

# 3

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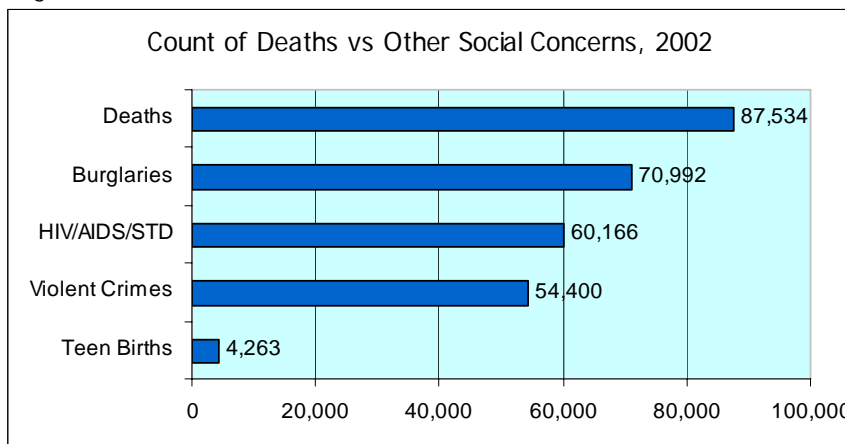
Key Points

## Mortality in Michigan

Addressing end of life issues is critical for a number of reasons.

1. The nature of death has changed since the early 20<sup>th</sup> century. The infectious diseases that drove mortality then have been replaced by chronic illnesses that persist for months or years before death. Even many cancers are managed as chronic conditions.
2. Medical advances enable physicians to help people survive life-threatening events that previously were fatal. As a result people live to older ages and later stages of decline and disability.
3. The growing elderly population will swell to unprecedented numbers when volume and longevity collide as baby boomers age. Some liken the boomers to the image of a pig passing through a python. The challenge of caring for the large numbers of elderly expected over the next half century looms as a crisis for health care and for society.

Figure 3.1



Sources: MI Dept of Community Health Vital Records and MI State Police Crime Trends

In Michigan in 2002, there were more deaths than there were burglaries, violent crimes (murder, rape, robbery, assault), and other social and health problems that raise public concern and drive professional action. (See Figure 3.1.) Like these problems, death has a profound and life-altering impact upon the affected persons and families. Unlike these problems, death has 100% incidence. We all face it ourselves, and most of us experience its impact as caregivers, friends or family members. Yet as a culture we remain reluctant to understand the end of life and to confront its challenges.

As a first step toward understanding end of life, this section describes our aging population and presents data about mortality rates and causes by age and by ethnic group. While the majority of deaths are caused by chronic disease in older adults, there are important differences among age groups and among ethnic populations.

## Michigan's Aging Population

Estimates based upon 2000 census data put Michigan's population at the 10 million mark for 2002 (see Table 3.1). Older adults (aged 65 and over) constitute 12.3 percent of the state's residents, comparable to 12.4 percent nationwide. Between 1990 and 2000 the number of older adults grew in every state. Michigan's experience falls in the middle. Among the 50 states, Michigan's 10 percent increase ranks 28<sup>th</sup>, and the state's 12.3 percent proportion of older adults in the population ranks 30<sup>th</sup>. (US Census Bureau, 2001).

Table 3.1

Estimated Population Count and Distribution by Age Group Michigan, 2002					
Age Group	<18 yrs	18-44 yrs	45-64 yrs	65+ yrs	TOTAL
Count	2,570,264	3,862,991	2,385,271	1,231,920	10,050,446
Percent	25.6%	38.4%	23.7%	12.3%	100%

Source: Division for Vital Records and Health Statistics, Michigan Department of Community Health.  
[http://www.mdch.state.mi.us/pha/osr/CHI/POP/dp00\\_A1.asp](http://www.mdch.state.mi.us/pha/osr/CHI/POP/dp00_A1.asp).

### Growth of Oldest Old

The most rapid growth of the older population in the United States in the 1990s happened in the oldest age groups. The number of people aged 85 and over increased by 38 percent. There was a decrease in the proportion of 65 to 69 year olds—fewer births in



Longevity + volume = end-life crisis.

People now live to older ages and later stages of disability. Decline before death often takes years or months. This reality will be magnified as the elderly ranks swell with aging baby boomers.

Death has 100% incidence—it happens to everyone.

the late 1920s and early 1930s led to fewer people reaching 65 in the 1990s (U.S. Census Bureau, 2001). Table 3.2 shows that Michigan's experience is similar.

Table 3.2

Percent Change by Age Group for Population 65 Years and Over, United States and Michigan, 1990 to 2000					
Age Group	65-69 yrs	70-74 yrs	75-79 yrs	80-84 yrs	85+ yrs
U. S.	-5.7%	+10.8%	+21.1%	+25.7%	+37.6%
Michigan	-10.8%	+8.8%	+22.1%	+30.7%	+35.9%

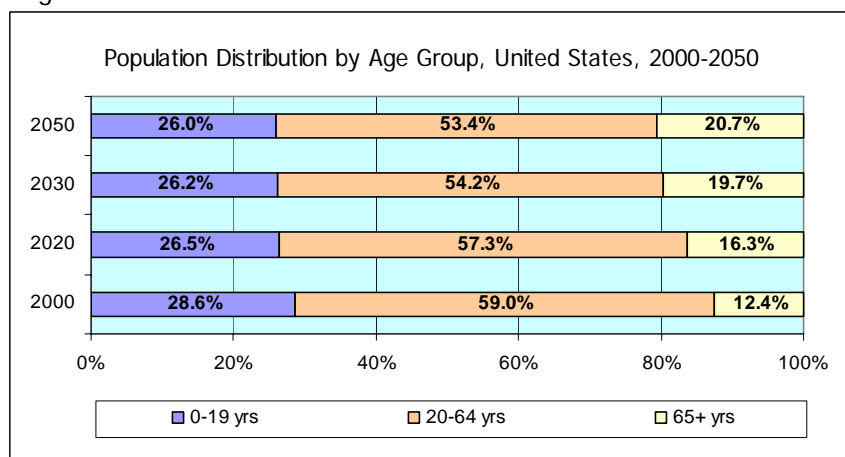
Source: US Census Bureau, 2001, The 65 Years and Over Population: 2000. Accessed at [www.census.gov/prod/2001pubs/c2kbr01-10.pdf](http://www.census.gov/prod/2001pubs/c2kbr01-10.pdf). MDCH Division for Vital Records and Health Statistics, 2004, Population Estimates by Age, 1990-2003, Michigan Total. Accessed at [www.mdch.state.us/pha/osr/CHI/POP/DP00\\_A2D.ASP](http://www.mdch.state.us/pha/osr/CHI/POP/DP00_A2D.ASP).

