Racial and Ethnic Health Disparities in Multnomah County: 1990-2004

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Summary of Findings

Racial and ethnic health disparities in Multnomah County were examined using 17 health status indicators. Using White non-Hispanics as a comparison group, health disparities were calculated for four groups of persons of color: African Americans, Asians, American Indians, and Hispanics. We also tracked health disparities from 1990 to 2004 in order to analyze trends.

Across the 17 indicators and four groups of color, African Americans experienced the greatest number of health disparities, though the magnitude of African American/White non-Hispanic health disparities showed improvement over time. Health disparities for the three other groups – Asians, Hispanics, and American Indians – were not as great as for African Americans. In fact, on most of the health status indicators examined, no significant health disparities were found for these three groups when compared to White non-Hispanics.

It is important to note that due to racial misclassification of American Indians, Asians, and Hispanics upon death, this report may underestimate health disparities for these groups. The problem is especially pronounced for American Indians and Asians, who may be misclassified by as much as 21% and 11%, respectively.

Appendix B shows graphs for each health indicator by race, from 1990 to 2004. For a list of efforts by the Multnomah County Health Department to address the inequities associated with health disparities, see our report, *Multnomah County Health Department Programs and Activities to Address Health Inequities, 2006*.

Progress Made

Some health disparities have been reduced in recent years. Across the 17 health indicators examined for all populations of color, 29 health disparities were identified for the 1990-1994 period. By the 2000-2004 time period, six disparities were eliminated – three of which were in the African American community– and 14 had been reduced. Specific details for each population of color are provided below.

Areas of Concern

Although some progress has been made, 23 disparities were identified in the 2000-2004 period. Of these, 11 were African American disparities, five were Hispanic, five were American Indian, and two were Asian. Three new disparities– two for American Indians and one for Asians– emerged in the later time period.

African American Community

- Health disparities were found on 14 of 17 health status indicators examined in the 1990-1994 period. Health disparities persisted on 11 indicators in the 2000-2004 period. African Americans experienced nearly half of the total number of disparities across all racial groups during both time periods;

- Health indicators improved relative to White non-Hispanics on 15 of 17 health status indicators between 1990 and 2004 (5 of which were statistically significant improvements). Three health disparities in the early time period ceased to be significant in the 2000-2004 time period;
- Health disparities were at least twice the White non-Hispanic rate for 6 health measures in the 2000-2004 period: syphilis (5 times higher than the White non-Hispanic rate), gonorrhea (over 7 times higher), chlamydia (five times higher), teen births (over 3.5 times higher), diabetes mortality (2 ½ times higher), and homicide (over 7 ½ times higher).

Hispanic Community

- Health disparities for six health status indicators were found in the 1990-1994 period. Health disparities for five indicators persisted in the 2000-2004 period. The syphilis disparity was eliminated;
- Of the 10 mortality-related health indicators examined, one significant disparity was found. Homicide rates were over twice the rate of White non-Hispanics in the 2000-2004 period;
- There were five significant changes in health indicators over time: two health status measures worsened (lack of early prenatal care, and teen births) and three improved (syphilis, gonorrhea, and chlamydia).

Asian Community

- Two significant health disparities were found for the 1990-1994 period (low birthweight, lack of early prenatal care). Health disparities were found for three indicators for the 2000-2004 period (homicide, lack of early prenatal care and chlamydia);
- The low birthweight disparity declined 10% between 1990-1994 and 2000-2004, when it ceased to be a significant disparity;
- The rate of new gonorrhea cases for Asians relative to White non-Hispanics decreased significantly between 1990-1994 and 2000-2004.

American Indian Community

- Health disparities were found for seven indicators in 1990-1994. Of the 13 health status measures having sufficient data, health disparities were found for three measures in 2000-2004.
- Two new health disparities– HIV Disease mortality and infant mortality– emerged in the 2000-2004 period.
- No significant changes in health disparities over time were found.

Introduction

Despite overall improvement in the health of the population over the last 50 years, persons of color lag behind the majority population, White non-Hispanics, on many health measures. This has been especially pronounced in the African American community, which continues to experience poorer health outcomes than other groups of color, compared to White non-Hispanics.

To what extent are racial and ethnic health disparities occurring in Multnomah County? Have these health disparities narrowed or grown larger over time? It is the purpose of this report to answer these questions.

What is a health disparity?

The National Institutes of Health has defined a health disparity as "a population-specific difference in the presence of disease, health outcomes, or access to care."[1] Health disparities are also referred to as health inequalities or inequities. Racial and ethnic health disparities identify differences in health outcomes that disproportionately affect African Americans, Hispanics, and other groups of color when compared to Whites. For example, the infant mortality rate (the rate at which babies die before age one) in the U.S. for African Americans is twice the rate for Whites.

What causes racial and ethnic health disparities?

The causes of racial and ethnic health disparities are complex and are not fully understand. Such disparities are thought to result from several interdependent factors, the most important being inequities in the social and physical environment, differences in behavior, and differential access to and quality of health care. The current health literature identifies environmental inequities as important causes of racial and ethnic health disparities. Abundant health research has shown that socioeconomic status – one important measure of the social environment – is strongly associated with health.[2] Those groups with higher educations and higher incomes generally have longer life expectancies, better health outcomes, and better access to high-quality health care than those with lower incomes and lower levels of education. As populations of color are disproportionately poorer and have less education, some of the reason for racial and ethnic health disparities is due to poorer socioeconomic conditions. In the view of many researchers, racism and discrimination, both current and past, are thought to be the underlying causes of such inequities in socioeconomic conditions. Discrimination may also contribute to racial health disparities by impacting a group's current access to adequate medical care, education, housing, and jobs.[3,4,5,6,7,9]

Regarding physical environment, recent research has found that populations of color are more likely than whites to live in areas with poorer air quality and to live closer to toxic waste sites.[8] Many studies have found that the overall quality of health care for these groups is poorer than for White non-Hispanics. In addition, there is reduced access to health care.[9] Hispanics, for example, are less likely to have health insurance than whites.

Biological differences between races have been widely disputed, and are considered to have minimal impact on racial and ethnic health disparities. [10]

Why are racial and ethnic health disparities important to identify?

Although there are many different kinds of health disparity – for example, based on gender, income, disability, sexual orientation – in this report we focus on racial and ethnic health

disparities. Racial and ethnic health disparities are important, because, as noted above, many of the factors responsible for racial and ethnic health disparities are capable of being changed, and are viewed as being related to past and ongoing racism and discrimination. Contrast this with health disparities based on age, which are mostly inevitable (it is indisputable that the older you get, the more health problems you have). Another reason racial and ethnic health disparities are important is due to the magnitude of the differences in health outcomes between persons of color and Whites. For example, African Americans have a 70% higher prevalence of diabetes than Whites in the U.S. Racial and ethnic health disparities are also important to identify because the problem is growing. Demographic changes in the United States and in Multnomah County highlight the fact that people of color are becoming a larger segment of the population, and are expected to grow over the next decade. According to population data for Multnomah County, groups of color (i.e., African Americans, American Indians, Asians, and Hispanics) made up about 15% of the population in 1990. By 2004, these groups represented 23% of the population. As former U.S. Surgeon General David Satcher has written, these demographic changes "magnify the importance of addressing disparities in health status; groups currently experiencing poorer health status are expected to grow as a proportion of the total U.S. population. Therefore, the future health of America depends substantially on our success in improving the health of racial and ethnic minorities."[11] Finally, we focus on such disparities because data based on race and ethnicity is readily available, compared to, for example, sexual orientation, which is not tracked for most health status measures.

Elimination of racial and ethnic health disparities is a top priority.

The elimination of racial and ethnic health disparities has been a top priority at the federal, state, and local level over the past eight years. The most recent push began in 1998, when then-President Clinton launched a new initiative to eliminate racial and ethnic health disparities by 2010. He focused on six areas: diabetes, cancer screening and management, cardiovascular disease, HIV/AIDS, immunizations, and infant mortality.

Perhaps in response to this, the U.S. Department of Health and Human Services intensified its focus from simply reducing health disparities to the elimination of health disparities as one of two overarching goals of Healthy People 2010.[12] (Healthy People 2010, a nationwide health promotion and disease prevention agenda, sets national health targets by 2010.)

The Multnomah County Health Department has also made the elimination of racial and ethnic health disparities a top priority, and has supported many community health programs and services to address this issue. The Health Department's dedication to tracking racial and ethnic health disparities is an important step in ultimately eliminating these disparities, and in assuring a healthy community for all of the County's residents.

Methods

We sought to identify disparities in health status for the following racial and ethnic groups, using White non-Hispanics as the comparison population: African Americans, Asians (including Native Hawaiians and Pacific Islanders), American Indians (including Alaska Natives), and Hispanics (of all races). The report has been organized by racial and ethnic group, and will present demographic data for each group, measurements of health status, and trends in health disparities.

White non-Hispanics were used as the comparison population because they make up the majority of the population (about 77% in 2004), have one of the highest incomes of any racial group, and do not suffer discriminatory treatment relative to populations of color.

To measure health status, we followed the lead of other health disparity reports[13, 14] (with some modifications) and studied 17 health status indicators that are especially important in identifying racial and ethnic health disparities. Table 1 presents the health status indicators for this report.

Table 1. Health Status Indicators for Measuring Health Disparities

Mortality Rates (ICD-9 Codes)
Heart Disease (390-398, 402, 404-429)
Stroke (430-438)
Cancer, All Causes (140-208)
Lung Cancer (162)
Female Breast Cancer (174)
Motor Vehicle Accidents (E810-E825)
Homicide (E960-E978)
Diabetes (250)
HIV Disease (042-044)
All Causes
Pregnancy and Birth Outcomes
Infant Mortality Rate
Percentage Low Birthweight Babies
Percentage of Women with No First Trimester Prenatal Care
Live Birth Rates for Adolescent Girls Aged 15-17 Years
Communicable Disease Incidence
Primary and Secondary Syphilis
Gonorrhea
Chlamydia

Rates were calculated for all health status indicators for each race/ethnicity using two different time periods. The earliest time period, 1990-1994, combines five years of numbers for these years. The later time period, 2000-2004, combines data from the latest five years. Ratios were used as a simple measure of the disparity between a population of color when compared to White non-Hispanics. To calculate ratios, the rate for the group of color (numerator) was divided by the rate for White non-Hispanics (denominator). Ratios larger than 1.0 indicate a disparity when compared to White non-Hispanics (i.e., the population of color has worse health status than whites), while ratios of 1.0 or smaller show no disparity. In addition, percentage change in the rate ratios from the 1990-1994 period to the 2000-2004 period was also calculated to show changes for the health status indicators over time. A negative percentage change indicates that a disparity is narrowing, and possibly improving (i.e., the health outcome is moving closer to that for White non-Hispanics), whereas a positive percentage change indicates that disparity is

worsening. We considered a disparity eliminated when a health indicator showing a statistically significant disparity in the early time period was no longer significant in the later time period. For more information on the methods used, see Appendix A.

Findings

The African American Community

Demographics. African Americans were an estimated seven percent of the population of Multnomah County in 2004. The African American community grew 24% between 1990 and 2004, when they were an estimated 45,000. Examination of African Americans by census tract shows that in 2000 – the most recent year available – the majority of African Americans were concentrated in 11 contiguous census tracts in North and Northeast Portland. The gentrification of traditionally African American neighborhoods in some of these census tracts in recent years may be pushing African American families out into the suburbs, especially to East Multnomah County. We are currently examining these changes using population estimates, but definitive numbers on the demographic shift in the African American population may have to wait until the 2010 Census.

