



NATIONAL PARTNERSHIP FOR ACTION
to End Health Disparities

REGION VII HEART DISEASE DISPARITIES REPORT

Heartland RHEC Environmental Scan Addendum



Heartland RHEC

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Introduction

This heart disease report was created by the Region VII Health Equity Council Data Committee as an addendum to the Heartland RHEC Environmental Scan published in 2014. The Environmental Scan was published to provide an overview of demographics, health disparities, social determinants of health data and other factors affecting health in Region VII. It also highlighted challenges, opportunities and next steps that could be taken to promote health equity and the elimination of health disparities in Region VII. As a next step to build upon the Environmental Scan and address health disparities in Region VII, the RHEC VII Council Data Committee reviewed the leading causes of death and health disparities data in Region VII and established heart disease as a priority area of focus for 2015 as it is one of the leading causes of death for most minority populations in Region VII. Heart disease and its risk factors exact a disproportionate toll on many racial and ethnic groups in Region VII. Heart disease accounts for approximately one-third of the years of potential life lost (YPLL) disparity between White and African American populations (American Heart Association, 2015).

Chronic conditions, such as heart disease, stroke, cancer and diabetes are the most frequent and costly health conditions in the United States (U.S.). Seven of the ten leading causes of death in 2010 were chronic conditions. Heart disease and cancer together accounted for nearly 48% of all deaths (Centers for Disease Control and Prevention (CDC), 2015b). The United States Secretary of Health and Human Services released an action plan to help prevent and minimize the prevalence of heart disease and stroke in the U.S. According to the CDC, the term “heart disease” refers to several types of heart conditions. However, the most common type of heart disease in the United States is coronary artery disease, which usually affects the blood flow to the heart (CDC, 2015a). In other words, heart disease can be defined as “any medical condition of the heart or the blood vessels supplying it that impairs cardiac functioning.” Heart disease and stroke are among the leading causes of death and disability in the US, estimated to cost approximately \$351 billion in 2003. As the U.S. population ages, preventable chronic conditions such as heart disease are predicted to become more frequent and costly (CDC, 2015d).

Methodology

Epidemiologists and vital statistics analysts from each State Health Department were contacted for Behavioral Risk Factor Surveillance System (BRFSS) and vital statistics heart disease data for racial and ethnic minority populations in Nebraska. The indicators described in this addendum include mortality rates of heart disease, prevalence of coronary heart disease (CHD) and myocardial infarctions (MI), and years of potential life lost (YPLL) to heart disease.

The data in this report covers the time periods of 2001 through 2010. While we understand there is more current data, the Regional Health Equity Data Committee used the data presented for consistent benchmarks. Beginning in 2011, the Division of Behavioral Surveillance (DBS) of the Centers for Disease Control and Prevention made two major changes to the BRFSS Survey methodology (weighting methodology and the addition of the cell phone sampling frame). These changes were designed to improve the accuracy of BRFSS estimates; however the results using these new methods are not comparable to BRFSS estimates from previous years. The BRFSS 2011 data should be considered a baseline year for data analysis and is not directly comparable to previous years of BRFSS data. Due to the small sample size issues, states combined 5 years of BRFSS data to generate the estimate for minority groups. At the time this report was being written, all of the most current five year BRFSS data (2011-2015) was not available, therefore 2006-2010 BRFSS heart disease prevalence data was used. Although the 2011 BRFSS data is not comparable to previous years, most of the leading causes of deaths in this region have not changed even today. Heart disease prevalence questions were not asked in CDC BRFSS survey core sections until 2005, and were not collected by all states in Region VII. Only 2 or 3 years of prevalence data was available, therefore it was not presented for the 2001-2005 period in this report.

For mortality rate trends, the data are presented from the years 2000 to 2010 for all states except Kansas, for which the years 2001-2010 are presented. In this report, 2006-2010 heart disease mortality data was also used to match the same time period of the BRFSS data. To compare changes in mortality rates throughout the decade, the decade was split into two time periods: 2001-2005 and 2006-2010.

All of the mortality rates and years of life lost data are age adjusted. Age-adjustment is a standardization method used for many health indicators to allow rates across different populations to be directly compared to each other. Adjusted indicators are presented as a rate per 100,000 people and are calculated using a standard population. An age-adjusted death rate represents what the crude death

rate would be if the population for which the rate is adjusted and the standard population had the same age distribution. The year “2000 U.S. Standard Population” was used for the calculation of age-adjusted mortality rates in this report.

In the figures for mortality rate trends, the trend line for White often falls under the trend line for the total population. As a result, the trend line for the total population was made thinner to increase visibility of the line for non-Hispanic Whites. This happens because Whites make up the vast majority of each state in the heartland; therefore, rates for the total population will closely mimic the rates for Whites and the two trend lines will overlap.

Additionally, please note that in some instances, data are omitted due to small population sizes. YPLL is calculated based on a life expectancy of 75 years. YPLL rates are used to compare YPLL among populations of different sizes. Because different populations may also have different age distributions, YPLL rates are age-adjusted to eliminate the effect of differing age distributions.

Data sources

The data comes from a number of sources for each state, including online tools, health department offices, and state surveys:

Iowa (IA):

Mortality rates were populated from CDC WONDER, which is an acronym for Wide-ranging Online Data for Epidemiologic Research available from the CDC for both public health professionals and the general public. This useful tool can be accessed at <http://wonder.cdc.gov/>. Information for YPLL due to heart disease was derived from the Vital Statistics in the Iowa Department of Health and percentages were populated from the IA BRFSS survey.

Kansas (KS):

The data populated for heart disease indicators were prepared by the Bureau of Epidemiology and Public Health Informatics in the Kansas Department of Health and Environment. The percentages of adults with CHD and MIs came from the KS BRFSS survey.

Missouri (MO):

The data gathered for the State of Missouri are Missouri Information for Community Assessment (MICA) documents focused on the population and deaths in the state. These can be found at <http://health.mo.gov/data/mica/MICA/>. For the American Indian/Alaska Native and Asian populations, statisticians used special population estimates. Similar to the other states of Region VII, the prevalence of CHD and MI were derived from the MO BRFSS survey.

Nebraska (NE):

The mortality rates and YPLL numbers for the State of Nebraska came from Vital Statistics in the Nebraska Department of Health and Human Services and the prevalence of CHD and MI were from the NE BRFSS survey.

In the following figures and accompanying text, the terms and abbreviations for racial/ethnic groups are as follows:

White: Non-Hispanic White

African American: African American/Black

American Indian: American Indian/Alaska Native

Asian: Asian American/Native Hawaiian or Pacific Islander

Hispanic: Hispanic/Latino

Other, non-Hispanic: includes Asian, Native Hawaiian or other Pacific Islander, American Indian/Alaska Native, and Multiracial. This term is used in KS BRFSS data.

Region VII State Populations

Table 1 below shows the population counts from the 2000 and 2010 U.S. Census. The total population for each state has grown over the decade and each racial or ethnic minority group has also experienced significant growth. Consequently, the White population makes up a smaller proportion of the total population in 2010 than in 2000; however, the White population is still the vast majority of each state (at least 80%). For all states, Hispanics had the largest percent change in population between 2000 and 2010.

Table 1. Region VII Four State Population

	Iowa				Kansas				Missouri				Nebraska			
	2000		2010		2000		2010		2000		2010		2000		2010	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
White	2,748,640	93.9	2,781,561	91.3	2,313,944	86.1	2,391,044	83.8	4,748,083	84.9	4,958,770	82.8	1,533,261	89.6	1,572,838	86.1
African American	61,853	2.1	89,148	2.9	154,198	5.7	167,864	5.9	629,391	11.2	693,391	11.6	68,541	4.0	82,885	4.5
American Indian/Alaska Native	8,989	0.3	11,084	0.4	24,936	0.9	28,150	1.0	25,076	0.4	27,376	0.5	14,896	0.9	18,427	1.0
Asian/Native Hawaiian & Pacific Islander	37,644	1.3	55,097	1.8	48,119	1.7	70,000	2.5	64,773	1.2	104,344	1.7	22,767	1.3	33,572	1.9
Hispanic	82,473	2.8	151,544	5.0	188,252	7.0	300,042	10.5	118,592	2.1	212,470	3.5	94,425	5.5	167,405	9.2
Two or More Races	31,778	1.1	53,333	1.8	56,496	2.1	85,933	3.0	82,061	1.5	124,589	2.1	23,953	1.4	39,510	2.2
State Total	2,926,324		3,046,355		2,688,418		2,853,118		5,595,211		5,988,927		1,711,263		1,826,341	

Source: U.S. Census Bureau, Population Division 2000, 2010

Percent Change: 2000 to 2010

Between 2000 and 2010, the minority population in all states have been increasing more rapidly than the non-Hispanic (NH) White population. Hispanics were the fastest-growing minority group. Asian/Native Hawaiian & Pacific Islanders were the second fastest growing minority group.

Table 2. Region VII Four State Population Percent Change

	Iowa	Kansas	Missouri	Nebraska
White	1.2%	3.3%	4.4%	2.6%
African American	44.1%	8.9%	10.2%	20.9%
American Indian/Alaska Native	23.3%	12.9%	9.2%	23.7%
Asian/Native Hawaiian & Pacific Islander	46.4%	45.5%	61.1%	47.5%
Hispanic	83.7%	59.4%	79.2%	77.3%
Two or More Races	67.8%	52.1%	51.8%	64.9%
State Total	4.1%	6.1%	7.0%	6.7%

Source: U.S. Census Bureau, Population Division 2000, 2010

Region VII 2014 Population Estimates

All States continue to become more diverse. In 2010, Hispanics were the largest minority group in Iowa, Kansas and Nebraska. African Americans were the second-largest minority group in these 3 states. In Missouri, African Americans were the largest minority group, Hispanics were the second-largest minority group.

Table 3. Annual Estimates of the Resident Population by Sex, Age, Race, and Hispanic Origin for the United States and States:
April 1, 2010 to July 1, 2014.

	Iowa		Kansas		Missouri		Nebraska	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
White, non-Hispanic	2,706,164	87.1	2,233,536	78.3	4,855,967	81.1	1,514,386	80.5
African American, non-Hispanic	101,236	3.3	163,542	5.7	689,391	11.5	87,349	4.6
American Indian/Alaska Native, non-Hispanic	9,087	0.3	23,157	0.8	24,179	0.4	15,459	0.8
Asian, non-Hispanic	67,723	2.2	67,726	2.4	98,340	1.6	39,854	2.1
Native Hawaiian/Pacific Islander, non-Hispanic	2,306	0.1	2,026	0.1	5,848	0.1	1,140	0.1
Hispanic	173,594	5.6	300,042	10.5	212,470	3.5	191,325	10.2
Two or More Races	47,016	1.5	63,089	2.2	102,732	1.7	31,990	1.7
State Total	3,107,126	100	2,853,118	100	5,988,927	100	1,881,503	100

Source: U.S. Census Bureau, Population Division 2010, 2014

Key Findings from the Heartland

- The age-adjusted heart disease mortality rates for the total population decreased from 2001 to 2010 for all race and ethnicity groups for all states, with the exception of Asians in Kansas. While the rates of African Americans continue to be higher than that of Whites and other racial and ethnic groups, the rates for American Indians/Alaska Natives and Asians in Kansas increased in late years of the decade.
- In Kansas, the age-adjusted myocardial infarction rates among all racial and ethnic minority groups were higher than the rate for Whites.
- African Americans in Missouri have more years of potential life lost due to heart disease in both the 2001-2005 and 2006-2010 time periods. When compared to Whites, African Americans had 840.5 more years of potential life lost per 100,000 during the 2006-2010 time period. All racial and ethnic populations had decreases between 2001-2005 and 2006-2010 periods except American Indians/Alaska Natives.
- Heart disease mortality for African Americans is highest in three of the four states in Region VII. In Nebraska, the mortality rate for African Americans was ranked second to that of American Indians.
- There was also an overall decline in the years of life lost due to heart disease per 100,000 people for all states; however with regard to specific racial and ethnic groups, for American Indians/Alaska Natives and Asians of Kansas and American Indians/Alaska Natives of Missouri, there were increases of years lost due to heart disease between the time periods of 2001-2005 and 2006-2010.
- The total percentages (e.g. all racial or ethnic groups combined for each state) of people who were told they had a myocardial infarction ranged between approximately 3.6% (NE, KS) and 4.7% (MO) for all four states for 2006-2010. It is important to note that African Americans of Missouri had a high percentage (11%) as did American Indians of Iowa (12.6%) in 2006-2010.
- Similar patterns were seen for the four states with regard to the total percent of individuals who were told they had coronary heart disease for the years 2006-2010. The percentages ranged from around 3.9% (NE, KS) to 4.4 % (MO). It is important to note that American Indians had the highest proportion of people who were diagnosed with heart disease in Nebraska and Iowa. In Missouri, African Americans had the highest proportion of individuals with CHD.