### Impact of Baby Boomers

Nationally in the 1990 to 2000 decade the five-year age groups that grew fastest were populated by baby boomers—the cohort of persons born in 1946 through 1964. The eldest boomers led a 55 percent increase in the 50 to 54 year age group. Following was the 45 to 49 year group, which scored the second highest increase at 45 percent (U.S. Census Bureau, 2001a). Over the coming 50 years, the pace of growth is expected to accelerate for each population age group as the baby boomers reach it.

The oldest baby boomers turn 65 in 2011. When the youngest ones reach 65 in 2029, the oldest will be nearing 85 years of age. According to U.S. Census Bureau projections for the nation, the share of the population aged 65 and over is expected to grow by 60 percent in the next three decades, from 12.4 percent in 2000 to 19.7 percent in 2030. See values for more years in Figure 3.2.

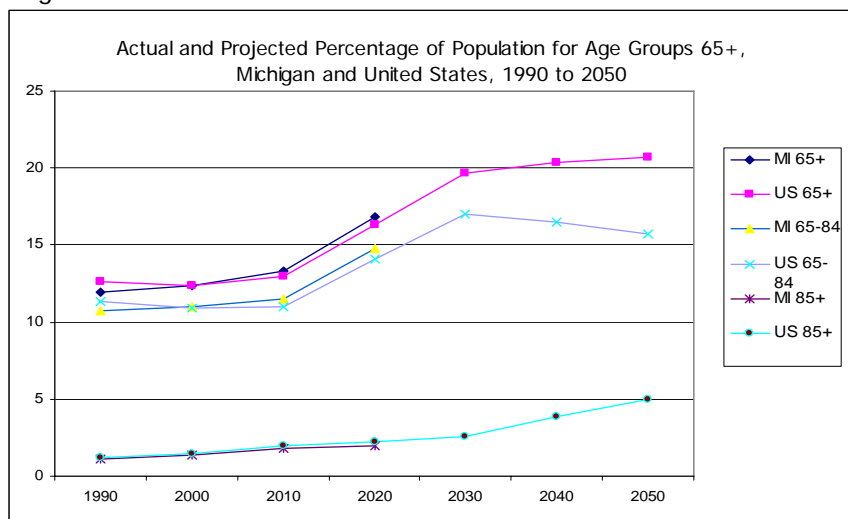
Figure 3.2



Source: U.S. Census Bureau, Demographic Trends in the 20<sup>th</sup> Century, Census 2000 Special Reports, CENSR-4, Table 5, Nov 2002. Accessed at [www.hal.lm.USProj04age.87546.7](http://www.hal.lm.USProj04age.87546.7).

Figure 3.3 shows that Michigan's actual and projected percentage distribution of older population groups has paralleled national experience and estimates to date. So it is reasonable to expect that the state may experience population growth patterns similar to those projected for the United States through 2050.

Figure 3.3



Sources: Population Projections for Michigan to Year 2020, compiled by Michigan Information Center, available at [www.michigan.gov/documents/8515\\_26106\\_7.pdf](http://www.michigan.gov/documents/8515_26106_7.pdf), and U.S. Census Bureau, *Demographic Trends in the 20th Century*, Census 2000 Special Reports, CENSR-4, Table 5, Nov 2002, available at [www.hal\\_lm\\_USProj04age\\_87546\\_7](http://www.hal_lm_USProj04age_87546_7)



The first baby boomers turn 65 in 2011. They are the crest of an approaching tidal wave of older adults in Michigan. Compared to 2000, these changes are expected:

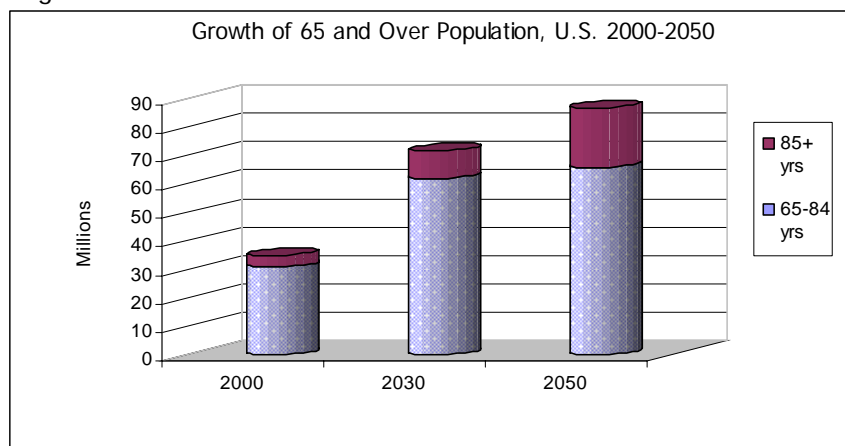
- By 2030, two times as many residents aged 65+
- By 2050, five times as many people aged 85+

In the United States between 2030 and 2050 the total percentage of adults aged 65 and over is predicted to grow slightly, from 19.7 percent to 20.7 percent of the population. Heaviest projected growth follows the baby boomers into the 85 and over segment. It will nearly double from 2.6 percent of the population in 2030 to 5.0 percent in 2050.

The cylinders in Figure 3.4 show the magnitude of the baby boomers' estimated impact on the volume of older adults in the United States as they move through the age spectrum.

- As baby boomers pass through the 65 to 84 year category between 2010 and 2030, the entire population aged 65 and over is projected to more than double in number.
- As boomers reach 85 and beyond, between 2030 and 2050, the number of people 85 and older is expected to nearly double.

Figure 3.4



Source: U.S. Census Bureau, Demographic Trends in the 20<sup>th</sup> Century, Census 2000 Special Reports, CENSR-4, Table 5, Nov 2002. Accessed at [www.hal\\_lm\\_USProj04age\\_87546\\_7](http://www.hal_lm_USProj04age_87546_7).

Applied to Michigan's population, these national trends support the projected head counts of older adults shown in Table 3.3.

Table 3.3

Estimated Number of Older Adults by Age Group, Michigan 2030 and 2050			
Age Group / Year	2000 (Actual)	2030 (Estimated)	2050 (Estimated)
Age 65 and over	1,231,920	2,500,000	3,000,000
Age 85 and over	142,460	322,000	700,000

Sources U.S. Census Bureau, Demographic Trends in the 20<sup>th</sup> Century, Census 2000 Special Reports, CENSR-4, Table 5, Nov 2002. Accessed at [www.hal\\_lm\\_USProj04age\\_87546\\_7](http://www.hal_lm_USProj04age_87546_7). US Census Bureau, Population Division, Annual Estimates of the Population by Sex and Age for Michigan: April 1, 2000 to July 1, 2003 (SC-EST2003-02-26). Release date September 30, 2004. Accessed 10/31/04 at [www.census.gov/popest/states/asrh/tables/SC-EST2002-02/SC-EST2003-02-26.pdf](http://www.census.gov/popest/states/asrh/tables/SC-EST2002-02/SC-EST2003-02-26.pdf)

The projected doubling of the 65 and over age group and the projected fivefold increase in the population aged 85 and over foretell ever-increasing and significant needs for long term care and attention to end of life issues.

