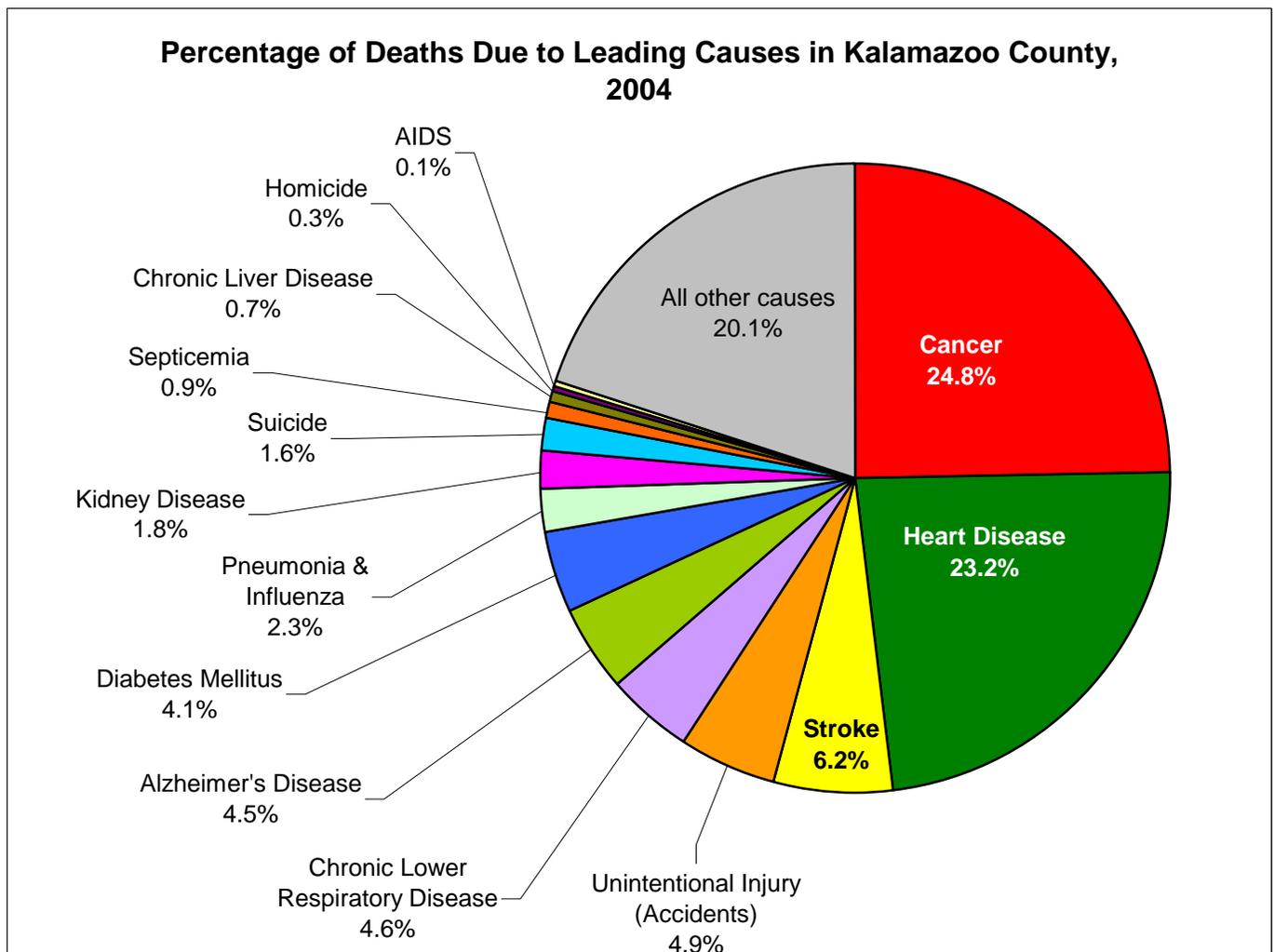


3.3 Leading Underlying Causes of Death

3.3.1 Ranked Causes of Death

The underlying cause of death is the condition that leads to the chain of events leading to death. Underlying causes of death are classified using a coding structure developed by the World Health Organization called the International Classification of Diseases (ICD).

In Kalamazoo County, more than half of deaths (54.1%) in 2004 had heart disease, cancer, or stroke as the underlying cause. The table on the following page lists the leading causes of death in ranked order in Kalamazoo County and in Michigan in 2004.



Mortality data source: Michigan Department of Community Health, Division for Vital Records and Health Data Development, Michigan Resident Mortality File

Causes of death are ranked in order of the number of deaths that occurred in a time period. In the table below, causes of death are listed in the order they rank in Kalamazoo County along with crude death rates per 100,000 population (crude rates are not adjusted for age). Note that the rank numbers listed for Michigan are not identical to the ranked order in Kalamazoo County.

Ranked Leading Underlying Causes of Death, Kalamazoo County and Michigan, 2004

Underlying Cause of Death	Kalamazoo County			Michigan		
	Rank	Number of Deaths	Crude rate per 100,000	Rank	Number of Deaths	Crude rate per 100,000
All Deaths	--	1,866	775.2	--	85,122	841.7
Cancer	1	463	192.3	2	19,654	194.4
Heart Disease	2	433	179.9	1	24,804	245.3
Stroke	3	115	47.8	3	5,282	52.2
Unintentional Injury (Accidents)	4	91	37.8	5	3,299	32.6
Chronic Lower Respiratory Disease	5	86	35.7	4	4,246	42.0
Alzheimer's Disease	6	84	34.9	7	2,231	22.1
Diabetes Mellitus	7	77	32.0	6	2,954	29.2
Pneumonia & Influenza	8	42	17.4	8	1,959	19.4
Kidney Disease	9	34	14.1	9	1,511	14.9
Suicide	10	30	12.5	10	1,096	10.8
Septicemia	11	16	6.6	12	849	8.4
Chronic Liver Disease	12	13	5.4	11	972	9.6
Homicide	13	5	2.1	13	672	6.6
AIDS	14	2	0.8	14	215	2.1
All other causes	--	375	155.8	--	15,643	155.2

Mortality data source: Michigan Department of Community Health, Division for Vital Records and Health Data Development, Michigan Resident Mortality File

Population data source: National Center for Health Statistics, U.S. Census Populations with Bridged Race Categories, updated 9/2005.

The following table includes ranked causes of death among subsets of the total population in Kalamazoo County between 2002 and 2004. The percentage in each box indicates the percentage of deaths among the population group (i.e. males, females, white population, black population) that was due to the cause of death.

