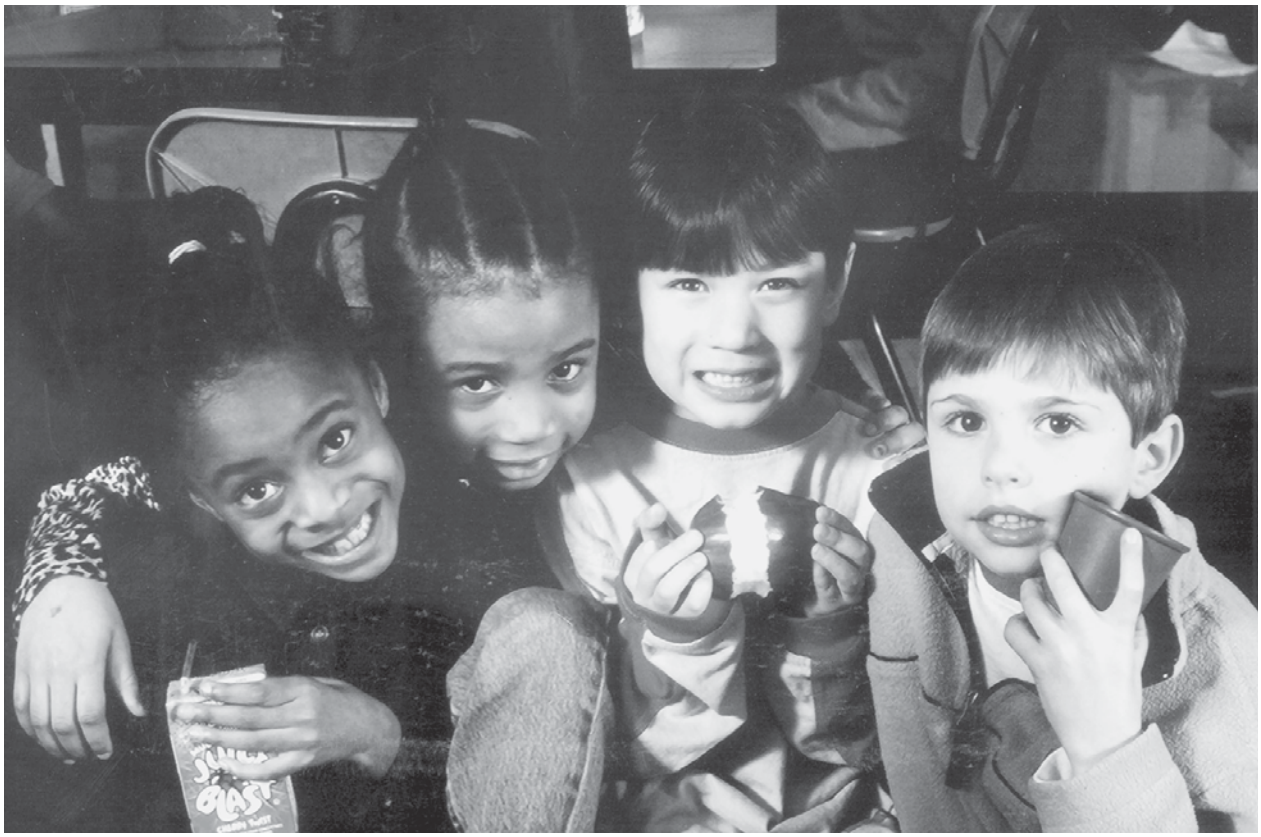


Improving Children's Health

Understanding Children's Health Disparities and Promising Approaches to Address Them

Children's Defense Fund
Washington, D.C.
2006

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About the Children's Defense Fund

The Children's Defense Fund's Leave No Child Behind® mission is to ensure every child a *Healthy Start*, a *Head Start*, a *Fair Start*, a *Safe Start*, and a *Moral Start* in life and successful passage to adulthood with the help of caring families and communities.

CDF provides a strong, effective voice for *all* the children of America who cannot vote, lobby, or speak for themselves. We pay particular attention to the needs of poor and minority children and those with disabilities. CDF educates the nation about the needs of children and encourages preventive investment before they get sick or into trouble, drop out of school, or suffer family breakdown.

CDF began in 1973 and is a private, nonprofit organization supported by foundation and corporate grants and individual donations. We have never taken government funds.

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Executive Summary

Several years after the initiation of national goals set in *Healthy People 2010* to eliminate health disparities by 2010, the continuing disparities in illness and death experienced by minorities and the poor, including their children, remain a major obstacle to improving the nation's health. For children, the impact of conditions such as lead poisoning on cognitive and physical development can affect them throughout their lives. Due to the long lasting impact of childhood conditions, reducing health disparities among children is key to improving the well-being of all children and, by extension, the nation as a whole. Our success in reducing health disparities among children will not only lessen future health care costs, but will also improve the nation's productivity.

The objective of the Children's Defense Fund's children's health disparities project, undertaken with the generous support of the Aetna Foundation, is to identify policies and practices that can advance the health of all children by reducing health disparities. This report begins with an overview of health disparities and various determinants of health outcomes, specifically focusing on children's health and why it is important to address disparities that arise in children. To illustrate this further, CDF has conducted its own analysis of the National Health Interview Survey, which shows stark racial and ethnic differences in health and the effect of health coverage and income on those disparities. Consider a few of our findings:

- When comparing insurance coverage, Latino children are more than three times as likely and Black children are almost 50 percent more likely than White children to be uninsured.
- Among uninsured children, Black children are almost 60 percent more likely than White children to have an unmet medical need.
- Latino children are more than 3½ times more likely than White children to lack a regular place to receive health care.
- When comparing low-income children, some similarities between White and Black children become apparent. Similar percentages of Black and White low-income children have gone two or more years without contact with a dentist and have a limitation of activity due to a chronic illness or disability.

Many past studies and federal data releases have not consistently controlled for income and insurance coverage when looking at racial and ethnic disparities in health status and access to care. CDF's analysis does this not only for general health status and access to care, but also across five different conditions affecting children's health: immunizations, lead poisoning, dental care, asthma, and overweight/obesity.

After documenting and examining these health disparities, the report then explores strategies communities have implemented that have been effective in reducing disparities in many health-related conditions. This list of promising approaches is not intended to be exhaustive or all-inclusive. Rather, it is intended to introduce communities to approaches they can adopt or advocate for in the pursuit of eliminating health disparities and improving the health of all children.

Promising approaches in reducing children's health disparities include:

- ***Collaboration and partnerships.*** Through partnerships in the community (including local schools, churches, and early childhood education programs), health care programs can reach many people in one location. Many oral care programs bring mobile units to local schools and early childhood education centers. Many prenatal care and infant mortality programs are associated with churches in order to find women in need.

- ***Use of community health workers from the targeted community.*** Community-based health workers, known as "promotoras" in Latino communities, are becoming more common in many community health programs because they understand cultural nuances and know the networks within the community. They are very effective in approaching individuals in the community and in conducting home visits.

- ***Use of mobile programs.*** Mobile care programs bring services directly to the children, which is critical in rural and other under-served areas. They are effective in bringing services directly to schools and early childhood centers, where many children can be reached in a short period of time.

Throughout these approaches to reducing children's health disparities, there are recurring themes and lessons:

- ***Begin by creating awareness of health disparities in the community.*** A community discussion is important in order to find out what the concerns of the community are and to identify the best approaches for addressing them. Members of the community are often the best source of ideas about how to address the disparities where they live. Their involvement also is key in ensuring that agreed upon approaches are carried out.