African Americans are the poorest racial group in Multnomah County. According to the 2000 U.S. Census, African Americans had a median annual household income of just $27,295 in 2000, substantially below that of White non-Hispanics ($42,947). In addition, 26% of African Americans in Multnomah County were in poverty in 2000, compared with only 10% for White non-Hispanics.

Life Expectancy. African Americans in Multnomah County can expect to live significantly fewer years than White Non-Hispanics. An African American at birth will live, on average, three fewer years than a White non-Hispanic in the County (Table 2).

Table 2. Multnomah County Life Expectancy, at Birth (years)

White non-Hispanic	African American	Difference
77	74	3*

Data Source: Mortality data, 2000-2004, Oregon Health Division Center for Health Statistics.
*Significant difference at $p<0.05$

Health Status Indicators. Examination of the 17 health status indicators for African Americans, compared to White non-Hispanics (Table 3), reveals that in the 1990-1994 period, there were statistically significant ($p<0.05$) health disparities – i.e., rate ratios greater than 1.0 – for 14 measures. There were significant health disparities for the following mortality measures in the 1990-1994 period: overall mortality, heart disease, stroke, all cancers, lung cancer, homicide, and diabetes. Health disparities were also found for the following birth-related and communicable disease measures: infant mortality, low birthweight babies, lack of early prenatal care, teen births, syphilis, gonorrhea, and chlamydia. The largest health disparity in the 1990-1994 period was for gonorrhea. Table 3 shows that in the 1990-1994 period, the rate of gonorrhea in the African American population was 1308 per 100,000, compared to only 58 per 100,000 for White non-Hispanics. Thus, the African American/White non-Hispanic rate ratio indicates that the gonorrhea rate was 23 times higher for African Americans than for White non-Hispanics in the 1990-1994 period. This ratio is statistically significant at $p<0.05$ (i.e., the 95% confidence intervals, 21.2 and 24.5, do not fall below 1.0). Large disparities were also found for syphilis (12 times higher for African Americans compared to White non-Hispanics) and homicide (10 times higher for African Americans).

Analysis of the 2000-2004 period reveals that significant health disparities persisted for 11 of the 14 health disparities found in the 1990-1994 period. The health disparities for lung cancer mortality, all cancer mortality, and heart disease mortality ceased to be significant disparities in

the later time period. For the 2000-2004 period, the largest disparities were for homicide (7.5 times higher than for White non-Hispanics), gonorrhea (7.4 times higher), and chlamydia (5 times higher).

Health indicators for African Americans improved for 15 of the 17 measures in the 2000-2004 period compared to the 1990-1994 period.

An overall trend analysis in health disparities was calculated for the 17 indicators. Analyzing the probability that 15 of 17 indicator ratios would show percent declines between the early and the later time periods, it was found that this overall trend was statistically significant ($p=0.001$). When examined individually, five health status indicators showed significant declines between the early and later time periods: gonorrhea showed a 67% decline, syphilis a 58% decline, chlamydia a 22% decline, low birthweight births a 19% decline, and overall mortality a 11.5% decline (all significant at $p<0.05$). Health disparities between African-Americans and White non-Hispanics grew for only two measures: diabetes and HIV deaths. Neither of these increases was statistically significant at $p<0.05$.

It is important to note that most all the indicators showed declines in their rates for both races in the two time periods examined. There were four exceptions: diabetes and chlamydia rates rose for both groups. Rates for gonorrhea and low birthweight babies grew for White non-Hispanics and fell for African Americans. Caution is warranted in interpreting the significant declines in African American health disparities for low birthweight babies, gonorrhea, and chlamydia due to increased rates for White non-Hispanics. Overall, disparities are decreasing for African Americans (compared to White non-Hispanics) at the same time that most health indicators are improving for both groups.

Table 3. Health Status Indicators and Rates, by Race and Year, With Associated African-American:White non-Hispanic Rate Ratios: Multnomah County, 1990-1994 and 2000-2004.

Indicator	Years	African American Rate	White non-Hisp. Rate	Afr. Amer. :White Rate Ratio (95% CI)	Percentage Change in Rate Ratio
Overall Mortality [a]	1990-1994	1246.6	967.6	1.29* (1.22, 1.36)	
	2000-2004	1018.2	893.3	1.14* (1.08, 1.20)	-11.5*
Heart Disease Mortality [a]	1990-1994	331.7	258.8	1.28* (1.16, 1.43)	
	2000-2004	220.7	197.2	1.12 (0.99, 1.25)	-12.8
Stroke Mortality [a]	1990-1994	120.8	81.2	1.49* (1.24, 1.78)	
	2000-2004	109.1	73.5	1.48* (1.26, 1.75)	-0.2
Lung Cancer Mortality [a]	1990-1994	87.9	71.2	1.23* (1.01, 1.51)	
	2000-2004	62.2	62.5	1.00 (0.81, 1.23)	-19.2
Female Breast Cancer Mortality [b]	1990-1994	34.8	33.3	1.05 (0.68, 1.61)	
	2000-2004	16.9	26.8	0.63 (0.37, 1.05)	-39.8
All Cancer Mortality [a]	1990-1994	279.4	236.1	1.18* (1.06, 1.32)	
	2000-2004	226.9	210.0	1.08 (0.97, 1.21)	-8.7
Motor Vehicle Accident Mortality [a]	1990-1994	13.0	10.7	1.22 (0.80, 1.86)	
	2000-2004	7.2	9.5	0.76 (0.45, 1.28)	-37.6
Homicide Mortality [a]	1990-1994	43.8	4.6	9.56* (7.27, 12.57)	
	2000-2004	18.5	2.5	7.51* (5.11, 11.05)	-21.4
Diabetes Mortality [a]	1990-1994	46.7	20.6	2.26* (1.70, 3.01)	
	2000-2004	69.3	28.5	2.43* (1.97, 2.99)	7.2
HIV Disease Mortality [a]	1990-1994	29.5	26.5	1.11 (0.84, 1.48)	
	2000-2004	6.5	5.1	1.27 (0.71, 2.23)	13.8
Infant Mortality Rate [c]	1990-1994	20.5	7.3	2.78* (2.17, 3.58)	
	2000-2004	8.7	5.4	1.62* (1.10, 2.40)	-41.8
Low Birthweight Babies, %	1990-1994	11.9	5.2	2.29* (2.07, 2.54)	
	2000-2004	11.1	6.0	1.87* (1.69, 2.06)	-18.6*
No 1st Trimester Prenatal Care, %	1990-1994	33.9	20.1	1.68* (1.59, 1.79)	
	2000-2004	23.8	15.7	1.52* (1.41, 1.64)	-9.7
Teen Birth Rate (aged <18 y) %	1990-1994	13.8	3.7	3.74* (3.38, 4.13)	
	2000-2004	6.4	1.8	3.52* (3.01, 4.12)	-5.8
Syphilis Case Rate [d]	1990-1994	66.7	5.6	11.87* (9.35, 15.08)	
	2000-2004	18.4	3.7	4.97* (3.45, 7.16)	-89.4*
Gonorrhea Case Rate [d]	1990-1994	1307.5	58.0	22.55* (21.15, 24.05)	
	2000-2004	471.3	63.5	7.42* (6.87, 8.02)	-67.1*
Chlamydia Case Rate [d]	1990-1994	652.9	86.5	6.51* (6.05, 7.00)	
	2000-2004	1404.9	276.7	5.08* (4.85, 5.32)	-22.0*

a Age-adjusted and expressed per 100,000 population.
b Age-adjusted and expressed per 100,000 women.
c Number of deaths among infants (in the first year of life) per 1,000 live births.
d Expressed per 100,000 population (unadjusted for age).
* Significant at $p<0.05$.

The Hispanic Community

Demographics. The Hispanic community in Multnomah County is now the largest group of color, representing over 9% of the population in 2004. The Hispanic community has also been the fastest growing group in the County. The Hispanic population grew 230% between 1990 and 2004, when they numbered close to 62,000. Hispanics have among the lowest incomes in Multnomah County. According to the 2000 Census, Hispanics had a median annual household income of just $32,244 in 2000, $11,000 below that of White non-Hispanics ($42,947). In addition, 26% of Hispanics in Multnomah County lived in poverty in 2000, compared with only 10% for White non-Hispanics. Along with African Americans, they have the highest poverty rate of all racial / ethnic groups in the County.

Despite their poverty, the Hispanic population nationally and in Multnomah County is healthier overall than the White non-Hispanic population, and does much better than White non-Hispanics on many health measures.

Life Expectancy. Hispanics in Multnomah County can expect to live significantly more years than White non-Hispanics. At birth, a Hispanic can expect to live, on average, 7 years longer than a White non-Hispanic in the County (Table 4).

Table 4. Multnomah County Life Expectancy, at Birth (years)

White non-Hispanic	Hispanic	Difference
77	84	-7*

Data Source: Mortality data, 2000-2004, Oregon Health Division Center for Health Statistics.
*Significant difference at p<0.05

Health Status Indicators. Examination of the 17 health status indicators for Hispanics, compared to White non-Hispanics, shows that in the 1990-1994 period, statistically significant health disparities ($p<0.05$) were found for six measures: homicide, lack of early prenatal care, teen births, syphilis, gonorrhea, and chlamydia (see Table 5). The largest health disparities in the 1990-1994 period were for syphilis cases (almost 14 times higher for Hispanics than for White non-Hispanics), gonorrhea (eight times the White non-Hispanic rate), and homicide (almost triple the White non-Hispanic rate).

Of the six health disparities found in the 1990-1994 period, significant disparities persisted for five indicators in the 2000-2004 period. The disparity for syphilis was eliminated in the later time period. In the 2000-2004 period, the largest disparities were for the teen birth rate, which was over three times the White non-Hispanic rate, and for chlamydia, which was close to three times higher than White non-Hispanic.

Examining indicators individually, health disparities between Hispanics and White non-Hispanics significantly worsened (at $p<0.05$) over time for two indicators: early prenatal care and teen birth rates. The highest significant increase in health disparities occurred for teen birth rates, which increased by 44% between the 1990-1994 period and the 2000-2004 period. The disparity for lack of early prenatal care grew 25%. Health disparities declined significantly for three indicators between the 1990-1994 period and the 2000-2004 period. Disparities in gonorrhea rates declined 85%, the syphilis disparity declined by 89%, and the chlamydia disparity fell 26% between the 1990-1994 period and the 2000-2004 period (all statistically significant at $p<0.05$). Examining overall trends, 10 of 16 health indicators worsened over time, a trend which was not statistically significant ($p=0.23$).

Table 5. Health Status Indicators and Rates, by Race and Year, With Associated Hispanic: White non-Hispanic Rate Ratios: Multnomah County, 1990-1994 and 2000-2004.