**Ranked Leading Underlying Causes of Death and Percentage of Deaths Due to Cause,
by Sex and Race in Kalamazoo County, 2002 – 2004**

Rank	Deaths Among the Total Population	By Sex		By Race	
		Deaths Among Males	Deaths Among Females	Deaths Among the White Population	Deaths Among the Black Population
1	Heart Disease (23.9%)	Cancer (24.7%)	Heart Disease (23.2%)	Heart Disease (24.4%)	Cancer (22.2%)
2	Cancer (23.0%)	Heart Disease (24.6%)	Cancer (21.5%)	Cancer (23.1%)	Heart Disease (19.3%)
3	Stroke (6.8%)	Unintentional Injury (Accidents) (6.0%)	Stroke (8.3%)	Stroke (6.9%)	Unintentional Injury (Accidents) (6.5%)
4	Unintentional Injury (Accidents) (5.0%)	Chronic Lower Respiratory Disease (5.2%)	Alzheimer's Disease (5.0%)	Chronic Lower Respiratory Disease (5.1%)	Diabetes Mellitus (6.1%)
5	Chronic Lower Respiratory Disease (4.8%)	Stroke (5.1%)	Chronic Lower Respiratory Disease (4.5%)	Unintentional Injury (Accidents) (4.9%)	Stroke (6.1%)
6	Alzheimer's Disease (3.7%)	Diabetes Mellitus (3.8%)	Unintentional Injury (Accidents) (4.2%)	Alzheimer's Disease (4.0%)	Chronic Lower Respiratory Disease (2.3%)
7	Diabetes Mellitus (3.5%)	Pneumonia & Influenza (2.3%)	Diabetes Mellitus (3.2%)	Diabetes Mellitus (3.3%)	Kidney Disease (2.3%)
8	Pneumonia & Influenza (2.7%)	Suicide (2.3%)	Pneumonia & Influenza (3.0%)	Pneumonia & Influenza (2.8%)	Homicide (1.9%)
9	Kidney Disease (1.5%)	Alzheimer's Disease (2.2%)	Kidney Disease (1.8%)	Suicide (1.5%)	Pneumonia & Influenza (1.9%)
10	Suicide (1.4%)	Kidney Disease (1.3%)	Septicemia (1.1%)	Kidney Disease (1.4%)	Septicemia (1.7%)

Mortality data source: Michigan Department of Community Health, Division for Vital Records and Health Data Development, Michigan Resident Mortality File

3.3.2 Age-Adjusted Mortality by Cause

Age-adjusted rates of death due to the leading causes are shown in the table below for the total population as well as for groups within the population. Three-year average rates are presented because the small number of deaths due to a particular cause in a single year among some of the groups would not provide a stable rate for purposes of comparison among the groups.

Age-Adjusted Mortality Rates per 100,000 Population for Leading Causes of Death, by Sex and Race, Kalamazoo County and Michigan 2002 – 2004

Cause of Death	Kalamazoo County					Michigan				
	Total	Males	Females	White	Black	Total	Males	Females	White	Black
All	820.1	990.4	696.1	797.2	1,133.2	839.6	1,001.9	715.5	803.5	1,102.0
AIDS	1.5	2.7	0.3	1.5	1.2	2.3	3.5	1.1	0.9	11.1
Alzheimer's Disease	29.0	26.8	30.2	29.7	17.0	20.0	16.3	21.9	20.9	12.0
Cancer	192.4	238.2	162.8	188.1	263.7	192.7	235.8	163.7	187.6	237.6
Chronic Liver Disease	5.7	8.1	3.5	5.3	9.9	9.5	12.9	8.9	9.0	12.1
Chronic Lower Respiratory Disease	40.5	53.0	33.7	41.2	29.1	42.8	52.1	37.3	44.2	29.1
Diabetes Mellitus	29.3	34.7	23.1	26.6	78.3	27.1	31.1	24.1	25.2	41.1
Heart Disease	194.9	253.2	153.3	191.7	257.2	248.3	305.1	205.1	236.3	348.5
Homicide	2.9	3.5	2.3	1.5	11.3	6.7	10.5	2.8	2.2	31.1
Kidney Disease	12.5	13.4	12.3	11.0	30.1	15.4	18.7	13.5	13.8	28.8
Pneumonia & Influenza	21.4	25.6	19.3	21.1	23.2	18.9	22.7	16.6	18.4	22.3
Septicemia	6.9	5.4	7.8	5.6	25.9	8.7	9.6	8.0	7.4	19.8
Stroke	55.0	54.6	54.5	53.4	75.0	52.8	53.5	51.8	50.8	67.0
Suicide	11.0	18.7	4.6	12.1	2.3	10.6	17.6	4.1	11.3	5.8
Unintentional Injuries (Accidents)	40.1	51.8	29.2	39.4	48.8	32.1	43.9	21.6	31.3	36.7
Alcohol-Induced	4.9	9.0	1.3	3.9	19.5	6.4	10.2	3.0	6.2	8.2
Diabetes-Related	74.0	88.8	62.6	68.4	167.3	80.3	94.9	69.6	75.2	117.5

Mortality data source: Michigan Department of Community Health, Division for Vital Records and Health Data Development, Michigan Resident Mortality File

Population data source: National Center for Health Statistics, U.S. Census Populations with Bridged Race Categories, updated 9/2005.

