



Eliminating Health Disparities: The Role of Primary Prevention

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Prevention Institute is a nonprofit organization, established in 1997, dedicated to placing prevention in the center of efforts to improve community health and well-being. Through synthesizing findings from research and practice, the Institute develops methods to strengthen and expand primary prevention. Prevention Institute assists community-based organizations and government in addressing key community concerns including chronic disease prevention, youth development, and injury and violence prevention. These efforts are aimed at changing policies and systems in order to achieve the broadest and most sustained impact.

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Introduction

Our nation spends nearly one trillion dollars a year on diagnosing and treating disease. Nevertheless, each year hundreds of thousands of deaths due to preventable causes occur — including 400,000 deaths due to smoking, nearly 300,000 deaths due to poor diet and inactivity, and 100,000 deaths as a result of alcohol misuse.¹ Certain groups of people are disproportionately represented in these figures. At the same time, populations currently experiencing poor health status are increasing while those experiencing good health status are decreasing.² In particular, these deaths and other associated health problems occur disproportionately among poor and minority populations. A commitment to reducing these disparities in health requires the pursuit of the most effective strategies to improve health.

Primary prevention — taking action before a health condition arises — can make a vital contribution to current efforts to reduce disparities in health. By addressing the underlying factors that negatively influence health, prevention has the power to reduce the incidence of poor health, injury, and premature death.

The Health Disparities Challenge

The National Institutes of Health defines health disparities as the “differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that exist among specific population groups in the United States.”³ While the most frequently noted disparities are those between ethnic, racial, and income groups, health outcomes are also differentiated along other factors including gender, geographic location, sexual orientation, physical ability/disability, age, and English speaking ability.

When elements of race, poverty, and environment converge, the confluence of these factors leads to greater overall threats to health. Among those that live in poverty, which affects almost every aspect of health, people of color are disproportionately represented. Data show that low-income individuals and people of color within the United States generally have higher

HEALTH DISPARITIES THAT CAN BE REDUCED THROUGH PREVENTION

- In 1999, African Americans were 30% more likely to die from cardiovascular disease than were white Americans.⁴
- In 2000, of persons age 12 or older, 40% of those residing in metropolitan areas reported at least one-time use of an illicit drug compared to 30% of those residing in rural areas; 50% of metropolitan residents reported alcohol use, compared to 36% of rural residents.⁵
- Of the AIDS cases reported in 1999, 46% were among men who have sex with men.⁶
- African American women are more likely to die of breast cancer than are women of any other racial or ethnic group.⁷
- In the U.S. in 1996, pediatric hospitalizations for asthma were estimated to be 5 times higher for children from lower income families.⁸
- In 1998, Hispanic/Latino Americans were almost twice as likely, and American Indians and Alaska Natives 2.8 times as likely, to have diabetes as were non-Hispanic whites.⁹
- In 2000, reported AIDS cases among African Americans were nearly 1.5 times those among white Americans.¹⁰

rates of poor health and injury than higher-income groups and whites.* While this paper will discuss disparities generally, it will specifically focus on this cluster of concerns.

Focusing on only the true root causes of health disparities such as poverty and racism is too broad an approach and thus unlikely to result in immediate health improvements.

Alternatively, focusing on individual medical care is too narrow an approach for reducing health disparities. Despite high quality medical care, treating individuals will do little to reduce the higher occurrence of disease and ill health among certain groups. A strategy that focuses on changing the



environmental conditions in communities can achieve both short- and long-term results in reducing health disparities. There is a compelling opportunity, therefore, to target prevention efforts toward the specific environmental conditions that create ill health.

The Role of Medical Care in Addressing Disparities

Ensuring that all individuals have access to medical care is one part of a comprehensive strategy to eliminate health disparities. Certainly, quality health care can identify conditions that cause poor health, promote healthy behaviors, and reduce the severity and repeat occurrences of disease. However, many people of color and/or low-income individuals currently have limited access to quality health care,¹¹ further widening the gap in health outcomes between themselves and white and higher income groups. Improving this access is only part of the solution to improving health outcomes and reducing health disparities.

There are three reasons why improving access to quality medical care alone will not eliminate disparities:

- Medical care is not the primary determinant of health.