Heart Disease Mortality by State

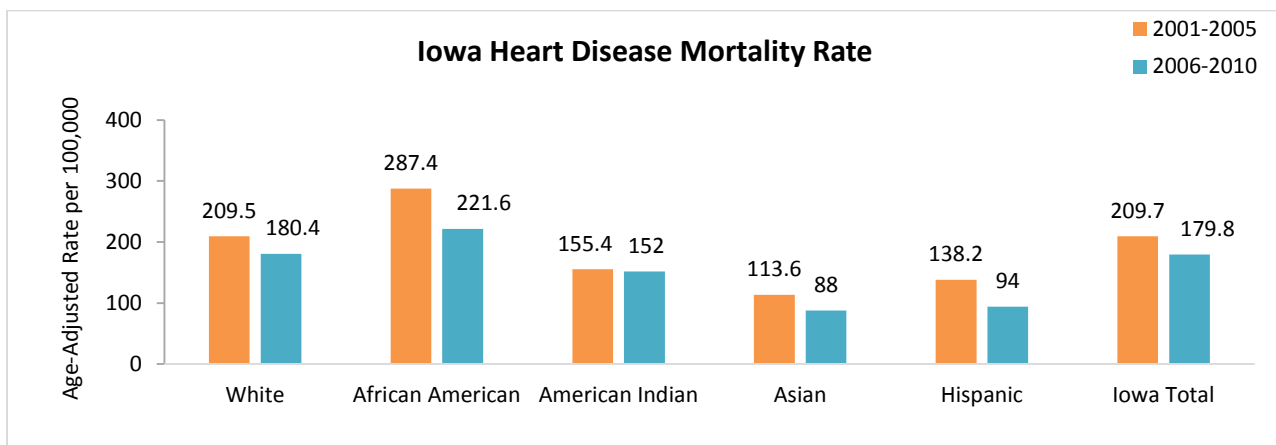
According to the CDC, about 610,000 people die from heart diseases every year, which translates to one in four deaths (CDC, 2015c). Furthermore, heart disease is the leading cause of death among men and women in the United States. Coronary heart disease is the most common form of heart disease, causing 370,000 deaths annually. According to a forecast made by CDC concerning the prevalence and mortality of heart disease, by 2020, the mortality rate, disability and socioeconomic cost of heart disease will sharply increase (CDC, 2015c).

The following charts describe the mortality rates and the years of potential life lost due to heart disease for each of the four states in Region VII, separated by race and ethnicity.

Iowa

The overall age-adjusted death rate due to heart disease from 2001-2005 in Iowa was 210 per 100,000 people. The rate decreased to 180 in 2006-2010 (Figure 1). Although rates for all racial and ethnic groups decreased between 2001-2005 and 2006-2010, the rates for American Indians decreased by only three points from 155 (2001-2005) to 152 (2006-2010). This is the smallest decrease among all groups. For both time periods, African Americans had the highest mortality rate.

Figure 1. Iowa Heart Disease Mortality Rate



Source: CDC Wonder (<http://wonder.cdc.gov/controller/datarequest/D77>)

The YPLL due to heart disease for the total population in Iowa decreased from 922 to 845 years per 100,000 people between the time periods (Figure 2). However, the African American rate from 2006-2010 remained the highest rate for all racial and ethnic groups; most notably, it was 2.3 times higher than the White population rate. Compared to other racial and ethnic groups, American Indians and African Americans had the biggest decreases in YPLL rate. For American Indians, the rate dropped by 479 years and for African Americans, the YPLL rate declined by 319 years. The smallest decreases were observed in the Asian and White populations (72-76 years).

Figure 2. Iowa Years of Life Lost due to Heart Disease

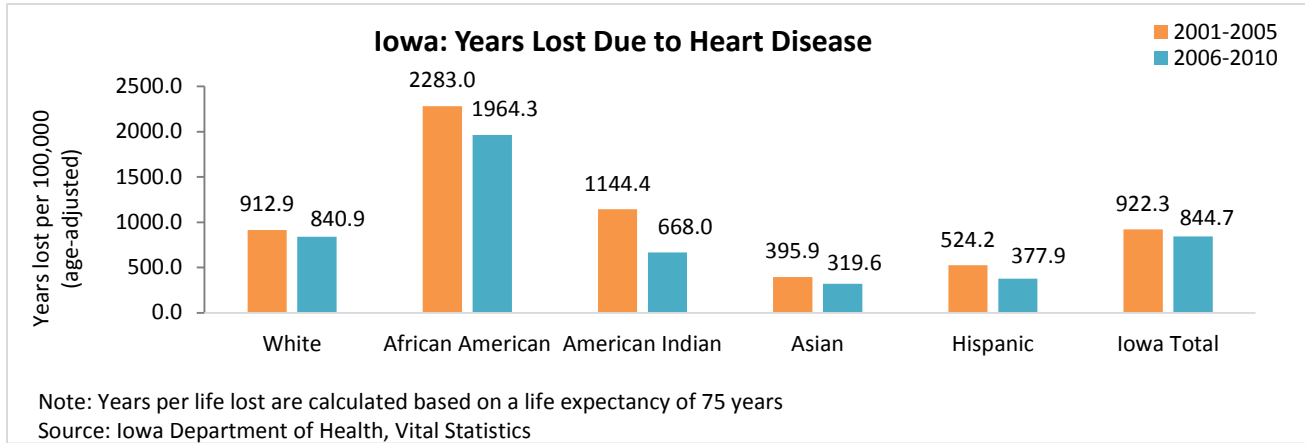
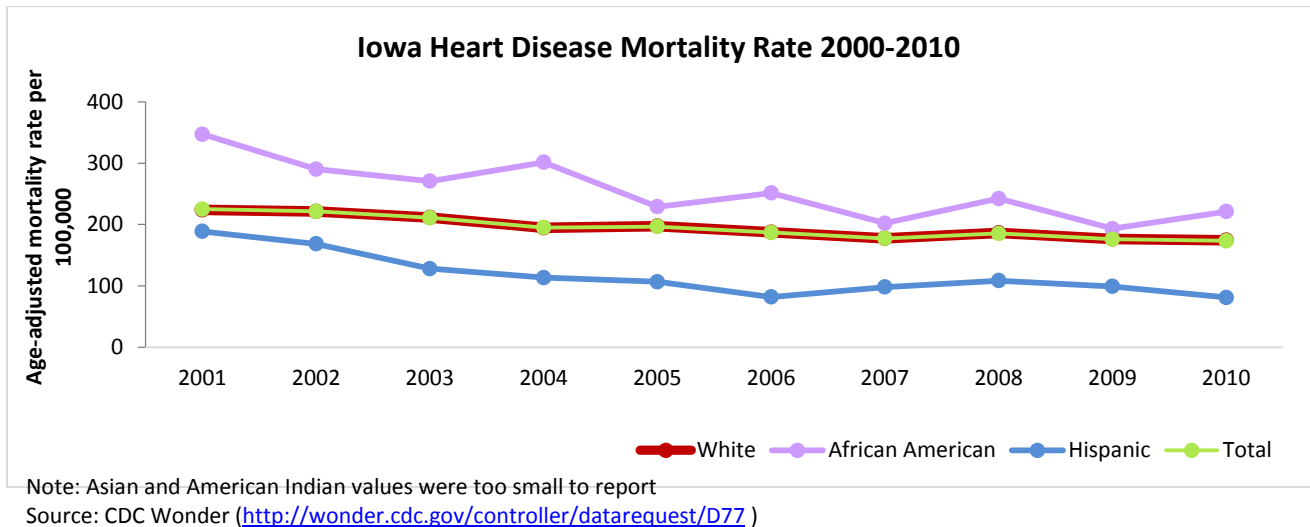


Figure 3 shows the age-adjusted heart disease mortality rates by race/ethnicity over time. Note that the Asian and American Indian values were omitted due to small numbers. The overall trend of heart disease mortality in Iowa decreased from 225 per 100,000 population in 2001 to 173 in 2010. Throughout the decade, the mortality rates for African Americans remained higher than that of Whites and Hispanics.

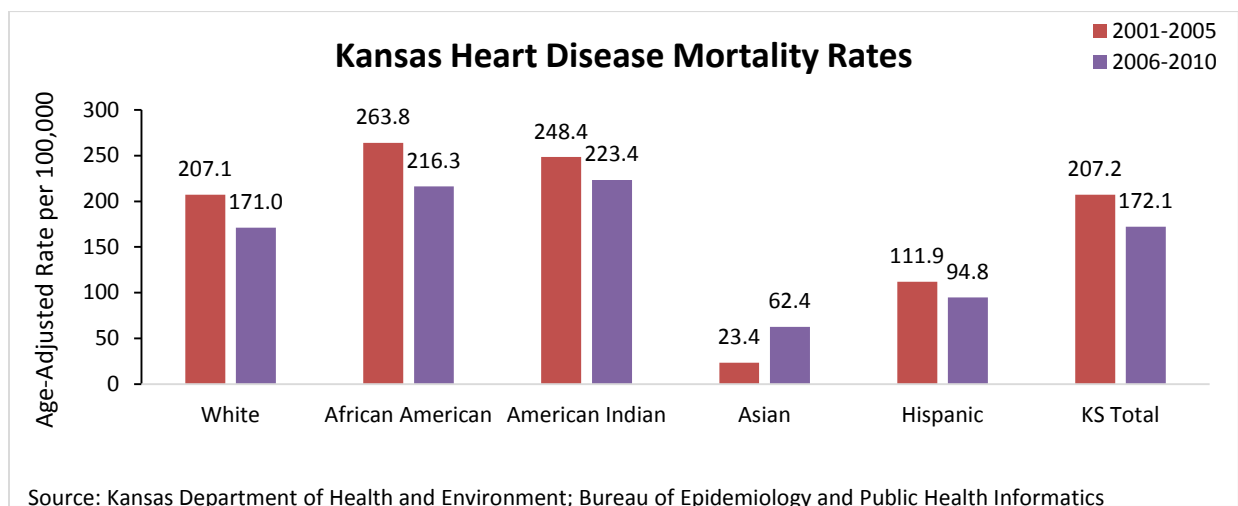
Figure 3. Iowa Heart Disease Mortality Trends from 2000-2010



Kansas

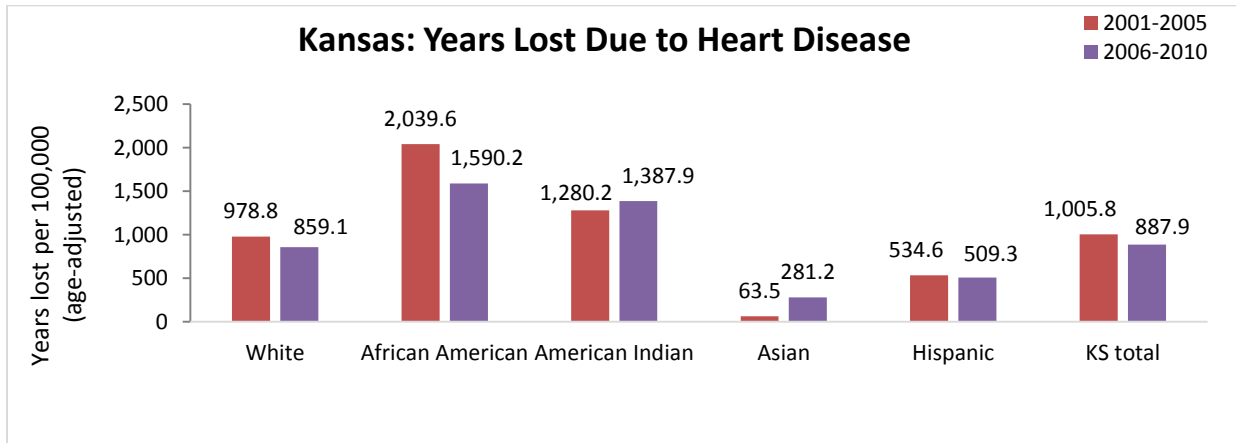
Figure 4 shows that there was a decrease in the age-adjusted heart disease mortality rate from 207.2 per 100,000 people in 2001-2005 to 172.1 per 100,000 people in 2006-2010 in Kansas. Heart disease mortality rates were higher for African American and American Indian populations than for Whites. American Indians recorded the highest rate in 2006-2010 (223.4). Although rates for the Asian population continue to be the lowest for all populations in Kansas, they tripled between the 2001-2005 and 2006-2010 time periods.

Figure 4. Kansas Heart Disease Mortality Rate



The years of potential life lost due to heart disease decreased for all populations except the Asian population in Kansas from 2001-2005 to 2006-2010 (Figure 5). There was a high increase of years of potential life lost for Asians between 2001-2005 and 2006-2010 (63.5 to 281.2). American Indians also had an increase in years of life lost from 1,280 (2001-2005) to 1,387 (2006-2010). African Americans had more YPLL than any other group during the 2001-2010 time period, despite experiencing a large decrease between the two periods.