- ***Form a community coalition with community members, clinicians, social workers, and public health officials***. When developing approaches to reducing health disparities, it is important to have many different kinds of people involved in a team to make sure that needs will be addressed appropriately. Community member involvement is important because any interventions decided upon need to address their needs. Clinicians, social workers, and other health care practitioners should also be involved in order to find out how the needs can be addressed in a clinical setting. Public health officials can bring information about the health disparity and identify what resources they can offer.

- ***Incorporate the importance of primary preventive care visits.*** If possible, any community approaches should focus on prevention and encourage primary care visits for children. Problems can be identified early if children can be screened and diagnosed for various conditions when they go for their preventive care visit.

- ***Implement evaluations from the beginning in order to achieve sustainability.*** The most effective programs are often those that can show results over time. With these evaluations, it is easier to demonstrate positive outcomes for children, obtain funding, and make the program sustainable.

- ***Find a champion or advocate to promote the approach.*** In order to increase public awareness, a champion or advocate should be found to discuss the applicable health disparities and approaches to reducing these disparities. This person can transmit information to the media, including television, radio, and newspapers; garner increased attention to both the problems and solutions; and help spread the word about health disparities among health care providers and in communities.

The report concludes with recommendations for broader policies and initiatives to eliminate health disparities for children. Within these recommendations, the focus is on the role that prevention and expanded access to health care for all children can play in improving health outcomes. Other recommended approaches include:

- ***Strengthen individual knowledge and skills.*** Individuals must have the knowledge, motivation, and skills necessary to adopt healthy behaviors. They must receive assistance to help them learn to ask the appropriate questions and participate in treatment decisions.

- ***Strengthen community capacity.*** Building a constituency that invests in community organizing, social capital development, and political participation will foster those community conditions most conducive to positive health outcomes.

- ***Improve access and quality of care.*** The goal must be to deliver the most appropriate health services that reflect population characteristics and community conditions. Community health programs, health care institutions, and local, state, and national governments must take steps to ensure that each child receives the care he or she needs.

- ***Promoting effective state and federal policies.*** As a first step, health coverage must be available to every child, either through employer-based insurance or public health programs that provide comprehensive health care, such as Medicaid or the State Children's Health Insurance Program (CHIP). There must also be aggressive efforts to enforce laws that prohibit discrimination in assessment of health need and the delivery of health care.

The Institute of Medicine's nationally renowned report, *Unequal Treatment,* states, "Racial and ethnic disparities exist and, because they are associated with worse outcomes in many cases, are unacceptable." The community programs profiled in this report (and its Appendix) make great strides towards seeing these disparities identified and eliminated. Expanded research, policies, and program initiatives are needed to contribute to public knowledge of health care disparities that affect children and assist in the development of effective strategies to address and prevent poor health outcomes in affected populations. The more children who have access to quality, preventive health care, the further we, as a nation, will be able to progress towards our goal of eliminating children's health disparities.

1 Introduction

"Health disparities are 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."

Definition from the National Institutes of Health[1]

Recent studies have added to the growing evidence documenting what many communities have known for years—that minorities and the poor live sicker and die younger. Almost every day we read an article or see a television news item about the unequal access to health care and medical treatment in this nation. These factors have contributed to differences, or disparities, in outcomes between minorities and Whites, rich and poor, across most major health conditions.

Seven years after the creation of national goals by the federal government to eliminate health disparities by 2010, continuing disparities in illness and death experienced by minorities and the poor, including children, remain a major obstacle to improving the nation's health. For children especially, conditions such as lead poisoning can have a permanent, detrimental effect on health. Because of the potential for long-lasting impact, reducing health disparities among children is key, not only to improving the well-being of all children, but the nation as a whole. Our success in reducing health disparities among children will not only lessen future health care costs, it will also improve the nation's productivity.

This report identifies policies and practices that can advance the health of all children by reducing health disparities. Beginning with an overview of these disparities and selected determinants of health outcomes, the report then documents disparities in outcomes across several major conditions affecting children and provides an analysis of several indicators related to children's health. The report also explores community strategies to reduce health disparities in several children's conditions to begin to identify a framework for promising practices that can be used across communities. There is a community program identified in each section, and additional programs are described in the Appendix. The description of promising approaches is not proposed as exhaustive or all-inclusive; it is intended to introduce communities to concepts they can adopt or advocate in the pursuit of eliminating health disparities and improving the health of all residents, especially children.

2
Health Disparities in the United States

"The evidence of the damaging health consequences of racial and ethnic disparities in health care continues to be overwhelming."

John W. Rowe, M.D., Chairman and CEO of Aetna[2]

When combined with public policies that have enhanced economic and social environments for a large portion of the U.S. population, public health interventions and improved health services have made tremendous progress over the last half-century in the overall health of the nation. However, not all groups have shared equally in the great gains in health; the health status of minorities continues to lag behind that of Whites. For numerous diseases and health conditions, differences have been documented in outcomes, the quality and appropriateness of care, mortality rates, and quality of life measures. Indeed, the gap in health status between Whites and minorities has persisted for a number of indicators.

For example, while age-adjusted death rates from all causes have declined for both Whites and Blacks, Blacks still have a 30 percent higher risk of death than Whites, a disparity greater than that which existed in 1960.[3] Major disparities exist in coronary heart disease (CHD) with a disproportionate burden of death and disability among minority and low-income populations. With almost 700,000 deaths a year, CHD is the leading cause of death in the United States accounting for 29 percent of all deaths. The age-adjusted death rate for CHD among White men and women declined by almost 60 percent from 1950 to 2002, but only by 42 percent among Black men and 51 percent among Black women.[4] In 2001, premature deaths (occurring in persons under age 64) from CHD were higher among American Indian/Alaskan Natives (36 percent), Blacks (31.5 percent), and Hispanics (23.5 percent) than among Whites (14.7 percent).[5]

There are similar disparities in health outcomes for cancer, the second leading cause of death in the United States. According to data from the "Annual Report to the Nation on the Status of Cancer," the incidence and death rates from cancer have declined significantly since the early 1990s, but not all segments of the population have benefited equally from the improvements. When looking at all cancers combined, Black men are 26 percent and Hispanic men are 16 percent more likely to die of a malignancy than are White men. Black women are 52 percent and Hispanic women are 20 percent more likely to die of cancer than are White women.[6] Notable differences remain even when scientists examine people diagnosed at the same stage of cancer.

Disparities in health exist not only for adults, but for children and adolescents as well. Poor and minority children—especially Black and Latino* children—continue to lag behind White and affluent children in almost every health indicator. However, the majority of the current research is concentrated on addressing disparities in health care for adults. Consequently, we know little about children's health disparities or how to eliminate them. What is known is that disparities persist in the rates of infant mortality, immunizations, asthma, dental care, lead poisoning, and obesity, to name a few of the conditions that affect children. These conditions impact many aspects of children's development and functioning; some effects occur before birth, continue through adolescence, and often last a lifetime.

* CDF prefers the word "Latino." However, many official data sources and research studies collect data using "Hispanic," therefore, CDF uses "Hispanic" in tables and when quoting or referring to these sources.

Factors Contributing to Health Disparities

"Health is the place where all the social forces converge."