Of the 30-year increase in life expectancy since the turn of the century, only about five years of this increase are attributed to medical care interventions.¹² Even in countries with universal access to care, people with lower socioeconomic status have poorer health outcomes.¹³ As noted by Blum, the most important determinant of health is environmental conditions, followed by lifestyle. Medical care ranks third as a determinant of health.¹⁴

* For the remainder of the paper, we will use the term “poor health” to represent loss of quality of life, disability, and premature death resulting from infectious disease, chronic disease, and intentional and unintentional injury.

- Medical care treats one person at a time.

By focusing on the individual and specific illnesses as they arise, medical treatment does not reduce the incidence or severity of disease among groups of people.

- Medical intervention often comes late.

Medical care is usually sought after people are sick. Today's most common chronic health problems, such as heart disease, diabetes, asthma, and HIV/AIDS, are never cured. Therefore it is extremely important to prevent them from occurring in the first place. Prevention is also preferable for serious acute problems, such as traffic injuries, violence, and contagious diseases. While medical care can help some people recover from these conditions, they would undoubtedly be far better off never experiencing them in the first place.

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Environmental Factors Contributing to Health Disparities

Health disparities are not the result of specific populations experiencing a *different* set of illnesses than those affecting the general population. Rather, the overall susceptibility to disease is greater and illness rates are higher due to a broad range of environmental conditions. The chief underlying cause of health disparities is increasingly understood to be social and economic inequality; i.e., social bias and institutional racism, limited education, poverty, and related environmental conditions that either directly produce ill health or promote unhealthy behaviors that lead to poor health.^{15,16,17} Far more than air and water, the environment is “anything external to individuals shared by members of the community,” including community behavioral norms.¹⁸ In an analysis of the forces influencing health outcomes, environmental conditions are “by far the most potent and omnipresent set of forces.”¹⁹

People affected by health disparities more frequently live in environments with:

- Toxic contamination and greater exposure to viral or microbial agents in the air, water, soil, homes, schools, and parks
- Inadequate neighborhood access to health-encouraging environments including affordable, nutritious food, places to play and exercise, effective transportation systems, and accurate, relevant health information
- Violence that limits the ability to move safely within a neighborhood, increases psychological stress, and impedes community development
- Joblessness, poverty, discrimination, institutional racism, and other stressors

- Targeted marketing and excessive outlets for unhealthy products including cigarettes, alcohol, and fast food
- Community norms that do not support protective health behaviors

Some of these environmental conditions directly cause ill health. For example, cancer can be caused by toxins in the environment and asthma can be triggered by chemicals and other pollutants in the air. In other cases, the environment influences health behaviors that can lead to ill health. Increasingly, health professionals recognize that an exclusive focus on individual responsibility in the causes of disease is limited. Therefore, individual educational efforts will have greater impact if they are linked with efforts to change environmental conditions.

For example, poor choices about diet and physical activity, which account for approximately a third of premature deaths in the U.S., are not just based on personal preference or information about health risks. An individual will have a harder time changing his behavior if he lacks sufficient income to purchase food, is targeted for the marketing of unhealthy products, and does not have access to healthy foods. Similarly, it is much harder for people to be physically active when streets are unsafe and there are few gyms or parks. Targeting even one of these environmental conditions could have a significant impact on rates of disease and disparities in health.

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Prevention Is a Tool for Eliminating Health Disparities

Addressing the underlying causes of disease before poor health occurs is called primary prevention. Primary prevention involves taking action before any conditions arise. It is distinguished from secondary prevention, which involves taking action when problems such as high blood pressure or elevated blood glucose are identified, and tertiary prevention, which involves intervening to respond to emergencies and prevent recurrences after a traumatic event such as a heart attack or stroke.

As noted, the environment plays a key role in the creation of health disparities, and reducing health disparities requires strategies that alter environmental conditions. A primary prevention approach is effective because it focuses on changing conditions at the community level rather than the individual level. While some individuals are helped through services, treating one person at a time will not change the incidence of disease within a community. In order to reduce the occurrence of health disparities, instead of treating already high rates of disease, preventative action must occur at the systems level.