Figure 5. Kansas Years of Life Lost due to Heart Disease

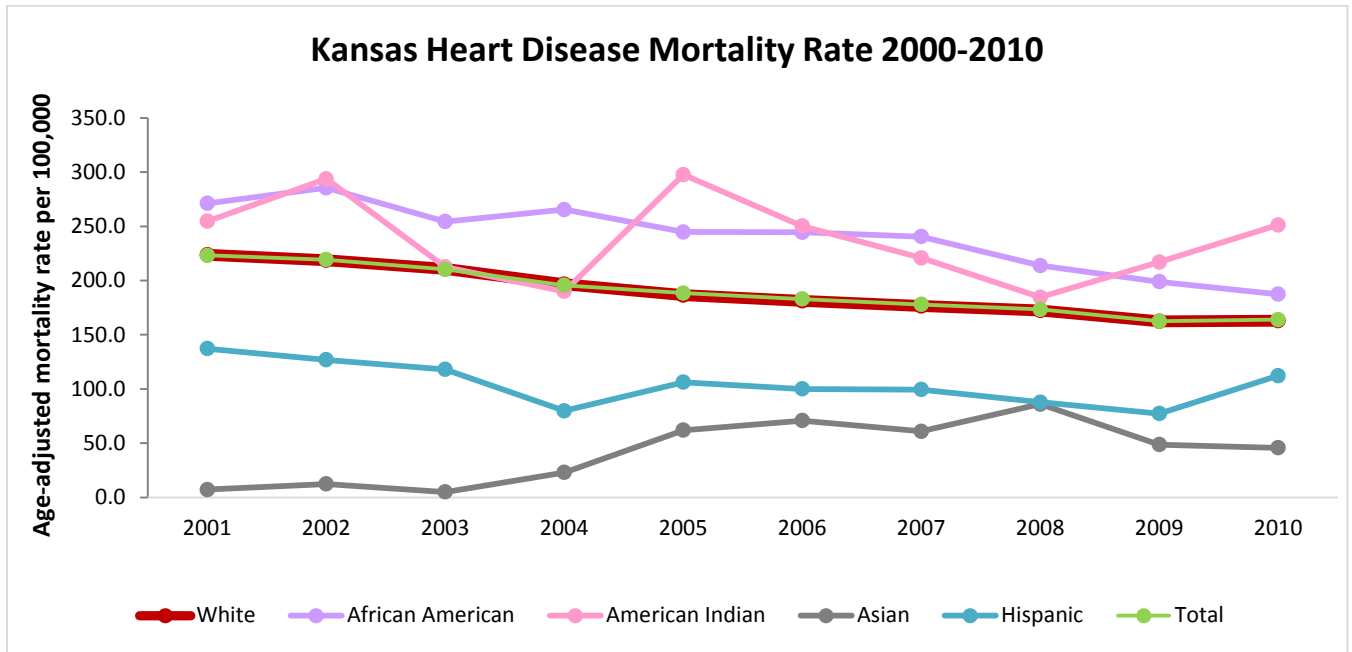


Note: Years per life lost are calculated based on a life expectancy of 75 years

Source: Kansas Department of Health and Environment; Bureau of Epidemiology and Public Health Informatics

Overall, heart disease mortality in Kansas decreased from 223 (2001) to 164 (2010) [Figure 6]. Similar to the 61-point decrease in mortality rate for the White population (from 223 to 162 per 100,000 people), African Americans had a decrease of 84 points from 271 to 187 deaths per 100,000. American Indians had a higher rate than both African Americans and Whites, at 254 in 2001, that only decreased by 3 points to 251 in 2010. The mortality rate for American Indians was 1.3 times greater than that of Whites in 2001, and was 1.5 times greater in 2010, indicating a growth in the health gap between the two races. The Hispanic rate was 137 in 2001, decreasing to 112 in 2010. Of all the racial and ethnic groups, Asians maintained the lowest heart disease mortality rates but were the only group to experience an increase in mortality rate, from 23 to 62 deaths per 100,000 between 2001 and 2010.

Figure 6. Kansas Heart Disease Mortality Rate Trend from 2001-2010

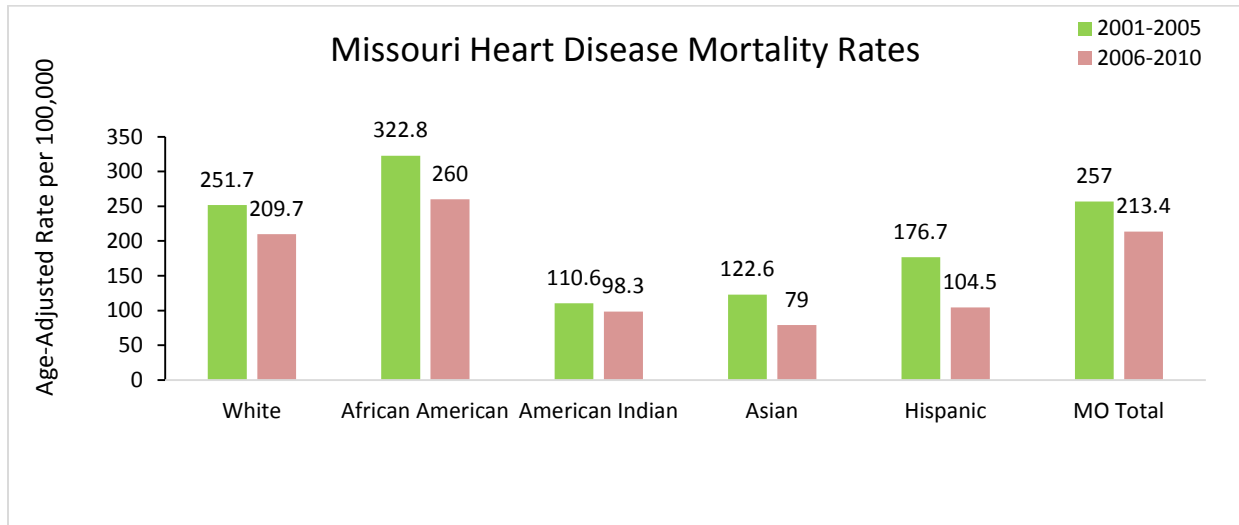


Source: Kansas Department of Health and Environment; Bureau of Epidemiology and Public Health Informatics.

Missouri

The overall age-adjusted mortality rate due to heart disease in Missouri declined from 257 per 100,000 people in 2001-2005 to 213.4 in 2006-2010 (Figure 7). Although heart disease mortality rates for all populations have declined from 2001-2005 to 2006-2010, African Americans in Missouri still experienced the highest mortality rates during both 5-year time periods. The smallest reduction in heart disease mortality was observed in the American Indian population from under 111 (2001-2005) to 98 (2006-2010).

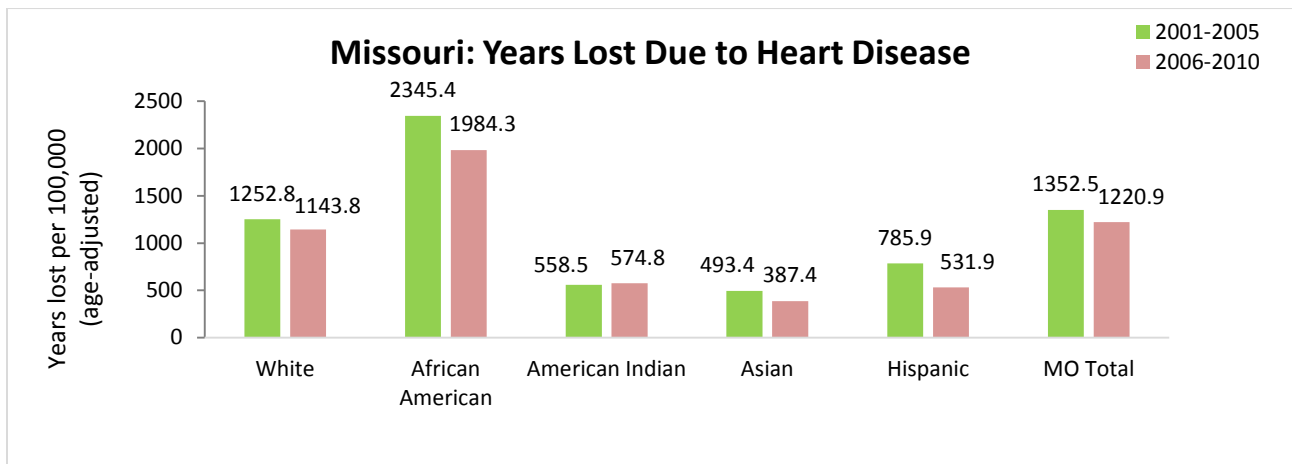
Figure 7. Missouri Heart Disease Mortality Rate



Source: MO Death and Population MICAs; Special population estimates for American Indian and Asian populations.

There was also a marked reduction in the from less than 1,353 per 100,000 people (2001-2005) to under 1,221 (2006-2010) (Figure 8). African Americans in Missouri have more years of potential life lost due to heart disease during both five year time periods than any other racial or ethnic group. When compared to Whites, African Americans had 840.5 more years of potential life lost per 100,000 during the 2006-2010 time period. All racial and ethnic populations had decreases between the two time periods except American Indians. The years of potential life lost for American Indians increased from almost 559 to almost 575.

Figure 8. Missouri Years of Life Lost due to Heart Disease

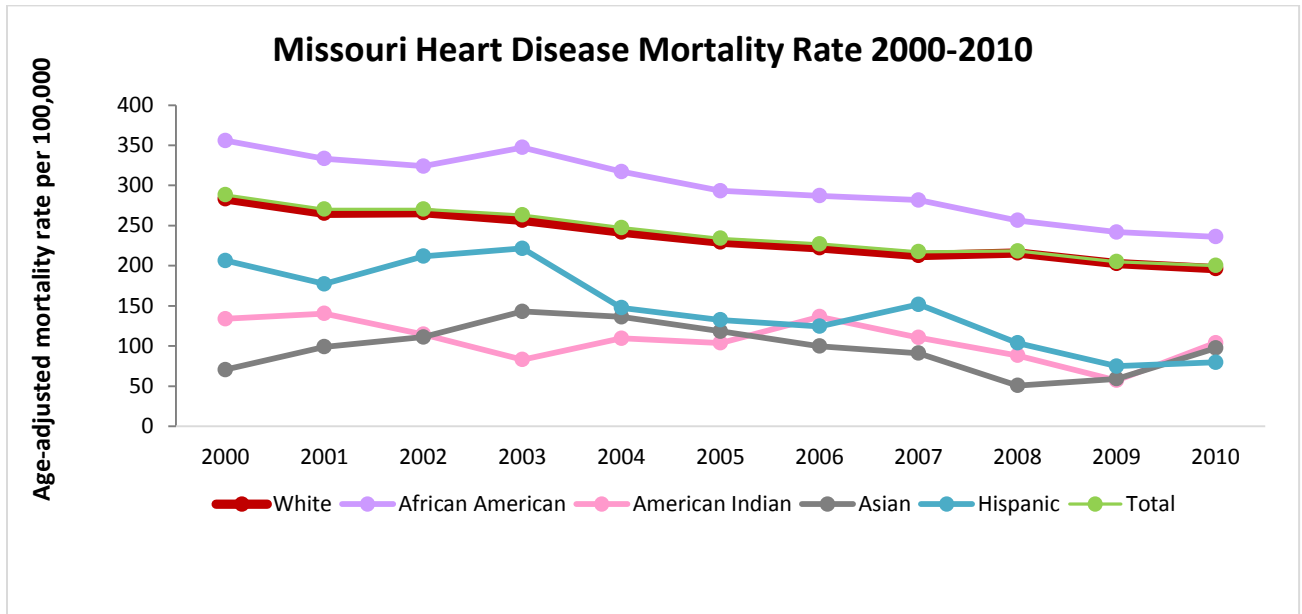


Note: Years per life lost are calculated based on a life expectancy of 75 years

Source: MO Death and Population MICAs; Special population estimates for American Indian and Asian populations

Heart disease mortality rates from 2000-2010 show a steady decline for African Americans in Missouri, although the rates continue to be higher than that of Whites and other racial and ethnic population groups (Figure 9). The trend data shows an increase in the rate of heart disease mortality for Asians from 2008-2010 and for American Indians from 2009-2010. The heart disease mortality rate for Hispanics during this 10 year period shows fluctuation.

