

# Health Disparities by Racial/Ethnic Populations in Minnesota

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**Minnesota Department of Health**

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**Introduction**

The purpose of this report is to identify health disparities for racial/ethnic populations (African American, American Indian, Asian, Hispanic and White) in Minnesota and to provide information on the health areas in which each population is experiencing the greatest disparities. Identifying the existence and extent of disparities is important for policy makers and key stakeholders to take action on programs and policies related to health disparities in Minnesota. Results from this type of effort can help to establish priorities, develop programs, and evaluate progress in the elimination of disparities. Disparity ratios are computed and ranked for selected health indicators to identify where disparities exist and the degree of these disparities for each population.

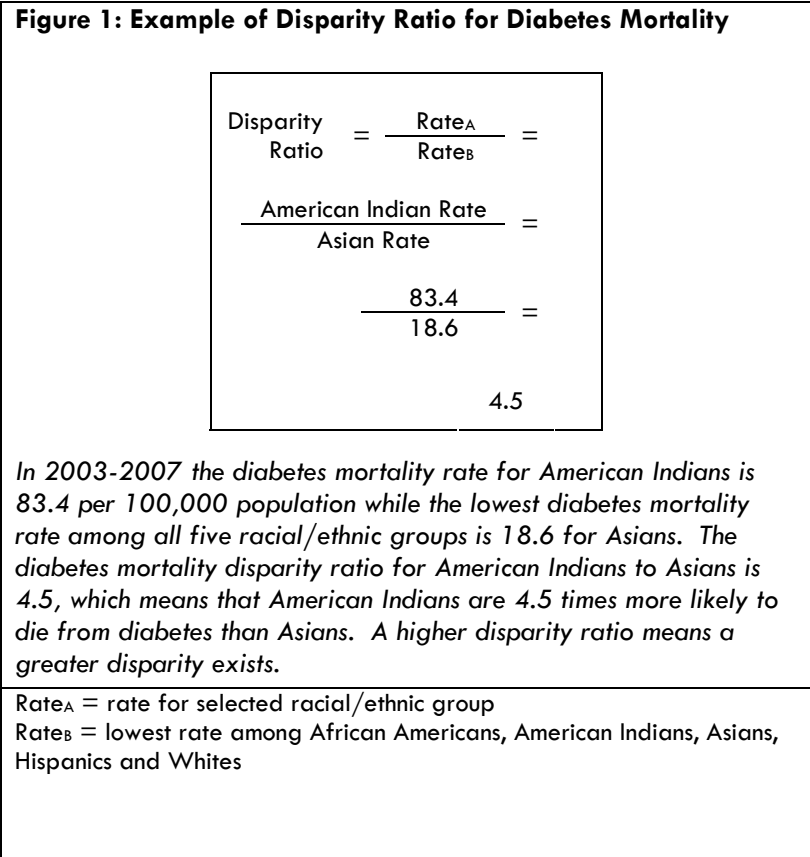
**Methods**

Disparity ratios are calculated by dividing the rate for a population (Rate<sub>A</sub>) by the best rate (Rate<sub>B</sub>) for a selected health indicator to determine how much more likely a particular event is to occur in a population compared to another population. In this report the best rate is the lowest rate among African Americans, American Indians, Asians, Hispanics and Whites for each indicator. Thus, the population with the lowest rate varies from indicator to indicator. A disparity ratio is not calculated for the population with the lowest rate; as a result all disparity ratios in this document are 1.1 or greater. Figure 1 is an example of a disparity ratio calculation using diabetes mortality rates.

This report computes disparity ratios for 17 key health indicators (Figure 2). These indicators were selected for several reasons:

- their common use to assess and monitor population health;
- availability and reliability;
- representation of health status over the lifespan;
- and their utility for public policy and intervention and prevention efforts.





While these indicators are only a small representation of many possible health indicators and do not illustrate the full scope of racial/ethnic health disparities, they do provide a broad perspective on health disparities in Minnesota.



