PART ONE

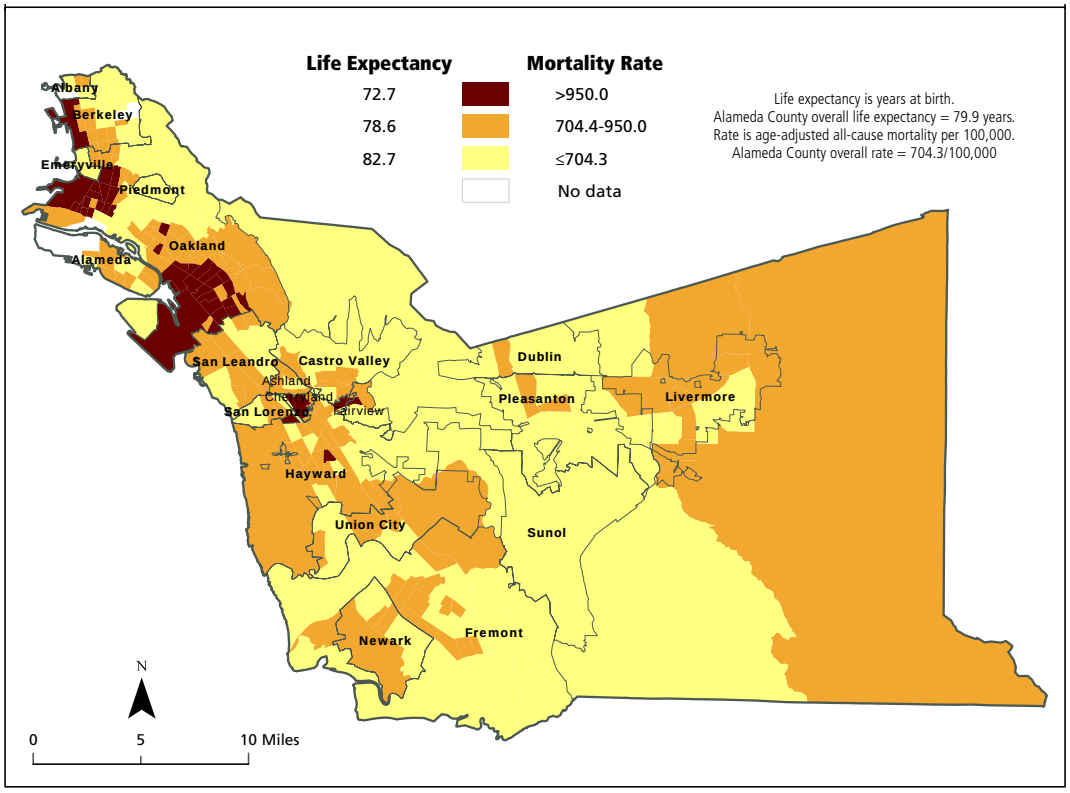
HEALTH INEQUITIES

Over the past 4 decades, the overall health outlook in Alameda County has improved. Health benefits, however, are not experienced equally in the county and across population subgroups. Profound and persistent health inequities exist by place, income, and race. This section examines the nature and magnitude of these inequities—first by place, next by income, and then by race.[a] These factors are then analyzed together to illustrate the complex ways they are related to each other and to the health of our county.

Place Matters: Health Inequities by Where People Live

As discussed in the Introduction, place matters because structural conditions of inequality have concentrated resources and opportunities for health in certain places. The resulting unequal neighborhood conditions affect individual and community health. Higher rates of mortality[b] occur in certain geographic areas, as seen in Map 1, which shows the spatial distribution of death from all causes by census tract. The highest rates of mortality (shown in dark red) are largely concentrated in parts of West Berkeley, North Oakland, West Oakland, and East Oakland, as well as a few areas in Cherryland, Fairview, and Hayward. People living in these areas have mortality rates that are 1.4 times higher than the county-wide rate of 704.3 per 100,000. The corresponding life expectancy[c] in these high-mortality areas is up to 10 years less than other areas of the county (shown in yellow).

Map 1: Mortality Rate by Census Tract, Alameda County



Source: Alameda County vital statistics files, 2001-2005.

a. The health indicators and data shown in this section are intended to illustrate inequities by place, income, and race. Other health inequities exist beyond those portrayed.
b. Mortality or death rates are the number of deaths per 100,000 persons. They are adjusted to allow comparisons among populations with different age distributions.
c. Life expectancy at birth is the number of years someone born today can expect to live if exposed to current death rates during their life.