Figure 9. Missouri Heart Disease Mortality Rate Trend from 2000-2010

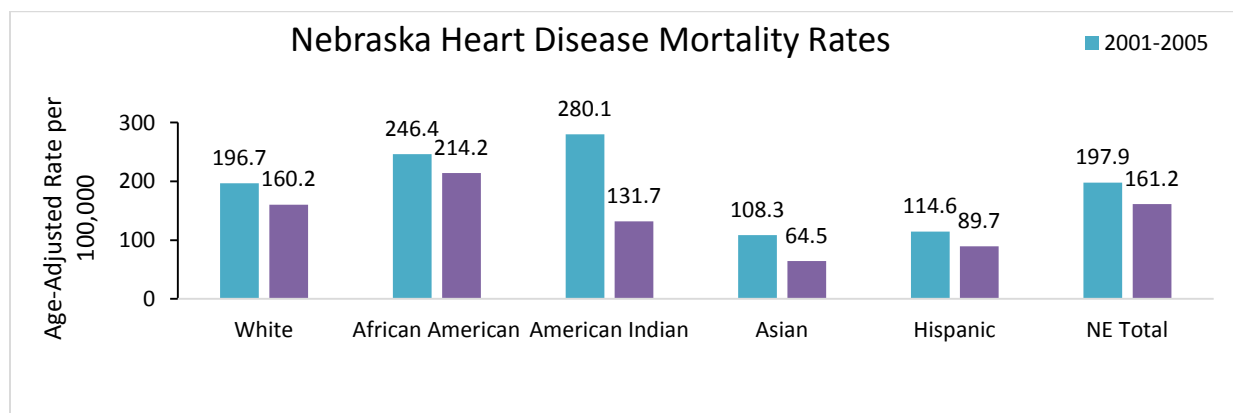


Source: MO Death and Population MICAs (<http://health.mo.gov/data/mica/MICA/>);
Special population estimates for AI and Asian populations

Nebraska

Nebraska’s African American population had the highest heart disease death rate in 2006-2010 (214.2 per 100,000 people) of all the racial and ethnic groups (Figure 10). Asian Americans had the lowest death rate at 64.5 per 100,000 people. Heart disease mortality decreased across all racial and ethnic groups from 2001-2005 to 2006-2010, with American Indians seeing the largest reduction from 280.1 per 100,000 people in 2001-2005 to 131.7 per 100,000 people in 2006-2010. African Americans had the highest heart disease death rate in 2006-2010, over American Indians who ranked highest in 2001-2005.

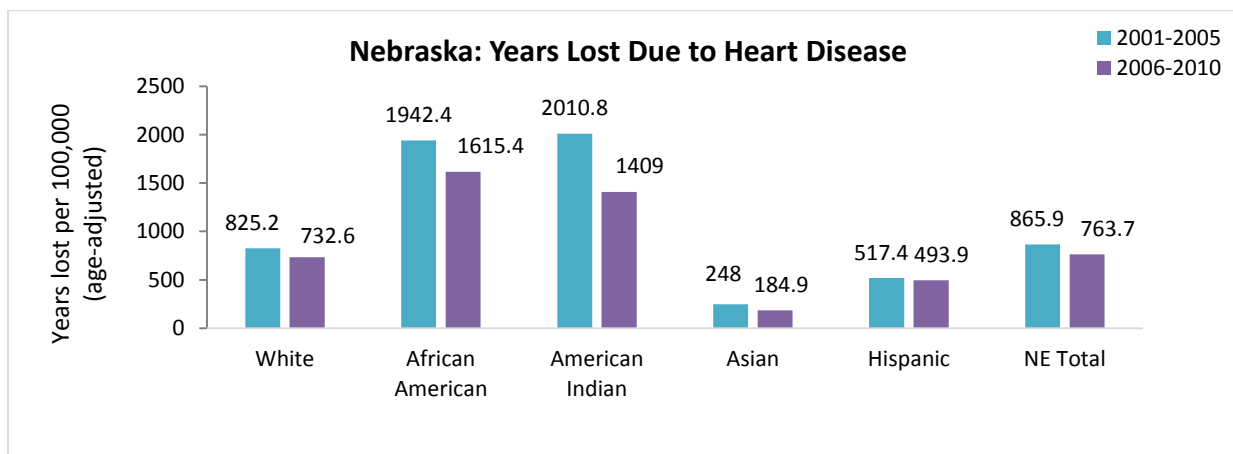
Figure 10. Nebraska Heart Disease Mortality Rate



Source: Nebraska DHHS Vital Statistics

Nebraska’s African American population had the highest amount of YPLL due to heart disease (1,615.4 per 100,000) in 2006-2010 (Figure 11). A combined 2,010.8 years were lost due to heart disease in the American Indian population in 2001-2005, compared to 825.2 in the White population. However, the number of years lost due to heart disease decreased across all groups between 2001-2005 and 2006-2010. American Indians saw the largest decrease in number of years lost per 100,000 people, dropping from the highest number (2,010.8) in 2001-2005 to 1,409 in 2006-2010. African Americans saw a smaller drop than American Indians, resulting in the highest amount of years lost to heart disease in the 2006-2010 time period among all groups.

Figure 11. Nebraska Years of Life Lost due to Heart Disease

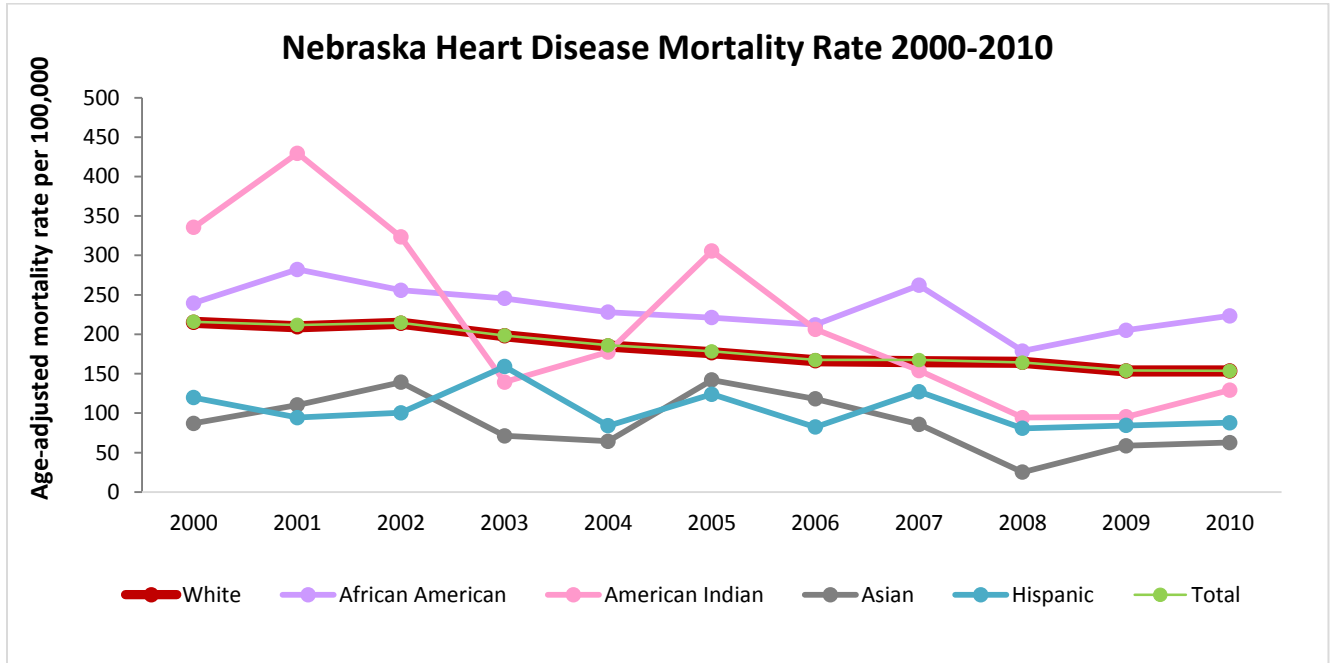


Source: Nebraska DHHS Vital Statistics

Note: Years per life lost are calculated based on a life expectancy of 75 years

African American had the highest rate of heart disease mortality throughout the decade (Figure 12) while Asians had the lowest rates of heart disease mortality in seven out of ten years. American Indians had a large decrease in heart disease mortality between 2001 (429.6/100,000 people) and 2003 (139.5/100,000 people), and only to rank the highest among all groups again in 2005. Where Hispanics and Asians may have experienced a leveling off at the end of the decade (2009-2010), African Americans and American Indians experienced another increase in heart disease mortality.

Figure 12. Nebraska Heart Disease Mortality Rate from 2000-2010

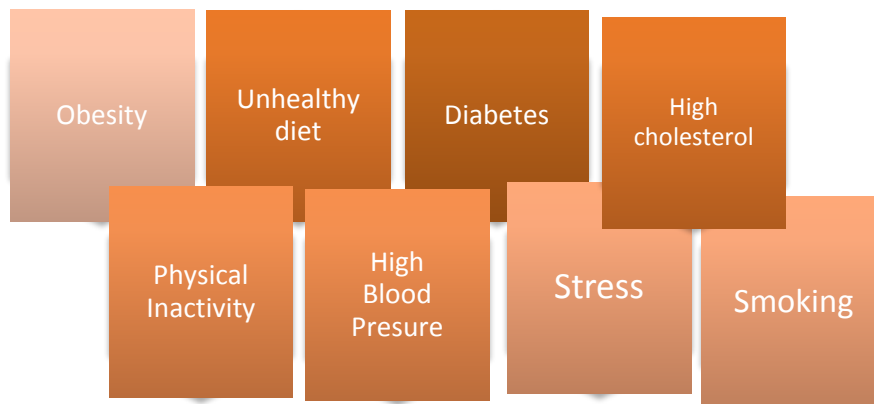


Source: Nebraska DHHS Vital Statistics

Heart Disease Prevalence

Myocardial infarction, also known as heart attack, is an irreversible necrosis of the heart muscle causing an interruption in the supply of blood to the heart. According to the Mayo Clinic definition, a myocardial infarction occurs when the flow of blood to the heart is blocked due to coronary heart disease (CHD). CHD is when a build-up of fat, cholesterol and other substances form a plaque in the arteries that feed the heart (coronary arteries). The indicator 'myocardial infarction (MI) or coronary heart disease' illustrates the percentage of people who have suffered from either of these conditions. Potential risk factors of coronary heart disease and stroke have been well documented and should be a central part of prevention and health education programs (Kansas Department of Health and Environment (KDHE), 2010).

Risk Factors for Heart Disease

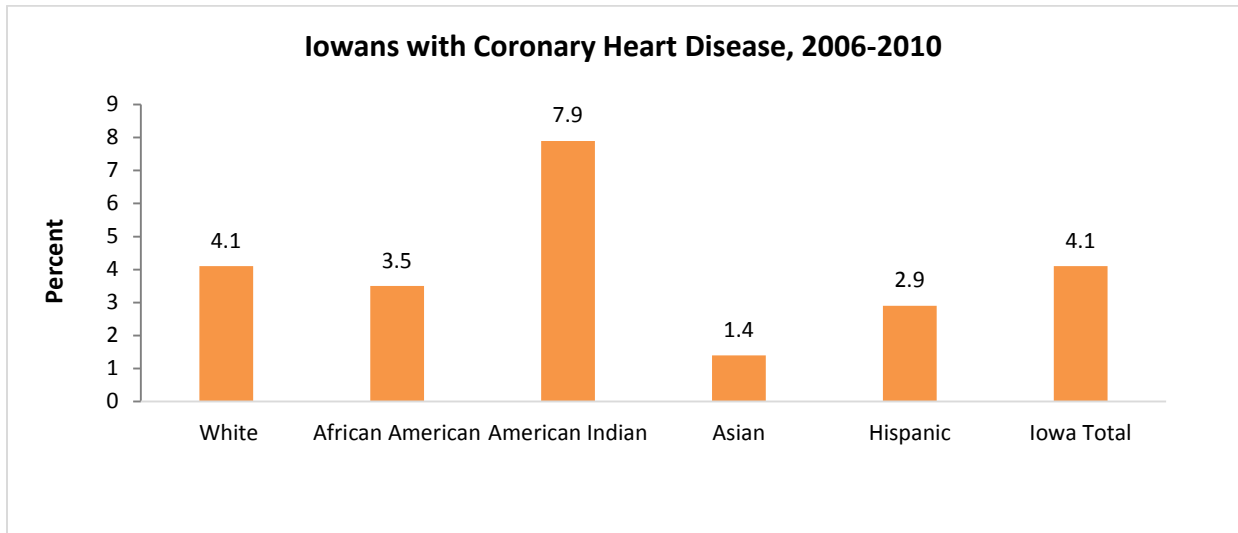


Prevalence or the percentage of people with heart disease varies across populations. Disparities have been linked to a number of complex factors in addition to the ones in the diagram above. This includes race, income, education, social determinants of health, lifestyle and health behaviors, genetic/physiological factors, access to care, and communication barriers. To bridge the health disparities gap, the American Heart Association and other national organizations have called for the reduction of barriers to heart disease medical care and higher quality treatment, including increasing the number of individuals with health insurance and a medical home (American Heart Association, 2015).

