. P60-259). U.S. Census Bureau. Retrieved February 21, 2018 from https://www.census.gov/library/publications/2017/demo/p60-259.html

[20] United States Department of Health and Human Services. (n.d.). Healthy People 2020. Retrieved February 21, 2018, from https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health/objectives

[21] Agency for Healthcare Research and Quality. (2015). Understanding the relationship between education and health: A Review of the Evidence and an Examination of Community Perspectives. In *Population Health: Behavioral and Social Science Insights* (pp. 347-384). Retrieved February 7, 2018 from http://www.ahrq.gov/professionals/education/curriculum-tools/population-health/zimmerman.html

[22] National Center for Health Statistics. (2012). Health, United States, 2011: With Special Feature on Socioeconomic Status and Health. Hyattsville, MD: U.S. Government Printing Office.

[23] Montez, J. K., Hummer, R. A., & Hayward, M. D. (2012). Educational attainment and adult mortality in the United States: A systematic analysis of functional form. *Demography*, *49(1)*, 315-336.

[24] United States Department of Health and Human Services. Healthy People 2020. Retrieved February 20, 2018 from https://www.healthypeople.gov/2020/leading-health-indicators/2020-lhi-topics/Social-Determinants/determinants

[25] Health, U. D. of, & Services, H. (2011). National Prevention Strategy: America's Plan for Better Health and Wellness. Rockville, MD: U.S. Department of Health and Human Services.

[26] Sommers, B. D., Gawande, A. A., & Baicker, K. (2017). Health Insurance Coverage and Health — What the Recent Evidence Tells Us. *New England Journal of Medicine*, *377(6)*, 586–593. https://doi.org/10.1056/NEJMsb1706645

[27] Hayes, S. L., Pamela Riley, M. D., Radley, D., & McCarthy, D. (2017). Reducing Racial and Ethnic Disparities in Access to Care: Has the Affordable Care Act Made a Difference? Retrieved February 21, 2018 from https://doi.org/10.15868/socialsector.28158

[28] Nasseh, K., & Vujicic, M. (2015). Dental Care Utilization Rate Continues to Increase among Children, Holds Steady among Working-Age Adults and the Elderly (Health Policy Institute Research Brief). American Dental Association. Retrieved February 21, 2018 from http://www.ada.org/~/media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_1015_1.pdf

[29] Artiga, S., Foutz, J., Cornachione, E., & Garfield, R. (2016). Key Facts on Health and Health Care by Race and Ethnicity (Report). Kaiser Family Foundation. Retrieved February 21, 2018 from https://www.kff.org/disparities-policy/report/key-facts-on-health-and-health-care-by-race-and-ethnicity/

[30] United States Department of Health and Human Services. (n.d.). Healthy People 2020. Retrieved February 20, 2018, from https://www.healthypeople.gov/2020/leading-health-indicators/2020-lhi-topics/Access-to-Health-Services

[31] McGinnis, J. M. "Actual Causes of Death, 1990-2010," Workshop on Determinants of Premature Mortality, Sept. 18, 2013, National Research Council, Washington, DC.

[32] Kansas Health Foundation. (2016). 2016 Kansas Civic Health Index. Retrieved February 9, 2018 from http://kansashealth.org/resources/kansas-civil-health-index/

[33] University of Wisconsin Population Health Institute. (2017). County Health Rankings and Roadmaps. Retrieved February 9, 2018 from http://www.countyhealthrankings.org/

[34] United States Department of Education. ED Data Express: Data about elementary & secondary schools in the U.S. Retrieved February 8, 2018 from https://eddataexpress.ed.gov/index.cfm

[35] University of Wisconsin Population Health Institute. (2017). County Health Rankings and Roadmaps: Social Associations. Retrieved February 21, 2018 from http://www.countyhealthrankings.org/app/kansas/2017/measure/factors/140/description

[36] United States Census Bureau. County Business Patterns: 2014. Retrieved February 21, 2018 from https://www.census.gov/data/datasets/2014/econ/cbp/2014-cbp.html

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