Indicator	Years	Hispanic	White non-Hisp.	Hispanic:White Rate Ratio (95% CIs)	Percentage Change in Rate Ratio
Overall Mortality [a]	1990-1994	519.2	967.6	0.54 (0.48, 0.60)	
	2000-2004	534.6	893.3	0.60 (0.54, 0.66)	11.5
Heart Disease Mortality [a]	1990-1994	109.6	258.6	0.42 (0.30, 0.60)	
	2000-2004	116.0	197.2	0.59 (0.45, 0.76)	38.8
Stroke Mortality [a]	1990-1994	51.8	81.2	0.64 (0.39, 1.04)	
	2000-2004	41.6	73.5	0.57 (0.37, 0.87)	-11.3
Lung Cancer Mortality [a]	1990-1994	22.9	71.3	0.32 (0.17, 0.62)	
	2000-2004	28.6	62.5	0.45 (0.28, 0.74)	42.4
Female Breast Cancer Mortality [b]	1990-1994	NSV	33.3	NSV	
	2000-2004	14.3	26.8	0.53 (0.25, 1.27)	NSV
All Cancer Mortality [a]	1990-1994	105.2	236.1	0.45 (0.33, 0.60)	
	2000-2004	131.3	210.0	0.63 (0.50, 0.78)	40.3
Motor Vehicle Accident Mortality [a]	1990-1994	9.5	10.7	0.89 (0.51, 1.55)	
	2000-2004	10.5	9.5	1.10 (0.75, 1.63)	23.6
Homicide Mortality [a]	1990-1994	12.5	4.6	2.72* (1.63, 4.51)	
	2000-2004	5.9	2.5	2.39* (1.48, 3.85)	-12.0
Diabetes Mortality [a]	1990-1994	12.2	20.6	0.59 (0.25, 1.43)	
	2000-2004	30.8	28.5	1.08 (0.68, 1.72)	82.3
HIV Disease Mortality [a]	1990-1994	22.6	26.5	0.85 (0.57, 1.28)	
	2000-2004	6.0	5.1	1.17 (0.68, 2.03)	37.6
Infant Mortality Rate [c]	1990-1994	5.6	7.3	0.76 (0.45, 1.28)	
	2000-2004	4.4	5.4	0.82 (0.57, 1.19)	8.4
Low Birthweight Babies, %	1990-1994	6.1	5.2	1.17 (1.00, 1.37)	
	2000-2004	5.8	6.0	0.97 (0.88, 1.08)	-16.8
No 1st Trimester Prenatal Care, %	1990-1994	33.7	20.1	1.67* (1.56, 1.79)	
	2000-2004	32.8	15.7	2.09* (1.96, 2.19)	25.1*
Teen Birth Rate (aged <18 y), %	1990-1994	8.4	3.7	2.28* (1.98, 2.63)	
	2000-2004	6.0	1.8	3.29* (2.91, 3.72)	44.3*
Syphilis case rate [d]	1990-1994	78.0	5.6	13.88* (10.67, 18.06)	
	2000-2004	5.4	3.7	1.47 (0.85, 2.12)	-72.1*
Gonorrhea case rate [d]	1990-1994	461.0	58.0	7.95* (7.20, 8.78)	
	2000-2004	77.6	63.5	1.22* (1.06, 1.41)	-84.6*
Chlamydia case rate [d]	1990-1994	320.5	86.5	3.71* (3.32, 4.13)	
	2000-2004	757.8	276.7	2.74* (2.59, 2.89)	-26.2*

Note: NSV=Not statistically valid. Total cases less than 5.
a Age-adjusted and expressed per 100,000 population.
b Age-adjusted and expressed per 100,000 women.
c Number of deaths among infants (in the first year of life) per 1,000 live births.
d Expressed per 100,000 population (unadjusted for age).
* Significant at $p<0.05$.

The Asian Community

Demographics. The Asian community (which includes Native Hawaiians and Pacific Islanders) is the second largest group of color in Multnomah County, representing just over 7% of the population in 2004. As with most other groups, Asians experienced significant population growth in the County: a 67% increase between 1990 and 2004, when they numbered 47,000. Asians are the most affluent group in Multnomah County. According to the 2000 U.S. Census, Asians had a median annual household income of $43,100 in 2000, slightly above that of White non-Hispanics ($42,900). 13% of Asians in Multnomah County lived in poverty in 2000, compared with 10% for White non-Hispanics. Asians have the lowest poverty rate of all non-White groups in Multnomah County.

Life Expectancy. Asians in Multnomah County can expect to live significantly more years than White non-Hispanics. At birth, an Asian can expect to live, on average, 6 years longer than a White non-Hispanic in the County (Table 6). As mentioned in more detail in the Discussion below, racial misclassification of Asians upon death underestimates their death rates in Multnomah County, and hence life expectancy may be inaccurate.

Table 6. Multnomah County Life Expectancy, at Birth (years)

White non-Hispanic	Asian	Difference
77	83	-6*

Data Source: Mortality data, 2000-2004, Oregon Health Division Center for Health Statistics.
* $p<0.05$

Health Status Indicators. Analysis of the 17 health status indicators for Asians compared to White non-Hispanics (see Table 7), shows that in the 1990-1994 period, statistically significant health disparities ($p<0.05$) existed for two measures: low birthweight babies (1.3 times higher for Asians than for White non-Hispanics) and lack of early prenatal care (1.4 times higher than White non-Hispanics).

Examination of the 2000-2004 period reveals three significant health disparities: homicide (1.9 times the rate of White non-Hispanics), lack of early prenatal care (1.4 times the rate of White non-Hispanics) and chlamydia (1.1 times higher for Asians). The disparity for low birthweight babies in the 1990-1994 period was eliminated in the 2000-2004 period. The homicide disparity emerged in the 2000-2004 period.

Only one of the 17 health status measures showed significant change over time for Asians relative to White non-Hispanics. The Asian rate ratio for gonorrhea, compared to the rate for White non-Hispanics, declined 50% between the 1990-1994 period and the 2000-2004 period. There was no significant overall trend in health disparities between the two time periods ($p=0.39$). Thus, health disparities do not appear to be changing over time for this group.

Table 7. Health Status Indicators and Rates, by Race and Year, With Associated Asian: White non-Hispanic Rate Ratios: Multnomah County, 1990-1994 and 2000-2004.

Indicator	Years	Asian	White non-Hisp.	Asian:White Rate Ratio (95% CIs)	Percentage Change in Rate Ratio
Overall Mortality [a]	1990-1994	633.4	967.6	0.65 (0.60, 0.71)	
	2000-2004	559.1	893.3	0.65 (0.58, 0.67)	-4.4
Heart Disease Mortality [a]	1990-1994	162.3	258.6	0.63 (0.52, 0.75)	
	2000-2004	102.4	197.2	0.52 (0.44, 0.61)	-17.3
Stroke Mortality [a]	1990-1994	65.8	81.2	0.81 (0.61, 1.08)	
	2000-2004	65.7	73.5	0.89 (0.72, 1.10)	10.3
Lung Cancer Mortality [a]	1990-1994	27.4	71.3	0.38 (0.26, 0.56)	
	2000-2004	29.4	62.5	0.47 (0.35, 0.63)	22.6
Female Breast Cancer Mortality [b]	1990-1994	NSV	33.3	NSV	
	2000-2004	19.6	26.8	0.73 (0.47, 1.44)	NSV
All Cancer Mortality [a]	1990-1994	157.9	236.1	0.67 (0.57, 0.79)	
	2000-2004	160.3	210.0	0.76 (0.67, 0.87)	14.2
Motor Vehicle Accident Mortality [a]	1990-1994	16.2	10.7	1.52 (0.97, 2.36)	
	2000-2004	9.7	9.5	1.02 (0.67, 1.55)	-32.6
Homicide Mortality [a]	1990-1994	5.6	4.6	1.23 (0.66, 2.28)	
	2000-2004	4.8	2.5	1.93* (1.02, 3.67)	57.4
Diabetes Mortality [a]	1990-1994	19.0	20.6	0.92 (0.54, 1.56)	
	2000-2004	21.3	28.5	0.75 (0.52, 1.07)	-19.0
HIV Disease Mortality [a]	1990-1994	NSV	26.5	NSV	
	2000-2004	NSV	5.1	NSV	NSV
Infant Mortality Rate [c]	1990-1994	6.7	7.3	0.92 (0.58, 1.44)	
	1997-2001	4.3	5.4	0.80 (0.49, 1.30)	-13.2
Low Birthweight Babies, %	1990-1994	6.5	5.2	1.26* (1.08, 1.45)	
	2000-2004	6.7	6.0	1.13 (0.99, 1.29)	-9.8
No 1st Trimester Prenatal Care, %	1990-1994	27.7	20.1	1.37* (1.31, 1.44)	
	2000-2004	22.6	15.7	1.44* (1.34, 1.54)	4.8
Teen Birth Rate (aged <18 y) , %	1990-1994	3.4	3.7	0.93 (0.76, 1.14)	
	2000-2004	1.8	1.8	0.97 (0.76, 1.23)	4.0
Syphilis case rate [d]	1990-1994	3.81	5.6	0.68 (0.30, 1.54)	
	2000-2004	2.2	3.7	0.59 (0.24, 1.02)	-13.3
Gonorrhea case rate [d]	1990-1994	47.0	58.0	0.81 (0.64, 1.02)	
	2000-2004	24.9	63.5	0.39 (0.30, 0.51)	-51.6*
Chlamydia case rate [d]	1990-1994	90.9	86.5	1.05 (0.88, 1.24)	
	2000-2004	306.1	276.7	1.11* (1.02, 1.20)	5.3

Note: NSV=Not statistically valid. Total cases less than 5.
a Age-adjusted and expressed per 100,000 population.
b Age-adjusted and expressed per 100,000 women.
c Number of deaths among infants (in the first year of life) per 1,000 live births.
d Expressed per 100,000 population (unadjusted for age).
* - Significant difference at $p<0.05$.

The American Indian Community

Demographics. The American Indian community in Multnomah County is the smallest group of color, representing only 1% of the population in 2004. The American Indian population grew 26% between 1990 and 2004, when they numbered approximately 9,100. American Indians are the second poorest group in Multnomah County. According to the 2000 U.S. Census, American Indians had a median annual household income of only $31,244 in 2000, $12,000 below that of White Non-Hispanics ($42,947). In addition, 1 in 5 American Indians in Multnomah County lived in poverty in 2000, compared with only 1 in 10 for White non-Hispanics.

Life Expectancy. Despite having a higher poverty rate, and lower median income, American Indians in Multnomah County can expect to live about the same number of years as White Non-Hispanics. Table 8 shows that, at birth, an American Indian can expect to live to age 76.[*] As mentioned in more detail in the Discussion below, racial misclassification of American Indians upon death underestimates their death rates in Multnomah County, and hence life expectancy appears to be higher than it really is.

Table 8. Multnomah County Life Expectancy, at Birth (years)

White non-Hispanic	American Indian	Difference
76	76	0

Data Source: Mortality data, 1990-2004, Oregon Health Division, Center for Health Statistics.

Health Status Indicators. Examination of the 17 health status indicators for American Indians, compared to White non-Hispanics, shows that in the 1990-1994 period, statistically significant health disparities ($p<0.05$) existed for seven measures (see Table 9). The largest health disparities in the 1990-1994 period were for syphilis cases (four times higher for American Indians than for White non-Hispanics) and homicide (triple the White non-Hispanic rate). Disparities were also present for motor vehicle accident mortality, lack of early prenatal care, teen births, gonorrhea, and chlamydia.

Examination of the 2000-2004 period reveals that there were five significant health disparities: HIV Disease mortality (2.4 times higher than for White non-Hispanics), infant mortality (2.8 times higher), lack of early prenatal care (twice as high), teen births (2.5 times higher), and chlamydia (1.2 times higher). Three disparities persisted in the 2000-2004 period, compared to the 1990-1994 period (lack of early prenatal care), teen births, and chlamydia), one disparity was eliminated in the 2000-2004 period (gonorrhea), and two new disparities appeared in the 2000-2004 period (HIV disease mortality and infant mortality). The largest increase in disparities in the two time periods was for HIV disease mortality, which grew 387%.