The Public Health Approach

A focus on environmental conditions is not new; rather, it is rooted in the foundations of public health. For example, the acceptance of the germ theory improved health outcomes not only through the development of antibiotics but through practices and procedures that ensured reductions in disease transmission such as securing safe food, clean water, and appropriate garbage disposal. Early public health practitioners also recognized the impact of poverty on creating disease and advocated for improvements including less crowded housing and better quality food.

Despite this tradition, health promotion in recent decades has tended to focus more on individual education and clinical screening.²⁰ Much of the research that examines the causes of poor health focuses on individual risk factors, which naturally leads to interventions at the individual level.

However, there are examples of initiatives that have successfully addressed environmental conditions and had enormous health benefits. These successes have shaped the knowledge base of effective primary prevention strategies for reducing health disparities. Some of these examples include the following:

- In California, the lung and bronchus cancer incidence is declining at a higher rate than the rest of the country due to a significant decrease in statewide smoking rates.²¹ These changes were achieved through a multi-pronged strategy including tax increases on cigarettes, ordinances for smoke-free workplaces, bars, restaurants, and public places, and a highly visible anti-tobacco marketing campaign.
- Since 1975, an estimated 19,000 lives have been saved due to the establishment of nationwide minimum age drinking laws.²²
- Regulations requiring the use of non-flammable materials in children's sleepwear have led to a tenfold decrease in the number of children's burn deaths.²³
- Reduced lead levels in the environment, particularly due to changing standards for gasoline and paint, resulted in a nearly 80% decline in elevated blood lead levels in children ages 1 to 5 in the U.S. from 1976-1991.²⁴

In each prevention success described above, knowledge about risks was not sufficient to change individual behavior or industry practices. A combination of education, advocacy, and policy change was needed. Specifically, increasing awareness of a problem among communities and individuals, followed by the formation of community collaboratives to mobilize for changes in organizational practices and policy, resulted in laws that then made possible widespread improvements in health.

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Preventive Analysis: Identifying Underlying Risk and Protective Factors

Selecting the appropriate environmental intervention requires an analysis of the underlying factors that influence health. In their analysis of the most prominent contributors to U.S. mortality, McGinnis and Foege identified a set of factors strongly linked to the major causes of death and referred to these factors as actual causes of death.²⁵ Among the leading actual causes are tobacco, diet and activity patterns, alcohol, microbial agents, toxic agents, firearms, sexual behavior, motor vehicles, and illicit use of drugs. These factors accounted for approximately half of all premature deaths.

Many efforts to address poor health focus only on specific diseases. For example, health departments are usually divided into programs for specific diseases, and separate funding streams for diabetes, cancer, and HIV inadvertently encourage a disease-specific approach. However, it is also important to address the actual causes that manifest themselves in multiple medical problems. For example, tobacco is associated with stroke, cancer, and heart disease, while poor diet and physical activity patterns are a key factor in the development of heart disease, cancer, stroke, and diabetes. An effective preventive approach should focus less on any specific health problem and more on reducing the overall burden of disease. A good solution will solve multiple health problems, and by focusing on the underlying factors, communities can help prevent a variety of diseases.