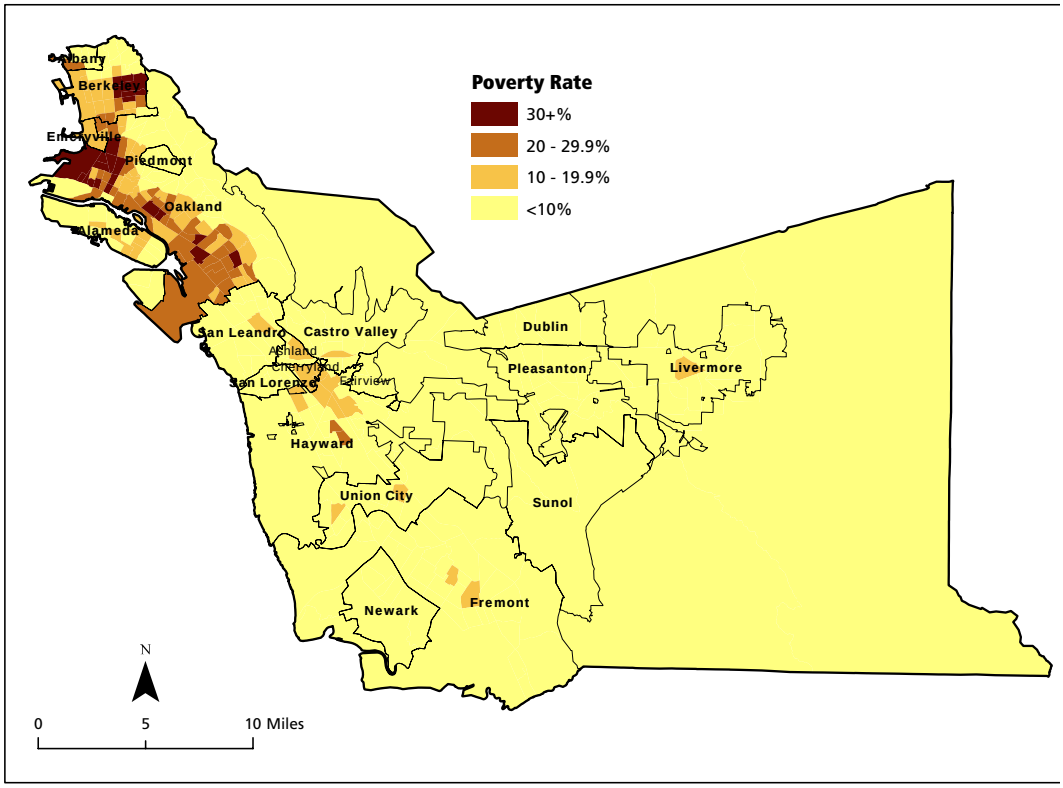
Income Matters: Health Inequities by Neighborhood and Household Poverty

One of the main ways in which place is linked to health is through geographic concentrations of poverty. In Alameda County, poverty is highly concentrated in certain neighborhoods (Map 2). The areas with the highest neighborhood poverty levels[d] are clustered together in parts of North Oakland, West Oakland, and East Oakland.[e] This geographic distribution of poverty is consistent with spatial patterns of death discussed above (Map 1 on page 13).

When health outcomes are compared across areas of varying poverty levels, a strong social gradient is observed. This means that rates of death increase with each step up in neighborhood poverty level. Neighborhoods with over 30% of people living in poverty have more death than neighborhoods with 20% to 29.9% in poverty, which, in turn, have more death than neighborhoods with 10% to 19.9% in poverty or neighborhoods with less than 10% in poverty. Figure 2 on page 15 illustrates that as neighborhood poverty levels rise, so do all-cause mortality rates. The mortality rate increases 55% from 636 (per 100,000 persons) in the lowest neighborhood poverty areas to 984 (per 100,000 persons) in the highest neighborhood poverty areas.

In addition to neighborhood poverty, social gradients are also found when comparing health outcomes by household poverty level based on household income.