Reed Tuckson, M.D., Sr. Vice President of the American Medical Association[7]

Despite the increasing documentation of disparities in numerous conditions and health outcomes, these insights have not led to significant improvements in racial and ethnic disparities overall, in part, because the factors contributing to these inequalities are complex and their interactions inadequately understood. Multiple theories on the causation of health disparities have been offered throughout the past five decades to explain the differences in mortality and morbidity. These theories have identified disparities in health status as consequences of environmental conditions, social and economic factors, health behaviors, and lack of access to appropriate care.[8] These factors are derived from the complicated interrelationships between socioeconomic status (SES) and race/ethnicity. Obviously, the community environment may reflect historical inequities that have persisted in the United States and thereby exacerbate disparities. On the other hand, as noted later in this report, community efforts are also central to reducing disparities.

The Impact of Socioeconomic Status—Socioeconomic status plays an important role in determining health outcomes partially because it affects access to insurance and health services. Beyond affording access to care, socioeconomic status shapes exposure to, and the impact of, a wide range of factors that affect health. In general, population groups with the worst health status are those that have the highest poverty rates and the least education. There is increasing evidence that one contributor to the increasing prevalence of health disparities is the widening gap between the rich and the poor.[9] Recent gains in health for the U.S. population reflect achievements among the higher socioeconomic groups, with lower groups continuing to lag behind.[10]

Minorities do not fare as well as Whites when measured by a variety of socioeconomic indicators including education and income, which are among the strongest predictors of health. In terms of educational attainment, for example, only 80 percent of Blacks and 57 percent of Hispanics 25 years or older had attained at least a high school diploma in 2003, compared to 89.4 percent of non-Hispanic Whites. In the same year, 17.3 percent of Blacks and 11.4 percent of Hispanics had attained at least a bachelor's degree compared to 30 percent of non-Hispanic Whites.[11]

In terms of income, Black households earn 62 cents, and Hispanics earn 71 cents for every dollar earned by White households in median family income.[12] The inequities in resources are magnified several times more when real estate, stock portfolios, and inherited wealth are taken into account. Furthermore, minorities have consistently fewer employment opportunities with Black and Hispanic unemployment rates often much higher (sometimes over two times higher) than Whites. Blacks (24 percent) and Hispanics (22 percent) are about three times as likely to be impoverished compared with non-Hispanic Whites (8 percent).[13]

These financial disparities create barriers to care for minorities. Consequently, minorities are less likely to have employer-sponsored health insurance and also are more likely to be uninsured.

In turn, access or lack of access to health coverage is a strong determinant of health outcomes and has been cited often as a key issue in reducing disparities. Whether or not a person has health coverage often governs how quickly the person will get health care and whether it is the best available. Conversely, individuals who are uninsured or underinsured are less likely to receive appropriate and timely health care, if they receive any care at all. These conditions disproportionately affect racial and ethnic minorities with Blacks

almost twice as likely and Latinos almost three times as likely to be uninsured as Whites. In fact, a recent study provides evidence that a significant share of the disparities in health care could be reduced if Blacks and Latinos were insured at levels comparable to those of Whites.[14]

According to the *National Healthcare Disparities Report*, racial and ethnic minorities and individuals of lower socioeconomic status are more likely to lack a source of ongoing care or identify institution providers as their source of care. Minorities and the poor are also more likely to report having a clinic, hospital outpatient department, or emergency department as their usual source of care.[15] Many individuals rely on hospital emergency departments to meet essential healthcare needs even though they offer less than optimal sources of primary services and continuity of care than a doctor's office.

The Impact of Race/Ethnicity—Although the disparities in minority health have often been attributed to minorities' decreased access to health care, lack of access alone does not explain all of the disparities. In fact, when income and health insurance status are taken into account, poorer health outcomes often persist among minority groups. A growing body of published research indicates that racial and ethnic minority patients receive a lesser amount of care and a lower quality of care for the same illness, even at the same income and insurance coverage level as White patients. Differences in the quality, intensity, and comprehensiveness of diagnostic process and treatment choices for many minorities and the poor produce disparities in the quality of life, morbidity, and mortality. Consequently, racial and ethnic differences in the quality of medical care have been increasingly recognized as significant contributors to poorer health status.

Some researchers contend that the roots of healthcare system disparities stem from the historical institutionalization of discrimination in the United States. Such discrimination occurred in the context of the consistent exclusion of racial and ethnic minorities from many sectors of American life, including mortgage lending, housing, employment, education, and criminal justice. For example, according to David Barton Smith, Blacks and other minorities have historically had problems obtaining health care from voluntary and public hospitals, leading to the development of separate institutions to care for minority populations after the Civil War.[16] Traditional organizations that offered health care such as orphanages, private charitable hospitals, local almshouses, and state facilities, only served Whites.

Discrimination also affected the training of minority providers as well as the medical care that minorities received. For example, few medical schools accepted Black students and those that did often advocated for training Black providers as sanitarians in order to reduce the spread of diseases rather than training them as expert medical practitioners. Black doctors could serve only Black patients, thus limiting opportunities for providers to practice and the supply of health care in Black communities.[17] Racism also was reinforced through research and experimentation on minorities, with one of the most infamous cases—the Tuskegee syphilis experiment—lasting for 40 years into the 1970s.

Even though the Civil Rights Act of 1964 and the Medicare Act forced the desegregation of many areas of the healthcare system, discrepancies continue to exist. A 2002 report by the Commonwealth Fund indicated that racial minorities in the United States lag behind Whites on nearly every measure of healthcare quality, including patient-physician communication and overcoming cultural and linguistic barriers. The survey found that African Americans, Asian Americans, and Hispanics are more likely than Whites to experience difficulty communicating with their physicians and to feel that they are treated with disrespect when receiving healthcare services. Only 45 percent of Asian Americans, 56 percent of Hispanics, and 61 percent of African Americans reported they were very satisfied with their care compared to 65 percent of Whites. The survey reveals that a significant proportion of minorities feel they would receive better care if they were of a different race or ethnicity.[18]

Despite these access issues, a disconnection exists between the experiences of minorities and physician perception. The Kaiser Family Foundation's National Survey of Physicians found that the majority of physicians believe that disparities in how people are treated within the healthcare system based on factors such as income, educational status, racial or ethnic background, or fluency in English, "rarely" or "never" happen. Physicians of different races and ethnicities tend to perceive disparities in the healthcare system very differently, with White and Asian doctors more likely than Black and Latino doctors to say that people are rarely or never treated unfairly based on those factors.[19]

In a landmark report that extensively detailed healthcare disparities across a range of illnesses and services, the Institute of Medicine (IOM) found that disparities in the quality of health care that minorities receive are substantial, even after accounting for characteristics typically associated with health inequality such as health insurance coverage and income.[20] For example, even when insured at the same level, minorities may experience other barriers to health care, such as language barriers, geography, and cultural familiarity. Aspects of health systems, such as how they are organized and financed, often work to the disadvantage of minorities. Among the sources of health disparities, the IOM report focused on clinical encounters and found evidence that stereotyping, biases, and uncertainty on the part of the health provider contribute to unequal treatment.[21]

Thus, race and ethnicity are increasingly seen as independent factors that affect access to health care and health status. Some researchers go further, describing race and ethnicity as major determinants of socioeconomic position. The effects of discrimination and economic disparity not only have a direct negative effect on health but also influence numerous risk factors for ill health, such as a higher likelihood of exposure to toxins in the workplace and at home; substandard housing conditions; less access to healthy foods; and fewer opportunities for physical activities. Racial inequalities in health care clearly are linked to inequities experienced by minority groups in the larger social context.