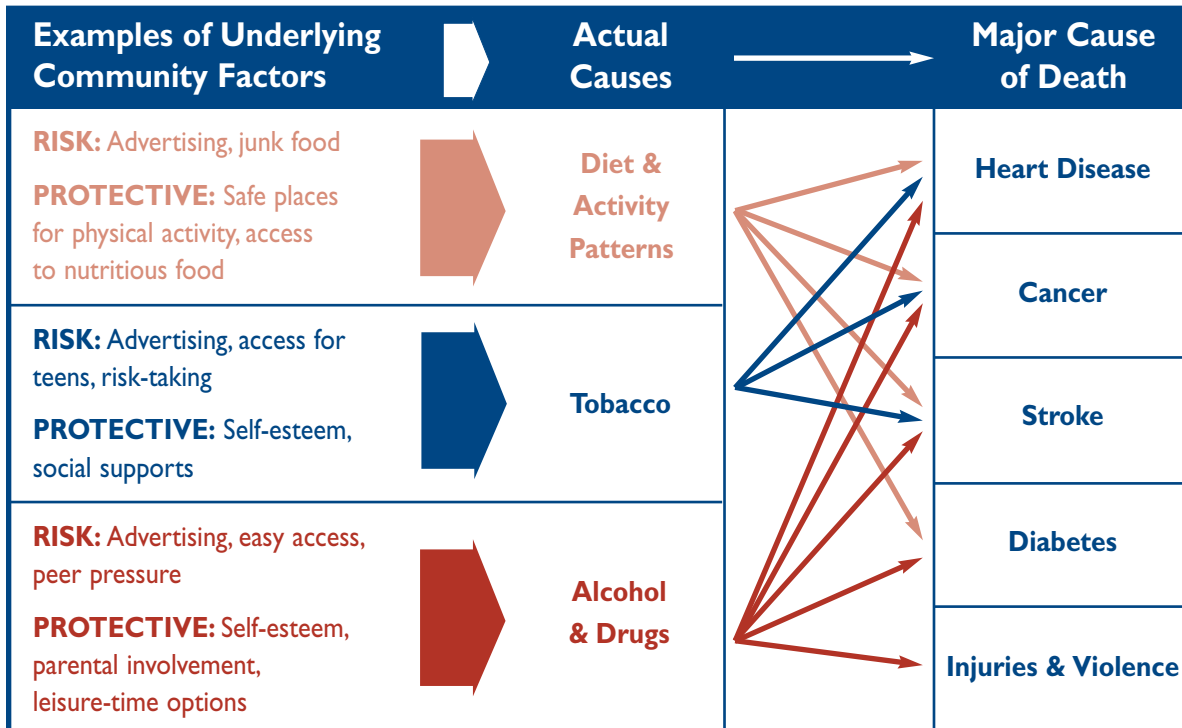
Identifying and responding to the actual causes of death and their underlying factors provides an agenda for action that is synergistic and efficient.

As the preventive analysis figure shows, there are underlying risk and protective factors that are associated with the actual causes of death. Risk and protective factors occur at both individual and community levels. Currently, programs tend to focus on individual risk factors such as low self-esteem or risk-taking behavior. However, building the protective factors (sometimes described as community assets or resiliency factors) that help communities and individuals thrive is also necessary.^{26,27} For example, in the case of teen pregnancy and HIV/AIDS, the widespread availability of condoms

and needle exchange programs, community norms supporting safe sex, access to team sports and arts programs, and community elders serving as mentors are all protective factors. While some theorists emphasize protective factors and others focus on risk, research indicates that the most effective interventions need to include both.²⁸

By focusing on the underlying factors, communities can help prevent a variety of diseases.

**PREVENTIVE ANALYSIS EXAMPLE:
COMMUNITY RISK AND PROTECTIVE FACTORS AS RELATED TO CLUSTERED HEALTH PROBLEMS**



Altering the pattern of risk and protective factors at the community level is at the heart of a preventive approach. It is important to note that such an approach does not aim to eliminate all health disparities at once. Rather, it identifies, prioritizes, and clusters those disparities facing an individual community. A preventive analysis addresses these questions:

- What are the most important health problems facing a community (or other defined population)?
- What are the ‘actual’ causes of these health problems?
- What are the underlying factors associated with these health problems?
- Which of the factors can have the greatest impact on the overall burden of disease?

A Multifaceted Approach to Prevention

To date, the preponderance of efforts to improve health outcomes has tended to focus on education, whether at the individual, community, or practitioner/professional level. Through increasing awareness of specific health issues among the broader public, education can play an important role in catalyzing change among decision-makers such as planners, health care providers, and politicians. However, for prevention to be effective in

reducing health disparities, a comprehensive approach that goes beyond education is necessary. This includes fostering coalitions and networks, changing institutional and organizational practices, and influencing policy and legislation.

Beyond education

By bringing together diverse players, coalitions and networks are often more powerful than any single organization working alone. Not only do coalitions reduce duplication and assure coordination, but they can also have more political power by bringing together different constituencies to work on shared interests. The multifaceted strategies required for eliminating health disparities would be virtually impossible without participation by community, government, and business representatives. Since health disparities are significantly impacted by environmental factors simultaneously affecting multiple communities, government can play an important role in coordinating the efforts of different agencies whose work has an effect on different aspects of a health issue. For example, poor air quality is a risk factor for asthma. A coalition of city and county planners, health care providers, asthma patients, transportation engineers, public transit authorities, factories, and public housing managers would create a more comprehensive solution to poor air quality than any group alone.

