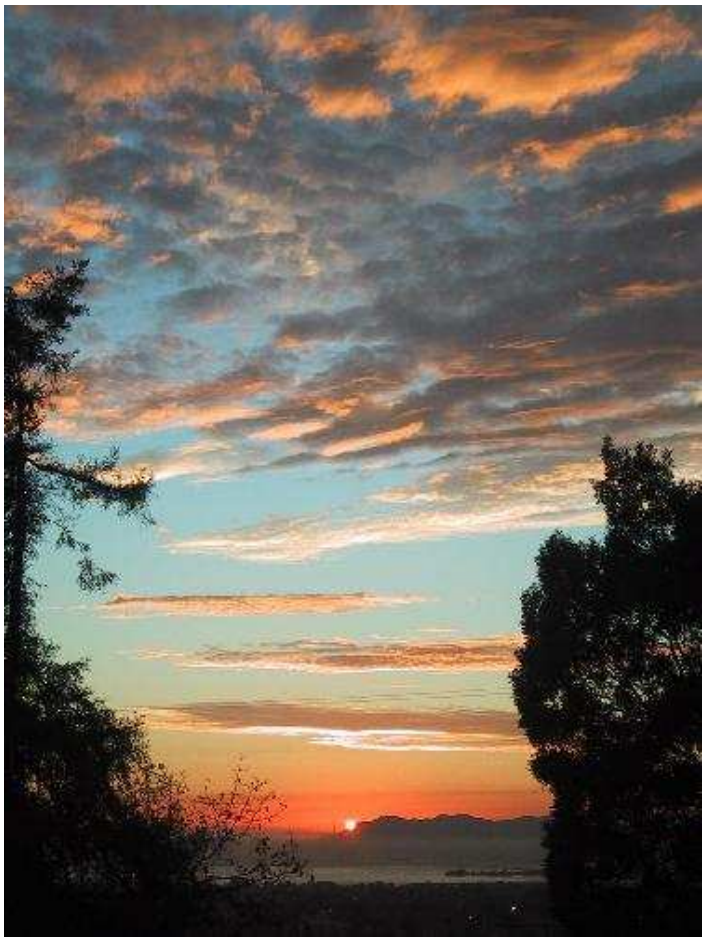
City of Berkeley
Health Status Report, 2007



May 2007
(Updated 10/15/2007)

City of Berkeley
Department of Health and Human Services
Public Health Division

City of Berkeley Leadership

City of Berkeley City Council

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Director, Department of Health and Human Services
Fred Medrano

FOREWORD

May 2007

Dear City of Berkeley Residents,

The Public Health Division and the Health & Human Services Department are pleased to provide you with the *City of Berkeley Health Status Report 2007*. This report presents a comprehensive assessment of Berkeley's health status and community health needs.

The numbers tell an important story that is simultaneously encouraging and distressing. Overall, Berkeley residents are living longer, healthier lives. Life expectancy has increased over the last 10 years from 77-83 years. Berkeley has the lowest teen birth rate in the state, due in part to the Public Health Division's 16-year partnership with the Berkeley Unified School District in operating the Berkeley High School Health Center. This comprehensive approach provides reproductive health services and pregnancy/STD prevention, among other services, to Berkeley teens. During this time, Berkeley has reduced the teen birth rate by 50%. Another marked improvement is in our access to prenatal care. More than 90% of pregnant mothers in Berkeley get prenatal care in the first trimester of pregnancy. In our 1999 Health Status Report, there were alarming disparities between racial and ethnic groups in Berkeley in access in prenatal care; these disparities have now been eliminated.

Despite these gains in health outcomes and program effectiveness, we continue to see persistent disparities in many health outcomes based on income, race/ethnicity, neighborhood, education, and other social determinants of health. Berkeley is a relatively small community in a large, very mobile, urban area. We have seen a great deal of middle-class flight in the last several years that changes the health dynamic considerably. There is still a lot of work that needs to be done, particularly in regard to understanding and eliminating these social inequities that contribute to poor health among some Berkeley residents.

Although it takes years to impact health risk factors and outcomes, it can be done. We propose to address health inequities in four priority areas for action that are detailed in the report:

- A healthy start for every child
- Positive youth development
- Chronic illness prevention
- Public health preparedness

This is work that cannot be done by the Public Health Division alone. We will continue to work with the community, to collaborate regionally, and to work in partnership with other City agencies. The City of Berkeley has long valued our quality of life, and health is certainly an important factor. Whether we are expanding park and recreation programs, planning transit corridors, or improving our clean water and sewer systems, we are improving the health of Berkeley residents. Health is how we do business.

Public involvement is an important part of this report, and we invite you to join us to talk about the report's findings and strategies for improving the health in our communities. You can find information about our community meetings by calling (510) 981-5300, visiting our website (www.ci.berkeley.ca.us/publichealth/reports/reports.html), or emailing publichealth@ci.berkeley.ca.us.

Ralph Waldo Emerson said, "The first wealth is health." I hope this report will be helpful in understanding out health concerns so that we can invest wisely to improve the health and lives of our community and its residents.

Best of health,

Linda Rudolph, M.D., M.P.H.
City of Berkeley Health Officer

Acknowledgements

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Email: publichealth@ci.berkeley.ca.us

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INTRODUCTION

City of Berkeley Public Health Division

Our Vision: ***Healthy people in healthy communities*.**

Our Mission: to achieve and maintain optimal health and well being for all people in Berkeley. We do this by working in partnership with our diverse communities to: promote healthy behaviors and environments, prevent illness and injury, protect against disease and other emerging health threats, eliminate health inequities, and advocate for social and environmental justice.

Our Guiding Principles: We believe that we can best achieve our goals if our work reflects these values:

Justice: The achievement of optimal health requires that we work with partners to advocate for social and environmental justice; address key social determinants of health such as poverty, racism, and all forms of discrimination; and work with our community to attain access for all to quality education, housing, economic opportunity, sustainable communities, and health care.

Equality: We strive to eliminate health inequities in all of our work. We value diversity and are committed to treating every individual – in our workplace and community – with respect and human dignity.

Community Engagement: We believe that residents know their needs and communities best, and that we cannot create a healthy city without engaging in a true partnership with community members. We need to build on community assets and strengthen community capacity.

Collaboration: Public health works best if we partner across programs within our Division, with other agencies in the City and State, with educational institutions, and with the many community based organizations and community groups that share our goals.

Prevention: Primary prevention offers the best opportunity for optimizing the health of our community. While we act across the spectrum of prevention, our focus is on primary prevention. Healthy people live in healthy communities and healthy environments. We seek to support and implement social, environmental, and policy changes that improve the health of neighborhood, community, and environment.

Accountability: We recognize our responsibility to make efficient and productive use of public resources. We base our actions on the best available evidence about interventions that are effective. We measure our performance and evaluate our programs. We strive for transparency in decision-making and information sharing.

HOW TO READ THIS REPORT

This report reflects Berkeley's health status and what determines it. We use an adapted framework from the Institutes of Medicine to represent our understanding of how social and environmental factors affect health, and to identify opportunities for prevention and intervention.

Social Determinants of Health and Health Inequities

The Social Determinants of Health and Health Inequities section is presented first, because we believe that social and environmental factors are the greatest contributors to health outcomes. In this section, we provide basic social, economic, and demographic information to give the reader a context for the subsequent health data.

Organized by Life Course

The next sections of the report follow the sequence from birth to adulthood to death. Health risks, needs, and concerns change over the life course. What happens in early childhood affects that life course, and people continue to develop from conception through adulthood into old age.

Risk Factors and Outcomes

Within each section, we first present data on risk factors (traits and lifestyle habits that increase the risk of disease), followed by health outcomes data. We understand that a small number of risk factors (for example, tobacco use and low physical activity levels) account for a large proportion of illnesses and deaths. Social and environmental factors (e.g., social and familial relationships, financial and social supports, environmental exposures, community characteristics, social and economic forces) also impact health risk behaviors. Where possible, we show the connections between economic status, race/ethnicity, and both risk factors and health outcomes.

Topics of Interest

Sidebars are used throughout the report to provide further information about topics of interest:

Gray sidebars further explain the relationship between a particular social determinant and health.

Purple sidebars contain short descriptions of HHS programs that work on the health issue of concern.


Blue sidebars are longer descriptions of 4 Public Health Division priority areas.

Comparisons and Benchmarks

Throughout the report whenever possible, we compare Berkeley to Alameda County and/or California, and use benchmarks set by Healthy People 2010 goals.

In bar charts we underline Berkeley's numeric value when Berkeley's findings are statistically different from Alameda County or California. This means that differences are not likely to be chance or year-to-year fluctuations, and are therefore "statistically significant." Lack of an underline means that the differences can be explained by year-to-year fluctuations alone. Statistical tests were used to help understand whether health outcomes in Berkeley have changed over time. In graphs that show a trend over time, we underline the name of the population group to indicate that their trends are not likely to be chance year-to-year fluctuations. Further details are in the Technical Notes.

Data Limitations

Some risk factors and health outcomes occur infrequently or occur in small population groups. This creates situations in which there are too few observations to be statistically reliable and/or ensure individuals' confidentiality. In each figure, results based on fewer than 10 health outcomes are not presented. When possible, we have aggregated data over several years for Latinos, Asians, African Americans and other population groups so that we can present reliable information that is still timely.

We have used the most recently available data for each risk factor or outcome of interest. This means that the years represented in each graph are not always the same. For example, data from the California Health Interview Survey is only available from 2001, and each graph using that data indicates the year 2001.

Appendix

The Appendix includes a Health & Human Services Department Resource Directory, Data Sources and Technical Notes (including more on data limitations), a List of Maps and Figures appearing in the report, and a list of references.

Suggested Citation

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HSR EXECUTIVE SUMMARY

Introduction

This City of Berkeley Health Status Report 2007 provides a wealth of information about risk factors, behaviors, illness, and death in our community. Since our last comprehensive Health Status Report in 1999, we have seen many improvements in health in Berkeley. Overall, people in Berkeley are very healthy, living longer lives with more years of good health than ever before. But health inequities persist; low-income and non-White residents of Berkeley have poorer health outcomes in many areas, just as they do throughout the Bay Area and the United States. We present data on health outcomes and on the larger social and economic factors that influence health status.

Improvements in Health

Since the 1999 Health Status Report we note many improvements in health. Overall life expectancy for Berkeley residents has increased from 77 to 83 years. The percent of pregnant women receiving prenatal care has increased, and the gap between White and African American women receiving prenatal care has disappeared. The teen birth rate in Berkeley continues to be one of the lowest in the nation, as is tobacco use among youth – which has declined since 1998. Domestic violence reports have decreased. New AIDS cases and deaths continue to drop, and are lower in Berkeley than in Alameda County. Many of these improvements are the result of years of coordinated public health initiatives.

Health Challenges Persist

Some members of our community – especially low-income people and those in racial and ethnic minority groups – suffer poorer health by many measures, and these inequities have changed little since prior Reports. Berkeley is no different than other communities in the County, State, or nation in this respect. These health inequities are the result of multiple factors in our social, economic, and physical environment that impact health directly and promote health risk behaviors. The Berkeley community and the City of Berkeley have made a serious commitment to address these inequities that result from social and economic forces (such as inequalities in income, educational attainment and structural racism) that are long-standing, and difficult to address at a local level alone. Special sidebars throughout the report address these factors in more detail.

We have seen alarming increases in obesity – especially in African Americans, Latinos, and low-income individuals. This epidemic of obesity represents a huge risk for future chronic disease such as diabetes. African Americans who have higher rates of smoking, sedentary lifestyle, and low fruit and vegetable intake are at even greater risk from this epidemic. Moreover, African Americans have far higher rates of illness and deaths from hypertension, heart disease, and stroke, compared to White residents of Berkeley. The elevated rate of low birth weight in African Americans persists, despite a temporary decrease in the late 1990's.

What Do We Need To Do?

We hope to use this report as a launching pad for action with every sector of the Berkeley community - residents, schools, City agencies, community organizations, policymakers, and other stakeholders - to address health inequities and improve the health and environment of all Berkeley residents. Berkeley has demonstrated a commitment to improving health and well-being for all. To improve and maintain health overall, larger social and economic changes that improve well-being and economic stability are necessary. We know that it takes years to impact health risk factors and outcomes. For example, many programs in the public health department, the schools, and the community have contributed to successfully lowering Berkeley's low teen birth rate, but it took a coordinated effort over many years, and required changes in the social environment as well as individual services. Another example is the coordinated effort over 3 decades to reduce tobacco use among Berkeley youth and adults through outreach and education, individual smoking cessation counseling, media interventions, environmental and policy changes. These successes can serve as a model for continued investment in coordinated efforts by multiple City agencies on health outcomes of concern in this Report.

We propose four key priority areas for action:

- **A healthy start for every child**: Early childhood is a critical stage in the life course; low-income children are especially vulnerable to conditions in the very early years that can have a lasting impact on social-emotional development and educational and health outcomes. We need to ensure that we identify all young children at risk, and provide the support and services for families and children that promote healthy development and school readiness. This will require coordinated action among public health, mental health, schools, childcare providers, and existing coalitions such as the Berkeley Integrated Resources Initiative.

- **Positive youth development**: Adolescence represents another critical time in the lifecycle in which youth are developing attitudes and behaviors that have a significant impact on their health and well-being throughout adult life. We see disturbing trends in our young people – consistent with Alameda County, California and U.S. trends – such as increases in sedentary activity, overweight, smoking and alcohol and other drug use, and unsafe sexual activity. Again, we need coordinated action uniting public health and many other sectors to help adolescents build on their strengths to develop healthy lifestyles and healthy relationships, and to enjoy opportunities for healthy transition to adulthood.

- **Chronic illness prevention**: The epidemic of obesity threatens to undermine our recent progress in increasing life expectancy – today's children may be the first generation to have a shorter lifespan than their parents. Chronic illnesses are also the biggest contributor to health inequities. Prevention of chronic illness relies on individual health behaviors and environmental and social supports that promote healthy choices and well-being. We need to increase our efforts to ensure that every person in Berkeley has access to healthy neighborhoods, healthy food, safe places to play and exercise, social support for healthy behaviors and stress reduction, and access to high quality preventive health services.

- **Public health preparedness**: The report demonstrates public health's success in limiting the impact of communicable diseases on health. We need to continue our activities to protect our community against infectious diseases including pandemic influenza, and other emerging health threats such as global warming, and to make sure that we are prepared for any natural, biological, or environmental disasters that may threaten our well-being.

Join Us!

We invite you to join us to discuss the findings in this report, and to participate in our strategies for action to improve the health of the Berkeley community. You can find information about town hall forums and community meetings on our website, at http://www.ci.berkeley.ca.us/publichealth/reports/reports.html, or you can email us at publichealth@ci.berkeley.ca.us.

Berkeley Health Facts

The following list provides a snapshot of many different social and health outcomes and risk factors, based on the most recent available data. It is a way to begin understanding the numbers of people affected by various social and health conditions, presented as an aid for discussions about how to set priorities for future work to protect the health and well-being of our community.

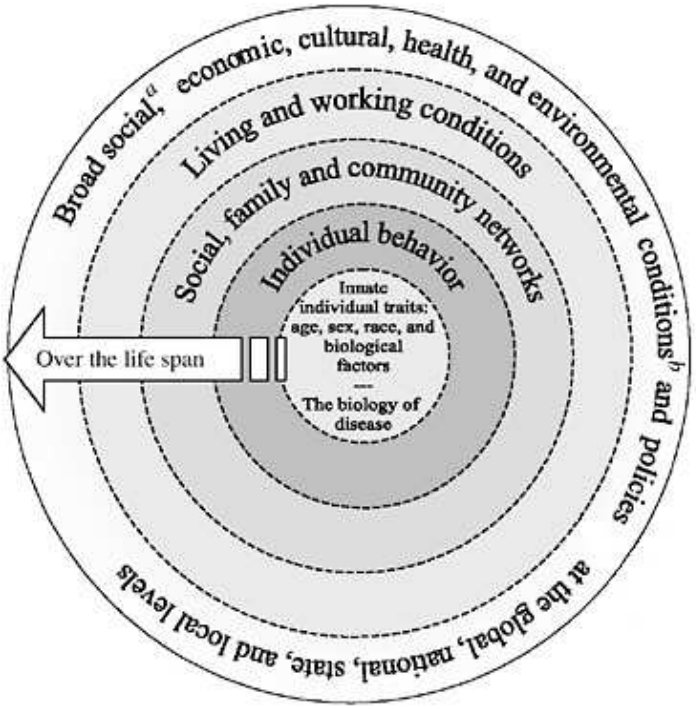
Berkeley Health Facts	Annual Number
Overweight and Obese Adults	27,797
Adults Who Needed Help With Emotional Problems in Past Year	21,325
People Living Below the Poverty Line	20,869
Years of Potential Life Lost	14,047
Adults Reporting Diagnosed Hypertension	13,458
Adults Reporting Diagnosed Asthma	13,453
Adults Who Smoke	11,448
Adults Who Are Uninsured	8,724
Children Living Below the Poverty Line	2,217
Births	895
Psychosis Hospitalizations (All Ages)	753
Traffic Injuries Reported to Police	706
Deaths (All Causes)	629
New Cases of Cancer	456
Adult Coronary Heart Disease Hospitalizations (e.g., heart attacks)	377
Domestic Violence Incidents Reported to Police	363
Hospitalizations in Adults due to Prescription Drug Reactions	340
Hospitalizations in Adults due to Falls	317
Reported Cases of Chlamydia	316
Hospitalization in Adults With Stroke	307
Cancer Deaths	150
Reported Cases of Gonorrhea	147
Coronary Heart Disease Deaths	123
Deaths Attributable to Tobacco	117
Traffic Injuries Reported to Police Involving Pedestrians	107
Hospitalization in Adults With Diabetes	104
Deaths Attributable to Poor Diet and Physical Inactivity	92
Traffic Injuries Reported to Police Involving Bicyclists	87
Life Expectancy	84
New Cases of Prostate Cancer	80
Low Birth Weight Infants	80
Hospitalization In Adults With Asthma	71
New Cases of Breast Cancer	70
Childhood Asthma Hospitalizations (0-14 Years)	63
Foodborne Illnesses Reported	61
Hospitalizations in Adults due to Motor Vehicle Collisions	57
New Cases of Lung Cancer	45
New Cases of Colorectal Cancer	37

Berkeley Health Facts (continued)	
Hospitalizations of Children 0-14 Years for Injuries	36
Hospitalization in Adults due to Suicide Attempts	36
Lung Cancer Deaths	29
Deaths Attributable to Alcohol	26
Deaths Attributable to Toxic Agents	25
Hospitalizations of Youth 15-24 Years for Suicide Attempts	23
Deaths Attributable to Microbial Agents	20
Diabetes Deaths	20
Breast Cancer Deaths	17
Prostate Cancer Deaths	13
Children With Blood Lead Level of 10 μg/dL or Greater	12
Deaths Attributable to Illicit Use of Drugs	11
Suicides	9
Deaths due to Motor Vehicle Collisions	8
New AIDS Cases	7
New TB Cases	7
Deaths Attributable to Firearms	5
Deaths Attributable to Sexual Behavior	4
AIDS Deaths	4

I. SOCIAL DETERMINANTS OF HEALTH & HEALTH INEQUITIES

We all know that people don't live in isolated bubbles. We live in families, neighborhoods, communities, and nations – in physical and social environments. The Institute of Medicine uses a "social-ecological" framework[1,2] to show the connections among the many social conditions and environments that impact individual and community health over the life course.

Figure 1.1 – A Framework to Understand Social Determinants of Health



At the center of the model is the individual, with his/her own genetic traits that may predispose to certain illnesses. Individual behaviors also shape health. These behaviors and their health effects may also be influenced by genetics. For instance, smoking is a complex behavioral activity with significant genetic heritability;[3] many studies have also shown an interaction between smoking and specific genes in determining the risk of developing cardiovascular disease and cancers. This is an example of the complex and dynamic interactions between and among the different levels (represented by the dotted lines in the model) to produce population health.

Families, housing, education, social and community networks, the work environment, and environmental conditions all have important influences on individuals, their behavior, and their health – both directly and indirectly. Children whose parents smoke are exposed to second-hand smoke; they are also more likely to become smokers. In addition to public education on the health risks of smoking and record-high enrollment in smoking cessation courses, environmental policy changes such as limiting advertising for cigarettes, reducing

youth access to tobacco, and banning smoking in public places have led to very significant reductions in smoking. This is an example of how social and physical environments influence and shape our behavior, and can either promote healthy behaviors or encourage and reinforce unhealthy ones.

In fact, we now know that it is these broad social, economic, cultural, and environmental conditions - represented in the outer circle of the model – that most impact the health of populations. We call these conditions the "upstream determinants" of health. Examples of upstream determinants include: economic inequality; educational attainment; urbanization; transportation access; cultural values; discrimination and intolerance on the basis of race, gender and sexual orientation; air pollution; immigration; crime and safety; and employment. [4]

Many of the upstream determinants of health in our society cluster together and the "social-ecological framework" helps to understand how these cumulative impacts could lead to poor health outcomes. For example, low-income people tend to live in low-income neighborhoods, with more crime, fewer grocery stores, more liquor stores, and fewer parks.

Health inequities are those differences in health for particular groups of people that are unnecessary, avoidable, unfair, and unjust. [5] These are the poor health outcomes that cannot be changed simply by telling people not to smoke, or by opening up more clinics. Our ability to eliminate health inequities requires that we address the upstream determinants of health. If we truly wish to improve the health of our community, the Public Health Division must work closely together with Berkeley's residents, schools, community-based organizations, policymakers, and many other agencies to achieve greater social justice and a healthier environment for all.

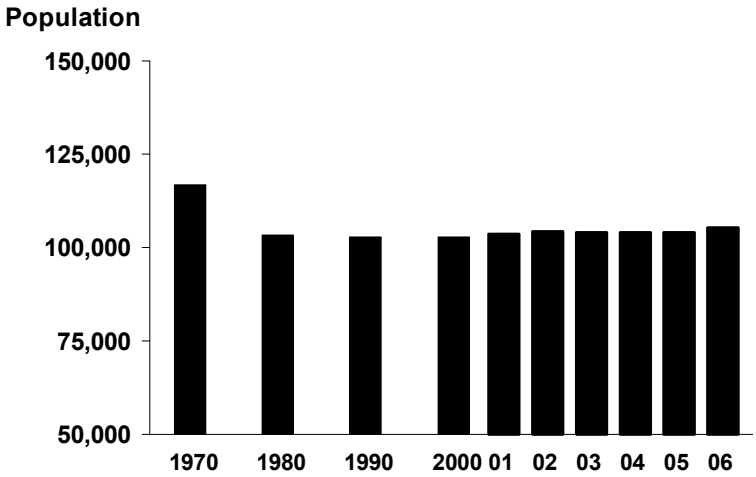
Highlights

- Berkeley has a diverse and highly educated population
- Berkeley has inequities in income, education, access to health care, and other health determinants. These inequities are not unique to Berkeley and occur across the region, state, and nation, and most often impact African Americans.
- Berkeley's population is aging and income inequality is growing, which impacts Berkeley's different race/ethnic groups in different ways.

Population

The total population of Berkeley has been stable over the last 2 decades and is currently estimated at about 105,000.

Figure 1.2 – Population of City of Berkeley, 1970-2006



Source: 1970, 1980, 1990, 2000 US Census (population counts)
Cal. Dept. of Finance, 2001-2006 (estimated population)

Social Determinants of Health: Environment

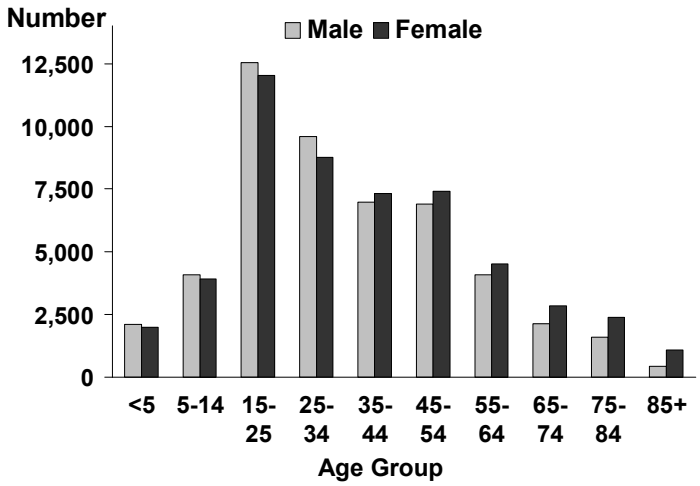
The environment is everything around us – the air we breathe, the food and water we consume, and the space we live in. It's also the chemicals, radiation, microbes, and physical forces with which we come into contact. The environment plays an important role in human development and health. Researchers have linked exposures to environmental hazards with specific diseases including cancer, lung disease, and child development.[6, 7] Others have linked exposure to certain social and physical environments with health-related outcomes such as high poverty areas with mortality, residential segregation with infant mortality, and neighborhood violence with stress and hypertension.[8-11]

Environmental influences also come in the form of billboards advertising alcohol targeting youth and social norms such as, "smoking is cool." Therefore, it is especially important to safeguard the health of populations and communities that are particularly vulnerable (such as the poor, children, elderly, disabled, and sick) from all types of hazards,[12] and to work actively to create "opportunity structures:" neighborhood or community attributes that allow residents to live a healthier lifestyle.[13-15]

Age

The age distribution is highly influenced by the university; adolescents and young adults comprise 25% of the population. Females outnumber males in older age groups.

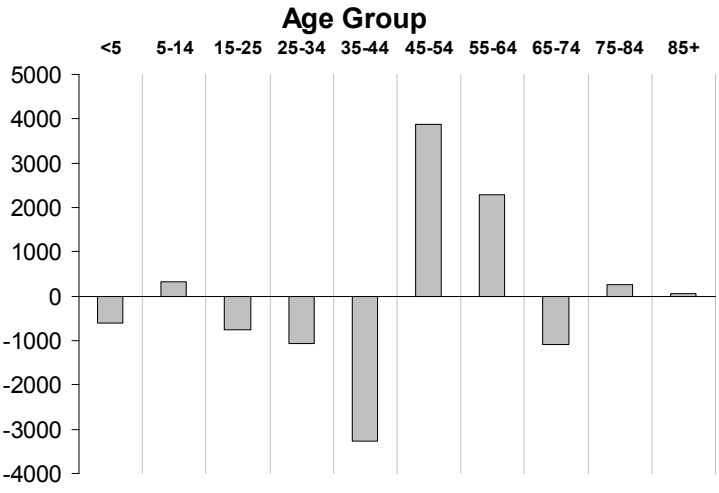
Figure 1.3 – Population by Age and Gender, Berkeley, 2000



Source: U.S. Census, 2000

Although the size of Berkeley's population was constant from 1990 to 2000, there was a net loss of residents aged 44 years and younger and a net gain of residents aged 45 years and older, especially baby boomers.

Figure 1.4 – Population Gains/Losses in 2000 from 1990 Baseline by Age, Berkeley, 2000

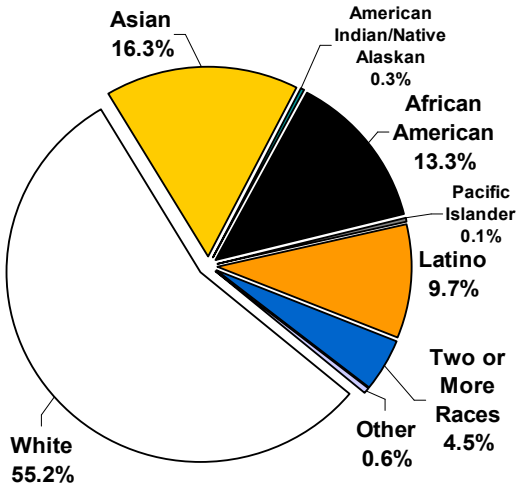


Source: U.S. Census, 2000

Race/Ethnicity

Whites make up 55% of Berkeley's population and people of color make up 45%

Figure 1.5 – Race/Ethnicity, Berkeley, 2000



Source: U.S. Census, 2000

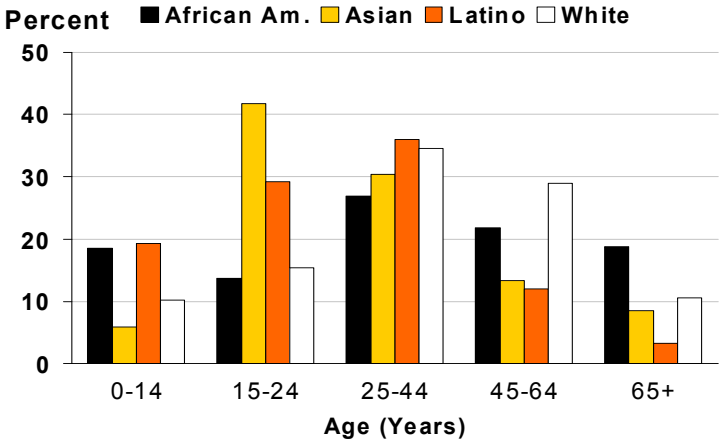
Social Determinants of Health: Race and Racism

Nationwide, there continue to be significant differences in life expectancy, disease, and functional status between White and populations of color despite improvements overall.[16,17] Racial/ethnic groups experience higher rates of disease and health risk because of complex interactions among socioeconomic, psychosocial, behavioral, and health care-related factors.[18-20] Racial/ethnic groups also have less access to the health care system, and often experience lower quality of medical care than Whites.[21] One reason for these poor health outcomes is that race and ethnicity are major determinants of every indicator of socioeconomic position. African Americans are disadvantaged in terms of education, but even given the same education, have lower incomes than Whites. But even after considering income, African American men and women have lower life expectancies than White men and women at every income level.[22-24]

Poor health outcomes are further exacerbated by the effects of racism, discrimination, and social exclusion.[25] Racism affects health inequities through restricted access to better education and income, segregation by race in environments with more pollution, crime, and poor-quality housing, and chronic stress that undermines mental and physical health in many ways.[26-28]

The age distribution varies by race/ethnicity. African Americans and Latinos have more young children. The university likely influences the large number of 15-24 year olds and Asians of that age in particular. Among African Americans, there are fewer working age people and more elderly than in other groups.

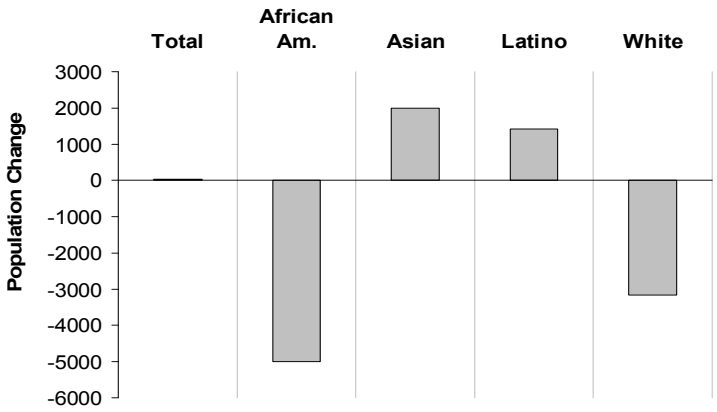
Figure 1.6 – Population by Age and Race/Ethnicity, Berkeley, 2000



Source: 2000 US Census

The number of African Americans and Whites decreased from 1990 to 2000, and the number of Latino and Asian residents increased.

Figure 1.7 – Population Gains/Losses in 2000 from 1990 Baseline by Race/Ethnicity, Berkeley, 2000



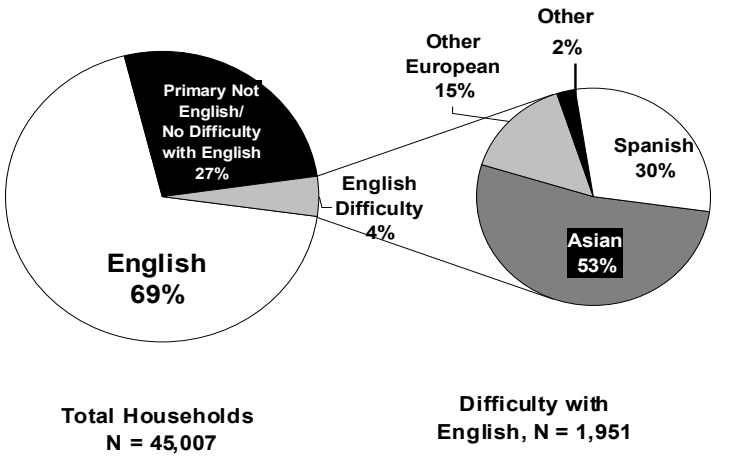
Source: 2000 US Census

Language/Difficulty with English

Over 30% of Berkeley households speak primarily a non-English language. In 4% of households, no one over 14 speaks fluent English.

*See Technical Notes for Census Definition.

Figure 1.8 – Language Spoken at Home and Difficulty with English, Berkeley, 2000



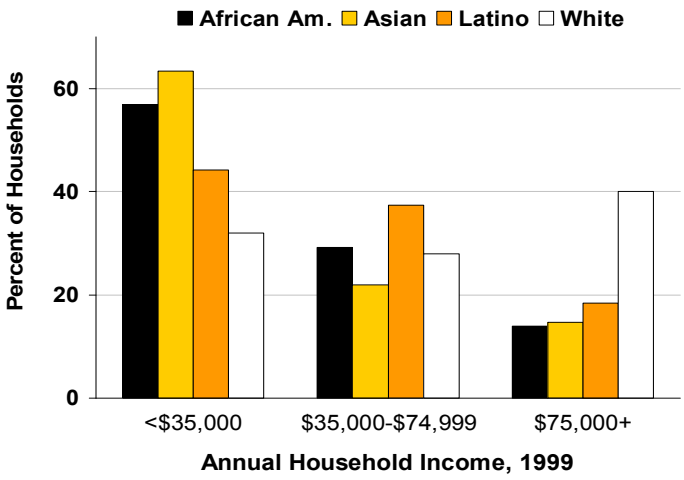
Source: U.S. Census, 2000

Income and Poverty

In 1999, the median income of Whites was twice that of African Americans. A large number of Asian households include university students who are not in the labor market.

Compared to every dollar of income earned by White residents, African Americans earn 50¢ and Latinos earn 68¢.

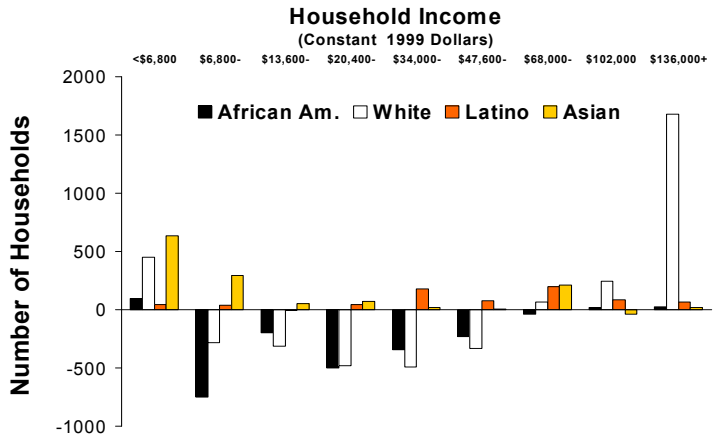
Figure 1.9 – Distribution of Households by Income and Race/Ethnicity, Berkeley, 1999



Source: U.S. Census, 2000

There were fewer low and middle income African American and White households in 2000 than 1990. The number of the poorest and richest households increased.

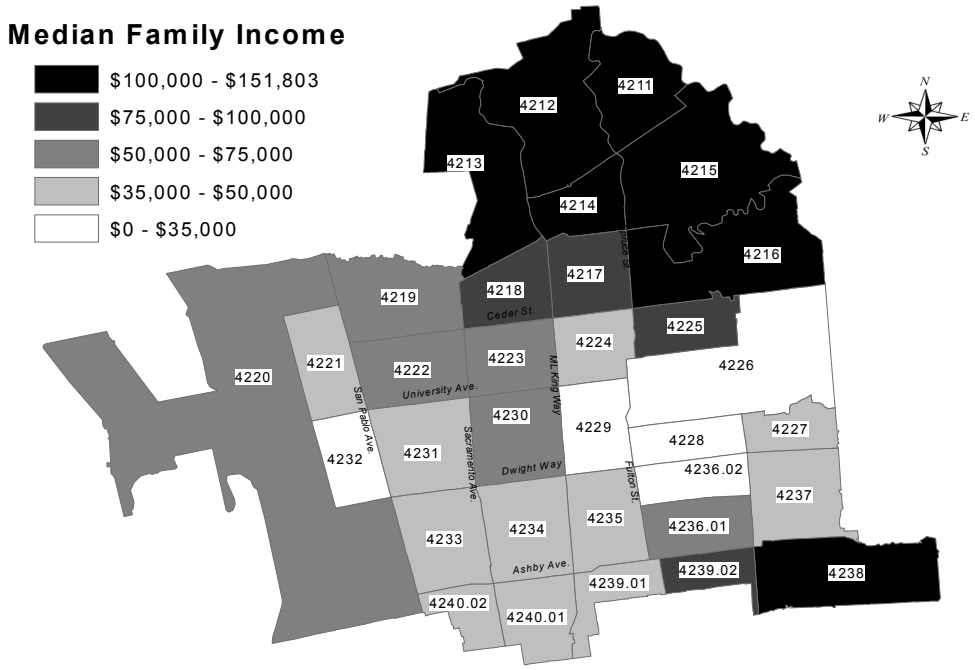
Figure 1.10 – Gains/Losses of Households in 2000 from 1990 Baseline by Household Income and Race/Ethnicity of Householder, Berkeley



Source: U.S. Census, 1990, 2000

People living in the Berkeley Hills have the highest median income, and, except for student-oriented census tracts next to the University of California, census tracts in South and West Berkeley have the lowest median incomes.

Map 1.1 – Median Family Income by Census Tract, Berkeley, 1999



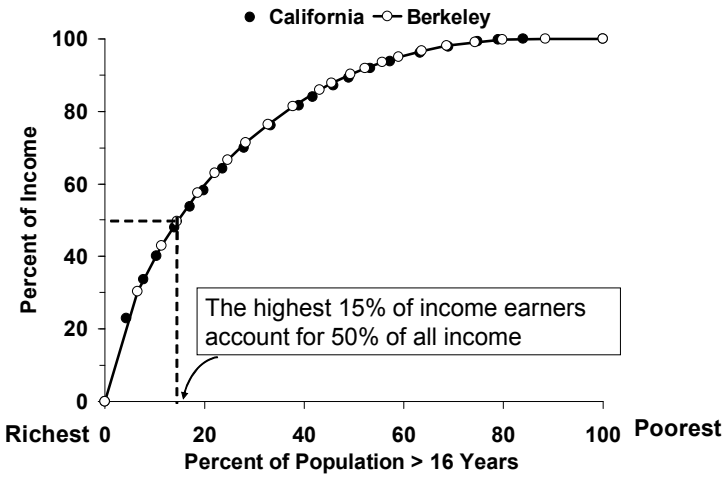
Source: U.S. Census, 2000

"The reduction of socioeconomic and racial/ethnic disparities in health depends most on social changes and public policies that reduce disparities in socioeconomic and racial/ethnic status or, more exactly, ensure that all citizens live under conditions that protect against disease and promote health."

- House and Williams 2003 [29]

Both in California and Berkeley, the 15% of the population with the highest incomes account for 50% of all income. The 50% of the population with the lowest incomes account for only 12% of income generated by Berkeley residents.

Figure 1.11 – Income Inequality, Berkeley and California, 1999



Source: 2000 US Census

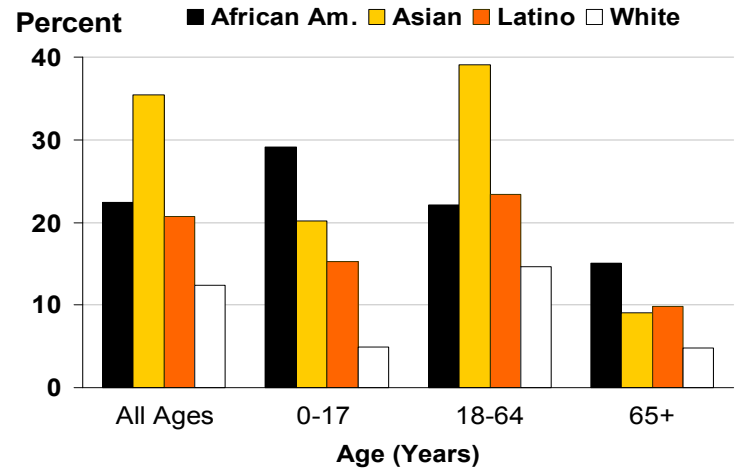
Social Determinants of Health: Poverty

All over the world, poverty and income inequality lead to worse health outcomes and higher death rates.[30] Not only do the very poorest people have the worst health, but there is a gradient of poor health and mortality that cuts across all income levels – so the upper middle class has better health than the lower middle class, which has better health than the working poor.[31] People living in poverty have limited access to protective resources such as healthy food, physical activity resources, adequate housing, education, transportation and health care.[32-35] The poor also have fewer housing options, live in some of the most under-resourced neighborhoods, and frequently rent units in sub-standard buildings under conditions that worsen their health.[36] These conditions, alongside the psychological impacts of powerlessness and lack of control over life situations, make the poor vulnerable to chronic stress and risk-taking behaviors, injuries, preventable diseases and early death.[37, 38]

Twenty percent of Berkeley residents live in poverty. Proportionately more African American and Latino children live below the poverty level than White children. Also, proportionately more African American seniors live below the poverty level than other groups.

Nearly 30% of African Americans living in poverty are children 0-17.

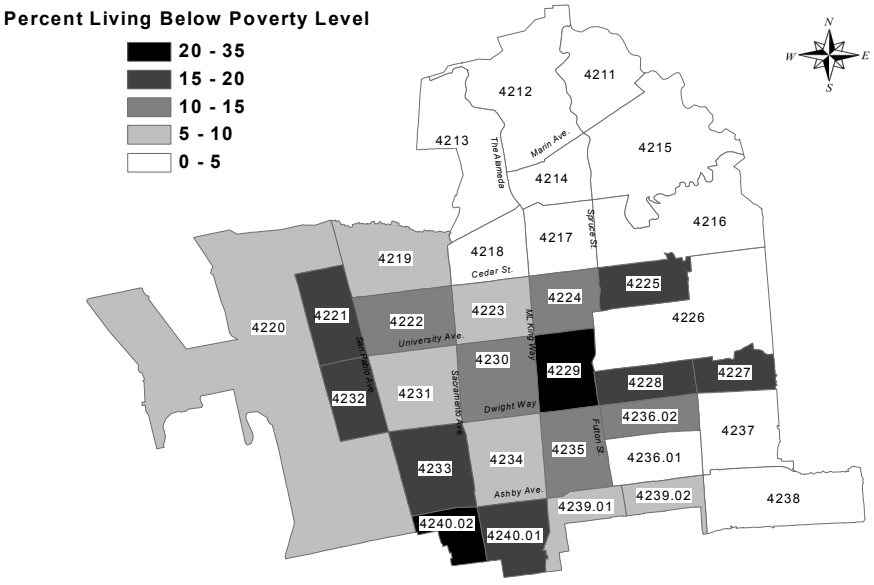
Figure 1.12 – Percent of Population Below the Poverty Level in 1999 by Age and Race/Ethnicity, Berkeley



Source: 2000 US Census

The proportion of families with incomes below the poverty level is highest in the southern and western census tracts of Berkeley. In Central Berkeley (census tract 4229), the high level of poverty is due to the high concentration of temporarily low-income university and college students.

Map 1.2 – Percent of Families Living Below the Poverty Level by Census Tract, Berkeley, 1999



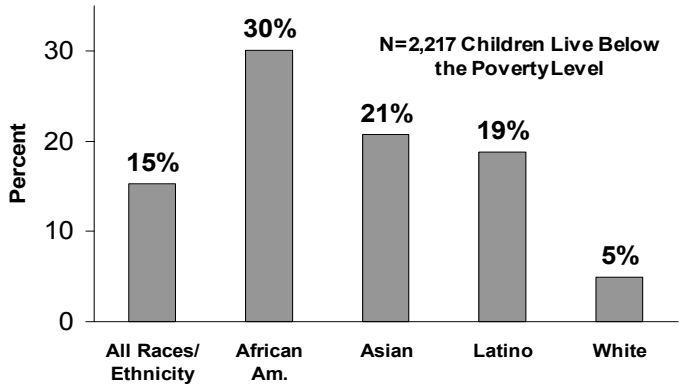
Source: U.S. Census, 2000

Children in Poverty

Over 2,200 children live in poverty. The poverty rate in African American children is 6 times higher than in White children.

30% of African American children are poor.

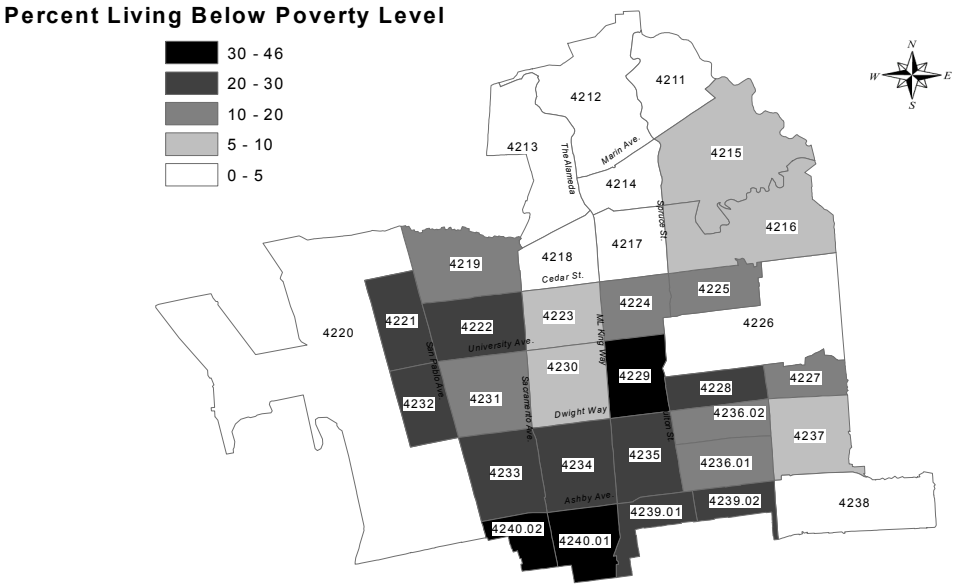
Figure 1.13 – Percent of Children Below the Poverty Level by Race/Ethnicity, Berkeley



Source: US Census, 2000

In some south and west Berkeley neighborhoods, as many as 32% of children live in poverty.

Map 1.3 – Percent of Children Living Below the Poverty Level by Census Tract, Berkeley, 1999

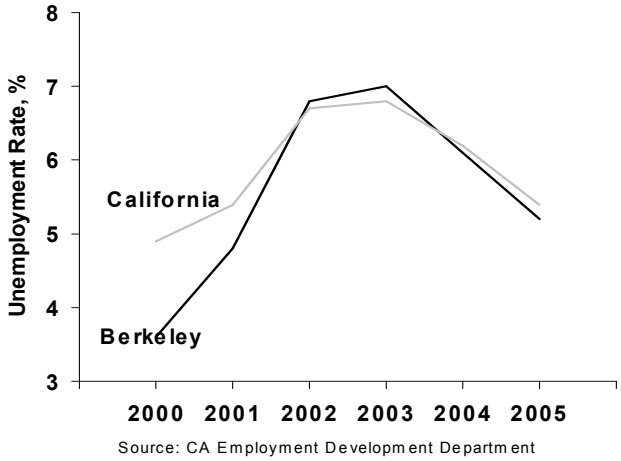


Source: U.S. Census, 2000

Employment

Berkeley had about 60,200 people in the labor force in 2005, of whom 3,100 were unemployed.

Figure 1.14 – Unemployment Rate, Berkeley and California, 2000-2005



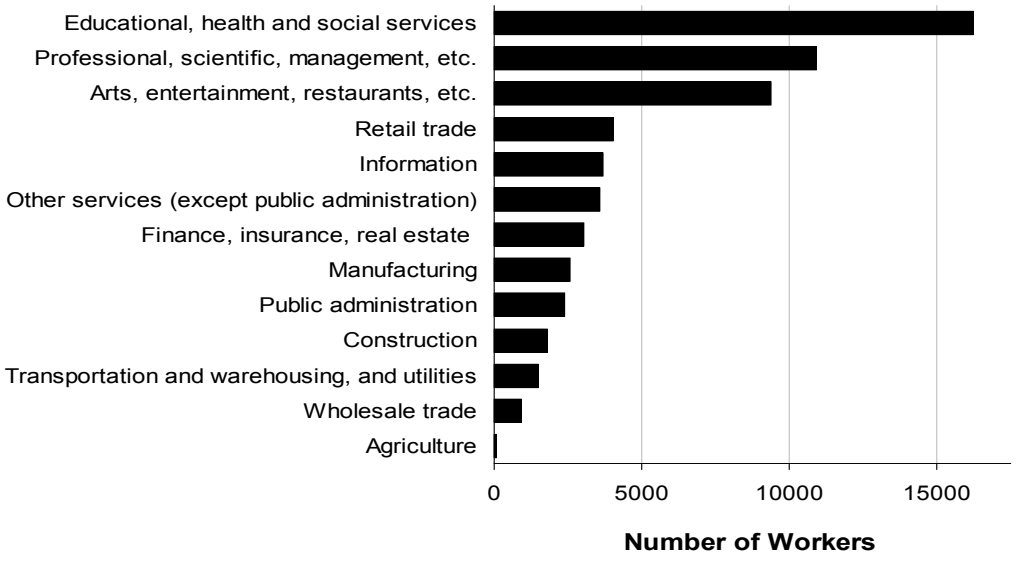
Source: CA Employment Development Department

Program Highlight: First Source and YouthWorks

The Employment Programs Division's First Source program promotes development of employment opportunities and helping local employers find qualified workers. YouthWorks helps young people ages 14 – 25 to transition to the adult working world. The Summer Youth Employment Program matches youth with appropriate jobs, conducts job-readiness workshops and collaborates with groups that provide youth services.

Jobs in education, health care, and professional, scientific, and arts and entertainment industries account for 61% of employment. Few jobs are available in traditional, "blue-collar" industries such as manufacturing and construction.

Figure 1.15 – Industry of Employed Population, Aged 16 Years and Over, Berkeley, 2000



Source: U.S. Census, 2000

Program Highlight: Community Health Worker Training Program

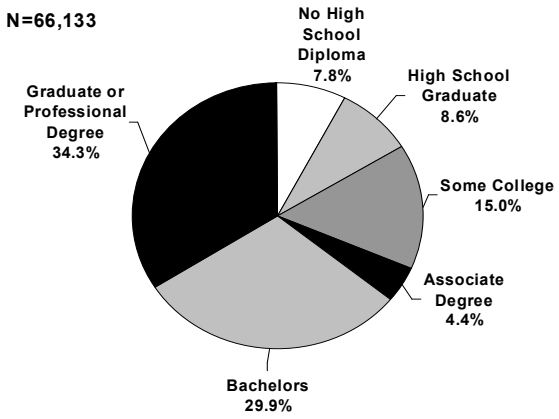
Community Health Workers (see picture above) – sometimes known as lay health workers or *promotores* - are members of the community and learn how to assist members of their own community in many ways such as: assistance with getting health insurance, help with learning how to eat healthier foods, teaching children how to better control their asthma, organizing for anti-smoking ordinances, and advocating for health policies that promote health for their communities.

This program provides health-related educational and professional opportunities for at-risk youth in Berkeley.

Education

Approximately 85% of Berkeley residents over age 25 attended college and 64% have a bachelors, graduate or professional degree.

Figure 1.16 – Educational Attainment of Population Aged 25 and Older, Berkeley, 2000



Source: U.S. Census, 2000

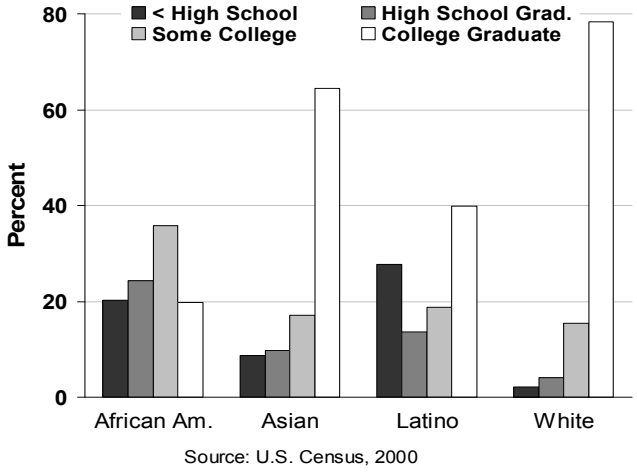
Social Determinants of Health: Education

There is a strong, positive relationship between education and health that is well-documented.[39] The more education a person gets, the better his/her health. It also appears that more education may actually reduce the risk of death.[40] Possible explanations are that education may make people better decision-makers,[41] that educated people can understand and have access to information about health,[42] and that a higher educational status improves financial resources and overall income that may help to pay for protective resources such as health insurance and health care.[39] Finally, educated parents can influence their child's academic success. Educated and professional parents increase their children's vocabulary and encourage their children more than parents who have lower education and are on welfare.[43]

Whites are 4 times more likely to be college graduates than African Americans.

A separate analysis of race and educational attainment found that African Americans in Berkeley are more likely to have a college degree than African Americans in California.[44]

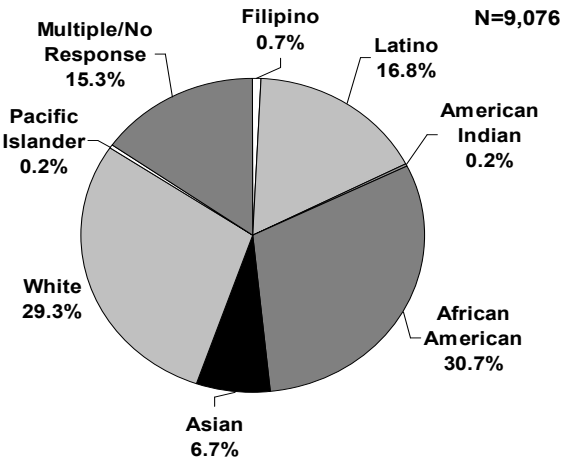
Figure 1.17 – Educational Attainment of Population Aged 25 Years and Older by Race/Ethnicity, Berkeley, 2000



Source: U.S. Census, 2000

In the 2005-6 school year, 9,076 students were enrolled in kindergarten through 12th grade in the Berkeley Unified School District (BUSD). African Americans make up a larger fraction of the BUSD student population than the child population as a whole (31% vs. 23%); there are fewer White students than there are Whites in the total population (29% vs. 45%). This reflects enrollment of students from other cities in BUSD and enrollment of White students in private schools.