### Variation by County

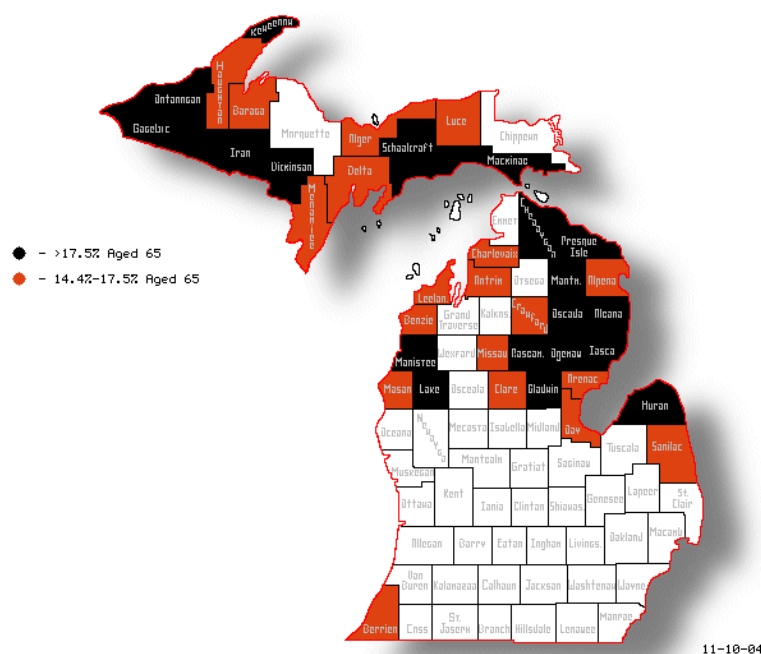
Many counties in the northern part of Michigan already have sizeable aged populations. Of the 44 counties in the Upper Peninsula and the northern half of the Lower Peninsula:

- In 19 counties the proportion of older adults (aged 65 and above) exceeds Florida's 17.6 percent of residents that age.

- In 17 counties older adults account for 14.7 to 17.5 percent of the population.
- The remaining 8 northernmost counties have a proportion of older residents closer to the Michigan average of 12.3 percent.

Note the side bar for a list of counties with the highest percentages of older residents, and see Figure 3.5 for their locations.

Figure 3.5  
Counties with Highest Proportions of Residents Aged 65 and Over



One reason for above average proportions of older adults in these geographic areas may be out-migration of young adults while their older relatives and neighbors age in place (U.S. Census Bureau, 2001). This possibility matches input from hospice directors in those areas. Many of them specified one of their most vulnerable populations to be elderly adults living alone or with an equally elderly spouse and little or no family in the area.

The fact that these also are rural counties adds to the challenges of meeting needs for older people at the end of life. Long distances, sparse availability of services, and limited personal and program resources stand as barriers to access to end of life care.

**Michigan Counties with ≥17.6% of Their Residents Aged 65 and Over**

- Upper Peninsula*
- Iron (25.2%)
  - Gogebic (22.6%)
  - Ontonagon (21.6%)
  - Keweenaw (20.3%)
  - Schoolcraft (18.6%)
  - Mackinac (18.2%)
  - Dickinson (18.1%)

- Lower Peninsula*
- Alcona (24.5%)
  - Montmorency (23.9%)
  - Roscommon (23.8%)
  - Presque Isle (22.3%)
  - Iosco (21.6%)
  - Oscoda (20.2%)
  - Lake (19.7%)
  - Huron (19.4%)
  - Ogemaw (18.8%)
  - Gladwin (18.3%)
  - Manistee (18.1%)
  - Cheboygan (17.9%)

**Michigan Counties with 14.4% to 17.5% of Their Residents Aged 65 and Over**

- Upper Peninsula*
- Menominee (17.3%)
  - Alger (17.2%)
  - Delta (17.0%)
  - Baraga (16.3%)
  - Houghton (15.5%)
  - Luce (15.4%)

- Lower Peninsula*
- Antrim (17.5%)
  - Benzie (17.5%)
  - Leelanau (17.4%)
  - Clare (17.3%)
  - Alpena (17.1%)
  - Mason (16.8%)
  - Arenac (16.6%)
  - Crawford (16.6%)
  - Sanilac (15.4%)
  - Charlevoix (14.9%)
  - Missaukee (14.8)
  - Bay (14.7%)
  - Berrien (14.4%)

Source: U.S. Census Bureau  
<http://quickfacts/census.gov/qfd/states/26/26143.html>

Given the accelerated growth of the aging population that is projected for the next four decades, it is reasonable to expect that end of life will gain urgency as a health care issue in Michigan. But these counties with high populations of older adults have urgent end of life needs right now.

## Mortality by Age and Race

Death happens more often in Michigan than in the United States as a whole. In 2002, the state’s 87,534 deaths represent an age-adjusted rate of 887.4 deaths per 100,000 population. This rate exceeds the 2001 U. S. rate of 848.5 by about 5 percent (MDCH, 2004). Table 3.4 shows how the 87,534 deaths registered for Michigan residents in 2002 are distributed by race and ethnicity.

Table 3.4

Count of Deaths by Race/Ethnic Group Michigan Residents, 2002	
White	74,027
African American	12,698
Native American	400
Asian/Pacific Islander	348
Other	61
<b>TOTAL</b>	<b>87,534</b>
Hispanic Origin	964

Source: 2002 Michigan Resident Death File, Vital Records and Health Data Development Section, Michigan Department of Community Health

Most of the data in this report reflect the experience of white, black, and Hispanic residents. The volume of deaths in the Native American and Asian/Pacific Islander populations is too small to support statistically stable conclusions, especially when there are many categories involved (such as age groups or causes of death).

### Age at Death

Overall in Michigan death comes as expected, primarily at older ages. About three-quarters of deaths occur at age 65 and beyond. Table 3.5 shows the distribution of deaths in 2002 by number, percentage, and rate per age range. Following an initial surge of infant mortality, death counts and rates drop and then climb slowly as age increases. Note that 27 percent of deaths occur at age 85 and beyond.



The counties with the highest percentage of residents aged 65+ are in northern Michigan.

These rural counties have urgent end of life needs now. Long distances, sparse services, and limited resources block access to care.

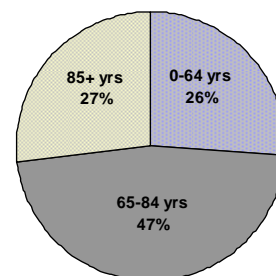
### Hispanic Origin

Hispanic Origin is an ethnic category, not a race. When asked to designate their race, a large majority of people of Hispanic origin choose White. The rest choose African American or another race.

Therefore, a portion of the population estimated to be White, Black, Native American or Asian/Pacific Islander is also counted as Hispanic origin.