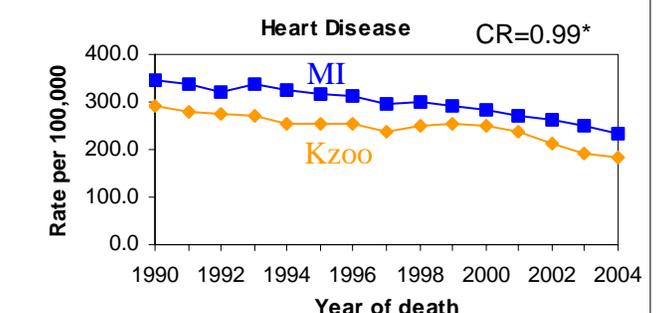
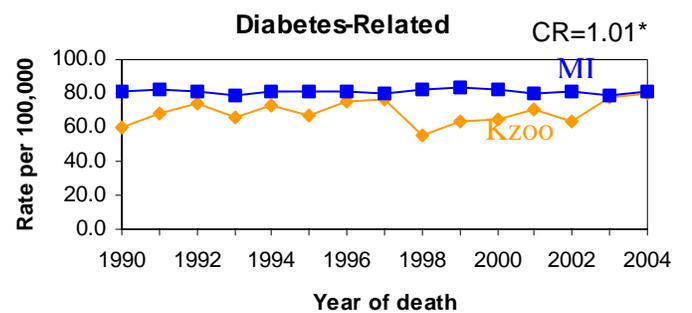
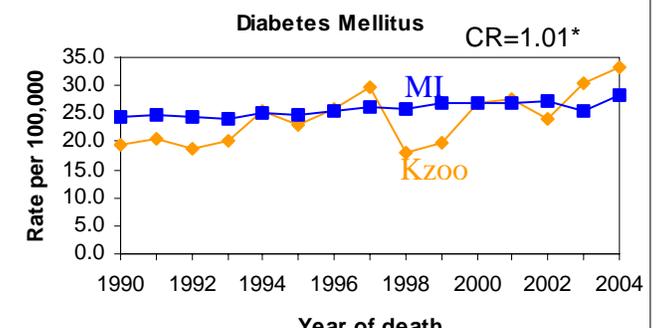
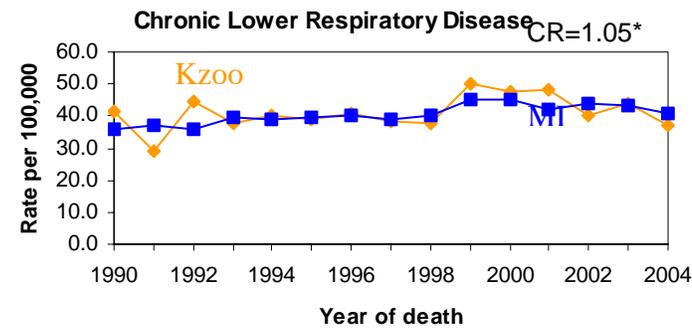
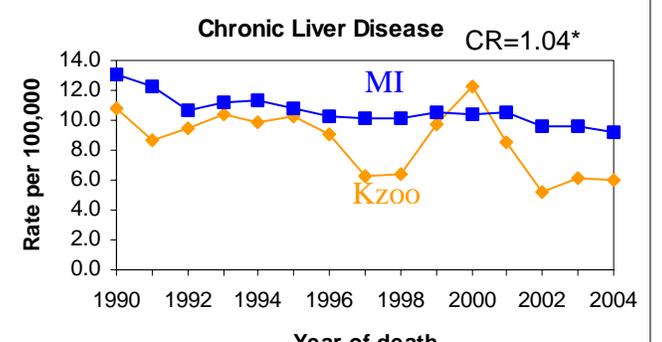
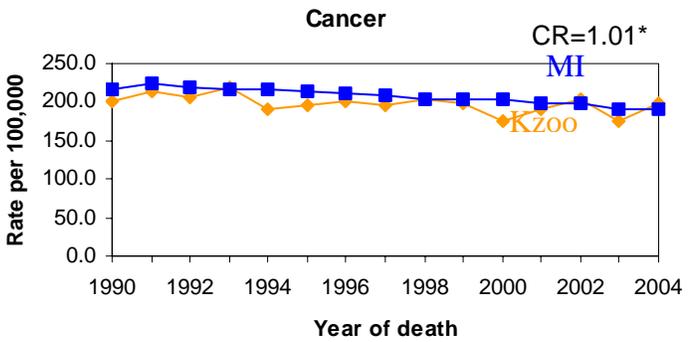
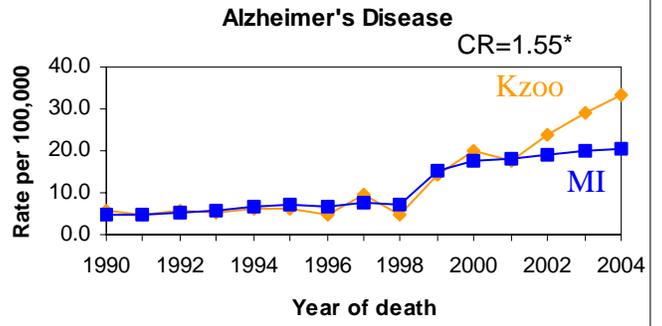
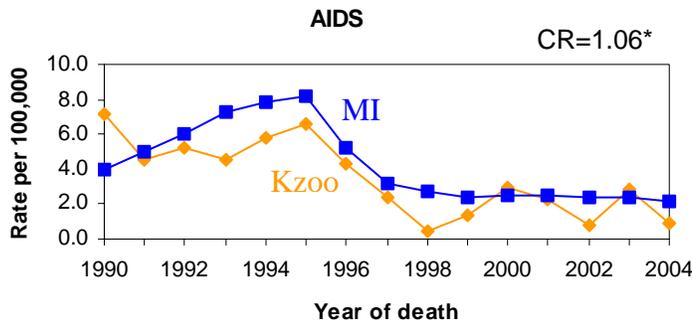
Charts on the following two pages illustrate trends in age-adjusted mortality rates due to the leading causes of death in Kalamazoo County and Michigan over time. (The two tables following these charts include the age-adjusted mortality rates by cause that are shown in the charts.)

Various factors can impact changes in mortality rates due to a particular cause over time. For example, changes in treatment and management of chronic diseases may allow individuals to live longer with a chronic disease and thus reduce age-adjusted death rates. Alternately, a particular cause of death may become more frequently recognized and recorded on death certificates because of improved diagnostic capabilities or changing opinion in the medical community. This would result in an apparent increase in mortality rates due to the particular cause even if the true rate of death due to the cause did not change over time. Therefore, contextual factors around each cause of death must be kept in mind when interpreting trends in mortality rates due to particular causes.

Additionally, changes in how causes of death are categorized can impact rates over time. Periodically, International Classification of Diseases (ICD) scheme is reviewed and revised in order to reflect changing medical opinion and practice. Between 1979 and 1998, the underlying causes of death were classified in accordance with the Ninth Revision of the International Classification of Diseases (ICD-9). Starting in 1999, causes of death were classified using the Tenth Revision of the International Classification of Diseases (ICD-10). As a result of the changes, health statistics based on one revision are not directly comparable to the other revision without the use of comparability ratios. Therefore, these comparability ratios must be kept in mind when interpreting trends in mortality rates due to particular causes over time.

When a comparability ratio for a particular cause of death is close to 1.0, the change from ICD-9 to ICD-10 had little or no impact on the comparisons of mortality statistics over time. Ratios less than or greater than 1.0 indicate that comparisons of mortality statistics over time should be interpreted with caution. The comparability ratio (CR) is noted for each cause of death on the charts on the following two pages.

Age-Adjusted Mortality Rates per 100,000 by Leading Cause, Kalamazoo County and Michigan 1990 – 2004