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Changing the practices of major institutions — including business, government, and health care management — can have an enormous impact on issues of service delivery, product development, and marketing and community design, all of which affect health. For example, reducing underage access to alcoholic beverages through stricter local enforcement of minimum age laws can reduce early adoption of drinking by young people and the related risk-taking behaviors. Builders can have a positive impact on community design by ensuring that new developments include space for recreation and are sited near public transportation. Further, changing practices

within organizations such as law enforcement, health departments, schools, and workplaces has the potential to positively influence organization members. By changing internal regulations and practices, institutions also help change norms, and thus influence the broader community.

The legislative and policy arenas usually present opportunities for the broadest improvement in health outcomes. Typically, policies related to industry are developed in response to abuses. Policies enacted proactively have tremendous potential for preventing injuries and deaths. Both institutional and legal policies affect large numbers of people as well as social norms. For example, the ongoing success of smoking, alcohol, lead, and children's sleepwear initiatives was possible only through legislative change. In addition, while attention is often given to state and national policy, local policy efforts are a key

component of reducing health disparities. Local policy development brings community concerns into public and political discourse and can be the catalyst for more broad-scale change. Local politicians are often more responsive to community concerns, and specific policies can be tailored to meet the needs of individual communities. Further, local communities are less burdened with the breadth and complexity of bureaucracy that often inhibits progress at the state and national levels.


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The Spectrum of Prevention

One framework that can be used to develop a systematic intervention to reduce health disparities is the *Spectrum of Prevention*, developed by Larry Cohen in 1983.²⁹ It is comprised of six levels of increasing scope (see figure below) including a focus on individual services and community education, but emphasizing changes in institutional practices and government policies. The *Spectrum* helps shape comprehensive strategies that result in “a whole that is greater than the sum of its parts.” It has been utilized by communities across the nation to address a range of issues, including traffic safety, nutrition, physical activity promotion, lead poisoning, and violence prevention.

THE SPECTRUM OF PREVENTION

Level of Spectrum	Definition of Level
6 <i>Influencing Policy and Legislation</i>	Developing strategies to change laws and policies to influence outcomes.
5 <i>Changing Organizational Practices</i>	Adopting regulations and shaping norms to improve health and safety.
4 <i>Fostering Coalitions and Networks</i>	Convening groups and individuals for broader goals and greater impact.
3 <i>Educating Providers</i>	Informing providers who will transmit skills and knowledge to others.
2 <i>Promoting Community Education</i>	Reaching groups of people with information and resources to promote health and safety.
1 <i>Strengthening Individual Knowledge and Skills</i>	Enhancing an individual’s capability of preventing injury or illness and promoting safety.



There is overlap, or ‘synergy,’ among the levels of the *Spectrum*, which optimizes the results of any one prevention activity. By acting at multiple levels, there is greater potential to have an impact than by acting on any one level alone. To eliminate health disparities, working on multiple levels to achieve both short- and long-term outcomes is vital.


Evaluation

In order to continue strengthening the field of primary prevention, we must continually assess the success of our efforts. Evaluation efforts play a major role in the development of the primary prevention field by giving practitioners and the overall community concrete evidence that prevention does work. Evaluation also ensures that we are using the best practices to solve problems.


Evaluating prevention efforts has its challenges. First, prevention is difficult to evaluate because its results may seem invisible. There is the notion that if prevention works, “nothing happens,” or that if someone does not become sick or injured, it goes unnoticed. While there are dramatic immediate examples of lives saved through prevention — for example, a baby kept alive in a horrific crash as a result of her car seat — the effects of prevention are more apt to be visible by looking at changes in the status of groups, not single individuals. Such preventive successes need to be better publicized and more simply explained.

Second, savings in lives through preventive action generally take a very long time and documented results are therefore hard to find. Prevention initiatives should focus on identifying credible short-term and intermediate community-level indicators of success. For example, a Bay Area public health department measured reduced cancer risk by documenting a decrease in cigarette purchases through tax receipts. (They did not try to prove that actual cancer rates were down in their county.) Indicators of improved nutrition (and thus decreases in the incidence of nutrition-related disease) could include increases in children receiving school breakfast and increased availability and purchase of fresh fruits and vegetables in a neighborhood.