In the table at left, the 964 Hispanic deaths are included among the reported deaths for the five racial categories but also listed separately on the bottom line.

Distribution of Deaths by Age Range  
Michigan Residents, 2002



Source: 2002 Michigan Resident Death File, Vital Records and Health Data Development Section, Michigan Department of Community Health

Table 3.5

Number, Percent, and Rate of Deaths by Age Michigan Residents, 2002			
Age	Number of Deaths	Percent of Deaths	Age-Specific Death Rate per 100,000 People
<1	1,054	1.2%	785.7
1-14	431	0.5%	81.4
15-24	1,064	1.2%	72.5
25-34	1,459	1.7%	103.4
35-44	3,170	3.6%	238.5
45-54	6,550	7.5%	419.0
55-64	9,053	10.3%	624.6
65-74	15,198	17.4%	1623.9
75-84	25,913	29.6%	4117.2
85+	23,641	27.0%	5292.9
TOTALS	87,534	100%	870.9

Source: 2002 Michigan Resident Death File, Vital Records and Health Data Development Section, Michigan Department of Community Health

### Making Sense of Death Rates

An **age-specific death rate** tells how many deaths occurred per 100,000 people in a specific age range. It allows comparison of deaths in groups of different sizes.

An **age-adjusted death rate** tells how many deaths occurred per 100,000 people in an entire population. It allows comparison of deaths in groups of different age composition. The process of age-adjusting applies a population's age-specific rates to the age distribution of the entire United States population. This corrects for the possibility that one population may appear to have a higher death rate simply because it has a larger share of older people.

## Racial Disparity in Age at Death

There are marked differences among whites, African Americans, and Hispanics in the distribution of deaths across the lifespan. Blacks and Hispanics share a pattern of premature death.

### *The Big Picture*

Compared to the white population, African Americans and Hispanics have double the share of premature deaths at younger ages and half the share of deaths at the very oldest ages.

- Almost half of Black (44%) and Hispanic (48%) deaths occur before age 65, while 23% of white deaths do.
- Only 15% of Black and 13% of Hispanic deaths happen at age 85 and beyond, while 29% of white deaths do.

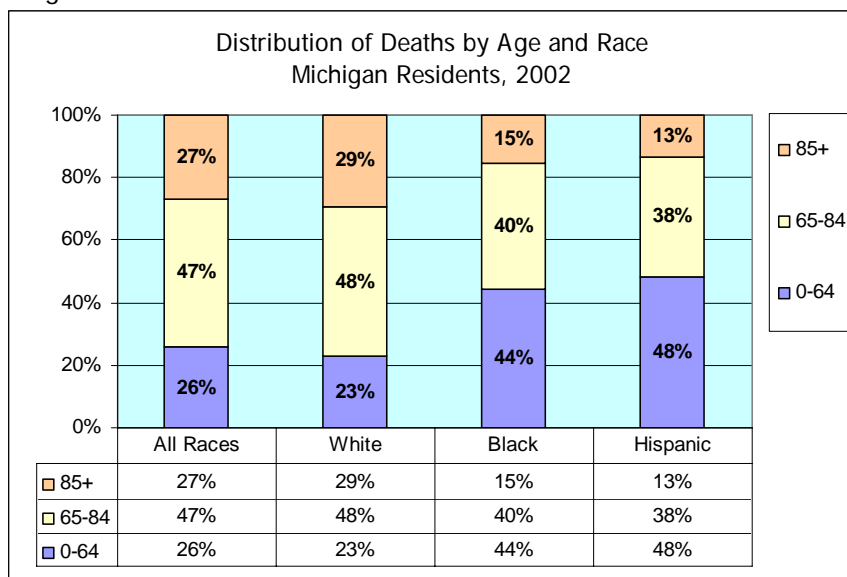
Figure 3.6 illustrates this disparity.

### Michigan Population by Race, 2002

Race	Number	%
White	8,269,209	82.3%
Black	1,484,848	14.8%
Asian/PI	223,285	2.2%
Native Amer	73,104	0.7%
TOTAL	10,050,446	100%

Source: Michigan Department of Community Health  
[www.mdch.state.mi.us/pha/osr/chi/pop/frame.asp](http://www.mdch.state.mi.us/pha/osr/chi/pop/frame.asp)

Figure 3.6



Source: 2002 Death File, Vital Records and Health Data Development Section, Michigan Department of Community Health



Blacks and Hispanics share a pattern of premature death.

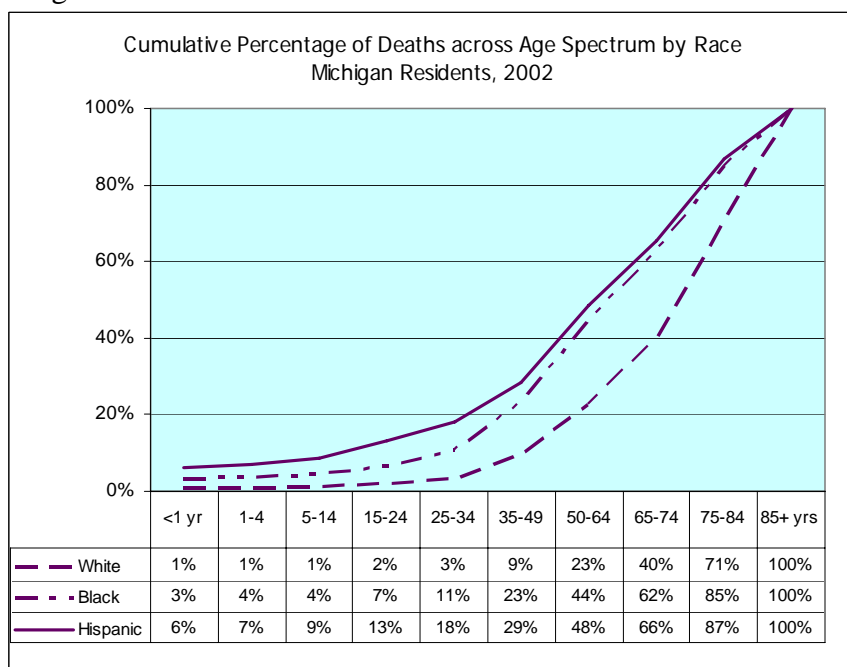
- Almost 50% of Black and Hispanic deaths happen before age 65.
- Only 15% occur at age 85 and above.

Compared to the white population, Blacks and Hispanics have double the share of deaths at young ages and half the share of deaths at very old ages.

*The Details*

The cumulative percentages of both Black and Hispanic deaths outpace the percentage for the white population at every age from infancy on. A widening gap peaks at age 65 and narrows after that. Note in Figure 3.7 that the cumulative percentage of deaths for Hispanics at each age is higher than that for blacks or whites.