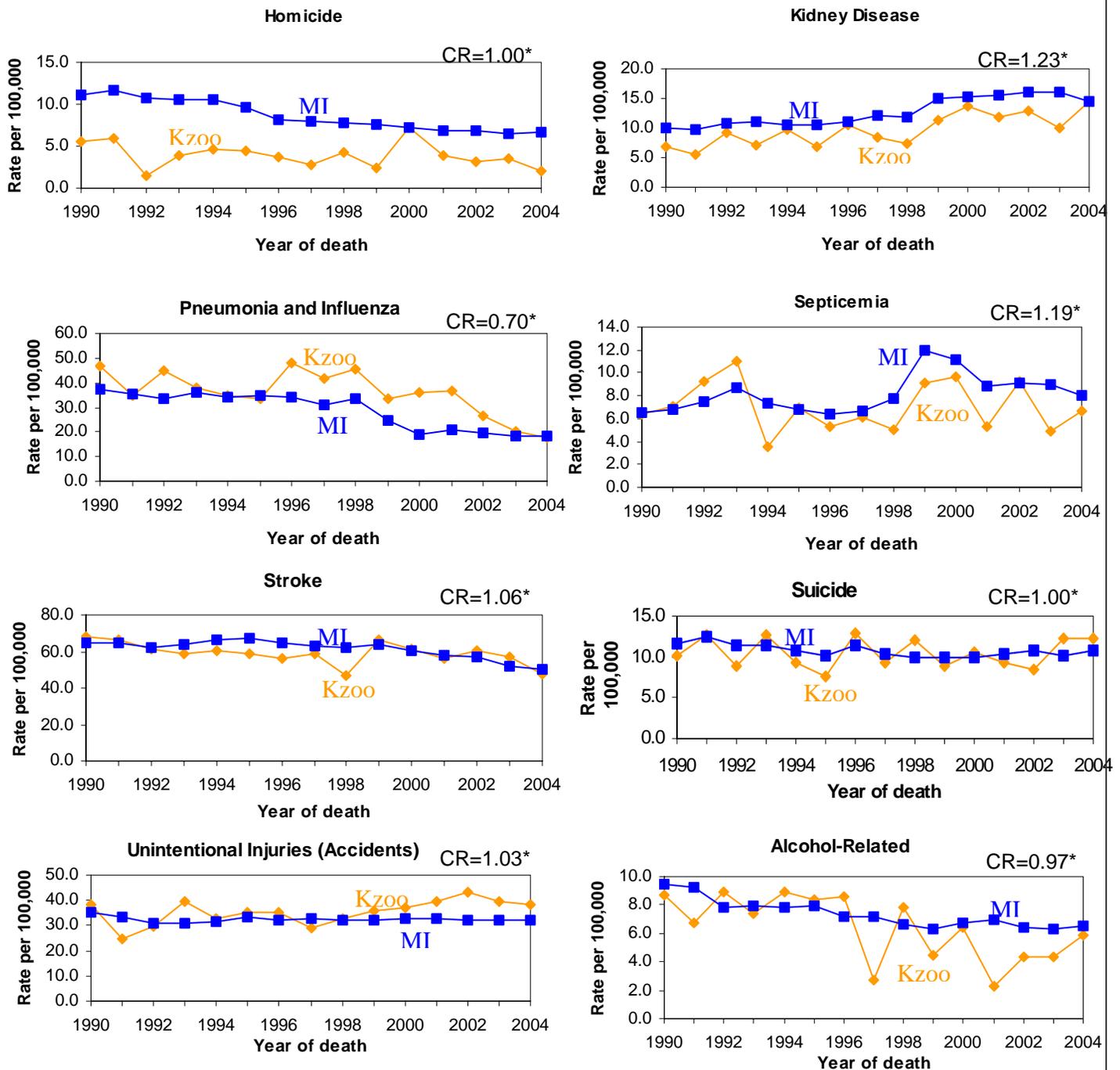


*CR: Comparability Ratio for ICD-9 and ICD-10 coding (see narrative for explanation). Ratios close to 1.00 indicate high comparability in rates over time (before 1999 compared to 1999 and later). For causes of death with ratios farther from 1.00, mortality statistics over time should be interpreted with caution.

Mortality data source: Michigan Department of Community Health, Division for Vital Records and Health Data Development, Michigan Resident Mortality File

Population data source: National Center for Health Statistics, U.S. Census Populations with Bridged Race Categories, updated 9/2005.

(Continued) Age-Adjusted Mortality Rates per 100,000 by Leading Cause, Kalamazoo County and Michigan 1990 – 2004



*CR: Comparability Ratio for ICD-9 and ICD-10 coding (see narrative for explanation). Ratios close to 1.00 indicate high comparability in rates over time (before 1999 compared to 1999 and later). For causes of death with ratios farther from 1.00, mortality statistics over time should be interpreted with caution.

Mortality data source: Michigan Department of Community Health, Division for Vital Records and Health Data Development, Michigan Resident Mortality File
 Population data source: National Center for Health Statistics, U.S. Census Populations with Bridged Race Categories, updated 9/2005.

**Age-Adjusted Mortality Rate per 100,000 Population by Leading Cause of Death,
Kalamazoo County 1990 – 2004**

Year of Death	AIDS Deaths	Alzheimer's Deaths	Cancer Deaths	Chronic Liver Disease Deaths	Chronic Lower Respiratory Disease Deaths	Diabetes Mellitus Deaths	Diabetes-Related Deaths	Heart Disease Deaths	Homicide Deaths	Kidney Disease Deaths	Pneumonia & Influenza Deaths	Septicemia Deaths	Stroke Deaths	Suicide	Unintentional Injuries (Accidents)	Alcohol-Induced Deaths
1990	7.1	5.7	199.8	10.8	41.7	19.4	59.5	292.5	5.5	6.8	46.6	6.4	67.8	10.2	38.2	8.7
1991	4.5	4.6	213.4	8.7	28.9	20.3	68.1	280.9	6.0	5.5	34.7	7.1	66.5	12.8	24.4	6.7
1992	5.2	5.8	206.6	9.4	44.4	18.7	73.7	273.1	1.4	9.3	45.1	9.3	60.9	8.9	29.8	8.9
1993	4.5	5.3	220.1	10.5	37.9	20.2	65.8	270.4	3.9	7.1	37.8	11.0	59.0	12.6	39.7	7.3
1994	5.8	6.1	191.1	9.9	40.3	25.4	72.6	253.3	4.7	9.8	34.7	3.5	60.8	9.2	33.0	9.0
1995	6.6	6.1	195.2	10.3	38.9	23.0	67.0	254.5	4.4	7.0	33.6	6.9	58.8	7.6	35.4	8.3
1996	4.3	4.8	201.9	9.1	40.6	26.0	75.3	252.5	3.8	10.7	48.2	5.3	56.4	12.9	35.4	8.6
1997	2.3	9.5	194.7	6.3	38.2	29.8	76.1	236.4	2.8	8.4	41.6	6.2	58.4	9.3	29.0	2.7
1998	0.5	4.7	204.4	6.4	37.8	18.0	54.7	250.7	4.3	7.5	45.8	5.1	46.7	12.1	32.7	7.9
			Change in ICD coding from Ninth to Tenth Revision													
1999	1.4	14.5	197.7	9.7	50.2	19.9	63.2	253.4	2.4	11.4	33.2	9.1	66.6	9.0	35.5	4.5
2000	3.0	19.9	174.2	12.2	47.8	26.9	65.1	248.3	7.2	13.7	35.9	9.6	61.0	10.6	37.2	6.4
2001	2.3	17.4	191.5	8.5	48.4	27.6	70.0	236.8	3.9	11.9	36.4	5.3	55.8	9.2	39.5	2.3
2002	0.8	24.0	202.8	5.2	40.0	24.0	64.1	211.4	3.1	12.9	26.8	9.2	60.4	8.4	43.1	4.4
2003	2.8	29.3	175.6	6.1	44.2	30.5	77.9	191.8	3.5	10.0	20.4	4.9	56.9	12.2	39.5	4.3
2004	0.9	33.5	198.5	6.0	37.4	33.2	79.7	182.0	2.1	14.4	17.4	6.7	47.9	12.4	38.0	5.9

Mortality data source: Michigan Department of Community Health, Division for Vital Records and Health Data Development, Michigan Resident Mortality File

Population data source: National Center for Health Statistics, U.S. Census Populations with Bridged Race Categories, updated 9/2005.