- Figure 2: Selected Health Status Indicators**
- Cancer Mortality
  - Chlamydia Incidence
  - Chronic Lower Respiratory Disease (CLRD) Mortality
  - Diabetes Mortality
  - Gonorrhea Incidence
  - Heart Disease Mortality
  - HIV New Infections
  - Homicide
  - Infant Mortality
  - Low Birth Weight (LBW) Singleton Births
  - Motor Vehicle Mortality
  - Premature Singleton Births
  - Prenatal Care Initiated: 3rd Trimester or None
  - Stroke Mortality
  - Suicide
  - Teen Births (Age 15-19)
  - Unintentional Injury Mortality

The remainder of this document provides disparity ratios for each racial/ethnic population. Each section includes the disparity ratios ranked from highest (worst) to lowest with the racial/ethnic group with the lowest rate identified for each indicator. If the population has the lowest rate for the selected health indicator a disparity ratio is not displayed. As a result, the number of indicators ranked varies from population to population. The disparity ratios are also grouped by size of disparity. Figure 3 describes these groupings; disparities that range from 1.1 to 1.4 are slight disparities while disparities of five and higher are more extreme.

**Figure 3: Disparity Ratio Ranges**

Range	Color
1.1 to 1.4	
1.5 to 1.9	
2.0 to 4.9	
5 and higher	

The discussion section summarizes disparities ratios and compares disparities by racial/ethnic group. Finally, the appendix has the rates for each indicator and indicator definitions.

**Table 1: Disparity Ratio<sup>1</sup> Ranking (Highest to Lowest) – African American, Minnesota 2003-2007<sup>2</sup>**

Rank	Indicator	Disparity Ratio	Lowest Rate	Summary										
1	Gonorrhea Incidence	42.6	Asian	<p>For African Americans, disparities existed for 15 of the 17 indicators. These disparities ranged from 1.4 (preterm births) to the worst, 42.6 (gonorrhea incidence). Four of the 15 indicators had rates above 10, meaning that African Americans experience rates of these conditions that are at least 10 times greater than the group with the lowest rate.</p> <p>African Americans had the lowest rates of motor vehicle mortality and suicide mortality compared to other racial/ethnic groups.</p> <table border="1" data-bbox="1333 755 1795 1015"> <thead> <tr> <th>Disparity Ratio Category</th> <th>Number of Indicators</th> </tr> </thead> <tbody> <tr> <td>5.0 and higher</td> <td>4</td> </tr> <tr> <td>2.0 to 4.9</td> <td>8</td> </tr> <tr> <td>1.5 to 1.9</td> <td>2</td> </tr> <tr> <td>1.1 to 1.4</td> <td>1</td> </tr> </tbody> </table>	Disparity Ratio Category	Number of Indicators	5.0 and higher	4	2.0 to 4.9	8	1.5 to 1.9	2	1.1 to 1.4	1
Disparity Ratio Category	Number of Indicators													
5.0 and higher	4													
2.0 to 4.9	8													
1.5 to 1.9	2													
1.1 to 1.4	1													
2	HIV New Infections	17.2	White											
3	Chlamydia Incidence	14.4	White											
4	Homicide	13.3	White											
5	Teen Births	3.9	White											
6	Prenatal Care Initiated: 3rd Tri or None	3.5	White											
7	Diabetes Mortality	2.8	Asian											
8	Heart Disease Mortality	2.3	Hispanic											
9	Infant Mortality	2.2	Asian											
10	Cancer Mortality	2.2	Hispanic											
11	Stroke Mortality	2.0	Hispanic											
12	Low Birth Weight Births	2.0	White											
13	Unintentional Injury Mortality	1.7	Asian											
14	CLRD Mortality	1.5	Asian											
15	Preterm Births	1.4	White											
*	Motor Vehicle Mortality		African American											
*	Suicide		African American											

<sup>1</sup>Ratio = African American Rate/Lowest Rate (White, African American, American Indian, Asian and Hispanic rates)