Figure 3.7

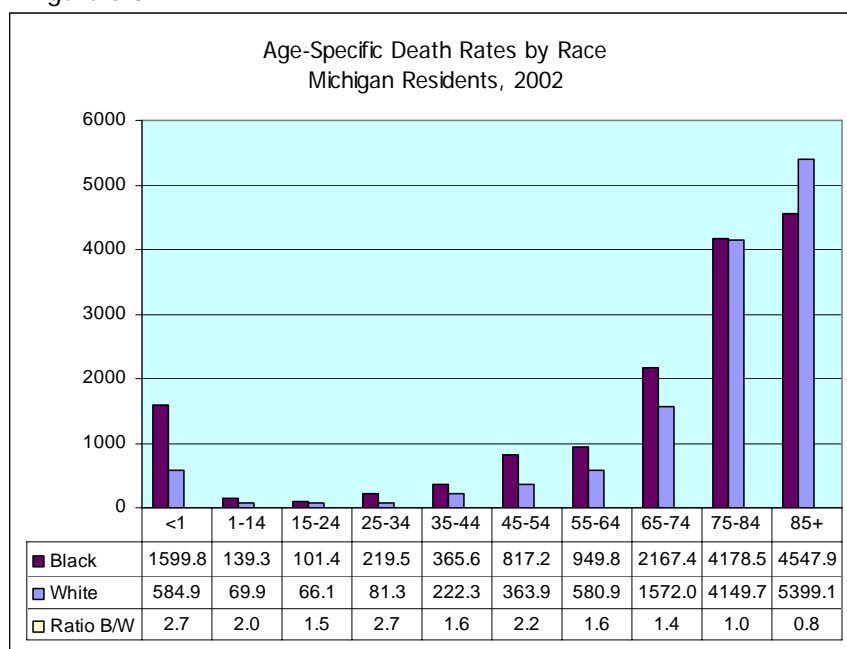


Source: 2002 Death File, Vital Records and Health Data Development Section, Michigan Department of Community Health

Age-specific death rates per 100,000 population for Michigan’s white and black residents for 2002 mirror this picture of disparity. (See Figure 3.8 and the explanation of rate ratios in the sidebar.)

- Death rates for African Americans are well above those for the white population from birth until age 75.
- In four of the six age groups below 55 years, the death rate for African Americans is at least double that for their white counterparts.
- The death rate for black infants is nearly triple the rate for white infants.

Figure 3.8



Source: 2002 Death File, Vital Records and Health Data Development Section, Michigan Department of Community Health

**How to Interpret a Rate Ratio**

In Figure 3.8, the bottom line of the data table shows the ratio of the Black death rate to the white death rate for each age group. This rate ratio is calculated by dividing the age-specific death rate for blacks by the age-specific death rate for whites.

**Ratio = 1.0**

The two death rates are about equal, as for the 75-84 year olds.

**Ratio > 1.0**

The black death rate is higher than the white rate. For instance in the <1 age group, black babies died at 2.7 times the rate that white babies did.

**Ratio < 1.0**

The death rate for blacks is lower than the rate for whites. For instance in the 85+ group, there were 8 black deaths for every 10 white deaths.

**Urban Variation in Mortality Rates**

Similar disparity is documented in a synopsis of three research studies conducted for the Detroit Area Agency on Aging by teams at Wayne State University and other partners (*Dying before Their Time*, n.d.). Findings reveal higher mortality rates for the years 1999 through 2001 for Detroit area residents compared to the rest of Michigan in all age groups through the 60 to 74 year olds.

- Excess mortality peaked between ages 15 and 49. Detroit area death rates were nearly triple those for the rest of the

state. For every 10 deaths at those ages elsewhere, there were 26 in Detroit.

- Death rates were 2.2 times higher for 50 to 59 year olds and 1.5 times higher for 60 to 74 year olds.
- For persons aged 75 and over, Detroit area mortality rates were similar to rates elsewhere in the state.

The researchers also compared Detroit death rates for ages 45 to 74 with rates in other urban areas. They found similar levels of excess mortality in Benton Harbor, Flint, Highland Park, Muskegon, Pontiac, and Saginaw. The gap was widest for persons aged 45 to 54. Like Detroit, these cities have high poverty levels and large minority populations. There is excess disease burden associated with both. The researchers noted that low-income individuals are more likely to enter the health care system at later stages of illness when they need higher levels of care.



Urban areas with high poverty levels and large minority populations have mortality rates for persons aged 45-54 more than double those in other communities.

These cities include:

- Benton Harbor
- Detroit
- Flint
- Highland Park
- Muskegon
- Pontiac
- Saginaw

## Cause of Death

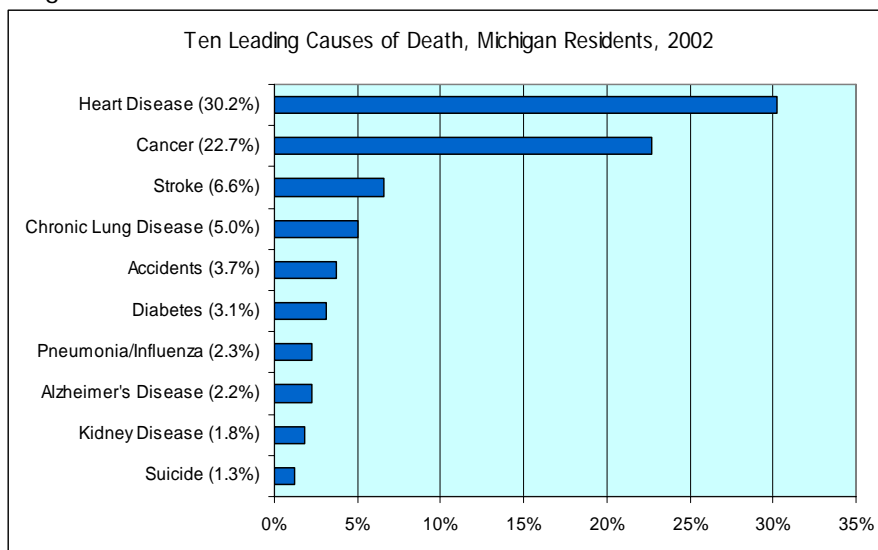
Chronic diseases cause seven of every ten deaths in the United States and in Michigan. This trend has persisted since the 1950's (CDC, n.d.). Figure 3.9 shows the ten leading causes of death for Michigan in 2002, displayed in rank order by percentage of deaths.

### Cause of Death

Only one diagnosis is designated as the underlying cause of death on a death certificate, and it is the underlying cause that is tabulated to determine leading causes of death for a population.

Attributing a death to a single cause usually oversimplifies the picture, especially for older adults. Medicare beneficiaries typically are treated for four major diagnoses in the final year of life—like heart disease, cancer, stroke, chronic lung disease, pneumonia, or dementia. (Hogan et al., 2001).