**Age-Adjusted Mortality Rate per 100,000 Population by Leading Cause of Death,
Michigan 1990 – 2004**

Year of Death	AIDS Deaths	Alzheimer's Deaths	Cancer Deaths	Chronic Liver Disease Deaths	Chronic Lower Respiratory Disease Deaths	Diabetes Mellitus Deaths	Diabetes-Related Deaths	Heart Disease Deaths	Homicide Deaths	Kidney Disease Deaths	Pneumonia & Influenza Deaths	Septicemia Deaths	Stroke Deaths	Suicide	Unintentional Injuries (Accidents)	Alcohol-Induced Deaths
1990	4.0	4.9	217.2	13.1	35.9	24.3	80.8	344.5	11.0	9.9	37.5	6.5	65.1	11.7	35.1	9.5
1991	5.0	4.7	223.1	12.2	36.8	24.8	81.8	337.3	11.7	9.8	35.1	6.8	64.4	12.4	33.5	9.2
1992	6.1	5.4	219.6	10.7	35.6	24.5	81.1	322.2	10.7	10.8	33.3	7.5	62.1	11.4	31.2	7.8
1993	7.2	5.9	216.2	11.2	39.3	24.1	79.4	335.7	10.5	11.1	36.1	8.7	63.5	11.5	30.6	8.0
1994	7.9	6.5	215.9	11.4	38.8	25.1	80.8	326.0	10.5	10.5	34.0	7.3	66.6	10.8	31.6	7.8
1995	8.1	6.9	212.9	10.8	39.8	24.9	80.6	318.2	9.6	10.6	34.8	6.7	67.3	10.1	33.5	7.9
1996	5.2	6.8	211.0	10.3	40.0	25.6	80.6	311.4	8.1	11.2	34.0	6.4	64.6	11.5	32.3	7.2
1997	3.2	7.5	207.8	10.1	39.0	26.2	80.3	296.7	7.9	12.0	31.1	6.6	63.0	10.3	32.6	7.1
1998	2.7	7.3	204.5	10.2	40.4	25.9	82.3	299.6	7.8	11.7	33.7	7.7	62.3	9.9	32.1	6.6
				Change in ICD coding from Ninth to Tenth Revision												
1999	2.4	15.5	204.6	10.5	45.0	26.9	83.0	291.6	7.6	15.0	24.5	11.9	64.1	9.8	32.4	6.3
2000	2.5	17.4	202.7	10.4	45.0	26.9	82.2	285.2	7.2	15.3	19.2	11.1	60.3	9.8	33.0	6.7
2001	2.5	18.3	198.2	10.5	42.1	26.7	80.2	271.4	6.9	15.6	21.0	8.9	57.5	10.4	32.6	6.9
2002	2.4	19.2	197.2	9.6	43.9	27.4	80.9	261.9	6.9	16.0	19.9	9.1	56.8	10.9	32.2	6.4
2003	2.3	20.2	191.4	9.6	43.5	25.6	79.1	249.5	6.4	16.1	18.6	8.9	52.1	10.0	32.1	6.3
2004	2.1	20.6	189.5	9.2	41.0	28.4	80.9	234.2	6.7	14.4	18.3	8.0	49.8	10.7	32.1	6.5

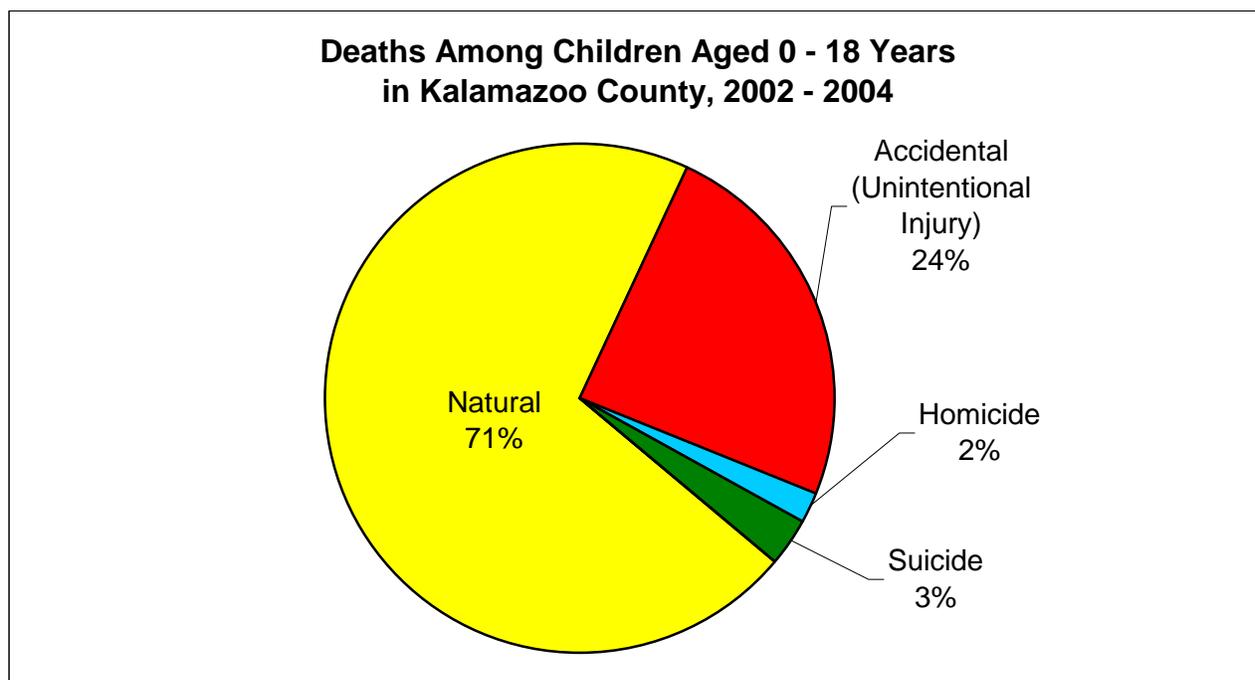
Mortality data source: Michigan Department of Community Health, Division for Vital Records and Health Data Development, Michigan Resident Mortality File

Population data source: National Center for Health Statistics, U.S. Census Populations with Bridged Race Categories, updated 9/2005.

3.3.3 Age-Specific Mortality by Cause

Causes of death between 2002 and 2004 among children (0 to 18 years), young adults (19 to 34 years), adults (35 to 64 years) and seniors (65 years and older) are presented in this section. (For additional analysis and information about causes of infant death in Kalamazoo County, please refer to “Section 9: Pregnancy, Natality and Infant Mortality” of the Health Surveillance Data Book.)

Most deaths among children in Kalamazoo County and in Michigan between 2002 and 2004 were due to natural causes (71% in both Kalamazoo County and Michigan). In both the county and the state, natural deaths were most commonly a result of conditions originating in the perinatal period (around the time of birth, either before or shortly after). Congenital anomalies were the next greatest cause of natural death. Accidents were responsible for 24% of deaths among children in Kalamazoo County in this time period and 21% of deaths in Michigan. The most frequent accidents causing death among children were motor vehicle accidents (17% of all child deaths in Kalamazoo County in this time period).