There were no significant changes in health disparities for any of the 17 indicators between 1990-1994 and 2000-2004. Nor was there a significant overall trend in health disparities. Thus, health disparities do not appear to be changing over time for this group, with the possible exception of HIV disease, which appears to be a persistent problem in the American Indian community.

[*] Due to small numbers for the American Indian population, mortality data for 1990-2004 were used to calculate the life expectancies in Table 8. Note that 2000-2004 mortality data were used for the other life expectancy calculations shown in this report.

Table 9. Health Status Indicators and Rates, by Race and Year, With Associated American Indian: White non-Hispanic Rate Ratios: Multnomah County, 1990-1994 and 2000-2004.

Indicator	Years	American Indian	White non-Hisp.	Amer.Indian:White Rate Ratio	Percentage Change in Rate Ratio
Overall Mortality [a]	1990-1994	796.5	967.6	0.82 (0.71, 0.96)	
	2000-2004	856.6	893.3	0.96 (0.83, 1.10)	16.5
Heart Disease Mortality [a]	1990-1994	162.6	258.6	0.63 (0.42, 0.93)	
	2000-2004	226.1	197.2	1.14 (0.86, 1.53)	82.2
Stroke Mortality [a]	1990-1994	60.7	81.2	0.75 (0.39, 1.44)	
	2000-2004	46.1	73.5	0.63 (0.32, 1.25)	-16.3
Lung Cancer Mortality [a]	1990-1994	67.3	71.3	0.94 (0.47, 1.89)	
	2000-2004	46.8	62.5	0.75 (0.38, 1.50)	-20.8
Female Breast Cancer Mortality [b]	1990-1994	NSV	33.3	NSV	
	2000-2004	NSV	26.8	NSV	NSV
All Cancer Mortality [a]	1990-1994	170.8	236.1	0.72 (0.50, 1.04)	
	2000-2004	147.1	210.0	0.70 (0.48, 1.02)	-3.1
Motor Vehicle Accident Mortality [a]	1990-1994	21.8	10.7	2.04* (1.04, 3.95)	
	2000-2004	NSV	9.5	NSV	NSV
Homicide Mortality [a]	1990-1994	15.0	4.6	3.28* (1.61, 6.72)	
	2000-2004	NSV	2.5	NSV	NSV
Diabetes Mortality [a]	1990-1994	33.5	20.6	1.63 (0.67, 3.92)	
	2000-2004	24.7	28.5	0.87 (0.43, 1.74)	-46.8
HIV Disease Mortality [a]	1990-1994	13.2	26.5	0.50 (0.21, 1.20)	
	2000-2004	12.3	5.1	2.42* (1.07, 5.48)	387
Infant Mortality Rate [c]	1990-1994	14.2	7.3	1.93 (0.99, 3.76)	
	1997-2001	14.9	5.4	2.79* (1.42, 5.45)	44.0
Low Birthweight Babies, %	1990-1994	6.5	5.2	1.24 (0.91, 1.70)	
	2000-2004	7.8	6.0	1.31 (0.99, 1.75)	5.2
No 1st Trimester Prenatal Care, %	1990-1994	37.0	20.1	1.84* (1.61, 2.11)	
	2000-2004	31.6	15.7	2.01* (1.74, 2.36)	9.5
Teen Birth Rate (aged <18y) , %	1990-1994	8.9	3.7	2.39* (1.83, 3.13)	
	2000-2004	4.5	1.8	2.46* (1.67, 3.63)	2.9
Syphilis case rate [d]	1990-1994	23.8	5.6	4.23* (2.16, 8.30)	
	2000-2004	NSV	3.7	NSV	NSV
Gonorrhea case rate [d]	1990-1994	113.7	58.0	1.96* (1.42, 2.72)	
	2000-2004	62.9	63.5	0.99 (0.69, 1.43)	-49.4
Chlamydia case rate [d]	1990-1994	129.5	86.5	1.50* (1.13, 1.99)	
	2000-2004	338.4	276.7	1.22* (1.03, 1.46)	-18.5

Note: NSV=Not statistically valid. Total cases less than 5.
a Age-adjusted and expressed per 100,000 population.
b Age-adjusted and expressed per 100,000 women.
c Number of deaths among infants (in the first year of life) per 1,000 live births.
d Expressed per 100,000 population (unadjusted for age).
* - Significant difference at $p<0.05$.

Discussion

Using 17 health status indicators – 10 mortality indicators, four pregnancy and birth indicators, and three infectious disease indicators – we sought to document the extent of health disparities between groups of color in Multnomah County, compared to White non-Hispanics. Disparities were examined from 1990 to 2004 to analyze trends (see Appendix B for graphs of the 17 health status indicators). We found that African Americans had the largest health disparities, compared to White non-Hispanics, of all groups examined. Furthermore, most African American disparities persisted over the 15-year study period. Health disparities for 14 out of 17 of the health status indicators were found in the 1990-1994 period, 11 of which persisted in the 2000-2004 period. This mirrors disparities for African Americans nationally, and in other local communities. On a positive note, health disparities between African Americans and White non-Hispanics appear to be improving over time. Between the 1990-1994 period and the 2000-2004 period, there were improvements in 15 of 17 of the health status indicators, an overall trend which was statistically significant ($p=0.001$). If these gains continue, many health disparities for African Americans, compared to White non-Hispanics, could be eliminated in later years. Indeed, since 2004, when this report first appeared, two disparities for African Americans – heart disease and cancer mortality– have ceased to be significant disparities. Furthermore, nine African American disparities continued to improve since the original report was released.

Fewer health disparities were found for the other groups of color that we examined. The Asian community had the fewest health disparities, and for many measures their health was better than for White non-Hispanics. Only three Asian health disparities were found for in the 2000-2004 period. Two factors may explain the lack of health disparities in Asians compared to White non-Hispanics. First, Asians are the most affluent racial group in the County and have the highest incomes and lowest poverty rates of all racial groups. As health disparities are associated with income, this factor may provide one explanation for their good health status. Second, it has recently been documented that Asians are undercounted on death certificates. According to a recent study by the National Center for Health Statistics (NCHS), this undercounting due to racial misclassification may be as high as 11%.[15] This results in artificially lower mortality rates, which in turn results in the misleading conclusion that health disparities do not exist for this group.

American Indians had fewer health disparities, compared to White non-Hispanics, than would be expected of a group with high poverty rates and low median income. Of 13 health status indicators for which data was available in the 2000-2004 period, health disparities were found for five indicators. One additional disparity for American Indians–HIV disease mortality–was found in this updated version of the report, compared to the original report released in 2004. It is important to note that incorrect identification of the race of American Indians at death results in significant undercounting of American Indians, which may lead to the mistaken conclusion that the health of this group is good relative to others. The same NCHS study mentioned above estimates that American Indians are vastly undercounted at death, with 21 of 100 American Indians mistakenly coded as another race (most likely white).

The Hispanic community also had fewer health disparities than would be expected of a group with the one of the highest poverty rates in the County. Health disparities were found for only five out of the 17 health status indicators in the 2000-2004 period. One Hispanic disparity found in the original report- syphilis- was eliminated in this updated version. It has been recognized in other studies that Hispanics have better health outcomes than the majority White population in

the U.S, despite their high rates of poverty (this is known as the Hispanic Health Paradox[16]). It is also possible that undercounting of Hispanic deaths will artificially lower mortality rates. NCHS found that 2 out of every 100 Hispanic deaths were incorrectly coded another race. [15]

Appendix A: Methods

Pregnancy and birth, communicable disease, and mortality data for the years 1990 to 2004 were obtained from the Oregon Department of Human Services Center for Health Statistics. The 10 mortality indicators were coded using the *International Classification of Diseases* (Ninth and Tenth Revisions) and were calculated as rates per 100,000, age-adjusted to the 2000 standard population. To adjust for the conversion of causes of death from ICD-9 to ICD-10, comparability ratios were applied to all death data before 1999. The infant mortality rate is expressed as the number of deaths per 1,000 live births. Both low birthweight and teen births were calculated as percentages. Syphilis, gonorrhea, and chlamydia rates are shown as cases per 100,000 population, unadjusted for age.

Life expectancy, or the average length of time that a person of a particular age in a population is expected to live, was calculated for all racial and ethnic and racial groups examined. All life expectancy numbers show the average years of life from birth.

To ensure that the number of cases for each indicator was large enough for meaningful analysis, indicators were calculated in 5-year periods, beginning with the combined years 1990-1994 (the earliest time period available) and ending with the years 2000-2004 (the latest years available). Indicator measures that were below five cases were considered unreliable and rates were not calculated.

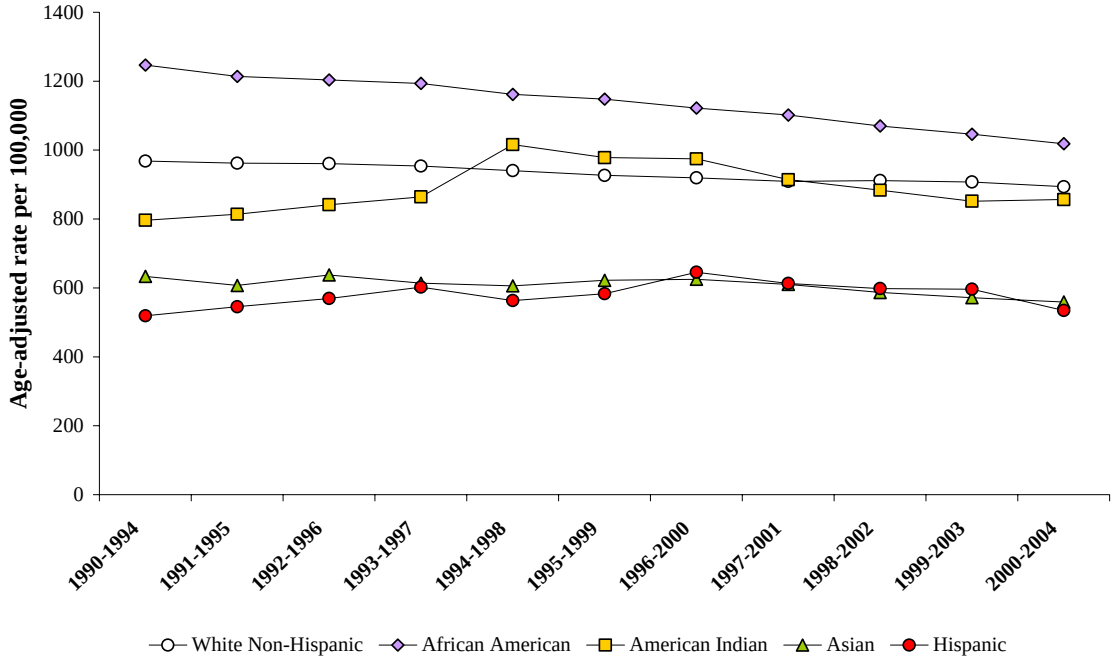
Confidence intervals for the rate ratios were calculated using a standard formula.[17] 95% confidence intervals were used to determine significant disparities, and to identify statistically significant changes in health disparities over time. Confidence intervals below 1.0 are not considered significant disparities. Health disparity ratios for a health status indicator that do not overlap in their confidence intervals in the two time periods are considered significantly different ratios, at $p<0.05$. A disparity is considered eliminated when a statistically significant health disparity in the early time period ceases to be significant in the later time period.