Figure 1.18 – Students Enrolled in K-12 Grades by Race/Ethnicity, Berkeley Unified School District, 2005-6



Source: Berkeley Unified School District

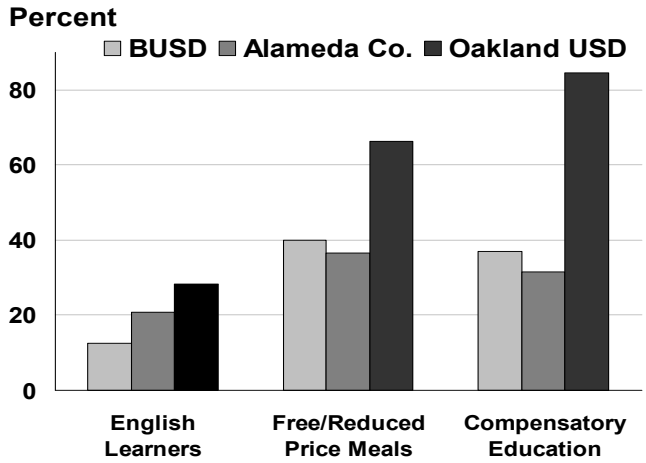
Program Highlight: School-Linked Health Services Program

School Linked Health Services (SLHS) was created to support interagency collaboration between the Berkeley Unified School District (BUSD) and Health & Human Services, as the school district works with community partners to address barriers to learning. SLHS is working to enhance the capacity of the Public Health Division and the school district to provide health services to elementary aged youth and to facilitate collaboration among programs. Currently this includes partnering to create a school based, multi-agency referral system; an initial assessment of unmet health needs and resources in BUSD; seeking opportunities for parent education and engagement; health consultations; policy recommendations and strengthening coordination of Public Health Division programs working in schools.

In the 2005-6 school year, over 40% of Berkeley students participated in special programs for English learners and for the economically disadvantaged.

See Technical Notes for definitions of these Special Programs

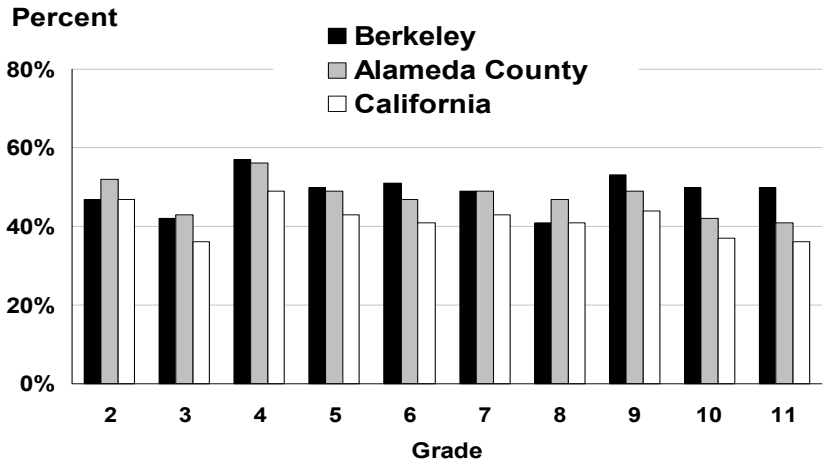
Figure 1.19 – Percent of K-12 Students Participating in Special Programs, BUSD and Alameda County, 2005-6



Source: California Dept. of Education

Approximately 43% to 58% of 2nd to 11th grade Berkeley students are **not** proficient in reading on the California Standardized Test.

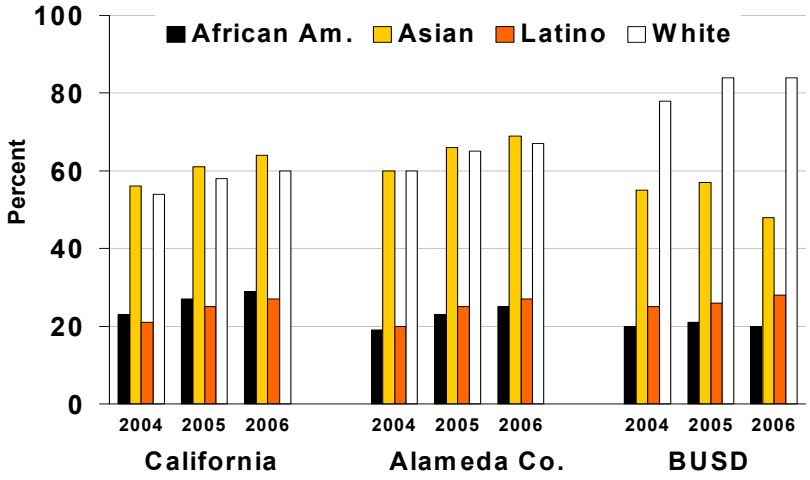
Figure 1.20 – Students Scoring Proficient or Above on California Standardized Test for Reading, Berkeley Unified School District, Alameda County, and California, 2005-6



Source: Berkeley Unified School District

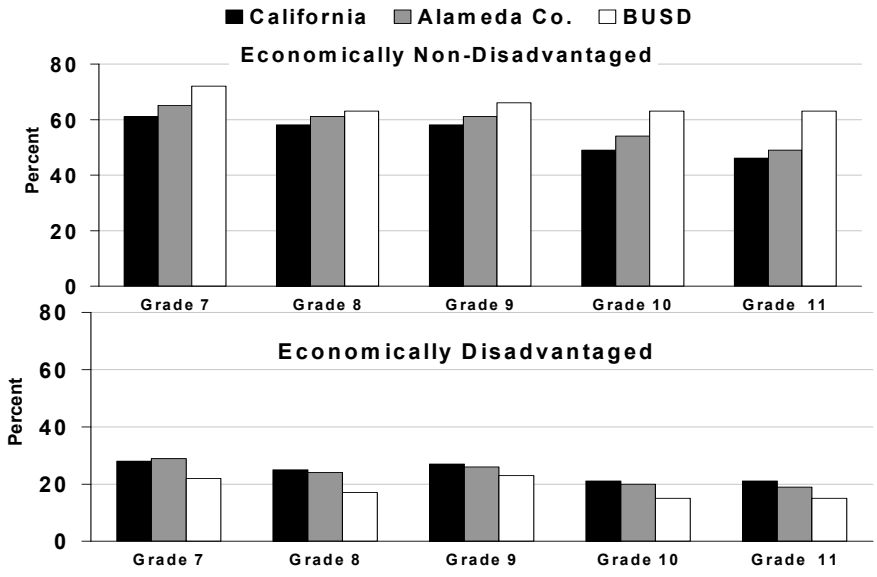
The following figures show the level of English-language arts (ELA) proficiency of all students in Berkeley according to their test scores on the 2004, 2005 and 2006 California Standards Test (CST). The first figure shows that African American and low income children in Berkeley do not score as well as White children and those with higher incomes. Compared to average test scores for Alameda County and California, Berkeley students with higher incomes have higher scores and low income Berkeley children have lower scores.

Figure 1.21 – Percent Proficient or Above in English Language Arts by Race/Ethnicity, Berkeley Unified School District, Alameda County, and California, 2004-2006



Source: California Dept. of Education, CST English Language Arts, 2nd-11th grades combined

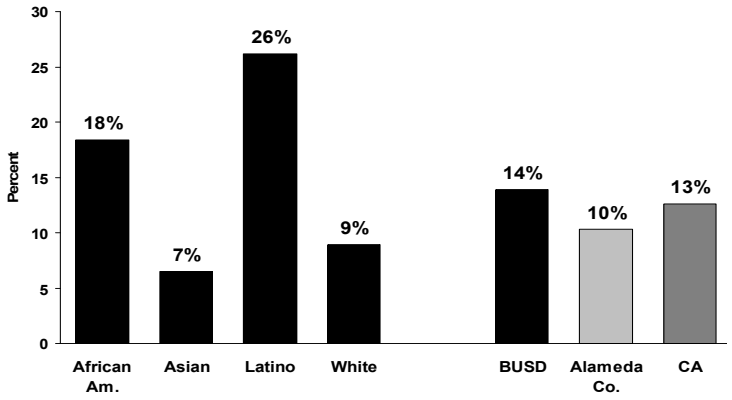
Figure 1.22 – Percent Proficient or Above in English Language Arts by Poverty Level, Berkeley Unified School District, 2005-6



Source: California Dept. of Education, CST English Language Arts

The rate of students not graduating from Berkeley High School ("4-year drop-out rate") was 13.9% in 2005-6. 1 in 4 Latino and 1 in 5 African American students did not graduate from high school.

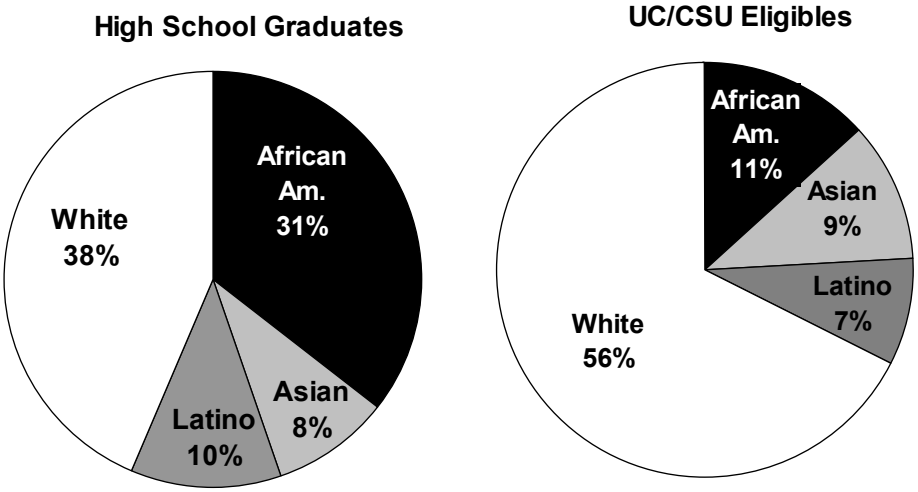
Figure 1.23 – Percent Non-Graduating Students by Race/Ethnicity, Berkeley Unified School District, Alameda County, and California, 2005-6



Source: Berkeley Unified School District

Nearly one-third of Berkeley High School graduates are African American, but only 11% of students eligible for admission at the University of California/California State University system are African American.

Figure 1.24 – High School Graduates and UC/CSU Eligibles by Race/Ethnicity, 2004-2006



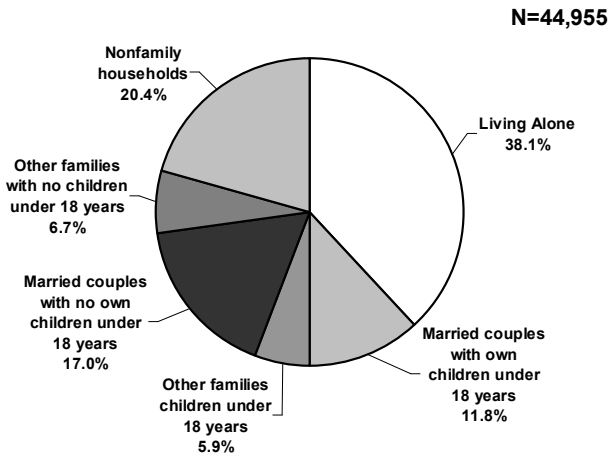
Source: Berkeley Unified School District

Housing

The U.S. Census counted 44,955 households in Berkeley. Many people live alone; married couples and other families make up 42% of households.

About half of the population rents and the other half lives in housing they own (most in single unit structures).

Figure 1.25 – Household Type and Presence of Children, Berkeley, 2000



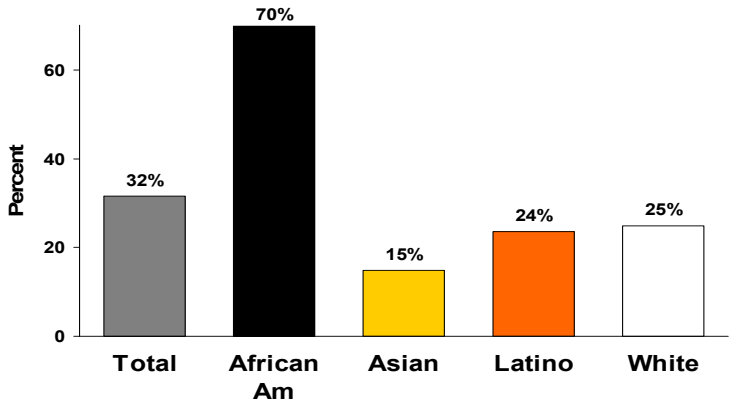
Source: U.S. Census, 2000

Social Determinants of Health: Housing & Homelessness

Poor quality housing and homelessness are associated with a range of health conditions such as respiratory infections, asthma, lead poisoning, tuberculosis, and injuries.[45] Overcrowded housing conditions are associated with absence of hot water for washing, ineffective waste disposal, infestation by insects and rats, and inadequate food storage.[45] Homelessness is a major public health concern. In Alameda County, as many as 16,000 people are homeless during the course of a year and more than 6,000 are homeless on any given night.[46, 47] In 2003, a survey of Berkeley homeless estimated between 500-800 adults and up to 50 children were homeless on the day of the interview.[46, 48] Many people experiencing homelessness have disabilities, and thousands more with serious and persistent mental illness and/or HIV/AIDS are living in insecure and unstable situations. Many homeless adults also have serious alcohol and drug problems, mental illness, and high rates of diabetes and hypertension.

There are over 8,300 households in which one or both parents live with children under the age of 18 years. African Americans have the highest percentage of single-parent households and Asians have the lowest.

Figure 1.26 – Percent of Single Parent Households with Children Under 18 Years of Age by Race/Ethnicity of Parent, Berkeley, 2000

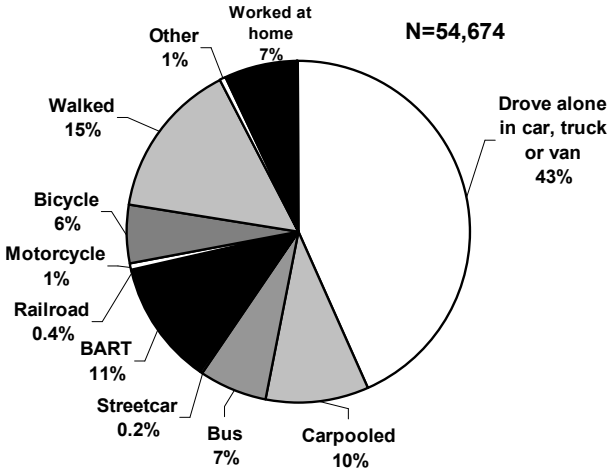


Source: U.S. Census, 2000

Transportation

Most Berkeley residents drive to work. Nearly 20% use mass transit (bus, BART, railroad). Over 40% spend 30 or more minutes commuting daily to work, and 30% of those over 16, work outside of Alameda County.

Figure 1.27 – Means of Transportation to Work for Workers 16 Years and Older, Berkeley, 2000

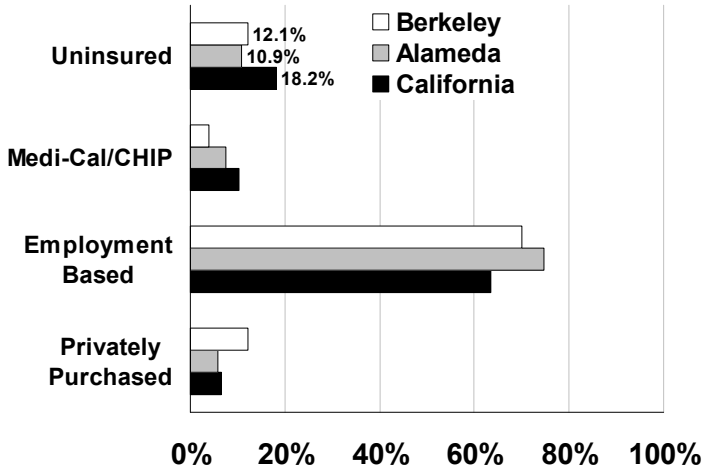


Source: U.S. Census, 2000

Health Insurance

Twelve percent of adults between 18 and 64 years (about 8,700 people) were uninsured in 2001.

Figure 1.28 – Type of Current Health Coverage Source (18 to 64 Years Old), Berkeley, Alameda Co., California, 2001



Source: California Health Interview Survey, 2001

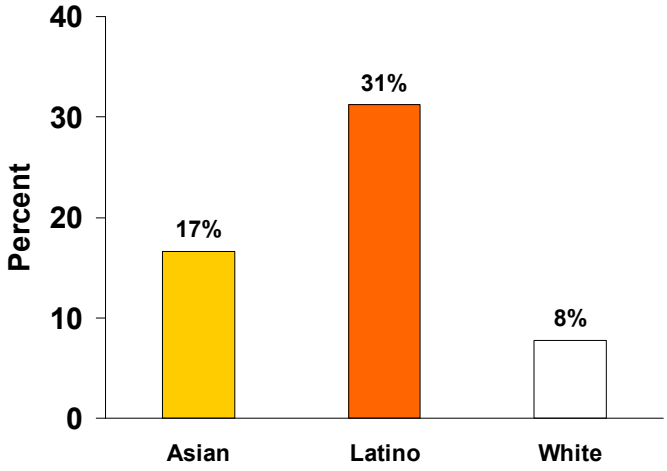
Social Determinants of Health: Health Care Access

Insurance coverage is one of the key determinants of timely, reliable access to health care services because it helps to remove barriers to health care providers and assists with the high cost of health care. Many people have limited or no access to health insurance.[17] As a result, they are significantly less likely to receive regular care from a medical provider who can help manage a chronic illness and facilitate access to preventive care. Those without insurance are also less likely to have medications they need to treat their condition, or a medical provider that is linguistically and culturally competent.[17] Despite its importance, access to health insurance will not, by itself, reduce inequities in health.

Latinos were less likely than other groups to have insurance coverage.

The percent uninsured for African Americans is not reported because there were too few responses to be statistically reliable.

Figure 1.29 – Uninsured Adults (18 to 64 Years Old) by Race/Ethnicity, Berkeley, 2001



Source: California Health Interview Survey, 2001

Program Highlight: El Centro

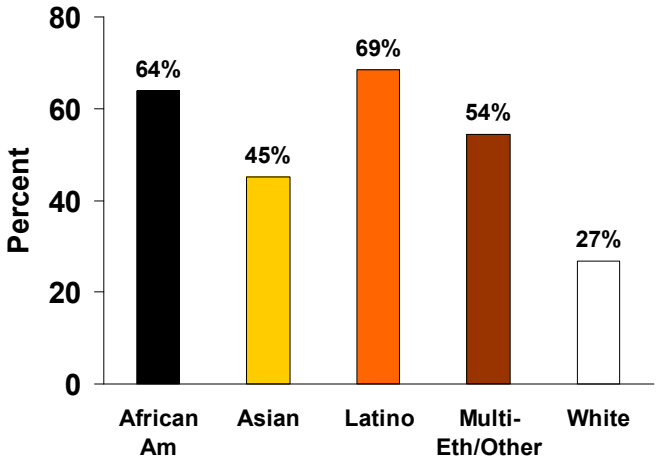
El Centro works to improve access to medical care for the Spanish-speaking population through outreach and assistance with completion of Medi-Cal /Healthy Families and Kaiser Child Health Plan applications.

El Centro es un recurso en la comunidad para mejorar el acceso a cuidado médico para los que hablan español. Se ofrece ayuda con las aplicaciones para seguro médico (Medi-Cal / Healthy Familias y Kaiser Child Health Plan).

Inequities in Risk Factors

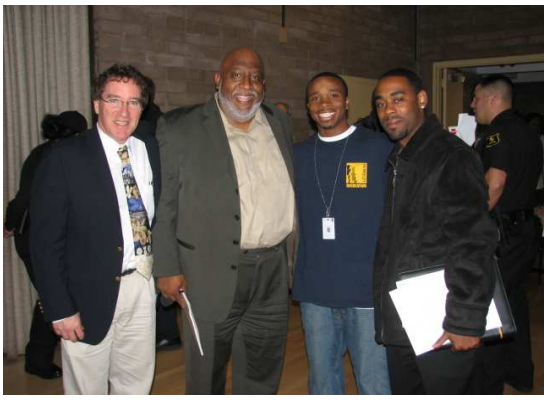
Risk factors for poor health outcomes are more prevalent among African American and Latino adults than other race/ethnic groups.

Figure 1.30 – Adults with 3 or More Risk Factors for Poor Health Outcomes by Race/Ethnicity, Berkeley, 2001 (Poverty, no health insurance, high school or less education, smoking, binge drinking, no exercise, low intake of fruits and vegetables, obesity)



Source: California Health Interview Survey, 2001

Picture of Community Meeting on Violence Prevention in South Berkeley with Elected officials, City Staff and community members.



Social Determinants of Health:

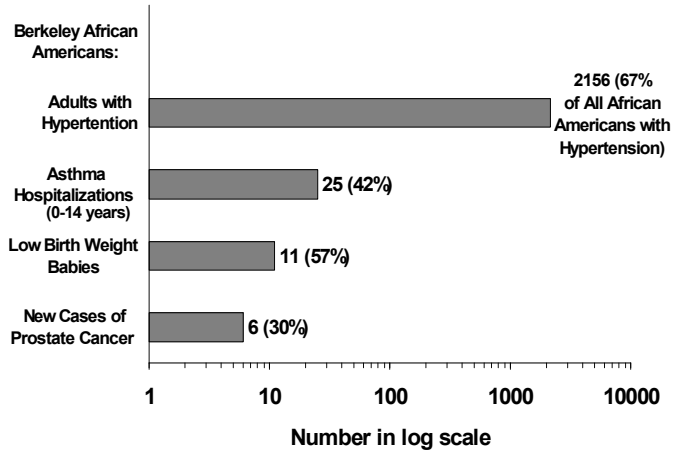
Neighborhood Influences on Behavioral Risk Factors

Use of alcohol, tobacco, and drugs, obesity, lack of exercise, and poor diet are more prevalent in residents of poor neighborhoods.[10,49] Some risk behaviors (like smoking) may be adaptive responses that help people better cope with the stress of adverse living conditions, racism, and poverty.[50] Unsafe streets and parks in poor neighborhoods can prevent outdoor exercise. Limited access to healthy foods at affordable prices by local food retailers contributes to inadequate diets, as does the ready availability of cheap and convenient candy, soda and fast food.[51,33] An abundance of alcohol retail outlets makes alcohol more available, even to underage drinkers;[52] and marketing tactics by tobacco and alcohol companies and the food and beverage industry increase the appeal of these harmful products and often target minority youth and communities of color.[53]

Inequities in Health Outcomes

If African Americans in Berkeley had the same health status as Whites, a large proportion of the poorer health outcomes, illness, and hospitalizations in African Americans would not occur.

Figure 1.31 – Inequities in Selected Health Outcomes: If Berkeley African Americans had the same health status as Berkeley Whites, how many poor health outcomes would NOT occur each year in Berkeley African Americans?

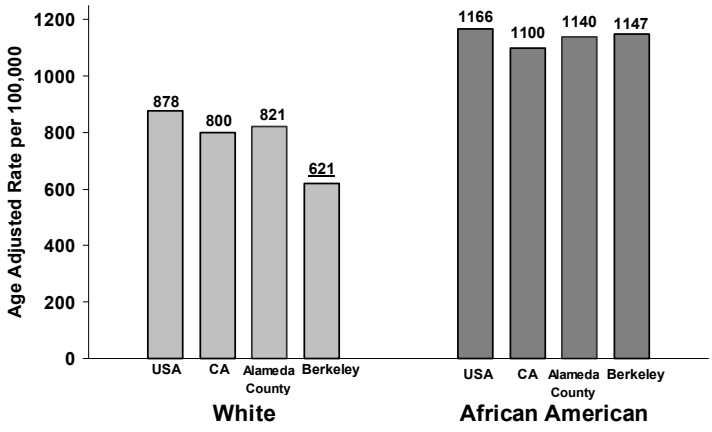


Source: Berkeley Public Health Division birth certificates, Office of Statewide Health Planning and Development, CHIS 2001, U.S. Census, 2000

Mortality Inequities

African Americans have much higher death rates than Whites, a pattern similar across Alameda County, California and the U.S.

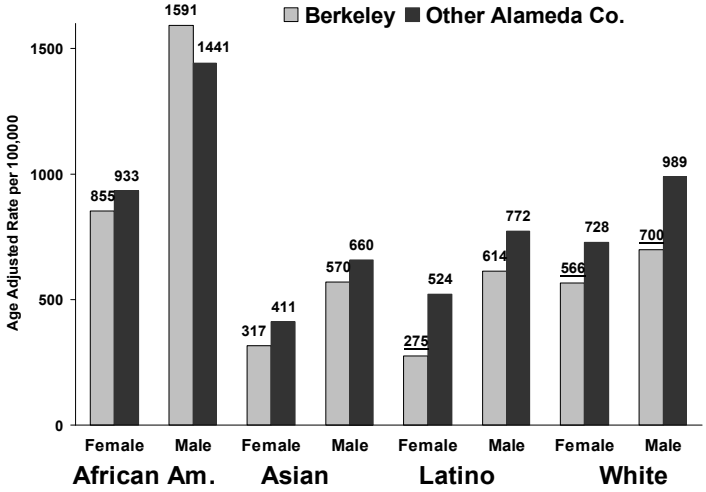
Figure 1.32 – White and African American Mortality Rates, United States, California, Alameda County, Berkeley, 2000



Source: Death Certificates, 1999-2001 (Annual Ave.), US Census, 2000

Berkeley Whites and Latina women have much lower death rates than their counterparts in the rest of Alameda County.

Figure 1.33 – Deaths by Gender and Race/Ethnicity, Berkeley and Other (non-Berkeley) Alameda County, 1999-2001



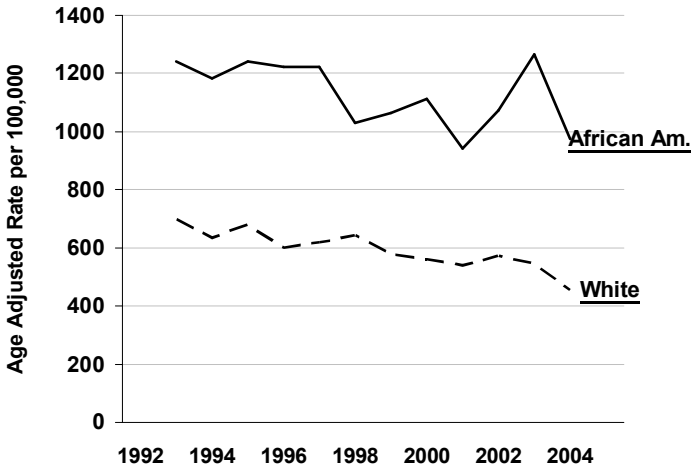
Source: Death Certificates, 1999-2001 (Annual Ave.), US Census, 2000

Health Inequities: Deaths in Berkeley

Throughout the industrialized world, mortality has been closely associated with income and race.[47] Berkeley has a mortality gap between Whites and African Americans that is even greater than that found in Alameda County or the U.S. One reason the difference is so great in Berkeley is that the White population in Berkeley has a much lower death rate than Whites in other parts of the County. This is likely related to the relatively high income and education levels of Berkeley's White population.

Though mortality rates are decreasing overall, disparities between White and African American rates are holding constant over time.

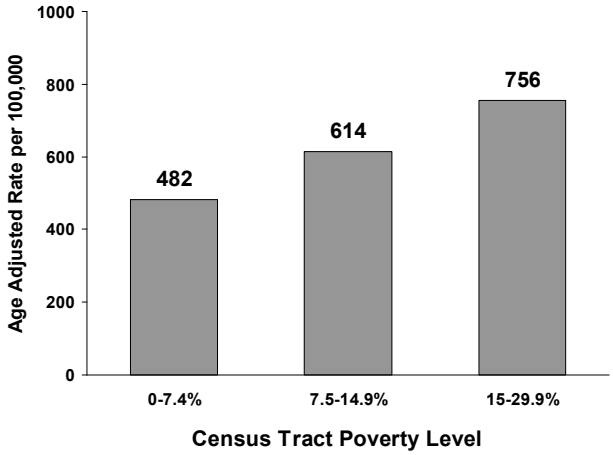
Figure 1.34 – Mortality Rates in Whites and African Americans by Year of Death, Berkeley, 1993-2004



Source: Berkeley Public Health Division Death Certificates, US Census, 2000

Poor neighborhoods (census tracts with a higher percent poverty level) have almost twice the mortality rate as neighborhoods where fewer people live in poverty.

Figure 1.35 – Mortality Rate by Poverty Level, Berkeley, 1999-2001



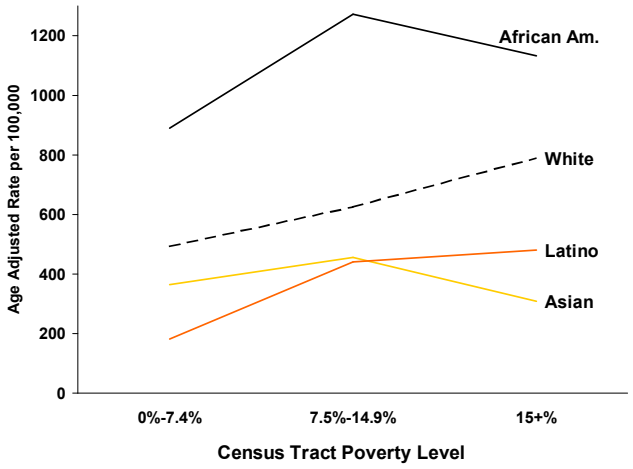
Note: The trend is statistically significant
Source: Berkeley Public Health Division Death Certificates, 1999-2001 (Annual Ave.), US Census, 2000

Program Highlight: South and West Berkeley Community Action Team

In 1999, The City of Berkeley Health Status Report released staggering statistics on ethnic and racial health disparities in the South and West Berkeley communities. In response, Community Action Teams (CAT) were established in both South and West Berkeley. The South and West Berkeley CAT is made up of local residents and built on an asset-based model of prevention using capacity-building methods. Its mission is to take action on neighborhood health issues that represent inequities. One of its charges is to recruit members who are least likely to participate in community organizing efforts and teach them a proactive way to effect positive change in the communities where they reside (see picture below of members at a CAT-organized Luau).

At every poverty level, African Americans have higher death rates than all other race/ethnic groups.

Figure 1.36 – Mortality Rate by Race/Ethnicity and Poverty Level, Berkeley, 1999-2001

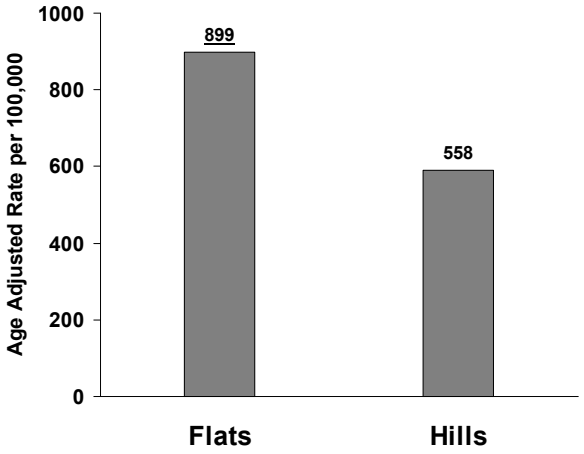


Source: Berkeley Public Health Division Death Certificates, 1999-2001 (Annual Ave.), US Census, 2000

The mortality rate in the Berkeley flatlands is much higher than the mortality rate in the hills.

See Technical Notes for how we defined and measured hills versus flats.

Figure 1.37 – Mortality Rate by Hills vs. Flats, Berkeley, 1999-2001



Source: Berkeley Public Health Division Death Certificates, 1999-2001 (Annual Ave.), US Census, 2000

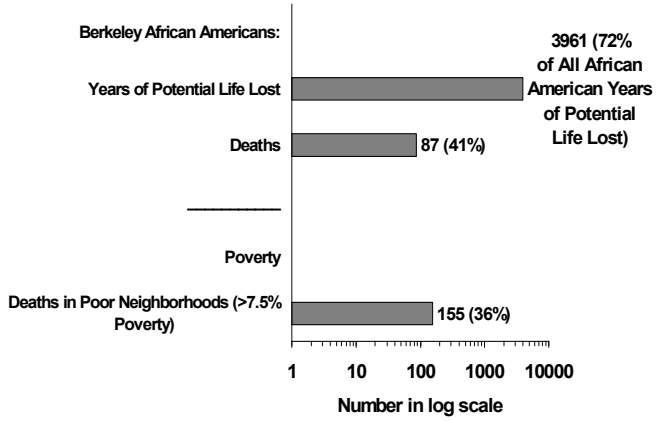
Program Highlight:

Community Health Action & Assessment Section (CHAAS)

CHAAS conducts data analysis using formal research methods and community assessments to report on the health of Berkeley residents. It also conducts evaluation of Public Health Division programs. CHAAS partners with residents, community-based organizations and City agencies to address health inequities in low-income residents in South and West Berkeley. Current initiatives include: 1) Youth Engagement and Policy Action, and 2) Public Health Preparedness.

If poverty and racial and ethnic inequities could be eliminated, the annual number of deaths would be reduced by at least one-third.

Figure 1.38 – Inequities in Mortality: Annual Number of Avoidable Deaths and Years of Potential Life Lost If White/African American Inequities and Poverty Were Eliminated, Berkeley, 2000



Source: Berkeley Public Health Division death certificates, U.S. Census, 2000

Program Highlight: South & West Berkeley Health Forum

The Forum is a community-based collaborative that formed after the release of the 1999 Health Status Report that first identified health inequities in Berkeley. Its purpose is to bring people and organizations together to talk about health inequities and improve communication and collaboration among institutions, organizations and the community. In the past few years, the Forum has been a community resource and information clearinghouse, educating participants on the root causes of health inequities. It has been central to the success of the Berkeley Hypertension Program and other City-wide efforts to address health inequities. Membership includes the Mayor's Office, LifeLong Medical Care, Alta Bates, S&W Berkeley Community Action Team, UC Berkeley School of Public Health, Kaiser Permanente, and the Health & Human Services Department.

PUBLIC HEALTH PRIORITY:

A HEALTHY START FOR EVERY CHILD

"What happens during the first months and years of life matters a lot, not because this period of development provides an indelible blueprint for adult well-being, but because it sets either a sturdy or fragile stage for what follows." - Institute of Medicine, 2000 [54]

Very young children - from conception to the first day of kindergarten - are the most vulnerable members of our community. Early childhood development is highly influenced by a child's environment and relationships. In the first five years of life, children lay the foundation for all subsequent development in critical areas ranging from language and cognitive development to social, emotional, and moral capacity. Early experiences determine how brain cell connections form, and how a child will learn, behave, form relationships, and enjoy good health. Supportive and secure relationships in early childhood are key, and negative early experiences or the absence of appropriate stimulation can have serious and sustained effects. [55]

Children living in poverty are at greater risk of exposure to environments and experiences that contribute to adverse developmental outcomes. They are especially disadvantaged due to poor access to health care, high quality child care, decent housing and adequate nutrition, and to the added stress on their families and caregivers. Adverse social and economic circumstances lead to striking differences in what children know and can do even before they enter kindergarten.

Parents and other caregivers play a primary role in children's lives, and children's healthy development requires at least one close, nurturing relationship with an adult. Risk factors that may harm healthy child development include prenatal alcohol and drug exposure, maternal depression, exposure to violence, and abusive or neglectful care.

Early interventions that focus on ensuring healthy pregnancies and supporting healthy parent-child relationships are proven to be effective. For low income children, well-designed early childhood interventions can improve a wide range of outcomes, and have economic benefits for families, and savings in public costs.

Families alone - especially low income families - cannot ensure healthy child development. Schools, neighborhoods, workplaces, and governments must all come together to promote the well-being of every child, with a focus on creating healthy environments in which families can thrive and all children can grow up healthy - physically, developmentally, emotionally, and socially.

What can we do?
* Universal screening for risk factors for all pregnant women and young children
* Increase access to quality child care and early head start
* Increase access to services to support healthy parenting
* Address social and environmental conditions that adversely affect healthy child development
* Advocate for policy changes that address these issues.

II. PREGNANCY & BIRTH

The health of mothers and their babies is critical to the health of a community and future generations. Healthy infant, child and adult development depend upon health-enabling environments that support healthy parenting and child development, and minimize risk-taking behaviors, such as smoking, alcohol and other drug use, and late prenatal care. Key health outcomes and behaviors in this stage of the life-course are births, teen births, prenatal care, low birth weight, premature birth, maternal depression, and breastfeeding.

Highlights

- Disparities in timely prenatal care have disappeared
- Berkeley continues to have one of the lowest teen birth rates in California, though births to African American teens are higher than in other groups
- African Americans continue to have far higher rates of low birth weight infants and premature births as compared to all other race/ethnic groups
- Berkeley has a high percentage of infants exclusively breastfed.

Births

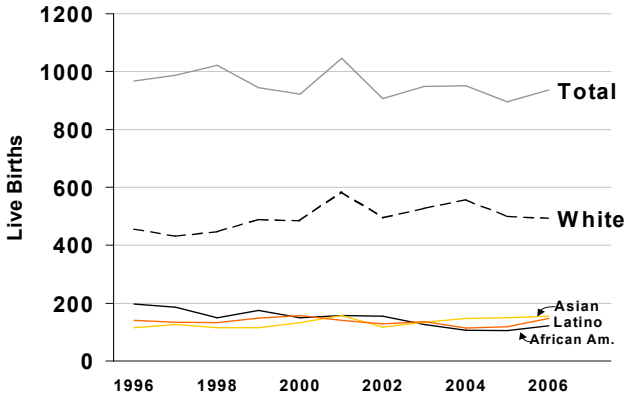
Why is This Important?

The nature and characteristics of births in Berkeley are important as indicators of population growth and future demographic trends.

Births in Berkeley

The annual number of births declined slightly in the past decade.

Figure 2.1 – Live Births, City of Berkeley, 1996-2005

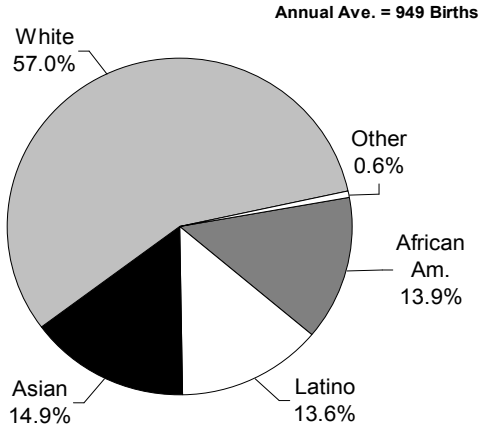


Source: Berkeley Public Health Division, Vital Statistics; Birth Records, 1996-2006

White babies accounted for the majority of births in Berkeley. There was a slight decline in the proportion of African American births from 2001 to 2005 and an increase in the proportion of White births.

In this time period, nearly three quarters of the babies were born at Alta Bates Hospital, 7% at Kaiser Permanente, 5.5% at Summit Medical Center, 4% at California Pacific Medical Center, and 3% were born at home.

Figure 2.2 – Live Births by Race/Ethnicity, 2001-2005 (All Years Combined)



Berkeley Public Health Division, Birth Records

Teen Births

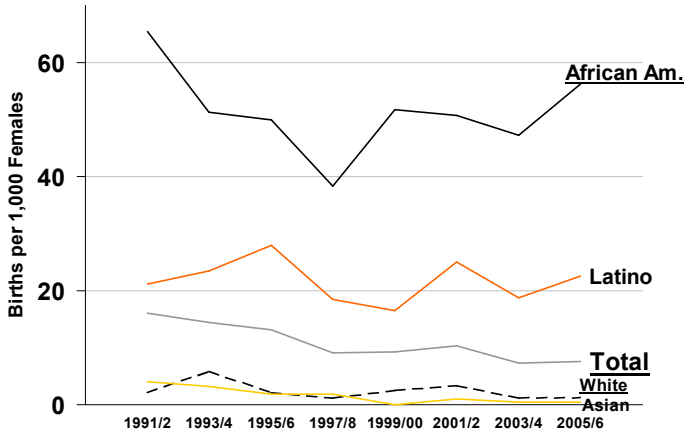
Why is This Important?

Births to teenagers are a key concern because teen mothers are at high risk for having low birth weight babies, late initiation of prenatal care, and related birth complications. Teen mothers have more trouble completing school and finding a job, and are more likely to live in poverty and need public assistance. Children of teen mothers have a higher risk for child abuse, neglect, and behavioral and educational problems. Strategies to prevent teen pregnancy and births address risk factors such as poor financial and emotional support, low levels of education, few positive role models, lack of after-school activities, substance abuse, a need for teen-appropriate reproductive health services, low self-esteem and unequal decision-making power about contraceptive use.[56]

Overall, the teen birth rate in Berkeley has declined since 1991.

Due to small numbers, there is year to year fluctuation in the statistical downward trend for African Americans.

Figure 2.3 – Birth Rates in Females 15 to 19 Years Old by Race/Ethnicity, Berkeley, 1991-2006 (2-year intervals)



Source: Berkeley Public Health Division, Birth Records, California Dept. of Finance, 1991-2006, US Census, 2000

Program Highlight: Berkeley High School Health Center

The Berkeley High School Health Center offers a comprehensive approach to protecting the health of teens by providing physical, emotional, and social health services including physical exams, referrals to public health nursing case management, reproductive health services, immunizations, individual and classroom based pregnancy/STD prevention education, youth development programs, mental health counseling, and crisis intervention services.

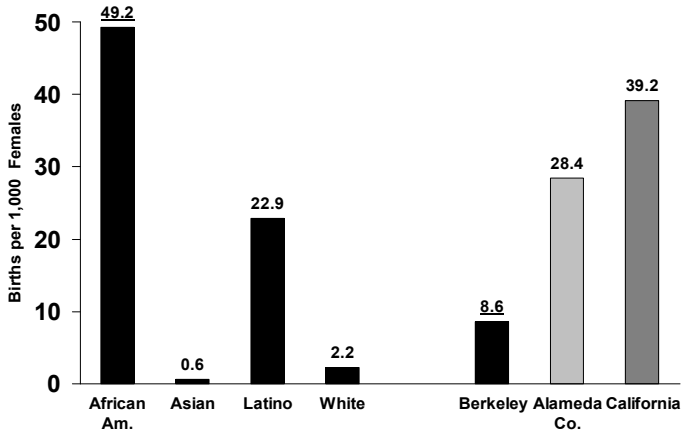
In 2005-2006, 61% of Berkeley High School students visited the Berkeley High School Health Center. Of those visits, 58% were for medical/first aid services, 22% were for mental health services, and 20% were for health education services. Over 60% of the clients receive a complete psychosocial screening, a process that often leads to medical and mental health referrals both within the Health Center and to external community providers.

Despite the downward trends, large racial and ethnic disparities persist in teenage birth rates.

The average teen birth rate from 2002 to 2004 was three times lower than the Alameda County average and 4 times lower than the statewide average.

Berkeley has maintained the lowest birth rate among adolescent mothers compared to all other California health jurisdictions since 1994.

Figure 2.4 – Birth Rates in Females 15 to 19 Years Old, Berkeley, Alameda County, and California, 2002-2004 Average



Source: Berkeley Public Health Division, Birth Records, California Dept. of Finance, U.S. Census, 2002-2004 (Annual Ave.)

Program Highlight: Vera Casey Collaborative for Pregnant and Parenting Teens

This program – in partnership with the YMCA Early Head Start program - provides the support and resources necessary to help pregnant and parenting teens stay in school and graduate, including a full-service child care center and child development services, parenting class and social support groups for moms and dads, providing vital linkages to physical, mental, and educational health services, and public health nursing case management.

Prenatal Care

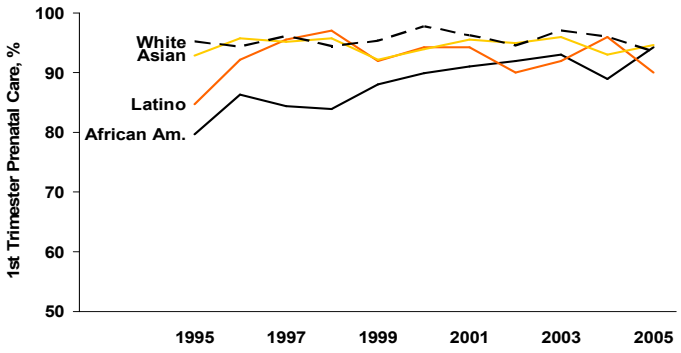
Why is This Important?

Preconception and prenatal care is the health care a woman gets before and during pregnancy. Both address the mother's health needs, and provide an opportunity to address health risks (such as smoking, alcohol, and other drug use), nutrition and physical activity, what to expect during the birth process, the mother's emotional health, and basic infant care. This care allows monitoring of the well-being of the developing fetus, as well as the mother. Prenatal care is most effective if started early in the first trimester.

Prenatal Care in Berkeley

In 2005, 90% or more of pregnant mothers initiated prenatal care in the first trimester of pregnancy. In 2003-2005, there were no race/ethnicity disparities. The disparities seen through the 1990s have disappeared.

Figure 2.5 – Percent of Pregnant Mothers Receiving Prenatal Care in 1st Trimester by Year of Birth, Berkeley, 1995-2005



Source: Berkeley Public Health Division; Birth Records, 1995-2005

Program Highlight: Centering Pregnancy Program

Lifelong's West Berkeley Family Practice and Berkeley Primary Care Access Clinic offer high quality prenatal care in a group setting. This creates support within a stable group of women, families/friends and babies to increase participant's sense of community and empowerment as health care consumers. The program also provides medical risk assessment, health education and social support. Participants learn and practice simple relaxation and stress reduction techniques.

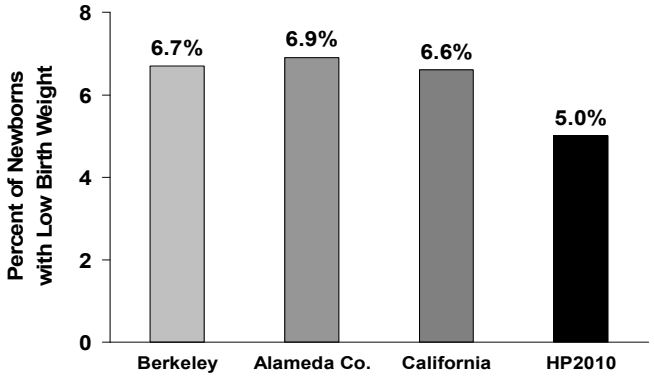
Low Birth Weight

Why is This Important?

Low birth weight (LBW) is defined as a birth weight less than 2,500 grams, or 5.5 pounds. LBW is increasing in the U.S., from 7% in 1990 to over 8% of all pregnancies in 2004.[57] Smoking accounts for 20 to 30 percent of all LBW births in the United States.[58] Other risk factors include premature birth, teen pregnancy, and stress – including stress associated with racism and poverty.[59,60] The smallest babies (less than 1500 grams) have an increased risk of infant death and of developmental disabilities.[61]

Low birth weight occurred in 6.7% of live births from 2002 to 2004.

Figure 2.6 – Low Birth Weight in Berkeley, Alameda County, California, 2002-2004, and Healthy People 2010 Goal



Source: Berkeley Public Health Division, Birth Records, 2002-2004

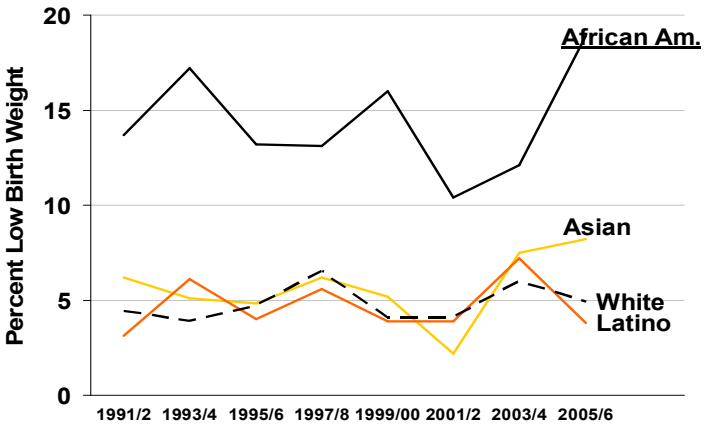
Program Highlight: Black Infant Health Program

This program (see picture of BIH staff above) aims to improve birth outcomes for African American women in Berkeley through intensive prenatal outreach and education, prenatal and postpartum peer support groups, and community/family education about current health issues and how to navigate social service systems to improve health care access, parenting skills, and self-improvement techniques. As was recommended in a previous City of Berkeley report on Low Birth Weight,[60] women need interconceptional care (health care between pregnancies) to reduce risk factors, in addition to screening and comprehensive services for substance abuse problems.

Low birth weight declined in African Americans during the 1990s but has increased again in recent years. The proportion of low birth weight babies is still twice as high in African Americans compared to other groups.

Due to small numbers, the apparent increase in 2005/06 may be random variation.

Figure 2.7 – Low Birth Weight by Race/Ethnicity and Year of Birth, Berkeley, 1990-2006



Source: Berkeley Public Health Division, Vital Statistics; Birth Records

Health Inequities: Perinatal Risk Factors

The health of a baby is strongly related to health and behaviors during pregnancy. Obesity can cause serious pregnancy-related complications, and during the earliest stages of human development it can have lifelong impacts on the development of chronic disease.[62] Appropriate weight during pregnancy is highly related to the baby's birth weight and is impacted by whether nutritious food and safe exercise opportunities are accessible. Strategies to improve healthy eating and exercise include culturally-appropriate social norm change campaigns that reduce the barriers for poor and minority women, and initiatives that alter the physical environment to improve access to health-promoting resources such as fresh produce and safe parks and recreational facilities.

Alcohol, tobacco and other drug use during pregnancy are leading preventable causes of birth defects and developmental disabilities in the United States.[63] In California, the rate of drinking during pregnancy (19%) is two times higher than the national rate and women in the Bay Area reported the highest rates of alcohol use during pregnancy in California.[64] Effective strategies to reduce the impact of tobacco, alcohol and drug use during pregnancy include education about the importance of early prenatal care, universal screening for perinatal drug use, counseling and treatment specifically for pregnant women with a positive screen, and environmental changes such as reducing marketing of alcoholic beverages to young women and the number of liquor stores in poor and minority neighborhoods.

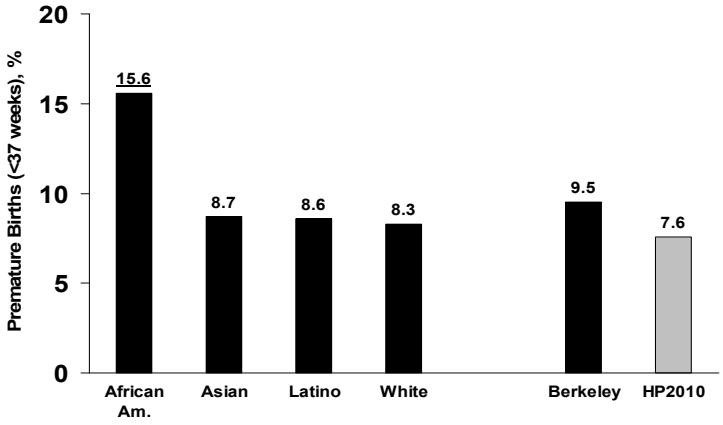
Premature Births

Why is This Important?

A baby born before 37 weeks of pregnancy is considered a **premature birth**. Prematurity is the leading cause of neonatal death not associated with birth defects. The rate of premature births is higher in African Americans than Whites across the U.S. Risk factors for prematurity include use of alcohol, tobacco, or other drugs during pregnancy, low pre-pregnancy weight or low weight gain during pregnancy, vaginal infections during pregnancy, and domestic violence.[58] Premature babies are likely to have a low birth weight and almost all very low birth weight babies are premature.

From 2002 to 2004, African American babies were twice as likely to be born premature as White, Latino, or Asian babies.

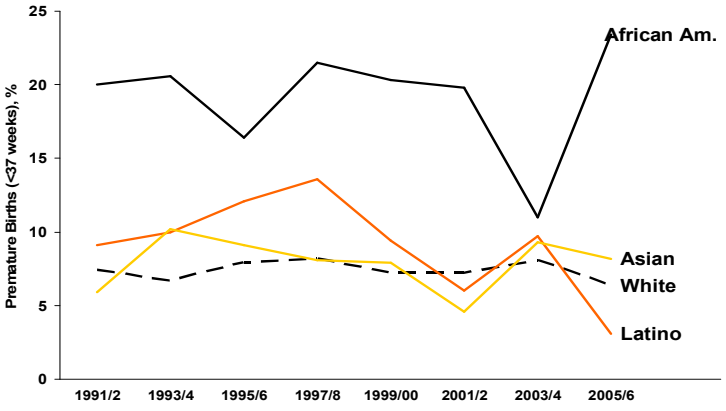
Figure 2.8 – Premature Births by Race/Ethnicity, Berkeley, 2002-2004



Source: Berkeley Public Health Division, Birth Records

Throughout the 1990s the percentage of premature births declined overall. In recent years, the trend has reversed in African Americans.

Figure 2.9 – Premature Births by Race/Ethnicity and Year of Birth, Berkeley, 1991-2006



Source: Berkeley Public Health Division Vital Statistics; Birth Records, 1991-2006

Maternal Depression

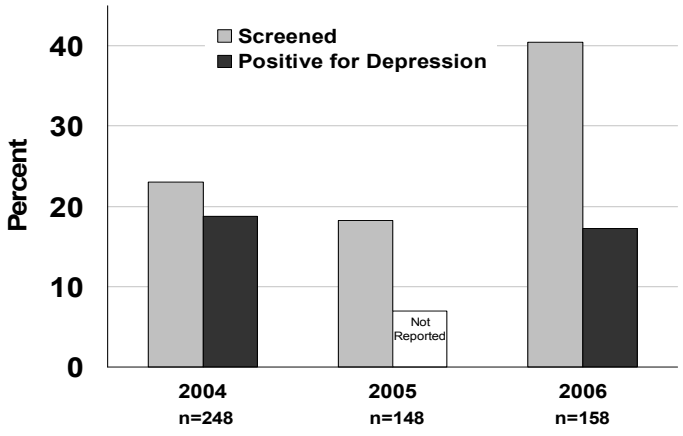
Why Is This Important?

Depression is a mood disorder in which feelings of sadness, loss, anger, or frustration interfere with everyday life for an extended time. Depression that occurs during pregnancy or within a year after delivery is called maternal depression - the "baby blues." Some women with depression have difficulty caring for themselves during pregnancy, difficulty parenting their newborns, and are more likely to use harmful substances, like tobacco, alcohol, or illegal drugs as attempts to self-medicate.[65,66]

Maternal Depression in Berkeley

In 2006, of new mothers who were receiving Family Support Services and received a home visit by a public health nurse, 41% were screened for depression. Of those screened, approximately 18% screened positive for depression.

Figure 2.10 – Maternal Depression Screening in Post-Partum Visits, Berkeley, 2004-2005



Source: Berkeley Public Health Division, Every Child Counts, 2004-2006

Program Highlight: Public Health Nursing Case Management

Case management by nurses provides comprehensive support, education and referrals for new moms for such issues as maternal depression. Over 150 new mothers were screened for depression and referred to appropriate care in 2006. There is a need to develop a system to ensure every new mother is screened and referred as needed to appropriate support or mental health services.