Figure 3.9



Source: 2002 Michigan Resident Death File, Vital Records and Health Data Development Section, MDCH

Heart disease and cancer alone accounted for more than half of deaths. Combined with stroke, chronic lung disease, diabetes, and Alzheimer's and kidney diseases, they caused 72 percent of deaths in Michigan in 2002.

### Leading Causes of Death by Age

Because three-quarters of deaths occur at age 65 and beyond, the rank and volume of the ten leading causes of death for the population most closely match the profiles for older age groups.

#### *The Big Picture*

Figure 3.10 shows the big picture—the distribution of deaths across the age spectrum. Each layer of the graph represents the actual volume of a particular cause of death and its relative contribution to total mortality across the lifespan. Several facts are apparent:

- Relatively few deaths occur before age 35. Most deaths happen after age 65.
- The leading causes of death are cancer and heart disease, and they are number one at age 65 and beyond.
- The other leading chronic diseases—stroke, diabetes, and lung, liver, and kidney diseases—together cause the second largest chunk of deaths. These also occur primarily after age 65.
- Other top causes account for relatively few deaths in the big picture. They are concentrated at certain ages:
  - Perinatal conditions and congenital anomalies in the first year;
  - Accidents, suicide, and homicide in the middle years; and
  - Alzheimer's disease, pneumonia, flu, and septicemia in the later years.

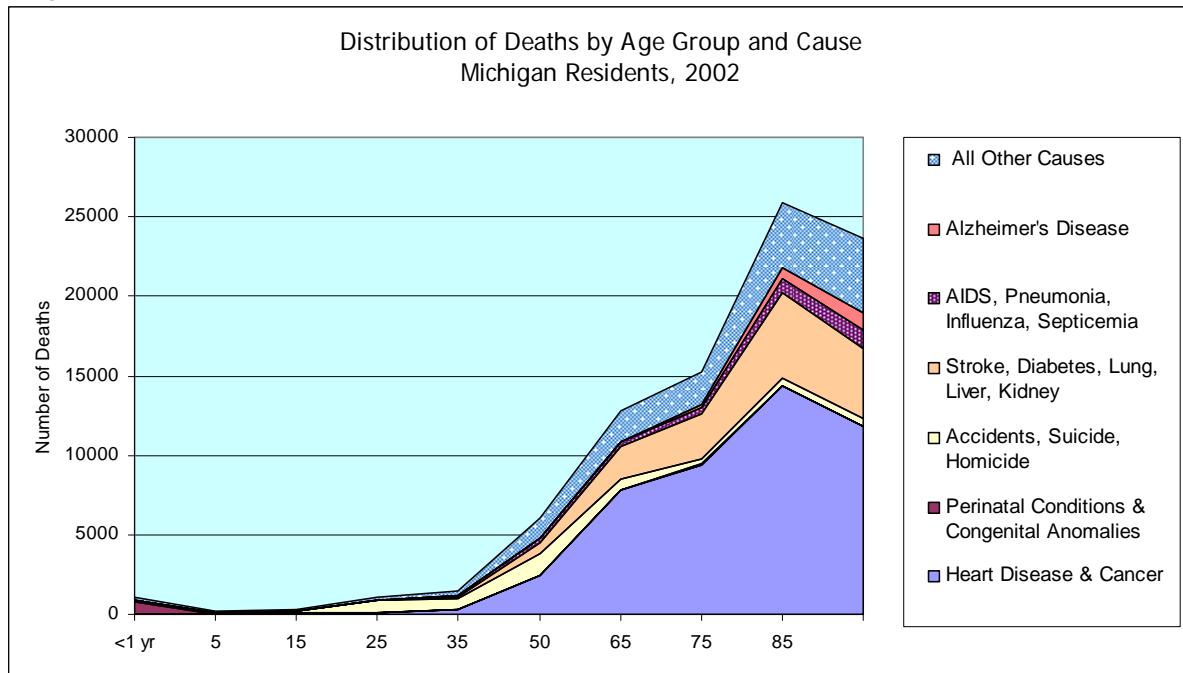


Overall,  $\frac{3}{4}$  of deaths occur after age 65. The leading causes are mainly chronic conditions, led by heart disease and cancer.

Other causes of death dominate at certain ages:

- Perinatal conditions for infants
- Trauma for teens and young adults.

Figure 3.10



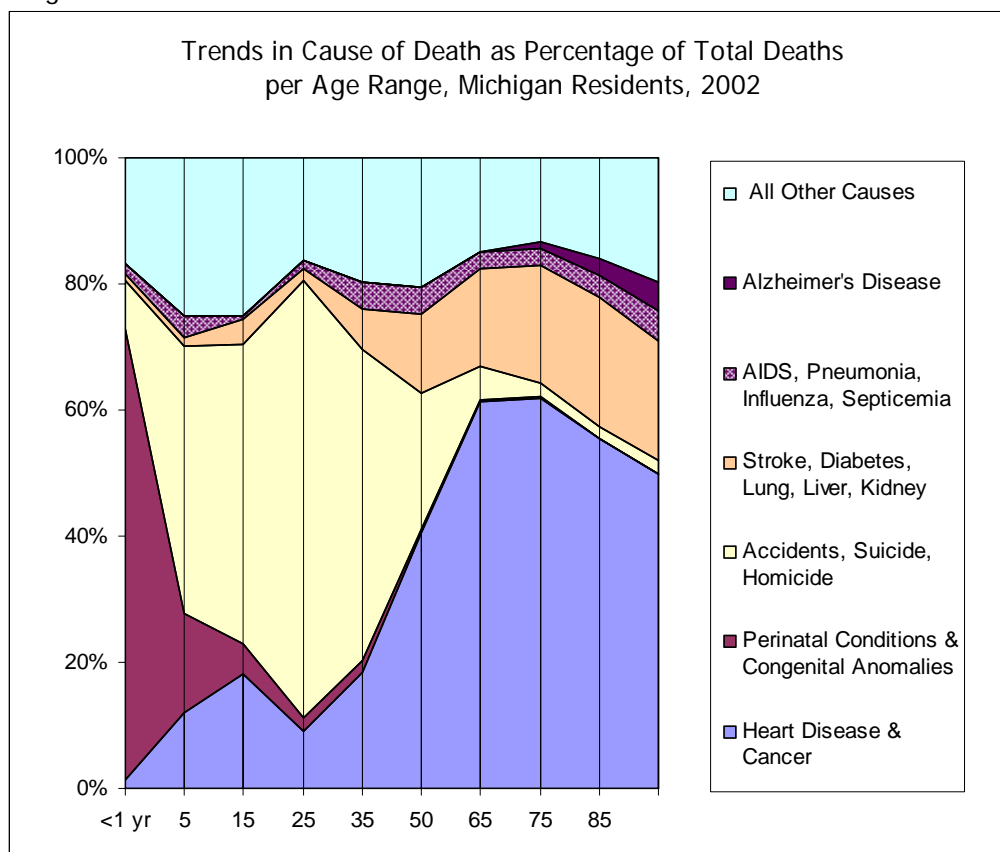
Source: 2002 Michigan Resident Death File, Vital Records and Health Data Development Section, Michigan Department of Community Health

### *The Details*

To fully understand mortality, it is necessary to examine causes of death by age group and note trends across the age spectrum. This approach better reveals the leading causes for younger ages and shows how they vary across the lifespan.