To test the overall trend in the 17 health status indicators, a binomial probability was calculated to test the significance of the percentage changes in the indicators from the 1990-1994 period to the 2000-2004 period.[14]

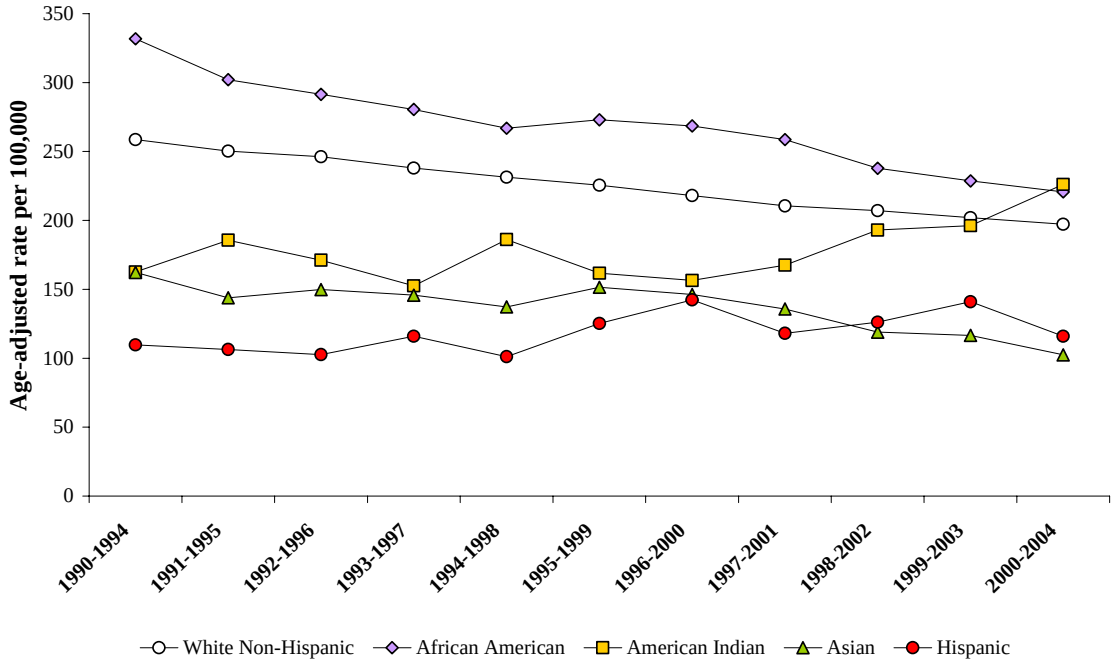
Life expectancy numbers, and the 17 health status indicators, were calculated by the Multnomah County Health Department using VistaPHw, a standardized community health assessment tool developed by the Public Health department in Seattle-King County, Washington.

Appendix B: Graphs[†]

Overall Mortality by Race and Ethnicity
Multnomah County Residents

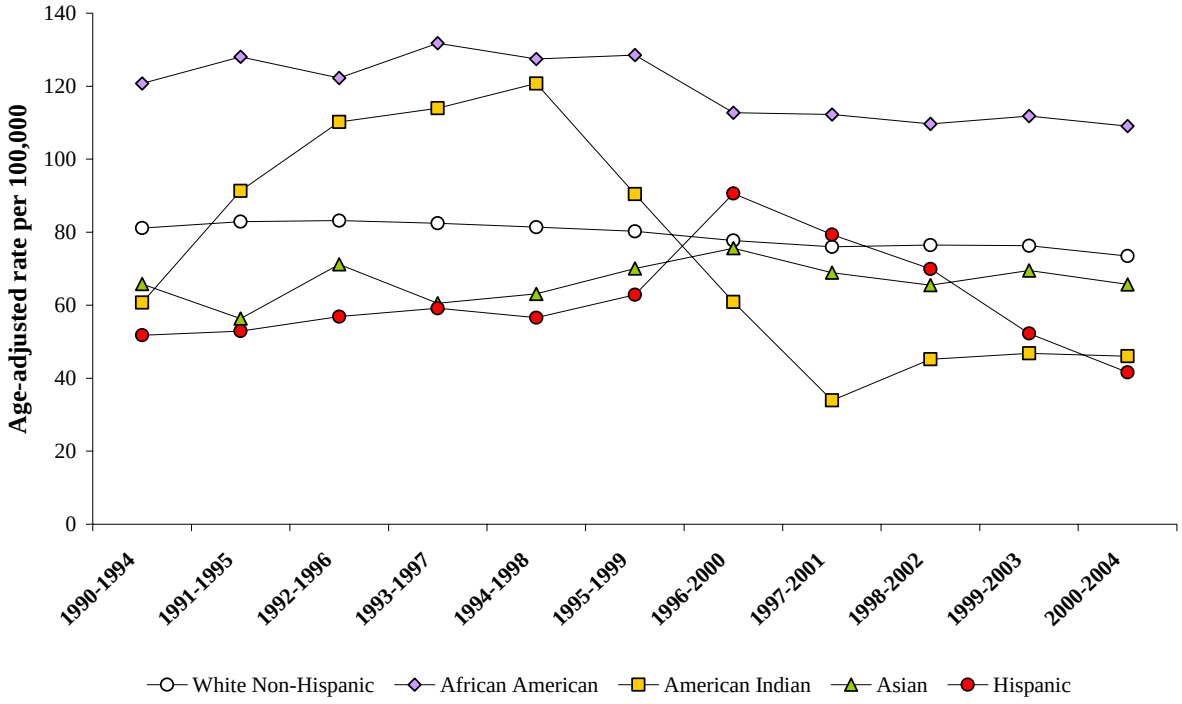


Heart Disease Mortality by Race and Ethnicity
Multnomah County Residents

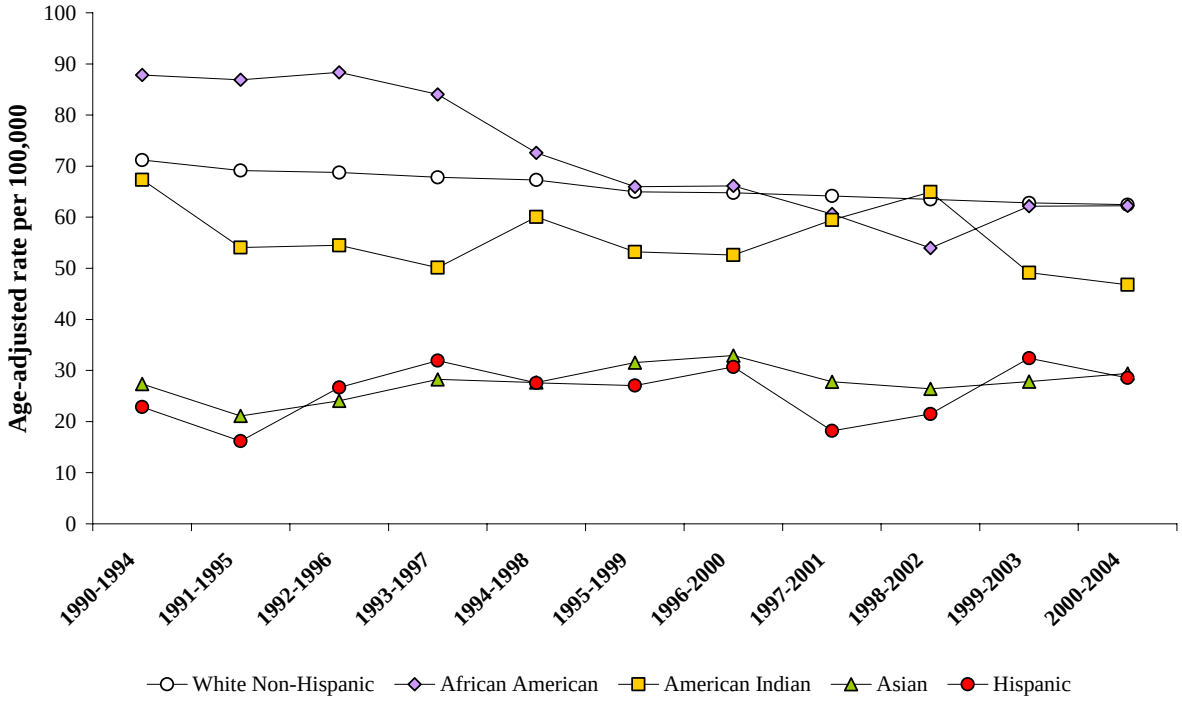


[†] Source: Oregon Department of Human Services, Center for Health Statistics.

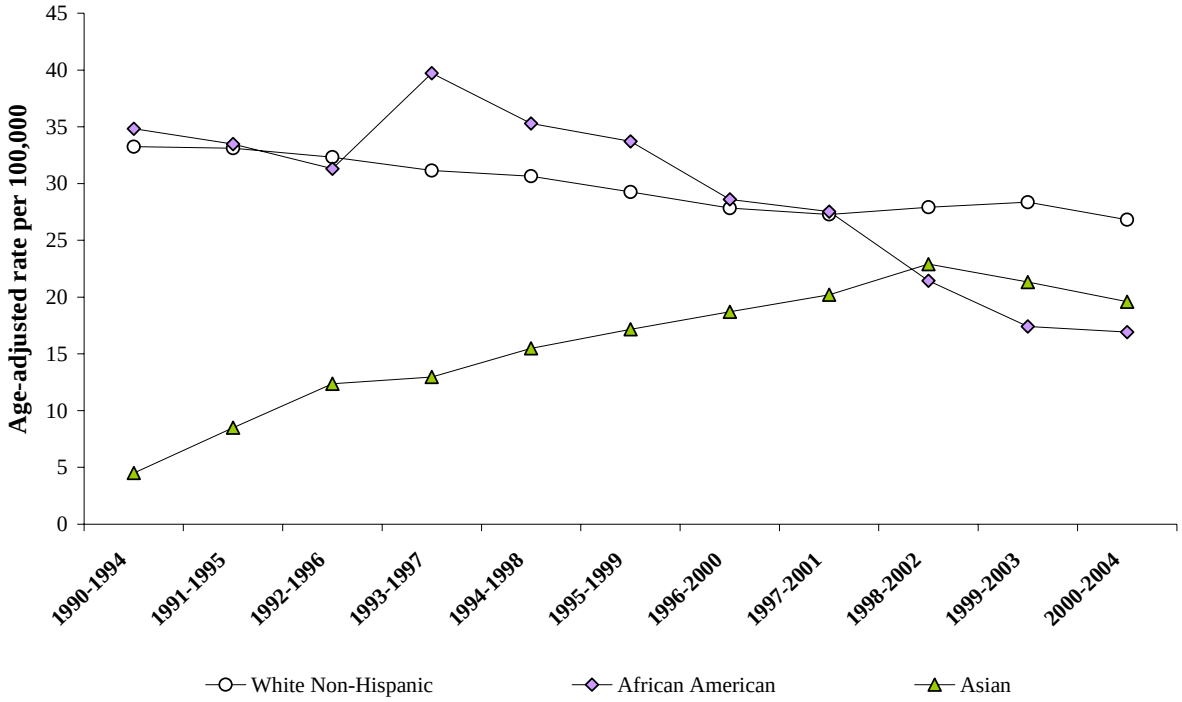
Stroke Mortality by Race and Ethnicity
Multnomah County Residents