PHN Public Health Nursing

Breastfeeding

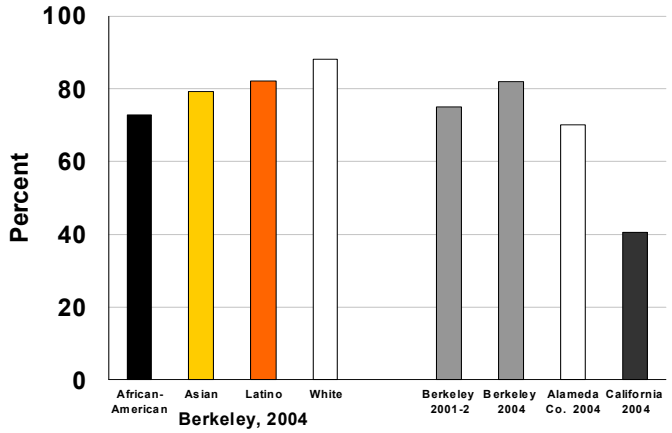
Why Is This Important?

Breastfeeding is the best way of nourishing infants.[67-69] Exclusive breastfeeding in the first 6 months reduces childhood infections and may help prevent childhood obesity among other chronic diseases.[70] Women who breastfeed also experience less breast and ovarian cancer. Nationally, African American, poor and less educated women have lower rates of breastfeeding.[71]

Breastfeeding in Berkeley

Alta Bates Hospital is one of the top 15 hospitals in California for the percent of mothers that exclusively breastfeed their infants when they take them home from the hospital. Exclusive breastfeeding rates were highest in White mothers and lowest in African American mothers.

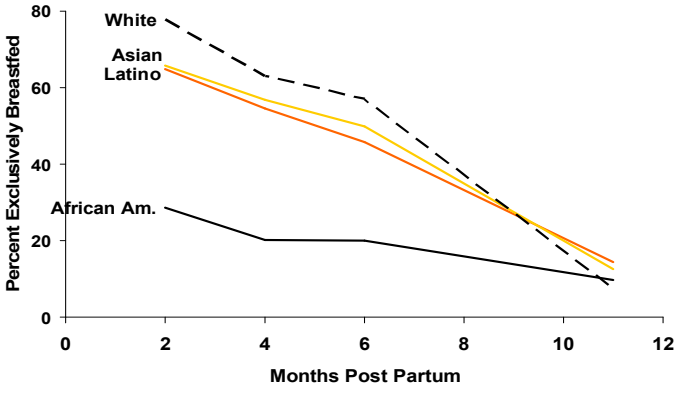
Figure 2.11 – In-Hospital Exclusive Breastfeeding Rates at Alta Bates/Summit Hospital, Berkeley, 2001-2004



Source: California Department of Heath Services, Genetic Screening Branch

In the first few months after birth, low-income African American infants in the Women, Infant, and Children (WIC) program were less likely to be exclusively breastfed in 2006 than infants of other race/ethnicity groups.

Figure 2.12 –Exclusive Breastfeeding in WIC Infants by Race/Ethnicity and Months Post-Partum, Berkeley, 2006



Source: Berkeley Public Health Division WIC Program

Program Highlight: Women, Infants and Children Program

This program provides food vouchers, nutrition and breastfeeding counseling and education, and referrals to relevant resources (see pictures below). The Breastfeeding Program supports breastfeeding with culturally relevant peer education, collaboration with lactation specialist public health nurses, counseling, assistance, and classes. WIC also offers electric pump loans, and works to eliminate formula distribution in hospitals.

PUBLIC HEALTH PRIORITY:

HEALTHY YOUTH DEVELOPMENT

"To this day, I believe we are here on this planet earth to live, grow up and do what we can to make this world a better place for all people to enjoy freedom."

-Rosa Parks School pledge

Adolescence represents a unique time in the lifecycle, a time of transition in which youth are developing attitudes and behaviors that make a significant impact on their health and well-being, and making choices about their futures and their roles in society.[72]

The term "youth development" refers both to what is known about the key processes, tasks and expectations that occupy young people in the second decade of life, and about the institutions, professions and practices designed to support them.[73] Merely involving youth in programs does not adequately address the full range of skills needed to help youth develop into productive adults. Rather than focusing on problems and risk factors, youth development approaches focus on building upon strengths and assets in youth.[73] Today's adolescents are tomorrow's workforce, parents, and leaders. Positive youth development initiatives can create the conditions in which young people from all populations have opportunities to develop skills and behaviors that lead to long-term good health.[72]

City of Berkeley programs focusing on healthy youth development are aimed at achieving coherent internal approaches to engaging youth on health issues and developing a youth-led program in which youth take leadership on addressing health inequities in Berkeley. These include peer education programs to prevent smoking, alcohol & other drug use, and injuries.

III. CHILD & ADOLESCENT HEALTH

Child health is of great importance to our community: today's children become tomorrow's parents and workers. Also, we now know that health in early life is the basis for health over the life span, and that adult health is influenced by socio-economic status during childhood.[74] An investment in early childhood well-being has great benefits for the overall health of our community.

This chapter summarizes the state of health of our children and adolescents: preventive health screenings and behaviors, overweight and obesity, use of alcohol, tobacco and other drugs, childhood immunizations, and specific health outcomes including mental health, children with special health needs, asthma, injuries, sexually transmitted diseases, dental health, lead poisoning, and anemia.

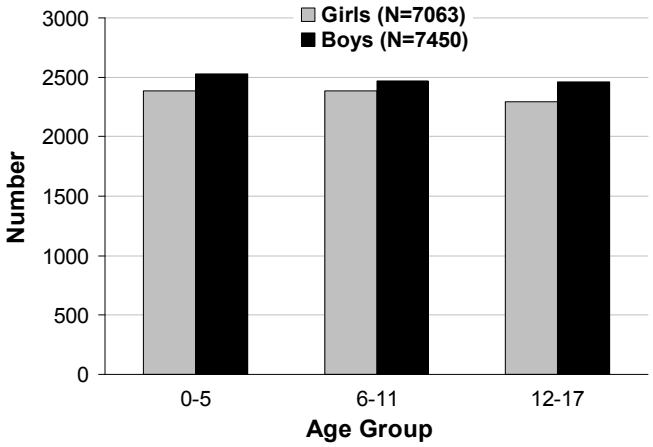
Highlights

- One-seventh of Berkeley's children live in poverty and a substantial number participate in programs for low-income families
- About 14% of adolescents report the use of tobacco, alcohol, marijuana and other drugs, and are exposed to violence.
- Asthma hospitalizations are high, particularly in African Americans and southwest Berkeley residents.
- Leading causes of injuries include attempted suicide, assault, motor vehicle accidents, falls, and reaction to prescription drugs

Demographics of Berkeley's Children

There are an equal number of children in ages that correspond to preschool, grade school and middle/high school.

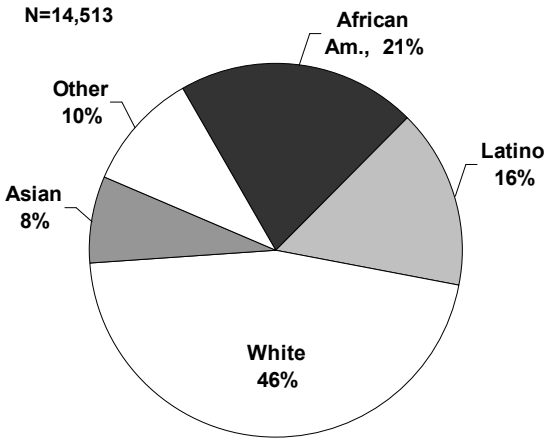
Figure 3.1 – Number of Children 17 years of Age and Younger by Sex, Berkeley, 2000



Source: US Census, 2000

Non-White racial and ethnic groups make up the majority of children.

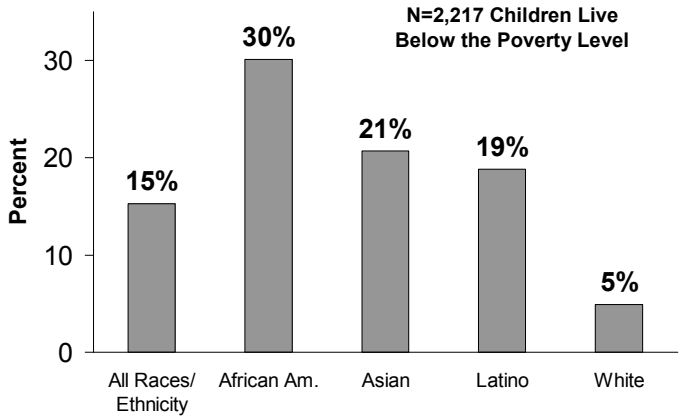
Figure 3.2 – Number of Children 17 Years of Age and Younger by Race/Ethnicity, Berkeley, 2000



Source: US Census, 2000

The poverty rate is 6 times higher for African American children and 4 times higher for Latino and Asian children than for White children.

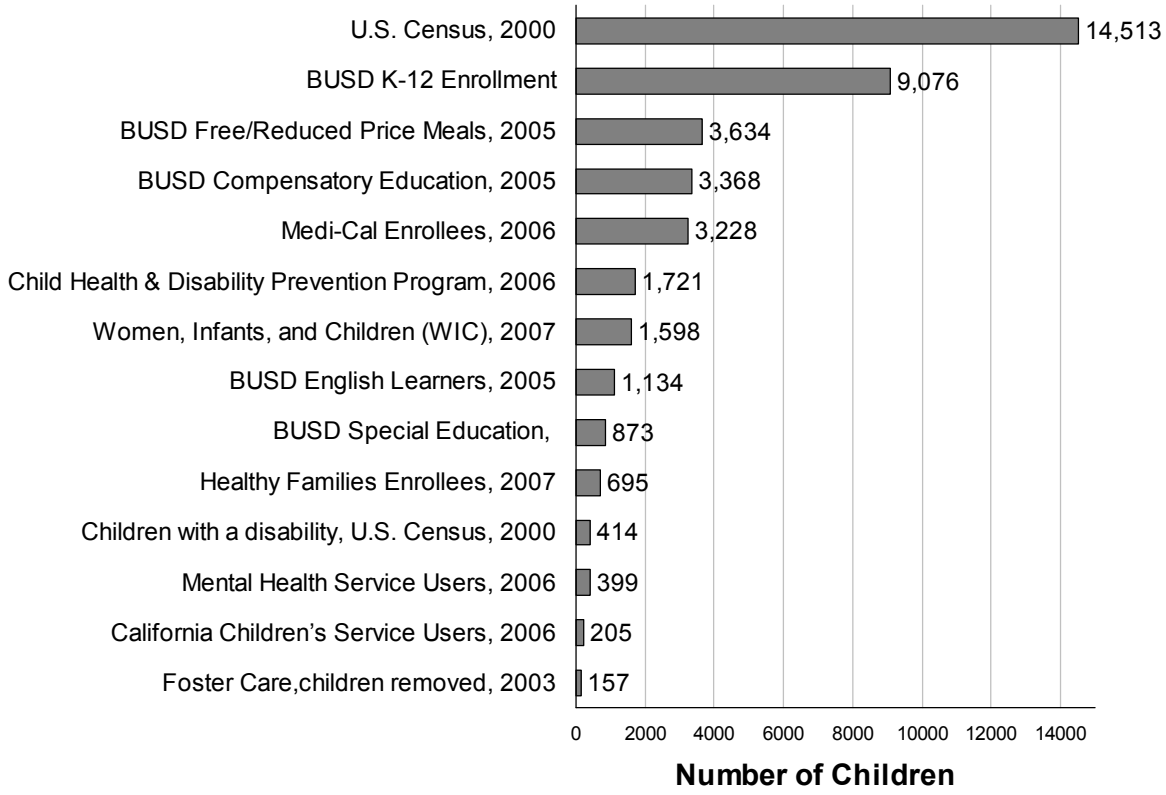
Figure 3.3 – Percent of Children 17 Years Old and Younger Living Below the Poverty Level by Race/Ethnicity, Berkeley, 1999



Source: US Census, 2000

A substantial percentage of Berkeley's children participate in health and social service programs. Approximately 22% of Berkeley's children less than 18 years of age receive health insurance through Medi-Cal. Over 10% of Berkeley's children receive preventive clinical services and screening for disabilities in the California Child Health and Disability Prevention Program. Several hundred children are enrolled in California and federally supported programs for serious medical conditions or disability or are in supervised foster care.

Figure 3.4 –Child Participation in Health and Social Service Programs, Berkeley, 2005-2006



Source: Child Health & Disability Prevention Program, Berkeley Unified School District, Medi-Cal, Managed Risk Medical Insurance Board , US Census

Nutrition and Physical Activity

Why Is This Important?

Poor childhood health behaviors such as sedentary lifestyles (very little activity and large amounts of sitting), unhealthy eating, overweight, and obesity increase risks of cardiovascular disease, diabetes, and other preventable diseases in adulthood.

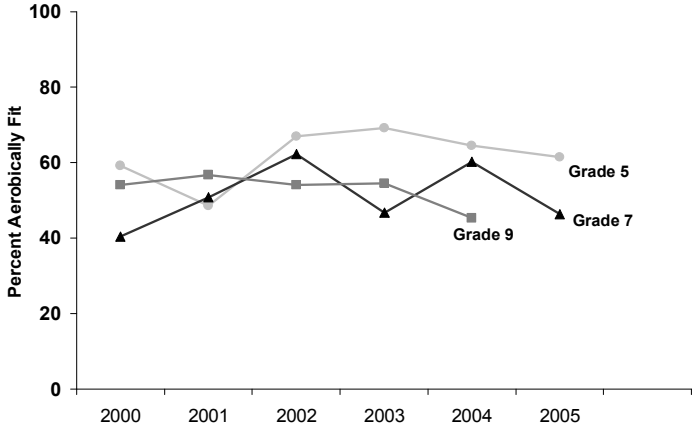
Children and youth are getting a large portion of their daily calories from snacks, are not eating breakfast as much as they used to,[75,76] and are not eating enough fruits and vegetables.[77] Physical activity has also decreased among children and adolescents with fewer enrolled in school physical education (PE) classes[78] and about 1/3 of 9th to 12th graders not receiving recommended levels of moderate or vigorous physical activity.[79] Changes in transportation patterns and activity levels are increasingly influenced by the built environment[80] and fewer children living close to school walk or bike there.[81]

In a recent California statewide study, children were actually vigorously active for only 4 minutes of an average 30-minute PE class.[82] For the past three decades PE time has been reduced in response to the pressure to raise academic test scores. Finally, PE instruction from trained professional PE teachers has shifted to instruction from regular classroom teachers.

Physical Fitness in Berkeley's Children

Between 30% and 60% of Berkeley grade schoolers (depending on the grade) cannot pass a standardized aerobic fitness test. Aerobic fitness is a measure of fitness of the heart and lungs.

Figure 3.5 – Aerobic Fitness of 5th, 7th, and 9th Graders, Berkeley Unified School District, 2000-2005



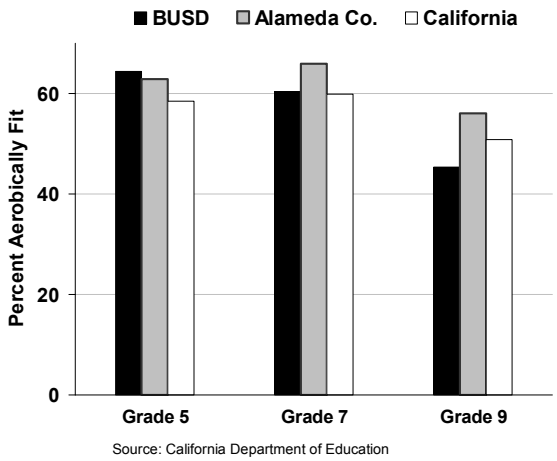
* Ability to briskly walk 1 mile (e.g. < 10 min. for 16 year old girls; <8.5 min for 16 year old boys. Source: California Department of Education

Program Highlight: Child & Youth Nutrition and Physical Activity Promotion

The San Pablo Park Steps to Wellness project aims to decrease childhood obesity rates in South and West Berkeley through creating an environment that supports healthy eating and physical activity. This is a Robert Wood Johnson Foundation funded partnership with the Department of Parks, Recreation and Waterfront and the Ecology Center Farm Fresh Choice Program. The project aims to include activities attractive to sedentary youth that don't identify themselves as athletic, including the installation of a Dance Dance Revolution Arcade game (see picture below) and tennis lessons. Healthy, inexpensive, tasty take-out meals from local restaurants are available for purchase one day a week as parents/caregivers pick up their children. The project also works with Ecology Center staff to replace soda with healthy beverages and increase healthy snack options and provides cooking classes for youth and parents.

Aerobic fitness declines from 5th to 9th grade. 9th grade students in the BUSD lag behind their Alameda County and California counterparts in aerobic fitness.

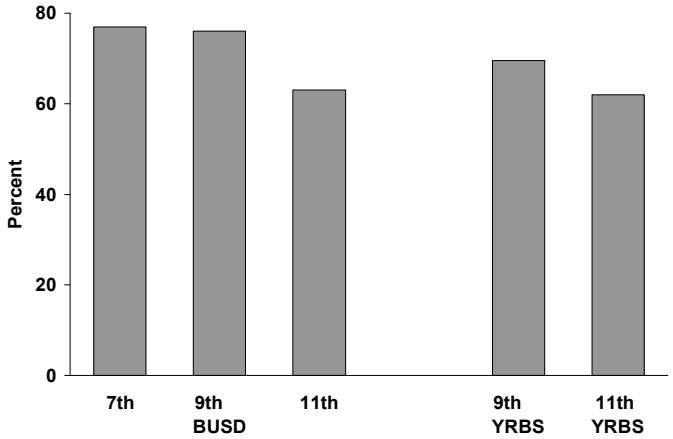
Figure 3.6 – Aerobic Fitness of 5th, 7th, and 9th Graders, Berkeley Unified School District, Alameda County, and California, 2004



Source: California Department of Education

Over 75% of 7th and 9th grade students reported regular physical activity, decreasing to just 63% among 11th grade students. A similar decrease in regular physical activity also occurs nationally among 9th and 11th graders.

Figure 3.7 – "Participated in 20 minutes of vigorous activity at least 3 days" in Past 7 Days for 7th, 9th, and 11th Graders, Berkeley Unified School District, Spring 2006 compared to 2005 National Youth Risk Behavior Survey

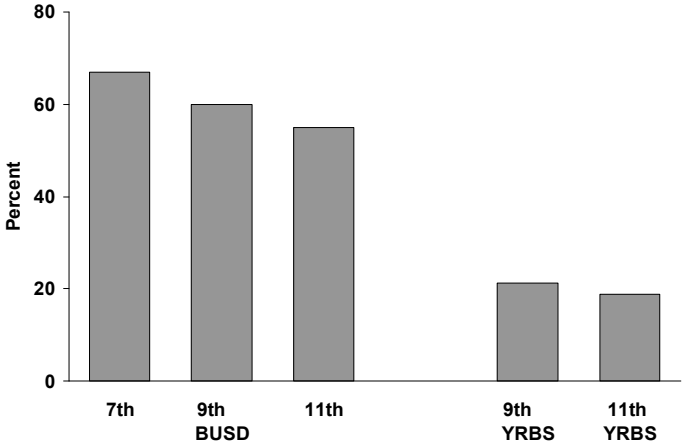


Source: California Healthy Kids Survey, Spring 2006; National Youth Risk Behavior Survey 2005

Healthy eating behaviors appear to decrease as students get older. Over two thirds of BUSD 7th graders ate 5 servings of fruits and vegetables the previous day, decreasing to 60% among 9th graders and 55% among 11th graders.

Compared to national averages, the rates are about 3 times higher among BUSD's 9th and 11th grade students.

Figure 3.8 – "Ate 5 Servings of Fruits and Vegetables" during the previous day for 7th, 9th, and 11th Graders, Berkeley Unified School District, Spring 2006 compared to 2005 National Youth Risk Behavior Survey



Source: California Healthy Kids Survey, Spring 2006; National Youth Risk Behavior Survey 2005

Obesity

Why Is This Important?

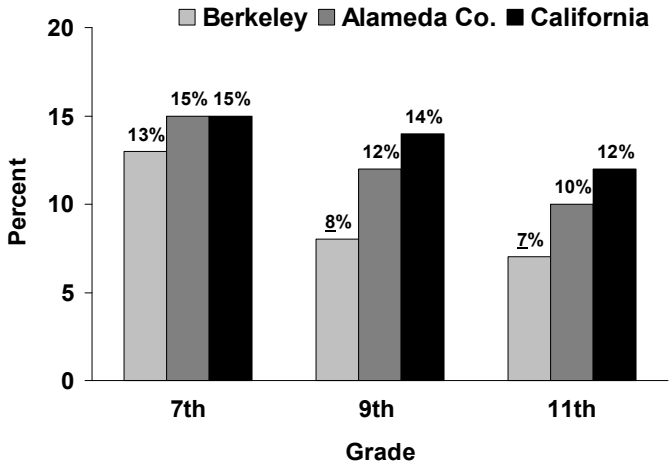
Obesity – defined as a body mass index at or above the 95th percentile - has more than doubled in U.S. children since 1971, and has tripled for children 6-11.[83,84] Rates are higher among African American, Latino and low income children.[85,86] Obese children are more likely to be overweight and obese adults, and to develop chronic conditions at earlier ages.[87] Pediatricians are starting to see adult chronic illnesses like hypertension and type 2 diabetes in children for the first time, conditions that increase the risk of cardiovascular disease.[88,89] Some experts predict that, as a result of obesity, today's children will be the first in the U.S. to have lower life expectancies than their parents.

Multiple factors contribute to the problem: children's increasingly sedentary lifestyles; reduced physical education time in schools; increased screen time watching TV and playing video games; extensive marketing by the food industry of high calorie foods with little nutritional value; increases in soda consumption; large portion size; and, particularly for many low-income children, limited access to healthy foods and safe places to play. As a result, children eat more high-fat, high-calorie foods and are not physically active, leading to an increase in the number of obese children.

Obesity in Berkeley's Children

Overall, obesity is less frequent in Berkeley's middle and high school students than the Alameda County or California average.

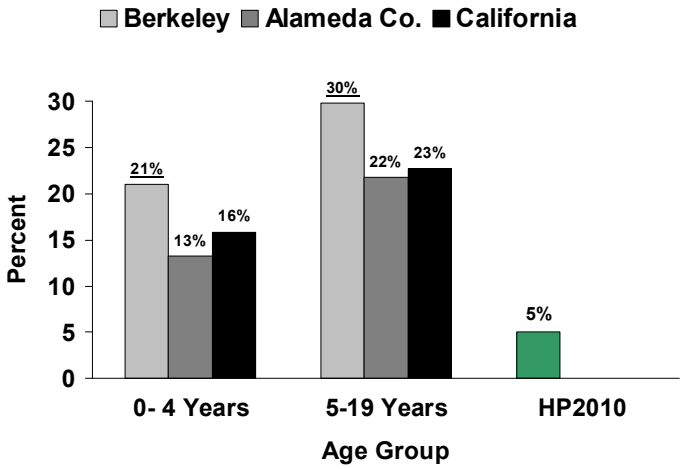
Figure 3.9 – Percent Obesity (>95 percentile) in Secondary School Children in Berkeley Unified School District, 2005-6



Source: California Healthy Kids Survey, 2005/6

Low income children in Berkeley's CHDP program are more likely to be obese than their Alameda County and California counterparts.

Figure 3.10 – Percent Obesity (>95th Percentile) in Children in California Child Health & Disability Prevention Program, Berkeley, Alameda County, and California, 2005, and Healthy People 2010 Goal



Berkeley has a statistically higher percentage of obese children
Source: California Child Health & Disability Prevention Program, 2005

Program Highlight: Chronic Illness Prevention Program

IMPROVING CHILD NUTRITION AND PHYSICAL ACTIVITY

From 2004-2006, Chronic Illness Prevention staff worked at the Berkeley Alternative High School (now Berkeley Technology Academy) with peer educators, students, administrators, faculty, staff, and parents to develop youth centered environments that promote healthy behaviors. Strategies included advocating for tastier school lunches/snacks, universal breakfast, increased student purchases at the Farmers' Market, taste testing of healthy foods (see picture above), and weekly hip hop dance classes.

In Summer 2006, local youth surveyed local grocery outlets and corner markets for their availability of healthy foods and environmental barriers and supports to healthy eating such as advertising for junk food versus healthy foods. As a follow-up to this project, Chronic Illness Prevention staff and high school youth are working with local corner market stores near middle and high schools to begin offering healthier food options and "depromote" unhealthier choices.

Alcohol, Tobacco and Other Drugs

Why Is This Important?

Cigarette smoking remains the single most preventable cause of disease and death in the United States. Smoking results in more deaths than AIDS, alcohol, cocaine, heroin, homicide, suicide, motor vehicle crashes, and fires – combined! Thirty years of concerted public health efforts have led to great success with declines in smoking rates and related cancer deaths. But today's youth are now starting to smoke again. Tobacco companies target youth with advertising and promotional giveaways.[53] More than half of youth nationwide have tried cigarettes by 12th grade, and 25% of 12th graders are current smokers.[90] As early as 8th grade, more than 25% have tried cigarettes, and 10% has become a current smoker.[91] Teenagers who smoke are more likely to develop a stronger habit as adults and the dangers of smoking on human health are well-documented.[92, 93] Risk factors for youth smoking include low socioeconomic status, peer tobacco use, smoking by parents, accessibility of tobacco, lack of parental support or involvement, and low self-esteem.[94,95]

Today's youth grow up in an environment that encourages multiple forms of substance use and abuse, both legal and illegal. Nationwide, youth have high rates of alcohol and drug abuse and significant problems with binge drinking, although rates of drug use overall are decreasing.[91] Underage drinking is a factor in a host of serious problems including homicide, suicide, serious injury, crime, and high risk sex.[96,97]

Tobacco and Marijuana Use in Berkeley's Children

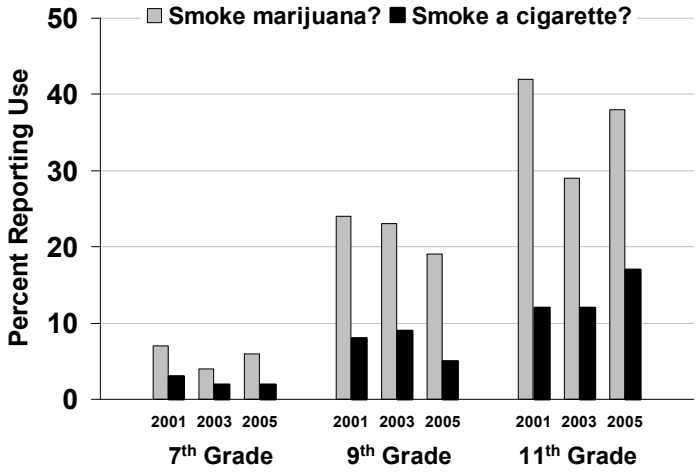
Berkeley Unified School District (BUSD) students* reported an increase from 7th to 11th grade of cigarette or marijuana use within 30 days. Nearly 40% reported using marijuana.

Of more than 1400 students screened at the Berkeley High School (BHS) Health Center in 2005, 12% had recently used tobacco.

Of 800 BHS students surveyed in 2005, 25% of them reported that their families still allow smoking inside the home.

* The response in 2006 was 56% for students that were surveyed

Figure 3.11 – Use of Tobacco and Marijuana During Past 30 Days in 7th, 9th, and 11th Graders, Berkeley Unified School District, 2002-2006

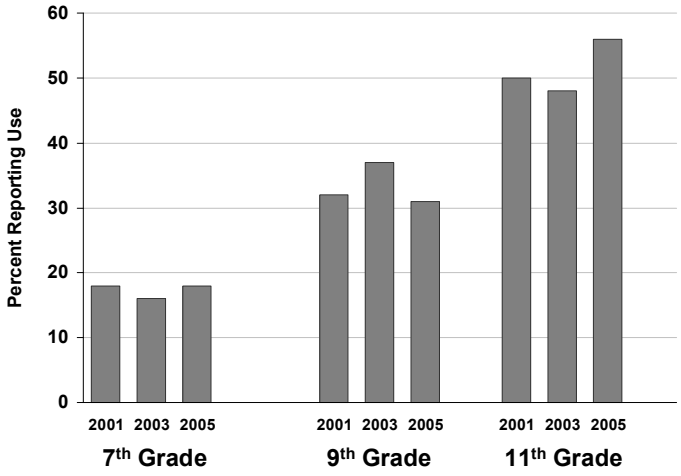


Source: California Healthy Kids Survey, 2001-2005

Alcohol Use in Berkeley's Children

In 2005, more than half of 11th graders reported using alcohol within 30 days.

Figure 3.12 – Use of Alcohol in 7th, 9th, and 11th Graders, Berkeley Unified School District, 2001-2005



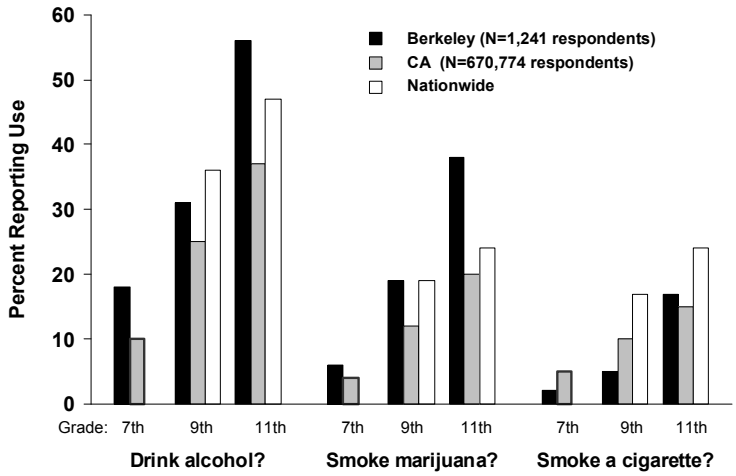
Source: California Healthy Kids Survey, 2001-2005

Program Highlight: Youth Tobacco Prevention

The Tobacco Prevention Program works to reduce youth access to tobacco through policy change requiring tobacco retailers to become licensed and by working with the Police Department to conduct tobacco sting operations. UC Berkeley and Berkeley High School students deliver interactive curricula to decrease second-hand smoke exposure and take action against the glamorization of tobacco – including blunts and hookahs -- in the entertainment industry. Student interns conduct projects and teach an academic class at UC Berkeley to increase smoking cessation rates and to reduce tobacco industry influence through research, funding and distribution of tobacco coupons.

More Berkeley students report using alcohol and marijuana than their statewide counterparts, but fewer report smoking cigarettes. At the 11th grade, more Berkeley students use alcohol and marijuana compared to teens nationwide.

Figure 3.13 – Cigarette, Alcohol, and Marijuana Use in Last 30 Days of 7th, 9th, and 11th Graders, Berkeley Unified School District, California (CSS), and U.S. Comparisons (YRBS), 2005



Source: California Healthy Kids Survey, 2001-2005

Program Highlight: Community Advocacy for Alcohol Policy

Availability of alcohol, tobacco and other drugs is recognized as a problem in Berkeley and is thought to be higher than the State average.[98] To help change the community norms on underage drinking and strengthen enforcement of laws to limit access to minors of alcohol and other drugs, the South and West Berkeley Community Action Team co-authored and testified in support of tougher City policies in partnership with a local coalition, the Berkeley Alcohol Policy Advisory Coalition (BAPAC). Through this involvement, they achieved success in the adoption of a city ordinance that will serve to limit underage drinking.

Sexually Transmitted Infections

Why Is This Important?

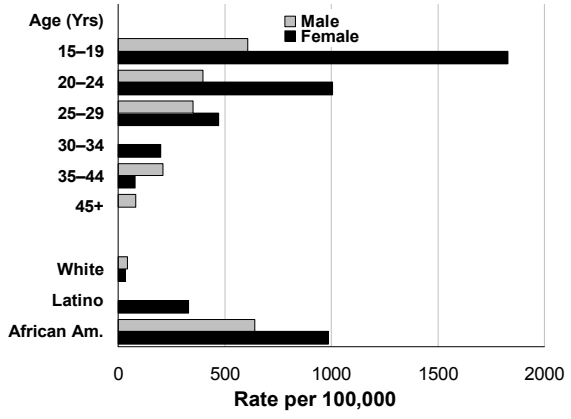
Sexually Transmitted Infections (STIs) are an indicator of high-risk sexual activity, and increase the risk for HIV infection. Untreated Chlamydia increases the risk of Pelvic Inflammatory Disease, potentially fatal ectopic pregnancy (pregnancy outside the uterus) and infertility in women. Gonorrhea is related to fertility problems in both men and women. Together, Chlamydia and gonorrhea account for the majority of reportable sexually transmitted infections in adolescents and young adults.[99]

Sexual Transmitted Infections in Berkeley's Adolescents

In 2005, two thirds of the Chlamydia infections and almost half of the gonorrhea infections reported by health care providers to the Berkeley Public Health Division occurred in youth aged 15 to 24 years of age. African American females had the highest rate of Chlamydia infection and African American males had the highest rates of gonorrhea infection. Berkeley's Chlamydia infection rate is below that of Alameda County and the California average.

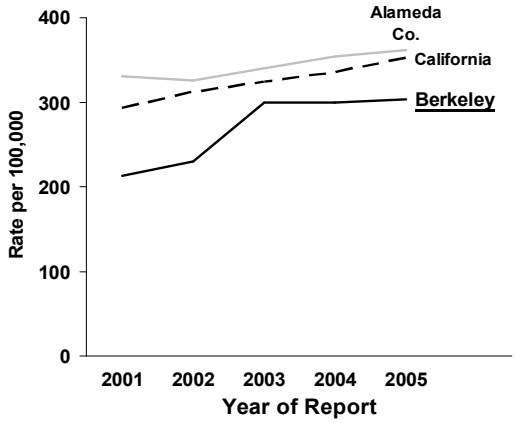
Of more than 1400 students screened at the Berkeley High School Health Center in 2005, over half were sexually active. Of sexually active students, 71% were screened for sexually transmitted infections; of these, 5% tested positive for Chlamydia.

Figure 3.14 – Chlamydia Rates by Gender, Age, and Race/Ethnicity, Berkeley, 2005



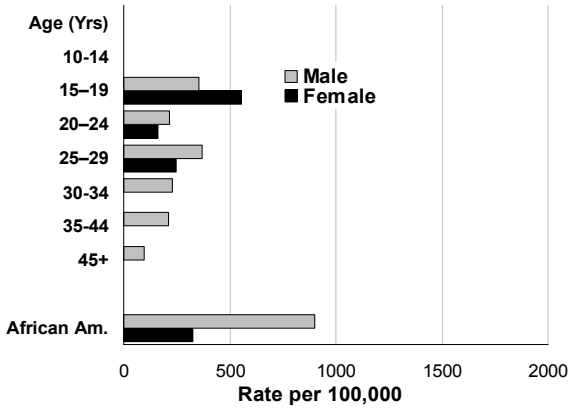
Source: California Department of Health Services, SDT Control Branch

Figure 3.15 – Chlamydia Rates, Berkeley, Alameda County, California, 2000-2005



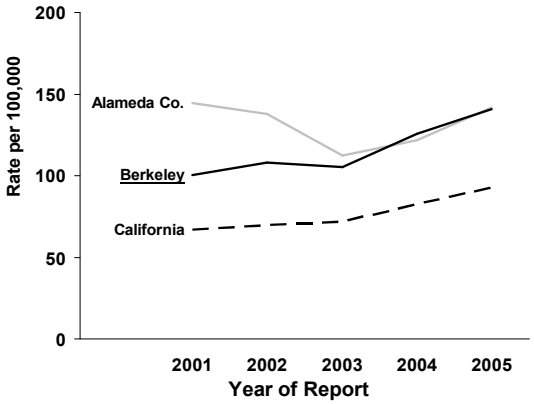
Source: California Department of Health Services, SDT Control Branch

Figure 3.16 – Gonorrhea Rates by Gender, and Age, Berkeley, 2005



Source: California Department of Health Services, SDT Control Branch

Figure 3.17 – Gonorrhea Rates, Berkeley, Alameda County, California, 2000-2005



Source: California Department of Health Services, SDT Control Branch

Program Highlight: Enhanced Gonorrhea Surveillance Program

Every Berkeley resident testing positive for gonorrhea is called to answer a short telephone survey. This program is an ongoing, surveillance activity that improves the understanding of gonorrhea transmission throughout California and helps to develop appropriate and targeted interventions.

Program Highlight: Safer Sexual Practices Among Youth and Young Adults

Various programs at the Berkeley High School Health Center and the Public Health Division work to increase education and outreach for youth and young adults to change social norms to promote safer sexual practices. Messages encourage youth to delay the onset of sexual activity, insist upon the correct and consistent use of condoms, and limit their number of sexual partners.

Immunizations

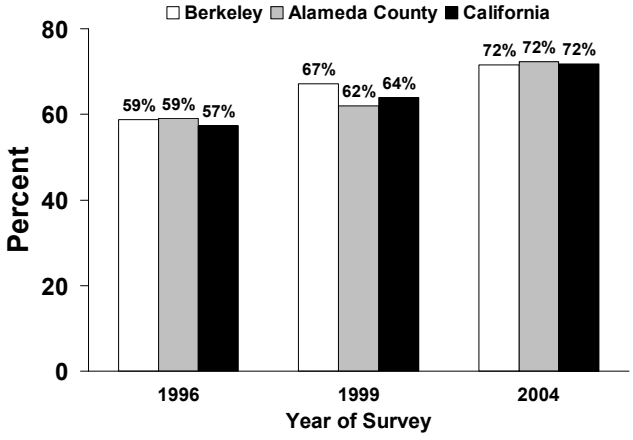
Why is This Important?

Immunization is one of the most significant public health achievements of the 20th century; polio is a scourge of the past, and once common childhood illnesses like mumps and measles are now rare. Nationally, childhood immunization rates are high.[100] However, children living in poverty and minority children have lower rates of immunization.[101] This disparity is of great concern in large urban areas with underserved populations because of the potential for outbreaks of vaccine-preventable diseases. A small percentage of parents sign personal belief exemptions (PBE) due to fear that vaccines are harmful and cause bad side effects such as illness and death and that vaccines overload the immune system and are not needed when there are very low or no cases of the diseases in the U.S. When these PBEs are included in the number of children not vaccinated, the PBEs lower overall immunization rates.

Immunization of Berkeley's Children

Childhood immunization rates for diphtheria, tetanus, whooping cough, polio, measles, mumps, and rubella have steadily increased over the last decade and are on par with Alameda County and statewide averages.

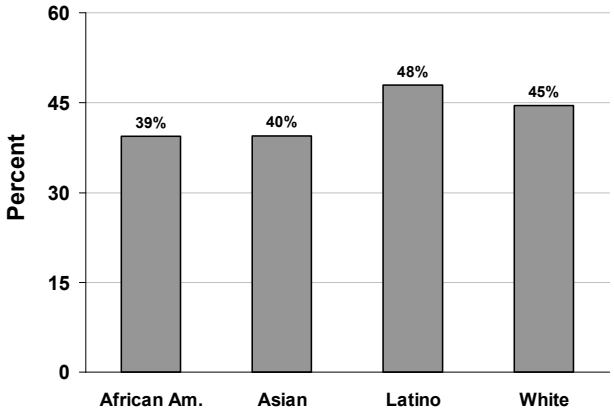
Figure 3.18 – Percent of Two-Year Olds Immunized Against 7 Childhood Diseases, Berkeley, Alameda County, and California, 1996, 1999, and 2004



Source: California Department of Health Services, Kindergarten Retrospective Survey
Diphtheria, tetanus, whooping cough, polio, measles, mumps, rubella (4:3:1)

Although a high percentage of Berkeley children are immunized against diphtheria, tetanus, whooping cough, polio, measles, mumps, and rubella, many are not yet immunized against hepatitis B, Haemophilus influenza, and chicken pox, for which vaccines are available.

Figure 3.19 – Percent of Two-Year Olds Immunized Against 10 Childhood Diseases by Race/Ethnicity, Berkeley, 2004



Source: Kindergarten Retrospective Survey, 2004
Diphtheria, tetanus, whooping cough, polio, measles, mumps, rubella, hepatitis B, Haemophilus influenza, chicken pox (4:3:1:3:3:1)

Program Highlight: Immunization Program

This program works to improve immunization rates for all Berkeley residents across the life span. Special efforts are targeted at the African American and Latino children under two years of age by collaborating with WIC; public and private preschools; licensed family childcare homes; medical providers; and through community outreach, education and encouraging participation in the immunization registry among medical providers.

Mental Health

Why Is This Important?

The future of our City and community depends on the mental health and strength of our young people. When untreated, mental health disorders can lead to school failure, family conflicts, drug abuse, violence, and even suicide. Nationally, one of every five children and adolescents has a mental disorder, and 10% have a serious emotional disturbance that affects daily functioning. But 80% of children who need mental health services do not receive them. Childhood and adolescence are critical periods for promoting social and emotional development and preventing mental disorders — many major mental health disorders now are recognized to have their onset in childhood.[102]

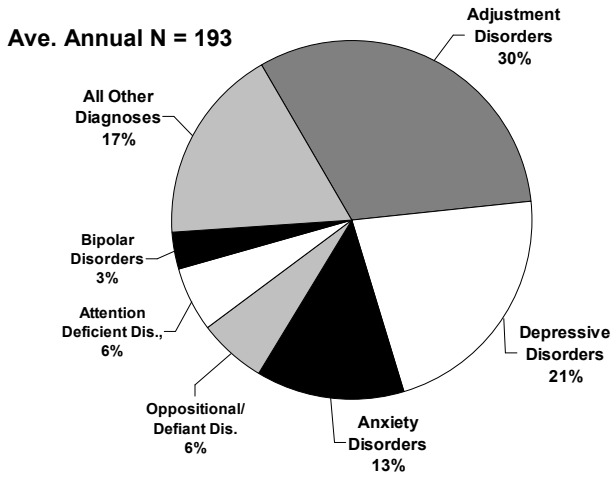
Mental Health of Berkeley's Children

In 2006, children under the age of 18 years accounted for 21% of Berkeley residents receiving services from Berkeley Mental Health Division. Each year, about 193 children and adolescents received mental health services.

Adjustment disorders occur in about 1/3 and are most commonly caused by trouble coping 3 months after a stressful event. One-third had depression or anxiety disorders.

In 2006, the Berkeley High School Health Center saw 202 youth as mental health clients, a total of 1,079 visits. In the latter half of that year, 44% of the youth had depression or anxiety disorders.

Figure 3.20 – Leading Diagnoses in Clients Less than 18 years of Age, Berkeley Mental Health Division, Berkeley, 2002-2006



Source: Alameda County Behavioral Health Services , 2002-2006

Program Highlight:

Berkeley High School Mental Health Services

The Health Center provides crisis intervention, long-term and short-term therapy, and support groups on a variety of student-related issues (family issues, substance use, grief and loss, and violence prevention). It also promotes positive youth development opportunities.

Program Highlight:

Mental Health Division's Family, Youth and Children's Services

The Division offers counseling and treatment services for children with serious emotional disorders and their immediate family members, and Crisis Services for both children and youth.

Children with Special Health Care Needs

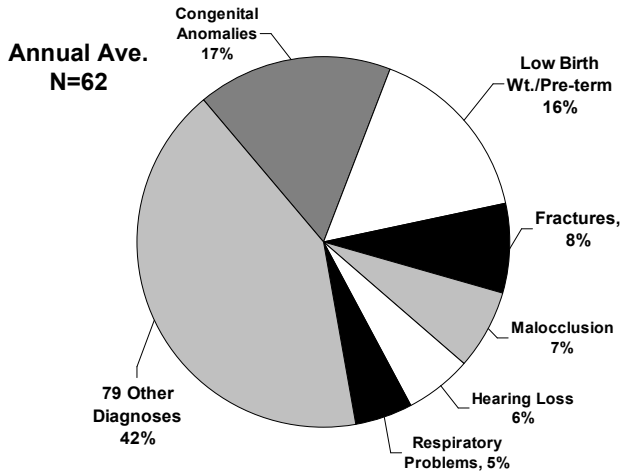
Why is This Important?

Children with Special Health Care Needs are: "…those who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally."[103] Nearly 20% of families in the U.S. have a child with special health care needs.[104] Children with special health care needs who meet strict eligibility criteria are able to access medical and developmental services through state-funded programs such as California Children's Services, Early Intervention, or Mental Health. But many children with special health care needs are not eligible for these services and their needs remain unmet.

Berkeley's Children with Special Health Care Needs

Congenital anomalies, prematurity and low birth weight account for one-third of the diagnoses of Berkeley children receiving medical services in the California Children's Services program.

Figure 3.21 – Leading Diagnoses of Children in California Children's Services, Berkeley, 2003-2006



Source: Alameda County Children's Medical Services , 2003-2006

Program Highlight: Child Health and Disability Prevention Program (CHDP)

CHDP improves health care access for Medi-Cal and low-income children in Berkeley by providing outreach and education regarding available services. CHDP providers provide physical check-ups which include immunizations, development and dental assessments, vision and hearing screening, health education and appropriate lab test for infants, children and teens with Medi-Cal. Periodic preventive health services are available to non-eligible children.

Asthma

Why Is This Important?

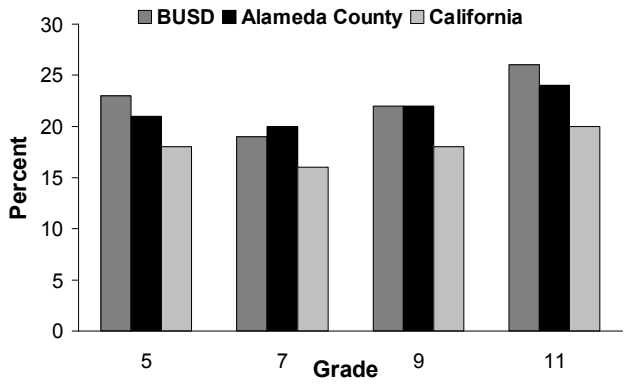
Asthma is the leading cause of hospital stays in children and the #1 cause of school absences.[105] Asthma triggers include air pollution, tobacco smoke, dust, pollen, and cockroaches, which are often worse in poor neighborhoods near freeways and with substandard housing. The percentage of children with asthma has been increasing. In California, the percentage of children ages 1-17 diagnosed with asthma rose from 14.1 percent in 2001 to 16.1 percent in 2005.[106]

African Americans are more likely to be hospitalized for asthma attacks and to die from asthma.[107,105] Hospitalization rates tell us about the burden of asthma in the community due to environmental and household triggers, access to medical care, and the quality of disease management for asthma.[108]

Asthma in Berkeley's Children

Over twenty percent of 5th graders in the Berkeley Unified School District report being told by a parent or other adult that they had asthma. The prevalence of asthma at all grades is consistently higher than the state average. Of more than 1400 students screened at the Berkeley High School Health Center in 2005, 12% had asthma.

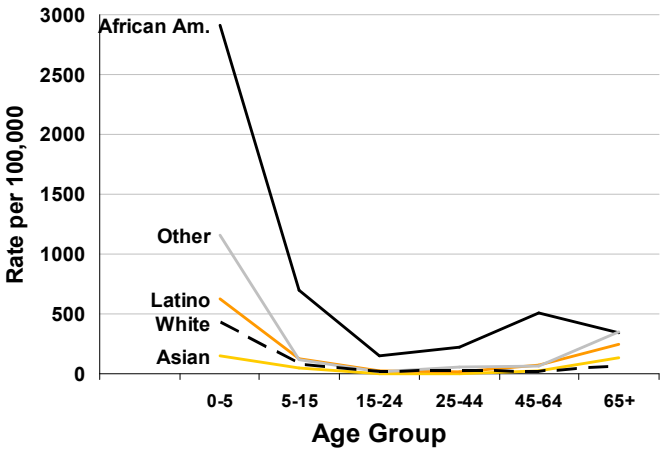
Figure 3.22 – Self-Reported Asthma Prevalence in BUSD Grade Students, Berkeley, 2005-6



Source: California Healthy Kids Survey, 2005-6

Annually, there are over 60 asthma hospitalizations in Berkeley children less than 15 years of age. Children account for about half of the 124 asthma hospitalizations that occur each year in Berkeley residents of all ages. African American children less than 5 years of age had over 5 times the rate of asthma hospitalization as White children of the same ages, and Latino children less than 5 years of age had 1.5 times the rate as White children.

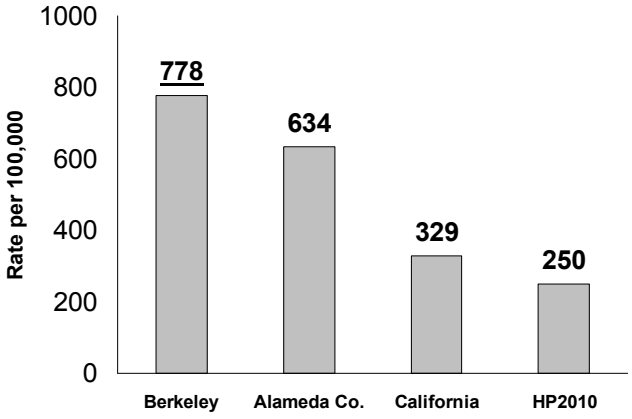
Figure 3.23 – Average Annual Asthma Hospitalization Rate by Age and Race/Ethnicity, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S.Census, 2000

For children under age 5, the rate of asthma hospitalization in Berkeley and Alameda County is significantly higher than the California rate.

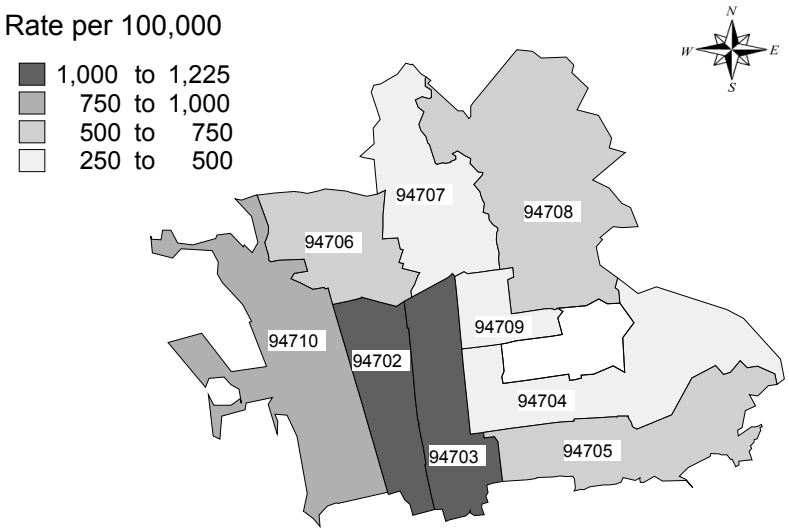
Figure 3.24 – Asthma Hospitalization Rate of Children < 5 Years of Age, Berkeley, Alameda County, California, 2001-2003



Berkeley's rate is statistically higher than California's rate
Source: Office of Statewide Health Planning and Development, U.S.Census, 2000

The highest rates of asthma hospitalization for children under 5 years of age occur in west and south Berkeley. The high hospitalization rates may be due to a higher number of children with asthma, high exposure to asthma triggers, lack of access to appropriate medications and primary care, inadequate primary care asthma management, or a combination of these factors. While the Public Health Division participates in regional coalitions on this issue, COB does not currently have any program activities that specifically address asthma.

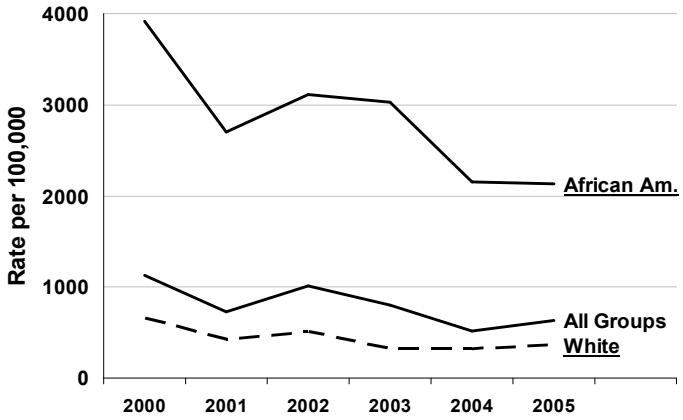
Map 3.1 – Asthma Hospitalization Rate of Children < 5 Years of Age by Zip Code, Berkeley/Albany, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census, 2000

From 2000 to 2005, the rate of asthma hospitalization in African American children less than 5 years of age decreased. However, in 2005, the rate was still 4 times higher than that of White children.

Figure 3.25 – Asthma Hospitalization Rate of Children < 5 Years of Age by Race/Ethnicity and Year of Hospitalization, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S.Census, 2000

Program Highlight: Secondhand Smoke Prevention

The Tobacco Prevention Program conducts community education and awareness campaigns aim to reduce children's smoke exposure (a known trigger for asthma) in homes and cars to help families develop smoke-free policies. The Smokefree Babies Project offers prevention services and cessation programs to pregnant mothers and their families to reduce exposure.

UC Berkeley students conducted surveys among over 800 Berkeley High School students in 2005 on their families' practices of allowing or restricting smoking within their family home and cars. Students reported that 25% of their families still allow smoking in their homes and 23% of the students reported that their families still allow smoking in their car.

Childhood and Adolescent Injuries

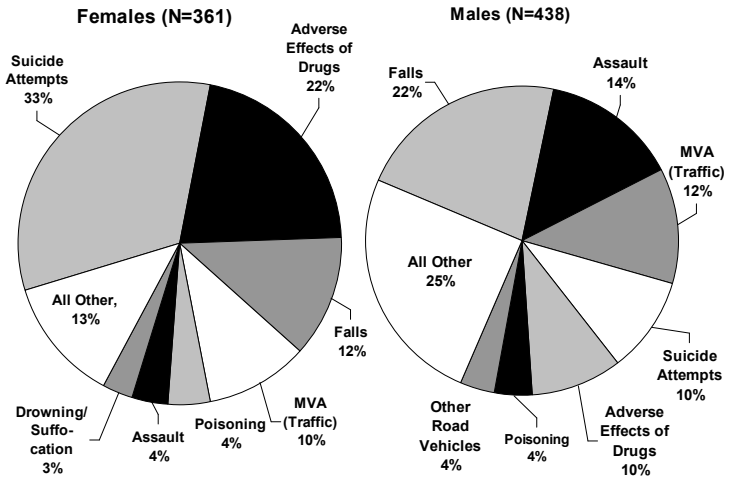
Why Is This Important?

Children and adolescents are at high risk for many injuries that can lead to death or disability. Among youth ages 13-20, homicides and suicides are top causes of injury hospitalization both in Alameda County and in California.[109] In 2004 in California and Alameda County, car crashes, bicycle collisions, and pedestrian injuries were responsible for 3 out of 5 leading causes of hospitalized nonfatal injuries for children.[109] The risk of motor vehicle crashes is higher among 16-19 year olds than among any other age group.[110] Compared with other age groups, teens have the lowest rate of seat belt use and the lowest usage rates are among African American and Latino students.[79] Drinking while driving is deadly – 25% of young drivers who died in motor vehicle crashes in 2003 had a high Blood Alcohol Concentration.[111]

Injuries in Berkeley's Children and Adolescents

From 2000 to 2005, there were 799 injuries in Berkeley youth less than 25 years of age serious enough to require hospitalization. For girls and young women, self-inflicted injury, adverse effects of medications and illicit drugs, and falls were the leading injuries. For boys and young men, falls, assault, and motor vehicle traffic collisions were the leading causes of injury.