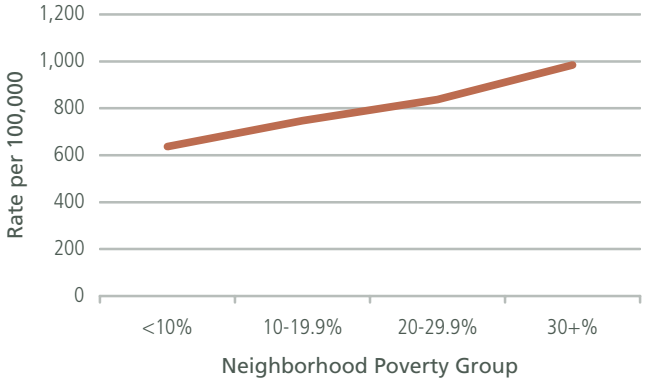
Map 2: Neighborhood Poverty Rate, Alameda County



Source: Census 2000.

d. Neighborhood poverty is defined by the percentage of persons in a census tract living below the federal poverty level. In Census 2000, the 1999 federal poverty threshold of $17,029 annually for a family of 4 was used. Census tracts with less than 10% of residents living in poverty represent low neighborhood poverty. Census tracts with 30% or more of residents living in poverty represent high neighborhood poverty.
e. Areas concentrated around the UC Berkeley campus in the eastern part of Berkeley are high poverty, but residents are predominantly students.

Figure 2: All-Cause Mortality Rate by Neighborhood Poverty, Alameda County



Source: Alameda County vital statistics files, 2003-2005.

Figure 3: Poor Self-Reported Health Status by Income, Adults, Alameda County

Source: California Health Interview Survey 2003.

Figure 3 shows a gradient in poor self-reported health status by household income expressed as a percentage of the federal poverty level (FPL).[f] Adults from low-income households are over 8 times as likely to report being in poor health than those from high-income households. The proportion of adults reporting poor health status ranges from 1.2% among households with high incomes to 10.5% among those with incomes below the federal poverty level.

A Note on Race/Ethnicity in this Report

This report provides data about the major racial/ethnic groups in Alameda County, including: Whites (the largest racial/ethnic group, comprising 37% of county residents based on California Department of Finance estimates); Asians comprise 23% and and Latinos/Hispanics comprise 23% of county residents); and Blacks or African Americans comprise 12% of county residents. Some of the smaller groups include: Native Hawaiian and Other Pacific Islanders (<1%), American Indians and Alaska Natives (<1%), and people of multiple races (3%). In this report, data are often limited to the four largest racial/ethnic groups because the numbers of events (for instance births and deaths) in the smaller groups are too small to calculate reliable rates. Unless otherwise specified, mutually exclusive racial categories are used for simplicity. Latinos/Hispanics of any race are used as a separate category.

Within this report, terms used to classify racial/ethnic groups may vary depending on the data source. For the purpose of brevity, some category names have been shortened. For example, the term *African American* is used to refer to people who are Black or African American (and abbreviated AfrAmer); the term *American Indian* refers to people of Native American, American Indian, and Alaska Native heritage (and abbreviated AmerInd); and the term *Pacific Islander* describes people of Native Hawaiian or other Pacific Island origins (and abbreviated PacIsl). In some cases, Native Hawaiian/Other Pacific Islanders are combined with (cont).

f. The federal poverty threshold is used to define income groups in terms of poverty level, a measure of material deprivation. A household between 0 and 99% of the federal poverty level is considered low income; households at or above 300% of the federal poverty level are considered high income.

Asians and called Asian/Pacific Islanders (abbreviated API) because racial classifications used prior to Census 2000 combined the two groups. The term *Latino* refers to people of Hispanic or Latino ethnicity.

There is considerable variation within these racial/ethnic groups (e.g., Chinese, Japanese, Korean, Vietnamese, Cambodian, Thai, Laotian, Hmong, Indian, and Filipino subgroups within Asians; Mexican, Puerto Rican, Cuban, and Central or South American subgroups within Latinos). While we recognize that there are culturally important differences among these subgroups, measuring differences in health outcomes is not feasible in this report due to a variety of factors—small numbers, the nature of the data compiled, and population estimates that are not available.

Throughout the report, the phrase *people of color* is commonly used to denote racial/ethnic groups other than Whites. The terms *minority* or *minorities* and *non-White* are used less frequently since people of color are not in the minority within Alameda County, and non-White tends to set up Whites as the norm against which other groups are compared. We recognize that the terms used to describe specific or other-than-White racial/ethnic groups have limitations as well.

Race and Racism Matter: Health Inequities by Race/Ethnicity

Profound racial/ethnic disparities in health are observed in Alameda County. Race is a social construct—largely defined by society and culture, rather than genes and biology.[1] As such, most health inequities by race reflect social processes that create racial differences in health, rather than innate biological differences. The relationship between race and health has long been shaped by residential segregation and other forms of racial discrimination. Covert and overt institutional policies have separated people by race in residential contexts, with lasting impacts on neighborhood conditions and ultimately on health (see Segregation section). While segregation has declined, African Americans remain highly concentrated in high-poverty areas of Alameda County. Health inequities are rooted in this and other legacies of discrimination.