The Importance of Addressing Children's Health

"Many things we need can wait. The child cannot. Now is the time his bones are being formed, his blood is being made, his mind is being developed. To him we cannot say tomorrow, his name is today."

Gabriela Mistral, Chilean Poet, Educator, Nobel Laureate

The impact of the social determinants of health is cumulative throughout the life cycle, with many critical influences occurring early in life. A growing body of research suggests that early experiences, such as growing up in a low-income family, may increase the risk of disease later on in life.[22] Arline Geronumus proposes a weathering framework in health that reflects a cumulative impact of social, economic, and political exclusion rather than chronological or developmental age.[23] For example, maternal health influences infant and child health, which then influences adolescence and subsequent risk factors in adult health.

Similarly, in order to shift the emphasis on treatment in later stages of disease to the promotion of earlier preventive strategies and intervention focused on maximizing optimal health development, Halfon and Hochstein illustrate in the Life Course Health Development framework how risk factors, protective factors, and early life experiences affect people's long-term health and disease outcomes.[24] Childhood is a time of tremendous physical, social, emotional, and intellectual growth, and early identification and intervention can prevent or ameliorate health issues that may become more severe in adulthood. Thus, eliminating health disparities among children is a critical component to reducing health disparities in the rest of the population.

Yet access to quality health care is not enough to address the continuing disparities in children's health. Even at the same level of health coverage, minority children continue to lag behind White children by most health measures. CDF analyses of the 2002 National Health Interview Survey illustrate some of the stark racial and ethnic differences in health and the effect of health coverage and income on those disparities. When children's health and access to health care are examined by their race and ethnicity alone, there are substantial differences (Table 1). The most striking differences are between White and Latino children. In terms of reduced access to care, the chance of Latino children lacking care ranges from one-third higher than White children for an unmet dental need to more than 3½ times as high as White children for having no usual place of care. Although the discrepancies between Black children and White children are not as extreme, Black children are also at higher risk for reduced access, from 26 percent more likely to have delayed medical care due to cost to an 81 percent higher likelihood of having no usual place of health care.

In contrast to the findings concerning access to care, health status discrepancies are greater when Black children are compared to White children. Black children are almost twice as likely not to be in excellent or very good health, 49 percent more likely to have asthma, and 21 percent more likely to have a limitation of activity. Latino children are almost twice as likely as White children to not be in excellent or very good health but are less likely to report having a limitation of activity.

Table 1

Access to Health Care and Health Status of Children, by Race and Ethnicity

				Ratio of White percentage to percentage of		Difference between percentage of White and percentage of	
	White	Black	Hispanic	Black	Hispanic	Black	Hispanic
Access to Care: Percent of children							
Who were uninsured	6.8	10.1	21.3	1.49	3.13	3.3	14.5
With no usual place of health care	3.2	5.8	11.6	1.81	3.63	2.6	8.4
Who delayed medical care due to cost	3.1	3.9	4.4	1.26	1.42	0.8	1.3
With an unmet medical need	1.8	2.9	2.8	1.61	1.56	1.1	1.0
Who went 2 or more years since last contact with a dental provider	14.9	20.0	25.9	1.34	1.74	5.1	11.0
With an unmet dental need	5.5	6.4	7.3	1.16	1.33	0.9	1.8
Health Status: Percent of children							
Not in excellent or very good health	12.4	24.1	24.3	1.94	1.96	11.7	11.9
With a limitation of activity due to chronic illness or disability	7.7	9.3	5.5	1.21	0.71	1.6	-2.2
Who were ever told they had asthma	11.6	17.3	10.1	1.49	0.87	5.7	-1.5

SOURCE: National Center for Health Statistics: 2002 National Health Interview Survey; analysis by the Children's Defense Fund, 2005.

Disparities in access are exemplified by racial and ethnic differences in health coverage. Latino children are more than three times as likely and Black children are almost 50 percent more likely to be uninsured. Lack of insurance is a major factor in the racial/ethnic discrepancies in health and healthcare access (Table 2). In almost every area, the discrepancies between White children and Black and Latino children diminished when looking at only those children who lacked coverage. However, uninsured children were more likely,

and in some cases far more likely, than insured children to lack access. That is, without insurance, White children's access to care was severely diminished, making them more similar to Black and Latino children. Controlling for health coverage, however, did not completely eliminate the differences between racial and ethnic groups.

Table 2

Racial and Ethnic Differences in Health and Access to Care, by Health Coverage Status

				Ratio of White to		Difference between White percentage and	
Percent of children	**White**	**Black**	**Hispanic**	**Black**	**Hispanic**	**Black**	**Hispanic**
With no usual place of health care							
All children	3.2	5.8	11.6	1.81	3.63	2.6	8.4
Uninsured children	16.9	26.6	37.0	1.57	2.19	9.7	20.1
Who delayed medical care due to cost							
All children	3.1	3.9	4.4	1.26	1.42	0.8	1.3
Uninsured children	14.1	16.9	10.6	1.20	0.75	2.8	-3.5
With an unmet medical need							
All children	1.8	2.9	2.8	1.61	1.56	1.1	1.0
Uninsured children	9.0	14.2	7.4	1.58	0.82	5.2	-1.6
Who went 2 or more years since last contact with a dental provider							
All children	14.9	20.0	25.9	1.34	1.74	5.1	11.0
Uninsured children	27.1	37.7	45.2	1.39	1.67	10.6	18.1
With an unmet dental need							
All children	5.5	6.4	7.3	1.16	1.33	0.9	1.8
Uninsured children	15.8	18.3	15.1	1.16	0.96	2.5	-0.7
Not in excellent or very good health							
All children	12.4	24.1	24.3	1.94	1.96	11.7	11.9
Uninsured children	16.1	27.0	24.5	1.68	1.52	10.9	8.4

SOURCE: National Center for Health Statistics: 2002 National Health Interview Survey; analysis by the Children's Defense Fund, 2005.

Controlling for income reduced the racial and ethnic disparities in access and health, with the exception of asthma. In some cases, limiting the analysis to children in families with incomes below 200 percent of poverty actually eliminated the racial/ethnic disparities. Lower-income Black children look like lower-income White children in terms of lack of contact with a dentist and limitation of activity (Table 3). When Black and Latino children were grouped together (because of small sample size), limiting the analysis to the lower-income children eliminated the differences between White and non-White children for delayed medical care, unmet medical needs, and unmet dental needs (Table 4). However, racial discrepancies remained in terms of health status. Black and Latino children were more than one-third more likely not to be in excellent or very good health (Table 3); and lower-income Black and Latino children were 55 percent more likely than lower-income White children to have gone two or more years since having contact with a doctor (Table 4).