<sup>2</sup>Years vary, see Appendix for years, data sources and definitions

\*Not ranked, lowest rate

**Table 2: Disparity Ratio<sup>1</sup> Ranking (Highest to Lowest) – American Indian, Minnesota 2003-2007<sup>2</sup>**

Rank	Indicator	Disparity Ratio	Lowest Rate	Summary										
1	Homicide	13.2	White	<p>For American Indians, disparities existed for 16 of the indicators (a disparity ratio was not computed for HIV new infections because of a small number of events).</p> <p>American Indian ratio disparities ranged from 1.3 (preterm and low birth weight births) to the worst, 13.2 (homicide).</p> <table border="1" data-bbox="1333 657 1795 917"> <thead> <tr> <th>Disparity Ratio Category</th> <th>Number of Indicators</th> </tr> </thead> <tbody> <tr> <td>5.0 and higher</td> <td>4</td> </tr> <tr> <td>2.0 to 4.9</td> <td>9</td> </tr> <tr> <td>1.5 to 1.9</td> <td>1</td> </tr> <tr> <td>1.1 to 1.4</td> <td>2</td> </tr> </tbody> </table>	Disparity Ratio Category	Number of Indicators	5.0 and higher	4	2.0 to 4.9	9	1.5 to 1.9	1	1.1 to 1.4	2
Disparity Ratio Category	Number of Indicators													
5.0 and higher	4													
2.0 to 4.9	9													
1.5 to 1.9	1													
1.1 to 1.4	2													
2	Prenatal Care Initiated: 3rd Tri or None	6.2	White											
3	Teen Births	5.4	White											
4	Gonorrhea Incidence	5.0	Asian											
5	Diabetes Mortality	4.5	Asian											
6	Suicide	4.1	African American											
7	Motor Vehicle Mortality	4.0	African American											
8	Unintentional Injury Mortality	3.9	Asian											
9	Chlamydia Incidence	3.9	White											
10	Heart Disease Mortality	3.3	Hispanic											
11	CLRD Mortality	2.5	Asian											
12	Infant Mortality	2.2	Asian											
13	Cancer Mortality	2.1	Hispanic											
14	Stroke Mortality	1.8	Hispanic											
15	Low Birth Weight Births	1.3	White											
16	Preterm Births	1.3	White											
**	HIV New Infections		White											

<sup>1</sup>Ratio = American Indian Rate/Lowest Rate (White, African American, American Indian, Asian and Hispanic rates)

<sup>2</sup>Years vary, see Appendix for years, data sources and definitions

\*\*Less than 10 events/year for American Indians

**Table 3: Disparity Ratio<sup>1</sup> Ranking (Highest to Lowest) – Asian, Minnesota 2003-2007<sup>2</sup>**

Rank	Indicator	Disparity Ratio	Lowest Rate	Summary
1	Teen Births	2.7	White	For Asians, disparities existed for ten indicators with the disparities ranging from 1.1 (motor vehicle mortality and heart disease mortality) to the worst, 2.7 (teen births).
2	Chlamydia Incidence	2.4	White	
3	Prenatal Care Initiated: 3rd Tri or None	2.3	White	
4	Stroke Mortality	1.6	Hispanic	
5	Low Birth Weight Births	1.5	White	
6	Suicide	1.2	African American	
7	Preterm Births	1.2	White	
8	Cancer Mortality	1.2	Hispanic	
9	Motor Vehicle Mortality	1.1	African American	
10	Heart Disease Mortality	1.1	Hispanic	
*	CLRD Mortality		Asian	Asians have the lowest rates for five indicators (CLRD mortality, diabetes mortality, unintentional injury mortality, infant mortality, and gonorrhea incidence).
*	Diabetes Mortality		Asian	
*	Unintentional Injury Mortality		Asian	
*	Infant Mortality		Asian	
*	Gonorrhea Incidence		Asian	
**	Homicide		White	The disparity ratios for HIV new infections and homicide are not reported because of a small number of events.
**	HIV New Infections		White	

Disparity Ratio Category	Number of Indicators
5.0 and higher	0
2.0 to 4.9	3
1.5 to 1.9	2
1.1 to 1.4	5

<sup>1</sup>Ratio = Asian Rate/Lowest Rate (White, African American, American Indian, Asian & Hispanic rates)

<sup>2</sup>Years vary, see Appendix for years, data sources and definitions

\*Not ranked, lowest rate

\*\*Less than 10 events/year for Asians

**Table 4: Disparity Ratio<sup>1</sup> Ranking (Highest to Lowest) – Hispanic, Minnesota 2003-2007<sup>2</sup>**

Rank	Indicator	Disparity Ratio	Lowest Rate	Summary
1	HIV New Infections	8.2	White	For Hispanics, disparities existed for 11 indicators. Disparities ranged from 1.1 (Infant mortality, preterm births, and low birth weight births) to the worst, 8.2 (HIV new infections).
2	Teen Births	6.0	White	
3	Gonorrhea Incidence	5.1	Asian	
4	Chlamydia Incidence	5.0	White	
5	Prenatal Care Initiated: 3rd Tri or None	3.2	White	
6	Diabetes Mortality	1.6	Asian	
7	Motor Vehicle Mortality	1.3	African American	
8	Unintentional Injury Mortality	1.3	Asian	
9	Low Birth Weight Births	1.1	White	
10	Preterm Births	1.1	White	
11	Infant Mortality	1.1	Asian	
*	Cancer Mortality		Hispanic	Hispanics had the lowest rates for three indicators - cancer mortality, stroke mortality, and heart disease mortality.
*	Heart Disease Mortality		Hispanic	
*	Stroke Mortality		Hispanic	
**	CLRD Mortality		Asian	The disparity ratios for CLRD mortality, homicide and suicide are not reported because of small numbers of events.
**	Homicide		White	
**	Suicide		African American	