Figure 3.26 – Leading Causes of Injury Hospitalization in Youth Under 25 Years of Age by Sex, Berkeley, 2000-2005



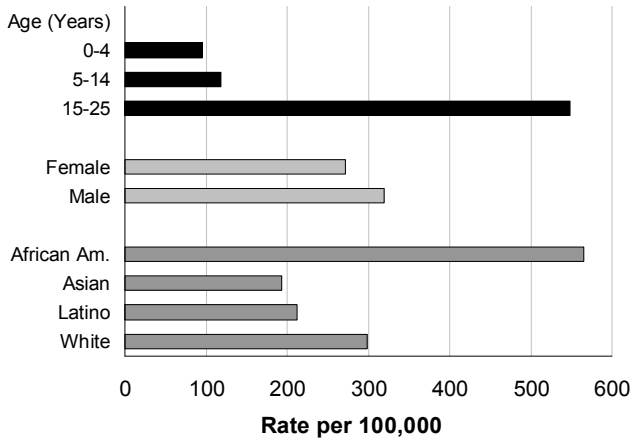
Source: Office of Statewide Health Planning and Development

Program Highlight: <u>Injury Prevention Program</u>

This is a community education program aiming to reduce bicycle, pedestrian and automobile injuries among youth in Berkeley by focusing on the prevention of drunk/drugged driving, risk reduction and safe travel habits. The program utilizes multiple intervention methods including comprehensive outreach, peer education, seminar-style education and services for children and families throughout Berkeley. Program activities include a high school peer education youth program, the Annual San Pablo Park Bike Rodeo (see picture on previous page), helmet and seat belt usage surveys, interactive educational programs for elementary-aged children, and the provision of free and low-cost helmets. The program is developing a peer-based youth violence prevention program. The program recently received an award from the California Office of Traffic Safety for its innovative peer youth education programs (see picture below).

Injury hospitalization rates are higher in males than females and increase rapidly in late teens. Injury hospitalization rates in African American youth are nearly double that of White youth.

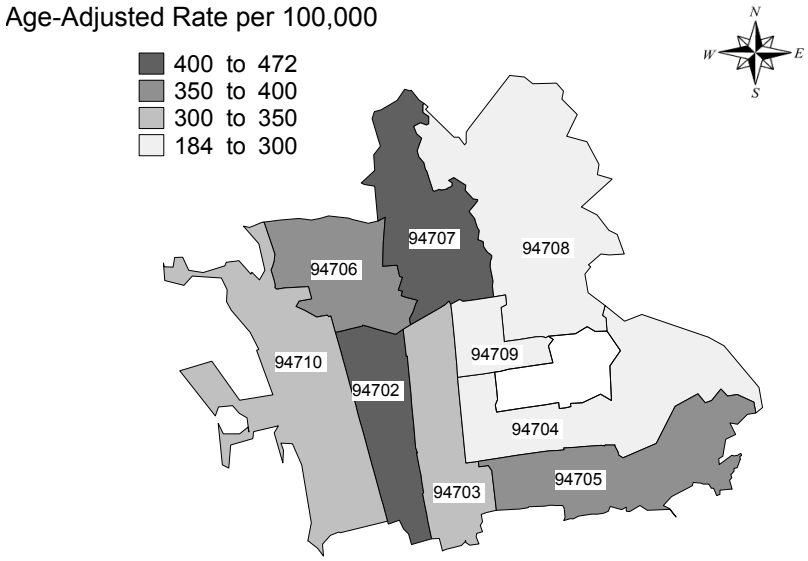
Figure 3.27 – Injury Hospitalization Rates in Youth Under 25 Years by Age, Sex, and Race/Ethnicity, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development

Injury hospitalization rates are highest in west Berkeley zip code 94702 and north Berkeley zip code 94707.

Map 3.2 – Injury Hospitalization Rate of Youth < 25 Years of Age by Zip Code, Berkeley/Albany, 2000-2005

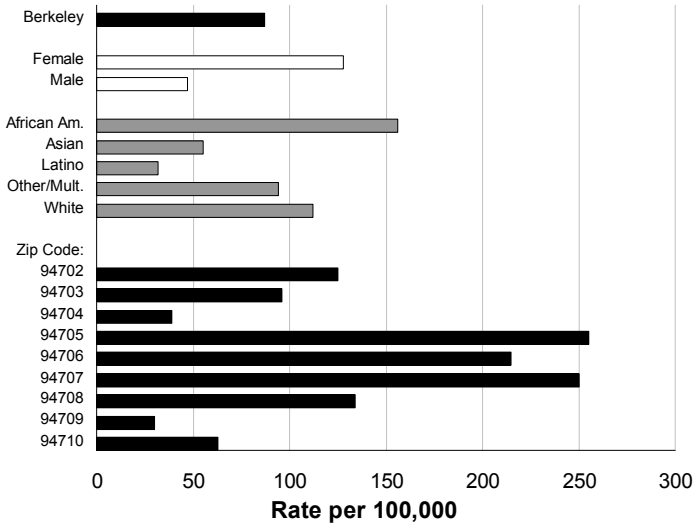


Source: Office of Statewide Health Planning and Development, U.S. Census, 2000

Self-Inflicted Injuries/Attempted Suicide

Girls and young women are 2.5 times more likely to be hospitalized for a self-inflicted injury than boys and young men. African Americans and Whites have increased risks for a self-inflicted injury. Youth in zip codes of southwest (94705) and northeast Berkeley (94706, 94707) have the highest rates of hospitalization for self-inflicted injury.

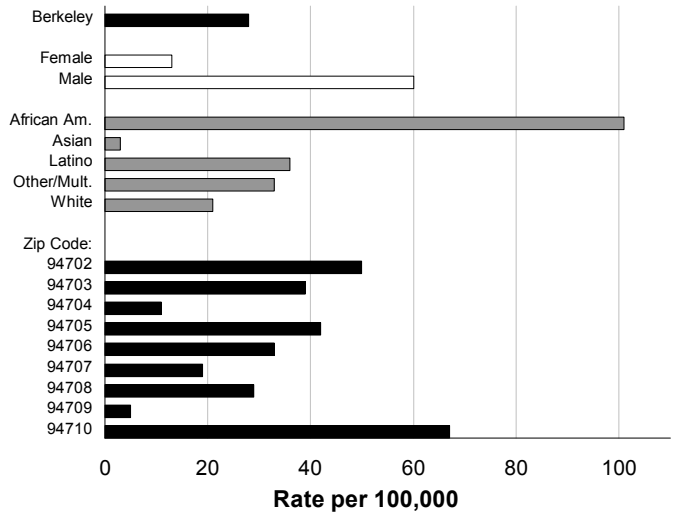
Figure 3.28 – Self-Inflicted Injury Hospitalization Rates in Youth 15-24 Years by Sex, Race/ Ethnicity, and Zip Code, Berkeley, 2000-2005



Assault and Youth Violence

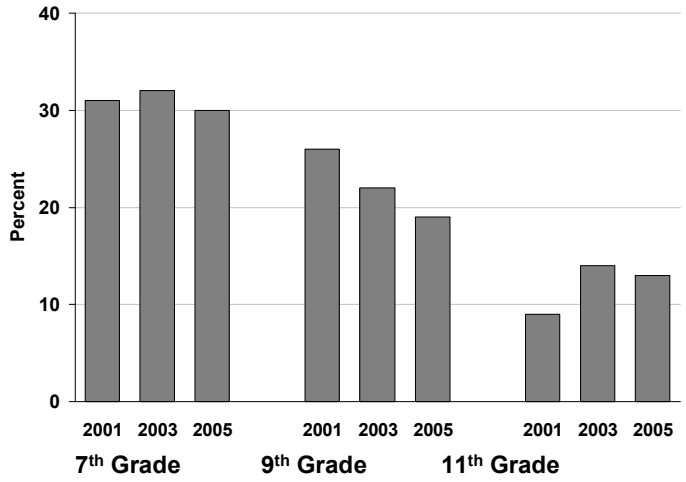
The male hospitalization rate due to assault was five times greater than that of females. The hospitalization rate of African Americans was 4 times greater than Whites, 3 times greater than Latinos, and 20 times greater than Asian youth. Youth living in zip codes of south and west Berkeley have the highest rate of assault hospitalizations.

Figure 3.29 – Assault Hospitalization Rates in Youth < 25 Years by Sex, Race/Ethnicity, and Zip Code, Berkeley, 2000-2005



Nearly one third of BUSD 7th graders surveyed between 2001 and 2005 reported having been in a physical fight within the past 12 months. Self-reported fighting decreases as students get older.

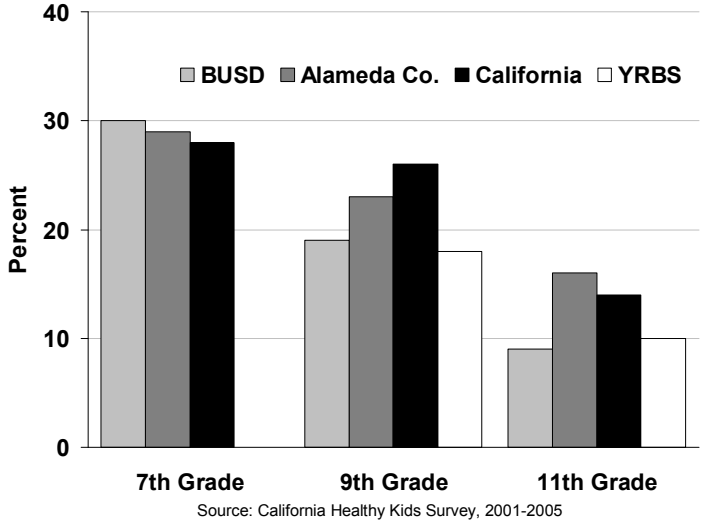
Figure 3.30 – "Been in a Physical Fight" in Last 12 Months of 7th, 9th, and 11th Graders, Berkeley Unified School District, 2001, 2003, 2005



Source: California Healthy Kids Survey, 2001-2005

Older BUSD students surveyed between 2001 and 2005 were less likely to be in a physical fight than their Alameda County or California counterparts.

Figure 3.31 – "Been in a Physical Fight" in Last 30 Days of 7th, 9th, and 11th Graders, Berkeley Unified School District, Alameda County, California, and Youth Risk Behavioral Surveillance, 2005



Source: California Healthy Kids Survey, 2001-2005

Dental Health

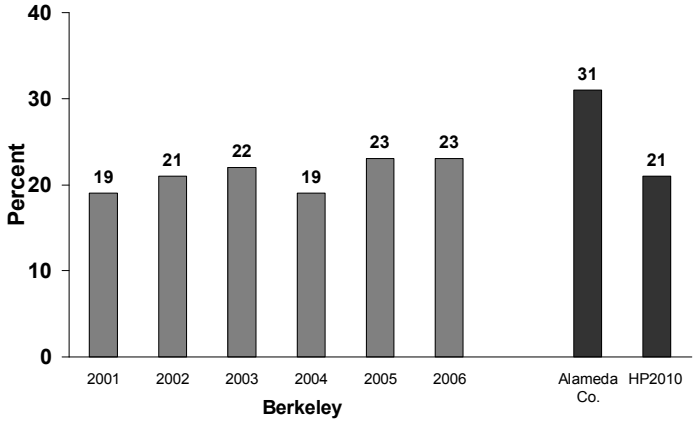
Why is This Important?

Dental caries are the single most common chronic disease of childhood.[112] Increased use of dental sealants, toothbrushing with fluoridated toothpaste, community water fluoridation, and sound dietary practices are needed to reduce tooth decay.[113] Untreated cavities cause pain that affects children's school performance.[114]

Dental Health of Berkeley's Children

On average, 21% of Berkeley's elementary school children have untreated tooth decay. This is a lower rate than Alameda County and matches the HP2010 goal of 21%.

Figure 3.32 – Untreated Tooth Decay in Second and Fifth Grade Students, Berkeley, Alameda County, and Healthy People (HP) 2010 Objectives



Source: Alameda County Oral Health Needs Assessment

Program Highlight: Oral Health Program

This program aims to decrease dental decay and increase overall health and well being of children in the Berkeley schools. It provides free dental screenings and sealants to 2nd and 5th grade children in all elementary schools.

Childhood Lead Poisoning

Why Is This Important?

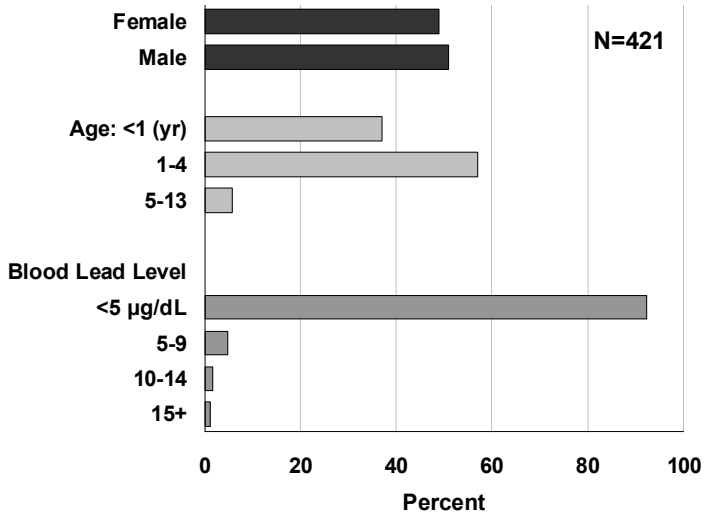
Lead poisoning (a blood lead level greater than 10 micrograms of lead per deciliter of blood) is a serious problem among young children that can go undetected because it typically has no obvious symptoms.[115] Lead exposure at low levels can cause learning disabilities and behavioral problems, and at very high levels can result in seizures, coma and even death. All high-risk children should be tested for lead at 12 and 24 months of age.

Children at greatest risk of lead poisoning are those under the age of 6 who are poor and reside or spend long amounts of time in pre-1978 housing (when lead was removed from house paint), childcare centers, or buildings that have chipping or peeling paint.[116, 115] The major source of lead exposure among U.S. children is lead-based paint and lead-contaminated dust found in poorly-maintained buildings. About 94% of Berkeley's housing units were built before 1979.[117] Other exposure sources include imported lead-glazed pottery, children's toys and jewelry, vinyl products, and take-home exposure from adults who work with lead (house painting, demolition, radiator repair).

Children Tested for Blood Lead

In 2006, 421 Berkeley children aged 0 to 13 years were screened for lead. Twelve children had elevated lead levels (>10µg/dl) that needed medical monitoring and follow-up. Eight of the 12 children lived in census tracts of southwest Berkeley, 2 lived in central Berkeley, and 2 lived in the Berkeley Hills.

Figure 3.33 – Children with Laboratory-Reported Blood Lead Tests, Berkeley, 2006



Source: California Department of Health Services, Laboratory Branch

Program Highlight: Childhood Lead Poisoning Prevention Program

This program provides medical case management for families of children with elevated blood lead levels, education, and technical assistance to medical providers, and increases awareness of the hazards of lead poisoning from painting and remodeling pre-1978 housing. Staff works closely with counterparts at the County to provide in-home consultations and self-testing kits for Berkeley property owners.

Anemia

Why Is This Important?

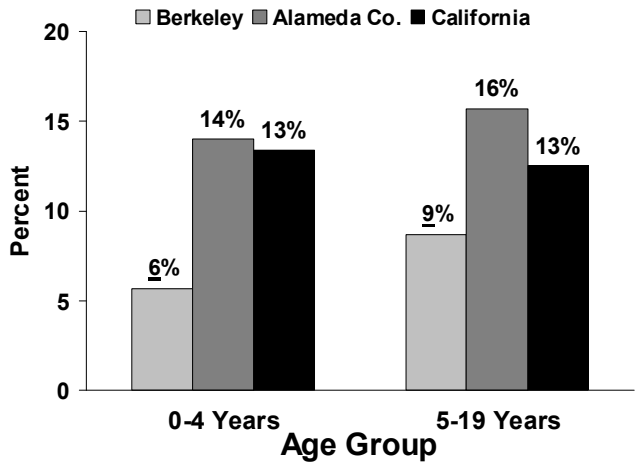
Anemia is often a marker of poor nutrition. Iron deficiency is the most common cause of anemia, though sickle cell disease is also a significant cause in some racial/ethnic groups. Untreated, anemia can lead to fatigue and poor growth. Risk factors for anemia in young children include poverty, prematurity, and birth to an iron-deficient woman.

Childhood Anemia in Berkeley

Nine percent of children screened in the Child Health & Disability Prevention Program had anemia.

The occurrence of anemia in Berkeley's CHDP enrollees is less than the Alameda County and state average.

Figure 3.34 – Anemia in Children in California Child Health & Disability Prevention Program, Berkeley, Alameda County, and California, 2005



Source: California Child Health & Disability Prevention Program, 2005

PUBLIC HEALTH PRIORITY

CHRONIC DISEASE PREVENTION

"If exercise could be packed into a pill, it would be the single, most widely prescribed and beneficial medicine in the nation."

- Dr. Robert N. Butler, Director, National Institute on Aging

Chronic diseases such as heart disease, cancer, and diabetes are the leading causes of death and disability in Berkeley, as well as across the United States. And although they are among the most common and costly of health problems, they are also among the most preventable. Adopting behaviors such as eating healthy foods, being physically active, and avoiding tobacco use can help prevent the development of these diseases and reduce the negative health impacts among those who do develop chronic illness.

Complex, powerful social and environmental forces in American society encourage eating too many high calorie, low nutrient foods and getting too little physical activity. These foods are more available, affordable and convenient than healthier options in many of our Berkeley neighborhoods, homes and workplaces. Technology has decreased the amount of energy that must be expended in daily living and academic pressures have reduced active play at schools. In addition, safety issues, community design and social norms discourage physical activity for many of our residents. Finally, access to screening and health care for those living with chronic illness is limited among low-income residents.

These and other factors combine in complex interactions across a number of social, environmental, and policy contexts in our community resulting in an epidemic that disproportionately impacts African American and Latino residents.

In order to effectively decrease death and disability from chronic illnesses, in addition to promoting personal responsibility about individual choices, we must also address the factors that influence those choices by promoting environmental solutions and institutional and government policies and practices that support healthy eating, increased physical activity, and access to health care.

City of Berkeley programs that work to prevent and manage chronic disease emphasize this need to address individual education concurrently with social, environmental and policy supports for healthier choices. Programs are designed to create conditions for all Berkeley residents where "the healthy choice is the easy choice" and all residents have access to screening, education and treatment.

IV. ADULT HEALTH

Quality of life is of prime concern at this stage in the life course. These are the family-focused and working years in which added responsibilities can create stress. Health behaviors such as smoking, inactivity, and poor diet can increase the risk for poor health and chronic illness. Also important considerations at this stage in the lifespan are injuries, communicable disease including HIV and other sexually transmitted infections, mental illness, alcohol and other drug use, and chronic diseases.

Highlights

- Healthy behaviors are more common in Berkeley adults than in their County and State counterparts
- Within Berkeley's adult population there are inequities in health behaviors and in health outcomes, most often impacting African Americans.
- Berkeley's adults have a lower risk of lung cancer and a higher risk of breast cancer and prostate cancer than Alameda County or California adults.
- Falls and prescription drug reactions are leading causes of hospitalization, particularly in older adults.
- Risks of injury in Berkeley pedestrians and bicyclists are low compared to other cities in California

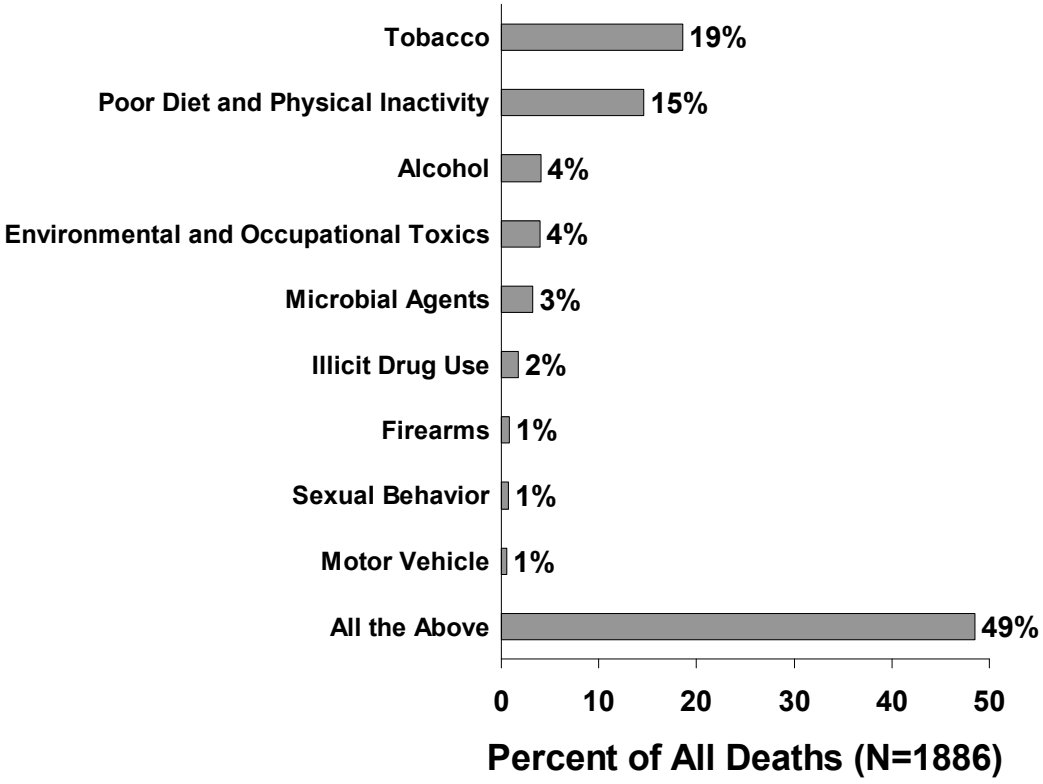
Impact of Health Risk Behaviors on Health Outcomes

Replicating a landmark study by McGinnis and Foege in the early 1990s, government researchers found that a large percentage of deaths in the United States were attributable to (actually caused by) preventable health risk behaviors such as smoking, poor diet, lack of exercise, alcohol abuse, and illicit drug use.[118, 119] They concluded that lifestyle changes such as never smoking or quitting smoking, eating healthier, and exercising more could prevent many of these deaths.[119]

Several social determinants of health such as poverty, race, and education level influence health risk behaviors and thereby contribute to poor health outcomes. In particular, low-income people and people of color experience adverse neighborhood and community level conditions that do not support healthy behaviors, eventually resulting in poor health.[120, 51, 121]

Lack of physical activity, unhealthy diet, use of tobacco, alcohol and other drugs, violence, and unsafe sex are estimated to be a cause for nearly 1/2 of all deaths in Berkeley.

Figure 4.1 – Leading Causes of Death by Behavioral Risk Factor, Berkeley, 2002-2004



Source: Berkeley Public Health Division Death Certificates, McGinnis JM, Foege WH. Actual causes of death in the United States. JAMA 1993;270:2207-2212.

Tobacco, Alcohol, and Other Drugs
Why Is This Important?

Tobacco, alcohol, and other drug use remains a pervasive public health problem in the U.S. Although rates of cigarette smoking are on the decline in the nation, in California and in Berkeley,[90, 106] its harmful health effects still account for nearly 440,000 deaths, or 1 of every 5 deaths in the U.S. every year.[93] There are more Americans who die every year from tobacco-related deaths than from HIV/AIDS, illegal drug use, alcohol use, motor vehicle injuries, suicides and murders combined.[119] Smoking is associated with poor general health and many conditions including cancer, cardiovascular disease, respiratory disease, and reproductive problems, among other diseases.[92, 90] Secondhand smoke exposure is a growing national priority and is a trigger for asthma and asthmatic episodes.[122]

Alcohol misuse is now the leading risk factor for serious injury in the United States, and the third leading cause of preventable death.[123-125] Alcohol abuse harms more than just the user; it has disastrous effects on those close to the individual, and leads to increases in crime.[126,127] In addition to the self-induced harm of substance abuse, people with alcohol or other drug disorders face public and private policies that limit their access to appropriate health care, housing, employment, and public benefits. The over-concentration of alcohol outlets in poor neighborhoods has been linked to increased crime and costly emergency and public health services.[127,126]

Illicit drug use (misuse of illegal or controlled drugs) includes marijuana, cocaine, hallucinogens, inhalants, heroin, or nonmedical use of sedatives, tranquilizers, stimulants, or analgesics. In a national household survey on drug abuse by the Substance Abuse and Mental Health Services Administration (SAMHSA) in 2004, 7.9% of people over 12 years of age used any illicit drug, 6.1% used marijuana, and 2.5% used a psychotherapeutic drug (non-medical use) in the past month.[128]

Program Highlight: <u>Tobacco Prevention Program – Prevention & Cessation</u>

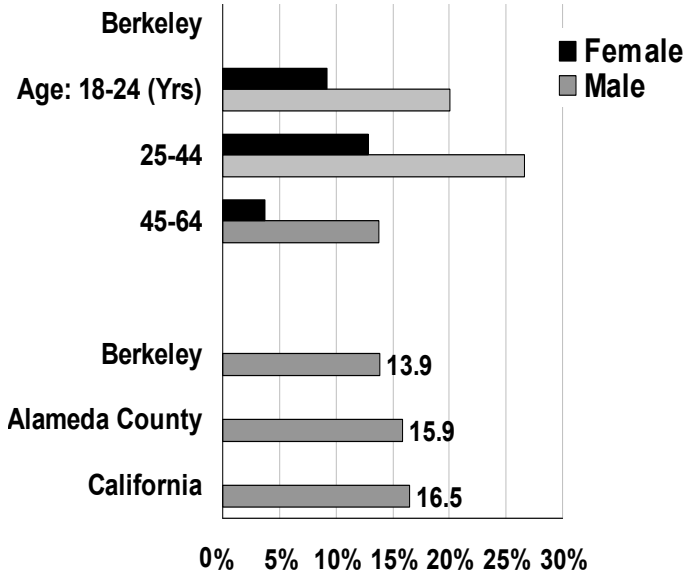
The program offers free, multi-session 'Freedom From Tobacco' classes to Bay Area smokers, each offering either acupuncture or hypnosis. Special cessation services and outreach interventions are delivered to pregnant and parenting families and to clinic staff who work with them. Clinicians receive continuing medical education in brief cessation interventions. Regular complaints about drifting smoke in multi-unit housing from people suffering significant consequences have prioritized the refinement and expansion of strategies to promote the Tobacco Prevention Program's 'Take it Outside' campaign in partnership with key stakeholders such as the Community Health Commission, City Attorney and others. The Berkeley Tobacco Prevention Coalition, working with City staff have advocated for amendments to the Berkeley Municipal Code to expand smokefree locations such as indoor and outdoor worksites, doorways, bus stops, and tot lots.

Tobacco Use in Berkeley

An estimated 11,000 Berkeley adults are current smokers. Young males have the highest smoking rates.

Berkeley's overall smoking prevalence is lower than Alameda County and the California average.

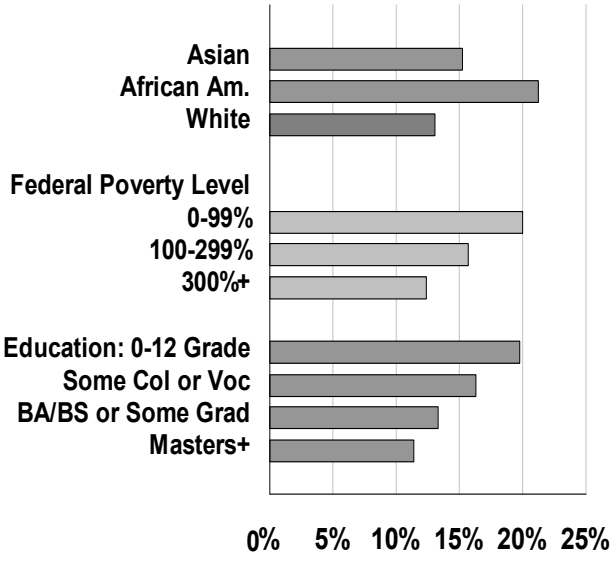
Figure 4.2 – Adults (18 Years and Older) Who Smoke Cigarettes Every Day or Some Days, Berkeley, Alameda County, California, 2001



Source: California Health Interview Survey (CHIS), 2001, Berkeley

African American adults smoke 1.6 times more than Whites. Poor people and those with a high school education or less are also more likely to smoke.

Figure 4.3 – Adults (18 Years and Older) Who Smoke Cigarettes Every Day and Some Days by Race/Ethnicity, Poverty Level, and Education, Berkeley, 2001



Source: California Health Interview Survey (CHIS), 2001, Berkeley

Tobacco Enforcement

Tobacco inspections by the Environmental Health Division review the facility permits of tobacco retailers to make sure they are in compliance with the Berkeley Tobacco Retail Licensure Ordinance.

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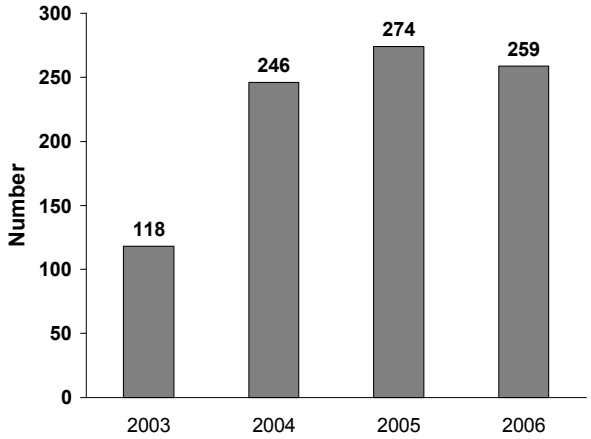
Figure 4.4 – Tobacco Inspections, Berkeley, 2003-2006



Source: Environmental Health Division, City of Berkeley

Program Highlight: Tobacco Policy Advocacy

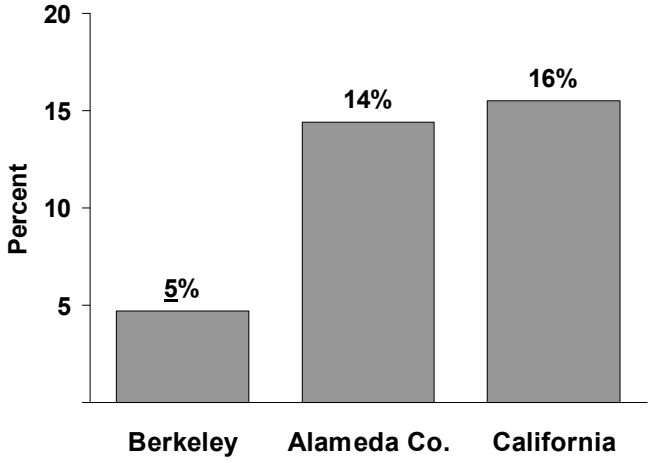
The Tobacco Prevention Program worked with youth to conduct survey research that led to local policy change. Surveys of youth tobacco purchases were conducted in 1996, 1998 and 2002, and it was found that 36-38% of Berkeley tobacco merchants sold tobacco to minors. Following passage of the Berkeley Tobacco Retail Licensure Law in Fall 2002, the rate fell to 14% in 2004 and 5.6% in 2006. This law implements an annual fee and is combined with penalties that prohibit merchants from selling tobacco following a violation.

Alcohol Use in Berkeley

An estimated 4,000 Berkeley adults drank 5 or more alcoholic beverages at a single sitting in the past month. Most of these "binge" drinkers are male and young adults.

The proportion of estimated Berkeley adults that report binge drinking is 3 times lower than the Alameda County or California average.

Figure 4.5 – Adults (18 Years and Older) Who Have More than 5 Drinks at a Time in the Previous Month, Berkeley, Alameda County, California, 2001



Source: California Health Interview Survey (CHIS), 2001, Berkeley

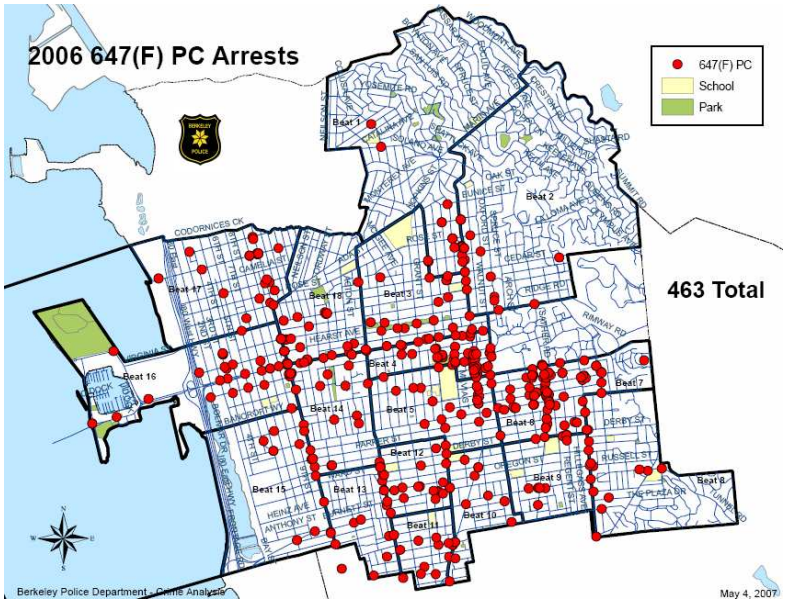
Program Highlight: Alcohol and Other Drugs (AOD) Program

This Program established the AOD Policy Council (collaboration between the Mental Health Division, local AOD providers and community members), implements standardized screening and assessment to improve substance abuse treatment and referrals for people with co-occurring disorders or dual diagnoses, and coordinates with others to address binge drinking and underage alcohol sales.

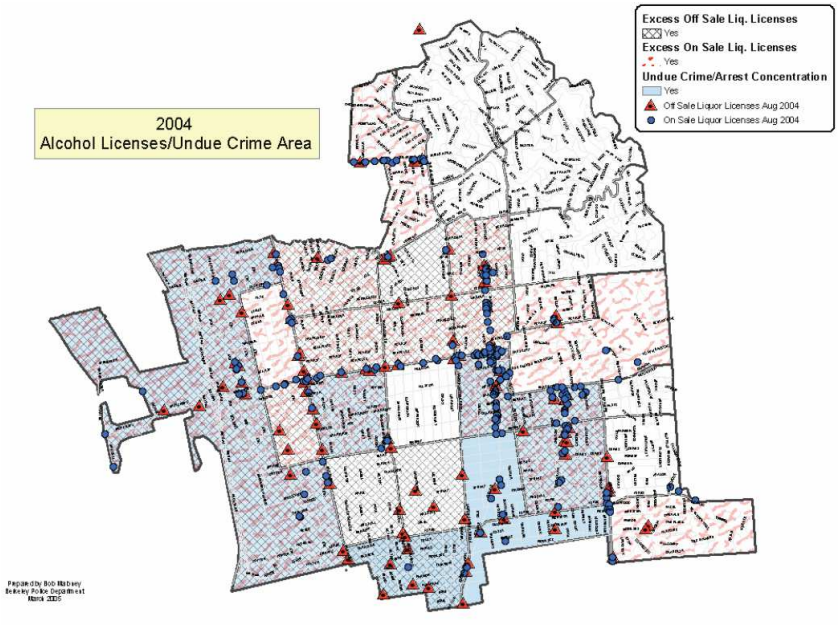
Impacts of Alcohol and Its Availability in Berkeley

Incidents of public drunkenness cluster along the western and southern borders of the campus of the University of California and along University and San Pablo Avenues. The locations of retail establishments that sell alcohol follow a similar pattern.

Map 4.1 – Arrests for Public Drunkenness, Berkeley Police Department, 2006



Map 4.2 – Alcohol-Selling Establishments, Berkeley, 2004



Source: Berkeley Police Department

Physical Activity, Nutrition and Overweight/Obesity

Why Is This Important?

Physically active people outlive inactive people.[129,130] Numerous large-scale studies in both the U.S. and around the world have demonstrated that physical activity can reduce the risk of developing or dying from heart disease, diabetes, colon cancer, and high blood pressure. Physical activity is especially important in preventing coronary heart disease (CHD, the leading cause of death and disability in the United States). Regular physical activity also helps to maintain functional independence of older adults and enhances the quality of life for people of all ages.[131]

In U.S. adults, rates of overweight and obesity have reached epidemic proportions.[132] As the rapid pace of daily life increasingly constrains time, we have put a strong value on the convenience, portability, and greater accessibility of food throughout the entire day.[84] Large portion sizes at relatively low cost, and more meals in restaurants and fast food establishments have increased the average calorie intake.[133,134] Meanwhile, caloric expenditure has decreased with more and more jobs involving sedentary activities and technology engineering physical activity out of our daily lives. We use TV remote controls instead of getting off the couch, leaf blowers instead of raking, power windows in our cars instead of hand cranks, elevators instead of stairs, being driven to school instead of walking – all of these small reductions in energy expenditure are cumulative.

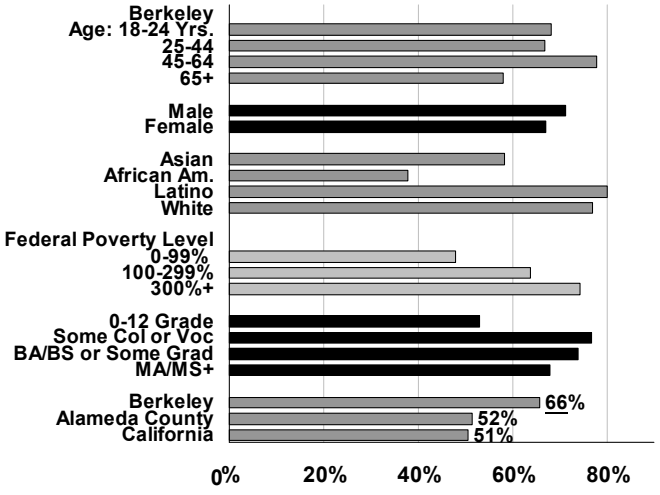
Overweight and obesity increase the risk for high blood pressure, type 2 diabetes, coronary heart disease, stroke, gallbladder disease, osteoarthritis, sleep apnea, respiratory problems, and some types of cancer.

Eating Fruits and Vegetables

Two-thirds of surveyed adults in Berkeley reported eating 5 or more servings of fruits and vegetables daily. African Americans, those living below the poverty level, and those with only a high school education are least likely to eat enough fruits and vegetables.

On average, Berkeley's adults eat more fruits and vegetables in their diets than adults in Alameda County or California.

Figure 4.6 – Adults (18 Years and Older) Who Ate 5 or More Servings of Fruits and Vegetables Daily, Berkeley, Alameda County, California, 2001

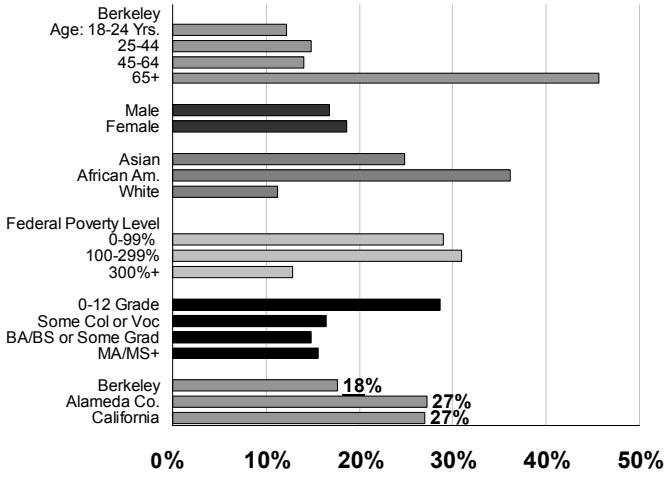


Source: California Health Interview Survey (CHIS), 2001, Berkeley

Physical Activity and Exercise in Berkeley

18% of surveyed adults in Berkeley reported that they did not have exercise in the past 30 days at a level that produced at least a light sweat or moderate increase in breathing or heart rate. Seniors, African Americans, low-income residents, and those with a grade school education were least likely to exercise, with almost half of older adults reporting no such exercise.

Figure 4.7 – Adults (18 Years and Older) Who Have No Moderate or Vigorous Exercise in Last 30 Days, Berkeley, Alameda County, California, 2001



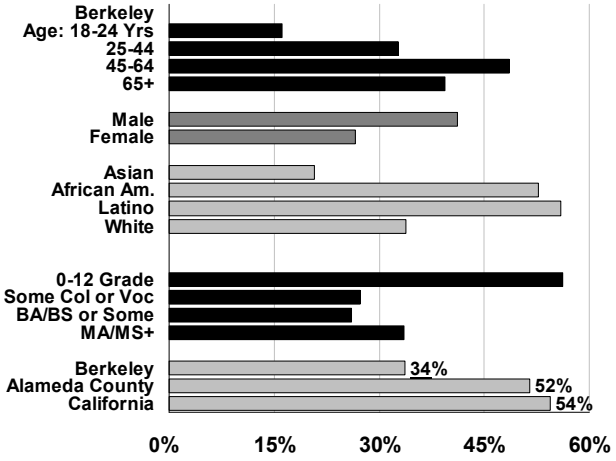
Source: California Health Interview Survey (CHIS), 2001, Berkeley

Overweight & Obesity in Berkeley

About 34% of surveyed adults in Berkeley are overweight or obese. 53% of African Americans and 56% of Latinos are overweight or obese. Rates are higher in older people and those with less education.

Berkeley has lower rates of overweight and obesity than Alameda County or California.

Figure 4.8 – Overweight and Obese Adults (18 Years and Older) Based on Body Mass Index (BMI) of 25 and Greater, Berkeley, 2001



Source: California Health Interview Survey (CHIS), 2001, Berkeley

Program Highlight: Nutrition & Physical Activity Promotion

The Program continues to conduct activities to implement the City of Berkeley Food and Nutrition Policy that was passed by Council in 2001. The Program collaborated with the Senior Programs Division to offer fresh salad bars at the senior centers, and is working with the school district, the Department of Parks, Recreation and Waterfront and the Division on Aging to provide more physical activity promotion and fitness tests for adults at senior centers and recreation centers. It also supports and collaborates with Spiral Gardens, a community food security project and the Ecology Center's Farm Fresh Choice Program to provide nutrition education and increase fresh produce availability for low-income residents through backyard containers and produce stands. With funding from Kaiser's Healthy Eating Active Living (HEAL) program, the program is working with local restaurants to improve the food/nutrition environment in Berkeley. Similar to the Green Business program, the goal is to establish a set of criteria that participating restaurant would adhere to in order to be identified as a Healthy Neighbor restaurant and interested restaurants would receive assistance from the city to meet the criteria and become part of promotional campaigns.

Injuries

Why Is This Important?

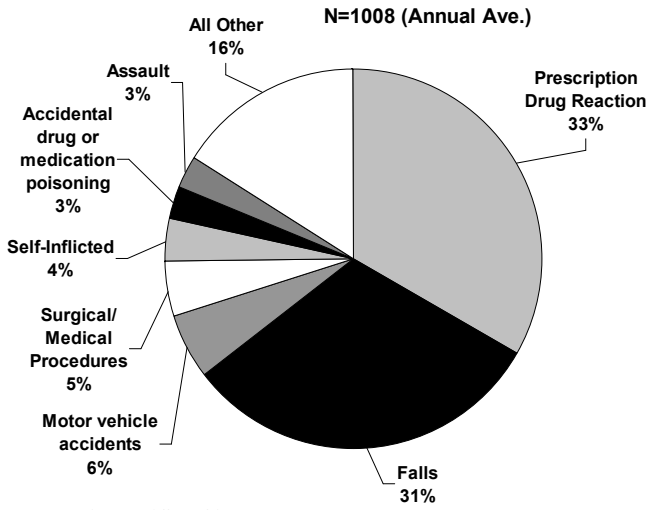
Injury is a leading cause of death in the U.S., and millions of Americans are injured or disabled each year by injuries. Most people have a serious injury at some time in their life. 6% of all deaths are from injuries. Of these fatal injuries, 63 percent are unintentional and 34 percent are intentional. Motor vehicle crashes cause about ½ of deaths from unintentional injury. Like diseases, injuries are preventable - they do not occur at random. Alcohol is an important contributing factor in many injuries.[135]

Over the last 30 years, laws requiring the use of seat belts, infant car seats, motorcycle and bicycle helmets, and improved car design all greatly reduced death rates from car and motorcycle crashes. Highway and road design can similarly reduce pedestrian and auto injuries, and home design such as grab bars in bathtubs can reduce fall injuries.[136]

Injuries in Berkeley's Adults

There were more than 1,000 hospitalizations due to injuries each year from 2000 to 2005. Two thirds of adults had either adverse reactions to prescription medications or fell. Seven percent of hospitalizations involved self-harm or assault. Motor vehicle collisions were the cause in 6% of hospitalizations.

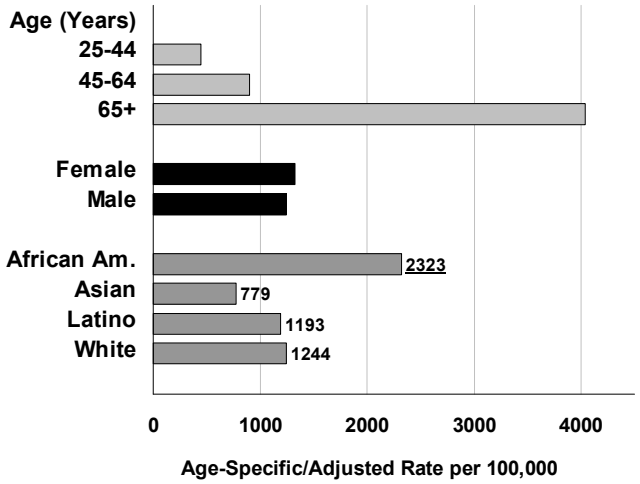
Figure 4.9 – Leading Causes of Injury Hospitalization of Adults 25 Years of Age and Older, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development

Injury rates in adults increase steeply after age 64. Injury rates in African Americans were 1.9 times greater than that of Whites.

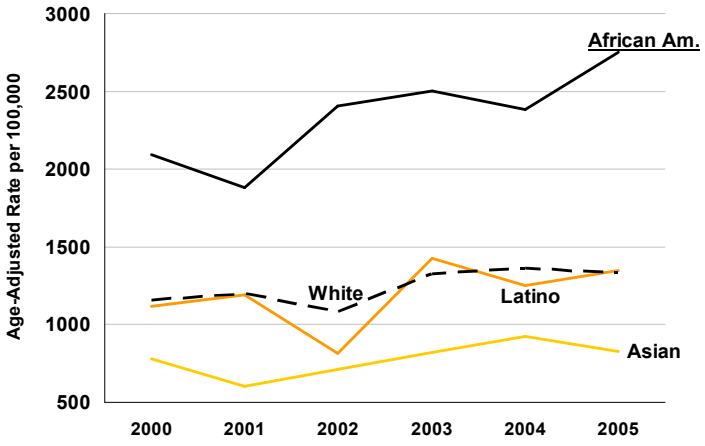
Figure 4.10 – Injury Hospitalization Rates in Adults 25 Years and Older by Age, Sex, and Race/Ethnicity, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S.Census, 2000

Hospitalizations for injuries increased for African American adults over the last 6 years and occur at twice the rate as in other racial/ethnic groups.

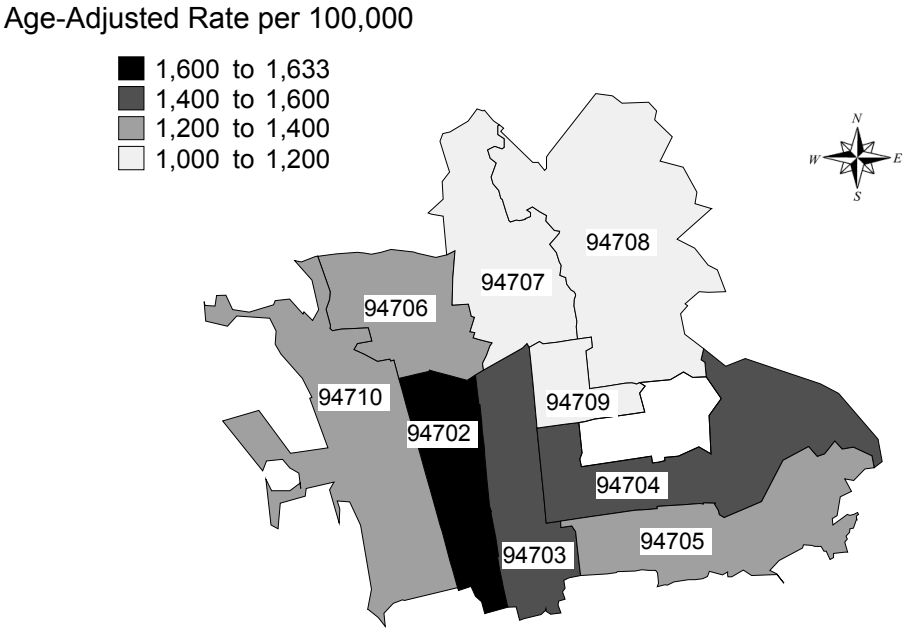
Figure 4.11 – Injury Hospitalization Rate in Adults 25 Years and Older by Race/Ethnicity and Year of Injury, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S.Census, 2000

The highest injury rates are found in southwest Berkeley.

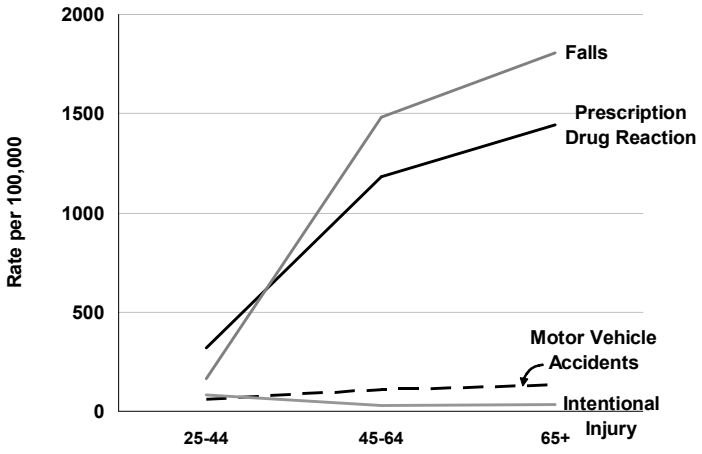
Map 4.3 – Injury Hospitalization Rate in Adults 25 Years and Older by Zip Code, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census, 2000

The rate of fall injuries and prescription drug reactions increases in middle and older ages. The rate of intentional injuries decreases with age, while motor vehicle accidents increase.

Figure 4.12 – Injury Hospitalization Rate by Age and Cause, Berkeley, 2000-2005



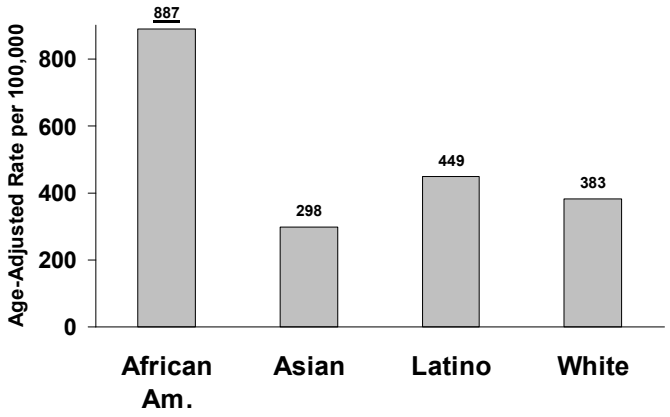
Source: Office of Statewide Health Planning and Development, U.S.Census, 2000

Hospitalizations due to prescription drug reactions occurred more than twice as frequently in African Americans than in Whites.

The highest rate of hospitalization from prescription drug reactions was in southwest Berkeley.

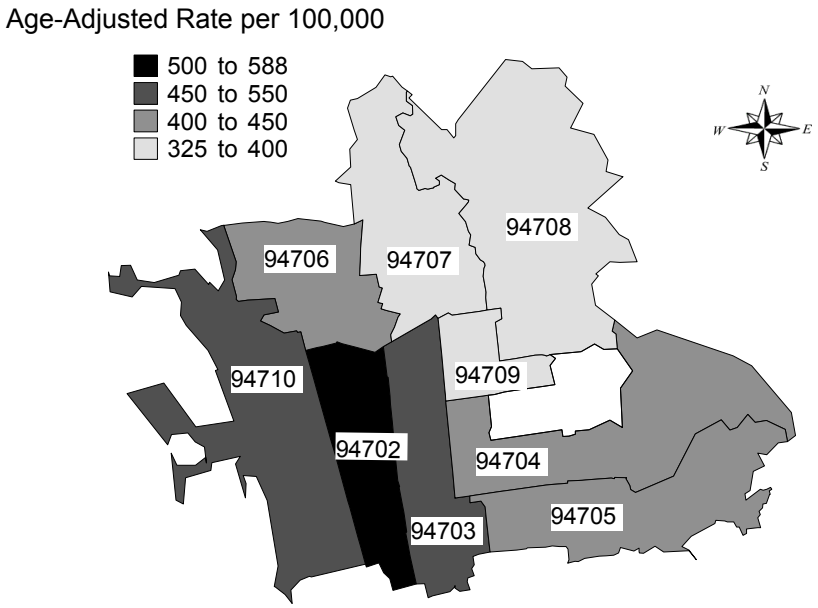
A large proportion of prescription drug reactions were due to medications used in treating heart disease (23%), pain (17%), diabetes (12%), and cancer (12%).

Figure 4.13 – Prescription Drug Reaction Hospitalization Rate in Adults 25 Years and Older by Race/Ethnicity, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S.Census, 2000

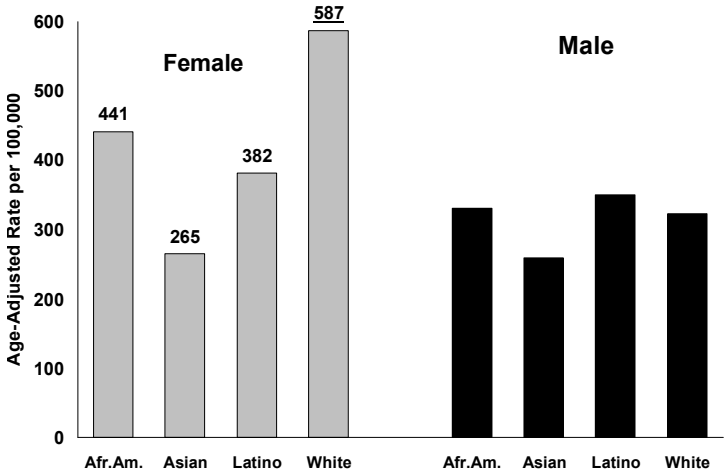
Map 4.4 – Rate of Hospitalization Due to Prescription Drug Reactions in Adults 25 Years and Older by Zip Code, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census, 2000

Women had higher rates of hospitalization for falls than men; White women had twice the rate of Asian women.