Third, a multifaceted approach to prevention as described here is more difficult to evaluate due to its complexity. When outcomes are documented, it may be difficult to attribute those effects to one initiative. Evaluation may be more effective by focusing on the contribution of the initiative to community changes. While a significant component of prevention initiatives must be policy and institutional change, there are no standard benchmarks to measure progress in these areas.



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The ability to improve evaluation approaches is hampered by the limited number of initiatives utilizing a comprehensive approach. There is a dearth of practitioners with the skills needed to implement these initiatives and a lack of training and technical assistance to support them.

Preventive evaluation can be a tool for communities to better enable their ownership of initiatives. Techniques such as participatory action research engage community members in determining priorities, objectives, and intervention strategies. In addition, making evaluation data accessible to community groups is crucial, and one of the least developed aspects of prevention methodology. Currently, dramatic achievements may be buried in academic journals like the *MMWR (Morbidity and Mortality Weekly Report)* and not frequently disseminated to the general population.

Evaluation of a prevention intervention not only measures the success of an approach but should provide those making the intervention with formative advice as they shape their work. Qualitative and quantitative evaluation findings can aid community members, practitioners, and policy makers in identifying how to be most effective in improving health and in investing in longer-term outcomes.

Conclusion

“No epidemic has ever been resolved by focusing on the affected individual.”³⁰


Dr. George Albee

There is an opportunity to incorporate primary prevention into an overall effort to reduce health disparities. Less than 5% of the total annual health care cost is spent on health promotion and disease prevention, and even less is devoted to prevention initiatives that address the major influences and underlying factors that negatively impact health.³¹ With its emphasis on underlying factors, community orientation, multidisciplinary collaboration, and organizational policy level changes, primary prevention can significantly improve the health of the individuals, families, and communities most impacted by poor health and premature death.

It is a question not only of health but of fairness. The inequality of morbidity, mortality, cost, and loss of quality of life affects certain groups most, but damages all of us.