Iowa

American Indians had the highest CHD prevalence at 8% from 2006-2010, which was twice the percentage for non-Hispanic Whites (4%) (Figure 13). African Americans (3.5%), Hispanics (2.9%), and Asians (1.4%) each had lower percentages.

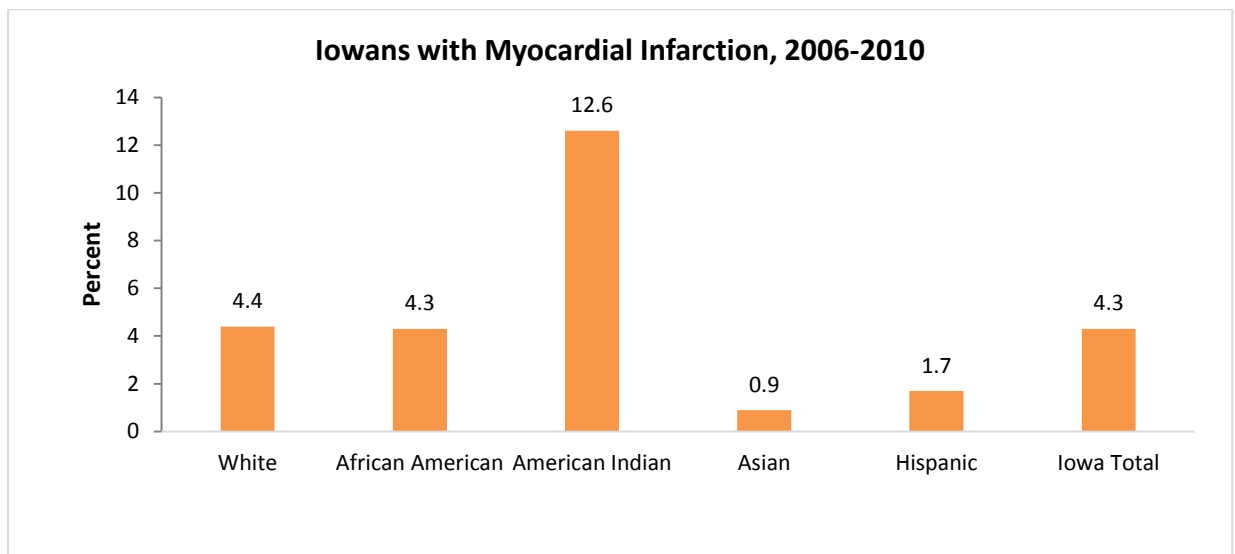
Figure 13. Coronary Heart Disease Prevalence by Race/Ethnicity in Iowa



Source: Iowa BRFSS

In the State of Iowa, the age-adjusted percentage of White residents with myocardial infarction was 4.4% in 2006-2010 (Figure 14). African Americans had a percentage similar to non-Hispanic Whites and equal to the state's total (4.3%). Among the Asian population in Iowa, 0.9% reported an MI—the lowest of all groups. In contrast, the proportion of American Indians reporting an MI (12.6%) was 2.9 times that of Whites.

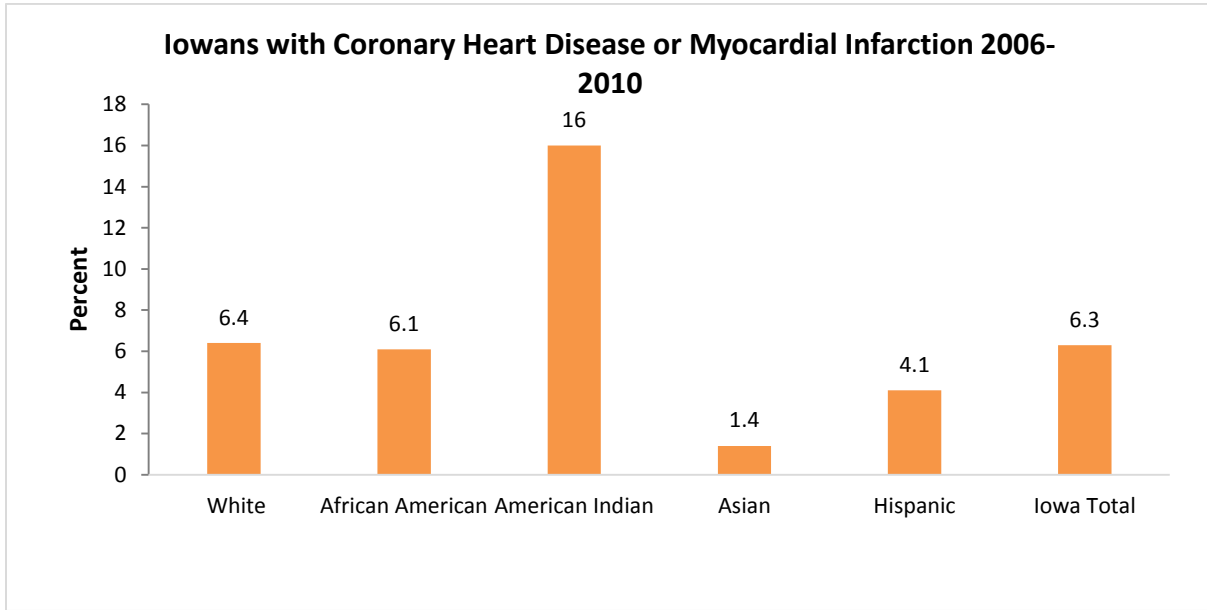
Figure 14. Myocardial Infarction Prevalence by Race/Ethnicity in Iowa



Source: Iowa BRFSS

The age-adjusted percentage of Iowa residents that were either diagnosed with coronary heart disease or myocardial infarction was 6.3% in 2006-2010 (Figure 15). American Indians had the highest rate at 16%, followed by Whites (6.4%), African Americans (6.1%) and Hispanics (4.1%).

Figure 15. Coronary Heart Disease or Myocardial Infarction Prevalence by Race/Ethnicity in Iowa

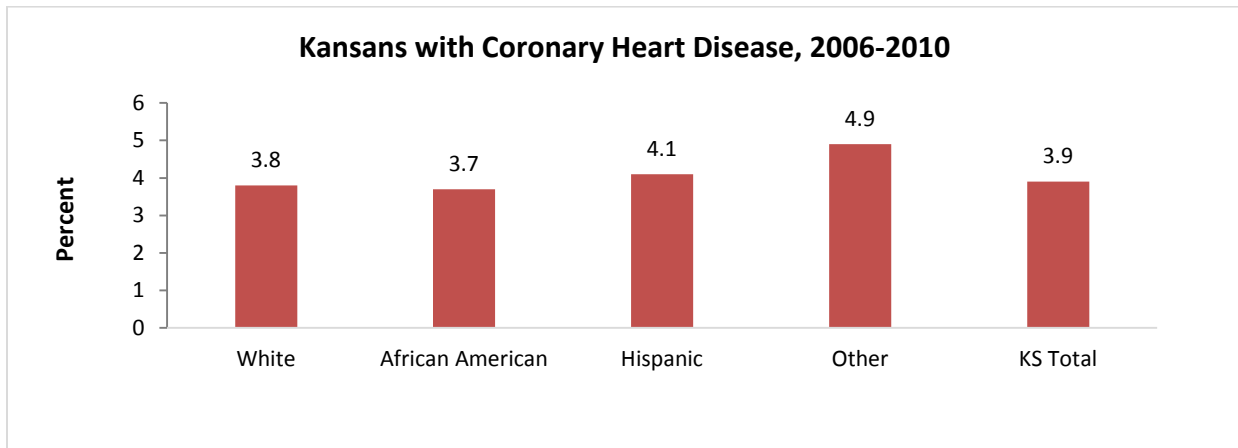


Source: Iowa BRFSS

Kansas

In 2006-2010, Whites and African Americans reported similar percentages of coronary heart disease at 3.7-3.8% (Figure 16). A slightly higher proportion of Hispanics reported ever being diagnosed with coronary heart disease (4.1%). Nearly 5% of “Other” races reported a CHD diagnosis in 2006 to 2010.

Figure 16. Coronary Heart Disease Prevalence by Race/Ethnicity in Kansas

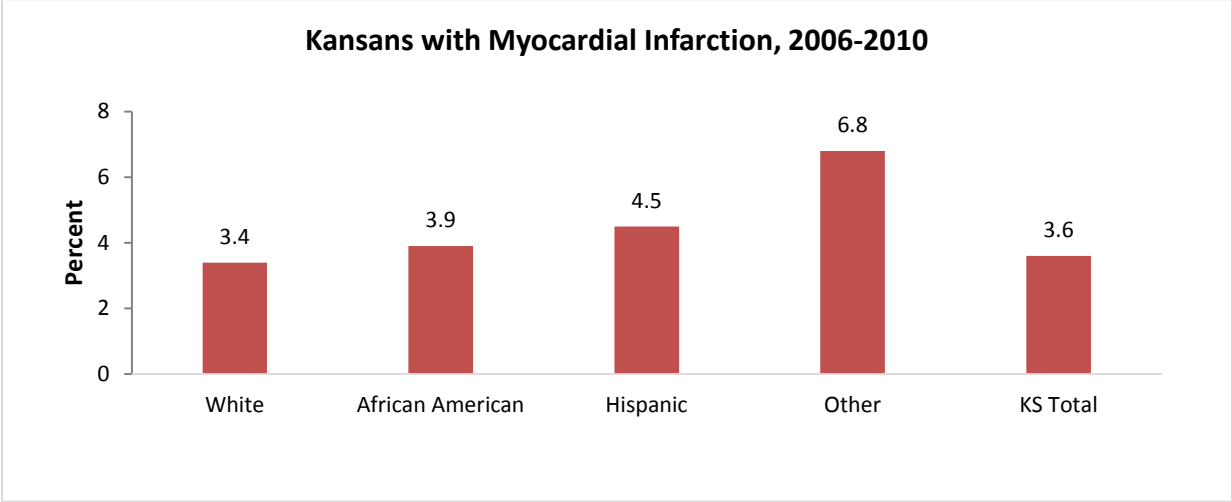


Other includes Asian, Native Hawaiian/Pacific Islander, American Indian/Alaska Native, multiracial

Source: Kansas BRFSS

The age-adjusted prevalence of myocardial infarction (MI) was higher among the racial group identified as “Other” (6.8%) for the period of 2006-2010 than for any other racial/ethnic group (Figure 17). The percentage among Whites was 3.4%, which was similar to that of African Americans (3.9%). MI was the lowest among the Whites than all the other races. In the same timeframe, 3.9% of African Americans and 4.5% of Hispanics were diagnosed with myocardial infarctions.

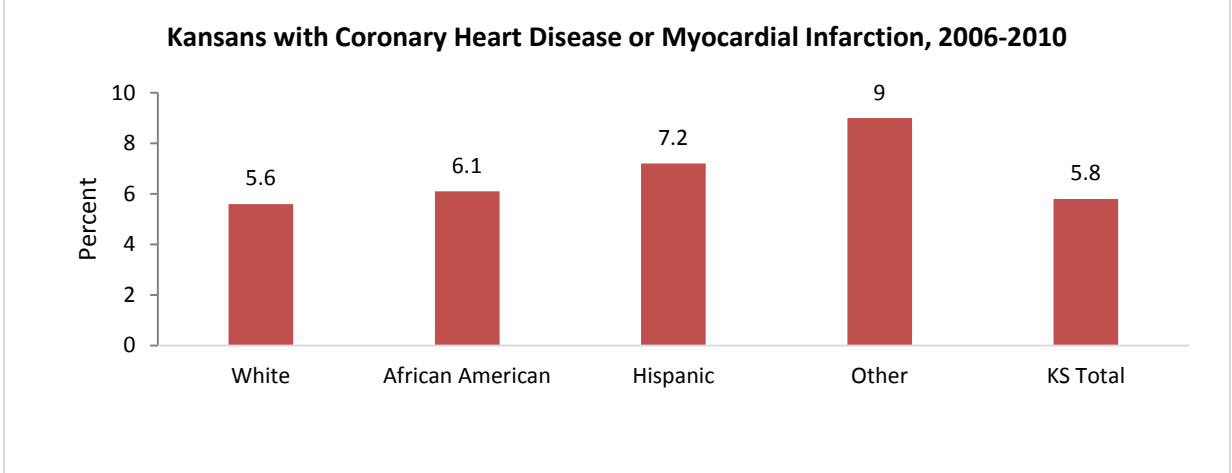
Figure 17. Myocardial Infarction Prevalence by Race/Ethnicity in Kansas



Other includes Asian, Native Hawaiian/Pacific Islander, American Indian/Alaska Native, multiracial
 Source: Kansas BRFSS

The overall percentage of the Kansas White population that was diagnosed with either MI or coronary heart disease in 2006-2010 was 5.6% (Figure 18). About 6.1% of African Americans and 7.2% of Hispanics reported ever being diagnosed with MI or coronary heart disease. Nine percent of the racial groups included in the “other” category reported a CHD or MI diagnosis.