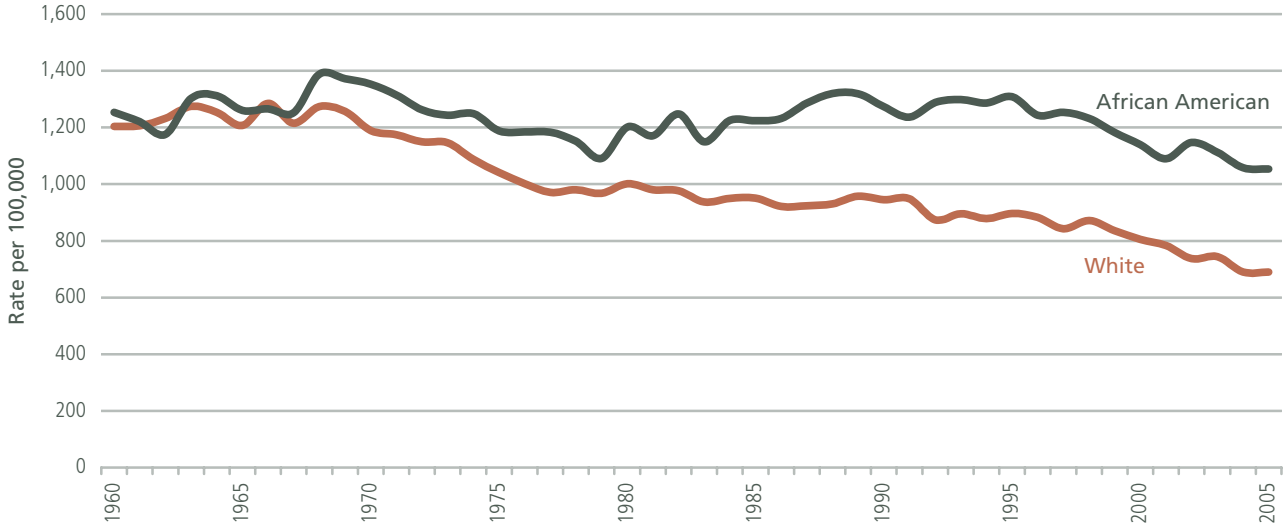
Over the past 4 decades, the gap in all-cause mortality between Whites and African Americans has widened (Figure 4 on page 17). In 1960, the African American mortality rate was 4% higher than the White rate in Alameda County. This gap grew to 14% in 1970, 20% in 1980, 35% in 1990, 42% in 2000, and 53% in 2005.

The trend in life expectancy mirrors the trend in mortality, with African Americans living an average of 7.8 years less than Whites in 2005 (Figure 5 on page 17).

Figure 6 (page 17) is a snapshot of all-cause mortality rates in 2003-2005. African Americans had substantially higher all-cause mortality compared to all other racial/ethnic groups. The African American rate was 2.5 times higher than that of Asians, twice that of Latinos, and 1.5 times that of Whites. Pacific Islanders also had notably higher mortality rates than all racial/ethnic groups except African American. In addition to all-cause mortality, African Americans fare worse than other racial/ethnic groups across a broad range of other health conditions, including coronary heart disease, stroke, diabetes, major cancers (lung, colorectal, breast, and prostate cancer), asthma, and low birth weight.