Mortality data source: Michigan Department of Community Health, Division for Vital Records and Health Data Development, Michigan Resident Mortality File

**Leading Causes of Death Among Children Aged 0 – 18 Years
in Kalamazoo County and Michigan, 2002 – 2004**

Cause of Death	Kalamazoo County		Michigan	
	Average # of deaths yearly	Percent of deaths	Average # of deaths yearly	Percent of deaths
All Causes	46	100%	1,792	100%
Natural	32	70.8%	1,277	71.3%
Perinatal Conditions	18	38.7%	590	32.9%
Congenital Anomalies	6	13.1%	229	12.8%
SIDS	<3	2.9%	62	3.4%
Circulatory System Disease	<3	1.5%	76	4.2%
Neoplasm	<3	1.5%	74	4.1%
Nervous System Disease	<3	1.5%	52	2.9%
Respiratory System Disease	<3	1.5%	54	3.0%
All Other Natural Causes	5	10.2%	140	7.8%
Accidental (Unintentional Injury)	11	24.1%	371	20.7%
Motor Vehicle	8	16.8%	213	11.9%
Suffocation and Strangulation	<3	2.9%	62	3.5%
Drowning	0	0.7%	31	1.7%
Fire and Burn	<3	2.9%	31	1.7%
Firearm and Weapon	0	0.0%	4	0.2%
All Other Accidents	0	0.7%	30	1.7%
Homicide	<3	2.2%	76	4.2%
Child Abuse and Neglect	0	0.7%	48	2.7%
Firearm and Weapon	0	0.7%	11	0.6%
All Other Homicides	0	0.7%	17	0.9%
Suicide	<3	2.9%	52	2.9%
Firearm and Weapon	<3	1.5%	24	1.4%
Suffocation and Strangulation	<3	1.5%	23	1.3%
All Other Suicides	0	0.0%	5	0.3%
Undetermined	0	0.0%	17	0.9%

Mortality data source: Michigan Department of Community Health, Division for Vital Records and Health Data Development, Michigan Resident Mortality File

Age-specific mortality rates for causes of death among children in Kalamazoo County were not significantly different from rates in Michigan between 2002 and 2004.

**Child Mortality Rates per 100,000 Children (0 – 18 Years) by Cause of Death,
Kalamazoo County and Michigan 2002 – 2004**

Cause of Death	Kalamazoo County		Michigan	
	Rate	+/- 95% CI	Rate	+/- 95% CI
All Causes	74.2	12.4	66.6	1.8
Natural	52.6	10.5	47.4	1.5
Accidental (Unintentional Injury)	17.9	6.1	13.8	0.8
Homicide	1.6	1.8	2.8	0.4
Suicide	2.2	2.1	1.9	0.3
Undetermined	0.0	0.0	0.6	0.2

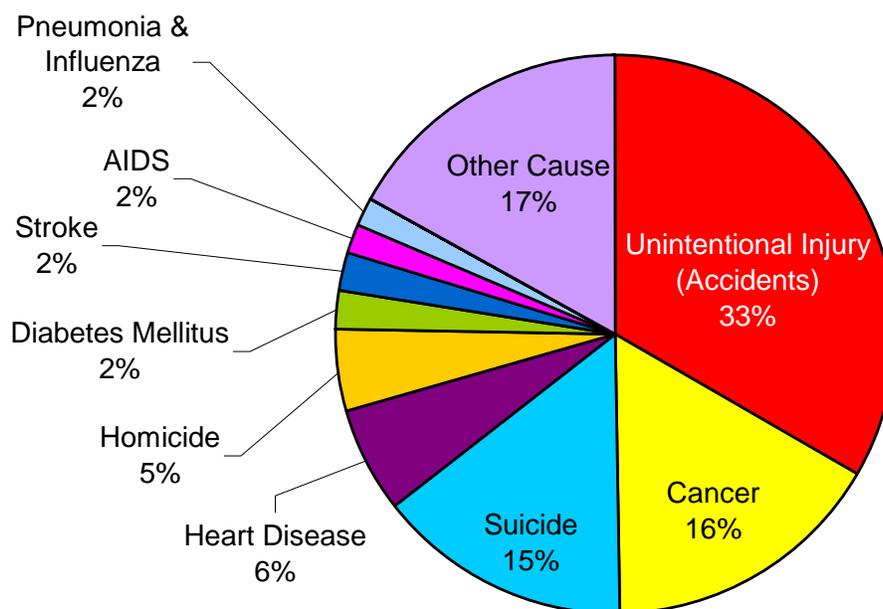
*95% Confidence interval exceeds possible limits

Mortality data source: Michigan Department of Community Health, Division for Vital Records and Health Data Development, Michigan Resident Mortality File

Population data source: National Center for Health Statistics, U.S. Census Populations with Bridged Race Categories, updated 9/2005.

Among young adults in Kalamazoo County (ages 19 to 34 years) between 2002 and 2004, the leading cause of death was unintentional injury (accidents) (responsible for 33% of deaths). Cancer was the next leading cause of death in the county, responsible for 16% of deaths, followed by suicide (15% of deaths). In Michigan overall, unintentional injury also caused the greatest number of deaths (28%) among young adults in this time period. The second and third leading causes of death in the state were homicide and suicide; homicide was responsible for 16% of deaths and suicide was responsible for 13% of deaths in Michigan.

**Deaths Among Young Adults Aged 19 - 34 Years
in Kalamazoo County, 2002 - 2004**



Mortality data source: Michigan Department of Community Health, Division for Vital Records and Health Data Development, Michigan Resident Mortality File

The overall mortality rate due to all causes was lower among this age group in Kalamazoo County than in Michigan. Mortality rates due to the leading causes were similar in Kalamazoo County and Michigan, with the exception of homicide. The mortality rate due to homicide was significantly lower in Kalamazoo County than in the state overall.

Although they are not categories that are exclusive of the leading causes of death, alcohol-induced deaths and diabetes-related deaths are shown in the table below.