- Figure 3.11 shows how the landscape of mortality changes across the age spectrum. Note these features of the chart:
- Each pair of vertical lines marks the boundaries of an age range, and the columnar space between the each pair of lines represents 100 percent of the deaths for that age range.
- The shaded pieces within each column correspond to the causes of death in the legend at right. The size of each shaded piece reflects the proportion of deaths due to that cause for that age range.
- Each column displays a complete picture of total deaths in an age range. Arrayed side by side, the columns show the trends in cause of death from infancy to the very oldest ages.

Figure 3.11



Source: 2002 Michigan Resident Death File, Vital Records and Health Data Development Section, Michigan Department of Community Health

Several trends stand out in Figure 3.11:

- Perinatal conditions and congenital anomalies account for about 75 percent of deaths in infancy but shrink to less than 20 percent of deaths by age 5.
- Heart disease and cancer are present at all ages and account for the majority of deaths by age 50 and beyond.
- The other top chronic diseases—stroke, diabetes, and lung, liver, and kidney diseases—also are present across the lifespan. They account for a growing share of deaths from age 25 on. Together they comprise the second largest chunk of deaths by age 65 and beyond.
- Trauma—due to accidents, suicide, and homicide—dominates as the number one cause of death between the ages of 5 and 35, peaking at about a 70 percent share.

- While Alzheimer's disease accounts for only a small percentage of deaths beyond age 65, that percentage increases six fold among the oldest old.

### Leading Causes of Death by Race

Just as the population picture hides variations in cause of death among age groups, it obscures differences by race and ethnic origin. As evident in Table 3.6, the ten leading causes of death in 2002 accounted for about 80 percent of mortality for each race and 74 percent for people of Hispanic origin. The white experience matches that of the Michigan population as a whole. For the other groups, the highlighted causes of death are ones that are not among the top ten for the state.

Table 3.6

Leading Causes of Death & Percent of Total by Race/Ethnicity, Michigan Residents, 2002										
Rank	White		Black		Hispanic		Asian/Pacific Islander		Native American	
1	Heart Disease	30%	Heart Disease	30%	Heart Disease	24%	Cancer	29%	Cancer	24%
2	Cancer	23%	Cancer	21%	Cancer	18%	Heart Disease	24%	Heart Disease	21%
3	Stroke	7%	Stroke	6%	Accidents	8%	Stroke	9%	Chronic Lung	7%
4	Chronic Lung	5%	Accidents	4%	Stroke	6%	Accidents	6%	Diabetes	7%
5	Accidents	4%	Homicide	4%	Diabetes	5%	Perinatal Cond	3%	Accidents	6%
6	Diabetes	3%	Diabetes	4%	Perinatal Cond	4%	Suicide	3%	Stroke	5%
7	Alzheimer's	2%	Chronic Lung	3%	Chronic Liver	3%	Chronic Lung	3%	Chronic Liver	4%
8	Pneumonia/Flu	2%	Kidney Disease	2%	Chronic Lung	2%	Diabetes	2%	Suicide	2%
9	Kidney Disease	2%	Perinatal Cond	2%	Suicide	2%	Kidney Disease	2%	Alzheimer's	2%
10	Suicide	1%	Pneumonia/Flu	2%	Homicide	2%	Homicide	2%	Pneumonia/Flu	2%
% of Total for Race		80%	77%		74%		83%		79%	

Source: 2002 Death File, Vital Records and Health Data Development Section, Michigan Department of Community Health

Note these facts that Table 3.6 illustrates:

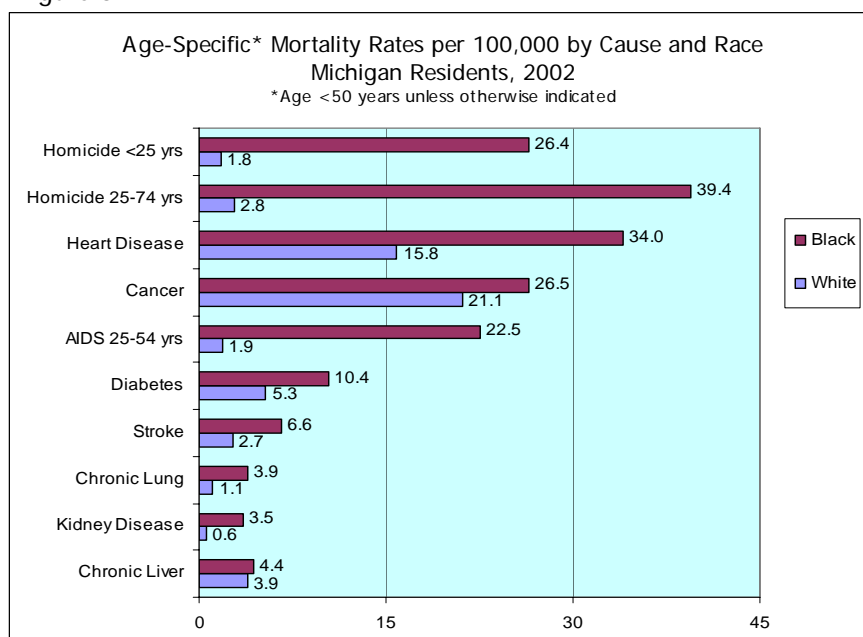
- Homicide and perinatal conditions rank in the top ten for blacks, Hispanics, and Asian/Pacific Islanders. Alzheimer's disease does not.
- Chronic liver disease ranks in the top ten for Hispanics and Native Americans.
- Accidents account for 4 percent of deaths in the white and black populations, 6 percent in Asians/Pacific Islanders and Native Americans, and 8 percent in Hispanics.

- Accidents and homicide combined account for 8 percent of deaths in blacks and Asian/Pacific Islanders and 10 percent in Hispanics.

These differing causes of death for minority populations are not chronic diseases (except for liver disease), and they all are conditions that contribute to premature mortality. Still, despite these differences, heart disease and cancer rank as the top two causes of death by a sizeable margin for all groups.