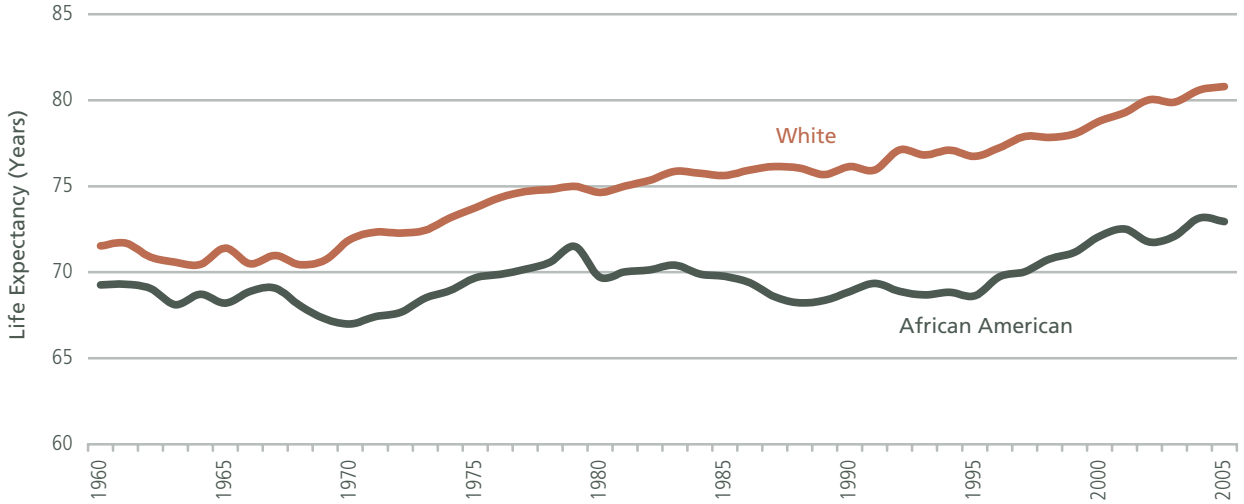
It is important to recognize that there are notable differences within the racial/ethnic groups, which are comprised of subgroups that vary in socioeconomic, cultural, and linguistic characteristics as well as im-

Figure 4: Historical All-Cause Mortality Rate, Alameda County



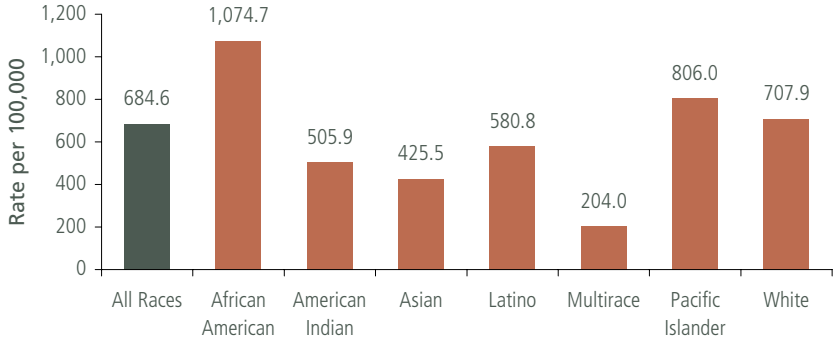
Note: White and African American defined regardless of Latino origin.
Source: Alameda County vital statistics files, 1960-2005.

Figure 5: Historical Life Expectancy at Birth, Alameda County



Note: White and African American defined regardless of Latino origin.
Source: Alameda County vital statistics files, 1960-2005.

Figure 6: All-Cause Mortality Rate by Race/Ethnicity, Alameda County



Source: Alameda County vital statistics files, 2003-2005.

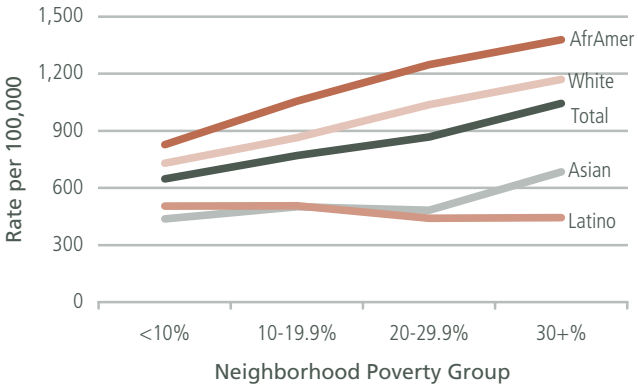
migration status—attributes that strongly influence health care use and health outcomes. All-cause mortality rates were significantly higher for the Cambodian subgroup (among Asians), for Samoans (among Pacific Islanders), and for Puerto Ricans (among Latinos) in 1999-2001 (data not shown). The sidebar titled "Immigration Status and Health" on page 20 describes how immigration status influences health outcomes.

A Deeper Look at Health by Place, Income, and Race

Previously, health inequities by place, by income, and by race were looked at separately. Here these factors will be analyzed together in order to explore the interrelationships of how concentrated neighborhood poverty and racial experiences play roles in shaping health inequities.

As described earlier, social gradients in health exist in Alameda County—as neighborhood poverty levels increase, so do rates of disease and death. Figure 7 displays this gradient for different racial/ethnic groups—the neighborhood poverty social gradient for all-cause mortality by race/ethnicity.

Figure 7: All-Cause Mortality Rate by Neighborhood Poverty Group and Race/Ethnicity, Alameda County



Source: Alameda County vital statistics files, 2001-2005.