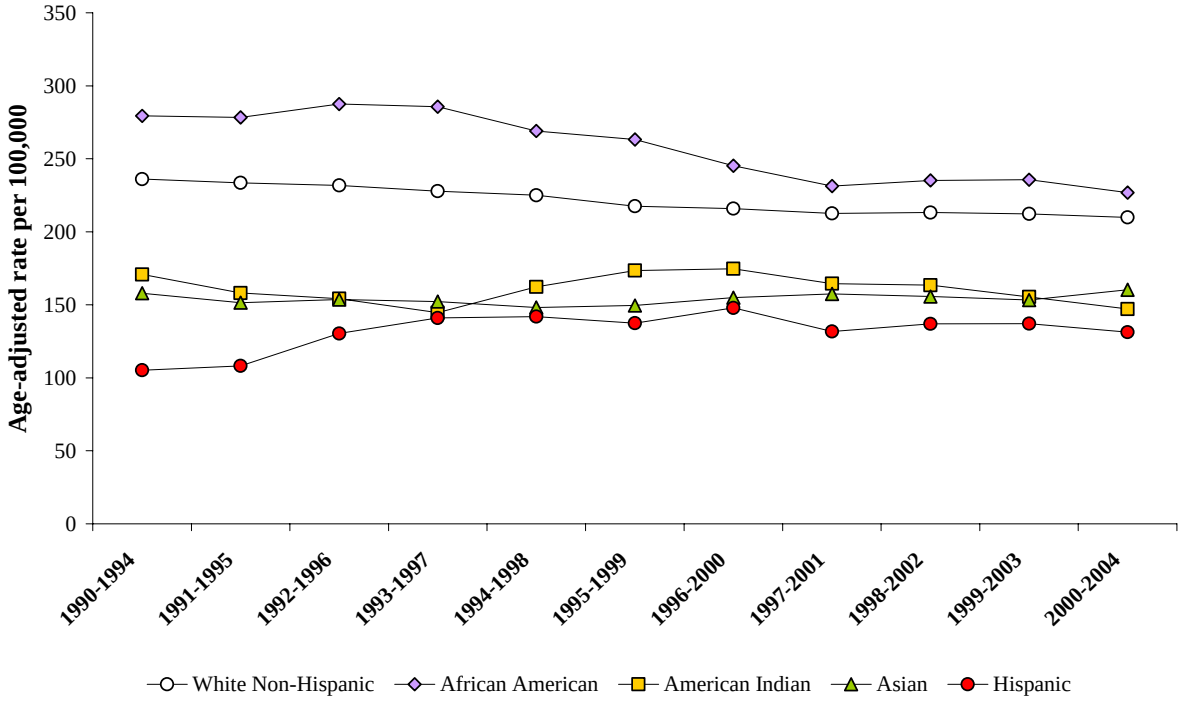
Lung Cancer Mortality by Race and Ethnicity
Multnomah County Residents



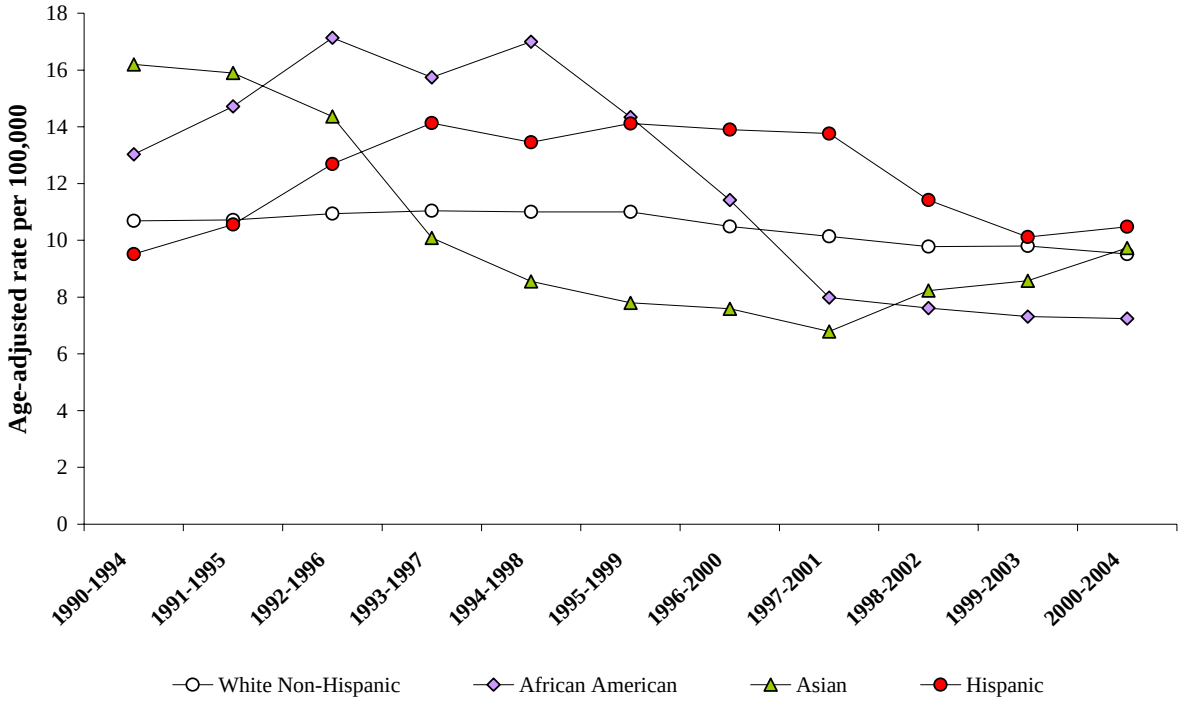
Female Breast Cancer Mortality by Race and Ethnicity
Multnomah County Residents



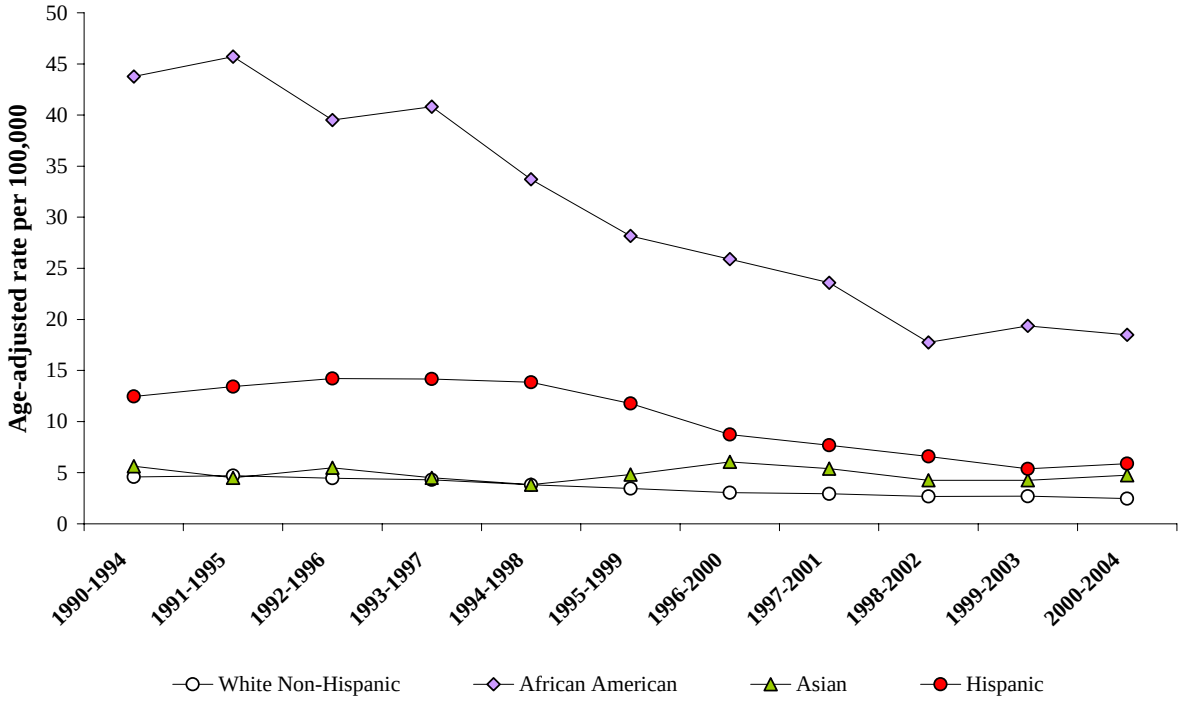
Cancer Mortality by Race and Ethnicity
Multnomah County Residents



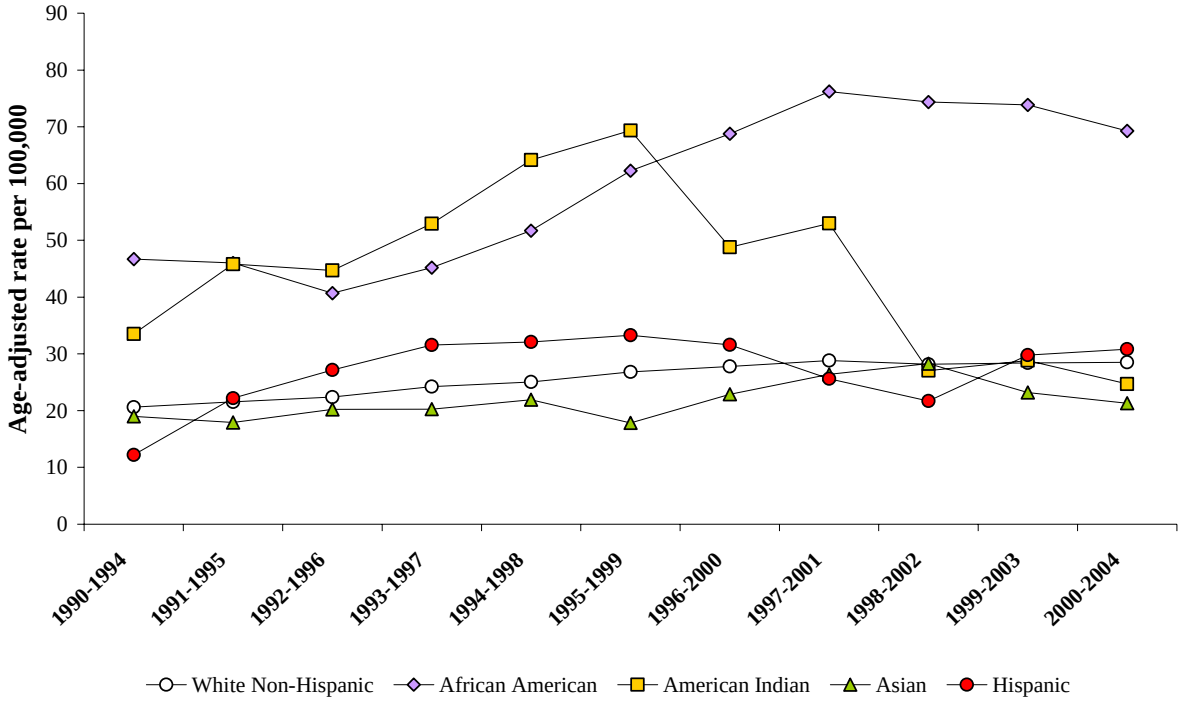
Motor Vehicle Accident Mortality by Race and Ethnicity
Multnomah County Residents