In a few situations Latino and/or Black children appeared to be doing better than White children. Latino children were less likely than both White and Black children to have a limitation of activity or to have been told they have asthma. This was also the case when the analysis included only lower income children (Table 3). In addition, among lower income children, Black and Latino children combined were 25 percent less likely to have missed 10 or more days of school due to illness or injury (Table 4). In some cases, the

Table 3

Racial and Ethnic Differences in Health and Access to Care, by Income

Percent of children	White	Black	Hispanic	Ratio of White to Black	Ratio of White to Hispanic	Difference between White percentage and Black	Difference between White percentage and Hispanic
Who went 2 or more years since last contact with a dental provider							
All incomes	14.9	20.0	25.9	1.34	1.74	5.1	11.0
Children in families with incomes below 200% of poverty	22.1	23.0	28.3	1.04	1.28	0.9	6.2
Not in excellent or very good health							
All incomes	12.4	24.1	24.3	1.94	1.96	11.7	11.9
Children in families with incomes below 200% of poverty	20.5	28.0	27.7	1.37	1.35	7.5	7.2
With a limitation of activity due to chronic illness or disability							
All incomes	7.7	9.3	5.5	1.21	0.71	1.6	-2.2
Children in families with incomes below 200% of poverty	12.4	11.7	6.0	0.94	0.48	0.7	-6.4
Who were ever told they had asthma							
All incomes	11.6	17.3	10.1	1.49	0.87	5.7	-1.5
Children in families with incomes below 200% of poverty	12.1	18.4	10.5	1.52	0.87	6.3	-1.6

SOURCE: National Center for Health Statistics: 2002 National Health Interview Survey; analysis by the Children's Defense Fund, 2005.

Table 4

White/Non-White* Differences in Health and Access to Health Care, by Income

Percent of children	White	Black or Hispanic	Ratio of White to Black/Hispanic	Difference between White percentage and Black/Hispanic percentage
Who went 2 or more years since contact with a doctor				
All incomes	2.5	6.7	2.68	4.2
Children in families with incomes below 200% of poverty	3.3	8.4	2.55	5.1
Who delayed medical care due to cost				
All incomes	3.1	4.1	1.32	1.0
Children in families with incomes below 200% of poverty	5.6	5.6	1.00	0.0
With an unmet medical need				
All incomes	1.8	2.9	1.61	1.1
Children in families with incomes below 200% of poverty	3.9	4.1	1.05	0.2
With an unmet dental need				
All incomes	5.5	6.9	1.25	1.4
Children in families with incomes below 200% of poverty	11.2	9.5	0.85	-1.7
Who missed 10 or more days of school due to illness or injury				
All incomes	9.8	9.1	0.93	-0.7
Children in families with incomes below 200% of poverty	15.0	12.0	0.80	-3.0

* Black and Hispanic children are combined because the sample size for these items was too small to analyze each group individually.

SOURCE: National Center for Health Statistics: 2002 National Health Interview Survey; analysis by the Children's Defense Fund, 2005.

differences may be due more to the likelihood of diagnosis or availability of a caretaker (in the case of missed school days) than a reflection of the actual health of the children. However, Black children have been reported to have higher rates of asthma than other groups in a number of studies.[25,26,27]

Expansion of eligibility for public insurance programs remains crucial to improving children's access to health care. This is especially important for many immigrants who are now ineligible for Medicaid or CHIP. Without expanding eligibility for public health insurance programs, many non-native born children will continue to lack adequate access to care, and harmful health disparities will persist.

Enhancements in Medicaid and CHIP outreach, enrollment, and retention are also important in ensuring that children have access to preventive care and treatment if necessary. The financing of and reimbursement to health programs should be appropriate so that an adequate supply of physicians will be available to provide primary and preventive care to children.[28]

Income and insurance status play a major role in the health and health care of children. Lower income and uninsured children of all races and ethnic backgrounds are worse off than their higher-income peers. Because Black and Latino children are more likely to live in households with lower incomes and to lack insurance, they are more likely to suffer from poor health and barriers to care than are White children. But similar to adults, the pattern of unequal health outcomes that exists for children and adolescents also reflects the impact social determinants have on health outcomes. In order to be successful in narrowing the gaps in children's health, we must go beyond insurance status and focus on those factors in children's everyday lives that affect their health.

Effective strategies to reduce health disparities have addressed community factors that impact population health outcomes, such as individual behaviors, access to quality health care, and local conditions that support healthy communities. Since health disparities exist within a broader social context, a comprehensive approach that addresses the underlying social inequalities must ultimately be adopted to ensure equal health outcomes.

The health and care of infants and children is critically important to maximizing the health of the next generation, and it has a direct impact on future healthcare costs. Furthermore, reducing health disparities among children will help ensure the economic security of the nation. It is estimated that minorities will comprise 41.5 percent of those entering the workforce between 1998 and 2008. By 2030, nearly 50 percent of the work force will be Black and Latino, while 74 percent of retirees will be White.[29] It is critical to find solutions now to improve the health of minority children before existing health conditions worsen and the nation's health as a whole is affected.

3
Child Health Disparities and Community Programs

"To reduce healthcare disparities in our nation, we must reach out to communities. Creating real and meaningful partnerships is essential to achieving a balanced community health system."

David Satcher, M.D., Ph.D., U.S. Surgeon General and Assistant Secretary for Health (1998-2001)[30]

Given the multiple factors that contribute to differences in health among minorities and the poor, the research on health disparities is broad, covering many different aspects of inequities in health outcomes. Throughout the literature, strategies for reducing health disparities vary widely in approach, including individual, clinical, organizational, and systemic processes. These approaches describe various critical pathways that determine population health outcomes and the corresponding improvements to reduce health disparities for low-income and minority populations.

An emerging framework in the study of health disparities is the effect of communities or neighborhoods on health. Studies have documented variations in health outcomes based on neighborhood residence for a wide range of outcomes, including birth outcomes and infant mortality, children's physical health, child development, health-related behaviors and mental health.[36] These studies highlight the importance of the social and physical environment within a community, in addition to individual socioeconomic standing, in shaping individual behaviors and health outcomes. Studies have shown that community-based factors affect availability of such indicators as higher likelihood of exposure to toxins in the workplace and at home, substandard housing conditions, less access to healthy foods, and fewer opportunities for physical activities.

Some researchers have suggested that community factors and residential segregation, which are associated with race and income, contribute to the additional risk.[32,33,34] Neighborhood-level association observed after adjustment for individual socioeconomic factors may reflect unmeasured socioeconomic influences at the individual level.[35] Current family income, along with education and health coverage, may not adequately represent the accumulated economic assets and socioeconomic conditions experienced early on, which can have important health impacts later in life. Some have even linked residential segregation among minority groups as a direct cause of differences in health status because it is a central determinant in the creation and perpetuation of racial inequalities in America.[36]

In the report entitled, *Reducing Health Disparities through a Focus on Communities*, PolicyLink, a non-profit research and advocacy organization, proposed a framework based on various conceptual models found in the public health literature and on theories of community building to describe how social, economic, and physical environments in neighborhoods affect health.[37] These neighborhood factors can impact health in at least four ways: direct effects on both physical and mental environments, indirect influences on behaviors that have health consequences, health impacts resulting from the quality and availability of health care, and health impacts associated with the availability of opportunity structures (such as access to healthy, affordable food, safe environments for exercise and recreation, and transportation resources that facilitate employment and education).[38]

Community-based solutions are especially important in addressing children's health disparities since they take into account the specific conditions of the environment in which children live and barriers that must be overcome in those communities. National campaigns are effective in raising awareness of an issue, such as the campaign against obesity recently launched by the United States Department of Health and Human Services. Given the importance of the community, effective strategies to eliminate racial and ethnic health disparities generally should not be viewed solely on the macro level, or simply within the scope of traditional health policy.

Children's health has seen remarkable improvements in many areas over the past three decades. Access to health care was expanded for children through both public insurance coverage and public health services programs. The increased access to health care has contributed to significant progress in children's health status with improvements in many health indicators. For example, the increased rate of prenatal care and well-baby services has led to a drop of more than 70 percent in the infant mortality rate. Due to higher rates of immunization, the incidence of many childhood diseases such as measles, German measles, polio, diphtheria and tetanus has dropped to almost zero.