The social gradient holds true across most racial/ethnic groups. African Americans, Asians, and Whites living in poorer neighborhoods die at higher rates compared to their counterparts living in more affluent neighborhoods. An especially steep gradient is observed for African Americans, with the mortality rate in the highest poverty areas being 1.7 times the rate for African Americans in the lowest poverty areas. Whether living in poor or rich neighborhoods, African Americans experience the highest rates of death compared to other groups. Death rates rise substantially for Asians in the highest poverty neighborhoods. Latinos appear to be the exception, with about the same mortality observed regardless of poverty level. Some possible explanations of the health advantage among Latinos despite their economic disadvantage are described in the sidebar on page 20. It is important to note that African Americans, followed by Latinos, are most likely to live in higher poverty neighborhoods (with over 20% of residents living in poverty). In 2003 (used in the analysis shown in Figure 7), about 40% of African Americans and 28% of Latinos resided in higher poverty neighborhoods, compared to 11% of Asians and 4% of Whites (see Segregation section for details).

Although death is inevitable, deaths that occur before the age of 75 are considered to be premature. In Alameda County, the social gradient is even more pronounced for premature mortality (data not shown). In the period 2001-2005, the rates of premature mortality among Whites and African Americans living in the highest poverty neighborhoods were more than twice the rates of Whites and African Americans living in the lowest poverty neighborhoods.

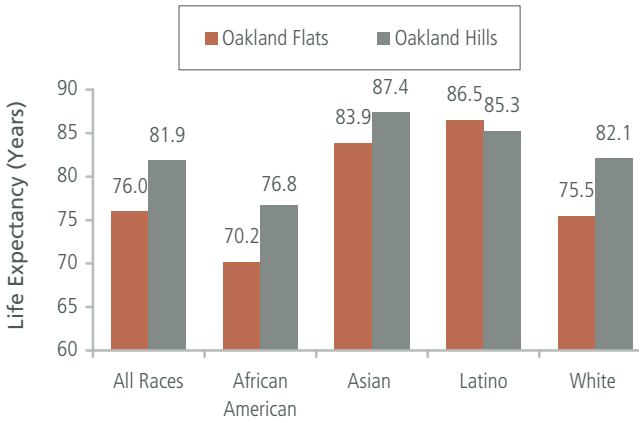
Using the 2001-2005 age-specific death rates (before age 75) of Whites in the lowest poverty neighborhoods of Alameda County as the reference group for comparison, if African Americans had experienced that same low age-specific death rate, 68% of the 208 annual deaths among African Americans living in the highest poverty neighborhoods and 34% of the 228 annual

deaths among those living in the lowest poverty neighborhoods would have been prevented. Comparing Whites across different neighborhood poverty groups, if Whites living in the highest poverty neighborhoods had experienced the same age-specific death rates as Whites in the lowest poverty neighborhoods, 64% of the 33 annual deaths in the high-poverty neighborhoods would have been prevented. The magnitude of preventable "excess" deaths is even greater when Asians are the reference group because they have the lowest mortality of all groups. About 82% of the 208 annual deaths among African Americans living in the highest poverty neighborhoods would have been prevented compared to Asians living in the lowest poverty neighborhoods.

The analysis just described illustrates how race/ethnicity is related to income and place in complex ways. While Latinos appear to be protected against detrimental health effects of living in high-poverty neighborhoods, African Americans are not protected and they experience ill health to a much greater extent than Whites and Asians. Regardless of where they live, African Americans tend to be burdened by higher rates of death than other racial/ethnic groups. This underscores the powerful influence of race/ethnicity and racism on their life chances. The combined effects of race, place, and income on the health of African Americans are profound. As described earlier, about two-thirds of deaths among African Americans in the highest poverty areas could have been prevented if they had the same death rates as Whites living in the lowest poverty areas.

Another illustration of the interplay of place, income, race, and health is seen when comparing life expectancy in the Oakland hills (high income) versus the flatlands (low income) (Figure 8). On average for all race/ethnicities, people who live in the wealthier hills live 5.9 years longer than those who live in the poorer flats. By race, the gap in life expectancy is most pronounced for African Americans and Whites (6.6 years). The largest gap that can be found between any

Figure 8: Life Expectancy at Birth, Oakland Flats and Hills



Source: Alameda County vital statistics files, 2001-2005.

two groups in this chart is between Asians living in the wealthier hills and African Americans living in the poorer flats—a difference of 17 years. What is clear from these comparisons is that factors beyond poverty appear to be negating health among African Americans—as the life expectancy of African Americans living in the wealthy hills is about the same as the life expectancy of Whites in the poor flats. Unlike African Americans, Latinos living in the flats and hills have about the same life expectancy.