Figure 18. Coronary Heart Disease or Myocardial Infarction Prevalence by Race/Ethnicity in Kansas

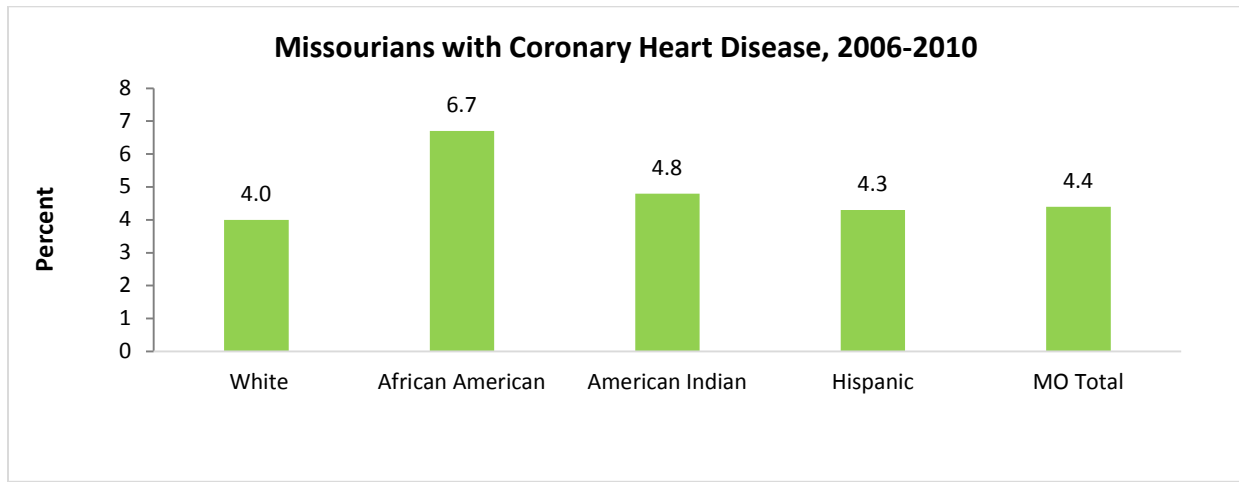


Other includes Asian, Native Hawaiian/Pacific Islander, American Indian/Alaska Native, multiracial
 Source: Kansas BRFSS

Missouri

The total prevalence of coronary heart disease across all races and ethnicities in the State of Missouri was 4.4% from 2006 to 2010 (Figure 19). Among the White population, the 2006-2010 age-adjusted prevalence of coronary heart disease reported was 4.0%. However, among the African American population, the percentage of age-adjusted coronary heart disease was nearly 7%. The reported prevalence of age-adjusted coronary heart disease among American Indians and Hispanics for the period of 2006-2010 was 4.8% and 4.3%, respectively.

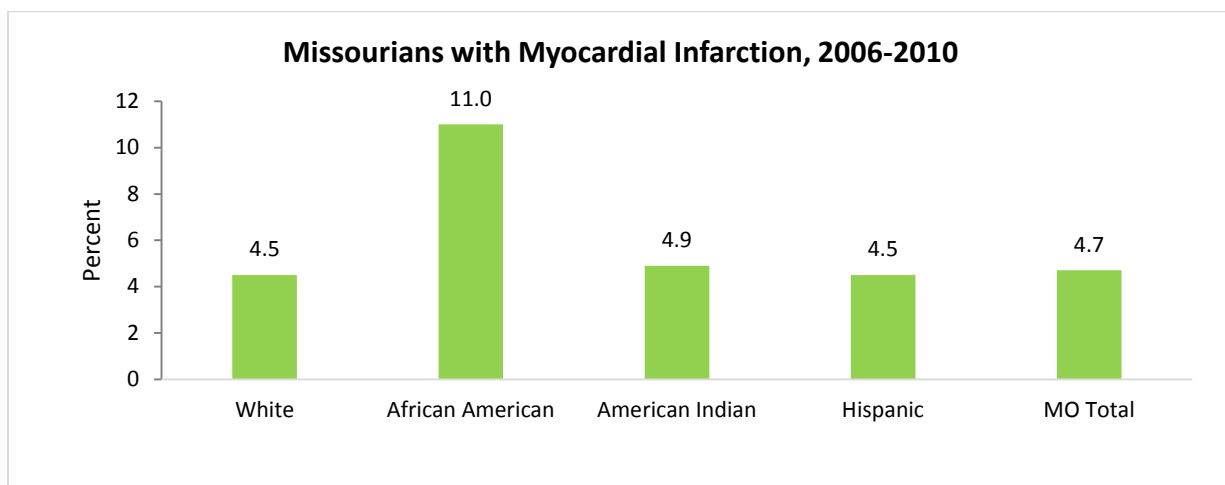
Figure 19. Coronary Heart Disease Prevalence by Race/Ethnicity in Missouri



Note: Asian category omitted due to small sample size
Source: Missouri BRFSS

The proportion of African Americans (11%) who have been diagnosed with MI was more than twice as high compared to other racial and ethnic groups (Figure 20). Hispanics and Whites had the lowest percentage (4.5%) but were not much lower than American Indians (4.9%).

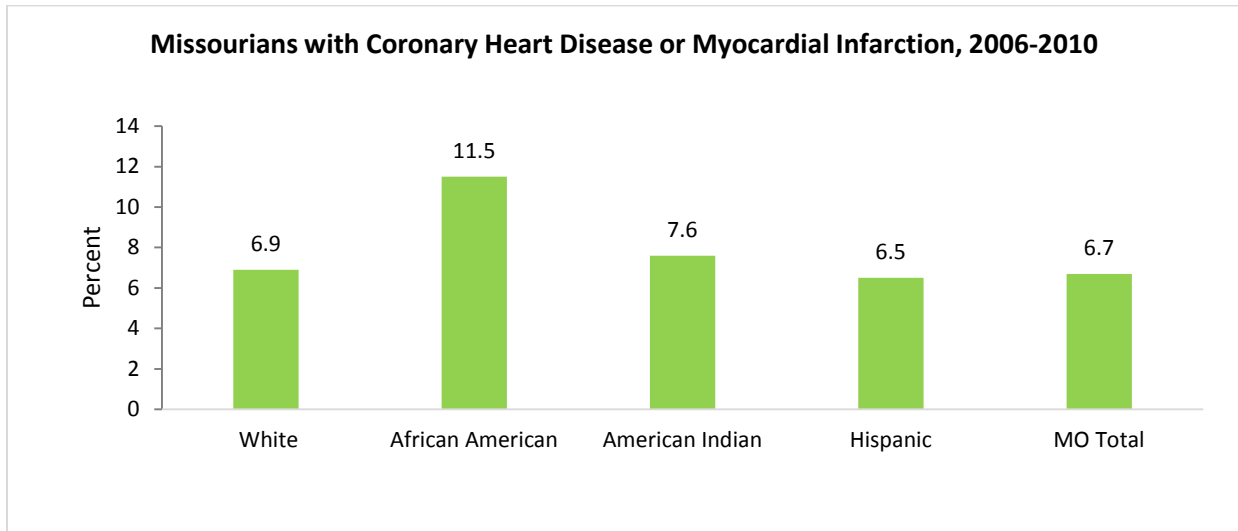
Figure 20. Myocardial Infarction Prevalence by Race/Ethnicity in Missouri



Note: Asian category omitted due to small sample size
Source: Missouri BRFSS

The proportion of the different racial and ethnic groups in Missouri that were diagnosed by clinicians with coronary heart disease or myocardial infarctions was highest among African Americans (11.5%), followed by American Indians (7.6%) (Figure 21). Among the White population, the age-adjusted percentages of either MI or coronary heart disease was 6.9% in 2006-2010. Only 6.5% of Hispanics were reported to have either MI or coronary heart disease.

Figure 21. Coronary Heart Disease or Myocardial Infarction Prevalence by Race/Ethnicity in Missouri



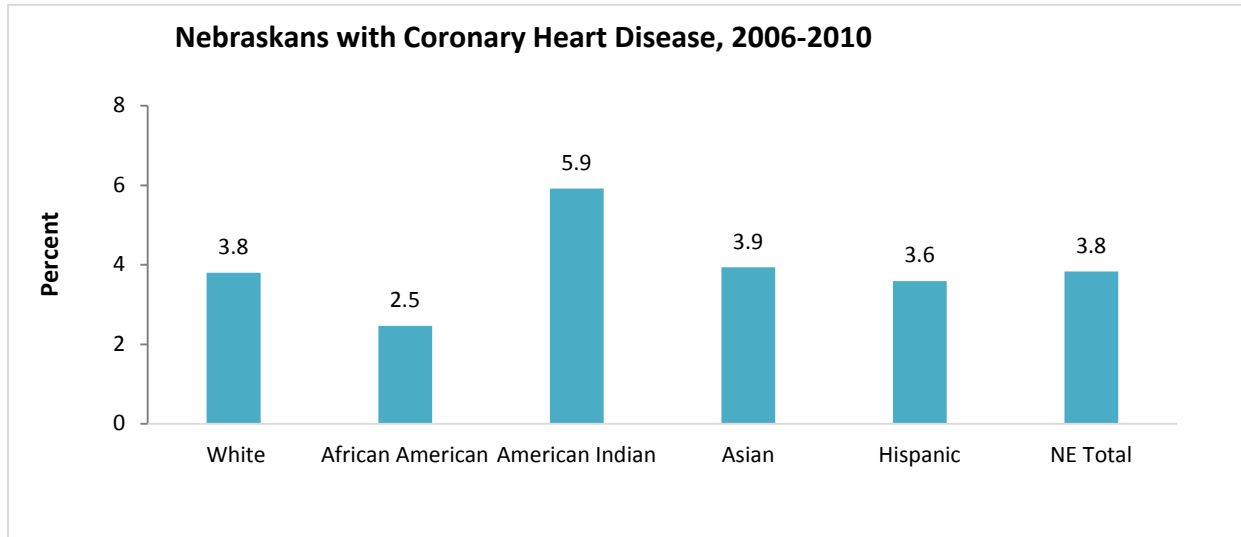
Note: Asian category omitted due to small sample size

Source: Missouri BRFSS

Nebraska

Nebraska's American Indian population had the highest percentage of people who had been told they have coronary heart disease (5.9%), compared to 3.8% of Whites (Figure 22). Almost 4% of Asian and 3.6% of Hispanic Nebraskans had been told that they have coronary heart disease.

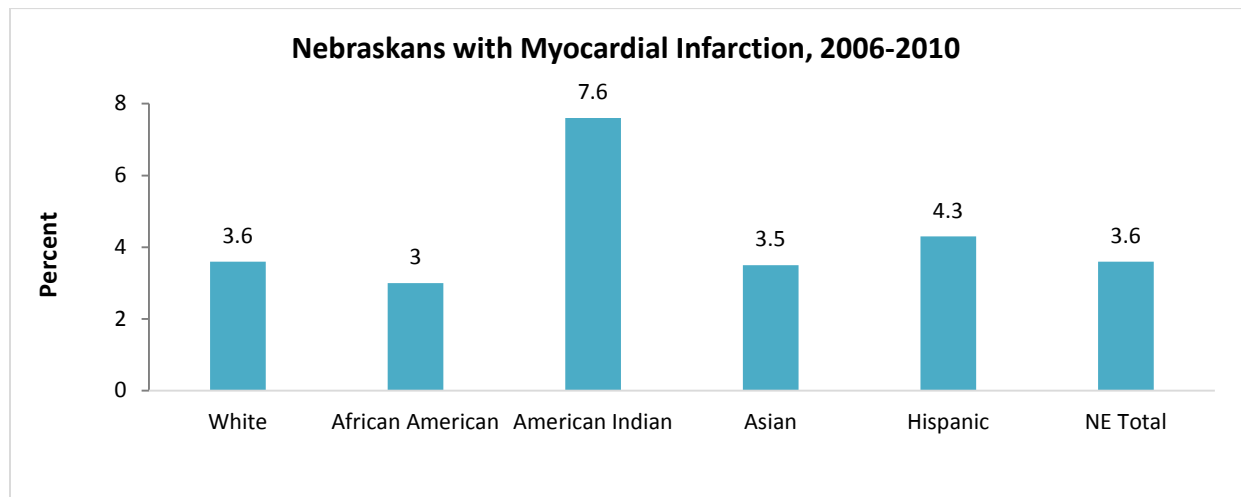
Figure 22. Coronary Heart Disease Prevalence by Race/Ethnicity in Nebraska



Source: Nebraska BRFSS

Nearly 4% of White Nebraskans were diagnosed with a myocardial infarction in 2006-2010 (Figure 23). The reported prevalence of MI among the African American was 3%, the lowest for all racial and ethnic groups. Asians had the second lowest proportion (3.5%) of all racial and ethnic groups. Conversely, the age-adjusted cases of MI reported for American Indians was highest among all racial and ethnic groups (7.6%). The prevalence of MI among Hispanics was second highest at 4.3%.