### Disparity by Age and Race

Figure 3.12



Source: 2002 Michigan Resident Death Files, Vital Records & Health Development Data Section, Michigan Department of Community Health

Cause of Death	Black <50yrs*	White <50 yrs*	Rate Ratio	Black 50-74 yrs	White 50-74 yrs	Rate Ratio
Homicide <25 yrs	26.4	1.8	14.7			
Homicide 25-74 yrs	39.4	2.8	14.1			
Heart Disease	34.0	15.8	2.2	621.3	300.7	2.1
Cancer	26.5	21.1	1.3	540.6	422.2	1.3
AIDS 25-54 yrs	22.5	1.9	11.8			
Diabetes	10.4	5.3	2.0	257.2	126.6	2.0
Stroke	6.6	2.7	2.4	106.5	46.5	2.3
Chronic Lung	3.9	1.1	3.5	45.8	71.5	0.6
Kidney Disease	3.5	0.6	5.8	47.7	15.3	3.1
Chronic Liver	4.4	3.9	1.1	41.1	22.0	1.9

\*Unless otherwise indicated



Many of the top ten causes of death for minority populations are conditions that lead to death at younger ages—perinatal conditions, accidents, homicide, suicide, chronic liver disease.

### African Americans

While some overall trends in cause of death may be similar by age and race, Figure 3.12 reveals that there are notable differences in death rates for selected causes for black and white residents. These

conditions are the same ones that dominate public health prevention efforts, in part because of their higher incidence at younger ages among minority populations.

The rate ratios in the data table for Figure 3.12 make it clear that higher morbidity is accompanied by excess mortality. This is especially true for ages under 50. Age-specific death rates for blacks are more than double those for whites for most causes and more than ten times higher for AIDS and homicide.

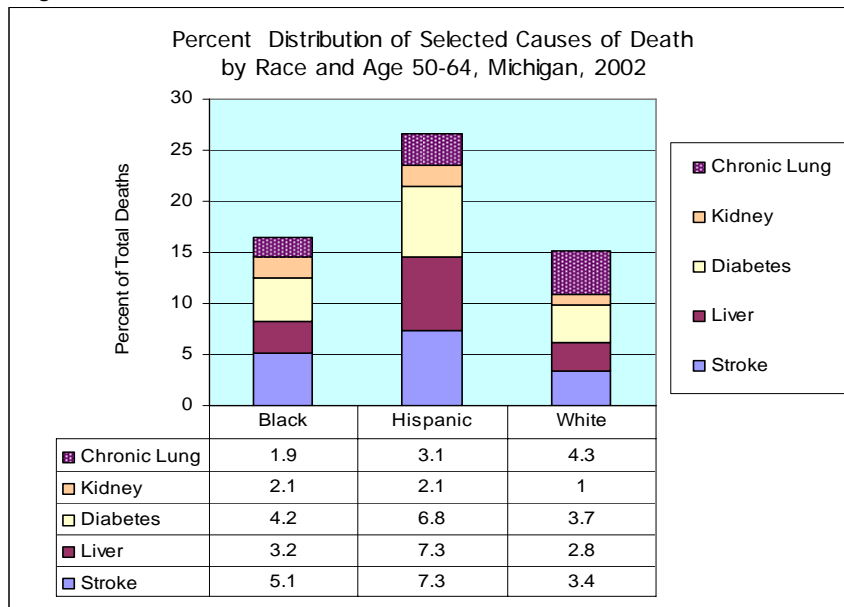
*Hispanics*

Hispanic also experience early mortality. In 2002, diabetes accounted for 6.9 percent of deaths among Hispanics aged 35 to 49. That is more than double the 2.9 percent for whites and 2.4 percent for blacks.

Figure 3.13 shows differences in among races for decedents aged 50 to 64 years:

- Stroke, chronic liver disease, and diabetes accounted for a greater percentage of Hispanic (21.4 percent) than white (9.9 percent) or black (12.5 percent) deaths.
- Stroke, liver, diabetes, kidney, and lung disease combined caused 26.6 percent of Hispanic deaths. That is well above the 16.5 percent for blacks and the 15.2 percent for white residents.

Figure 3.13



Source: 2002 Michigan Resident Death File, Vital Records and Health Data Development Section, Michigan Department of Community Health

## Implications for Policy and Programs

### Prepare for population aging

Current challenges in long term care and end of life care will be magnified with the rapid growth in the aging population that will begin in the next decade and continue through the next 40 years. It is important to examine unmet service needs for older adults now to be prepared for the surge of need that approaches. The most rapidly growing segment of the older population is the 85+ age group, which is the most vulnerable. Where they die and how they die should be a priority for intervention and improvement.

### Accommodate regional variations

Counties differ in demographics and geography. The end of life picture in rural areas is quite different than that in large urban areas. Therefore, strategies for improving end of life care may differ as well. Regional action should complement statewide action to allow solutions to be tailored to local needs.

### Address unique needs caused by early mortality

The fact that excess mortality for minority populations peaks at earlier ages has implications for end of life care.

- People who are dying before their time may seek aggressive treatment over hospice, hoping for a miracle or at least more time. It is important that they have access to palliative care services.
- Families of critically ill young persons may face difficult decisions about withholding or withdrawing treatment. They need access to effective end-of-life decision-making support.
- Survivors of people who die prematurely have great need for grief support. It would be wise to evaluate the features and availability of grief support programs in high risk communities and ensure access to needed services.

The traumatic deaths that prevail at younger ages are often sudden, and suddenness is recognized by bereavement professionals as a leading risk factor for complicated mourning. Without hospice, survivors may lack access to effective grief support. Since untreated complicated grief can lead to a variety of mental and physical health and

social problems for the bereaved (Rando, 1993), they need access to quality grief support services.

### Provide person-centered care

Finally, while most deaths happen from chronic causes after age 65, there is much variation in leading causes of death by age and ethnic group. To deal with that variation, end of life services must be person-centered. System-centered models of care lack the flexibility to meet the individual needs which are paramount at the end of life.

## Key Points

Michigan's aging population will swell after the first baby boomers turn 65 in 2011. The number of residents aged 65+ is expected to double by 2030, and by 2050 the number of residents aged 85+ will increase five-fold. It is critical that we improve end of life care for these age groups NOW so that we will be poised to handle the surge of need that approaches.

Michigan's northernmost counties have the highest proportions of older adults in their populations. Half have a greater percentage of older residents than Florida does. For these people long distances, sparse services, and limited resources hamper access to care now.

Overall in Michigan, three quarters of deaths occur after age 65. But there are marked differences among racial and ethnic groups. Blacks and Hispanics suffer twice the rate of premature deaths—almost half of their deaths occur before age 65, compared to 25 percent for the white population.

Socially disadvantaged persons experience higher mortality rates and death at younger ages. In Michigan, urban areas with high poverty levels and diverse populations have mortality rates for persons aged 45-54 more than double those of other communities. These cities include Detroit, Benton Harbor, Flint, Highland Park, Muskegon, Pontiac, and Saginaw.

Overall, cancer and heart disease are the leading causes of death. But causes vary by age. Perinatal conditions and birth defects dominate in the first year; accidents, suicide, and homicide in the middle years; and chronic diseases after age 35.

Improving end of life care in Michigan is likely to require regional action, because populations, culture, needs, and resources in rural areas are quite different from those in urban areas.

People who die young are more likely to die in the hospital receiving aggressive treatment than at home with hospice. They need access to inpatient palliative care services and their families need access to grief support services.