Significant progress has been made, but further improvements to correct racial and ethnic disparities in insurance coverage, access to care, and health status are necessary. The following section describes six major conditions affecting children's health, and the community approaches that have had a positive impact on disparities in each of these areas. (Additional community approaches are described in the Appendix, beginning on page 43.) Racial disparities in these areas—infant mortality and prenatal care, immunization, lead poisoning, dental care, asthma, and obesity—together pose enormous health risks to children.

Infant Mortality and Prenatal Care

Infant mortality and birthweight remain critical indicators of children's health, and they illustrate the persistence of health disparities among children. Although the overall infant mortality rate dropped steadily until 2002, the gap between White and Black infant mortality rates has not lessened. In 2002, there were more than 28,000 infant (children under age 1) deaths, more than all deaths combined among children ages 1 through 19. Infants born to Black mothers were more than twice as likely as infants born to White mothers to die before their first birthday (14.4 versus 5.8 deaths per 1,000 live births). Almost 30 percent of all infants who died in 2002 were born to Black mothers, even though only 14 percent of infants born that year were Black.[39]

While low birthweight is one of the leading causes of infant mortality among all races, it is by far the greatest cause of death for infants born to Black mothers. In 2002, 7.8 percent of infants were born weighing less than 2,500 grams or 5.5 pounds, which is similar to previous years. Non-Latino Black infants were almost twice as likely to be born at low birthweight as were non-Latino White infants (13.4 percent versus 6.9 percent).[40]

Prenatal care for pregnant women, considered important in reducing the incidence of infant mortality and low birthweight, is consequently a critical component in ensuring healthy infants and children. The level and timing of prenatal care is often used as a proxy for access to care and birth outcomes. During the 1990s, the proportion of women starting early prenatal care improved slowly but steadily. This improvement coincided with an expansion of the Medicaid program for pregnant women with incomes below 133 percent of the federal poverty guidelines (many states provide coverage to pregnant women at higher income levels).[41]

In 2002, 83.7 percent of mothers began prenatal care during the first three months of their pregnancy, a slight increase from the previous year. In that same year, 3.6 percent of all mothers had late or no prenatal care, which is defined as care never initiated or only initiated during the last three months of pregnancy. However, racial and ethnic differences continue in the timeliness of prenatal care. In 2002, 75.2 percent of non-Latino Black and 76.7 percent of Latino women received prenatal care in the first trimester, compared to 85.4 percent of non-Latino White women.[42] Non-Latino Black and Latino women also were more than two times as likely as non-Latino White women to have late or no prenatal care (6.2 percent and 5.5 percent, respectively, versus 3.1 percent).[43]

Approaches to Promote Prenatal Care and Reduce Infant Mortality

The Department of Health and Human Services has recognized the need to decrease infant mortality and increase early prenatal care. Objectives related to these healthcare issues are included in *Healthy People 2010*, a national initiative to achieve 467 specific health objectives by 2010. Specifically, there is a goal to increase the percentage of mothers who receive prenatal care to 90 percent[44], from its current rate of 83 percent[45], as well as to decrease the infant mortality rate to 4.5 deaths per 1,000 live births.

States also have taken a variety of steps to improve low-income women's access to prenatal care services and care after birth to decrease infant mortality. Many have expanded their CHIP programs to include women who are pregnant to ensure that all women have access to prenatal care. Many of the causes of infant mortality, including low birthweight, are preventable through early and adequate prenatal care. This requires a combination of policy, community, and professional responsibility.

Successful community-based approaches to promote prenatal care and reductions in infant mortality share common elements:

- Using community health workers.
- Providing more in-home visits and case management by health workers.
- Providing extra support for women during pregnancy and through the first year of the child's life.
- Creating community partnerships with local faith communities.
- Creating community partnerships with local Head Start, Healthy Start, and child care programs.
- Forming support groups for pregnant or breastfeeding mothers.
- Offering literature and support geared toward the community.
- Providing community education to increase knowledge of first-time mothers after birth.

One promising approach that exemplifies several of these elements in reducing disparities in infant mortality and receipt of prenatal care is described below. (Also see Appendix, page 43.)

Black Babies SMILE (Montgomery County, Maryland)

The Black Babies SMILE program is a division of the African American Health Program. The program was developed in 1999 when a town hall community meeting was held to discuss disparities in the community. The program offers free services and is administered by The People's Community Baptist Church. Its focus is divided into education before pregnancy, nurse management during pregnancy, and campaigns to keep infants safe after pregnancy. The program partners with clinicians' offices and early childhood programs, such as Healthy Start, to recruit high-risk mothers, although most women are enrolled through word of mouth.

The Nurse Case Management Program within Black Babies SMILE was developed to improve maternal health and prevent perinatal deaths. The case managers visit women who are pregnant or have recently given birth. At home visits, they monitor weight gain, blood pressure, and offer in-home oral HIV testing. They encourage early prenatal care and help women seek social support. The frequency of visits can range from more than once a week to once a month. Follow-up, including home visits and phone contacts, may continue until the child is one year old. Breastfeeding is encouraged, and mothers who choose to do so may participate in their free breast pump loan program.

There are also prenatal and Baby Basics classes offered locally. Healthy Lifestyles classes are offered at local high schools to encourage a focus on pre-conception health. The program has partnered with local housing communities, where classes are also offered on healthy lifestyles. In 2004, the program was able to hire a second case manager, allowing them the capacity to work with 100 mothers and 60 newborns per year.

Contact Information:
African American Health Program
3300 Briggs Chaney Road
Silver Spring, MD 20904
240-777-1055
www.onehealthylife.org

Immunizations

Immunization is one of the most effective ways to protect a child from serious, preventable infectious diseases. For every $1 spent vaccinating children against measles, mumps, and rubella, $16 is saved in medical costs to treat those illnesses.[46] Vaccination programs in the United States have resulted in the elimination of smallpox and have rendered diseases such as diphtheria, polio, and tetanus exceedingly uncommon. In addition, cases of Hib (*haemophilus influenzae* type b), the leading cause of childhood bacterial meningitis and postnatal mental retardation, and cases of measles have been significantly reduced as a result of broad improvement in childhood vaccination levels over the last decade.

While incredible progress has been made in increasing U.S. immunization rates for children, sustained policy, outreach, and educational efforts are necessary to maintain current rates and to improve upon them. The percentage of 2-year-olds receiving the full 4:3:1:3:3[47] complement of vaccines for diphtheria/tetanus/pertussis, polio, measles, Hib, and hepatitis B reached a high of 80.9 percent in 2004, meeting the government's *Healthy People 2010* goal. However, the immunization rate for Black and Hispanic children in the same year fell behind that of White children. According to data from the Centers for Disease Control and Prevention's National Immunization Survey, 74.5 percent of non-Hispanic Black and 79.7 percent of Hispanic 2-year-olds received the 4:3:1:3:3, compared with 83.3 percent of non-Hispanic Whites.[48]

This disparity indicates a need for renewed immunization outreach and education efforts, particularly to poor and minority children, whose immunization levels are lower than their White and higher-income counterparts.[49] These disparities leave millions of children at risk for often debilitating and potentially life-threatening infectious diseases.