Endnotes

- 1 McGinnis JM, Foege WH. Actual causes of death in the United States. *JAMA*. 1993;270:2207-2213.
- 2 Snyder L. Eliminating racial and ethnic disparities in health. *Public Health Reports*. 1998;13:372-375.
- 3 National Institutes of Health, Addressing Health Disparities: The NIH Program of Action. What are health disparities. Available at: <http://healthdisparities.nih.gov/whatare.html>. Accessed January 14, 2002.
- 4 Department of Health and Human Services, Office of Minority Health, Closing the Health Gap. 'Closing the health gap': reducing health disparities affecting African-Americans [HHS fact sheet]. Available at: <http://www.healthgap.omhrc.gov/hgfs.htm>. Accessed January 15, 2002.
- 5 Substance Abuse and Mental Health Services Administration. Summary of findings from the 2000 National Household Survey on Drug Abuse. Appendix F1: Substance Use Prevalence Tables (Tables F.1 - F.41). Available at: <http://www.samhsa.gov/oas/NHSDA/2kNHSDA/appendixf1.htm>. Accessed January 20, 2002; Table F.20; Substance Abuse and Mental Health Services Administration. Summary of findings from the 2000 National Household Survey on Drug Abuse. Appendix F2: Substance Use Prevalence Tables (Tables F.42 - F.79). Available at: <http://www.samhsa.gov/oas/NHSDA/2kNHSDA/appendixf2.htm>. Accessed January 20, 2002; Table F.49.
- 6 National Center for HIV, STD and TB Infection. HIV Prevention Strategic Plan through 2005: current status of the HIV/AIDS epidemic in the United States: how people are becoming infected. Available at: http://www.cdc.gov/nchstp/od/hiv_plan/How%20People%20Are%20Becoming%20Infected.htm. Accessed January 17, 2002.
- 7 US Department of Health and Human Services. *Healthy People 2010: Understanding and Improving Health*. Washington, DC: US Dept of Health and Human Services; 2000.
- 8 US Department of Health and Human Services. *Healthy People 2010 Conference Edition Volume 1*. Washington, DC: US Dept of Health and Human Services; January 2000:1-25.
- 9 Centers for Disease Control and Prevention. *National Diabetes Fact Sheet: National Estimates and General Information on Diabetes in the United States*. Rev ed. Atlanta, Ga: Centers for Disease Control and Prevention, US Department of Health and Human Services; 1998.
- 10 Centers for Disease Control and Prevention, National Center for HIV, STD and TB Prevention, Divisions of HIV/AIDS Prevention. HIV/AIDS surveillance by race/ethnicity: L238 slide series (through 2000). Available at: <http://www.cdc.gov/hiv/graphics/minority.htm>. Accessed January 15, 2002; Slide 6.
- 11 The Henry J. Kaiser Family Foundation. *Key Facts: Race, Ethnicity, & Medical Care*. Menlo Park, Calif: The Henry J. Kaiser Family Foundation; 1999.
- 12 Peters RM. The negative effect of the clinical model of "health": implications for health care policy. *Journal of Health Care Finance*. 1998;25:78-92.
- 13 Pincus T, Esther R, DeWalt DA, Callahan LF. Social conditions and self-management are more powerful determinants of health than access to care. *Annals of Internal Medicine*. 1998;129:406-411.
- 14 Blum HL. Social perspective on risk reduction. *Family and Community Health*. 1981;3(1):41-50.
- 15 Moss N. Socioeconomic disparities in health in the US: an agenda for action. *Social Science and Medicine*. 2000;51:1627-1638.
- 16 Pincus T, Esther R, DeWalt DA, Callahan LF. Social conditions and self-management are more powerful determinants of health than access to care. *Annals of Internal Medicine*. 1998;129:406-411.
- 17 Murray-Garcia J, Herd D, Morello-Frosch R, Smith S. *An Annotated Bibliography: Multicultural Health: Setting the Stage for Innovative and Creative Approaches*. Woodland Hills, Calif: The California Endowment; 1999:9,11.
- 18 Cheadle A, Wagner E, Koepsell T, Kristal A, Patrick D. Environmental indicators: a tool for evaluating community-based health-promotion programs. *American Journal of Preventive Medicine*. 1992;8:345-350.
- 19 Blum HL. Social perspective on risk reduction. *Family and Community Health*. 1981;3(1):41-50.
- 20 Green LW, Kreuter MW. Commentary on the emerging Guide to Community Preventive Services from a health promotion perspective. *American Journal of Preventive Medicine*. 2000;18(1S):7-9.
- 21 *California Tobacco Control Update*. Sacramento, Calif: Tobacco Control Section, California Department of Health Services; August 2000.

- 
- 22 National Center for Statistics and Analysis. *Traffic Safety Facts 1999: Young Drivers*. Washington, DC: National Highway Traffic Safety Administration, US Dept of Transportation; 1999. Publication DOT HS 809 099.
 - 23 Trauma Foundation. Sleepwear fact sheet. Available at: <http://www.tf.org/tf/injuries/sleep3.html>. Accessed January 20, 2002.
 - 24 National Safe Kids Campaign. Injury facts: poisoning. Available at: <http://www.safekids.org>. Accessed January 14, 2002.
 - 25 McGinnis JM, Foege WH. Actual causes of death in the United States. *JAMA*. 1993;270:2207-2213.
 - 26 Bradley RH, Whiteside L, Mundfrom DJ, Casey PH, Kelleher KJ, Pope SK. Early indications of resilience and their relation to experiences in the home environments of low birthweight, premature children living in poverty. *Child Development*. 1994;65:346-360.
 - 27 Smith C, Lizotte AJ, Thornberry TP, Krohn MD. Resilient youth: identifying factors that prevent high-risk youth from engaging in delinquency and drug use. In: Hagan J, ed. *Delinquency and Disrepute in the Life Course: Contextual and Dynamic Analyses*. Greenwich, Conn: JAI Press; 1995:217-247.
 - 28 Ibid.
 - 29 Cohen L, Taylor L. Beyond brochures: a systematic approach to prevention. *American Journal of Public Health*. 1991;81:929-930; Cohen L, Swift S. The spectrum of prevention: developing a comprehensive approach to injury prevention. *Injury Prevention*. 1999;5:203-207.
 - 30 Albee GW. Psychopathology, prevention, and the just society. *Journal of Primary Prevention*. 1983;4(1):5-40.
 - 31 McGinnis JM, Foege WH. Actual causes of death in the United States. *JAMA*. 1993;270:2207-2213.