**Leading Causes of Death Among Young Adults Aged 19 – 34 Years
in Kalamazoo County and Michigan, 2002 – 2004**

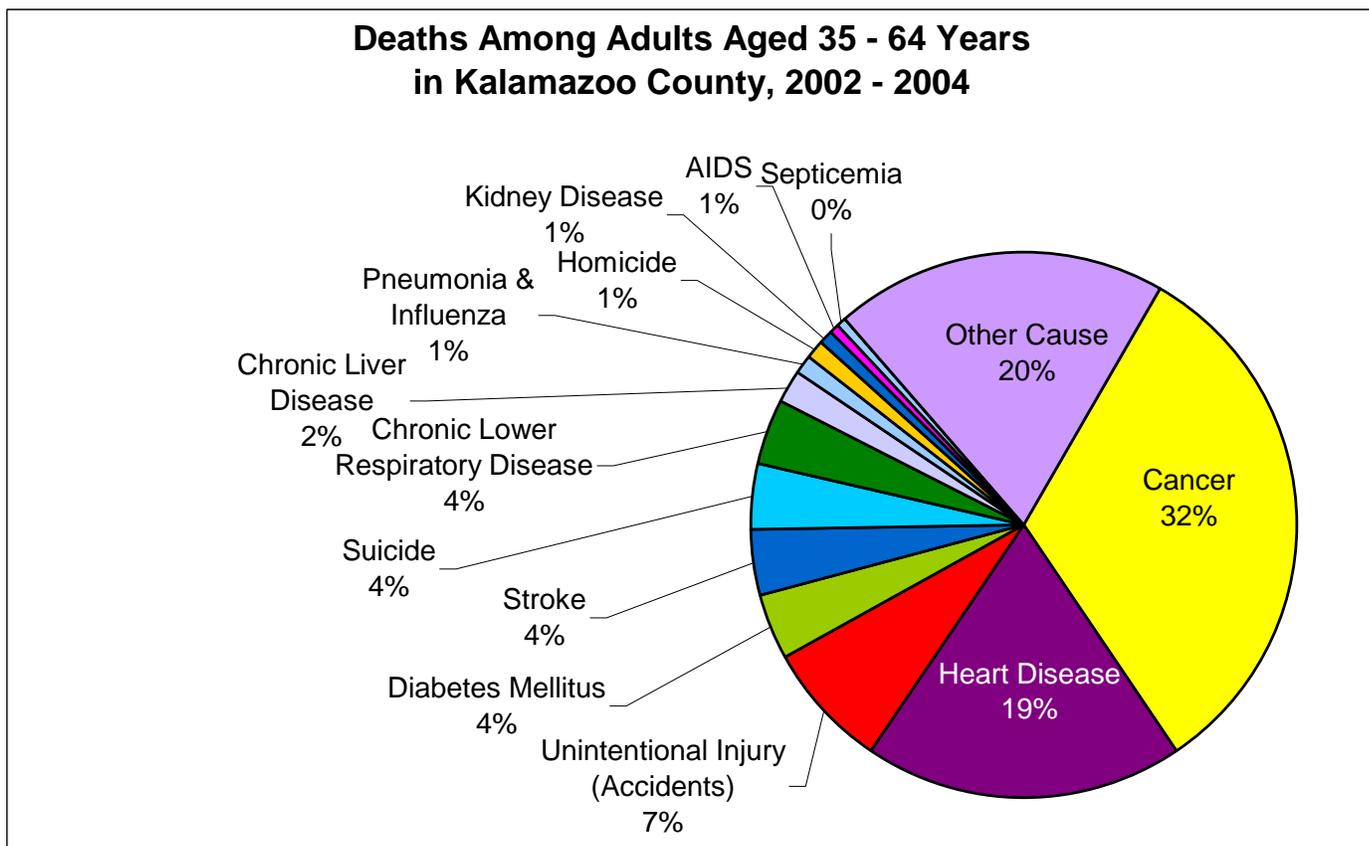
Cause of Death	Kalamazoo County				Michigan			
	Average # deaths yearly	% of all deaths	Mortality rate per 100,000	+/- 95% CIs	Average # deaths yearly	% of all deaths	Mortality rate per 100,000	+/- 95% CIs
All Deaths	43	100.0%	66.9	11.5	2,094	100.0%	97.1	2.4
Unintentional Injury (Accidents)	14	33.3%	22.3	6.7	575	27.5%	26.7	1.3
Cancer	7	16.3%	10.9	4.7	182	8.7%	8.5	0.7
Suicide	6	14.7%	9.9	4.4	274	13.1%	12.7	0.9
Heart Disease	3	6.2%	4.1	2.9	138	6.6%	6.4	0.6
Homicide	2	4.7%	3.1	2.5	336	16.0%	15.6	1.0
Diabetes Mellitus	1	2.3%	1.6	1.8	25	1.2%	1.1	0.3
Stroke	1	2.3%	1.6	1.8	25	1.2%	1.2	0.3
AIDS	1	1.6%	1.0	1.4	34	1.6%	1.6	0.3
Pneumonia & Influenza	1	1.6%	1.0	1.4	20	0.9%	0.9	0.2
Alzheimer's Disease	0	0.0%	0.0	0.0	0	0.0%	0.0	0.0
Chronic Liver Disease	0	0.0%	0.0	0.0	17	0.8%	0.8	0.2
Chronic Lower Respiratory Disease	0	0.0%	0.0	0.0	17	0.8%	0.8	0.2
Kidney Disease	0	0.0%	0.0	0.0	9	0.4%	0.4	0.2
Septicemia	0	0.0%	0.0	0.0	9	0.4%	0.4	0.2
Other Cause	7	17.1%	11.4	4.8	433	20.7%	20.1	1.1
Alcohol-Induced	0	0.0%	0.0	0.0	25	1.2%	1.1	0.3
Diabetes-Related	1	3.1%	2.1	2.0	45	2.1%	2.1	0.4

*95% Confidence interval exceeds possible limits

Mortality data source: Michigan Department of Community Health, Division for Vital Records and Health Data Development, Michigan Resident Mortality File

Population data source: National Center for Health Statistics, U.S. Census Populations with Bridged Race Categories, updated 9/2005.

Among adults in Kalamazoo County (ages 35 to 64 years) between 2002 and 2004, the leading cause of death was cancer (responsible for 32% of deaths). Cancer and heart disease (19% of deaths) accounted for more than half of deaths in this age group. Unintentional injury was the third leading cause of death in this time period (7% of deaths). In comparison to Kalamazoo County, the proportion of deaths due to particular causes was similar in Michigan with the exception of heart disease, which was responsible for 24% of deaths in Michigan in this age group.



Mortality data source: Michigan Department of Community Health, Division for Vital Records and Health Data Development, Michigan Resident Mortality File

Within this age group, the overall mortality rate due to all causes was slightly lower in Kalamazoo County than in Michigan (although the difference was not statistically significant). Mortality rates due to the leading causes were similar in Kalamazoo County and Michigan, with the exception of heart disease, chronic liver disease, and septicemia; each of these causes of death had a lower mortality rate among this age group in Kalamazoo County than in the state overall. The rate of alcohol-induced deaths (not a leading cause of death) was also lower in Kalamazoo County than in Michigan in this time period.

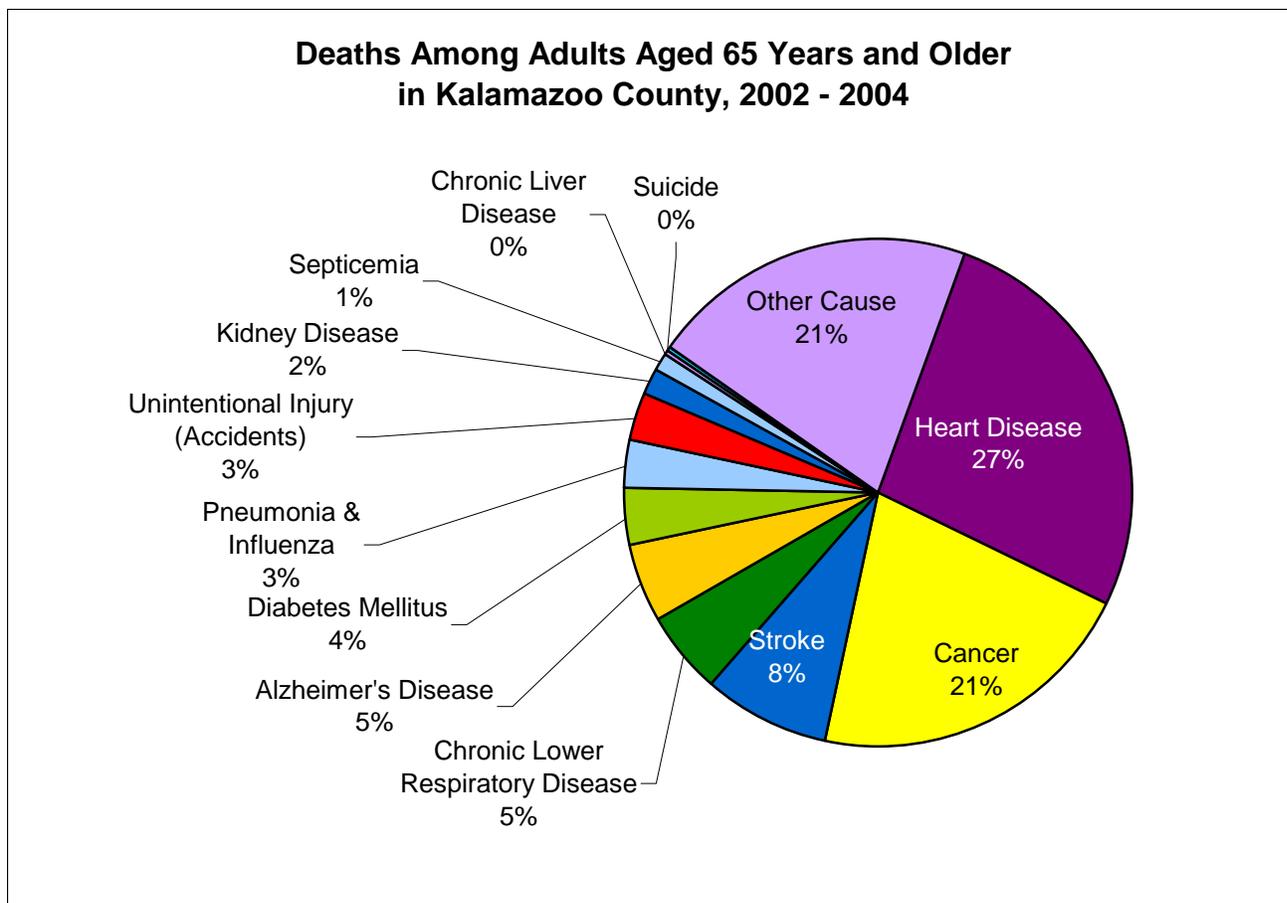
**Leading Causes of Death Among Adults Aged 35 – 64 Years
in Kalamazoo County and Michigan, 2002 – 2004**