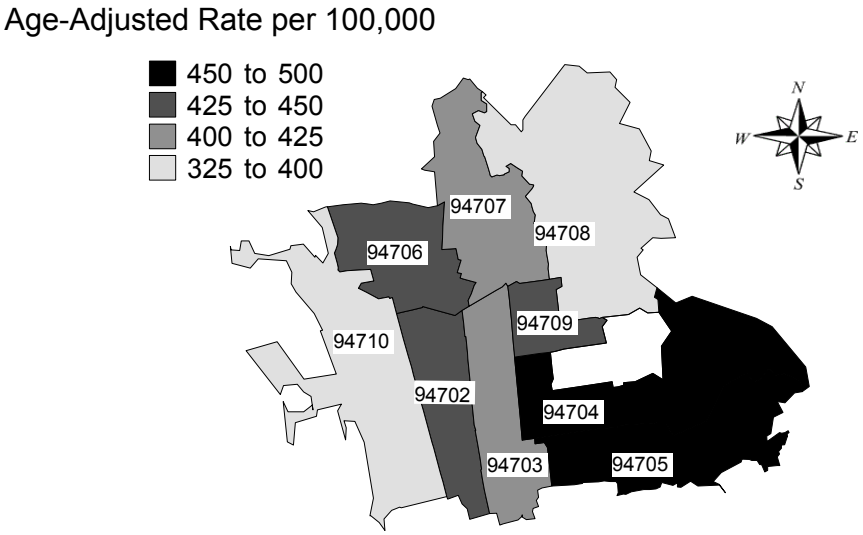
Figure 4.14 – Fall Injury Hospitalization Rate in Adults 25 Years and Older by Sex and Race/Ethnicity, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S.Census, 2000

The highest rate of hospitalization from falls was in southeast Berkeley.

Map 4.5 – Rate of Hospitalization Due to Falls in Adults 25 Years and Older by Zip Code, Berkeley, 2000-2005

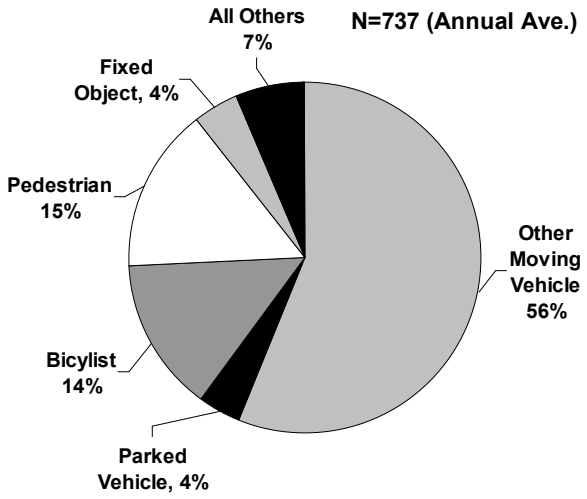


Source: Office of Statewide Health Planning and Development, U.S. Census, 2000

Motor Vehicle Traffic Injuries

Over 730 adults are injured and 2 Berkeley residents die each year in traffic collisions (as reported to the Berkeley Police Department).

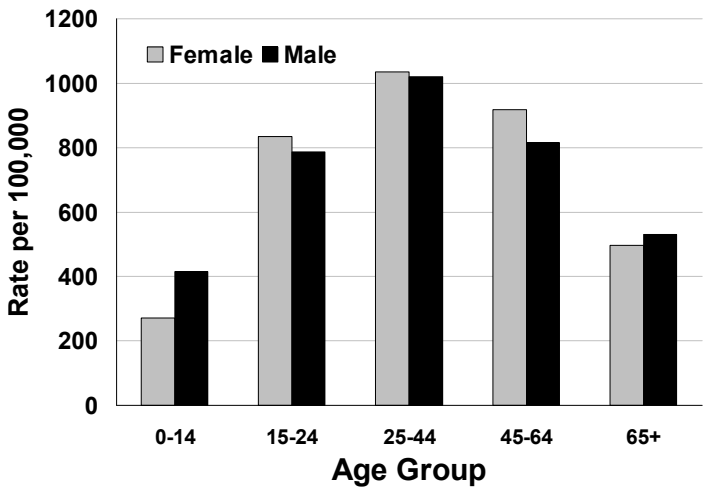
Figure 4.15 – Traffic Injuries Involving a Collision Between a Moving Vehicle and Other Vehicles, Bicyclists, and Pedestrians, Berkeley, 2003-2005



Source: Statewide Incident Traffic Reporting System (SWITRS)

In Berkeley, traffic injury rates peak in adults aged 25 to 44 years of age. At ages less than 15 and over 64 years, males have higher rates than females.

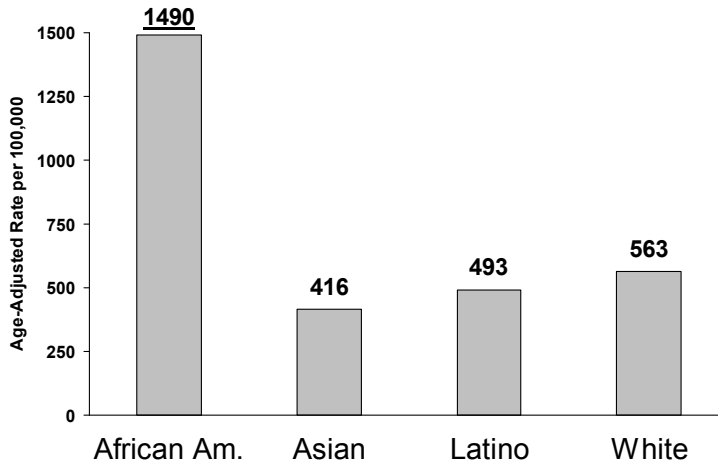
Figure 4.16 – Traffic Injury Incidence Rates by Age and Sex, Berkeley, 1998-2002



Source: Statewide Incident Traffic Reporting System (SWITRS), U.S. Census 2000

African Americans are more than twice as likely as other racial and ethnic groups to be injured in a traffic collision.

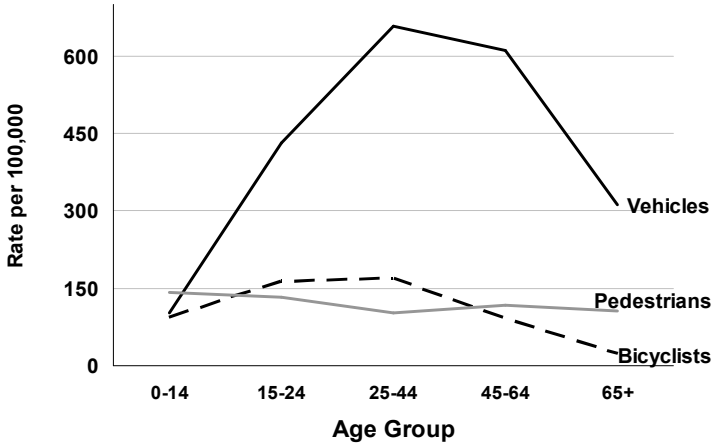
Figure 4.17 – Traffic Injury Incidence by Race/Ethnicity, Berkeley, 2002-2005



Source: Statewide Incident Traffic Reporting System (SWITRS), U.S. Census 2000

Pedestrian injury rates are relatively constant across age groups. Bicycle injuries are highest in children and young adults and decline after age 45. Motor vehicle injuries steadily climb from the youngest ages, peak in young adults, and then decline after age 45.

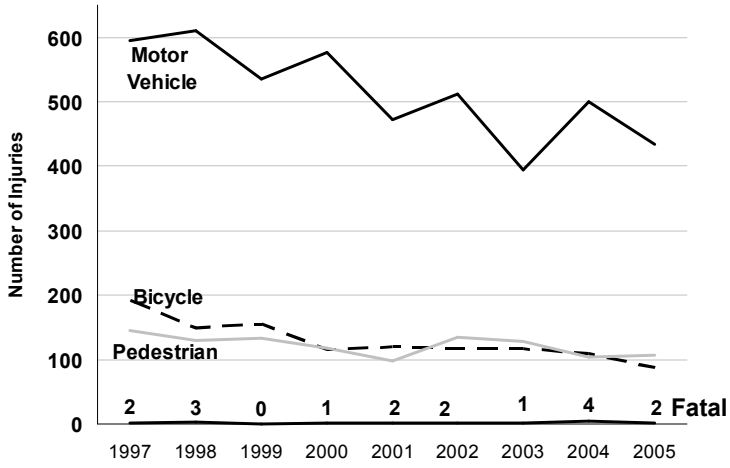
Figure 4.18 – Traffic Injury Incidence by Age and Type, Berkeley, 2002-2005



Source: Statewide Incident Traffic Reporting System (SWITRS), U.S. Census 2000

The annual number of traffic injuries occurring in Berkeley has been declining since 1997. The number of deaths due to collisions fluctuates randomly.

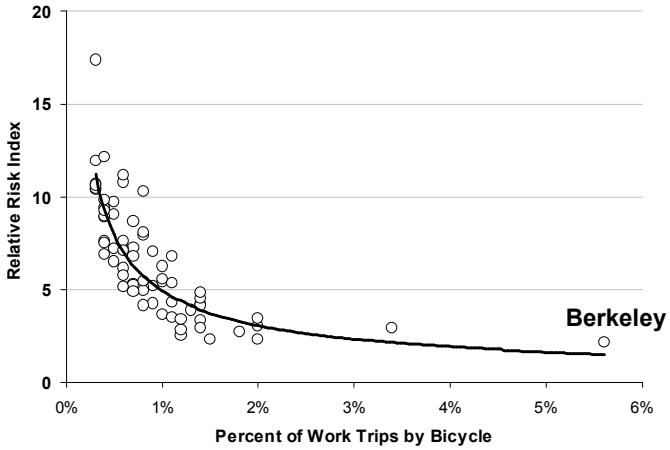
Figure 4.19 – Traffic Injuries by Type and Year, Berkeley, 1997-2005



Source: Statewide Incident Traffic Reporting System (SWITRS)

Compared to other major California cities, bicyclists that commute to work in Berkeley have a low risk of injury. This appears to be related to relatively high bicycle use.

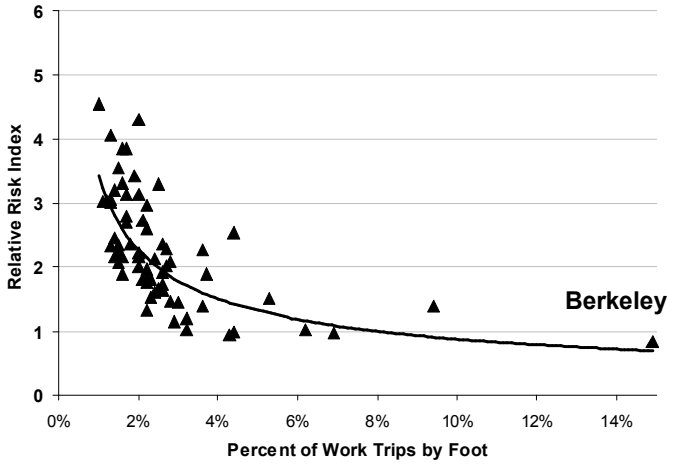
Figure 4.20 – Risk of Injury Bicycling to Work in 68 California Cities, 2000



Source: Jacobsen PL. Injury Prevention 2003;9:205. SWITRS, U.S. Census

Compared to other major California cities, Berkeley pedestrians walking to work have a low risk of injury. This appears to be related to high pedestrian volume.

Figure 4.21 – Risk of Injury Walking to Work in 68 California Cities, 2000



Source: Jacobsen PL. Injury Prevention 2003;9:205. SWITRS, U.S. Census

Domestic Violence

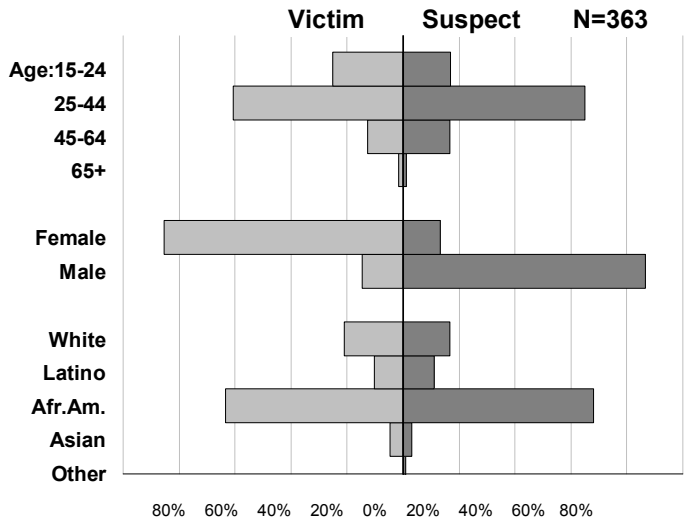
Why Is This Important?

Domestic Violence/ Intimate Partner Violence (IPV) is a serious, preventable public health problem affecting more than 32 million Americans [137]. The term "intimate partner violence" describes physical, sexual, or psychological harm by a current or former partner or spouse. Most incidents of IPV are not reported to the police. IPV results in nearly 2 million injuries and 1,300 deaths nationwide every year [138]. Among the ethnic groups most at risk are American Indian/Alaskan Native women and men, African American women, and Hispanic women [139]. Young women and those below the poverty line are disproportionately victims of IPV [139]. Frequent mental distress is common among women experiencing IPV and more than half of them want help, but few seek treatment for their mental health problems [140].

Domestic Violence in Berkeley

There were 363 domestic violence incidents in residents 15 years and older reported to the Berkeley Police Department in 2000. African Americans accounted for 64% of victims and 68% of suspects. Approximately 4% involved same-sex victims and suspects.

Figure 4.22 –Victims 15 Years of Age and Older and Suspects in Domestic Violence Incidents Reported to the Berkeley Police Department, 2000



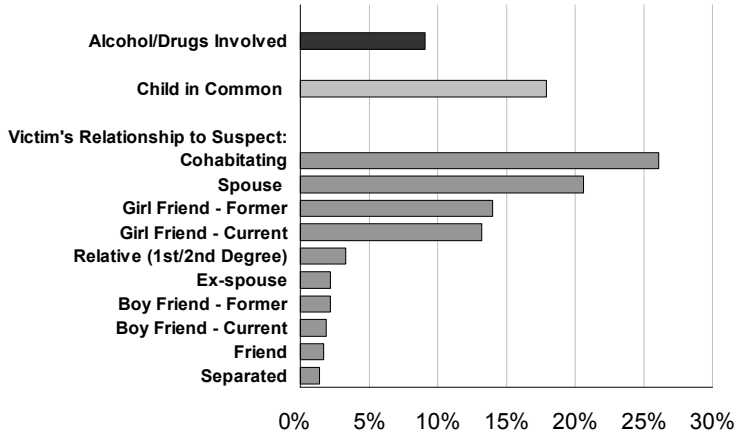
Source: Berkeley Police Department, 2000

Program Highlight: Domestic Violence Program

This program aims to coordinate activities with the school district, police department, the high school health center, the County, and community-based organizations to promote healthy relationships among Berkeley youth and their families. The program utilizes a youth-led model that is working to incorporate youth voice in identifying risk factors, coping mechanisms for stopping the cycle of abuse and developing outreach curriculum to promote change within peer and near-peer groups.

Alcohol and/or drugs were known to be involved in 9% of the incidents. In 18% of incidents, the victim and suspect were parents to a child who was present. Most incidents involved intimate partners who were currently living together.

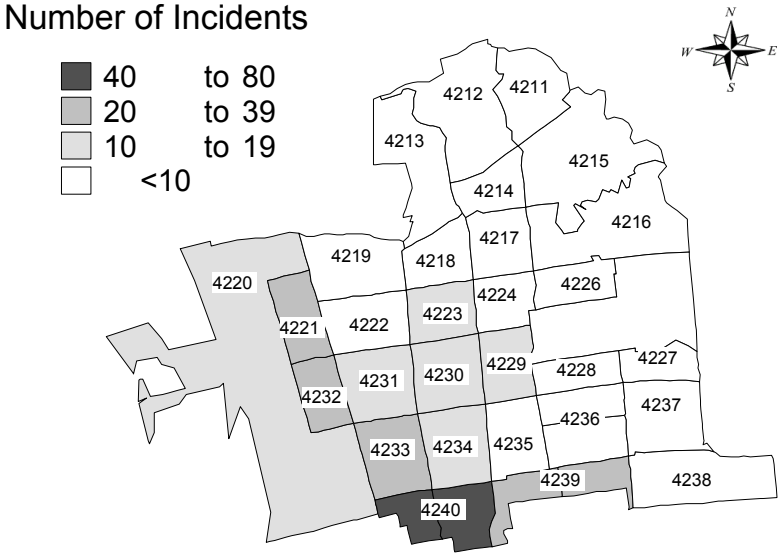
Figure 4.23 –Victims 15 Years of Age and Older and Suspects in Domestic Violence Incidents Reported to the Berkeley Police Department, 2000



Source: Berkeley Police Department, 2000

The number of domestic violence incidents reported to Berkeley's Police Department is highest in southwest Berkeley census tracts.

Map 4.6 – Incidents of Domestic Violence (Ages 15 and Older) Reported to the Berkeley Police Department by Census Tract, Berkeley, 2000



Source: Berkeley Police Department, U.S. Census, 2000

Communicable Disease

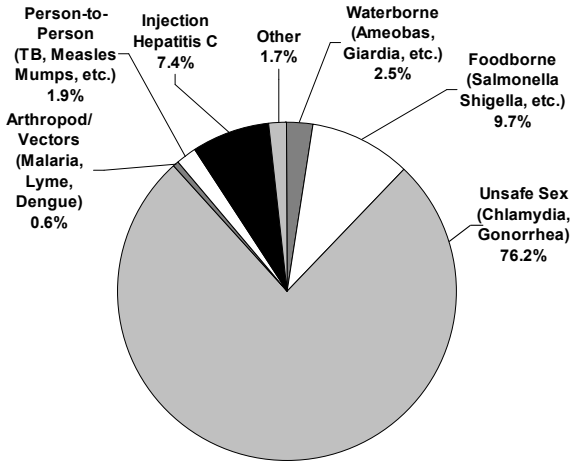
Why Is This Important?

While the 20th century brought vaccinations and antibiotics to prevent and cure infectious diseases, these diseases remain important causes of illness and death. New infectious agents and diseases are being detected, and some diseases considered under control – such as pertussis – have reemerged in recent years. Resistance to antibiotics is rapidly emerging as a difficult problem in a variety of hospital- and community-acquired infections. These trends suggest that many challenges still exist in the prevention and control of infectious diseases.

Communicable Diseases in Berkeley

Approximately 630 new cases of communicable diseases are reported each year in Berkeley. Three quarters of new cases were sexually transmitted infections.

Figure 4.24 – Communicable Disease Incidence Rates by Usual Mode of Transmission, Berkeley, 2000-2005



Source: Berkeley Public Health Division

Program Highlight: Communicable Disease Control Program

This program investigates cases of reported disease and works in partnership with the Environmental Health Division and with community partners, including University Health Services (Tang Center) to control and prevent the occurrence and spread of communicable diseases through prevention, surveillance and outbreak control. Outbreak investigations are conducted for any reported food-borne illness by working with doctors to identify and isolate the cause and to intervene to prevent the spread to others. Also, several large gastro-intestinal outbreaks occur in skilled nursing facilities each year that require intervention by public health nurses.

Communicable Disease: Acquired Immunodeficiency Syndrome (AIDS)

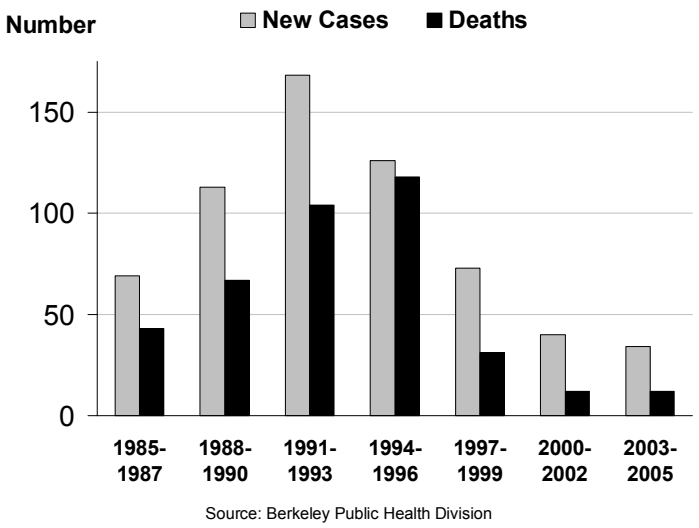
Why Is This Important?

AIDS is caused by HIV (human immunodeficiency virus). By killing or damaging cells of the body's immune system, HIV progressively destroys the body's ability to fight infections and certain cancers. Today, there are approximately 1.2 million people living with HIV/AIDS in the U.S, including more than 500,000 who are African American.[141] The HIV/AIDS epidemic is taking an increasing toll on minorities in the United States, especially among African Americans.[142] The epidemic has also had a disproportionate impact on African American men, women, youth, Latinos, and men who have sex with men, and its impact varies across the country.[143] The local epidemic has affected primarily men who have sex with men and intravenous drug users.

AIDS in Berkeley

The number of new AIDS cases and AIDS deaths has dropped substantially over time.

Figure 4.25 – New AIDS Cases and AIDS Deaths, Berkeley, 1985-2005



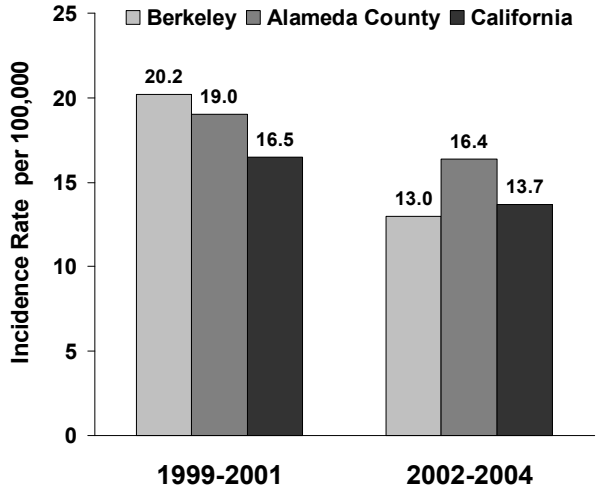
Source: Berkeley Public Health Division

Program Highlight: HIV and AIDS Programs

This program offers free and anonymous HIV/AIDS testing, community education and prevention workshops and outreach, assistance accessing approved drug treatment for individuals with HIV and AIDS with prescriptions and income eligibility, and public health nursing follow-up and case management. The program distributes 500,000 condoms annually, about 5 for every Berkeley resident. Innovative prevention activities include street outreach linked to HIV and STI testing, and the needle exchange harm reduction project (see picture of needle exchange van below). Assessment data of special populations at high-risk for HIV infection (including African American men who have sex with men, sex workers, and youth) is used to guide program planning for the Office of AIDS.

The incidence of AIDS has decreased over time for all populations in Berkeley and is lower in Berkeley than in Alameda County.

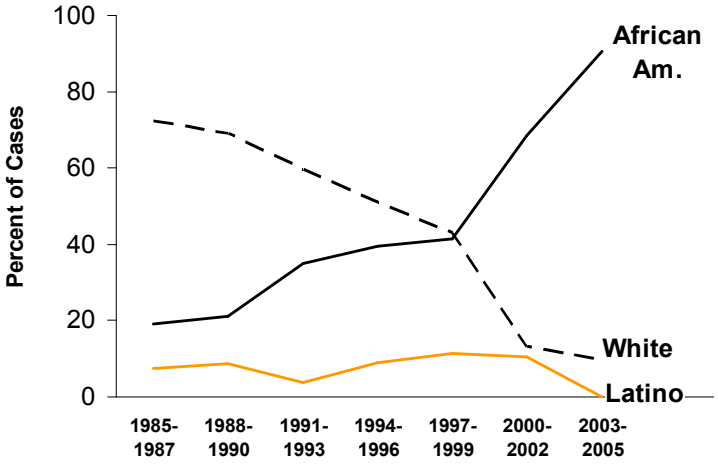
Figure 4.26 – Reported Incidence of AIDS Cases (Aged 13 Years and Over), Berkeley, Alameda County, California, 1999-2001 and 2002-2004 Average



Source: Berkeley Public Health Division

Over 90% of the new AIDS cases reported since 2003 are in African Americans.

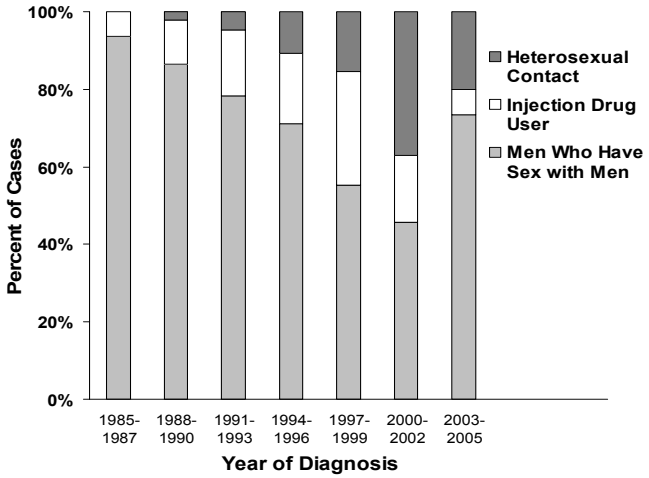
Figure 4.27 – Proportion of AIDS Cases by Race/Ethnicity, Berkeley, 1985-2005



Source: Berkeley Public Health Division

In 2003-2005, sex between men was the primary mode of transmission of AIDS.

Figure 4.28 – Proportion of AIDS Cases by Three Major Modes of Exposure, Berkeley, 1985-2005



Source: City of Berkeley Public Health Division

Communicable Disease: Sexually Transmitted Infections

Why Is This Important?

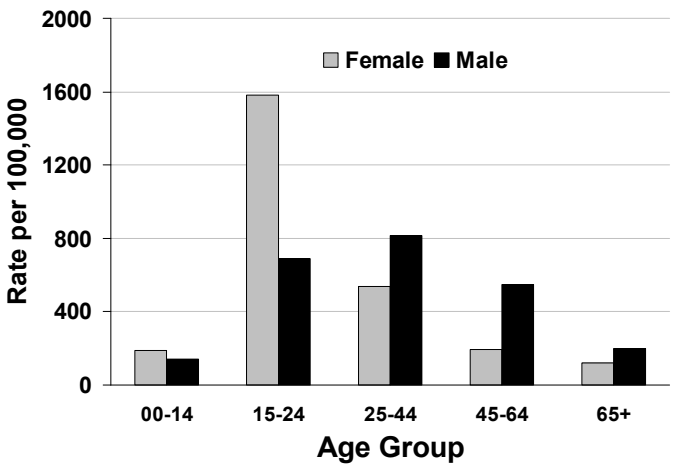
Sexually Transmitted Infections (STIs) cause many harmful, often irreversible, and costly clinical complications, such as reproductive health problems, fetal and perinatal health problems, and cancer. STIs are also part of a causal chain of events in the sexual transmission of HIV infection.[144] Chlamydia infections – though often without symptoms – can cause infertility, and affect 3 times more women than men.[99] Gonorrhea infection increases the risk for pelvic inflammatory disease, infertility, ectopic pregnancy, and acquisition and transmission of human immunodeficiency virus (HIV).[145] The rate of gonorrhea is increasing and it is resistant to many drugs used to treat it.[146] Syphilis rates increased from 2001 to 2005, primarily among men who have sex with men, and those with high rates of HIV co-infection and high-risk sexual behavior.[147]

Sexually Transmitted Infections in Berkeley

The peak incidence of STIs in females is between ages 16 and 24. For males the peak incidence was between 25 and 44 years of age.

Race/ethnicity information was not reliably reported.

Figure 4.29 – Communicable Disease Incidence Rates by Age and Sex, Berkeley, 2000-2005



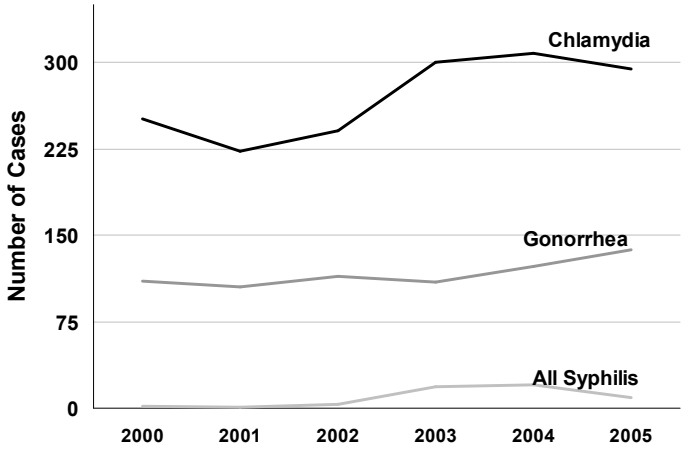
Source: City of Berkeley Public Health Division, U.S. Census 2000

Program Highlight: Sexually Transmitted Infections (STIs)

This program offers confidential testing, diagnosis, treatment and prevention education (see picture of counseling session below) to residents who think they may have a sexually transmitted infection (also called STD or VD). The program also provides free condoms and lubricants, and links to other program services (birth control, HIV/AIDS).

The rates of Chlamydia and gonorrhea are rising. Higher rates may be explained by increases in screening high-risk populations.

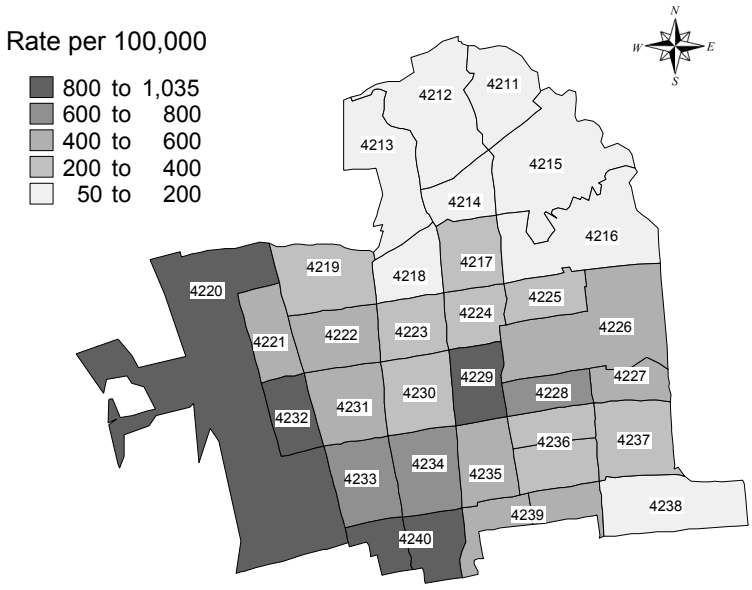
Figure 4.30 – Cases of Chlamydia, Gonorrhea, and Syphilis by Year of Report, Berkeley, 2000-2005



Source: Berkeley Public Health Division

Incidence rates of reported sexually transmitted infections were highest in west and southwest Berkeley and in census tracts southwest of the campus of the University of California.

Map 4.7 – Incidence Rate of Sexually Transmitted Infections by Census Tract, Berkeley, 2000-2005



Source: Berkeley Public Health Division, U.S. Census 2000

Other Communicable Diseases: Hepatitis C, Foodborne illness and Tuberculosis

Why Is This Important?

Hepatitis C virus (HCV) is the most common chronic blood borne viral infection in the United States. The most common source of transmission is through sharing of equipment between injection drug users, and most new cases are young adults aged 20 to 39 years. Tuberculosis is a very infectious disease that most often affects the lungs. While the number of new TB cases is declining, highly drug resistant forms of TB have emerged that are very difficult to treat. Immigrants (especially from Southeast Asia) and people with AIDS are at high risk of TB.

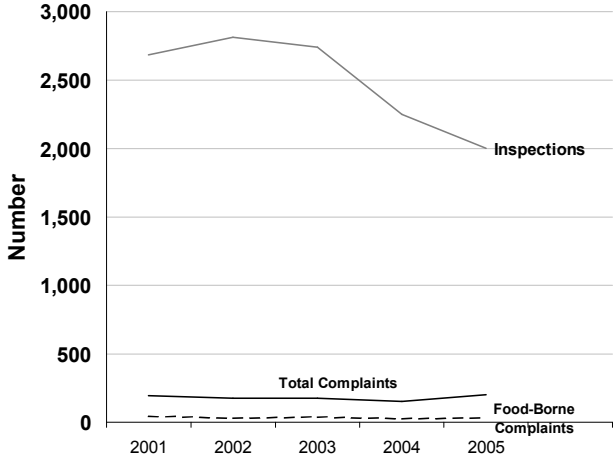
Each year, it is estimated that 76 million people experience foodborne illness. The major causes of foodborne illnesses are improper food preparation, storage, and distribution practices; poor hand hygiene among food handlers, and an increasingly global food supply. Recent outbreaks such as the E. Coli from spinach have brought more attention to these rather common illnesses, and are a reminder that our food supply must be monitored. Restaurants serving safe food, free of disease-causing pathogens, are essential for a healthy and sustainable Berkeley community.

Food Safety

Each year, over 2000 routine restaurant inspections are conducted by the Environmental Health Division, which receives an annual average of 180 complaints from restaurant patrons. About 19% of complaints are related to suspected foodborne illness.

Complaints of suspected foodborne illness receive priority response and are usually investigated within 24 hours.

Figure 4.31 – Restaurant Inspections and Complaints, Berkeley, 2001-2005



Source: Environmental Health Division, City of Berkeley

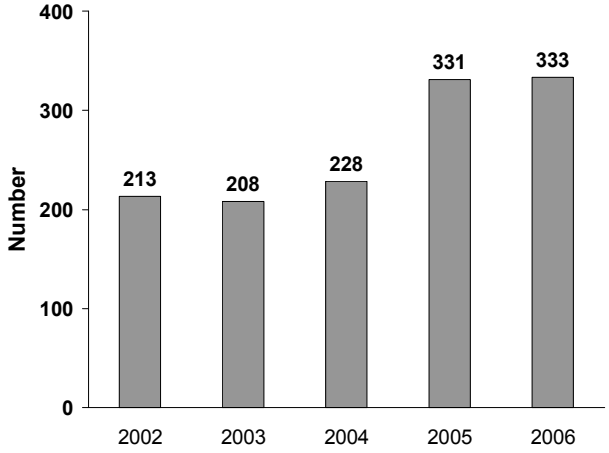
Program Highlight: Environmental Health Division

The Division administers several local programs to protect the public against environmental health hazards. This is achieved through community education efforts and by enforcement of state and local laws to ensure safe supplies of food, water and a clean environment, to monitor the proper management of wastes, to control human disease vectors, to investigate environmental health-related causes of illness and to abate hazardous environmental health conditions. Local programs include food safety, public pools and spas, noise control, smoking control, tobacco licensing, demolition inspections, abandoned vehicles, vector control, waste tire management, water quality monitoring, Berkeley Municipal Code Enforcement, and public health emergency response.

Rodent Requests for Service

The City's Vector Control Program concentrates on the monitoring and control of the rodent population to suppress populations of Norway rats, roof rats, and house mice. Staff responds to public nuisance complaints that may be potential rodent nests such as accumulations of garbage, rubbish, overgrowth of vegetation, abandoned or inoperable vehicles, and animal waste. Service requests have increased over the last 5 years.

Figure 4.32 – Rodent Service Requests, Berkeley, 2002-2006



Source: Environmental Health Division, City of Berkeley

Program Highlight: Tuberculosis (TB) Control

Contact investigation is a fundamental strategy for the control and prevention of tuberculosis. Berkeley has had 28 cases of active TB disease since 2003. Each case generates anywhere from 3 to 100 contacts to follow up for examination, evaluation and possibly treatment. Each newly diagnosed case of tuberculosis requires a public health nurse to assist and observe a patient taking their medication each day so that the entire course of medication is taken in the correct dose, at the correct time and for the complete period of therapy often 6-9 months, but sometimes up to 24 months. Lapses in the regimen can lead to spread to other individuals and drug resistance.

The Public Health Clinic offers TB skin testing and reading. Berkeley residents without a medical provider or health insurance are eligible for the Health Department's twice monthly TB Diagnostic Clinic, where a chest x-ray, medical examination and medicine may be provided.

Chronic Disease

Why Is This Important?

Sixty percent of all deaths in the world are due to chronic diseases.[148] Chronic diseases are diseases that are long-lasting or reoccurring and typically result from lifestyle behaviors, such as smoking, diet and level of physical activity, and environmental factors like pollution. Examples of chronic diseases include diabetes, hypertension (or high blood pressure), heart disease, asthma and cancer. Chronic diseases can be controlled and managed, but rarely cured completely. In many cases, chronic disease can be prevented, its onset delayed or with proper management, the number and severity of complications can be reduced. Improved nutrition, increased physical activity, and not smoking are primary lifestyle behaviors that can prevent chronic disease.

Cancer

Why Is This Important?

Cancer is a term for diseases in which abnormal cells divide without control; it results from changes in the genes that control normal cell growth and death that may be inherited or be caused by smoking or other environmental or lifestyle factors.[149] Over half of all cancers are preventable.

Lung cancer is responsible for more deaths than any other cancer. Cigarette smoking is the most important risk factor for lung cancer, accounting for 68 to 78 percent of lung cancer deaths among females and 88 to 91 percent of lung cancer deaths among males.[93]

Breast cancer is the most common cancer among women in the United States. Death from breast cancer can be greatly reduced if the tumor is discovered at an early stage, especially through the use of mammography. Most breast cancer risk factors (family history, age, reproductive history, race and ethnicity) are not amenable to intervention; but overweight and hormone use are important risk factors for breast cancer in post-menopausal women, and can be addressed.[150] White women have the highest rates of breast cancer nationally but African American women with breast cancer were more likely to die of it than other racial/ethnic groups, due in part to delayed diagnosis and treatment.[151]

Cervical cancer is the 10th most common cancer in women. Almost all cervical cancer deaths could be avoided if all women got recommended routine screening with Pap smears and follow-up. The new Human Papilloma Virus (HPV) vaccine may soon decrease the risk of cervical cancer even further.

The most common form of cancer (other than skin cancer) among men is prostate cancer; prostate cancer most often occurs in men aged 65 and older. African American men die of prostate cancer more frequently than men in other groups.[152]

Screening for colorectal cancer can reduce mortality through early detection.

Program Highlight: Preventive Services at Public Health Clinic

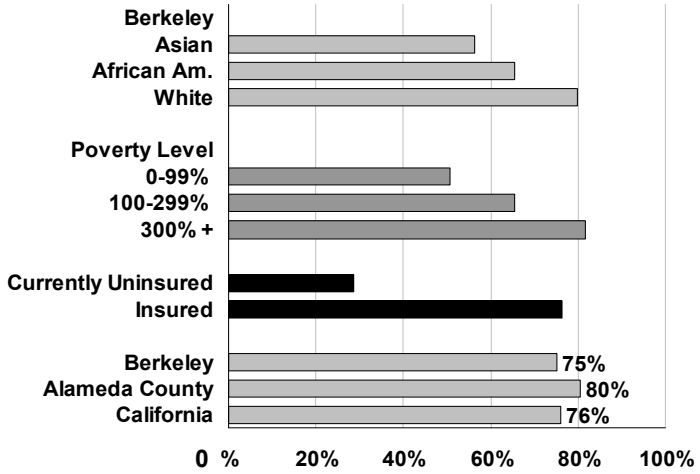
The Public Health Clinic offers preventive health services including pap smears (cervical cancer prevention), and local and low-cost referrals to breast screening/mammography services.

Mammogram to Screen for Breast Cancer

In 2001, 75% of Berkeley women over 40 years old surveyed reported having had a mammogram in the past 2 years. White women reported higher rates of having a mammogram than either African American or Asian women.

Alameda County has a higher percentage of women reporting having had a mammogram than Berkeley.

Figure 4.33 – Mammogram in Past 24 Months in Women Aged 40 Years and Older, Berkeley, 2001



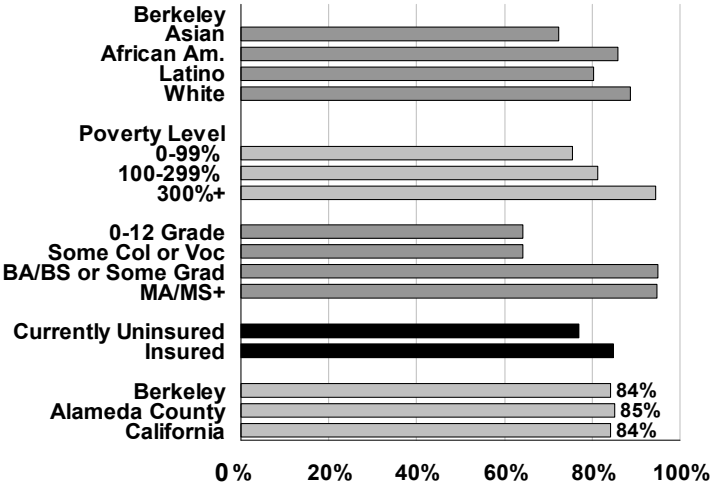
Source: California Health Interview Survey, Berkeley, 2001

Screening for Cervical Cancer

In 2001, 84% of surveyed Berkeley women over 18 years old reported having had a Pap test within 3 years.

An average of 4 Berkeley women are diagnosed with invasive cervical cancer each year.

Figure 4.34 – Pap Test in the Last 3 Years in Women Aged 18 Years and Older by Race/Ethnicity, Berkeley, California, 2001

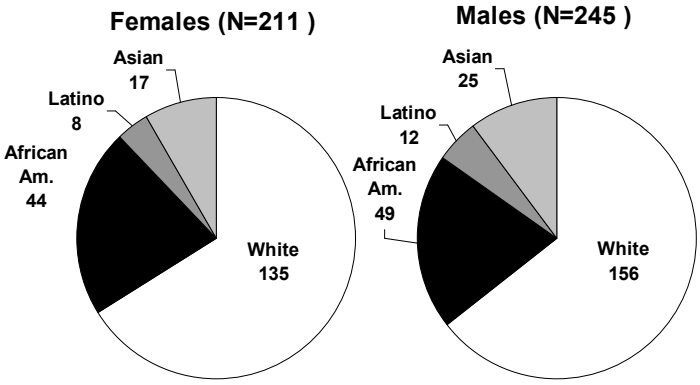


Source: California Health Interview Survey, Berkeley, 2001

Cancer in Berkeley

Each year there are 456 newly diagnosed cancer cases among Berkeley residents.

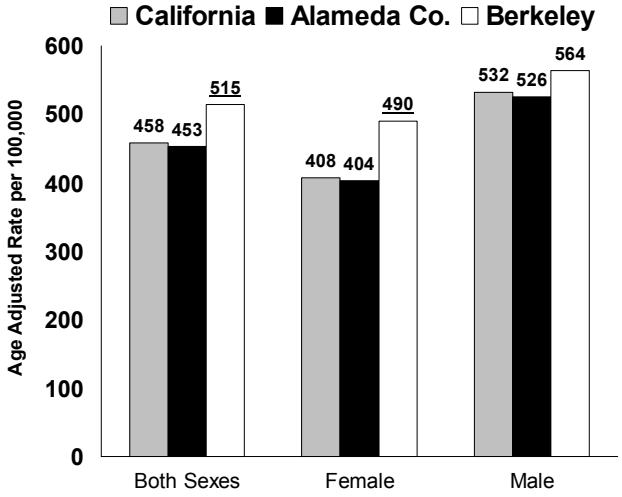
Figure 4.35 – Average Annual Number of Newly Diagnosed Cancer Cases by Sex and Race/Ethnicity, Berkeley, 1998-2002



Source: Greater Bay Area Cancer Registry

Berkeley women have a higher cancer rate than women in Alameda County or California.

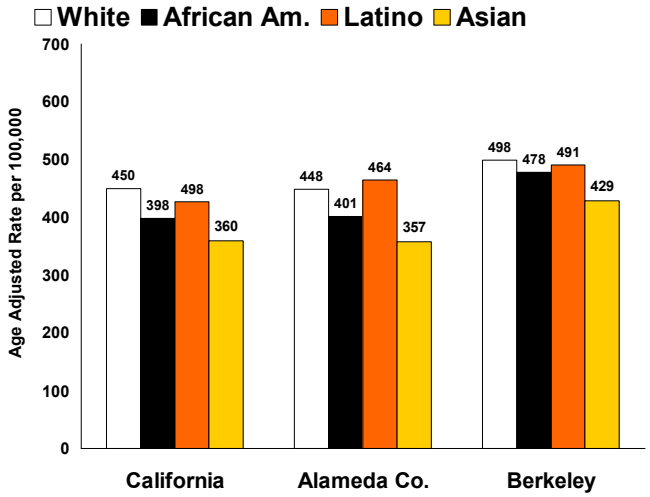
Figure 4.36 – Cancer Incidence by Sex, Berkeley, Alameda County, California, 1998-2002



Source: Greater Bay Area Cancer Registry

Berkeley women of different race/ethnic groups do not have disparities in their cancer incidence rates.

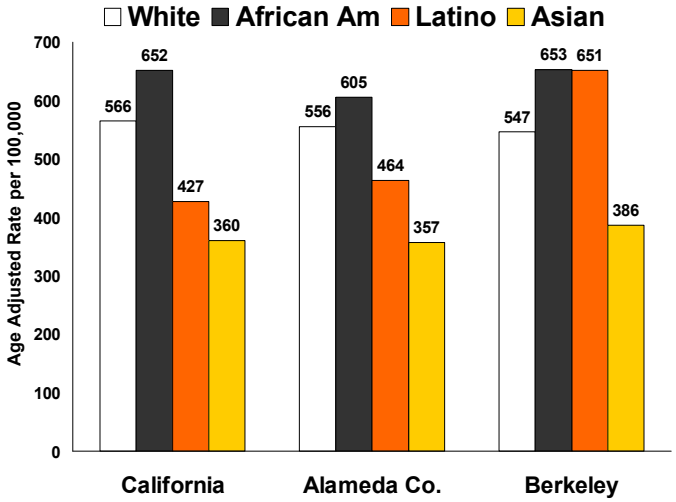
Figure 4.1 – Cancer Incidence In Females by Race/Ethnicity, Berkeley, Alameda County, California, 1998-2002



Source: Greater Bay Area Cancer Registry

In Berkeley, Asian males have significantly lower cancer rates than African Americans and Whites.

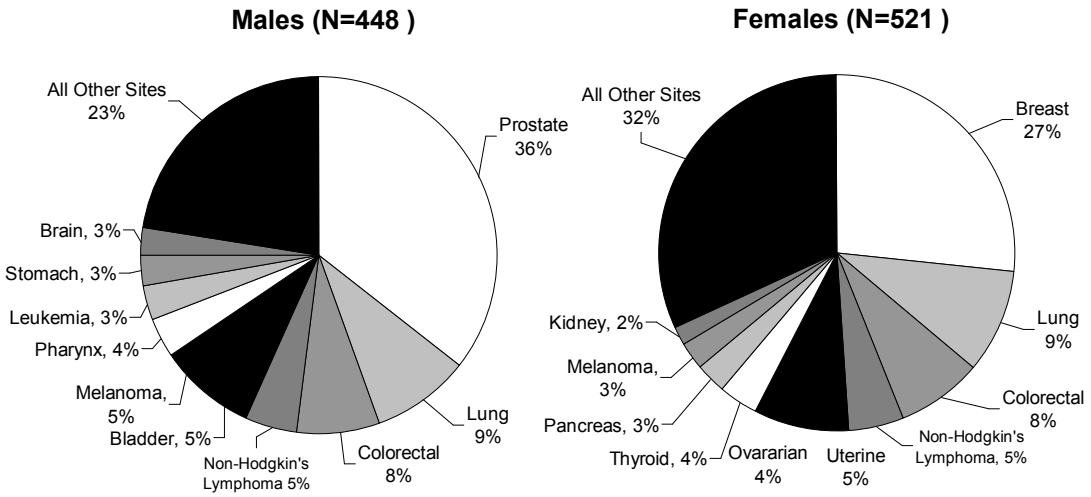
Figure 4.2 – Cancer Incidence In Males by Race/Ethnicity, Berkeley, Alameda County, California, 1998-2002



Source: Greater Bay Area Cancer Registry

The cancer site with the most frequent diagnoses was breast for females and prostate for males. For both sexes, lung cancer, colorectal cancer, and non-Hodgkin's lymphoma were the next most frequent sites.

Figure 4.39 – Leading Cancer Sites by Sex, Berkeley, 2003-2004



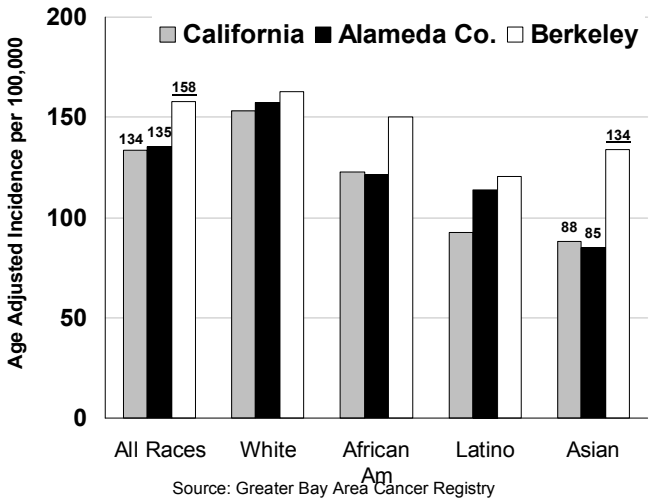
Source: Greater Bay Area Cancer Registry

Breast Cancer

There was an annual average of 70 new cases of breast cancer diagnosed in Berkeley women in 2002-2003. Incidence rates were highest for White women and lowest for Latinas.

Berkeley has higher rates of new breast cancer cases for all ethnicities than Alameda County.

Figure 4.40 – Age-Adjusted Breast Cancer Incidence, Berkeley, Alameda County, California, 1998-2002

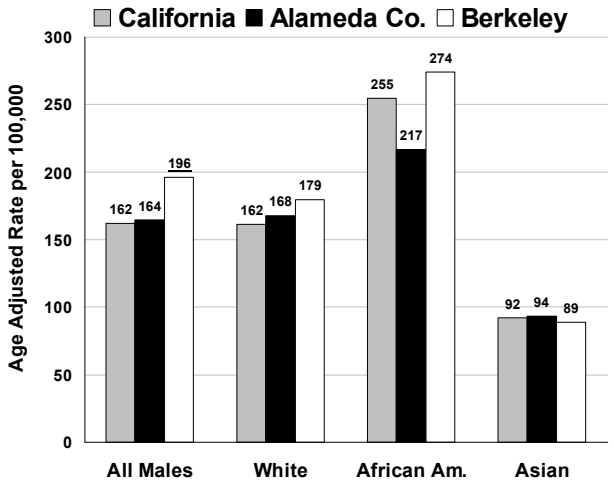


Source: Greater Bay Area Cancer Registry

Prostate Cancer

The rate of prostate cancer in Berkeley men is higher than the rate in Alameda County or California.

Figure 4.41 – Prostate Cancer Incidence by Race/Ethnicity, Berkeley, 1998-2002

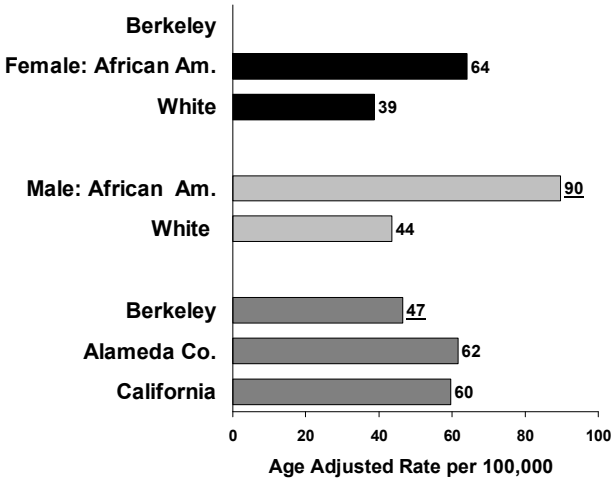


Source: Greater Bay Area Cancer Registry

Lung Cancer

Berkeley's rate of lung cancer is lower than the rate of Alameda County or California. However, the lung cancer incidence in Berkeley's African American males is two times higher than that of White males.

Figure 4.42 – Lung Cancer Incidence by Sex and Race/Ethnicity, Berkeley, 1998-2002

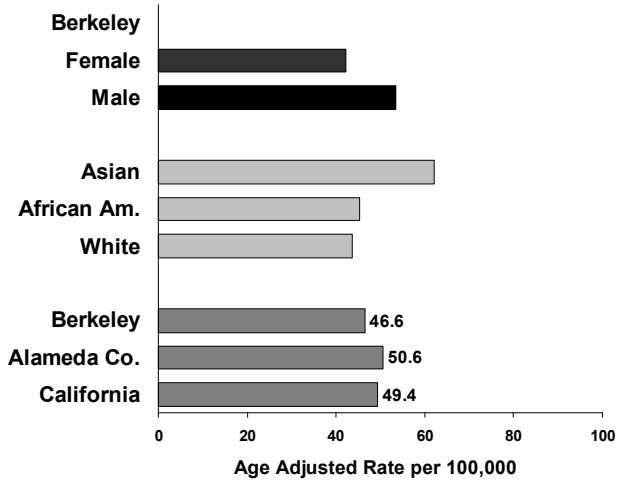


Source: Greater Bay Area Cancer Registry

Colorectal Cancer

Berkeley's rate of colorectal cancer is similar to that of Alameda County and California.

Figure 4.43 – Colorectal Cancer Incidence by Sex and Race/Ethnicity, Berkeley, 1998-2002



Source: Greater Bay Area Cancer Registry

High Blood Pressure, Heart Disease, and Stroke

Why Is This Important?

Heart disease is the leading cause of death for all people in the U.S., accounting for nearly 1/3 of all deaths. Stroke is the third leading cause of death. Heart disease and stroke continue to be major causes of disability and significant contributors to increases in U.S. health care costs.

It is estimated that nearly one third of American adults have high blood pressure, or hypertension. Blood pressure is a measure of how hard your heart has to work to circulate blood throughout the body and when the pressure is too high, it adds to the workload for your heart, increasing the wear and tear on the heart and blood vessels.

Uncontrolled high blood pressure can lead to serious health problems like heart attacks, stroke, heart failure or heart disease. High blood pressure is the number one modifiable risk factor for stroke. High blood pressure is often called the “silent killer” because there are no symptoms and a person can have high blood pressure for years without even knowing it. The only way to know if you have it is to get it measured regularly.