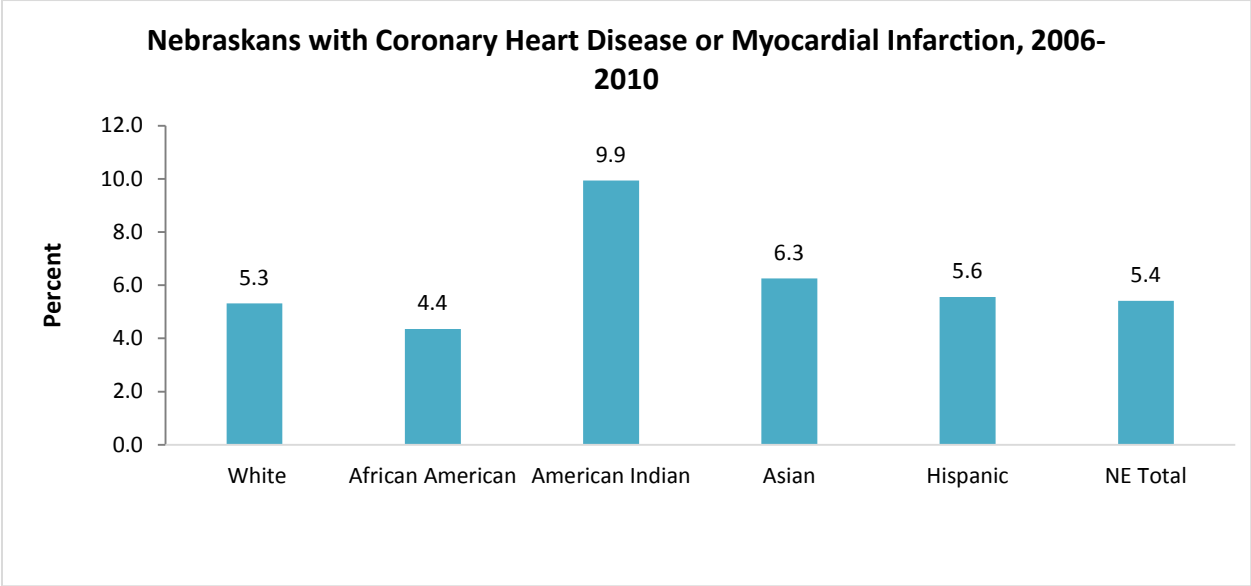
Figure 23. Myocardial Infarction Prevalence by Race/Ethnicity in Nebraska



Source: Nebraska BRFSS

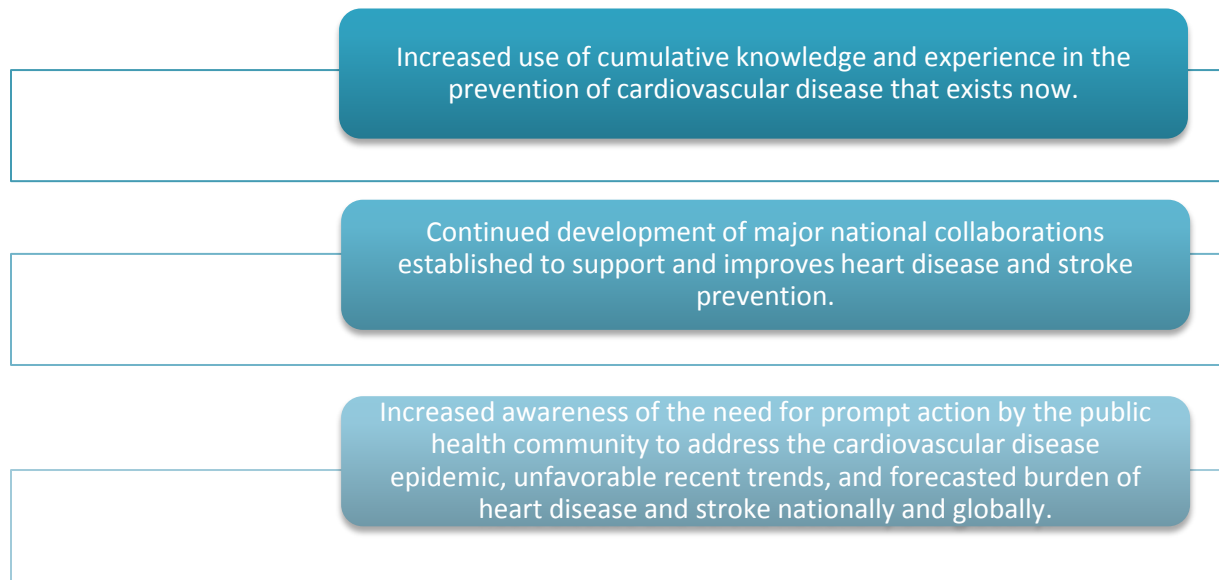
In Nebraska, almost 10% of American Indians had CHD or MI in 2006-2010, compared to 5.3% of Whites (Figure 24). Approximately 6% of Asians (6.3%) and Hispanics (5.6%) had CHD or suffered from MI. Only 4.4% of African Americans had a heart attack or reported having coronary heart disease in 2006-2010 despite having a higher mortality rate due to heart disease than non-Hispanic Whites.

Figure 24. Coronary Heart Disease or Myocardial Infarction Prevalence by Race/Ethnicity in Nebraska



Source: Nebraska BRFSS

Key Strategies to Reduce Heart Disease and Stroke



Initiatives Combating Heart Disease by State

Despite continued declining heart disease mortality trends in the Heartland; it continues to be a leading cause of death and a significant burden on the healthcare system. Programs to improve cardiovascular health in the Heartland are necessary to continue health improvements and to reduce health disparities. Potential programs include: health education campaigns, worksite wellness programs, efforts to improve quality of care, community efforts to strengthen emergency care systems and efforts to increase access to community and social supports to help individuals manage their condition (American Heart Association, 2015; KDHE, 2010). The following is a description of activities in each Heartland state.

Iowa

Since 2008, the Iowa Department of Health (IDPH) has led many initiatives aimed at reducing Iowa's heart disease mortality and morbidity.

In 2008, the Iowa Heart Disease and Stroke Prevention Program (HDSP) was established through a grant funded by the Centers for Disease Control and Prevention (CDC), National Heart Disease and Stroke Prevention (NHDSPP). This allowed IDPH to bring partners together to develop, implement, and monitor an Iowa Comprehensive Heart Disease and Stroke Plan that focused on CDC priorities as they applied to Iowans through 2014. The plan was also in line with the healthy people 2010 national objectives as well as state-specific objectives found in Healthy Iowans 2010 and provided opportunities for improving the health of Iowa residents beyond the year 2010. This plan promoted policy and system changes in health care delivery, worksite wellness programs in other community settings that worked to increase awareness of signs and symptoms of heart attack and stroke and the need to call 911; improved Emergency Response in Iowa; improved the quality of cardiovascular care in Iowa; and strived to

eliminate disparities--ensuring that all Iowans have access to early, affordable and appropriate cardiovascular treatment which is essential to reducing disability and costs.

In 2013, IDPH received funding from CDC for the State Public Health Action to Prevent and Control Diabetes, Heart Disease, Obesity and Associated Risk Factors and Promotes School Health, CDC-RFA-DP13-1305. IDPH is currently beginning the third year of this funding. The majority of the work is conducted in working with Iowa's health systems to increase the control of hypertension through the introduction of clinical innovations and coordinated care/team care.

IDPH has also led Iowa's Million Hearts® Initiative and built partnerships across sectors improving quality of care around the ABCS (Aspirin Utilization, Blood Pressure Control, Cholesterol Management and Smoke Cessation) of heart health and health information technology; increasing public awareness about risk factors; improving medication adherence; promoting healthier behaviors and environments; and enhancing surveillance and monitoring. State Partners have developed an Iowa Million Hearts Action Plan.

In addition, evidence-based initiatives guide the health promotion and prevention endeavors to improve the health of all people in Iowa. For example, IDPH was able to use the healthy people 2010 track and evaluate programs and plans related to the reduction of heart diseases. Iowa has a 29% reduction in the CHD death rate since 2003, from 165/100,000 in 2003 to 117/100,000 in 2013. Iowa met the national Healthy People 2010 objective of reducing the CHD death rate to 162/100,000 since 2004 and will continue to work towards to the 2020 goal of 103.4 deaths per 100,000.

IDPH also utilizes various data sources such as mortality, inpatient and outpatient admissions and discharge data, BRFSS, and other program specific data (e.g. WISEWOMAN program which provides cardiovascular disease screening for low-income, uninsured, and under-insured women in Iowa) to track and evaluate Iowa's heart disease reduction. In 2009, IDPH prepared and published the first burden report of heart disease and stroke in Iowa and, since then, has produced burden report supplements and fact sheets each year to monitor the trends of heart disease and stroke. Profiles were created to update burden information in 2013 and again in 2015. Through its current funding from CDC, IDPH has worked with health systems and partners to create a voluntary Performance Measures Data Set Matrix where clinics/health systems report their data to the CDC 1305 program, those for the CMS State Innovation Model, as well as those for the newly initiate TCPI (Transforming Clinical Practice Initiative) grant.

IDPH received CDC funding to plan for an Iowa Stroke Registry from 2009 to 2012. In 2013 it received Coverdell funding through 2015. Funding was curtailed for the current funding period, but the Iowa Stroke Task Force and the University of Iowa, College of Public Health is seeking other funding so as to continue the Iowa Stroke Registry.

Kansas

The Kansas Department of Health and Environment (KDHE) has taken a leadership initiative by creating an action plan document geared towards the prevention and fight against heart diseases and stroke. As a strategic approach, the state health department invites all individuals and organizations that are interesting in the successful implementation of the strategic plan for 2012-2017 to the table for action. In 2003, through a grant sponsored by the Center for Disease Control and Prevention (CDC), the Kansas Heart Disease and Stroke Prevention program was established. One of the mandates of this program is to engage partner organizations in creating a state cardiovascular health plan that is responsive to the priority areas (Kansas Department of Health and Environment (KDHE), 2013).

Adopted from the core framework of the Healthy People 2020, evidence-based initiatives are also put into perspective to guide the national health promotion and prevention endeavors to improve the health of all people in the United States. In light of this background, the state of Kansas will use the healthy people 2020 to be able to track and evaluate various programs and plans including the reduction of heart diseases. In Kansas various initiatives were designed to put all hands on the desk in the fight to reduce heart diseases. Communities in Kansas are encouraged to implement environmental support initiatives that will promote physical activity, healthy nutrition and tobacco-free living. The health care system is engaged by supporting primary care providers in the detection and treatment of hypertension and hyperlipidemia (precursors of heart diseases). Schools are also put to task (KDHE, 2013).

In an attempt to expand the combat against heart disease and stroke, other community and faith based organization were also empowered to increase awareness about health disease and stroke. The Empowered to Serve Faith (ETSF) Association was created through the auspices of the American Heart Association and American Stroke Association. The focus of the association is to bridge the disparity gap while empowering communities. The organization has nominated members representing community advocacy, healthcare, faith-based, corporate institutions, and family members/survivors of heart disease and stroke. The organization also execute projects that are geared towards combating health equity, increasing awareness about the prevalence of heart diseases and stroke while raising funding for scientific researches to improve cardiovascular disease outcome particularly among minorities (KDHE, 2013). KDHE prepared a report that was published in July 2010 titled "Burden of Coronary Heart Disease and Stroke in Kansas". In this document, the health authorities of Kansas re-affirm their commitments to fight to reduce coronary heart disease and stroke in the state of Kansas. This document was the product of the surveillance of the prevalence and incidence of coronary heart disease and stroke in Kansas. According to this report, 43% of all deaths from cardiovascular diseases in Kansas are caused by coronary heart disease in 2008. In the report, it is also revealed that mortality rates of coronary heart disease is found to be higher among the African Americans men and women compared to their white counterparts. A greater 56.8% of all deaths from coronary heart disease occur before the victim reach hospitals or medical care source (pre-transport). In 2008, 32 % of all deaths in Kansas was caused by some form of cardiovascular diseases. In line with the healthy people 2010 national objectives, the state of Kansas is determine to engage public health professionals, private organizations, communities and faith-based organization in combating heart disease and stroke with the intent to intensify interventions while increasing awareness level about coronary heart disease and stroke (KDHE, 2013).