Disparity Ratio Category	Number of Indicators
5.0 and higher	4
2.0 to 4.9	1
1.5 to 1.9	1
1.1 to 1.4	5

<sup>1</sup>Ratio = Hispanic Rate/Lowest Rate (White, African American, American Indian, Asian and Hispanic rates)

<sup>2</sup>Years vary, see Appendix for years, data sources and definitions

\*Not ranked, lowest rate

\*\*Less than 10 events/year for Hispanics

**Table 5: Disparity Ratio<sup>1</sup> Ranking (Highest to Lowest) – Whites, Minnesota 2003-2007<sup>2</sup>**

Rank	Indicator	Disparity Ratio	Lowest Rate	Summary
1	Heart Disease Mortality	2.2	Hispanic	For Whites, disparities existed for ten indicators. The disparities ranged from 1.1 (diabetes mortality, gonorrhea incidence and mortality) to the worst, 2.2 (heart disease mortality).
2	Suicide	1.9	African American	
3	CLRD Mortality	1.8	Asian	
4	Cancer Mortality	1.7	Hispanic	
5	Unintentional Injury Mortality	1.6	Asian	
6	Stroke Mortality	1.5	Hispanic	
7	Motor Vehicle Mortality	1.4	African American	
8	Diabetes Mortality	1.1	Asian	
9	Gonorrhea Incidence	1.1	Asian	
10	Infant Mortality	1.1	Asian	
*	Homicide		White	Whites have the lowest rates for seven indicators - homicide, low birth weight births, preterm births, prenatal care initiated: 3 trimester or none, teen births, new HIV infections and Chlamydia incidence.
*	Low Birth Weight Births		White	
*	Preterm Births		White	
*	Prenatal Care Initiated: 3rd Tri or None		White	
*	Teen Births		White	
*	HIV New Infections		White	
*	Chlamydia Incidence		White	

Disparity Ratio Category	Number of Indicators
5.0 and higher	0
2.0 to 4.9	1
1.5 to 1.9	5
1.1 to 1.4	4

<sup>1</sup>Ratio = White Rate/Lowest Rate (White, African American, American Indian, Asian and Hispanic rates)

<sup>2</sup>Years vary, see Appendix for years, data sources and definitions

\*Not ranked, lowest rate



## Discussion

The disparity ratios in this report reaffirm the existence of racial/ethnic disparities in Minnesota. Table 6 summarizes the disparity ratios by category and race/ethnicity for the selected indicators and provides a perspective on where these disparities remain the most pronounced. There were a total of 62 indicators in which disparities existed. American Indians and African Americans had the greatest number of disparity ratios that were two or higher, indicating large disparities continue to exist for these populations. Twelve indicators were 2.0 or higher for African Americans, 13 for American Indians, three for Asians, five for Hispanics and one for Whites.

**Table 6: Number of Indicators by Disparity Ratio Category and Race/Ethnicity**

Disparity Ratio Category	Number of Indicators					Total
	African American	American Indian	Asian	Hispanic	White	
5 or higher	4	4	0	4	0	12
2.0 to 4.9	8	9	3	1	1	22
1.5 to 1.9	2	1	2	1	5	11
1.1 to 1.4	1	2	5	5	4	17
<b>Total Disparities</b>	<b>15</b>	<b>16</b>	<b>10</b>	<b>11</b>	<b>10</b>	<b>62</b>

For each racial/ethnic population there were indicators where a disparity ratio was not calculated either because it was the lowest rate or there were less than 10 events for that indicator (Table 7). Whites had the most indicators with the lowest rate at seven, and Asians were second with five. There were six indicators in which disparity ratios were not calculated because there were less than 10 events, one indicator for American Indians, two for Asians and three for Hispanics.

**Table 7: Number Indicators in which a Disparity Ratio was not Calculated by Race/Ethnicity**

Disparity Ratio Category	Number of Indicators				
	African American	American Indian	Asian	Hispanic	White
Lowest Rate	2	0	5	3	7
Less than 10 Events	0	1	2	3	0
<b>Total</b>	<b>2</b>	<b>2</b>	<b>7</b>	<b>6</b>	<b>7</b>

The indicators that ranked highest (worst disparity ratio) varied within each racial/ethnic population (Table 8). The indicators with the largest disparity ratios were gonorrhea incidence for African Americans, homicide mortality for American Indians, teen births for Asians, HIV new infections for Hispanics and heart disease mortality for Whites (Table 8). These ratios ranged from 42.6 to 1.8.