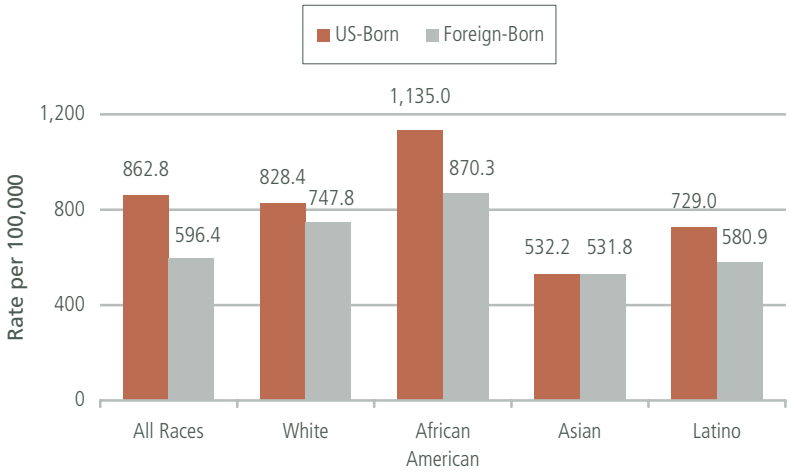
The data presented above clearly illustrate the complex and striking health inequities by place, race/ethnicity, and income in Alameda County. Part Two of this report will explore why—what are these unnatural causes that determine chances at life and death in Alameda County? The underlying social inequities that create and maintain health inequity will be examined in-depth.

Immigration Status and Health

Despite their generally lower socioeconomic status, foreign-born persons (immigrants) in the United States have a considerable advantage over U.S.-born persons on several health outcomes. This health advantage—referred to as the "Immigrant Health Paradox" —has been shown among recent or first-generation immigrants in the major racial/ethnic groups; however it is not observed universally across health measures or racial/ethnic subgroups. Immigrants can vary widely in their socioeconomic background and cultural characteristics by country of origin. Their immigration experience in the United States can also vary based on circumstances, criterion for immigration (skill, refugee, family reunification), and immigration policies in effect at the time of immigration. Thus understanding the immigrant health paradox to better address the public health needs of populations experiencing persistent health disparities is crucial and complex.[2-5]

Figure 9 illustrates that in Alameda County, immigrants have lower all-cause mortality than their U.S.-born racial/ethnic counterparts. The health advantage among immigrants is also observed in the lower prevalence of several chronic diseases and their risk factors such as hypertension, asthma, heart disease, obesity and smoking among immigrants compared to U.S.-born persons in the county (data not shown).

Figure 9: All-Cause Mortality Rate Among U.S.- and Foreign-Born Persons by Race/Ethnicity, Alameda County



Source: Alameda County vital statistics files, 1999-2001.

Researchers propose several hypotheses to explain the observed immigrant health advantage. Among the accepted explanations is the "healthy migrant effect" or the selective migration of healthier persons from their countries of origin. Evidence supporting this explanation is largely from studies showing that U.S. immigrants have better health outcomes than comparable groups resident in their countries of origin.[2,6,7] Another explanation for lower mortality among immigrants is the "salmon bias" or selective return migration of less healthy, older immigrants to their native countries—a hypothesis that is plausible, but not well substantiated. However there is more consistent and compelling evidence for the hypothesis that immigrants have healthier behaviors (e.g. lower smoking prevalence, healthier diet) and thus a much lower risk profile for a number of chronic health conditions than U.S.-born persons.[2,8]

Consistent with national findings, in Alameda County, Latino immigrants have much lower mortality than U.S.-born Latinos (Figure 9). This health advantage may be explained in part by migratory factors and healthier behaviors (discussed earlier) among immigrant Latinos, which are also observed among other immigrant groups. Additional findings suggest that there may be cultural factors unique to Latinos that are health-protective.[8,9]

As described previously in this section, lower socioeconomic status is associated with poorer health among most racial/ethnic groups; however, Latinos appear to be the exception. In the United States and in Alameda County, Latinos have higher poverty rates, less education, and more limited access to health care compared to Whites, but much lower all-cause mortality. This is in contrast to African Americans, who like Latinos have a lower socioeconomic profile than Whites, but much higher all-cause mortality. This health advantage among Latinos despite lower socioeconomic status is referred to as the "Latino Health Paradox." There is considerable evidence of the mortality paradox among Mexican immigrants; a paradox has also been observed for other health outcomes among several Latino subgroups, e.g., infant mortality. In Alameda County, among the U.S.-born, Latinos have much lower all-cause mortality compared to Whites despite their socioeconomic disadvantage. In addition, they have lower all-cause mortality than African Americans who have a comparable socioeconomic profile (Figure 9).