Cause of Death	Kalamazoo County				Michigan			
	Average # deaths yearly	% of all deaths	Mortality rate per 100,000	+/- 95% CIs	Average # deaths yearly	% of all deaths	Mortality rate per 100,000	+/- 95% CIs
All Deaths	388	100.0%	442.8	25.4	18,774	100.0%	470.1	3.9
Cancer	126	32.4%	143.3	14.5	5,765	30.7%	144.3	2.1
Heart Disease	73	18.8%	83.2	11.0	4,541	24.2%	113.7	1.9
Unintentional Injury (Accidents)	29	7.4%	32.7	6.9	1,184	6.3%	29.6	1.0
Diabetes Mellitus	15	3.9%	17.5	5.1	636	3.4%	15.9	0.7
Stroke	15	3.9%	17.5	5.1	644	3.4%	16.1	0.7
Suicide	15	3.9%	17.5	5.1	596	3.2%	14.9	0.7
Chronic Lower Respiratory Disease	15	3.8%	16.7	4.9	566	3.0%	14.2	0.7
Chronic Liver Disease	8	2.1%	9.1	3.6	631	3.4%	15.8	0.7
Pneumonia & Influenza	4	1.0%	4.6	2.6	216	1.2%	5.4	0.4
Homicide	4	0.9%	4.2	2.5	231	1.2%	5.8	0.4
Kidney Disease	3	0.9%	3.8	2.4	211	1.1%	5.3	0.4
AIDS	3	0.7%	3.0	2.1	187	1.0%	4.7	0.4
Septicemia	2	0.4%	1.9	1.7	164	0.9%	4.1	0.4
Alzheimer's Disease	0	0.0%	0.0	0.0	22	0.1%	0.6	0.1
Other Cause	77	19.8%	87.8	11.3	3,180	16.9%	79.6	1.6
Alcohol-Induced	8	2.0%	8.7	3.6	533	2.8%	13.4	0.7
Diabetes-Related	34	8.7%	38.4	7.5	1,768	9.4%	44.3	1.2

Mortality data source: Michigan Department of Community Health, Division for Vital Records and Health Data Development, Michigan Resident Mortality File

Population data source: National Center for Health Statistics, U.S. Census Populations with Bridged Race Categories, updated 9/2005.

The leading causes of death among seniors in Kalamazoo County (age 65 years and older) between 2002 and 2004 were heart disease (27% of deaths), cancer (21% of deaths) and stroke (8% of deaths). Combined, these causes of death were responsible for 56% of all deaths in this age group. In Michigan, these three leading causes were responsible for 62% of deaths among seniors.



Mortality data source: Michigan Department of Community Health, Division for Vital Records and Health Data Development, Michigan Resident Mortality File

The all-cause mortality rate in Kalamazoo County among seniors between 2002 and 2004 was similar to the all-cause rate in Michigan. The mortality rate among seniors due to heart disease was lower in Kalamazoo County than in Michigan in this time period. Mortality rates due to leading causes that were higher in Kalamazoo County than in Michigan included Alzheimer's disease and unintentional injury.

**Leading Causes of Death Among Adults Aged 65 Years and Older
in Kalamazoo County and Michigan, 2002 – 2004**

Cause of Death	Kalamazoo County				Michigan			
	Average # deaths yearly	% of all deaths	Mortality rate per 100,000	+/- 95% CIs	Average # deaths yearly	% of all deaths	Mortality rate per 100,000	+/- 95% CIs
All Deaths	1,430	100.0%	5,206.1	151.7	63,660	100.0%	5,140.7	22.5
Heart Disease	380	26.6%	1,383.1	79.7	20,979	33.0%	1,694.1	13.1
Cancer	305	21.3%	1,111.4	71.6	13,669	21.5%	1,103.8	10.6
Stroke	113	7.9%	410.1	43.6	4,800	7.5%	387.6	6.3
Chronic Lower Respiratory Disease	77	5.4%	280.3	36.1	3,756	5.9%	303.3	5.6
Alzheimer's Disease	70	4.9%	256.0	34.5	2,075	3.3%	167.6	4.2
Diabetes Mellitus	50	3.5%	183.2	29.2	2,114	3.3%	170.7	4.2
Pneumonia & Influenza	46	3.2%	167.4	27.9	1,710	2.7%	138.1	3.8
Unintentional Injury (Accidents)	42	2.9%	152.9	26.7	1,145	1.8%	92.5	3.1
Kidney Disease	26	1.8%	93.4	20.9	1,360	2.1%	109.8	3.4
Septicemia	14	1.0%	51.0	15.4	708	1.1%	57.2	2.4
Chronic Liver Disease	5	0.3%	18.2	9.2	331	0.5%	26.7	1.7
Suicide	3	0.2%	12.1	7.5	147	0.2%	11.9	1.1
AIDS	0	0.0%	0.0	0.0	7	0.0%	0.6	0.2
Homicide	0	0.0%	0.0	0.0	25	0.0%	2.0	0.5
Other Cause	299	20.9%	1,087.1	70.8	10,834	17.0%	874.9	9.5
Alcohol-Induced	3	0.2%	12.1	7.5	109	0.2%	8.8	1.0
Diabetes-Related	133	9.3%	485.3	47.4	6,401	10.1%	516.9	7.3

Mortality data source: Michigan Department of Community Health, Division for Vital Records and Health Data Development, Michigan Resident Mortality File

Population data source: National Center for Health Statistics, U.S. Census Populations with Bridged Race Categories, updated 9/2005.