Factors that make a person more likely to develop high blood pressure include age, race/ethnicity, family history, excess weight, physical inactivity, tobacco use, excessive alcohol consumption, high sodium intake and too much stress. Although we cannot control our age, race or family history, there is still a lot we can do to prevent or manage high blood pressure, like eating healthier, not smoking, being more active, reducing the amount of sodium we eat, and reducing our stress levels.

By lowering blood pressure to acceptable levels:

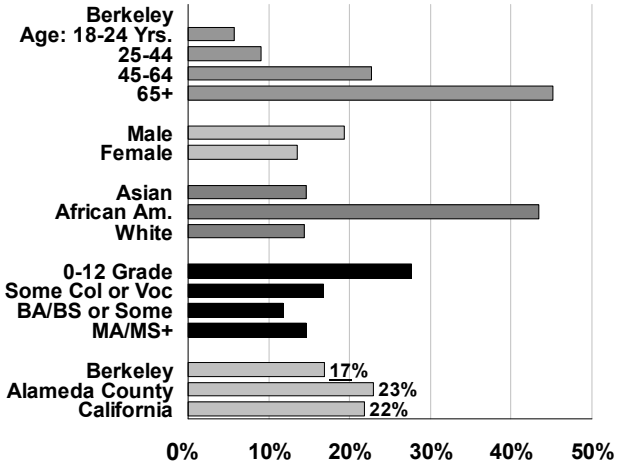
- Stroke incidence can be reduced by an average of 35–40%.
- Heart attack incidence can be reduced by an average of 20–25%.
- Heart failure incidence can be reduced by an average of more than 50%.

High Blood Pressure

In 2001, 17% of Berkeley adults surveyed reported they were told by a physician that they had high blood pressure. Over 40% of African Americans report high blood pressure – 3 times the percentage of Whites.

Berkeley has a smaller percentage of adults reporting hypertension than Alameda County or California.

Figure 4.44 – Berkeley Adults (18 Years and Older) Who Were Ever Told by a Doctor They Have High Blood Pressure, Berkeley, 2001



Source: California Health Interview Survey (CHIS), 2001, Berkeley

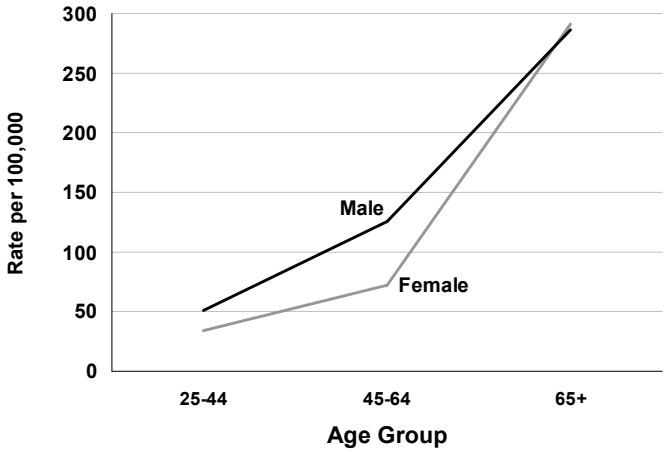
Program Highlight: Berkeley Hypertension Program

In partnership with Lifelong Medical Center, this program focuses on community-based health promotion and environmental changes to 1) encourage healthy eating and physical activity; 2) increase access to hypertension screening and treatment; 3) implement the Chronic Care Model to improve the quality of care for hypertension patients, and, 4) train Community Health Workers in a program focused on outreach, education, and intensive counseling and support. A highlight of the program is the weekly drop-in Hypertension Clinic that provides free blood pressure screenings and education to everyone, and provides treatment to uninsured residents with hypertension.

Hypertensive Heart Disease

Each year, there is an average of 85 hospitalizations of Berkeley adults due to hypertensive heart disease. The rate of hospitalization is higher for males and increases rapidly after 64 years of age.

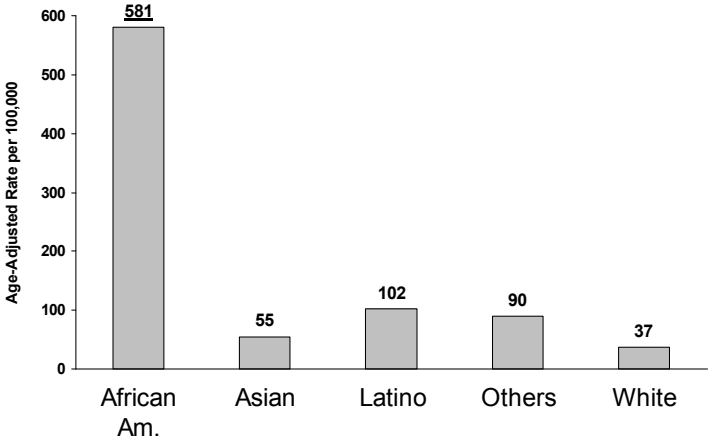
Figure 4.45 – Hypertensive Heart Disease Hospitalization Rates in Adults (25 Years and Older) by Age and Sex, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

African Americans have 10-times greater rate of hospitalizations due to hypertensive heart disease than Asians, and a 15-times higher rate than Whites.

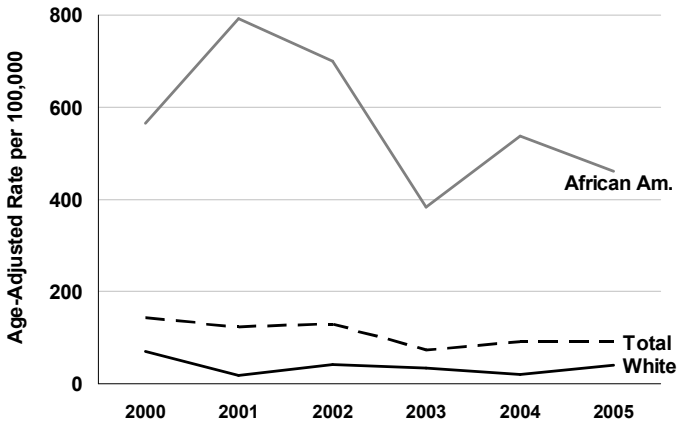
Figure 4.46 – Hypertensive Heart Disease Hospitalization Rates in Adults (25 Years and Older) by Race/Ethnicity, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

Rates of hypertensive heart disease hospitalization in African Americans have not declined (with statistical certainty) over the last several years.

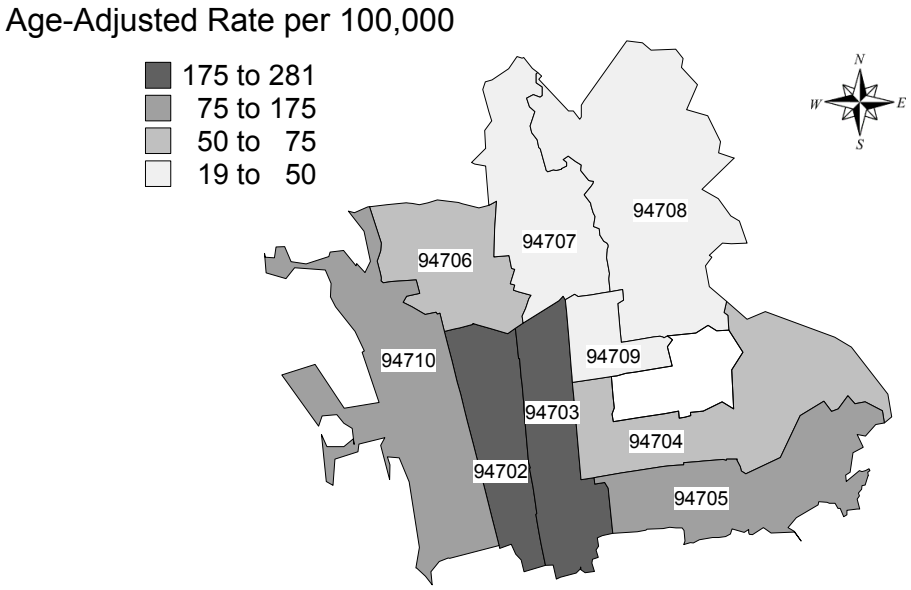
Figure 4.47 – Hypertensive Heart Disease Hospitalization Rates in Adults (25 Years and Older) by Race/Ethnicity and Year of Hospitalization, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

Hospitalization rates for hypertensive heart disease are highest in southwest Berkeley.

Map 4.8 – Hypertensive Heart Disease Hospitalization Rates in Adults (25 Years and Older) by Zip Code, Berkeley, 2000-2005



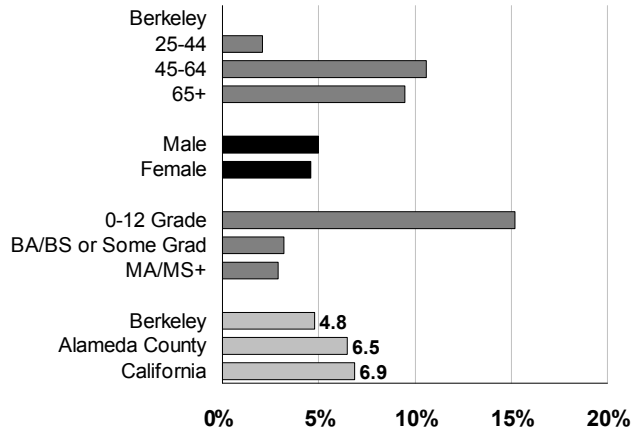
Source: Office of Statewide Health Planning and Development, U.S. Census 2000

Heart Disease in Berkeley

An estimated 4,000 Berkeley adults – 5% of the adult population – report that they have been told by a physician that they have heart disease. It is more commonly reported among those with lower levels of education.

The percentage of Berkeley adults reporting physician-diagnosed heart disease is lower than that of Alameda County or California.

Figure 4.48 – Adults (18 Years and Older) Who Were Ever Told by a Doctor They Have Heart Disease, Berkeley, 2001

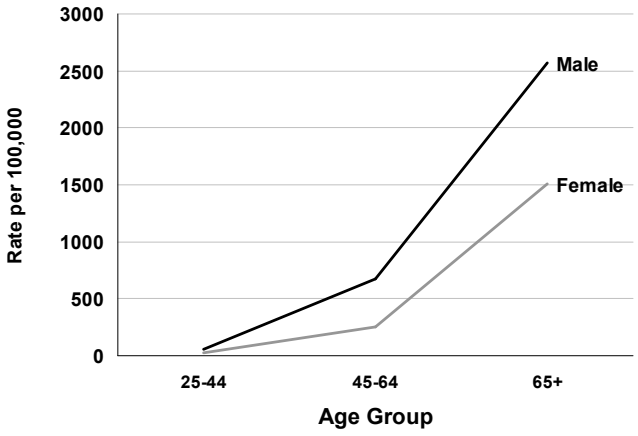


Source: California Health Interview Survey (CHIS), 2001, Berkeley

Coronary Heart Disease in Berkeley

Each year, over 400 hospitalizations due to coronary heart disease occur in Berkeley adults. The rate of hospitalization is higher for males and increases rapidly after 64 years of age.

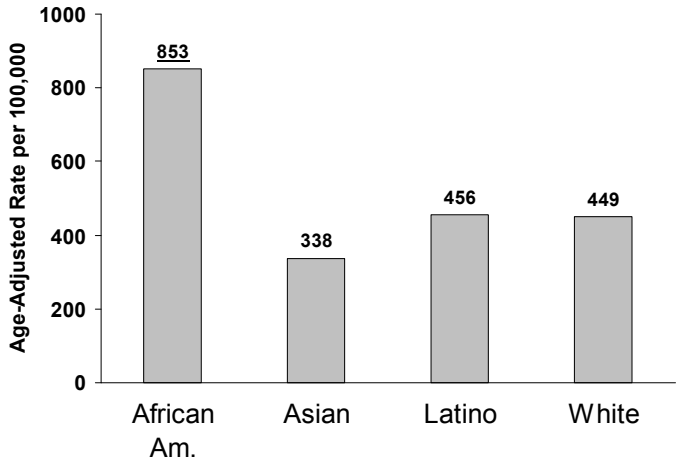
Figure 4.49 – Coronary Heart Disease Hospitalization Rates in Adults (25 Years and Older) by Age and Sex, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

Hospitalizations due to coronary heart disease occur more frequently in African Americans than in other race/ethnic groups.

Figure 4.50 – Coronary Heart Disease Hospitalization Rates in Adults (25 Years and Older) by Race/Ethnicity, Berkeley, 2000-2005

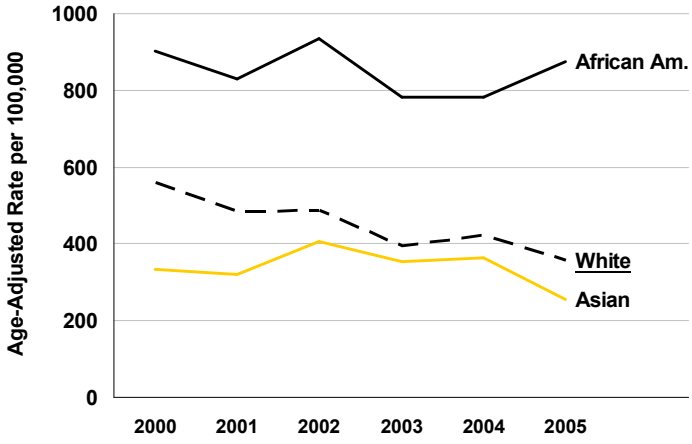


Source: Office of Statewide Health Planning and Development, U.S. Census 2000

Coronary heart disease hospitalization rates for Whites and Asians have decreased over the last 6 years, while rates for African Americans have remained stable.

The disparity between African American rates and others has increased.

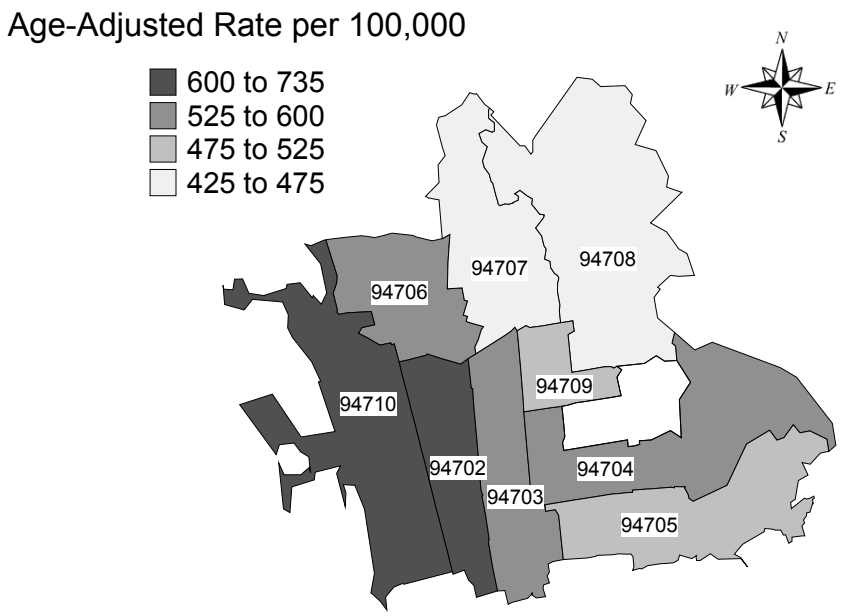
Figure 4.51 – Coronary Heart Disease Hospitalization Rates in Adults (25 Years and Older) by Race/Ethnicity and Year of Hospitalization, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

Hospitalization rates for coronary heart disease are highest in southwest Berkeley.

Map 4.9 – Coronary Heart Disease Hospitalization Rates in Adults (25 Years and Older) by Zip Code, Berkeley, 2000-2005

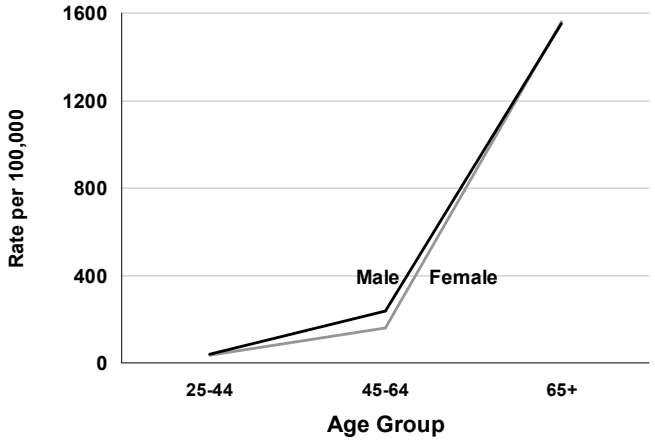


Source: Office of Statewide Health Planning and Development, U.S. Census 2000

Stroke

Each year, there is an average of 289 hospitalizations of Berkeley adults due to stroke. The rate of hospitalization is higher for males and increases rapidly at 65 years of age and older.

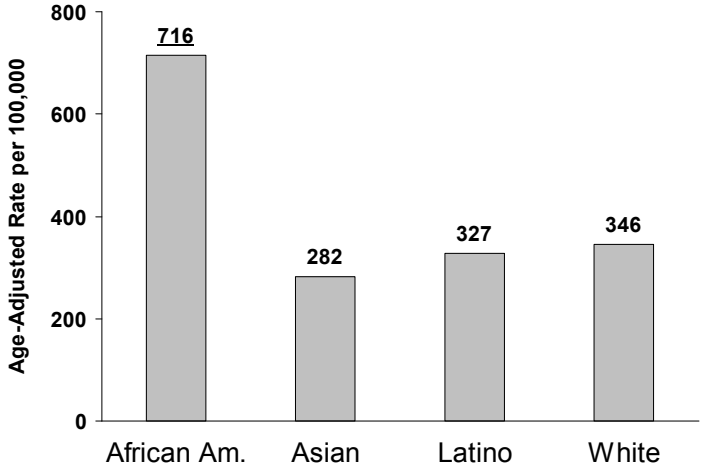
Figure 4.52 – Stroke Hospitalization Rates in Adults (25 Years and Older) by Age and Sex, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

African Americans have a stroke hospitalization rate about twice as high as other race/ethnicity groups.

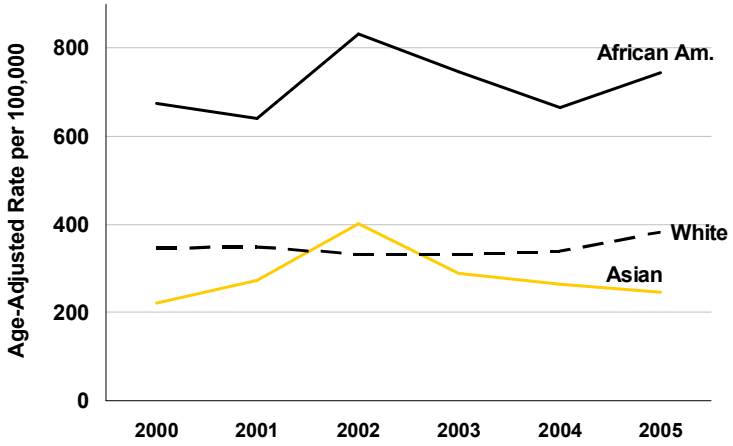
Figure 4.53 – Stroke Hospitalization Rates in Adults (25 Years and Older) by Race/Ethnicity, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

Stroke hospitalization rates and the difference between African American and White stroke hospitalization rates are unchanged over time.

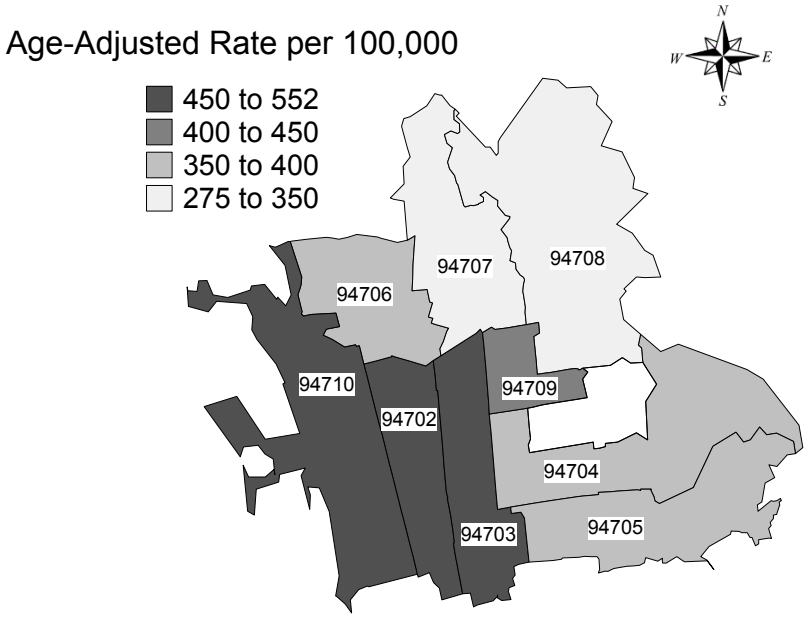
Figure 4.54 – Stroke Hospitalization Rates in Adults (25 Years and Older) by Race/Ethnicity and Year of Hospitalization, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

Hospitalization rates for stroke are highest in southwest Berkeley.

Map 4.10 – Stroke Hospitalization Rates in Adults (25 Years and Older) by Zip Code, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

Diabetes

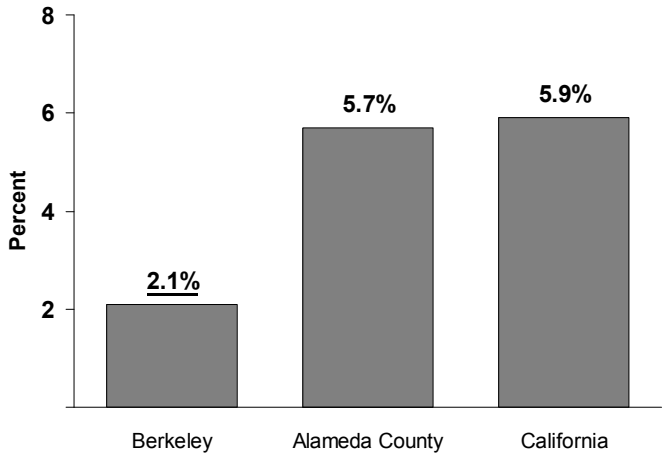
Why Is This Important?

Diabetes is a serious disease in which the level of glucose or sugar in the blood is too high. Over time, diabetes can lead to serious complications such as blindness, kidney damage, and lower-limb amputations. In addition, diabetes negatively impacts quality of life due to the challenge of constantly monitoring blood sugar levels, dietary changes, and numerous physical problems that lead to serious complications. Across the nation, 20.8 million people (7% of the population) have diabetes; many people with diabetes do not know it because they do not have a lot of symptoms.[153] The occurrence of diabetes is increasing rapidly, especially among African Americans and Latinos, and lower income people. Overweight/obesity, unhealthy diets and low physical activity rates all contribute to this chronic disease.[154]

Diabetes in Berkeley

An estimated 1,750 Berkeley adults – 2% of the adult population – have been told by a physician that they have diabetes. Berkeley's rate is lower than that of Alameda County or California.

Figure 4.55 – Adults (18 Years and Older) Who Were Ever Told by a Doctor They Have Diabetes, Berkeley, 2001



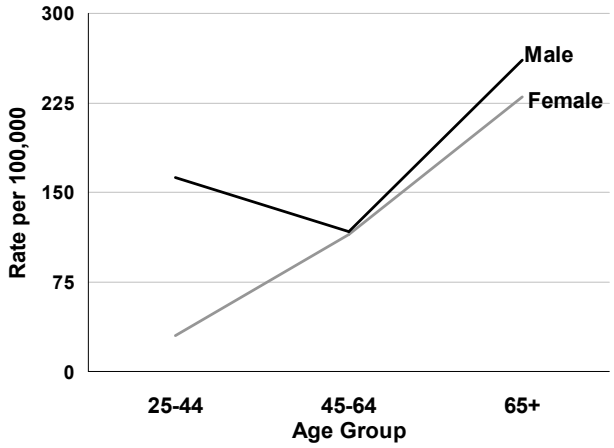
Source: California Health Interview Survey (CHIS), 2001, Berkeley

Program Highlight: Live Well, Be Well

The goal of Live Well Be Well is to prevent or delay the onset of diabetes in adults that are at highest risk for the disease. This program is a joint project of the Public Health Division and the University of California, San Francisco Center of Healthy and Active Aging funded by the National Institutes of Health. The program provides free diabetes screening and education, a series of workshops and regular, phone-based counseling to residents who are identified as pre-diabetic to support healthy eating and increased physical activity. The focus is on African American, Latino and South Asian adults over 25. In-depth evaluation of the efficacy of the program is being conducted by UCSF.

Each year, there is an average of 107 hospitalizations of Berkeley adults due to diabetes. The rate of hospitalization is higher for males and increases with age.

Figure 4.56 – Diabetes Hospitalization Rates in Adults (25 Years and Older) by Age and Sex, Berkeley, 2000-2005

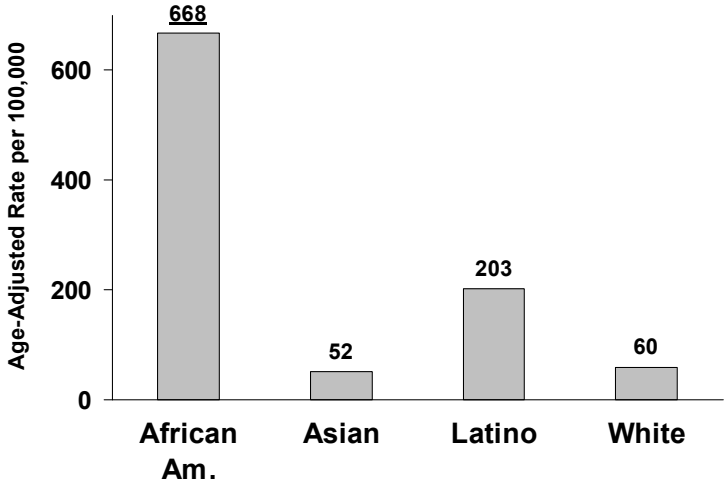


Source: Office of Statewide Health Planning and Development, U.S. Census 2000

African Americans have a diabetes hospitalization rate over 10 times higher than Whites. Latinos also have an elevated hospitalization rate compared to Whites and Asians.

High rates of diabetes hospitalizations may be due to both a higher rate of diabetes and less success in managing diabetes as a result of less access to high quality health care and risk behaviors such as diet and lack of exercise.

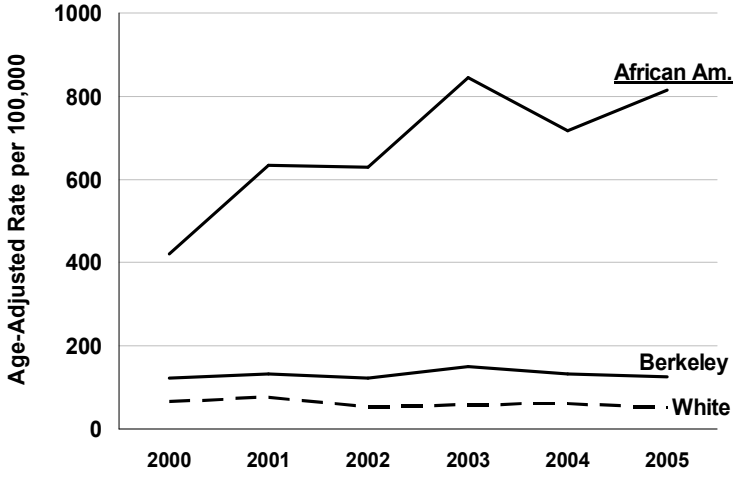
Figure 4.57 – Diabetes Hospitalization Rates in Adults (25 Years and Older) by Race/Ethnicity, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

Over the last several years, rates of diabetes hospitalization have increased in African Americans.

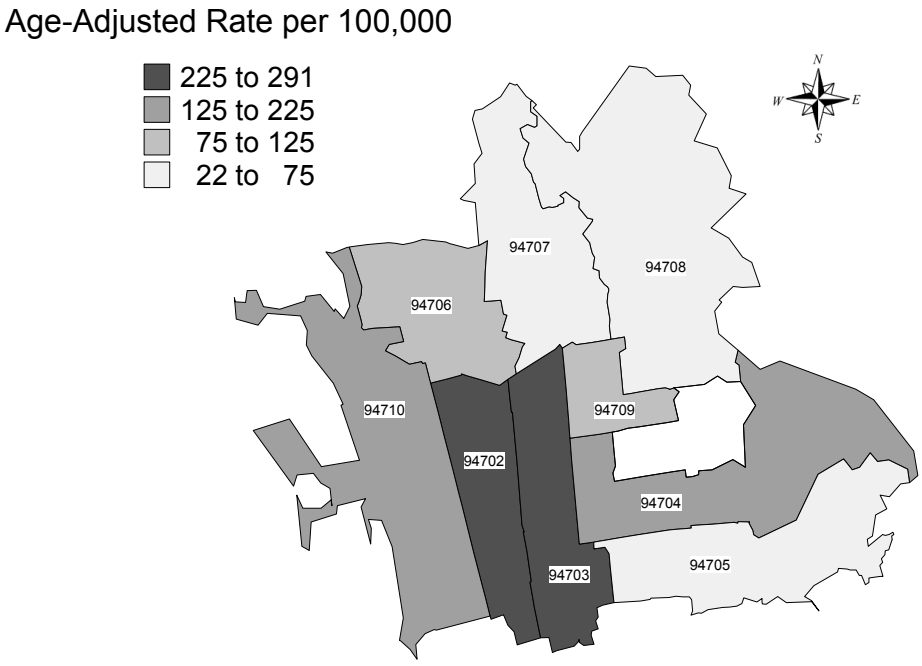
Figure 4.58 – Diabetes Hospitalization Rates in Adults (25 Years and Older) by Race/Ethnicity and Year of Hospitalization, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

Hospitalization rates for diabetes are highest in southwest Berkeley.

Map 4.11 – Diabetes Hospitalization Rates in Adults (25 Years and Older) by Zip Code, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

Asthma

Why Is This Important?

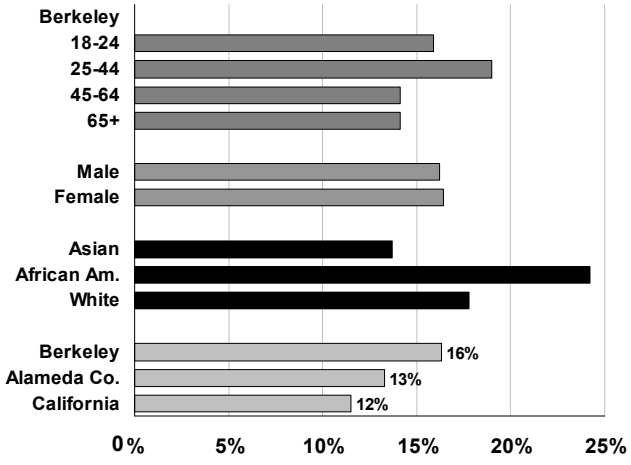
Asthma is a chronic lung condition that causes swelling, excess mucus, and narrowing of the airways, and is responsible for about 500,000 hospitalizations, 5,000 deaths, and 134 million days of restricted activity a year in the U.S.[155,156] Asthma is triggered by cigarette smoke, air pollution, allergens, cockroaches, and other environmental factors. Controlling exposure to factors that trigger asthma episodes, adequately managing asthma with medicine, monitoring lung function, and helping asthma patients to become partners in their own care can reduce the burden of the disease.

In California, asthma prevalence has increased for all groups,[106] but hospitalization rates due to asthma are highest among African Americans regardless of income. At both the state and national levels, rates among African Americans are at least three times higher than those of non-Hispanic Whites. [157]

Asthma in Berkeley

In 2001, 16% of the Berkeley adult population surveyed report they were told by a physician that they had asthma. African Americans have a prevalence of asthma that is higher than that of Whites or Asians.

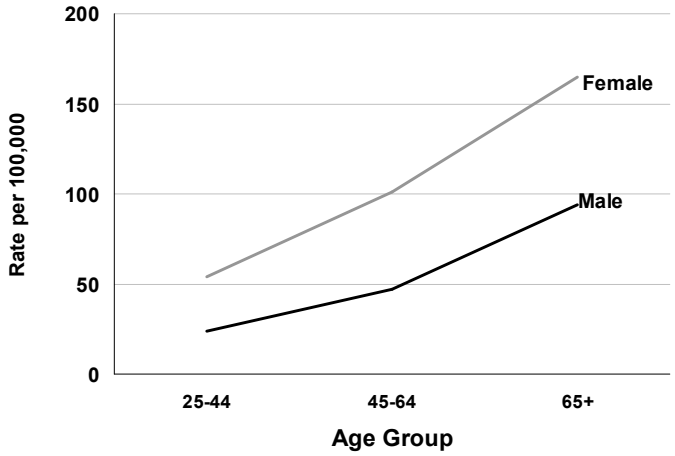
Figure 4.59 – Adults (18 Years and Older) Who Were Ever Told by a Doctor They Have Asthma and Experienced Symptoms in the Past Year, Berkeley, 2001



Source: California Health Interview Survey (CHIS), 2001, Berkeley

Each year, over 400 hospitalizations due to asthma occur in Berkeley adults. The rate of hospitalization is higher for women and increases with age.

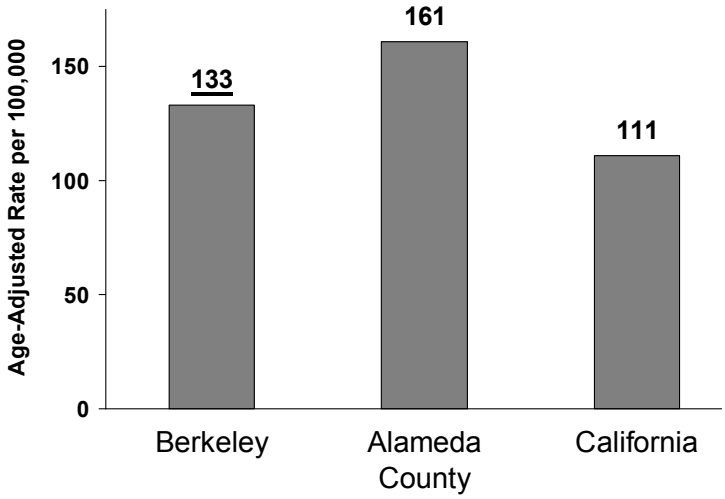
Figure 4.60 – Asthma Hospitalization Rates in Adults (25 Years and Older) by Age and Sex, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

The asthma hospitalization rate in Berkeley is higher than the California average but lower than the Alameda County average.

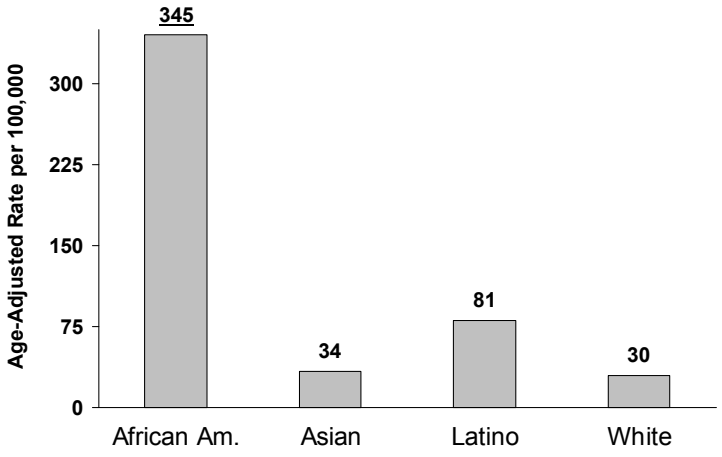
Figure 4.61 – Asthma Hospitalization Rate (All Ages), Berkeley, Alameda County, and California, 2001-2003



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

African Americans are hospitalized for asthma 10 times more often than Whites and Asians. Latinos are hospitalized nearly 3 times more than those groups.

Figure 4.62 – Asthma Hospitalization Rates in Adults (25 Years and Older) by Race/Ethnicity, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

Environmental Inequities & Asthma

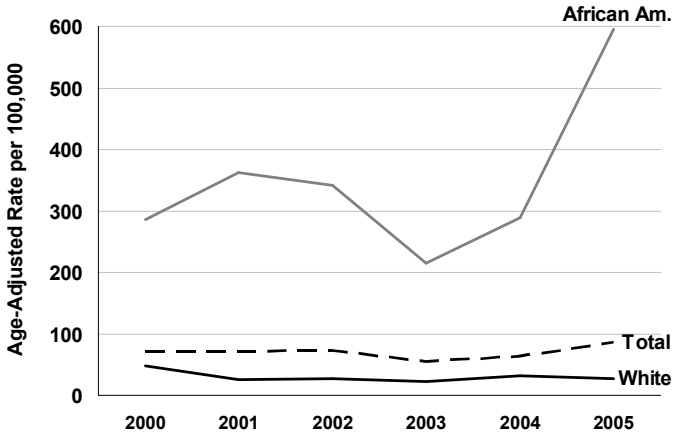
Poor and minority residents of the San Francisco Bay Area are more heavily exposed to air pollution and environmental hazards that are known asthma triggers.[158] Areas of West Berkeley are more heavily impacted by industry that releases a multitude of pollutants into the air, they experience the heaviest traffic flow in our cities along the I-80 corridor—especially diesel truck traffic, which releases more irritants than other vehicle emissions—and they are predominantly populated by people of color.[108]

Several community groups in Berkeley are working to combat environmental inequities:

1) The City's Community Environmental Advisory Commission (CEAC) plans and makes recommendations for environmental protection, hazardous materials and reduction, with outreach to and education of the public, small businesses and industry.
2) The Oakland-Berkeley Asthma Coalition (OBAC) meets with the aim to reduce the burden of asthma in the communities of Oakland and Berkeley.
3) The West Berkeley Alliance for Clean Air and Safe Jobs is a network allied to preserve safe jobs while preventing pollution.
4) The Regional Asthma Management and Prevention Initiative (RAMP) has workgroups on schools, clinical issues in asthma, and the environment – including the Ditching Dirty Diesel Collaborative.

In African Americans, rates of asthma hospitalization were higher in 2005 than in 2000.

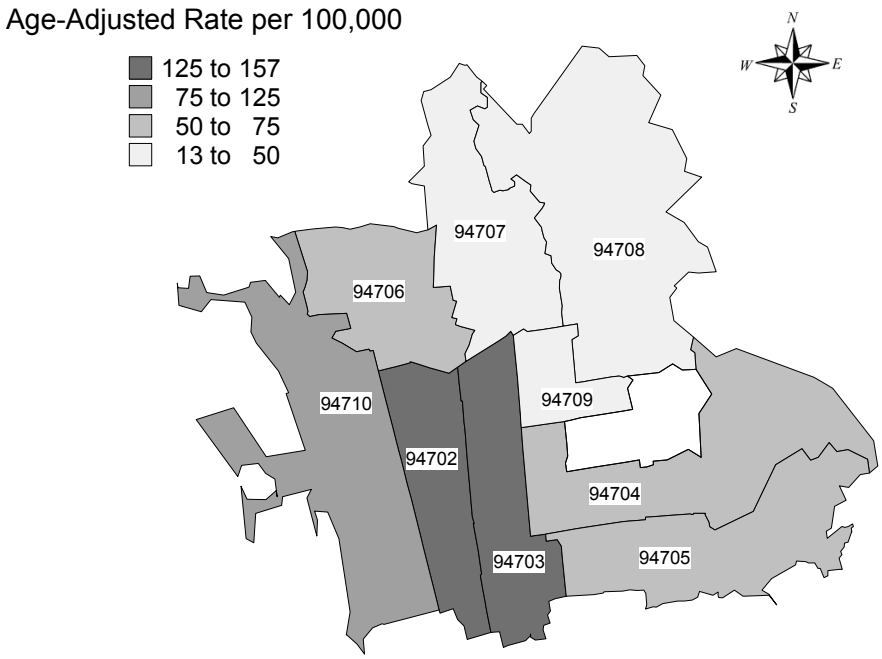
Figure 4.63 – Asthma Hospitalization Rates in Adults by Race/Ethnicity and Year of Hospitalization, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

Hospitalization rates for asthma are highest in southwest Berkeley.

Map 4.12 – Asthma Hospitalization Rates in Adults by Zip Code, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

Disability

Why Is This Important?

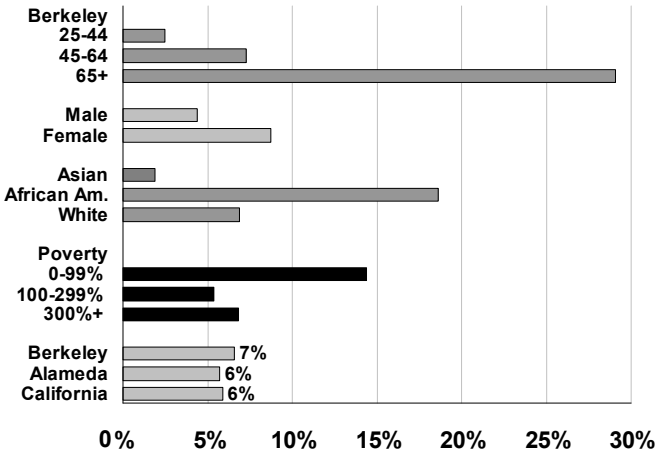
About 50 million people in the U.S. have a disability, such as hearing loss, mental disability, physical limitation, or vision loss.[159] People have many types of disabilities. Some disabilities are easy to see, such as when a person uses a wheelchair or when someone has lost an arm. Other disabilities, like intellectual disability (mental retardation) or a chronic condition like arthritis, may not be as easy to see. Statewide, African Americans are more likely than other ethnic groups to have a disability.[159] Berkeley recently won an award from the National Organization on Disability in recognition of its focus on disability issues and design of successful programs, services, and facilities for people with disabilities.

Disability in Berkeley

In 2001, 7% of Berkeley adults surveyed reported they had a health problem that required special equipment such as a cane, wheel chair, or special telephone. Nearly 30% of seniors have these types of health problems.

African Americans are twice as likely as Whites to have a disability requiring special equipment. Berkeley's rate is minimally higher than that of Alameda County or California.

Figure 4.64 – Adults (18 Years and Older) Who Have a Health Problem Requiring Special Equipment, Berkeley, 2001



Source: California Health Interview Survey (CHIS), 2001, Berkeley

Program Highlight:

Achieving Health for Berkeley's Senior Population

Safe Living - In collaboration with the City of Berkeley Fire Department, the Division of Aging offers a program focused on fall prevention and home safety.

Health-Promoting Services - The Division of Aging offers resources and services at three multi-service community-based senior centers that enhance the lives and promote the physical, emotional, spiritual and financial health and well-being of community elders. Services include case management, transportation, information, assistance, counseling and referrals on a variety of topics, health screenings, health and wellness programs, group dining and Meals on Wheels, learning opportunities through adult school classes, seminars, and workshops, arts and cultural events, opportunities to socialize, and trips and excursions. The Senior Caregiver Program provides education, training, assessment and respite for family caregivers.

Hearing Senior Voices - The Division of Aging offers opportunities for seniors to hold decision-making positions in City and State governance, and promotes volunteer and employment positions.

Mental Health

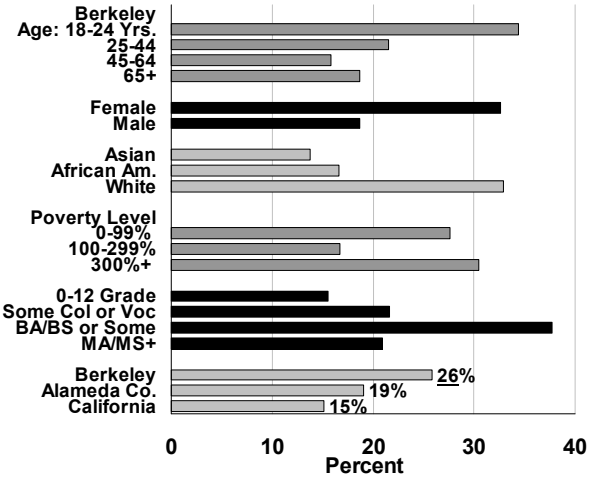
Why Is This Important?

Mental disorders are common in the United States and internationally, and are a leading cause of disability in the U.S. for people ages 15-44.[160] An estimated 26% of Americans ages 18 and older suffer from a diagnosable mental disorder in a given year.[161] About 6 percent, or 1 in 17, suffer from a serious mental illness.[161] Nationally, African Americans are more likely than Whites to suffer severe, untreated and disabling depression and underutilize treatment services.[162] Transition-aged youth (16-25), and older adults are the most underserved age groups in the mental health system.

Mental Health in Berkeley

About one quarter of Berkeley adults surveyed reported needing help for an emotional or mental health problem in the past year. Women, Whites and persons of multiracial backgrounds reported needing help at a greater frequency than other groups.

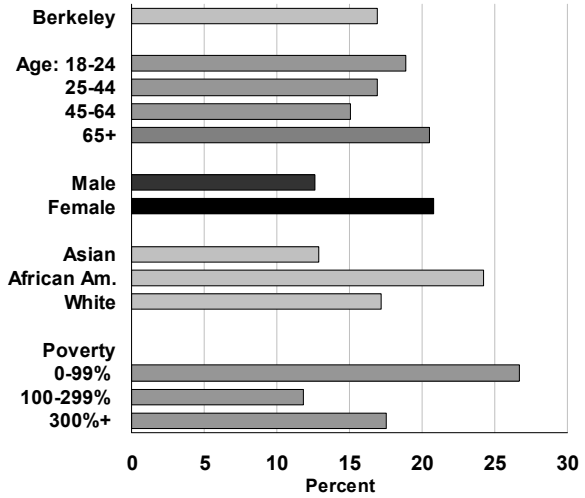
Figure 4.65 – Adults (18 Years and Older) Who Needed Help for an Emotional/Mental Health Problem in Past Year, Berkeley, 2001



Source: California Health Interview Survey (CHIS), 2001, Berkeley

In 2001, 17.3% of surveyed Berkeley adults reported that emotional problems limited their usual activities or work. The percentage experiencing limitations was higher in African Americans than in other groups.

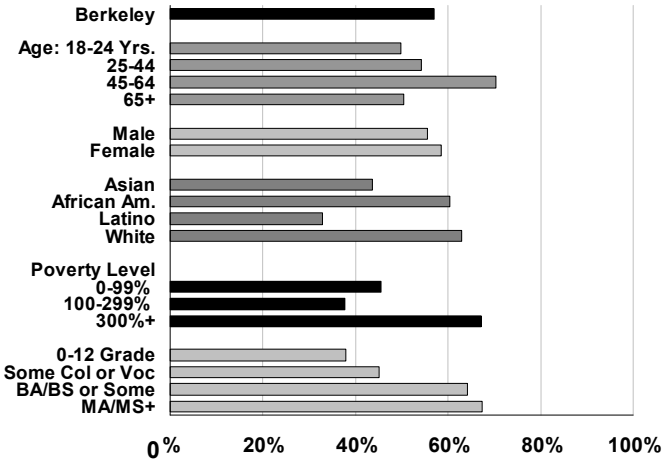
Figure 4.66 – Adults (18 Years and Older) Limited in Usual Activities or Work Due to an Emotional Problem in Past 4 Weeks, Berkeley, 2001



Source: California Health Interview Survey (CHIS), 2001, Berkeley

Over 40% of Berkeley adults surveyed report they do not have health insurance that covers mental health. Young adults and Latinos are least likely to have mental health insurance.

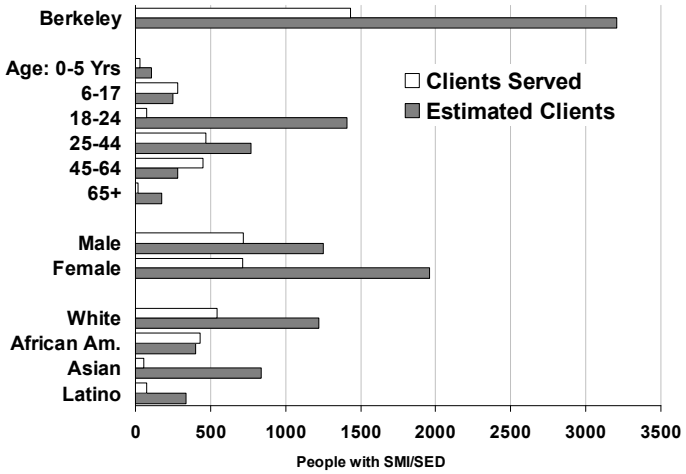
Figure 4.67 – Adults (18 Years and Older) with Mental Health Insurance Coverage, Berkeley, 2001



Source: California Health Interview Survey (CHIS), 2001, Berkeley

The California Department of Mental Health estimates that over 3200 residents of Berkeley/Albany have a serious mental illness or serious emotional disorder, and that many are not receiving mental health services. It appears that Asians and Latinos are seriously underserved.

Figure 4.68 – Prevalence of Serious Mental Illness/Serious Emotional Disorder and Mental Health Division Clients by Age, Sex, and Race, Berkeley, 2005



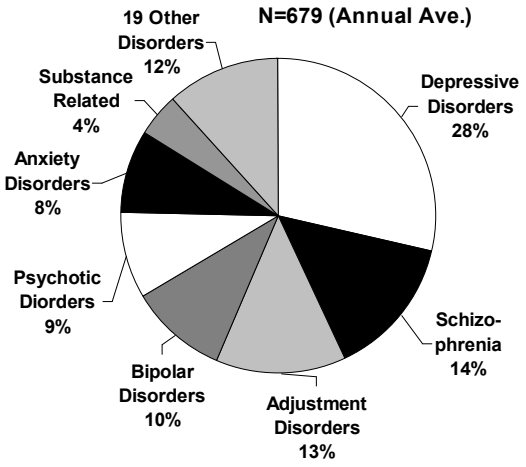
Source: Alameda County Behavioral Health Services, California Department of Mental Health

Program Highlight: Multicultural Mental Health Services

This program reaches out to Berkeley's growing multicultural communities to expand cross-cultural understanding of mental health issues and reduce stigma and discrimination, following Mental Health Services Act recommendations. Innovative outreach strategies (see picture above of Latino mental health outreach presentation) are utilized to educate both staff and community members, and to identify families impacted by severe mental illness and emotional disturbances.

The Berkeley Mental Health Division serves an annual average of 679 adults, 85% of whom have depressive disorders, schizophrenia, adjustment disorders, or bipolar disorders.

Figure 4.69 – Adult Clients (Aged 20 Years and Older) by Diagnosis of the Mental Health Division, Berkeley, 2000-2006



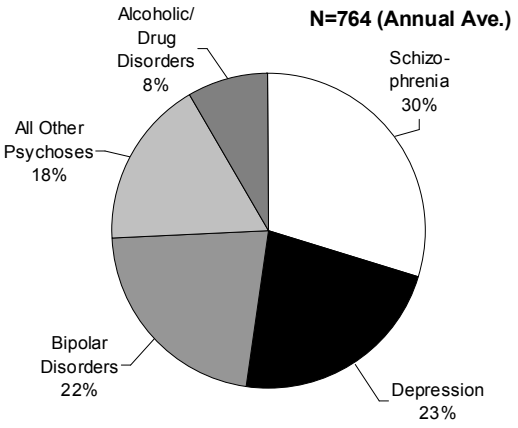
Source: Alameda County Behavioral Health Services

Program Highlight: Community-Based Mental Health Services

The Mental Health Division provides a range of services to Berkeley and Albany residents, and helps people in crisis, children, teens, and families experiencing emotional difficulties, people with serious mental illnesses and disabilities, and others who are in need of mental health or related social services. Specific activities include: working with Senior Programs Division to provide consultation and case finding at the Berkeley senior centers; and designing and delivering public education workshops and community building events in the Spanish-speaking community to reach this underserved and growing population.

Each year from 2000 to 2005, there were an average of 764 hospitalizations of Berkeley residents for serious mental health problems.

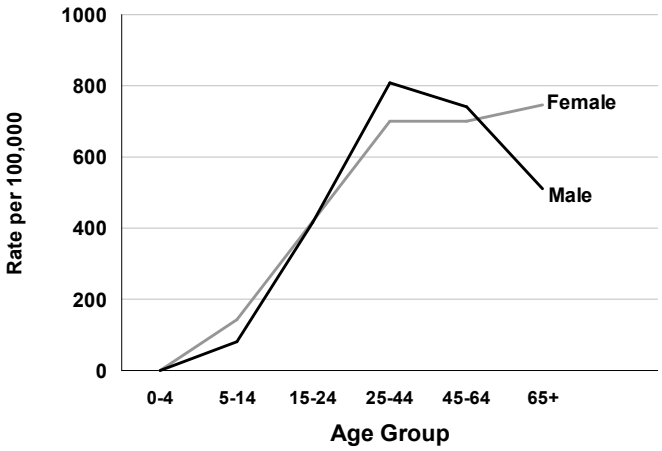
Figure 4.70 – Psychosis Hospitalizations by Diagnosis, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

For men, psychosis hospitalization has a pronounced rise and fall with a peak at 25-44 years. In women, psychosis hospitalization steadily increases and plateaus after the age of 45 years.

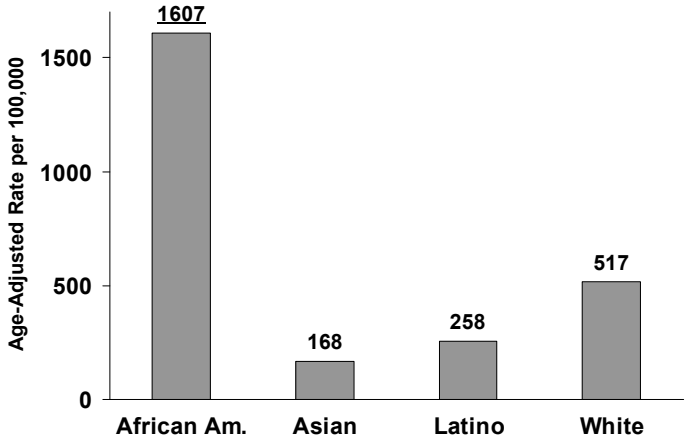
Figure 4.71 – Psychosis Hospitalization Rate by Age and Sex, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

African Americans have nearly 3 times the rate of hospitalization for psychoses than Whites. Latinos have half the rate of Whites and Asians have a third of the rate of Whites.

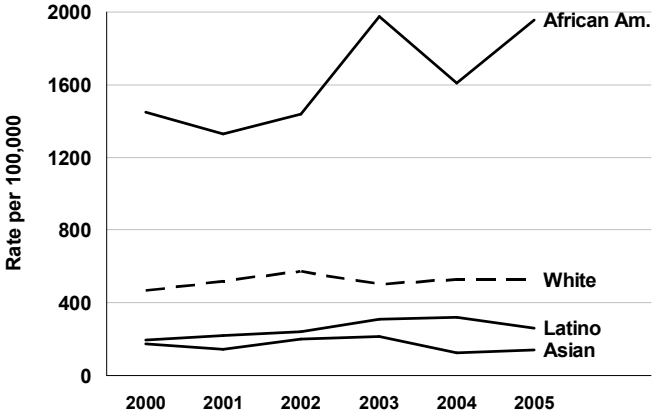
Figure 4.72 – Psychosis Hospitalization Rate by Race/Ethnicity and Sex, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

The rate of psychosis hospitalization is increasing for African Americans.