Several studies suggest that the health paradox among Latinos may be better explained by factors that are social in origin. Cultural protective factors unique to Latinos may buffer against the racial and economic marginalization they might experience. Strong ethnic identity and positive identification with native culture among Latinos may confer health benefits. Furthermore, aspects of Latino culture such as strong social networks and close-knit, cohesive ethnic neighborhoods may have a powerful health-protective effect.[8,9]

The distinct health advantage among recent immigrants erodes over time for most groups. In general, immigrants become less healthy the longer they live in the United States. Decline in health outcomes is also observed among subsequent generations born in the United States. This decline is largely explained by the process of acculturation, defined as the "process by which an individual raised in one culture enters the social structures and institutions of another, and internalizes the prevailing attitudes and beliefs of the new culture."[8] It is a complex process that can influence health through social factors such as the degree of social support and networks, social acceptance, and changes in socioeconomic status. Acculturation can also influence health directly through its effect on health risk behaviors and access to the health care system. The impact of acculturation on health status varies among immigrant groups and by health outcome due to factors such as circumstances of immigration, living conditions in countries of origin or cultural protective factors.[8,10]

Understanding the protective factors in the immigrant health paradox and the health effects of acculturation is critical to developing public health strategies for disadvantaged immigrant groups to achieve health equity.

References

1. Randall V. *Dying While Black.* Dayton, OH: Seven Principles Press. 2006.

2. Dey AN, and Lucas JW. Physical and Mental Health Characteristics of U.S.- and Foreign-Born Adults, United States, 1998-2003. *Advance Data from Vital and Health Statistics, Number 369.* Hyattsville, MD: National Center for Health Statistics. 2006.

3. David RJ, and Collins JW. Differing Birthweight Among Infants of U.S.-Born Blacks, African-Born Blacks, and U.S.-Born Whites. In: LaVeist T, ed. *Race, Ethnicity and Health: A Public Health Reader.* Jossey-Bass, 2002: 252-264.

4. Singh G, and Yu SM. Adverse Pregnancy Outcomes. Differences Between U.S.- and Foreign-Born Women in Major U.S. Racial and Ethnic Groups. In: LaVeist T, ed. *Race, Ethnicity and Health: A Public Health Reader*. Jossey-Bass, 2002: 265-279.

5. Frisbie WP, Cho Y, and Hummer RA. Immigration and the Health of Asian and Pacific Islander Adults in the United States. In: LaVeist T, ed. *Race, Ethnicity and Health: A Public Health Reader*. Jossey-Bass, 2002: 231-251.

6. Fennelly K. The "Healthy Migrant" Effect. *Minnesota Medicine: Clinical and Health Affairs*. March 2007.

7. Lucas JW, Barr-Anderson DJ, Ward S. Health Status, Health Insurance, and Health Care Utilization Patterns of Immigrant Black Men. *American Journal of Public Health*. 2003;93(10): 1740-1747.

8. Franzini L, Rible RC, Keddie AM. Understanding the Hispanic Paradox. In: LaVeist T, ed. *Race, Ethnicity and Health: A Public Health Reader*. Jossey-Bass, 2002: 280-310.

9. Abraído-Lanza AF, Dohrenwend BP, Ng-Mak DS, and Turner JB. The Latino Mortality Paradox: A Test of the "Salmon Bias" and Healthy Migrant Hypotheses. *American Journal of Public Health*. 1999;89(10): 1543-1548.

10. Derose KP, Escarce JJ, and Lurie N. Immigrants and Health Care: Sources of Vulnerability. *Health Affairs*. 2007;26(5): 1258-1268.

Data Sources

1. Alameda County Public Health Department Automated Vital Statistics System and State of California Statistical Master Death File. *Vital Statistics.* Computer Files.

2. U.S. Census Bureau. *Census 2000.* Available at: http://www.factfinder.census.gov/.

3. California Health Interview Survey. *CHIS 2003 Adult Special Use File, Release 1.* Computer File. Los Angeles, CA: UCLA Health Policy Research. February 2005.