**Table 8: Three Highest Disparity Ratios by Racial/Ethnic Population, Minnesota 2003-2007<sup>1</sup>**

Rank	African American	American Indian	Asian	Hispanic	White
1	Gonorrhea incidence (42.6)	Homicide (13.2)	Teen births (2.7)	HIV new infections (8.2)	Heart disease mortality (2.2)
2	HIV new infections (17.2)	Prenatal care <sup>2</sup> (6.2)	Chlamydia incidence (2.3)	Teen births (6.0)	Suicide (1.9)
3	Chlamydia incidence (14.4)	Teen births (5.4)	Prenatal care <sup>2</sup> (2.3)	Gonorrhea incidence (5.1)	CLRD mortality <sup>3</sup> (1.8)

<sup>1</sup> Years vary; see Appendix for years, definitions and data sources.

<sup>2</sup> prenatal care initiated in the third trimester or not at all

<sup>3</sup> chronic lower respiratory disease

This report provides a perspective on health disparities by computing and comparing rate/ratios for selected indicators. This effort provides a glimpse of where health disparities exist, extent of disparities, and how disparities disproportionately affect some communities. Future efforts to study disparities should include an examination of multiple measures (e.g. rates, and changes in rates and ratios over time); expanding the number of indicators to include socioeconomic, access to care, and morbidity indicators; and testing for statistical differences to establish real differences in disparities. Together this kind of information can assist policy makers and key stakeholders in the development of policy, priority-setting in public health, and programming that will lead to the elimination of racial/ethnic disparities in Minnesota.

**Appendix Table 1: Selected Indicators Rates with Lowest Rate Shaded by Race/Ethnicity, Minnesota**

Indicator	Year(s)	MN	African	American	Asian	Hispanic	White
			American	Indian			
LBW Singleton percent <sup>1</sup> (Low birth weight, less than 2,500 grams)	2003-07	4.9	8.7	5.7	6.5	4.8	4.3
Preterm Singleton percent <sup>1</sup> (Less than 37 weeks gestation)	2003-07	8.4	11.1	10.3	9.4	8.6	8.0
Infant Mortality Rate per 1,000 births <sup>2</sup> (less than 1 year of age)	2002-06	4.9	9.5	9.4	4.3	4.6	4.5
Prenatal Care Initiated: 3rd Trimester or None percent <sup>1</sup>	2003-07	2.2	5.2	9.3	3.5	4.8	1.5
Teen Birth Rate per 1,000 (females ages 15-19) <sup>1</sup>	2003-07	27.1	71.6	99.4	48.6	110.1	18.3
Cancer Age Adjusted Death Rate per 100,000 <sup>1,3</sup>	2003-07	173.0	222.4	211.5	118.8	102.4	171.9
Heart Disease Age Adjusted Death Rate per 100,000 <sup>1,3</sup>	2003-07	140.4	143.8	211.3	64.6	63.3	139.7
Stroke Age Adjusted Death Rate per 100,000 <sup>1,3</sup>	2003-07	42.1	56.4	50.9	45.5	27.8	41.4
CLRD Age Adjusted Death Rate per 100,000 <sup>1,3</sup>	2003-07	34.7	29.3	49.0	19.5	**	34.8
Diabetes Age Adjusted Death Rate per 100,000 <sup>1,3</sup>	2003-07	22.0	51.3	83.4	18.6	30.5	21.1
Unintentional Injury Age Adjusted Death Rate per 100,000 <sup>1,3</sup>	2003-07	35.8	37.3	85.0	21.9	28.2	34.8
Homicide Age Adjusted Death Rate per 100,000 <sup>1,3</sup>	2003-07	2.5	17.3	17.1	**	**	1.3
Suicide Age Adjusted Death Rate per 100,000 <sup>1,3</sup>	2003-07	10.3	5.4	22.3	6.4	**	10.3
Motor Vehicle Age Adjusted Death Rate per 100,000 <sup>1,3</sup>	2003-07	12.3	8.7	34.7	9.1	11.7	12.1
HIV New Infections Rate per 100,000 <sup>4</sup>	2007	6.6	58.6	**	**	27.9	3.4
Chlamydia Incidence Rate per 100,000 <sup>5</sup>	2007	273	1871	504	311	646	130
Gonorrhea Incidence Rate per 100,000 <sup>5</sup>	2007	70	851	100	20	101	22