Missouri

The WISEWOMAN Program (**W**ell-**I**ntegrated **S**creening and **E**valuation for **W**omen **A**cross the **N**ation) is a heart disease and stroke prevention and education program for women, and Missouri is one of 22 projects funded by Centers for Disease Control and Prevention. Thirty-one of the “Show Me Healthy Women” facilities are WISEWOMAN providers and are located regionally throughout the state. Providers consist of local public health agencies, federally qualified health centers, hospitals, and not-for-profit health centers. A list of providers is available on the WISEWOMAN website: <http://health.mo.gov/living/healthcondiseases/chronic/wisewoman/index.php>.

Show Me Healthy Women is a statewide program for breast and cervical cancer screening that is typically combined with WISEWOMAN, which promotes cardiovascular health among women. Department of Health provides information about heart health and risk factors for heart disease to women when discussing breast health and cervical cancer screening.

Missouri Million Hearts is a campaign formed to prevent one million heart attacks and strokes by 2017. Missouri has various partners involved in this campaign that raise awareness and highlight work that is done by all of the partners to save lives from heart disease and stroke.

The Missouri Actions to Prevent Chronic Disease and Control Risk Factors (MAP) Program addresses various chronic disease issues. The program provides interventions designed to address community approaches that promote health, health system improvements, and community clinical linkages; furthermore, the MAP Program targets both adults and children. Services include:

- Evidence-Based School Health Programs that support policies and practices encouraging physical activity and good nutrition in schools and early learning facilities.
- Evidence-Based Community Approaches that Promote Good Health through contracts with University of Missouri Extension and other community-based agencies to enhance access to healthy foods and safe places to be physically active within communities.
- Contracts with Quality Improvement Agencies and Rural Hospital Systems to ensure the increased use of electronic health records, promotion of blood pressure and diabetes reporting to improve understanding and awareness of health trends and to impact needed change
- Contracts with Missouri Primary Care Association to increase use of pharmacists serving as members of Patient Care Teams in order to improve blood pressure and diabetes medication adherence and to increase patient involvement in blood pressure management.
- Evidence-Based Community Health Worker Initiatives to increase engagement in an effort to promote linkages between health systems and community resources for adults with high blood pressure and pre-diabetes.
- Promotion of participation in American Diabetes Association recognized diabetes self-management education programs.
- Increased Lifestyle Education programs in community settings for the primary prevention of type 2 diabetes.

Missouri has made significant investments in creating communities that support healthy behaviors important for preventing and managing heart disease and other chronic diseases. The DHSS contracts with local public health agencies to make policy and environmental changes to increase access to

healthy food, safe places to be physically active, and smoke-free environments. The Healthy Eating Active Living (HEAL) contracts enable local public health agencies (LPHAs) to work collaboratively with local partners to increase access to healthy food and safe places to be physically active. HEAL projects include multi-sector initiatives that involve traditional public health partners such as community organizations and health care providers, and non-traditional partners such as local government planning and recreation departments, businesses and farms. HEAL Communities select at least one nutrition strategy (e.g. healthy vending, community gardens, etc.) and one physical activity strategy (e.g. promotion of physical activities) to address.

Department of Health and Senior Services staff, in conjunction with the ten Missouri Area Agencies on Aging (AAAs), implement chronic disease prevention and treatment programs such as the Chronic Disease Self-Management Education (CDSME), which teaches participants about lifestyle choices regarding nutrition, exercise, and medication management that can mitigate the impact of chronic diseases, including heart disease. In addition, many AAAs and senior centers provide health screenings that include blood pressure checks and glucose level checks and also provide the Healthy Moves exercise program, which is an individually tailored in-home training designed for persons that cannot attend group programs.

St. Louis Missouri

Staff in the Health Equity Program provide monthly presentations to fatherhood classes at the Fathers' Support Center and 100 Black Men. These presentations highlight risk factors for heart disease, diabetes, and hypertension for African American men as well as health behaviors that can lower risk.

Partnerships have been formed with the Health Equity Program, the American Heart Association and other community health providers in the region on a monthly basis to discuss how each group is addressing health disparities related to heart disease. Staff also assist in planning and implementing the annual heart walk sponsored by the American Heart Association.

I Am Moving, I Am Learning. The Department of Health receives a small contract from the Missouri Department of Health and Senior Services to provide in-depth specialized training to child care providers on improving physical activity and healthy eating opportunities for 2- to 5-year-old children. The program focuses on three areas in the child care setting: increasing moderate to vigorous physical activity every day, improving the quality of planned movement activities lead by child care workers, and promoting healthy choices.

Nebraska

The Nebraska heart disease efforts span across a number of offices and departments. For example, there are two teams within the Nebraska Chronic Disease Prevention and Control Program (NCDPCP) who focus on chronic disease. The two teams include the Health Systems and Disease Management Team and the Community and Clinic Linkages Team. The NCDPCP funds their efforts through two CDC grants: (1) the State Public Health Actions to Prevent and Control Diabetes, Heart Disease, Obesity and Associated Risk Factors and Promote School Health (1305); and (2) the State and Local Public Health Actions to Prevent Obesity, Diabetes, and Heart Disease and Stroke (1422).

The NCDPCP only receives federal grants to support their programming efforts, therefore all work is based on the guidance provided by the Centers for Disease Control and Prevention. The focus of the 1305 and 1422 grants is based on guidance contained in national plans, guidelines, and evidence-based program. Strategies are aimed at improving multiple chronic diseases and the risk factors associated with the following public health priorities: uncontrolled hypertension; the prevention and control of diabetes; the incidence of obesity; increased physical activity and healthy eating in children and adults; increased breastfeeding; and improving the management of chronic conditions of students.

Additionally, Nebraska's Office of Disease Prevention and Health Promotion has a Heart Disease and Stroke Prevention Program (HDSPP). The HDSPP works to provide and promote useful information to Nebraskans regarding aspirin use, blood pressure, cholesterol, and a number of other concepts related to heart disease and stroke. Nebraska's DHHS also works with CIMRO of Nebraska and the Midwest Chapter of the American Heart Association to support the "ABCS" Learning and Action Network (LAN). This LAN focuses on improving cardiovascular health among Nebraskans by promoting aspirin use among people at risk, **B**lood pressure control, **C**holesterol management, and **S**moking cessation (ABCS).

Nebraska's Office of Women's Health also promotes "The Heart Truth," or a heart disease awareness campaign that targets women's awareness of heart attacks and strokes. The State of Nebraska also promotes the Million Hearts campaign, which provides information for heart disease risks, costs and consequences, and prevention methods. Both of these initiatives are national and are adopted and promoted by Nebraska.

Work specifically led by and aligned with heart disease and stroke prevention efforts include:

- Promoting the reporting of blood pressure and A1C measures; and initiating activities that promote clinical innovations, team-based care, and self-monitoring of blood pressure.
- Promoting the awareness of high blood pressure among patients
- Increasing the implementation of quality improvement processes in health systems by:
 - Increasing electronic health records adoption and the use of health information technology to improve performance
 - Increasing the institutionalization and monitoring of aggregated/standardized quality measures at the provider and systems level
- Increasing use of team-based care in health systems by:

- Increasing the engagement of non-physician team members (i.e. nurses, pharmacists, and patient navigators) in hypertension and diabetes management in health care systems
 - Increasing the use of self-measured blood pressure monitoring tied with clinical support
- Increasing the use of health-care extenders in the community in support of self-management of high blood pressure and diabetes by:
 - Increasing the engagement of community health workers to promote linkages between health systems and community resources for adults with high blood pressure
 - Increasing the engagement of community pharmacists in the provision of medication/self-management for adults with high blood pressure and adults with diabetes

National Initiatives Combating Heart Disease

As alluded to in the previous section, The Heart Truth and the Million Hearts campaigns are national efforts, adapted by many states and organizations across the nation, focused on educating the public and preventing heart disease among Americans.

The Heart Truth is from the National Institutes of Health (the National Heart, Lung, and Blood Institute) and its goal is to increase awareness about heart disease through education and motivation. The symbol for this campaign is the Red Dress, which serves as a reminder for women to protect their heart health. The Heart Truth targets women ages 40 through 60, however the campaign also stresses that it is important for women outside of that age range to be aware of heart disease risk factors and signs or symptoms. This campaign also utilizes a Healthy Action Community, a forum in which Americans can find tools and resources helpful to controlling their heart health. The Heart Truth is especially important because the signs or symptoms of heart attacks may differ between men and women; therefore, lack of awareness among women may severely reduce their health outcomes. Similar to The Heart Truth, Go Red for Women is a campaign by the American Heart Association that works to promote heart disease and stroke awareness among women.

From the national Office of Women's Health, American women benefit from the "Make the Call. Don't Miss a Beat." campaign that focuses on educating and empowering women to recognize the signs of a heart attack, citing that every 90 seconds a woman has a heart attack but only half of them would call 911. This is another effort that is crucial to improving the health outcome among women who experience heart attacks.

WomenHeart: the National Coalition for Women with Heart Disease is another effort that focuses on educating women about heart disease. This organization utilizes a number of methods to spread information among women, including hosting a conference to train women with heart disease to be public advocates for disease awareness and prevention.

The Million Hearts campaign, for both men and women, aims to prevent one million heart attacks and strokes through the use of interventions within the clinic and within the community that have been previously shown to be effective yet inexpensive. This campaign also works to address the ABCS related to heart disease and strives to standardize core ABCS indicators across entities involved in health care and management (medical practices, insurers, providers, and other systems). This facilitates improved disease reporting and better patient care due to increased ease of measuring and controlling quality of care by providers. Within the community, the Million Hearts campaign promotes healthy lifestyle choices—from smoking cessation to lower sodium consumption. This two-ended approach to heart disease education and prevention increases the likelihood of success for heart disease prevention.

Please note that this is not an exhaustive list of national campaigns or programs focused on promoting heart health. With increased awareness of the importance of preventing heart disease, individual organizations and states, and the country as a whole, can work towards improving the health status of millions of Americans by reducing the burden of heart disease.

Conclusions

Overall, American Indians and African Americans experienced the greatest disease burdens in all four states between 2001 and 2010. It is important to remember that despite the higher proportions and rates they experienced compared to other racial and ethnic groups, nearly everyone experienced a general improvement in health with declines in mortality rates and years of potential life lost.

Heart disease is the leading cause of death (CDC, 2015c). The risk factors associated with heart disease are largely behavioral; therefore each individual has a fair amount of control in whether they develop heart disease. For example, smoking and unhealthy diets are implicated in the development of heart disease but these risk factors can be eliminated through smoking cessation and proper nutrition. Similarly, physical inactivity can be reversed with a regular exercise regimen, from daily walks to running marathons. A reduction in individuals experiencing the various risk factors associated with heart disease leads to a consequent reduction in healthcare costs, loss of productivity, and in disease mortality.

Despite some racial and ethnic groups having higher disease prevalence or higher mortality rates, Region VII as a whole fares relatively well compared to national numbers. The national age-adjusted mortality rate for heart disease as of 2010 was 179.1 deaths per 100,000 people. All states in Region VII, except Missouri, had total mortality rates that were close or lower than the national rate in 2010.

Additionally, the prevalence of coronary heart disease among African Americans for each state was lower than the national percentage (6.5%), except for the State of Missouri. Hispanics of all states had lower proportions of individuals with CHD than the national population of Hispanics (6.1%). However, although we have figures comparable or lower than national rates, local public health professionals must maintain or increase efforts in disease prevention and education to further reduce the number of individuals who are diagnosed with heart disease, especially those in racial and ethnic minorities. The fact that heart disease is preventable but is the number one killer among Americans, combined with the fact that it costs hundreds of billions of dollars per year, make it a primary public health issue.

Next Steps

The 2016 Region VII Heart Disease report addendum illustrates that while heart disease mortality rates in Region VII have declined from 2001 – 2010, rates still remain high for African Americans and American Indians.

To assist in the national efforts in reducing heart disease in our nation, the Heartland RHEC published this heart disease report to provide heart disease data and highlight the disparities among the non-Hispanic White and racial and ethnic minority populations for all states in Region VII. We hope this addendum provides you with important information and compliments your existing efforts to improve heart disease rates among racial and ethnic populations in Region VII. Furthermore, we hope that the data and information in this report leads to increased focus on heart disease programs targeting to minority populations in Region VII.

The Region VII Health Equity Council invites you to take a proactive role in helping reduce heart disease in Region VII and encourages the following:

- Review the heart disease initiatives listed above in each state and become involved in and encourage collaboration and engagement among other stakeholders within your community and your state to assist us in reducing heart disease in Region VII;
- Ensure collection of race, ethnicity, and language data within your organization;
- Share the Heartland RHEC Environmental Scan and this heart disease report addendum with other stakeholders interested in reducing heart disease in Region VII;
- Focus prevention and health education efforts for African American and American Indian populations in Region VII due to their high heart disease burden, as shown by the data provided in this report;
- Learn more about heart disease initiatives in your state and connect with organizations in other states in Region VII to discuss opportunities for collaboration and development of regional strategies to reduce gaps in heart disease.

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