Table 5

Immunization of Two-Year-Olds* in 1995 and 2004 By Race/Ethnicity and Poverty Status

	Percent fully immunized 4:3:1:3 series**		Percent fully immunized 4:3:1:3:3 series***	
	1995	**2004**	**1995**	**2004**
All income levels				
All races	73.7	82.5	55.1	80.9
White non-Hispanic	76.4	85.1	55.6	83.3
Black non-Hispanic	69.8	76.0	53.3	74.5
Hispanic	68.2	81.2	53.0	79.7
Below poverty				
All races	67.3	78.0	51.0	76.8
White non-Hispanic	68.9	77.6	45.6	76.5
Black non-Hispanic	69.6	73.8	53.1	72.0
Hispanic	62.9	79.8	53.4	78.9

*Children 19-35 months of age

**Four or more doses of diphtheria, tetanus, pertussis vaccine (DTP or DTaP or DT); three or more doses of poliovirus vaccine; one or more doses of any measles-containing vaccine (MCV); and three or more doses of *Haemophilus influenzae* type b vaccine (Hib)."

***Four or more doses of diphtheria, tetanus, pertussis vaccine (DTP or DTaP or DT); three or more doses of poliovirus vaccine; one or more doses of any measles-containing vaccine (MCV); three or more doses of *Haemophilus influenzae* type b vaccine (Hib); and three or more doses of hepatitis B vaccine (HepB). The hepatitis B vaccine was a relatively new recommendation for children in 1995, so rates of immunization were somewhat low. The percentage of children fully immunized was therefore also lower.

Source: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 1995 and 2004 National Immunization Survey, Table 32, at <http://www.cdc.gov/nip/coverage/NIS/04/toc-04.html>.

Despite the profound benefits of immunizations, there have been recent claims that some vaccines are causing children to get sick or develop certain conditions, thereby raising the risk that some children will not be immunized. However, scientific research and experience have shown that serious adverse effects from vaccines are extremely rare. The Institute of Medicine's Immunization Safety Review committee has rejected causal links between certain vaccines and conditions such as autism[51], sudden infant death syndrome[52], and multiple sclerosis[53]. The CDC also has found no link between vaccines that contained thimerosal as a preservative and a wide range of neurodevelopment problems, including autism, attention deficit disorder (ADD), language delays, sleep disorders, emotional disorders, tics, and asthma.[54]

Full and timely immunization is the best-known way to protect children from the devastating effects of vaccine-preventable diseases. At the same time, it is critical that parents, doctors, and policy makers rely on valid and sound scientific information about childhood immunizations and the risks of adverse reactions as well as the risks of leaving children vulnerable to serious and deadly diseases.

Approaches to Increasing Immunization Rates

Involving the entire community to increase immunization awareness helps increase immunization rates for everyone, especially children. Working in collaboration with local clinics and public health offices has proven effective in increasing the number of children who receive vaccines. Having community health workers dispel myths concerning the safety of vaccines and remind families of when their child is due for immunizations has improved the efficacy of immunization programs.

Promising community approaches to increase childhood immunization rates share common elements:

- Establishing community clinics so that immunization locations are easily accessible to all members of the community.
- Using feedback from successful strategies for improving vaccination rates to influence provider practices in other preventive services, such as anemia and lead screening.
- Using outreach and media campaigns that are community specific and culturally appropriate to promote community awareness of the importance of immunizations. (It is not enough to simply translate messages from English into Spanish.)
- Devising reminder systems and recall appointment notices, written in the native language of the recipients, to be sent out before each clinic date.
- Improving health professionals' knowledge about immunizations, especially as related to high-risk populations, and helping providers bridge the gap for parents between misinformation about immunizations and raising healthy children.
- Providing accurate, comprehensive and up-to-date information about childhood vaccines and the diseases they prevent to parents and healthcare professionals.
- Building relationships and trust with surrounding communities in a culturally sensitive manner, including Native American tribes, Latino populations, and others.
- Ensuring access to newly recommended vaccines for children in low-income families and families without health insurance.

A national program profiled below has made great strides in reducing disparities in immunizations. (Also see Appendix, page 48.)

Spotlight on:
National Immunization Program, Vaccines for Children (Nationwide)

The National Immunization Program provides national guidance relative to vaccine preventable disease in children, adolescents, and adults. The Vaccines for Children (VFC) Program is an integral component of the National Immunization Program because it provides vaccines to minority children who are generally eligible for Medicaid in their home state. Its goals are to ensure children are receiving vaccines as a part of routine care, supporting the reintegration of vaccination and primary care. The program strives to enhance access to vaccines in the physician's office and through local healthcare providers instead of only at federally qualified health centers or rural health centers.

VFC provides government-funded vaccines to four categories of eligible children:

1. Medicaid eligible children
2. Children without health insurance
3. American Indians and Alaskan Natives
4. Children with health insurance that does not cover the cost of vaccines (These children must receive their shots at a federally qualified health center or rural health clinic).

The VFC program provides publicly purchased vaccines for use by all participating providers. The vaccines are administered to eligible children with no cost to the provider or the parent. In 2003, the CDC awarded $975 million in VFC funds to state, local, and territorial public health agencies for program operations and the purchase of vaccines. There are currently over 45,000 provider sites, which include public health clinics, community health clinics, hospitals, and private providers throughout the United States. All grantees/states have outreach mechanisms that are part of the program's core components and differ from grantee to grantee.

By decreasing referrals to public health departments, the VFC program has improved the continuity of care and promoted the "medical home" concept. The program has contributed to high immunization rates and reduced delays in immunizations and, subsequently, the risk of serious illness or death from vaccine-preventable diseases. Prior to VFC's implementation in 1993, only about two-thirds of 2-year-olds had been fully immunized. By 2004, 80.9 percent of 2-year-olds were immunized, meeting the *Healthy People 2010* goal.

Contact Information:
National Immunization Program Public Inquiries
Mailstop E-05
1600 Clifton Rd., NE
Atlanta, GA 30333

CDC Information Contact Center
1-800-CDC-INFO (800-232-4636)
Fax: 1-888-CDC-FAXX (888-232-3299)
NIPINFO@cdc.gov
http://www.cdc/nip

Lead Poisoning

Lead poisoning continues to pose a threat to children's health despite the 1978 nationwide ban of lead paint. Nearly one million children are affected by lead poisoning, exhibiting elevated blood lead levels.[55] It is estimated that one out of every 20 children in the United States has some lead poisoning but is not necessarily exhibiting visible signs or symptoms.[56]

America's leading source of lead exposure in children is deteriorating lead paint in older housing. All children are potentially vulnerable to lead poisoning because they engage in more hand-to-mouth activity and, consequently, are easily poisoned from chronic ingestion of lead paint chips and house dust or soil that may have lead particles in it.[57] Additionally, a child's growing body can absorb more lead than adults, and their developing brains and nervous systems are more sensitive to the damaging effects of lead. High levels of lead can cause learning and behavior problems, stunted growth, hearing problems, and headaches.[58] A recent study of 5-year-olds has found that lead exposures far lower than the limit deemed acceptable by the federal government can damage a young child's ability to learn and reason.[59] Researchers found a decreasing trend in IQ in the studied age group when blood lead levels exceeded half the federal acceptable concentrations.[60]

The threat of lead exposure is even greater for low-income and minority children, because they are more likely to occupy housing and schools that contain lead-based paint. For example, one study found that 16 percent of low-income children living in older housing have lead poisoning, compared with 4 percent of all children.[61] Another study found that children receiving Medicaid constituted about one-third of the U.S. population of children ages 1 to 5, but represented about 60 percent of children with elevated blood lead levels.[62] According to the Alliance to End Childhood Lead Poisoning, Black children are at five times greater risk of exposure than White children.[63]

Table 6

Percent of Children* with Lead Levels over 5µ g/dL**

	All children	Ages 1 to 5
All***	3.2	8.2
White non-Hispanic	2.5	7.0
Black non-Hispanic	7.0	17.4
Hispanic	2.8	6.3
200% of poverty or more	0.9	****
Under 200% of poverty	5.2	****
Insured	2.9	7.7
Uninsured	5.2	11.3

* Children are ages 1 through 18.
** Blood lead levels of greater than 5 micrograms per deciliter (approximately 3.38 oz.) of blood.
*** Includes all children measured, regardless of race, income, or insurance status.
**** Sample size too small to produce a reliable estimate.