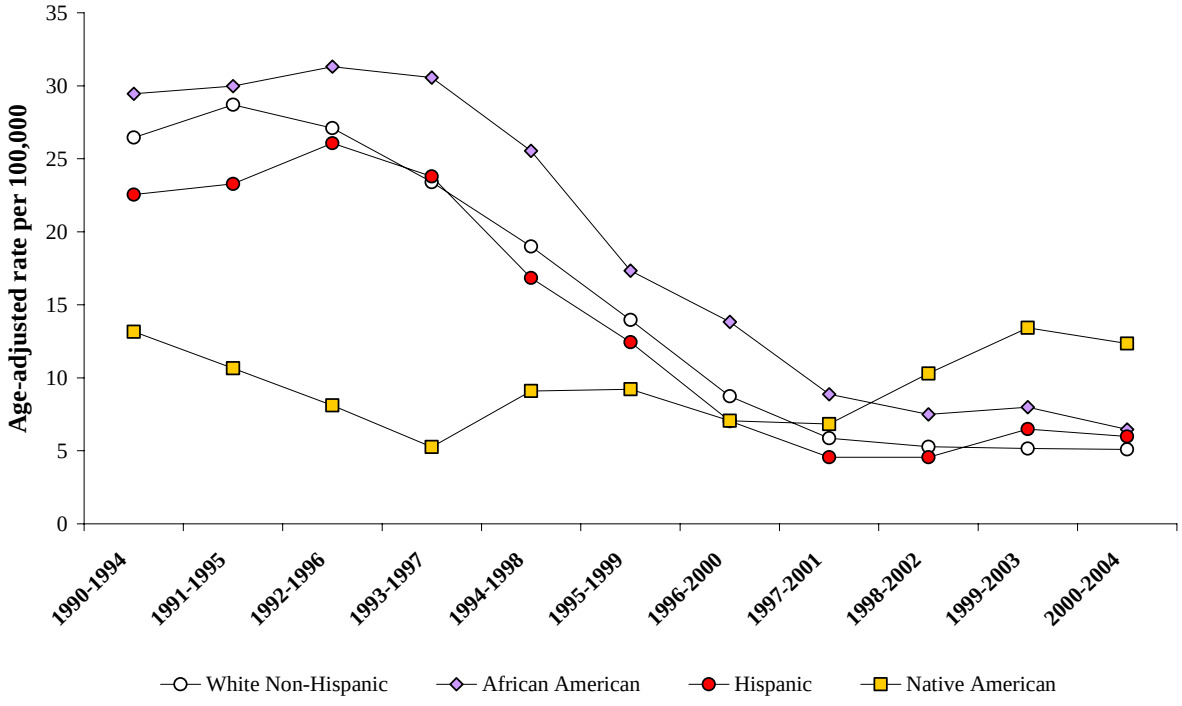
Homicide Rates by Race and Ethnicity
Multnomah County Residents



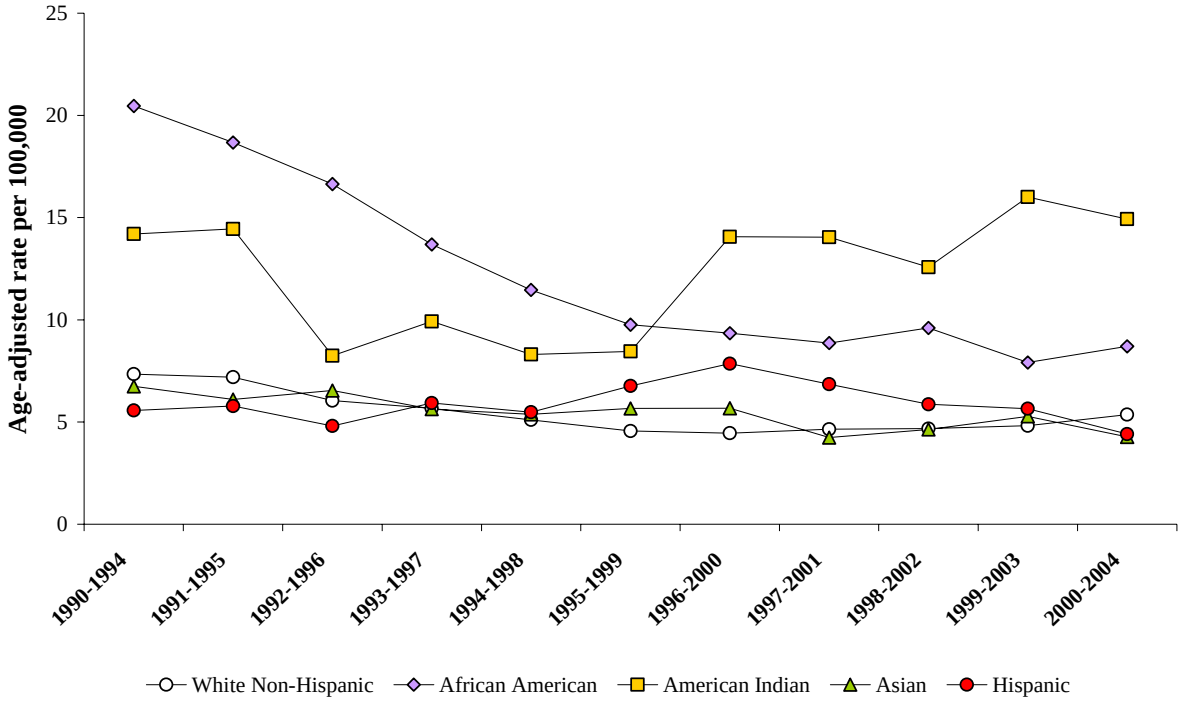
Diabetes Mortality by Race and Ethnicity
Multnomah County Residents



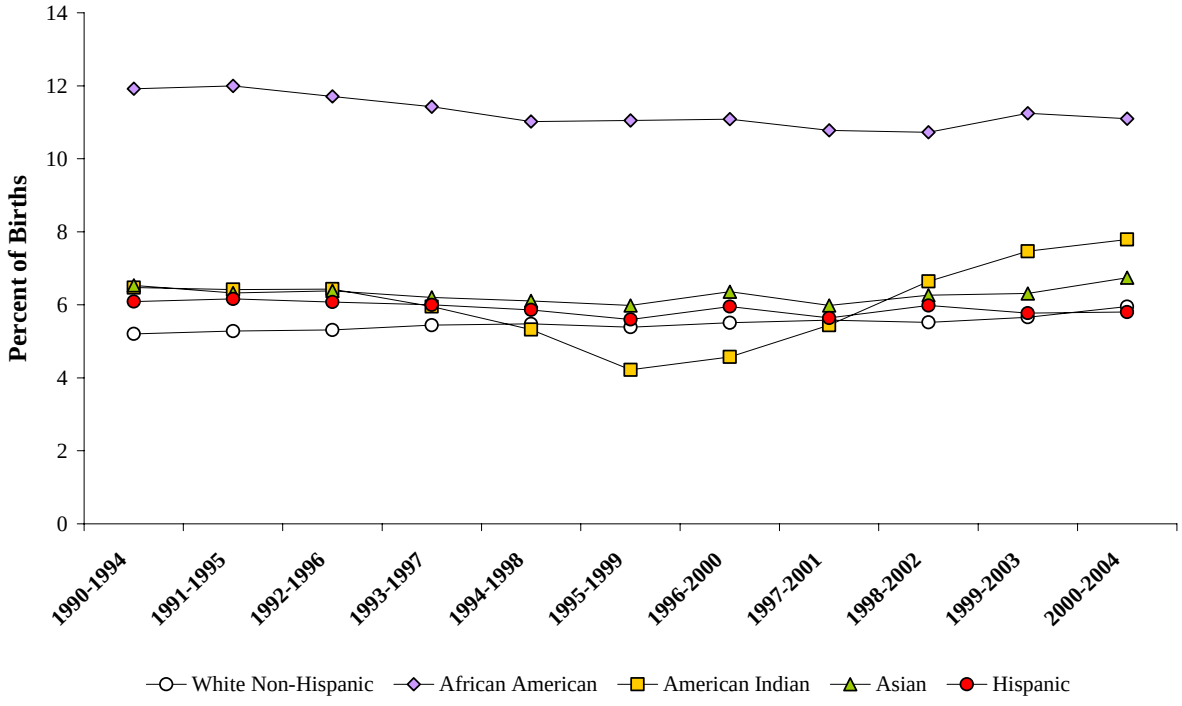
HIV Disease Mortality by Race and Ethnicity
Multnomah County Residents



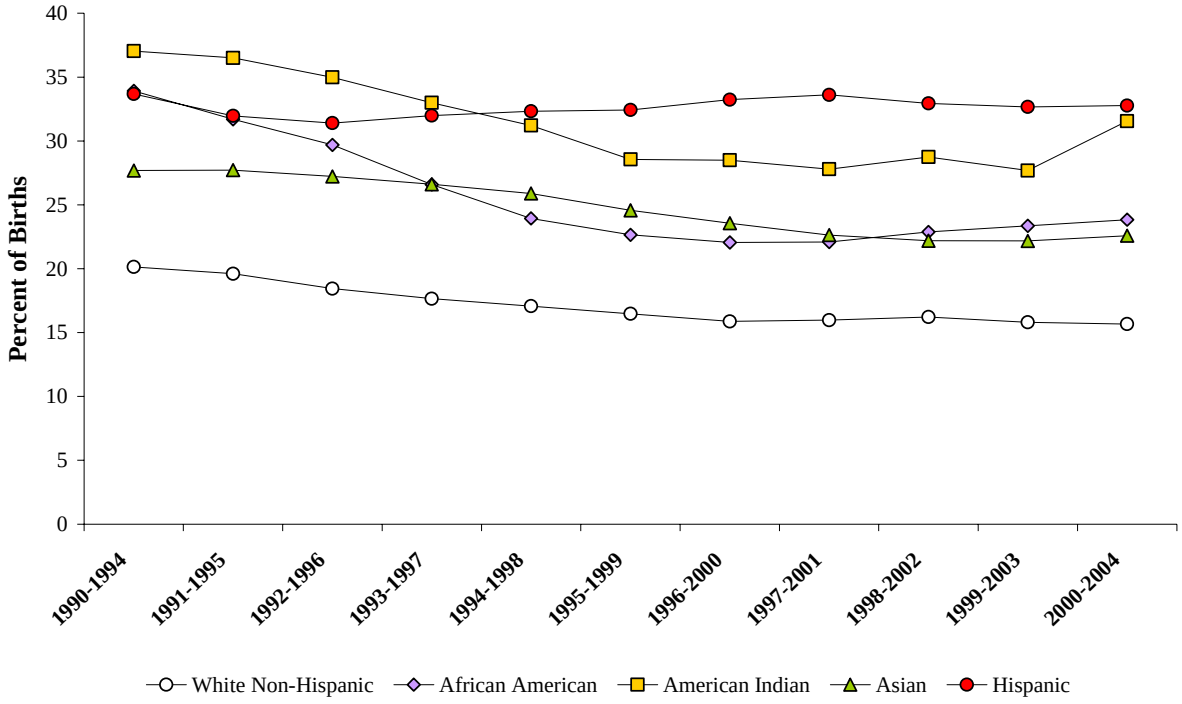
Infant Mortality by Race and Ethnicity
Multnomah County Residents