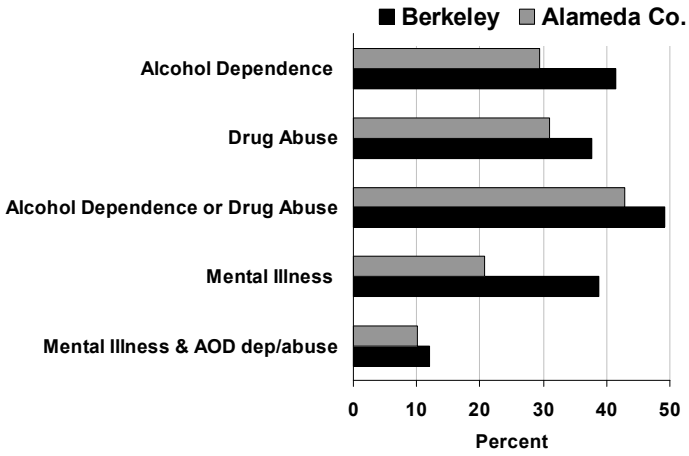
Figure 4.73 –Psychosis Hospitalization Rate by Race/Ethnicity and Year of Hospitalization, Berkeley, 2000-2005



Source: Office of Statewide Health Planning and Development, U.S. Census 2000

Berkeley's homeless population experiences high levels of alcohol and other drug abuse and mental illness. The prevalence of alcohol and drug abuse in Berkeley's homeless is higher than the Alameda County average.

Figure 4.74 – Alcohol and Drug Problems and Mental Illness in Homeless (Community Definition), Berkeley and Alameda County, 2003 (N=1083)



Source: Alameda Countywide Shelter and Services Survey, 2004

Program Highlight: Improving Mental Health in Berkeley

Efforts over the past year to provide more resources to transitional age and older age groups are beginning to happen, with increased enrollments in the AB2034 program providing housing and supports to homeless people with severe mental illnesses. Collaboration with Lifelong Medical and other primary care providers is expected to improve access to mental health care for older adults.

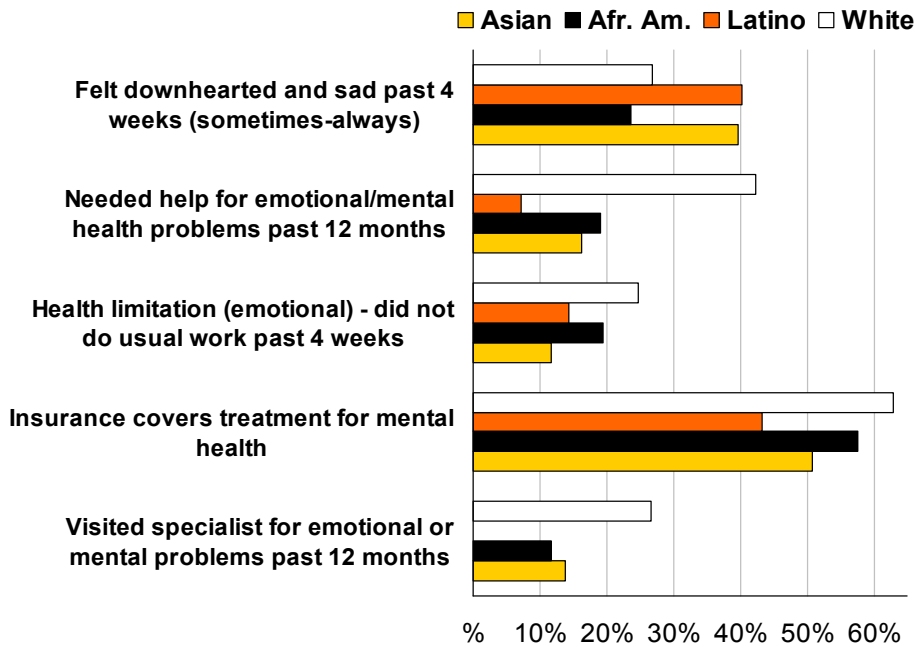
Depression Among Women

Why Is This Important?

Depression is the most common of mental illnesses, a leading cause of disability, and the cause of more than 2/3 of all suicides.[163] Women experience depression at roughly twice the rate of men.[164,165] Researchers continue to explore how special issues unique to women—biological, life cycle, and psycho-social- may be associated with women's higher rate of depression. The prevalence rate of depression in African American and Hispanic women remains about twice that of men of the same race/ethnic group.[166]

In 2001, 31% of Berkeley adult women surveyed reported sadness and depressive symptoms sometimes, most of the time, or always in the prior month. Twenty percent reported that emotional problems limited their work or usual activities. During the prior 12 months, 31% reported needing professional help, and 20% reported seeing a professional for a mental health problem. Latinas were most likely to self-report feeling sad, and were least likely to have mental health insurance or seek care.

Figure 4.75 – Prevalence of Self-Reported Depressive Feelings, Emotional Problems, and Mental Health Service Use in Berkeley Adult Women (18 Years and Older), by Race/Ethnicity, 2001



Source: California Health Interview Survey, Berkeley, 2001

PUBLIC HEALTH PRIORITY

PUBLIC HEALTH PREPAREDNESS

The Public Health Division has been actively engaged in preparedness planning since 2002. Our goal is to strengthen our community's preparedness for and response to public health threats: threats that include natural disasters such as earthquakes, and infectious disease outbreaks such as pandemic influenza, as well as bioterrorism.

Public Health Preparedness planning is an integral part of citywide disaster preparedness planning. We address specific health-related needs of the community and plan for efficient and effective response, while facilitating personal preparedness efforts in the community. Public Health Preparedness planning requires coordination with local and regional partners. Thus we work with partner agencies in the City, UC Berkeley, the Berkeley Unified School District, private sector businesses, health care organizations and providers, and community based organizations. We collaborate with Alameda County, neighboring Bay Area Counties, and State and Federal entities.

Preparedness means more than planning: it means practicing, training, and educating. The Public Health Division participates in preparedness exercises in the City and in the Region, and coordinates community outreach activities. The City's Fall 2007 annual preparedness exercise will be a Public Health Division-led exercise simulating pandemic flu. Training and educational activities for Public Health staff, city staff, and the community currently focus on the threat of pandemic flu.

As Hurricane Katrina taught us, disasters exacerbate health inequities: the most vulnerable are the hardest hit. Public Health Preparedness means working to develop disaster-resilient communities in which all members' needs are identified, planned for, and addressed. By frequent exercising of our plans, review and revision of those plans based on our experiences, on-going education and training, and collaboration with our many partners, we are making progress toward that goal.

V. Death From All Causes / Mortality Overview

What people die of in Berkeley tells us a lot about our progress in reducing unnecessary deaths by fighting preventable disease, and the impact of our programs to identify and treat diseases early. This section contains information about Berkeley trends in deaths, life expectancy, leading causes of death, the years of potential life lost, and deaths due to various chronic diseases.

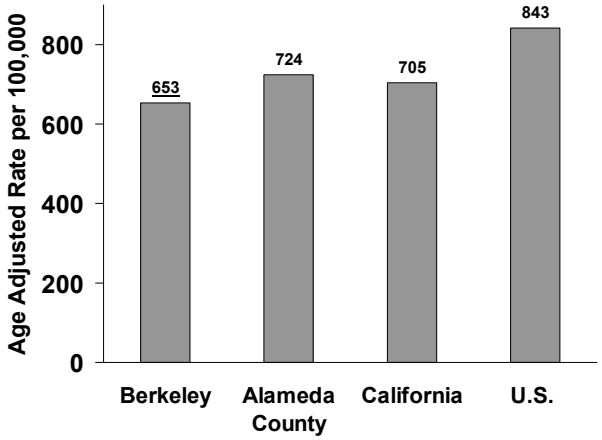
Highlights

- Life expectancy is improving for Berkeley overall.
- Death rates in Berkeley are lower than the surrounding Alameda County and California.
- Health inequities exist for all causes of death combined and for the leading causes of death. One-third of the nearly 200 deaths occurring in African Americans each year would not occur if African Americans and Whites had the same death rate.
- About half of all deaths can be attributed to tobacco, inadequate nutrition and physical activity, alcohol consumption, and other behavioral risk factors.

All Causes of Death in Berkeley

Approximately 626 residents die each year. Berkeley's death rate is lower than that of Alameda County, California, and the United States.

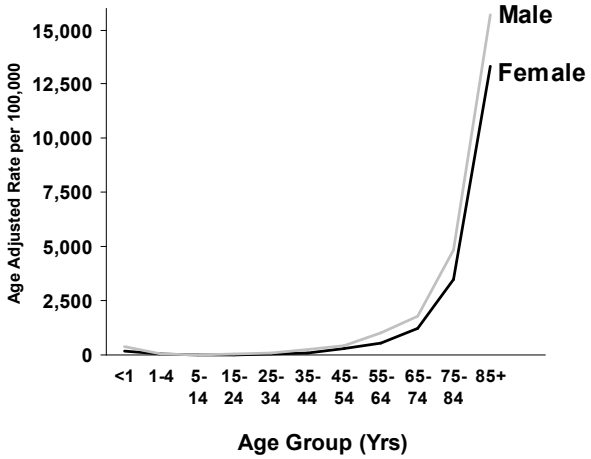
Figure 5.1 – Deaths in Berkeley, Alameda County, California (2002-2004), and the United States (2001-2003)



Source: Public Health Division, US Census, Death Certificates

There are 2-3 deaths each year in infants less than 1 year of age. The death rate is very low in adolescents and young adults, and increases after age 65.

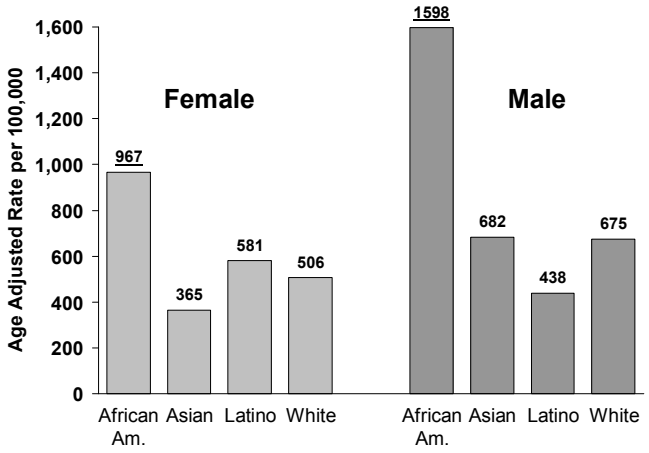
Figure 5.2 – Deaths by Age and Gender, Berkeley, 2002-2004



Source: Berkeley Public Health Division Death Certificates, US Census

African American males have a death rate 3 times greater than Asian males, and African American females have a death rate 2.6 times higher than Asian females.

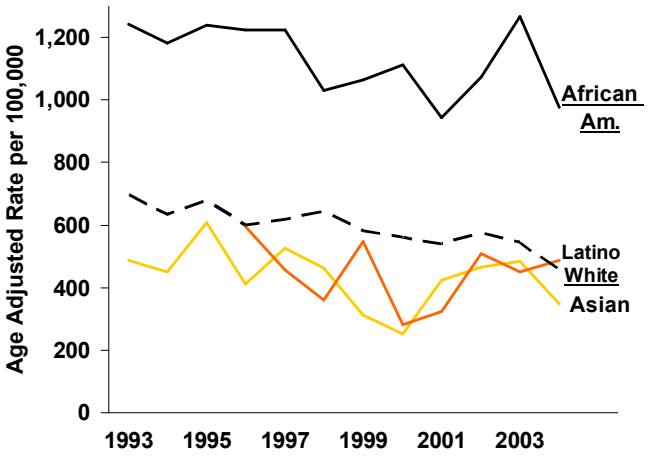
Figure 5.3 – Deaths by Gender and Race/Ethnicity, Berkeley, 2002-2004



Source: Berkeley Public Health Division Death Certificates, US Census

Over the last decade, the death rate for each race/ethnicity has declined. African Americans have twice the death rate as Whites, and the gap does not appear to be closing.

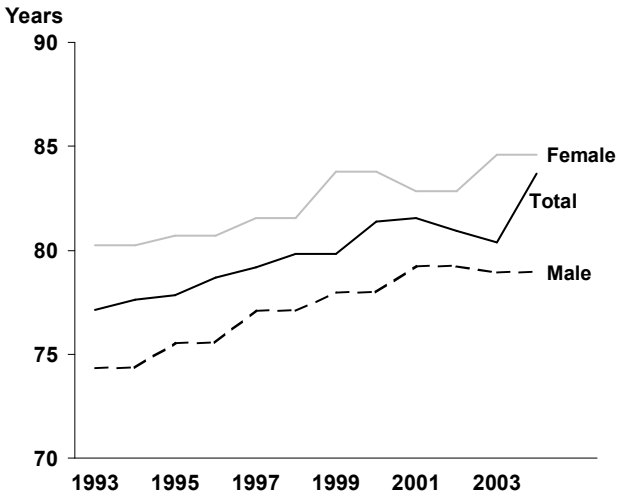
Figure 5.4 – Deaths by Race/Ethnicity and Year of Death, Berkeley, 1993-2004



Source: Berkeley Public Health Division Death Certificates, US Census

Over the last decade, life expectancy at birth has increased from 77 to 83 years. Women have a life expectancy 5 years greater than men.

Figure 5.5 – Life Expectancy by Gender, Berkeley, 1993-2004



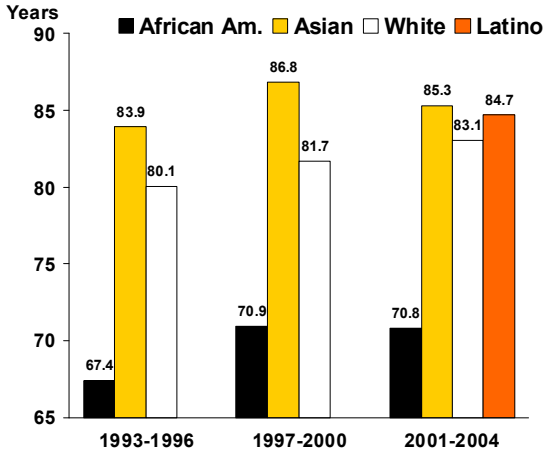
Source: Berkeley Public Health Division Death Certificates, US Census

Life expectancy at birth is greatest for Asians and lowest for African Americans. Life expectancy for African Americans increased from 67 years to 71 years in the 1990s, but has leveled off after 2000.

The life expectancy of African Americans is 12 years less than that for Whites.

Rates for Latinos are not reliable before Year 2000 due to differing Census classification and small numbers.

Figure 5.6 – Life Expectancy by Race/Ethnicity, Berkeley, 1993-2004

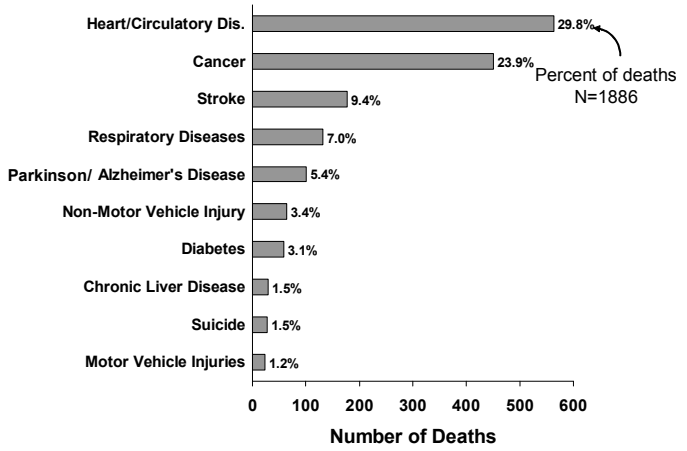


Source: Berkeley Public Health Division Death Certificates, US Census

Heart disease and cancer are the leading diseases that account for the most deaths in Berkeley

The next figure shows key factors that contribute to the diseases that cause death.

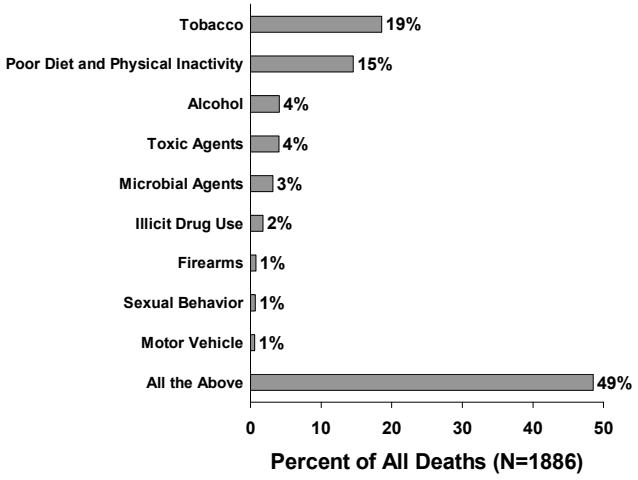
Figure 5.7 – Leading Causes of Death by Disease Category, Berkeley, 2002-2004



Source: Berkeley Public Health Division Death Certificates

Use of alcohol, tobacco, and drugs, lack of physical activity, inadequate diet, violence, and unsafe sex are estimated to be responsible for nearly 1/2 of all deaths in Berkeley.

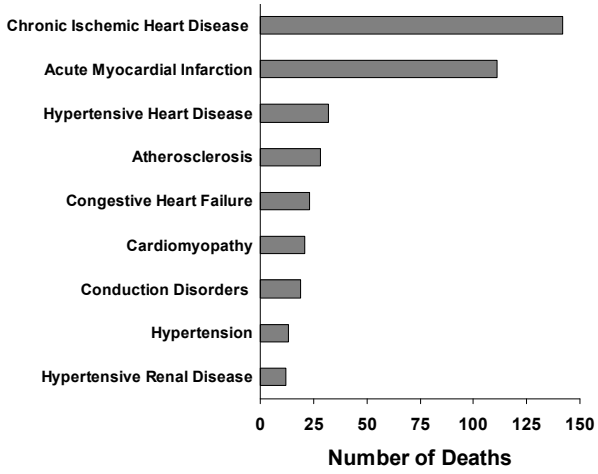
Figure 5.8 – Leading Causes of Death by Behavioral Risk Factor, Berkeley, 2002-2004



Source: Berkeley Public Health Division Death Certificates, McGinnis JM, Foege WH. Actual causes of death in the United States. JAMA 1993;270:2207-2212.

Coronary heart disease and hypertensive heart disease are major contributors to heart disease mortality.

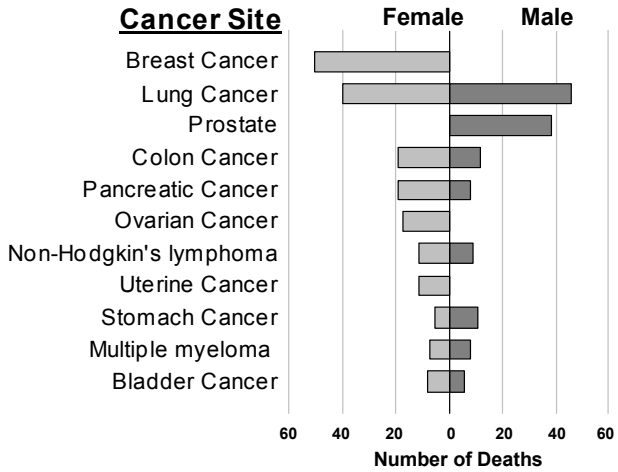
Figure 5.9 – Leading Heart Disease Causes of Death, Berkeley, 2002-2004



Source: Berkeley Public Health Division Death Certificates

For women, breast cancer is the leading cause of cancer death, followed by lung cancer. For men lung cancer is the leading cause of cancer death, followed by prostate cancer.

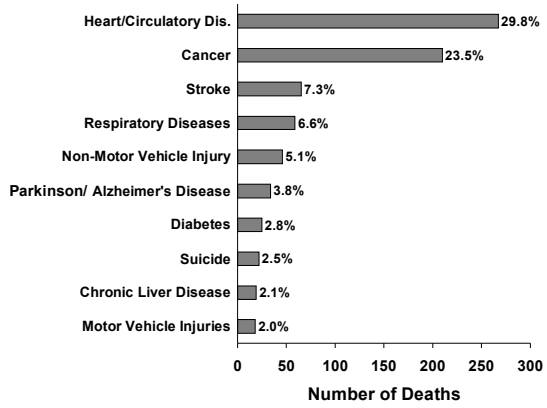
Figure 5.10 – Leading Cancer Causes of Death, Berkeley, 2002-2004



Source: Public Health Division Death Certificates

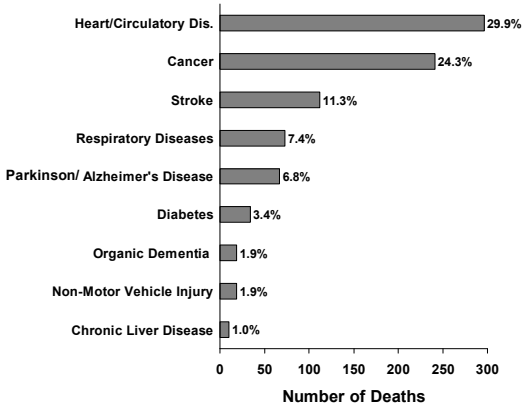
Males and females share the 4 top-ranked causes of death: Heart Disease, Cancer, Stroke and Respiratory Disease. Diabetes, Non-motor vehicle injuries, Neurological diseases of the brain (e.g., Alzheimer's/Parkinson), and Chronic liver disease are each in the top 10 leading causes of death for each sex.

Figure 5.11 – Leading Causes of Death, Males, Berkeley, 2002-2004



Source: Berkeley Public Health Division Death Certificates

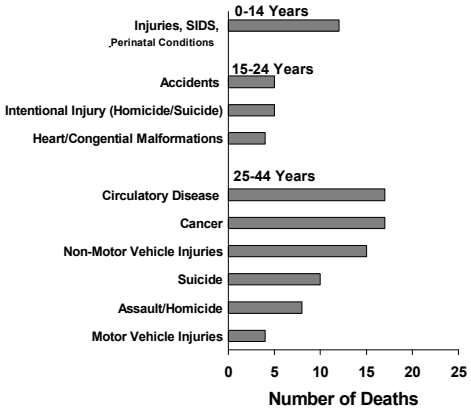
Figure 5.12 – Leading Causes of Death, Females, Berkeley, 2002-2004



Source: Berkeley Public Health Division Death Certificates

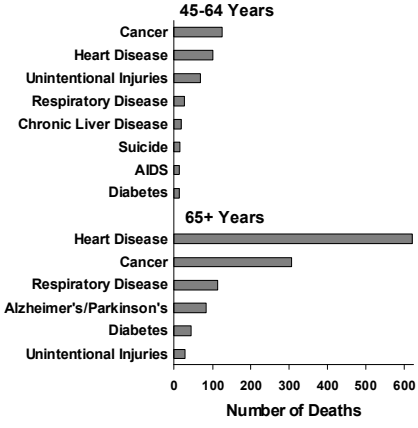
Injuries are leading causes of death from childhood to early adulthood. Although injuries are a leading cause in adults under 45 years of age, chronic diseases, such as cancer and heart disease, are more prevalent. After age 45, additional chronic diseases become more common as the cause of death.

Figure 5.13 – Leading Causes of Death, Age 44 Years and Younger, Berkeley, 2002-2004



Source: Berkeley Public Health Division Death Certificates

Figure 5.14 – Leading Causes of Death, Age 45 Years and Older, Berkeley, 2002-2004



Source: Berkeley Public Health Division Death Certificates

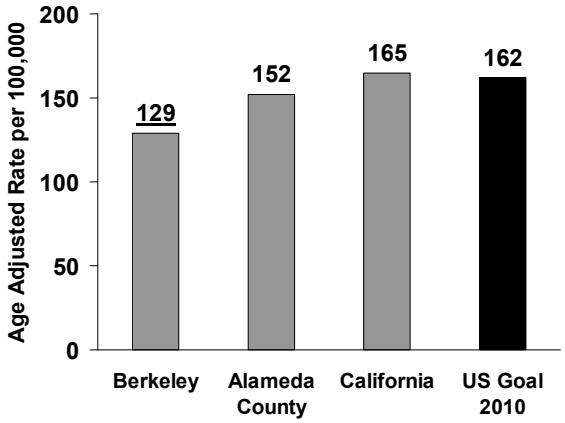
Coronary Heart Disease Deaths

There are 123 deaths per year due to coronary heart disease in Berkeley.

Berkeley has a lower death rate due to coronary heart disease than Alameda County and the State of California.

Berkeley's rate is better than the HP2010 goal.

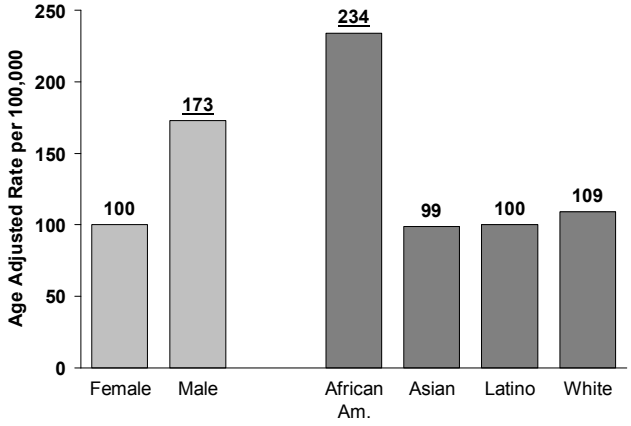
Figure 5.15 – Coronary Heart Disease Deaths, Berkeley, Alameda County, and California, 2002-2004



Source: Public Health Division, US Census, Death Certificates

Males and African Americans have high rates of death from coronary heart disease compared to females and other race/ethnicity groups.

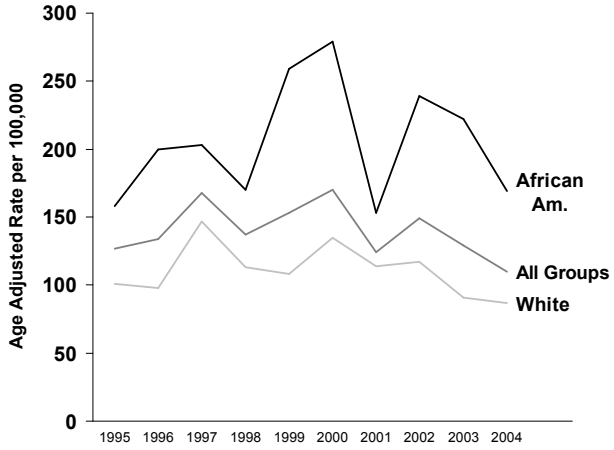
Figure 5.16 – Coronary Heart Disease Deaths by Gender and Race/Ethnicity, Berkeley, 2002-2004



Source: Berkeley Public Health Division Death Certificates, US Census

Coronary heart disease mortality has not consistently declined in the past decade.

Figure 5.17 – Coronary Heart Disease Deaths by Race/Ethnicity and Year of Death, Berkeley, 2002-2004

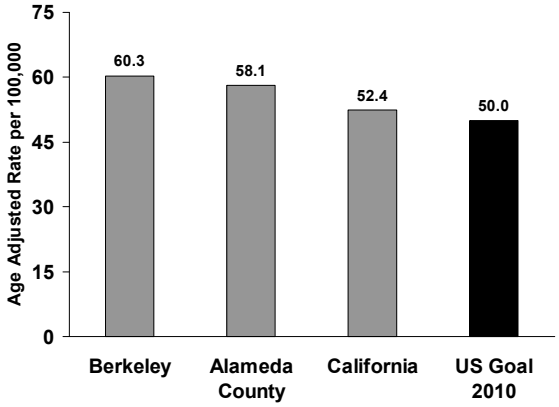


Source: Berkeley Public Health Division Death Certificates, US Census

Stroke Deaths

There is an average of 60 stroke deaths every year in Berkeley.

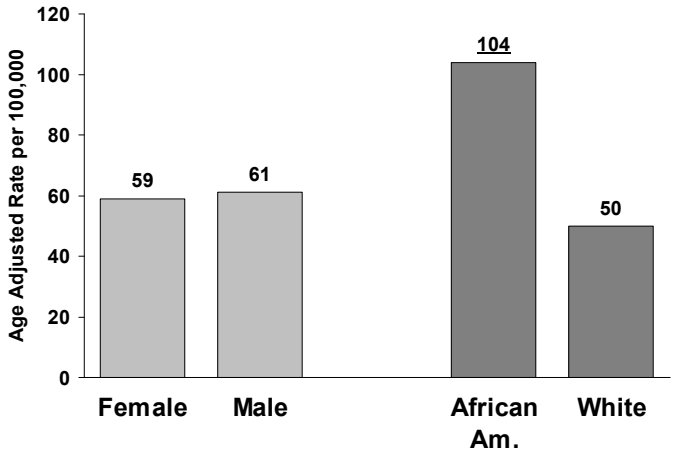
Figure 5.18 – Stroke Deaths in Berkeley, Alameda County, and California, 2002-2004



Source: Public Health Division, US Census, Death Certificates

African Americans have twice the death rate from stroke as Whites.

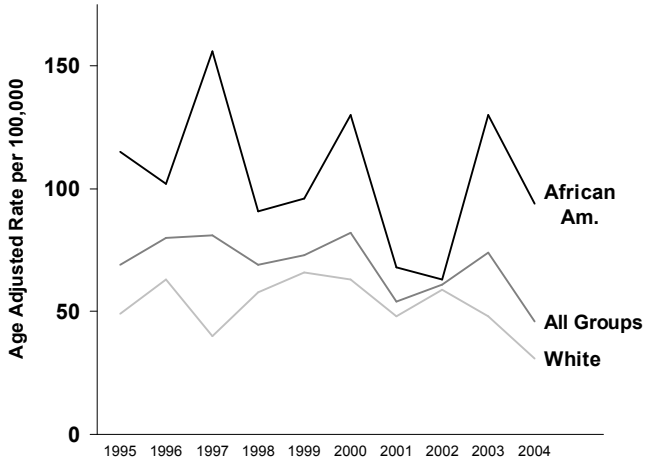
Figure 5.19 – Stroke Deaths by Gender and Race/Ethnicity, Berkeley, 2002-2004



Source: Berkeley Public Health Division Death Certificates, US Census

The death rate due to stroke has not consistently declined in the past decade. Death rates for African Americans show large fluctuations.

Figure 5.20 – Stroke Deaths by Race/Ethnicity and Year of Death, Berkeley, 2002-2004

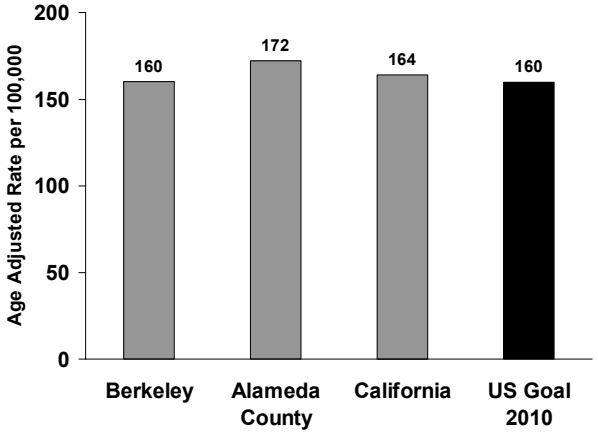


Source: Berkeley Public Health Division Death Certificates, US Census

Cancer Deaths

There is an annual average of 160 cancer deaths in Berkeley.

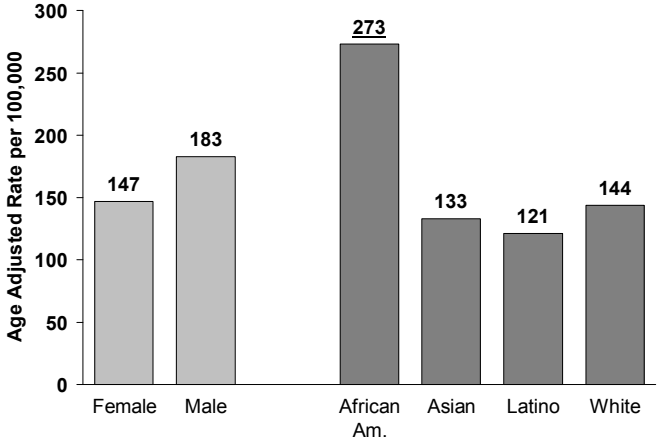
Figure 5.21 – Cancer Deaths, Berkeley, Alameda County, and California, 2002-2004



Source: Public Health Division, US Census, Death Certificates

Males and African Americans have the highest death rates compared to females and other race/ethnicity groups.

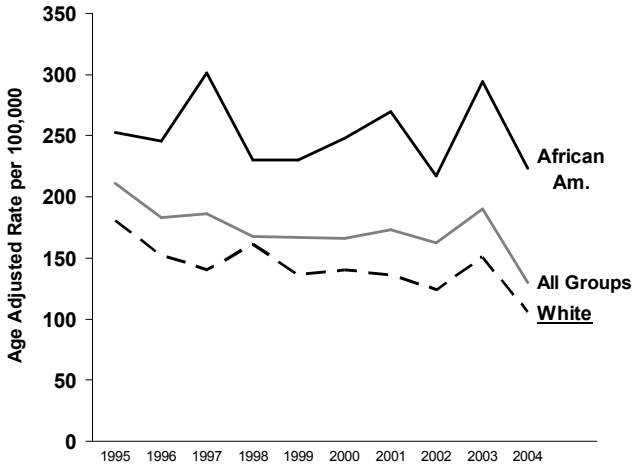
Figure 5.22 – Cancer Deaths by Gender and Race/Ethnicity, Berkeley, 2002-2004



Source: Berkeley Public Health Division Death Certificates, US Census

The death rate due to cancer has declined for Whites in the last 10 years. There is no consistent trend for African Americans.

Figure 5.23 – Cancer Deaths by Race/Ethnicity and Year of Death, Berkeley, 2002-2004



Source: Berkeley Public Health Division Death Certificates, US Census

Program Highlight: City of Berkeley Vital Records Office

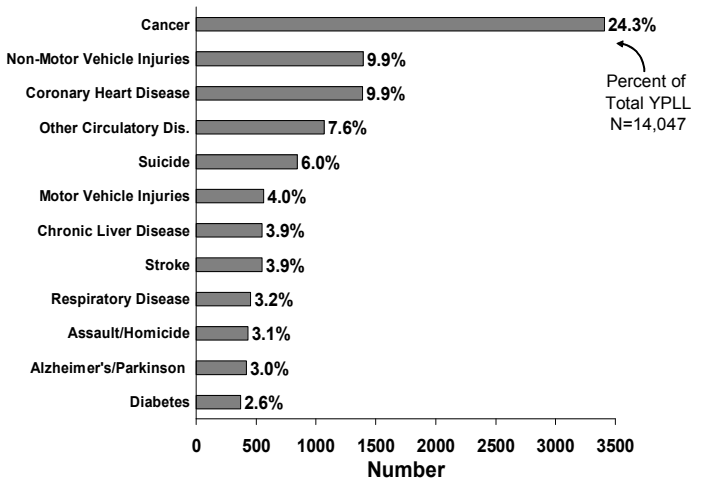
The Vital Records Office maintains documentation of births and deaths that occurred within Berkeley City limits since 1895, and plays an important role in the analysis of birth and death records and in surveillance of potential outbreaks. It was awarded two certificates of excellence and appreciation by the California State Office of Vital Records for "reaching and exceeding the State-mandated time frame for birth registration" and for "the completeness and accuracy of vital records data." These awards are indicators of high performance in following State standards for maintaining data on Berkeley residents.

Years of Potential Life Lost

Deaths before the age of 75 are considered premature. For those who die before age 75, the years not lived is a measure of potential life lost. Causes of death that are more common in young people, such as injuries, have a strong impact.

Each year, Berkeley loses 4,682 years of potential life from the 626 persons who die.

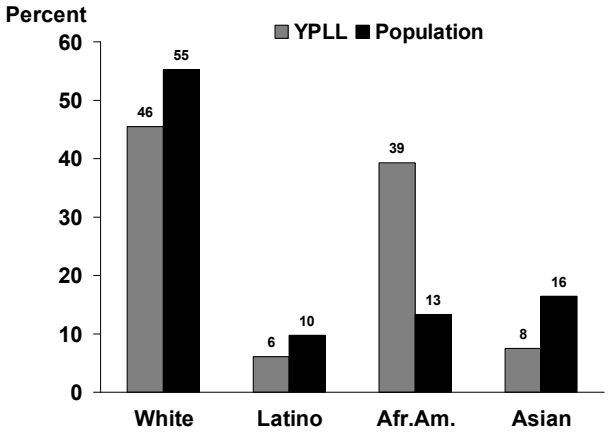
Figure 5.24 – Years of Potential Life Lost by Cause of Death, Berkeley, 2002-2004



Source: Berkeley Public Health Division Death Certificates

Although African Americans comprise 13% of Berkeley's population, they account for 39% of the years of potential life lost.

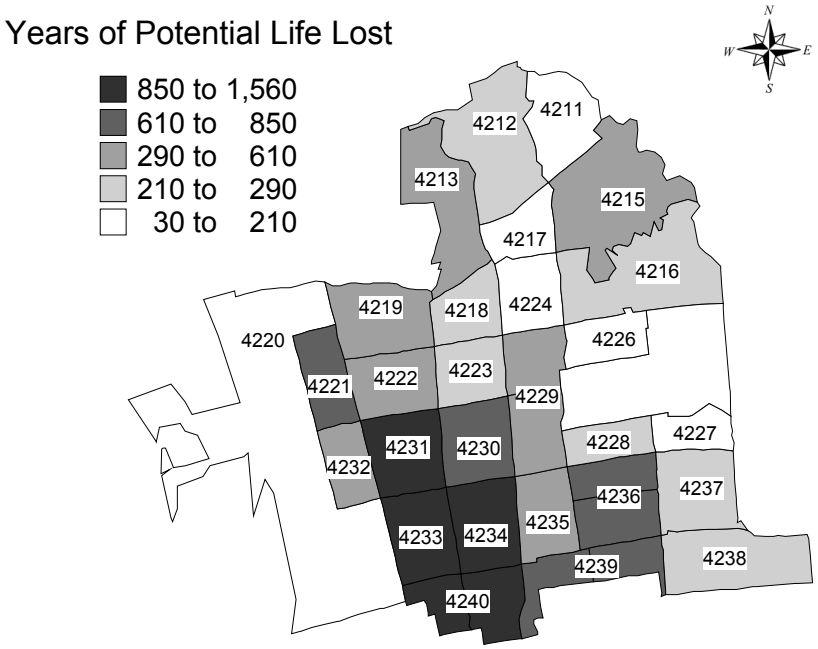
Figure 5.25 – Years of Potential Life Lost by Race/Ethnicity, Berkeley, 2002-2004



Source: Berkeley Public Health Division Death Certificates

The highest concentrations of years of potential life lost are in southwest Berkeley.

Map 5.1 – Years of Potential Life (YPLL) by Census Tract Berkeley, 2002-2004



Source: Berkeley Public Health Division Death Certificates

Conclusion

Based upon the findings in this Report, we have four key priority areas for action to address health inequities:

- **Ensuring a healthy start for every child**, through a focus on the conditions that promote healthy child development and support for parents and families

- **Positive youth development** to help adolescents build on their strengths to develop healthy lifestyles and healthy relationships, and to enjoy opportunities for healthy transition to adulthood.

- **Chronic illness prevention**, through creating a community in which every person has access to healthy food, safe places to play and exercise, social support, and access to preventive health services and appropriate treatment.

- **Public health preparedness**, to protect our community against infectious diseases and other emerging disease threats, and to make sure that we are prepared for any natural, biological, or environmental disasters that may threaten our well-being.

We invite you to join us to discuss the findings in this Report, and to help us develop strategies for action to improve the health of our community. You can find information about town hall forums and community meetings on our website at: http://www.ci.berkeley.ca.us/publichealth, or you can email us at publichealth@ci.berkeley.ca.us.

Thank you.

VI. APPENDIX

CONTENTS

Health & Human Services Department Resource Directory*

Berkeley High School Health Center
High school students in the Berkeley Unified School District are provided free medical, mental health, and health education services. Phone: 644-6965. Hours: M-F: 8-30a-12:15p and 1:15-4:30p

Berkeley Public Health Clinic
Provides family planning, immunizations, TB skin test, and Sexually-Transmitted Infection/HIV prevention and testing services. Phone: (510) 981-5350.

Community Engagement in the Public Health Division
The Community Health Action & Assessment Section (CHAAS) and the School-Linked Health Services Program (SLHSP) organize community engagement efforts involving community residents, community-based organizations, policy stakeholders, other City agencies, parent groups, and the school district. Phone: 981-5337 (CHAAS) and 981-7677 (SLHSP):

El Centro
Provides health insurance information, assistance with Healthy Families and Medi-Cal Applications, and health information. Phone: 981-5370. Hours: Tues 1-4p walk-in.

Nurse of the Day Program
This service provides free counseling, health education, physical assessments, referrals, resource information, and assistance with accessing needed health services for residents of Berkeley and the surrounding area. To speak to a nurse, call (510) 981-5300. Hours: M-F: 8a-12p and 1-5p. In-person, visit 1947 Center Street, 2nd Floor. Hours: M-F 8a-12p and 1-5p.

Senior Centers

North Berkeley	South Berkeley	West Berkeley
1901 Hearst Avenue	2939 Ellis Street	1900 Sixth Street
(510) 981-5190	(510) 981-5170	(510) 981-5180

Vital Records Office
Birth and death certificates are available. Certificate request forms to print and mail in are available online at: http://www.cityofberkeley.info/publichealth/vitalstatistics/default.html. See website for more information. Phone: 981-5300. Office hours are Mon-Fri, 9am-4pm except holidays. Location: 1947 Center Street, 1st Floor.

Women, Infants and Children Program
Provides nutrition education, free food vouchers and breastfeeding support. Phone: 981-5360. Hours: M-Th 9a-12p and 1-5p.

* This is a select listing of programs and services. For a full listing of Health & Human Services Department programs and services, please visit: http://www.ci.berkeley.ca.us/hhs/

DATA SOURCES AND TECHNICAL NOTES

I. Social Determinants of Health & Health Inequities

Population and Demographics

The United States Bureau of Census conducted a complete count of the Berkeley population in 1990 and 2000 as part of the decennial census. Self-reported age, sex, race, and ethnicity of residents were collected in standardized questionnaires. Housing and household characteristics including types of families, income, and mode of transportation to work were also collected. Additional information on such topics as educational attainment, language spoken at home, disability status, and other information used in this report was collected on a sample of Berkeley residents.

Data used in this report for 1990 and 2000 census were obtained from publicly available data files[167] that aggregate individuals' responses at the level of the entire city, census tracts, and U.S. Postal Service zip codes. Census tracts are made up of contiguous blocks of residential housing in which approximately 4,000 persons live.

Poverty

Poverty was defined in Census data using federal guidelines,[168] which create income thresholds ("poverty line") that are compared to a family's pre-tax income. The thresholds vary by the number of adults and children in the family. In 1999, the threshold was $16,995 for a two-parent family with 2 children, and $13,423 for a single parent household with two children. The methodology was created in the 1960's and reflects the assumption that the cost of food for a minimum but adequate diet accounted for one-third of family income. Drawbacks of the methodology and alternatives have been reviewed.[169]

In analyses of poverty and mortality from 1999-2001, Census data on the percent of residents living below the poverty line in 1999 was compiled for each Berkeley census tract (4211-4240). The poverty status of each person who died as based on the census tract in which he/she lived.[170] Residential addresses in vital statistics data files were used to code census tract. For some analyses in this report, census tracts were grouped as Hills (east of Sacramento Ave.) and Flats (west of Sacramento Ave.).

Race/Ethnicity

Race/Ethnicity in census data is classified using federal system based on five categories of race (White, Black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander) and 1 category of ethnicity (Hispanic).[171] In the 2000 Census respondents were also allowed to select a category of one or more races. Race and ethnicity were combined to create mutually exclusive categories based on Hispanic (Latino) of any race and White, African American, Asian, Other, and Multi-racial individuals who are not of Hispanic ethnicity. Major changes in race/ethnicity classification occurred between the 1990 and 2000 census. For analyses using 1990 to 1999 population projections, Non-Hispanic Whites were tabulated as the difference of Whites and Hispanics of any race. A small number of Latinos were included in the totals of African Americans and Asians for this time period.

Linguistic Isolation

We used the term, “English Difficulty” to represent the U.S. Census term, “Linguistic Isolation.” The Census Bureau defines a linguistically isolated household as one in which no one 14 years old and over speaks only English or speaks a non-English language and speaks English "very well." In other words, all members of the household 14 years old and over have at least some difficulty with English.

Intercensus Population Estimates for Rate Calculations

Rates of illness, injury, and death are comprised of a numerator that is the count of health events and a denominator that counts population for a given time period (e.g., 50 deaths per 100,000 population in 2003).

$$\text{Rate} = \frac{\text{Number of Health Events}}{\text{Population}} \times \text{Time Period}$$

Data collection systems for vital statistics, hospitalizations, and traffic injuries reported to the Berkeley Police Department were compiled annually for this report. However, actual population counts by age, sex, and race/ethnicity for Berkeley were only available for 1990 and 2000 as part of the decennial census. In order to follow time trends in health outcomes for each year from 1991 to 2006, we calculated the linear change in the 1990 and 2000 census for the Berkeley population in each of 110 subgroups based on 11 age groups (in roughly 10-year bands), two sexes, and five race/ethnicity groups (non-Hispanic White, non-Hispanic African America, Latino, Asian, and Other/Multi-racial). These annual changes were extended through 2006.

For the annual population in mortality and traffic injury analyses, we multiplied each cell by a constant to make the total Berkeley population consistent with the estimate for Berkeley made by the California Department of Finance[172] each year between 1991 and 2006. (The California Department of Finance estimates county populations by age, sex, and race subgroups but only estimates city populations in aggregate).

Geographic information for hospitalizations was available only at the level of zip code. Population estimates between 1991 and 2006 were based on linear change between the 1990 and 2000 census for subgroups based on 9 zip codes (94702-94710), 6-age groups in roughly 15-year bands), 2 sexes, and 5 race/ethnicity groups. [167] The choice of age-bands was based on groupings used by the California Department of Health Services[173] and the Office of Statewide Health Planning and Development (OSHPD)[174] so that comparisons would be standardized. Because zip codes extend beyond city borders, approximately 15% of the population were non-Berkeley residents from adjoining cities.

K-12 Students in the Berkeley Unified School District (BUSD)

Demographic information on K-12 students enrolled in the Berkeley Unified School District in 2005-2006 was reported by the BUSD to the California Department of Education.[175, 176] Documents published by the California Department of Education were also used to describe physical fitness, standardized testing and reporting (STAR) of proficiency in English Language Arts, high school non-graduation rates (“drop out”), and high school students with California State University/University of California (CSU/UC) eligibility in the Berkeley Unified School District.[177] The number of children with special education needs by ethnicity was provided by the Berkeley Alliance.[175]

Special Programs are defined as follows. *English Learners* are students who are not yet proficient in English. *Free /Reduced Price Meals* is a program to students from low-income families for free or reduced price meals. *Compensatory Education* are students participating in the federal Title I or the state Economic Impact Aid/State Compensatory Education (EIA/SCE) program. Title I is a federal program that provides supplementary services to low-achieving students from low-income families. The EIA/SCE is a state program that provides funds to low-achieving schools with high proportions of transient, low-income or English learner students. The goal of both is to improve student achievement in reading and mathematics.

Homeless Population

Estimates of Berkeley homeless were based on a survey conducted under the auspices of the Alameda County-wide Homeless Continuum of Care Council. The survey was a stratified cluster sample of 1,461 persons throughout Alameda County at homeless shelters and service sites in 2003.[178]

II. Pregnancy and Birth

Birth Certificates

Birth certificates are issued by the Public Health Division Vital Statistics Office for all births occurring in Berkeley, including home and hospital births (Alta Bates Summit Medical Center). For births of Berkeley residents occurring outside of Berkeley, the Automatic Vital Statistics System (AVSS) returns those records back to the place of residence, irrespective of the place of birth.

Birth certificates record characteristics of the parents (e.g., maternal age), pregnancy (e.g. duration of pregnancy and physician visits for prenatal care), and birth outcomes (weight of the newborn). The race of the baby is assigned as the race/ethnicity of the mother. These data are used to calculate the rate of adolescent (teen) births, prematurity and low birth weight.

Adolescent Birth Rate is the number of live births among adolescents, 15 to 19 years old, divided by the estimated female population in the same age group per 1,000 population.

Low Birth-Weight baby is a live birth in which the newborn weighs less than 2,500 grams or 5.5 pounds. The low birth weight rate (or percentage) is number of babies weighing less than 2500 grams divided by the total number of live births in a specified time period.

Premature birth is a live birth with a gestation of less than 36 weeks.

Timely Initiation of Prenatal Care is defined as one or more prenatal visits to a doctor occurring in the first trimester of the pregnancy.

Maternal Depression was measured in new mothers enrolled in an Alameda County-based program, "Every Child Counts" that coordinates services for children less than 5 years of age and their families. Hospital-based outreach coordinators enroll new Berkeley mothers (of any income level) for post-partum home visits and identify mothers who have a history of, or appear to be at risk for depression. Public health nurses receive referrals to visit these at-risk women and administer the Edinburgh Depression Screening tool.[179]

Breastfeeding

Data on in-hospital breastfeeding are from the California Newborn Screening Program database of the Genetic Disease Branch of the California Department of Health Services.[180] All nonmilitary hospitals are required to complete the Newborn Screening Test Form (DHS 4409) prior to an infant's discharge. Based on responses on the form, breastfeeding is categorized as breast only, formula only, breast and formula, and other. WIC administrative data were used to track breast feeding during the first 11 months post partum.

III. Child & Adolescent Health

Service utilization of Berkeley children was compiled from published data and internal databases of state and county agencies including Medi-Cal,[181] Healthy Families,[182] California Children Services,[183] Alameda County Behavioral Health Services,[184] and the Berkeley Unified School District. [175, 176]

California Healthy Kids Survey

Youth Behaviors: Alcohol, Tobacco, Drugs, and Violence

The California Healthy Kids Survey is the source of data for youth behaviors measured in students enrolled 5th, 7th, 9th, and 11th grades in the Berkeley Unified School District. The survey was developed under a contract from the California Department of Education by WestEd and Duerr Evaluation resources.[185]

The survey is comprised of over 50 questions regarding student demographics (8 items), alcohol and other drug use (20 items), tobacco use (8 items), physical harassment and violence (11 items), food and nutrition (5 items), exercise and physical activity (2) items, and single items for depression, asthma, and overweight. Many questions occur as couplets asking the lifetime frequency or past 30 day's use of alcohol, tobacco, and drugs or the exposure to violence.

The sample is made up of random classrooms within grades 5, 7, 9, and 11, and non-traditional schools or classes (continuation, alternative, court, and community day school settings). The survey is voluntary, confidential, and anonymous, although consent was required to be given by parents for 5th grade students. Response rates in the 2005-6 survey years were 57% for grade 5 (target N = 591), 67% for grade 7 (target N = 629), 47% for grade 9 (target N = 862), 53% for grade 11 (target N = 781), and 35% for non-traditional (target N = 112). Comparison data is available for California (California Student Survey) [186] and the United States (Youth Behavioral Risk Survey). [187]

Obesity and Asthma

Based on student self-report of height and weight in the CHKS survey, Body Mass Index (BMI) was calculated [Weight in kilograms/(Height in meters^2)] and compared to U.S. population data of BMI-for-age. BUSD students with a BMI greater than the 95% percentile for age were considered obese.[188]

Asthma prevalence was the proportion of BUSD students responding affirmatively to: "Has a doctor ever told you or your parent/guardian that you have asthma?"

California Child Health & Disability Prevention Program

The Child Health and Disability Prevention Program (CHDP) provides health care and periodic preventive health assessments to California children in low-income families. Eligible children include all Medi-Cal recipients under the age of 21 and other eligible low-income children up to the age of 19 years. As part of routine assessments, physicians monitor childhood physical development and indicators of anemia. To receive reimbursement for services, physicians submit encounter forms (PM 160s).

Obesity

Obesity in Berkeley children enrolled in the CHDP Program was calculated from a sample of 495 children who had an encounter in April, August, and December 2005. Height, weight, sex, and age in months were abstracted from encounter forms. Each child's percentile was calculated based on Centers for Disease Control and Prevention growth curves using BMI-for-age for children 24 months and older and weight-for-length for children aged less than 24 months.[188] Children exceeding the 95% percentile were classified as obese. Comparison data was available for Alameda County and California.[189]

Anemia

In the sample of CHDP children (above), anemia was defined as children with hemoglobin levels below national guidelines based on age and sex.[190]

Confidential Morbidity Reports

Communicable Diseases

California law (Title 17, §2500) requires physicians, other types of health care providers, and health facilities to report over 80 communicable diseases to the local health officer by phone, fax, or mail within specified time limits.[191] These confidential morbidity reports are received and compiled by the Berkeley Public Health Division Vital Statistics Office.

For the sexually transmitted diseases of Chlamydia, Gonorrhea, and syphilis, laboratory data are included in the confidential morbidity report to confirm cases. Likewise, data on viral hepatitis (A, B, C, D) includes results of antigen testing. For tuberculosis reporting, results of skin tests, chest x-ray, and bacteriological analysis are included to confirm cases.

Cases and rates are presented by the *count year*, which is the date when the TB case is verified and reported to the California Department of Health Services.

Childhood Immunization

As part of the California Department of Health Services Expanded Kindergarten Retrospective Survey, the Berkeley Public Health Division visited local schools with kindergartens and collected copies of student immunization record (blue card).[192] Demographic information and immunization history were extracted from each record. Data were analyzed using birth dates and immunization dates to retrospectively estimate immunization coverage at various age checkpoints. For example, a survey conducted in children (3-8 years olds) attending kindergarten in 2004 reviewed data on children with birthdates from 1995 to 2001. Since the 1990s, immunizations have included 4 doses

of vaccine for diphtheria, tetanus and pertussis, 3 doses for polio, and 1 dose of vaccine for measles mumps, and rubella (4:3:1). As new vaccines became available in the late 1990s, additional immunizations were included for assessment. These included Haemophilus influenza (3 doses) and hepatitis B (3 doses), and varicella (chicken pox) (4:3:1:3:3:1). The summary statistic is the percent of all children with vaccinations up to date at 24 months of age. Even though the survey provides the best available information on immunization coverage, the results have a built-in lag of several years, during which immunization practices may have changed.

Hospital Discharge (OSHPD)

Short-stay hospitals in California are required to report data on in-patients to the Office of Statewide Health Planning and Development (OSHPD),[174] which compiles data on each hospitalization. The data in this report was based on hospitalizations and not unduplicated patients. For each hospitalization, patient age, sex, race/ethnicity, zip code of the patient's residence, date of hospitalization, and causes of the hospitalization were available for patients residing in Berkeley zip codes 94702 to 94710. Residents of Kensington, Albany, and adjoining cities who share zip codes with Berkeley could not be excluded. The diseases and injuries that caused hospitalization were coded by OSHPD using the 9th revision of the International Classification of Diseases (ICD-9).[193] [See table below].