Sources:

<sup>1</sup> MDH, Center for Health Statistics Birth and Death Records

<sup>2</sup> MDH, Center for Health Statistics, Linked Infant Death/Birth Records

<sup>3</sup> Age adjusted to the US 2000 standard population

<sup>4</sup> MDH, HIV/AIDS Surveillance Reports, HIV infection includes all new cases of HIV infection (both HIV (non-AIDS) and AIDS at first diagnosis) among Minnesota residents in that year.

<sup>5</sup> MDH, STD Surveillance Reports

CLRD: Chronic lower respiratory disease

\*\*Less than 10 events/year

 Lowest rate

A 5-year time period was chosen for births and deaths to provide adequate numbers of events, thereby increasing the reliability of the findings. It is important to review the numbers of events for a better understanding of the scope of the problem. For numbers of events see Appendix 2.

**Appendix Table 2: Numbers of Events for Indicators by Race/Ethnicity, Minnesota**

Indicator	Year(s)	MN*	African American	American Indian	Asian	Hispanic	White
LBW Singleton <sup>1</sup> (Low birth weight, less than 2,500 grams)	2003-07	16,672	2,510	396	1,402	1,307	11,441
Preterm Singleton <sup>1</sup> (Less than 37 weeks gestation)	2003-07	25,567	2,514	576	1,657	1,974	19,492
Infant Deaths <sup>2</sup> (less than 1 year of age)	2002-06	1,747	263	65	88	120	1,247
Prenatal Care Initiated: 3rd Trimester or None <sup>1</sup>	2003-07	7,464	1,354	626	691	1,215	3,933
Teen Births (females ages 15-19) <sup>1</sup>	2003-07	24,589	3,852	1,621	1,990	3,807	14,693
Cancer Deaths <sup>1</sup>	2003-07	45,305	960	350	470	280	43,446
Heart Disease Deaths <sup>1</sup>	2003-07	38,998	627	337	209	169	37,783
Stroke Deaths <sup>1</sup>	2003-07	11,745	215	72	154	73	11,283
CLRD Deaths <sup>1</sup>	2003-07	9,149	112	68	52	24	8,910
Diabetes Deaths <sup>1</sup>	2003-07	5,891	199	125	59	74	5,483
Unintentional Injury Deaths <sup>1</sup>	2003-07	9,643	332	252	135	198	8,845
Homicides <sup>1</sup>	2003-07	640	232	62	33	42	301
Suicides <sup>1</sup>	2003-07	2,677	65	74	58	49	2,466
Motor Vehicle Deaths <sup>1</sup>	2003-07	3,212	101	104	69	107	2,888
HIV New Infections Cases <sup>3</sup>	2007	325	119	6	6	40	149
Chlamydia Incidence Cases <sup>4</sup>	2007	13,412	3,797	409	524	926	5,600
Gonorrhea Incidence Cases <sup>4</sup>	2007	3,459	1,728	81	34	145	955

## Sources:

<sup>1</sup> MDH, Center for Health Statistics Birth and Death Records<sup>2</sup> MDH, Center for Health Statistics, Linked Infant Death/Birth Records<sup>3</sup> MDH, HIV/AIDS Surveillance Reports, HIV infection includes all new cases of HIV infection (both HIV (non-AIDS) and AIDS at first diagnosis) among Minnesota residents in that year.<sup>4</sup> MDH, STD Surveillance Reports

CLRD: Chronic lower respiratory disease

\*MN includes "other race" and "unknown race". Hispanic can be any race.

## Selected MDH Racial/Ethnic Health Publications

Populations of Color Health Status Reports, 2002-2009

<http://www.health.state.mn.us/divs/chs/POC/>

Disparities in Infant Mortality in Minnesota, 2009

<http://www.health.state.mn.us/divs/chs/infantmortality/>

Immunization and Health Disparities Report, 2009

<http://www.health.state.mn.us/divs/idepc/immunize/stats/index.html>

Minnesota's Disparities in Diabetes by Race/Ethnicity, 2005

<http://www.health.state.mn.us/diabetes/data/index.html>

Cancer in Minnesota by Race and Ethnicity, 1998-2002: Preliminary Report, 2005

<http://www.health.state.mn.us/divs/hpcd/cdee/mcss/index.html#majormcssreports>

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