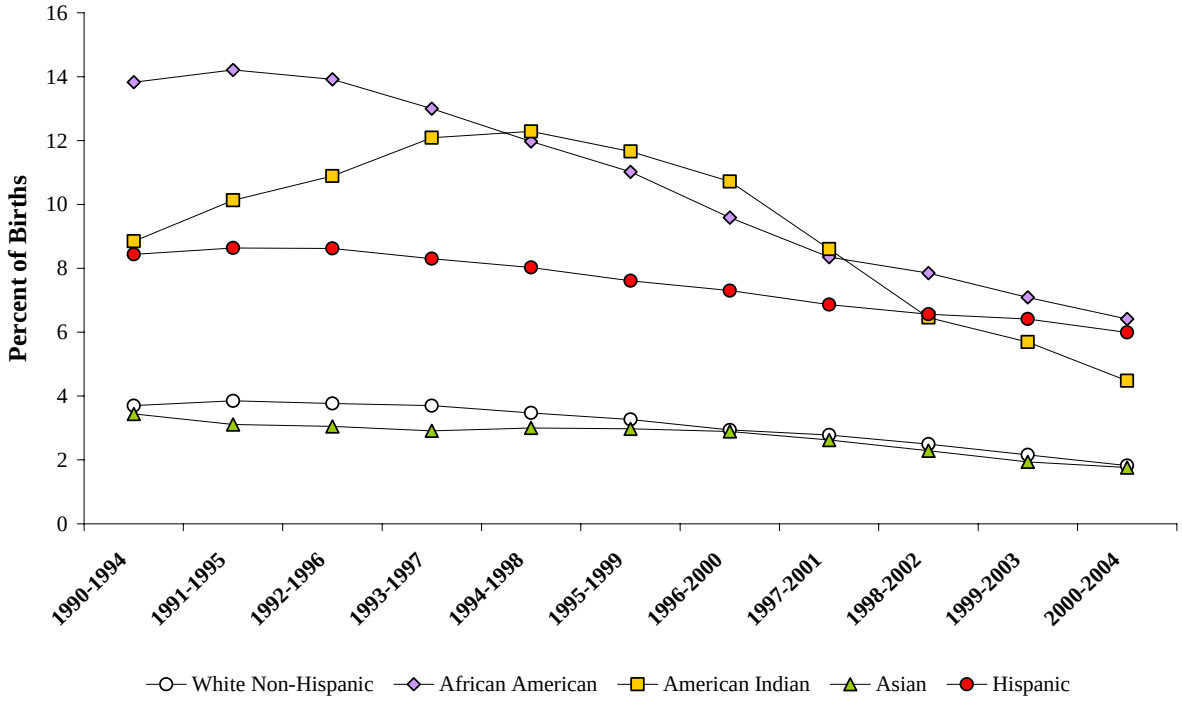
Low Birth Weight Babies by Race and Ethnicity
Multnomah County Residents



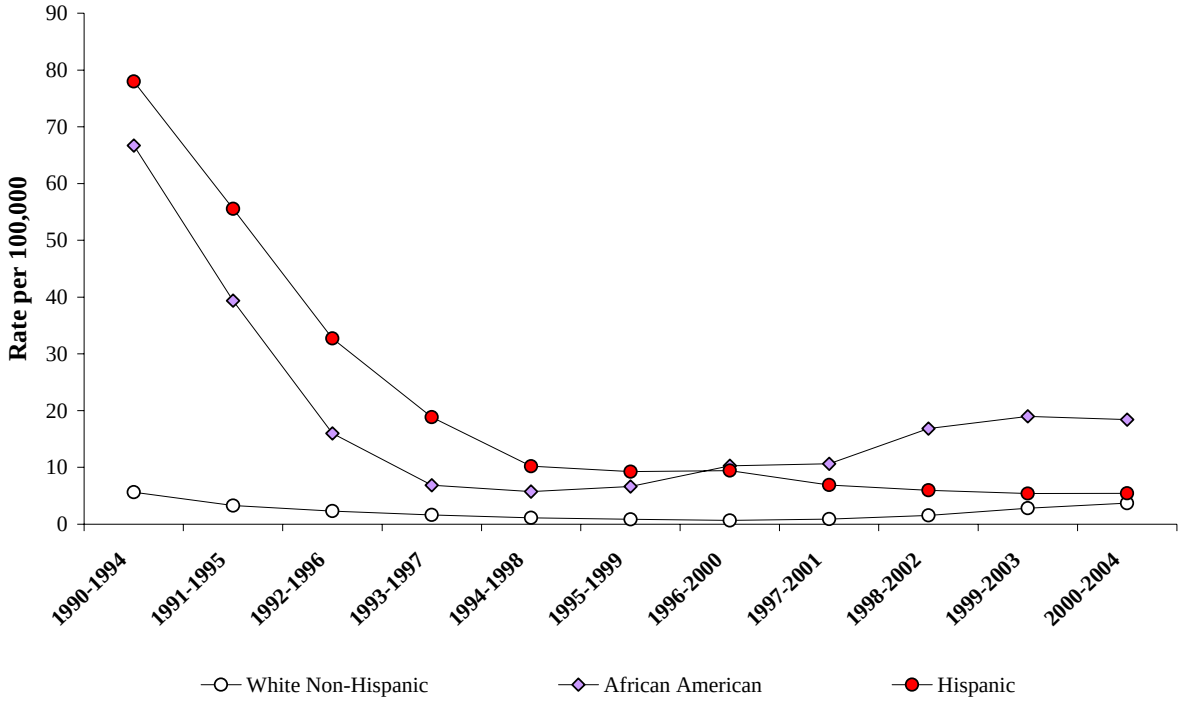
No First Trimester Prenatal Care by Race and Ethnicity
Multnomah County Residents



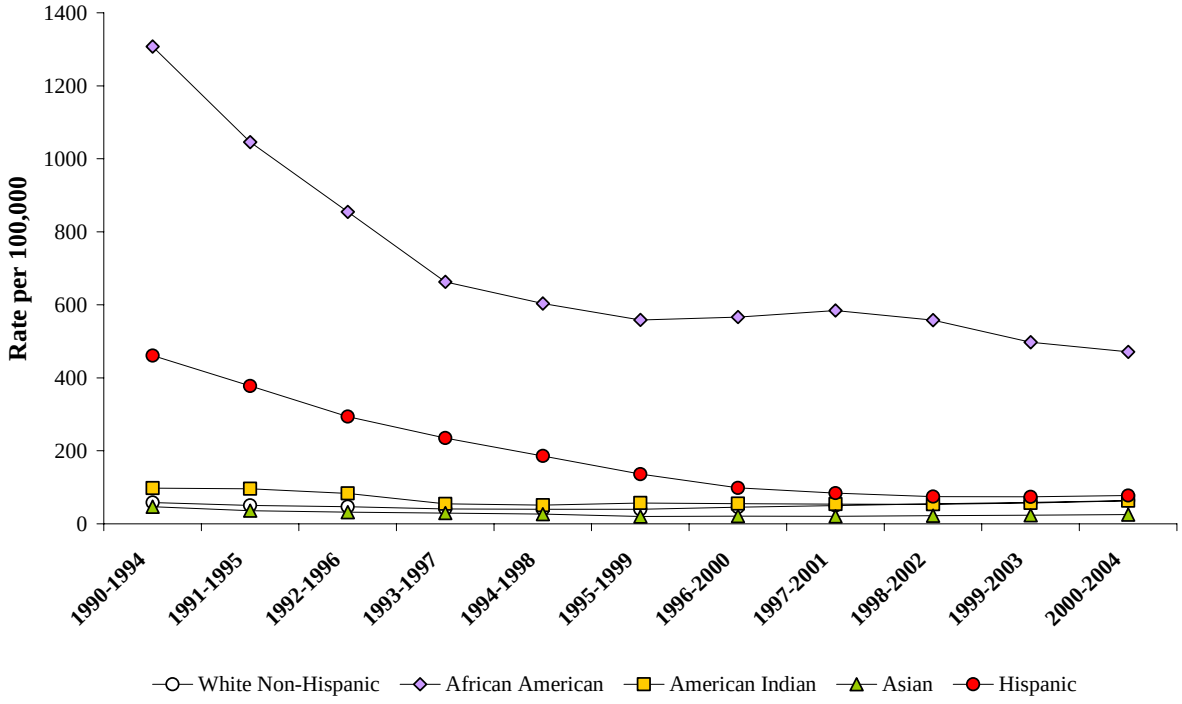
Teen Births (Aged Less than 18) by Race and Ethnicity
Multnomah County Residents



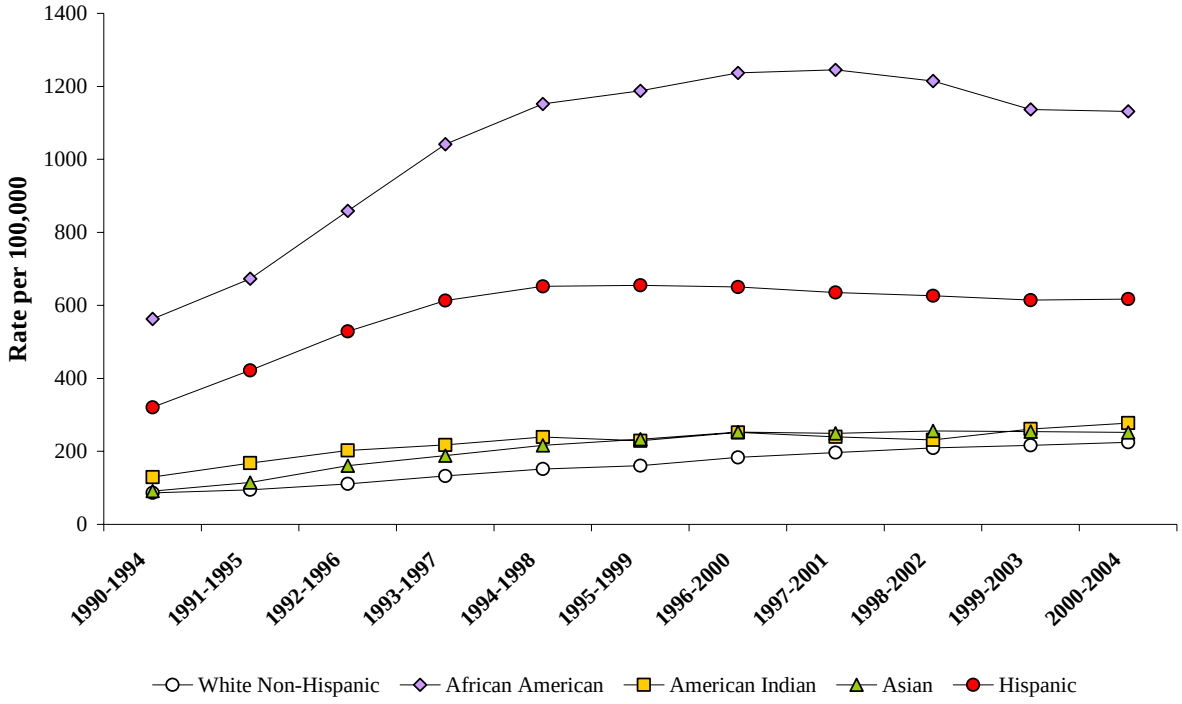
Syphilis Cases by Race and Ethnicity
Multnomah County Residents



Gonorrhea Cases by Race and Ethnicity
Multnomah County Residents



Chlamydia Cases by Race and Ethnicity
Multnomah County Residents



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