Classification of Hospitalizations for Injury and Illness, Office of Statewide Health Planning and Development

Illness/Disease/Injury	ICD-9 Codes*
Coronary Heart Disease	402, 410-414, 429.2
Cerebro-vascular Disease (Stroke)	430-438
Hypertensive Heart Disease	401-405
Diabetes Mellitus	250
Psychosis	290-299
Asthma	493
Motor Vehicle Accidents	E810-E825
Accidental Poisoning By Drugs, Medicinals, And Biologicals	E850-E858
Accidental Falls	E880-E888
Adverse Effects Of Drug, Medicinal And Biological Therapy (including prescription drugs)	E930-E949
Suicide And Self-Inflicted Injury	E950-E959
Homicide And Injury Purposely Inflicted By Other Persons	E960-E969

* All non-injury diseases were based on the primary diagnosis field

Hospitalizations due to injuries were coded in two ways: 1) type of injury (fracture, amputation, laceration) and 2) external cause (fall, motor vehicle crash, adverse prescription drug reaction, etc.). For external causes of injury, only the first hospitalization was E-coded, even if there were subsequent hospitalizations for the same injury.

The hospitalization rate is:

$$\text{Hospitalization Rate} = \frac{\text{Hospitalizations}}{\text{Population}} \times \text{Time Period}$$

IV. Adult Health

California Health Interview Survey, 2001

The California Health Interview Survey, conducted in each county at 2-3 year intervals has been the largest ongoing health-related survey of Californians since 2001. CHIS is a collaborative project of the UCLA Center for Health Policy Research, the California Department of Health Services, and the Public Health Institute.[194]

In 2001, cities with local health departments, including Berkeley, were included in the sample. The 90-page questionnaire covered self-perceived health status, disability, chronic health conditions, cancer screening, health insurance, alcohol and tobacco use, mental health, diet, and physical activity. One adult per household was selected by random digit dialing. Berkeley's sample included 809 adults representing 82,505 individuals 18 years of age and older. Participants were interviewed by telephone in English, Spanish, Vietnamese, Cantonese, Mandarin, Korean, and Khmer. The average adult interview took approximately 32 minutes to complete.

The response rate for Berkeley was 62%, slightly better than the statewide average of 59.2% and Alameda County (57.6%). To ensure the sample was as representative of Berkeley's adult population, the sample was weighted for non-response to reflect Berkeley's demographics in the 2000 U.S. Census and the availability of telephone lines. Individuals living in group quarters (e.g., university dormitories, nursing homes) may have been underrepresented.

A data file with sample weights was used to calculate weighted population estimates and weighted percents with their 95% confidence intervals. The methods used to generate these estimates are the same as those in published data for Alameda County and California.[195]

The definition of individual behaviors is as follows:

Current smokers were defined as adults who indicated they smoke cigarettes every day or some days.

Binge drinkers were defined as adults who consumed 5 or more alcohol drinks of any type on a single occasion during the past month.

Lack of moderate physical activity was based on a negative response to the question "Over the past 30 days, did you do any moderate activities in your free time for at least 10 minutes that caused only light sweating or slight to moderate increase in breathing or heart rate?"

Obesity was defined as a Body Mass Index (BMI) of 25 or greater. BMI was calculated from self-reported height and weight.[2]

Daily servings of fruits and vegetables was calculated from self-reported daily consumption of specific food groups (juices, salads, beans, fruit, vegetables, fried potatoes, and tomatoes) and estimated serving sizes based on respondent's age and sex.[196]

Health insurance questions polled respondents about their current participation in Medicare, Med-Cal, Healthy Families, employer sponsored health insurance, privately purchased health insurance, and other public insurance programs.

Lifetime prevalence of asthma, hypertension, heart disease, and diabetes were based on affirmative responses to the question: "Has a doctor ever told you that you have . . . (specified condition)?

Pap screening (women 18 Years and Older) *and mammograms* (women aged 40 years and older) were based on a sequence of responses of ever having had a Pap test or mammogram, and querying about the time interval since the last test (within 3 years for Pap and 24 months for mammogram).

Disability status was defined as an affirmative response to "Do you now have any health problem that requires you to use special equipment, such as a cane, a wheelchair, a special bed, or a special telephone?"

Depressive symptoms were based on responses to "Did you feel downhearted and sad in the past month?" as all of the time, most of the time, or some of the time.

Limitations in Daily Activities was based on affirmative responses to "During the PAST 4 WEEKS, how much of the time has your PHYSICAL HEALTH OR EMOTIONAL PROBLEMS interfered with your social activities like visiting with friends, relatives, etc.?"

Mental health insurance coverage was defined as a positive response to "Does your insurance cover treatment for mental health problems, such as visits to a psychologist or psychiatrist?"

Self-perceived mental health needs was defined as a positive response to "During the past 12 months, did you think you needed help for emotional or mental health problems, such as feeling sad, blue, anxious or nervous?"

Mental health service utilization was defined as an affirmative response to "Not counting overnight stays, emergency room visits, or visits for drug or alcohol problems, in the past 12 months, have you seen a psychiatrist, psychologist, social worker, or counselor for emotional or mental health problems?"

Adult Communicable Diseases: AIDS\HIV Registry

The statistics presented in the AIDS and HIV section were obtained using the AIDS cases reported to the Berkeley Public Health Division as part of the confidential AIDS Surveillance System. HIV databases were obtained from the anonymous and confidential HIV testing sites of the Public Health Clinic and the HIV seroprevalence surveys at the sexually transmitted disease clinic.

Traffic Injuries (Statewide Integrated Traffic Records System, SWITRS)

The California Highway Patrol, CalTrans, and the California Department of Motor Vehicles collaborate in collecting information from traffic collisions throughout California to improve roadway conditions and monitor the effectiveness of enforcement efforts.[197] Standard data collection methods, including report forms (Traffic Collision Report, CHP 555) and data element definitions are used to describe collisions involving motor vehicle drivers, passengers, pedestrians, and bicyclists. Demographics of the injured and many other aspects of the collision are recorded. Since 1997, data are compiled annually in a database (Statewide Integrated Traffic Records System, SWITRS).

A data extract of the SWITRS database was made available to the City of Berkeley for collisions occurring in Berkeley's streets and highways between 1997 and 2005.[198] The unit of analysis in this report was injury (unique party-collision-date triplet) rather than collisions. Race/ethnicity of injured persons was available from 2002-2005.

Domestic Violence

The Berkeley Police Department collects data on domestic violence cases or domestic incidents reported to the police. For incidents reported in 2000, a data extract was provided by the Domestic Violence Prevention Unit. The data collected from police reports includes both victim and aggressor demographics and their relationship (spouse, ex-spouse/boyfriend/girlfriend, cohabitation). The unit of analysis was an incident, and multiple incidents may have occurred in the same victim and aggressor. It is recognized that most domestic violence incidents are underreported in crime statistics.[199]

Cancer Incidence

Cancer incidence rates and their 95% confidence intervals were provided by the Greater Bay Area Cancer Registry (GBACR).[200] Since 1987, California state law requires hospitals, physicians, and cancer treatment facilities to report newly diagnosed cases of cancer to regional cancer registries. The Greater Bay Area Cancer Registry collects and manages this information on cases reported in 9 Bay Area counties. Cancers are histologically confirmed and classified by site using the ICD-O-3 (oncology) system.

Cancer incidence rates in this report were calculated as 5-year averages using the number of cases in Berkeley zip codes from 1998 to 2002 as the numerator and multiplying the 2000 U.S. Census population count for Berkeley zip codes by 5 as the denominator. Cancer incidence rates and their 95% confidence intervals[201] were age-adjusted (see Technical Notes below) to the U.S. population standard.

To ensure confidentiality and statistical reliability, the GBACR reports rates for a particular population group if the group includes at least 15 cases of a specific cancer and if the total population for the designated time period exceeds 10,000. Race/ethnicity groupings were based on mutually exclusive federal classifications (Latino and non-Hispanic: White, African American, Asian, Other, and Multi-racial).

V. Death from All Causes

Death Certificates

Death certificates are issued by the Public Health Division Vital Statistics Office for all deaths occurring in Berkeley, including home and hospital deaths. Death certificates provide demographics of the decedent, the cause of death, and census tract of residence. Typically, funeral directors complete the non-medical portion of the death certificates (age, sex, race, residence, occupation of the decedent), and physicians complete the sections pertaining to progression of illnesses or injuries causing the death.

The medical information is classified into standard categories by trained personnel at the California Department of Health Services according to the International Classification of Disease[193], using the 9th Revision for deaths occurring from 1990-1998, and the 10th Revision for deaths occurring from

1999 to 2006. For deaths of Berkeley residents occurring outside of Berkeley, the California Department of Health Services annually complies and forwards birth certificate information to Berkeley's Public Health Division Vital Statistics Office, and also compiles a master file of deaths in Berkeley residents.

Mortality Rate

The mortality rate is the number of deaths divided by the population in a specified time period.

$$\text{Mortality Rate} = \frac{\text{Number of Deaths}}{\text{Population}} \times \text{Time Period}$$

The mortality rate can be further specified by age, sex, or race (e.g., deaths in 25-44 year olds in 2003 divided by the number of 25-44 year olds in the population in 2003). The numerator can likewise be specified for a given cause of death, such as coronary heart disease, cancer, stroke, etc.

We classified leading causes of death and hospitalization using the standard diagnostic categories of the International Classification of Diseases (See table below).

International Classification of Disease Classifications of Leading Causes of Death

Illness/Disease/Injury	ICD-9 Codes*	ICD-10 Codes†
All Cancers	140-208	C00–C97
Coronary Heart Disease	402, 410-414, 429.2	I11, I20–I25
Stroke	430-438	I60 – I69
Respiratory Disease	NA	J00-J98
Chronic Liver Disease	NA	K70-K76
Diseases of the Nervous System (Alzheimer's, Parkinson's Disease, etc.)	NA	G00-G98

* Berkeley deaths occurring 1991-1998
† Berkeley deaths occurring 1999-2005

Years of Potential Life Lost is the difference in years between the age of death and age 75 for those who die before age 75 (e.g., 75 – 45 age at death = 30 years of potential life lost).

Life Expectancy is the number of years that a newborn can expect to live based on current death rates. For this report, life expectancy was calculated using the abridged life table method[202] using mortality rates in 19 age bands (<1, 1-4, 5-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-79, 80-84, 85+).

Statistical Methods

Age-Adjustment

Rates for hospitalization, traffic injuries, and mortality were age-adjusted. Age-adjustment is a statistical technique that makes it possible to compare health outcomes of populations that have different age profiles. Hospitalization and death rates increase rapidly after age 60, so population groups that have proportionately more older persons will appear to have high rates compared to groups that have a smaller proportion of older people.

The technique is applied in three steps. First, the rate is calculated in specific age groupings. Mortality rates in this report used 11 age groupings (<1 year, 1-4, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+). An example of an age-specific death rate is deaths in persons 35-44 years old in 2005, divided by the number of 35-44 year olds in the population in 2005. Second, rather than taking a simple average these age-specific rates, each rate is multiplied (weighted) by the proportion of individuals in that age group that were estimated to be in the U.S. population in 2000.[203] Third, these weighted rates are summed. The sum reflects the weighted average, and is the age-adjusted rate.

Statistical Reliability of Rates

Rates of mortality and hospitalization based on large numbers of events are more reliable than those with only a few observations. Rates based on a small number of outcomes can fluctuate widely, making time trends difficult to discern or year-to-year changes seem spurious.

Analysts use several approaches to guide users in their interpretation of rates based on small numbers. Some agencies publish rates, but use symbols (e.g., asterisk) to warn readers that the rate does not meet a given reliability standard. Other agencies do not report results if the number of events do not meet a minimum number. There is no universally adopted minimum number, but many agencies' minimum number is in the range of 10 to 20.[173, 200, 204-206] This range reflects a statistical zone in which measures of the variability in the rate (standard error) are between one-quarter to one-third of the value of the rate itself (i.e. a Relative Standard Error between 23% and 33%). For this report, we adopted the lower limit of 10, which strikes a balance between the amount of data that can be presented, particularly for Asians and Latino health outcomes, and the statistical reliability of rate measurements. The choice of 10 observations also helps prevent the potential identification of individuals and maintains confidentiality. Graphs in this report omit population groups with less than 10 observations in the numerator of a rate or proportion. This is the reason why some groups (e.g. Latinos) are included in some graphs and excluded from others.

To enhance the reliability of rates in some analyses of time trend, we aggregated data in 2- to 6-year intervals, so that, for most time periods, at least the larger population subgroups (White, African American) had at least 10 observations per time interval. These rates are average annual rates.

Statistical Significance

Examining differences in rates between geographic areas of Berkeley, Alameda County, and California, and between race/ethnicities within Berkeley follow from the questions, "How is Berkeley doing compared to other communities?" and "How do race/ethnicities within Berkeley compare to each other?"

Given that some health outcomes are based on small numbers or a sample, differences between two (or more) rates may be the result of random variation rather than other explanations. In this report, statistical tools were applied to help assess whether differences in rates were a likely or unlikely consequence of random fluctuation. "Statistical significance" is a technical term that indicates that the difference between two rates or proportions is not likely to be due to chance, or random fluctuation. "Statistical significance" is not a pronouncement on whether the difference has or does not have practical importance. Statistical significance was assessed using widely accepted statistical methods taking into account the sample design and the frequency of the health outcome.

Health outcomes that occur in more than a few percent of a specific population are considered "common" in statistical terms. These include the percent of low birth weight (5%-15%, anemia (~6%) or obesity (~25%) in CHDP children of a given age group. Significance testing for "common" health outcomes from non-weighted samples used a two-tailed Chi square test and a confidence level of 95% ($p < 0.05$). In addition to these statistical tests, 95% confidence intervals were calculated using the binomial distribution.[207] The 95% confidence interval reflects the spread in results if outcomes (e.g., percent low birth weight) were repeatedly measured in the same population taking different random samples of the same size.

Although the prevalence measures in the CHIS are statistically "common," the data were weighted for non-response and other factors to make the sample representative of the Berkeley adult population. Sample weights were used to generate weighted percents and the weighted sample design was taken into account in calculating 95% confidence intervals.[208] Differences in weighted percents in CHIS between Berkeley, Alameda County, and California were assessed with 95% confidence intervals. Confidence intervals that did not overlap were considered statistically significant ($p < 0.05$). This is the methodology recommended and used by CHIS sponsors to assess statistical significance.[209] CHIS estimates at the Berkeley city level generally adhered to a reliability standard based on a relative standard error of < 30%. We also included some results with RSEs > 30% if there were at least 10 sample observations in the numerator of a proportion.

Mortality and hospitalization rates are considered to be "rare" health outcomes relative to the population. Rates and 95% confidence based on a Poisson distribution were calculated for Berkeley and compared to those in published reports.[173, 201] 95% confidence intervals of age-adjusted rates that did not overlap were considered statistically significant. Except for a few analyses, Berkeley residents were not excluded from statistical comparisons of Alameda County. This introduces a bias that tends to make Berkeley-Alameda County differences smaller than they actually are.

Assessing Time Trends

Specialized regression software[210] developed by the National Cancer Institute was used to assess the statistical significance of time trends in proportions and age-adjusted rates (low birth weight, hospitalizations, and mortality). The software fits line segments to trend data using the fewest number of line segments that the data allow. For low birth weight percent, a linear trend was modeled using standard errors (binomial) to weight each yearly observation. For hospitalization and mortality rates, standard errors based on the Poisson distribution were used to weight observations.

Maps and Figures

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REFERENCES

1. Dahlgren G, Whitehead M. Policies and strategies to promote social equity in health. Stockholm, Sweden: Institute for Futures Studies; 1991.
2. Institute of Medicine. The Future of the Public's Health in the 21st Century. Washington, D.C.: National Academies Press; 2003.
3. Batra V, Patkar AA, Berrettini WH, Weinstein Sp, Leone FT. The genetic determinants of smoking. Chest 2003;123:1730-1739.
4. Smedley BD, Syme SL. Promoting Health: Intervention Strategies from Social and Behavioral Research. Washington DC: National Academies Press; 2000.
5. Whitehead M. The concepts and principles of equity in health. Int J Health Serv 1992;22:429-445.
6. Evans GW, Kantrowitz E. Socioeconomic status and health: The potential role of environmental risk exposure. Annual Review of Public Health 2002;23:303-31.
7. Sorlie P, Rogot E, Anderson R, Johnson N, Backlund E. Black-white mortality differences by family income. Lancet 1992;340:346-350.
8. Bell JD, Bell J, Colmenar R, Flournoy R, McGehee M, Rubin V, et al. Reducing Health Disparities Through a Focus on Communities. Oakland, CA: PolicyLink; 2002 November.
9. Yen IH, Syme SL. The social environment and health: A discussion of the epidemiologic literature. Annual Review of Public Health 1999;20:287-308.
10. Cubbin C, Hadden WC, al. e. Neighborhood context and cardiovascular disease risk factors: The contribution of material deprivation. Ethnicity and Disease 2001;11(4):687-700.
11. Adler NE, Newman K. Socioeconomic Disparities in Health: Pathways and Policies. Health Affairs 2002;21(2):60-76.
12. Stokols D. Establishing and Maintaining Healthy Environments: Toward a Social Ecology of Health Promotion. American Psychologist 1992;47:6-22.
13. Ellen IG, Mijanovich T, Dillman KN. Neighborhood Effects on Health: Exploring the Links and Assessing the Evidence. Journal of Urban Affairs 2001;23(3-4):391-408.
14. Carlisle DM, Leake BD, Shaprio MF. Racial and ethnic disparities in the use of cardiovascular procedures: associations with type of health insurance. American Journal of Public Health 1997;87(2):263-267.
15. Epstein AM, Ayanian JZ. Racial disparities in medical care. New England Journal of Medicine 2001;344(19):1471-1473.
16. Kaiser Family Foundation. Key Facts: Race, Ethnicity & Medical Care, 2007 Update (http://www.kaisernetwork.org/daily_reports/rep_disparities.cfm). Menlo Park, CA; 2007.
17. Agency for Healthcare Research and Quality. National Healthcare Disparities Report, 2005 (http://www.ahrq.gov/qual/nhdr05/nhdr05.htm). Rockville, MD; 2005.
18. Smedley BD, Stith AY, Nelson AR. Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care. Washington, D.C.: National Academy of Sciences; 2003.
19. Marmot MG, Davey Smith G, Stansfield S, Patel C, F N, Head J, et al. Health inequalities among British civil servants: the Whitehall II study. Lancet 1991;337:1387-1393.
20. Dewalt DA, Berkman ND, Sheridan S, Lohr KN, Pignone MP. Literacy and Health Outcomes: A Systematic Review of the Literature. J Gen Intern Med 2004;19:1228-39.
21. Fiscella K, Franks P, Gold MR, Clancy CM. Inequality in quality: addressing socioeconomic, racial, and ethnic disparities in health care. JAMA 2000;283(19):2579-2584.
22. Geronimus AT. The weathering hypothesis and the health of African-American women and infants: Evidence and speculations. Ethnicity and Disease 1992;2:207-21.
23. Kaplan GA, Keil JE. Socioeconomic factors and cardiovascular disease: a review of the literature; 1993.

24. Ebrahim SH, Froerer G. Pregnancy-related substance use in the United States during 1996-1998. Obstetrics and Gynecology 2003;101:374-379.

25. Bruner E, Marmot M. Social organization, stress, and health. In: Marmot MG, Wilkinson RG, editors. Social Determinants of Health 2nd ed. Oxford: Oxford University Press; 2005. p. 6-30.

26. Jones CP. Levels of racism: a theoretic framework and a gardener's tale. Am J Public Health 2000;90(8):1212-5.

27. Mays VM, Cochran SD, Barnes NW. Race, Race-Based Discrimination, and Health Outcomes Among African Americans. Annu Rev. Psychol 2007;58:201-25.

28. House JS, Williams DR. Understanding and reducing socioeconomic and racial/ethnic disparities in health. In: Smedley BD, Syme SL, editors. Promoting health: Intervention strategies from social and behavioral research. Washington, D.C.: National Academy Press; 2000.

29. House J, Williams D. Understanding and reducing socioeconomic and racial/ethnic disparities in health. In: Hofrichter R, editor. Health and Social Justice. San Francisco Jossey Bass; 2003.

30. Rogot E, Sorlie P, Johnson N. Life expectancy by employment status income and education in the National Longitudinal Mortality Study. Public Health Reports 1992;107:457-461.

31. Shaw M, Dorling D, Davey Smith G. Poverty, social exclusion, and minorities. In: Marmot M, editor. Social Determinants of Health. Oxford: Oxford University Press; 1999.

32. Flournoy R. Regional Development and Physical Activity: Issues and Strategies for Promoting Health Equity. Oakland, California: PolicyLink; 2002.

33. Morland K, Wing S, Diez-Roux A, Poole C. Neighborhood characteristics associated with the location of food stores and food service places. American Journal of Preventive Medicine 2002;22(1):23-9.

34. Hobson J, Quiroz-Martinez J, Yee C. Roadblocks to Health: Transportation Barriers to Healthy Communities. Oakland, California: Transportation and Land Use Coalition (TALC); 2002.

35. Smedley BD, Stith AY, Nelson AR. Unequal treatment: Confronting racial and ethnic disparities in health care. Washington, D.C: National Academies Press; 2003.

36. Krieger J, Higgins DL. Housing and health: time again for public health action. American Journal of Public Health 2002;92(5):758-768.

37. Ellen IG, Dillman KN, Mijanovich T. Neighborhood Effects on Health: Exploring the Links and Assessing the Evidence. Journal of Urban Affairs 2001;23(3-4):391-408.

38. US Government Accountability Office. Poverty in America: Economic Research Shows Adverse Impacts on Health Status and Other Social Conditions as well as the Economic Growth Rate (http://www.gao.gov/cgi-bin/getrpt?GAO-07-344). Washington D.C.: US GAO; 2007 Jan.

39. Cutler DM, Lleras-Muney A. Education and Health: Evaluating Theories and Evidence - NBER Working Paper No. 12352. Cambridge, MA: National Bureau of Economic Research; 2006 July.

40. Lleras-Muney A. The Relationship Between Education and Adult Mortality in the United States. The Review of Economic Studies 2005;72(1):189-221.

41. Cowell AJ. The Relationship Between Education and Health Behavior: Some Empirical Evidence. Health Economics 2006;15(2):125-146.

42. Marcus EN. The Silent Epidemic - The Health Effects of Illiteracy. New England Journal of Medicine 2007;355(4):339-241.

43. Hart B, Risley T. Meaningful differences in the everyday experience of young American children. Baltimore, MD: Brookes; 1995.

44. Lopez A. Race and Educational Attainment in California: Census 2000 Profiles. Stanford, CA: Center for Comparative Studies in Race and Ethnicity - Stanford University; 2002 October. Report No.: 11.

45. Krieger J, Higgins DL. Housing and Health: Time Again for Public Health Action. American Journal of Public Health 2002;92(5):758-768.

46. Speiglman R, Norris JC. Alameda Countywide Shelter and Services Survey COUNTY REPORT. Berkeley, CA: Public Health Institute; 2004.

47. Hofrichter R. The Politics of Health Inequities. In: Hofrichter R, editor. Health and Social Justice. San Francisco: Jossey Bass; 2003.

48. Anderson RT, Sorlie P, Backlund E, Johnson N, Kaplan GA. Mortality effects of community socioeconomic status. Epidemiology 1997;8:42-47.

49. Diez-Roux AV. Residential environments and cardiovascular risk. Journal of Urban Health: Bulletin of the New York Academy of Medicine 2003;80:569–589.

50. Clark R, Anderson NB, Clark VR, Williams DR. Racism as a Stressor for African Americans: A Biopsychosocial Model. In: LaVeist TA, editor. Race, Ethnicity, and Health. San Francisco: Jossey-Bass; 2002.

51. Morland K, Wing S, Diez Roux A. The contextual effect of the local food environment on residents' diets: the atherosclerosis risk in communities study. American Journal of Public Health 2002;92:1761–1767.

52. LaVeist TA, Wallace JM. Health Risk and Inequitable Distribution of Liquor Stores in African American Neighborhoods. In: LaVeist TA, editor. Race, Ethnicity, and Health. San Francisco: Jossey-Bass; 2002.

53. Story M, French S. Food advertising and marketing directed at children and adolescents in the US. Int J Behav Nutr Phys Act 2004;1:3.

54. Institute of Medicine. From Neurons to Neighborhoods: The Science of Early Childhood Development. Washington, D.C.: National Academy Press; 2000.

55. Health Canada. Growing Healthy Canadians (http://www.growinghealthykids.com); 2007.

56. Centers for Disease Control. Adolescent Reproductive Health (http://www.cdc.gov/reproductivehealth/AdolescentReproHealth/index.htm). Atlanta, GA: Centers for Disease Control,; 2006.

57. National Center for Health Statistics. Health, United States, 2006 With Chartbook on Trends in the Health of Americans. Hyattsville, MD; 2006.

58. Healthy People 2010. Maternal, Infant and Child Health (http://www.healthypeople.gov/document/html/volume2/16mich.htm#_Toc494699665): Centers for Disease Control; 2007.

59. Lu M, Halfon N. Racial and Ethnic Disparities in Birth Outcomes: A Life-Course Perspective. Maternal and Child Health Journal 2003;7(1):13-30.

60. Namkung P, Alexander V, Ducos J, Tehrani K. City of Berkeley Health Status Report, 2002: Low Birth Weight. Berkeley, California: City of Berkeley Public Health Division; 2002.

61. Centers for Disease Control. Infant Mortality and Low Birth Weight Among Black and White Infants --- United States, 1980--2000. MMWR 2002;51(27):589-592.

62. National Research Council and Institute of Medicine. Influence of Pregnancy Weight on Maternal and Child Health: Workshop Report. Washington, DC:: National Academies Press; 2007.

63. Floyd RL, Ebrahim S, Tsai J, O'Connor M, Sokol R. Strategies to Reduce Alcohol-Exposed Pregnancies. Maternal and Child Health Journal 2006;10:S149-S151.

64. California Maternal and Infant Health Assessment (MIHA). Alcohol Use During Pregnancy, 2003. (http://www.mch.dhs.ca.gov/epidemiology/): California Department of Health Services, Maternal, Child and Adolescent Health Branch.; 2003.

65. U.S. National Women's Health Information Center. Postpartum Factsheet (http://womenshealth.gov/faq/postpartum.htm): Office of Women's Health, U.S. DHHS; 2006.

66. McLearn KT, Minkovitz CS, Strobino DM, Marks E, Hou W. The Timing of Maternal Depressive Symptoms and Mothers' Parenting Practices With Young Children: Implications for Pediatric Practice. Pediatrics 2006;118(1):e174-e182.

67. American Academy of Pediatrics. Policy Statement: Breastfeeding and the Use of Human Milk. Pediatrics 2005.;115(2):496-506.

68. Institute of Medicine. Nutrition during Lactation. Washington, DC: National Academy Press; 1991.

69. World Health Organization. The optimal duration of exclusive breastfeeding: Results of a WHO Systematic Review. http://www.who.int/inf-pr-2001/en/note2001-07.html 1996;22:1079-1083.

70. Centers for Disease Control and Prevention. Recommendations to improve preconception health and health care - United States: a report of the CDC/ATSDR Preconception Care Work Group and the Select Panel on Preconception Care. MMWR 2006;55(RR-6).

71. Centers for Disease Control. Key Findings of the 2005 National Immunization Survey Regarding Breastfeeding Practices. Atlanta, GA; 2005.

72. Birkhead GS, Riser MH, Mesler K, Tallon TC, Klein SJ. Youth Development is a Public Health Approach (www.health.state.ny.us/community/youth/development/docs/jphmp_s001-s003.pdf). J Public Health Management Practice 2006;Nov(Suppl):S1-S3.

73. Judd B. Incorporating Youth Development Principles into Adolescent Health Programs: A Guide for State-Level Practitioners and Policy Makers. Washington, DC: The Forum for Youth Investment, Impact Strategies, Inc. and the Alaska Department of Health and Social Services; 2006.

74. Fuligni AS, Brooks-Gunn J. The Healthy Development of Young Children: SES Disparities, Prevention Strategies, and Policy Opportunities. In: Smedley BD, Syme SL, editors. Promoting Health: Intervention Strategies from Social and Behavioral Research. Washington D.C.: National Academy Press; 2002.

75. Jahns L, Siega-Riz AM, Popkin BM. The increasing prevalence of snacking among US children from 1977 to 1996. Journal of Pediatrics 2001;138(4):493-498.

76. Siega-Riz AM, Popkin BM, Carson T. Trends in breakfast consumption for children in the United States from 1965-1991. Am J Clin Nutr 1998;67(4):748S-756S.

77. American Dietetic Association. Position of the American Dietetic Association: Dietary guidance for healthy children ages 2 to 11 years. J Am Diet Assoc 2004;104(4):660-677.

78. DHHS. Physical Activity and Health: A Report of the Surgeon General. Atlanta, GA: Department of Health and Human Services, Centers for Disease Control; 1996.

79. National Center for Chronic Disease Prevention and Health Promotion. Youth Risk Behavior Surveillance-United States, 2003 (http://apps.nccd.cdc.gov/yrbss/CategoryQuestions.asp?cat=1&desc=Unintentional%20Injuries%20and%20Violence). Atlanta, GA: Centers for Disease Control and Prevention; 2004.

80. Frank LD. Land use and transportation interaction: Implications on public health and quality of life. J Plan Educ Res 2000;20:6-22.

81. Bureau of Transportation Statistics. National Household Travel Survey (http:www.bts.gov/programs/national_household_travel_survey/); 2003.

82. The California Endowment. Failing Fitness: Physical Activity and Physical Education in Schools (http://www.calendow.org/reference/publications/pdf/disparities/Policy6_references.pdf) San Francisco: The California Endowment; 2007 January.

83. Kimbro RT, Brooks-Gunn J, McLanahan S. Racial and Ethnic Differentials in Overweight and Obesity Among 3-Year Old Children. American Journal of Public Health 2007;97(2):298-305.

84. Koplan JP, Liverman CT, Kraak VI. Preventing Childhood Obesity: Health in the Balance. Washington, D.C.: National Academies Press; 2005.

85. Ogden CL, Flegal KM, Carroll MD, Johnson CL. Prevalence and trends in overweight among US children and adolescents, 1990-2000. JAMA 2002;288:1728-1732.

86. Mei Z, Scanlon KS, Grummer-Strawn LM, Freedman DS, Yip R, Trowbridge FL. Increasing prevalence of overweight among US low-income preschool children: the Centers for Disease Control and Prevention pediatric nutrition surveillance, 1983 to 1995. Pediatrics 1998;101:103-105.

87. Whitaker RC, Wright JA, Pepe MS, Seidel KD, Dietz WH. Predicting obesity in young adulthood from childhood and parental obesity. New England Journal of Medicine 1997;337:869-873.

88. Sugiyama T, Xie D, Graham-Maar RC, Inoue K, Kobayashi Y, Stettler N. Dietary and Lifestyle Factors Associated with Blood Pressure among U.S. Adolescents. Journal of Adolescent Health 2007;40(2):166-172.

89. Fagot-Campagna A, Saadinem JB, Flegal KM, Beckles GL. Emergence of type 2 diabetes mellitus in children: Epidemiologic evidence. J Pediatr Endocrinol Metab 2000;13:1395-1405.

90. Centers for Disease Control. Smoking and tobacco use: Fact sheet - Health Effects of Cigarette Smoking (http://www.cdc.gov/tobacco/data_statistics/Factsheets/health_effects.htm). Atlanta, GA: Centers for Disease Control; 2006 Dec 2006.

91. Johnston LD, O'Malley PM, Bachman JG. Monitoring the Future: National Results on Adolescent Drug Use. Overview of Key Findings, 2002. Bethesda, MD.: National Institute on Drug Abuse; 2003.

92. Department of Health and Human Services. The Health Consequences of Smoking: A Report of the Surgeon General (http://www.cdc.gov/tobacco/data_statistics/sgr/sgr_2004/index.htm). Washington D.C.: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2004.

93. Centers for Disease Control and Prevention. Annual Smoking-Attributable Mortality, Years of Potential Life Lost, and Productivity Losses—United States, 1997–2001 (http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5114a2.htm). MMWR 2002;51(14):300-303.

94. Department of Health and Human Services. Preventing Tobacco Use Among Young People: A Report of the Surgeon General (http://www.cdc.gov/tobacco/data_statistics/sgr/sgr_1994/index.htm). Atlanta, GA: U.S. Department of Health and Human Services, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Office on Smoking and Health; 1994.

95. DHHS. A Systematic Approach to Health Improvement: Department of Health and Human Services; 2000.

96. International Institute for Alcohol Awareness. Underage Drinking in California: The Facts. Alexandra, Virginia: Pacific Institute for Research and Evaluation; 2006.

97. Insurance Institute for Highway Safety. Q&A teenagers: underage drinking (www.hwysafety.org/research/qanda/underage.html). Arlington, VA: Insurance Institute for Highway Safety; 2004.

98. Officer Steven Rego. Minor Decoy Operation Report. Berkeley, CA: Berkeley Police Department; 2004 September.

99. Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance, 2005. Atlanta, GA: U.S. Department of Health and Human Services; 2006 Nov.

100. National Center for Health Statistics. Health, United States, 2005 - With Chartbook on Trends in the Health of Americans. Hyattsville, MD: Centers for Disease Control and Prevention; 2005.

101. National Immunization Program. 2006 Annual Report. A Global Commitment to Lifelong Protection through Immunization. Atlanta, GA: Centers for Disease Control and Prevention; 2006.

102. National Institute for Health Care Management. Children's Mental Health Report (http://www.nihcm.org/CMHReport-FINAL.pdf); 2005 Feb.

103. McPherson M, Arango P, Fox H, Lauver C, McManus M, Newacheck P, et al. A new definition of children with special health care needs. Pediatrics 1998;102:137-140.

104. Newacheck PW, Strickland B, Shonkoff J, et al. An epidemiologic profile of children with special health care needs. Pediatrics 1998;102:117-123.

105. Mannino DM, Homa DM, Akinbami LJ, Moorman JE, Gwynn C, Redd SC. Surveillance for asthma—United States, 1980– 1999. MMWR 2002;51(SS01):1-13.

106. Babey SH, Grant D, Brown ER. UCLA Health Policy Fact Sheet: Adult Smoking Rate Declines, While Asthma, Diabetes and Obesity Rates Rise. Los Angeles, CA: UCLA Center for Health Policy Research; 2006 Nov.

107. Healthy People 2010. Chapter 24: Respiratory Diseases. Washington, D.C.: U.S. Department of Health and Human Services (HHS) - Action Against Asthma: A Strategic Plan for the Department of Health and Human Services; 2000.

108. Oakland/Berkeley Asthma Coalition. Oakland/Berkeley Asthma Hospitalization Report, Volume 1. Oakland, CA; 2004.

109. California Office of Statewide Health Planning and Development. Five Leading Causes of Hospitalized Nonfatal Injuries in Alameda County/California, 2004, Ages 0-20 years old. Sacramento, CA: California Office of Statewide Health Planning and Development; 2004.

110. Insurance Institute for Highway Safety. Fatality facts: teenagers 2003 (www.hwysafety.org/research/fatality_facts/pdf/teenagers.pdf). Arlington, VA: Insurance Institute for Highway Safety; 2005.

111. National Highway Traffic Safety Administration. Traffic safety facts 2003: young drivers (www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2003/809774.pdf). Washington, DC: U.S. Department of Transportation; 2004.

112. Centers for Disease Control. Children's Oral Health (http://www.cdc.gov/OralHealth/topics/child.htm). Atlanta, GA; 2007.

113. Healthy People 2010. Oral Health (http://www.healthypeople.gov/Document/HTML/Volume2/21Oral.htm). 2007.

114. Alameda County Public Health Department. More Than a Toothache: Untreated Dental Disease in Our School Children. The Alameda County Oral Health Needs Assessment of Kindergarten and 3rd Grade Children. Oakland, CA: ACPHD Office of Dental Health; 2006 Feb.

115. Centers for Disease Control. http://www.cdc.gov/nceh/lead/faq/about.htm; 2006.

116. California Childhood Lead Poisoning Prevention Branch. Child Lead Poisoning (http://www.dhs.ca.gov/childlead/html/faq.html). 2007.

117. American Community Survey. US Census American FactFinder: American Community Survey; 2005

118. McGinnis JM, Foege WH. Actual causes of death in the United States. JAMA 1993;270:2207-2212.

119. Mokdad A, Marks JS, Stroup D, Gerberding JL. Actual Causes of Death in the United States, 2000. JAMA 2004;291(1):1238-1245.

120. Burdette HL, Whitaker RC. Neighborhood playgrounds, fast food restaurants, and crime: relationships to overweight in low-income preschool children. Preventive Medicine 2004;38:57-63.

121. Kadushin C, Reber Saxe L, Livert D. The substance use system: social and neighborhood environments associated with substance use and misuse. Substance Use and Misuse 1998;33:1681–1710.

122. California Air Resources Board. Rulemaking to Consider Proposed Identification of Environmental Tobacco Smoke as a Toxic Air Contaminant - January 26, 2006 (http://www.arb.ca.gov/regact/ets2006/ets2006.htm). Sacramento, CA: California Air Resources Board; 2007.

123. Centers for Disease Control. Alcohol and Health (http://www.cdc.gov/alcohol/); 2006.

124. Rivara FP, Jurkovich GJ, Gurney JG, et al. The magnitude of acute and chronic alcohol abuse in trauma patients. Arch Surg 1993;128:907-913.

125. National Highway Traffic Safety Administration. Traffic safety facts 2005: alcohol (www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2005/AlcoholTSF05.pdf). Washington (DC): U.S. Dept of Transportation; 2006.

126. Gorman D, Speer P, Gruenewald P, Labouvie E. Spatial dynamics of alcohol availability, neighborhood structure and violent crime. Journal of Studies on Alcohol and Drugs 2001;62(5):628-636.

127. Tatlow JR, Clapp JD, Hohman MM. The relationship between the geographic density of alcohol outlets and alcohol-related hospital admissions in San Diego County. Journal of Community Health 2000;25(1):79-88.

128. Office of Applied Studies. National Survey on Drug Use and Health, 2004. Rockville, MD: Substance Abuse and Mental Health Services Administration (SAMHSA); 2005.

129. Kujala UM, Kaprio J, Sarna S, et al. Relationship of leisure-time physical activity and mortality: The Finnish twin cohort study. Journal of the American Medical Association 1998;279(6):440-444.

130. Paffenbarger RS, Hyde RT, Wing AL, et al. The association of changes in physical-activity level and other lifestyle characteristics with mortality among men. New England Journal of Medicine 1993;328(8):538-545.

131. LaCroix AZ, Guralnik JM, Berkman LF, et al. Maintaining mobility in late life. Smoking, alcohol consumption, physical activity, and body mass index. American Journal of Epidemiology 1993;137(8):858-869.

132. Flegal KM, Carroll MD, Johnson CL. Prevalence and Trends in Obesity Among US Adults: 1990-2000. JAMA 2002;288:1723-1727.

133. French SA, Story M, Jeffery RW. Environmental influences on eating and physical activity. Annu Rev Public Health 2001;22:309-335.

134. Sloan EA. What, when, and where Americans eat. Food Techn 2003;57(8):48-66.

135. NIAAA. Ninth Special Report to the U.S. Congress on Alcohol and Health From the Secretary of Health and Human Services. Rockville, MD: National Institutes of Health; 1997. Report No.: NIH Pub. No. 97-4017.

136. Freedman VA, Hodgson N, Lynn J, Spillman BC, Waidmann T, Wilkinson AM, et al. Promoting Declines in the Prevalence of Late-Life Disability: Comparisons of Three Potentially High-Impact Interventions The Milbank Quarterly 2006;84(3):493–520.

137. Tjaden P, Thoennes N. Extent, nature, and consequences of intimate partner violence: findings from the National Violence Against Women Survey. Publication No. NCJ 181867 (www.ojp.usdoj.gov/nij/pubs-sum/181867.htm). Washington,DC: U.S. Department of Justice; 2000.

138. National Center for Injury Prevention and Control. Costs of intimate partner violence against women in the United States (www.cdc.gov/ncipc/pub-res/ipv_cost/ipv.htm). Atlanta, GA: Centers for Disease Control and Prevention; 2003.

139. Tjaden P, Thoennes N. Full report of the prevalence, incidence, and consequences of violence against women: findings from the National Violence Against Women Survey. Publication No. NCJ183781. (www.ncjrs.org/txtfiles1/nij/183781.txt). Washington, DC: U.S. Department of Justice; 2000.

140. California Women's Health Survey. Frequent Mental Distress and Desire for Help Among California Women Experiencing Intimate Partner Violence, 2003-2004. Data Points: Results from the California Women's Health Survey 2006;4(28).

141. McQuillan GM, et al. Prevalence of HIV in the U.S. Household Population: The National Health and Nutrition Examination Surveys, 1988 to 2002. Journal of AIDS 2006;41(5).

142. Henry J. Kaiser Family Foundation. Black Americans and HIV/AIDS. HIV/AIDS Policy Fact Sheet,. Menlo Park, CA: Henry J. Kaiser Family Foundation; 2006 Dec.

143. Centers for Disease Control. HIV/AIDS Surveillance Report. 2006;17.

144. Healthy People 2010. Sexually Transmitted Diseases http://www.healthypeople.gov/document/html/volume2/25stds.htm: Centers for Disease Control and Prevention; 2007.

145. Fleming DT, Wasserheit JN. From epidemiological synergy to public health policy and practice: the contribution of other sexually transmitted diseases to sexual transmission of HIV infection. Sex Transm Infect 1999;75:3-7.

146. Centers for Disease Control. Increases in Gonorrhea --- Eight Western States, 2000--2005. MMWR 2007;56(10):222-225.

147. Centers for Disease Control. National Surveillance Data for Chlamydia, Gonorrhea, and Syphilis. STD Surveillance 2004: Trends in Reportable Sexually Transmitted Diseases in the United States, 2004 2005;November.

148. World Health Organization. Chronic Diseases and Health Promotion (http://www.who.int/chp/chronic_disease_report/part1/en/index1.html); 2007.

149. National Cancer Institute. Cancer: Questions and Answers (http://www.cancer.gov/cancertopics/factsheet/Sites-Types/general). Bethesda, MD; 2005.

150. Henderson BE, Pike MC, Bernstein L, et al. Breast Cancer. In: Schottenfeld D, Fraumeni Jr JF, editors. Cancer Epidemiology and Prevention, 2nd ed. New York, NY: Oxford University Press; 1996. p. 1022-1039.

151. Landis SH, Murray T, Bolden S, et al. Cancer statistics, 2000. CA. A Cancer Journal for Clinicians 2000;50(1):2398-2424.

152. U.S. Cancer Statistics Working Group. United States Cancer Statistics: 1999-2002 Incidence and Mortality Web-based Report. Atlanta, GA: Centers for Disease Control and Prevention and National Cancer Institute; 2005.

153. Cowie CC, Rust KF, Byrd-Holt D, et al. Prevalence of diabetes and impaired fasting glucose in adults-United States, 1999-2000. MMWR 2003;52:833-837.

154. Centers for Disease Control and Prevention. National Diabetes Fact Sheet: National Estimates and General Information on Diabetes in the United States. Atlanta, GA: Department of Health and Human Services (HHS), Centers for Disease Control and Prevention; 1999.

155. National Heart Lung and Blood Institute. Data Fact Sheet. Asthma Statistics. Bethesda, MD: National Institutes of Health (NIH), Public Health Service (PHS); 1999.

156. National Center for Health Statistics (NCHS). Current estimates from the National Health Interview Survey, 1990. Vital and Health Statistics 1997;10(194).

157. Stockman J, Shaikh N, Von Behren J, Bembom O, Kreutzer R. California County Asthma Hospitalization Chart Book: Data from 1998-2000. Oakland, CA: Environmental Health Investigations Branch, California Department of Health Services; 2003 Sept.

158. Pastor M, Sadd J, Morello-Frosch R. Still Toxic After All These Years: Air Quality and Environmental Justice in the San Francisco Bay Area (http://cjtc.ucsc.edu/docs/bay_final.pdf). Santa Cruz, CA: Center for Justice, Tolerance and Community - University of California Santa Cruz; 2007.

159. Centers for Disease Control. Disability and Health State Chartbook - 2006 - Profiles of Health for Adults With Disabilities. Atltanta, GA: Centers for Disease Control; 2006.

160. World Health Organization. The World Health Report 2004: Changing History, Annex Table 3: Burden of disease in DALYs by cause, sex, and mortality stratum in WHO regions, estimates for 2002. Geneva: World Health Organization; 2004.

161. Kessler RC, Chiu WT, Demler O, Walters EE. Prevalence, severity, and comorbidity of twelve-month DSM-IV disorders in the National Comorbidity Survey Replication (NCS-R). Arch Gen Psych 2005;62:617-627.

162. Neighbors HW, Caldwell C, Williams DR, Nesse R, Taylor RJ, Bullard KM, et al. Race, Ethnicity, and the Use of Services for Mental Disorders - Results From the National Survey of American Life. Arch Gen Psychiatry 2007;64:485-494.

163. Healthy People 2010. Leading Health indicators; Mental Health (http://www.healthypeople.gov/document/html/uih/uih_4.htm). 2000.

164. Robins LN, Regier DA, editors. Psychiatric Disorders in America, The Epidemiologic Catchment Area Study. New York, NY: The Free Press; 1990.

165. Blehar MC, Oren DA. Women's increased vulnerability to mood disorders: Integrating psychobiology and epidemiology. Depression 1995;3:3-12.

166. National Institute of Mental Health. Depression: What Every Woman Should Know (Publication No. 00-3679). Bethesda, MD: National Institute of Mental Health; 2000.

167. U.S. Bureau of Census. Summary Files 1-4. Detailed Tables (http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=DEC&_submenuId=datasets_1&_lang=en). Washington, DC: U.S. Bureau of Census; 2000.

168. Bureau of Census. Poverty Thresholds in 1999, by Size of Family and Number of Related Children Under 18 Years. Washington, DC: U.S. Bureau of Census; 2000.

169. Citro C, Michaels R, eds. Measuring Poverty: A New Approach. Washington, DC: National Academy Press; 1995.

170. Krieger N, Chen JT, Waterman PD, Rehkopf DH, Subramanian SV. Race/Ethnicity, gender, and monitoring socioeconomic gradients in health: a comparison of area-based socioeconomic measures—The Public Health Disparities Geocoding Project. Am J Public Health 2003;93:1655–1671.

171. Office of Management and Budget. Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity. Federal Register, October 30, 1997.

172. Demographic Research Unit. Table 2: E-4 Population Estimates for Cities, Counties and State, 2001-2006 with 2000 DRU Benchmark (www.ca.gov/HTML/DEMOGRAP/ReportsPapers/Estimates/E4/E4-01-06/documents/Hist_E-4.xls. Sacramento: Department of Finance; 2007.

173. California Department of Health Services, California Conference of Local Health Officers. County Health Status Profiles, 2006. Sacramento, CA: California Department of Health Services; 2006.

174. Office of Statewide Health Planning & Development. California Perspectives in Healthcare, 2004. Sacramento, CA: Office of Statewide Health Planning & Development; 2004.

175. Bruce G. Special Education Needs by Ethnicity, BUSD, 2006-7. Berkeley, CA: Berkeley Alliance; 2007.

176. Education Data Partnership. Berkeley Unified School District: Students by Ethnicity, 2005-06; Special Programs, 2005-06; Languages of English Learner Students, 2005-06; Graduates with UC/CSU Required Courses by Ethnicity, 2004-05; Dropouts by Ethnicity, 2004-2005. Sacramento: Alameda County Office of Education, California Department of Education, Ed Source, Fiscal Crisis & Management Assistance Team (www.ed-data.k12.ca.us/welcome.asp); 2007.

177. California Department of Education. Aerobic Capacity. Summary of Results. 2005-06 California Physical Fitness Report, Berkeley Unified School District, Grades 5, 7, 9 (http://data1.cde.ca.gov/dataquest/). Sacramento, CA California Department of Education; 9/30/2005.

178. Speiglman R, Norris JC. Alameda Countywide Shelter and Services Survey: County Report. Oakland: Public Health Institute; 2004.

179. Milder T, Burger J, Hwang C, Bernzweig J, Wellenkamp J, Toledo M. First 5 Alameda County Every Child Counts 2005-06 Annual Report (www.ackids.org/reports/reports_docs.htm). San Leandro: First 5 Alameda County Every Child Counts; 2006.

180. Breastfeeding Program. In-Hospital Breastfeeding Initiation by Maternal County of Residence (www.mch.dhs.ca.gov/programs/ bfp/in_hospital_breastfeeding_initiation.htm). Sacramento: California Department of Health Services; 2006.

181. Fiscal Forecasting and Data Management Branch. Medi-Cal Beneficiaries by Zip Code (www.dhs.ca.gov/admin/ffdmb/MCSS/RequestedData/Zip/zip.htm, accessed 2/7/07). Sacramento: California Department of Health Services; 2006.

182. Managed Risk Medical Insurance Board. Healthy Families Enrollment, Berkeley Zip Codes (www.mrmib.ca.gov/MRMIB/HFPReports.shtml, accessed 2/7/2007). Sacramento: Managed Risk Medical Insurance Board; 2007.

183. Children's Medical Services. CCS database (Business Objects) Extract, Alameda County, 2001-2004. Sacramento: California Department of Health Services; 2006.

184. Alameda County Behavioral Health Care Services. Data Extract, Alameda County Clients, 2002-2006,. Oakland: Alameda County Behavioral Health Care Services; 2007.

185. Safe and Healthy Kids Program Office, WestEd. Berkeley Unified Technical Report, Spring 2006, Module A: Core (7th-11th Grades), Technical Report 5th Grade, Spring 2006, Berkeley Unified. Sacramento, CA: California Department of Education; 2006.

186. California Department of Education, Department of Alcohol and Drug Programs, Department of Health Services. California Student Survey, CSS (safestate.org/index.cfm?navid=254). Sacramento: California Attorney General's Crime and Violence Prevention Center; 2006.

187. National Center for Chronic Disease Prevention and Health Promotion. Youth Risk Behavior Surveillance - United States, 2005 (www.cdc.gov/HealthyYouth/yrbs/index.htm). MMWR 2006;55(SS-5):1–108.

188. Centers for Disease Control and Prevention. The 2000 CDC Growth Charts and the New Body Mass Index-For-Age Charts (www.cdc.gov/growthcharts/). Atlanta, GA: Centers for Disease Control and Prevention; 2006.

189. Centers for Disease Control and Prevention, California Department of Health Services. Table 16B. Growth Indicators by Race/Ethnicity and Age, Alameda County. 2005 Pediatric Nutrition Surveillance (0-www.cdc.gov.mill1.sjlibrary.org/pednss/pednss_tables/tables_numeric.htm). Atlanta, GA: Centers for Disease Control and Prevention; 2006.

190. Centers for Disease Control and Prevention. Recommendations to Prevent and Control Iron Deficiency in the United States. MMWR 1998;47(No. RR-3).

191. Division of Communicable Disease Control. Confidential Morbidity Reporting (CMR) Project: Final Feasibility Study Report. Sacramento, CA: California Department of Health Services; 2006.

192. Immunization Branch. 2006 Kindergarten Retrospective Survey Results (www.dhs.ca.gov/ps/dcdc/izgroup/schools/levels.htm). Sacramento: California Department of Health Services; 2006.

193. Centers For Medicare and Medicaid Services, National Center for Health Statistics. International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM). Baltimore, MD: Centers For Medicare and Medicaid Services,; 2006.

194. California Health Interview Survey. California Health Interview Survey. CHIS 2001 Data Dictionary. Special Use File. Adult Survey (Data File: CHIS2001_LHDA2_091302 [Berkeley]). Los Angeles: University of California, Los Angeles; 2002.

195. California Health Interview Survey. Health of California's Adults, Adolescents, and Children. Selected Findings from CHIS 2001. Alameda County. (www.chis.ucla.edu/ber/tables.asp?countyID=1). Los Angeles, : University of California; 2007.

196. National Cancer Institute. Fruit and Vegetable Screener: Scoring Procedures(appliedresearch.cancer.gov/surveys/chis/fvscreener/scoring.html, accessed 4-16-07). Bethesda, MD: National Cancer Institute; 2005.

197. Accident Investigation Unit. Statewide Integrated Traffic Records System (www.chp.ca.gov/html/aiuswitrs.html). Sacramento: California Highway Patrol; 2006.

198. Crossroads Software. Traffic Collision Database System (Ver. 8.41). Brea, CA: Crossroads Software; 2006.

199. Tjaden P, Thoennes N. Extent, Nature, and Consequences of Intimate Partner Violence: Findings From the National Violence Against Women Survey. Washington, DC: National Institute of Justice and Centers for Disease Control; 2000.

200. Greater Bay Area Cancer Registry. Five-Year Average Annual Age-Adjusted Incidence Rate (per 100,000) for All Cancers and Selected Sites for Berkeley, Alameda County, and California by Sex and Race/Ethnicity, 1998-2002 (Census 2000 denominators multiplied by 5). Oakland: Greater Bay Area Cancer Registry (www.nccc.org/ResearchandTraining/research_gbareg.html); 2007.

201. Le GM MHS, Gomez SL, Clarke CA, Chang ET, Keegan THM, O'Malley CD, et al. Cancer Incidence and Mortality in the Greater Bay Area. Fremont, CA: Northern California Cancer Center; 2006.

202. Arias E. United States Life Tables, 2003. National Vital Statistics Reports Vol. 54, No 14. Hyattsville, MD: National Center for Health Statistics; 2006.

203. Anderson RN, Rosenberg HM. Age Standardization of Death Rates: Implementation of the Year 2000 Standard. National Vital Statistics Reports Vol 47, No. 3. Hyattsville, MD: National Center for Health Statistics; 1998.

204. New York Department of Health. Rates Based on Small Numbers: Why are rates based on fewer than 20 cases marked as being unreliable? (www.health.state.ny.us/diseases/chronic/ratesmall.htm). Albany, NY: New York Department of Health; 1999.

205. Alameda County Public Health Department. Alameda County Health Status Report 2006. Oakland: Alameda County Public Health Department; 2006.

206. Hoyert DL, Heron MP, Murphy SL, Kung H. Deaths: Final Data for 2003. National Vital Statistics Reports. Vol. 54 No 13. Hyattsville, MD: National Center for Health Statistics; 2006.

207. Fleiss JL. Statistical Methods for Rates and Proportions. Second Edition. New York: John Wiley & Sons, Inc.; 1981.

208. Stata Corporation. STATA Statistical Software. Version 7. SVYMEAN. College Station, TX: Stata Press; 1997.

209. Holtby S, Zahnd E, Yen W, N L, McCain C, DiSogra C. Health of California's Adults, Adolescents, and Children: Findings from CHIS 2001. Los Angeles: University of California; 2004.

210. Statistical Research and Applications Branch. Joinpoint Regression Program, Version 3.0. April 2005 (srab.cancer.gov/joinpoint). Silver Spring, MD: National Cancer Institute; 2005.