SOURCE: 1999-2000 and 2001-2002 National Health and Nutrition Examination Survey. Calculations by the Children's Defense Fund, 10/04.

Regular lead screening is essential for identifying children in need of treatment. As part of Medicaid's Early and Periodic Screening, Diagnostic and Treatment (EPSDT) services benefit, CMS requires that Medicaid-enrolled children be screened for lead poisoning, at a minimum, at ages 12 months and 24 months. Therefore, at least one blood test for lead is supposed to occur before the age of 2.[64] In three

states—New Jersey, Massachusetts, and Rhode Island—the law mandates screening of all children younger than age 6, regardless of Medicaid status.[65]

Although 37 states claim that blood lead screenings of children in Medicaid happen regularly as part of EPSDT requirements, a Government Accountability Office (GAO) report found that, despite this requirement, over 80 percent of children receiving Medicaid have not been screened for blood lead levels.[66] This is particularly disconcerting given that children receiving Medicaid are three times more likely than other children to suffer from lead poisoning.[67] A National Conference of State Legislatures survey reported many barriers to consistent application of lead screening, including provider noncompliance, lack of access to laboratories, lack of funding, a transient population, and problems with parental follow-through.[68]

Approaches to Prevent Lead Poisoning

In an effort to promote screening and prevent lead poisoning in young children, the Centers for Disease Control and Prevention (CDC) issued a statement that recommended activities for community level interventions.[69] They include:

- *Screening and surveillance:* Identifying high-risk populations and neighborhoods.
- *Risk assessment and integrated prevention planning:* Analyzing and identifying lead sources, exposure patterns, high-risk populations, and neighborhoods.
- *Outreach and education:* Educating parents, teachers, health providers, and other key community members about the dangers of lead poisoning, prevention strategies, and screening recommendations.
- *Infrastructure development:* Finding the resources needed and the proper channels for communication.
- *Hazard reduction:* Reducing the presence of lead in dust, soil, and high-risk homes and neighborhoods.

While all of these activities are important for program development, they do not necessarily have to occur within one organization. Increasingly, successful programs are built upon partnerships and collaboration. While some of these partnerships occur between government and community organizations, successful models are also seen in community partnerships with local businesses, medical institutions, universities, the media, and other community groups. Additionally, successful program models show the importance of using local community members to lead outreach and education efforts. Many of them depend on partnerships between community members and local community groups, churches, schools, or other children's health programs.

While working to ensure early and consistent blood level screening of high-risk children is essential, addressing the issue of lead poisoning necessitates a public health approach. Community groups are in a unique position to expand lead poisoning prevention efforts, from individual screening to widespread primary prevention efforts. Population-based awareness, neighborhood screenings, home remediation, and nutritional counseling also have been shown to be effective tools in preventing lead poisoning.

Examples of Strategies Within Each Area

In an effort to provide every child and family in America with a hazard-free home and lead-free environment, community programs are using innovative means to educate, engage, and effect change within their communities. Program elements and tactics of successful community approaches in the areas identified by the CDC include the following:

Screening and Surveillance

- Partnerships with state or local health departments.

Risk Assessment and Integrated Prevention Planning

- Community-wide assessment of the problem; garnering input from medical specialists, government officials, housing and environmental experts, parents, and teachers.
- Integration of lead poisoning prevention programs into other children's health activities like Head Start, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and schools.

Outreach and Education

- Expansion of lead safety education and awareness programs to reach new and expectant parents.
- Culturally sensitive education and outreach to Latino populations, specifically outreach that focuses on folk medications, tableware, and imported ceramic pottery, which can be sources of lead contamination.
- The use of community educators, or "promotoras," to promote primary prevention of lead poisoning.
- Providing residents with the tools needed to advocate for housing rights.
- Partnerships with local organizations, like churches, to address the needs of local populations.
- Providing nutritional counseling.

Infrastructure Development

- Safe Houses provided as temporary shelter for families living in homes where high levels of lead have been detected.
- Materials available in language of the community, i.e., Spanish, French, Cambodian, etc.
- Utilization of visual messaging for those who are not literate in any language.
- Training programs for Environmental Protection Agency (EPA) approved Lead Sampling Technicians (LST) and Lead Safe Work Practices (LSWP).

Faced with tens of thousands of children affected by lead paint, the nation's cities tried for years to tackle the problem by going after building owners and testing children for lead in their blood. Following successful rulings against the makers of tobacco products, government entities and private individuals have turned increasingly to filing claims against manufacturers of lead-based paint. These suits seek funds for removing lead-based paint from affected dwellings and for the treatment of lead-poisoned children. The courts, however, have dismissed recent cases in several localities, including Chicago; Milwaukee, Wisconsin; San Francisco; and Holmes County, Mississippi.[70]

The following approach incorporates several successful practices for reducing disparities in children's lead exposure and poisoning. (Also see Appendix, page 55.)

The Environmental Health Coalition: Campaign to Eliminate Childhood Lead Poisoning (CeCLP) (National City, California)

CeCLP is a division of the Environmental Health Coalition (EHC). EHC is a private, non-profit organization founded in 1980 that provides technical and organizing assistance to populations in San Diego and Tijuana, Mexico, adversely affected by toxic chemicals. EHC operates four distinct campaigns to achieve this goal: the Border Environmental Justice Campaign, the Clean Bay Campaign, the Community Assistance Program, and CeCLP.

CeCLP provides education to at-risk families and assists parents in getting their children tested for lead poisoning, focusing on families residing in high-risk neighborhoods, which tend to be predominantly Latino families. According to the Environmental Health Coalition, 84 percent of children reported to have elevated blood levels in San Diego County are Latino. High-risk neighborhoods are determined by looking at potential sources of lead including deteriorated lead-based paint, leaded pottery, and leaded dust and soil. The high percentage of Latino children affected by lead poisoning is due in part to their socioeconomic status, but it should also be noted that clay bean pots from Mexico, popular among the Latino community, are a common source of lead.

As part of their education efforts, CeCLP maintains a lead-safe home registry on their Web site. Potential renters/buyers can find out the lead-safe status of a pre-1978 unit within the city of San Diego.

CeCLP relies on the work of its community Lead-SALTA promotoras (English translation: Health Promoters Taking Action to Eliminate Lead Poisoning) to facilitate community outreach. The promotoras learn the proper role of nutrition, tenant rights, and develop the skills to conduct a lead home inspection and take samples of paint chips, soil, and dust. In fact, many of the promotoras are Environmental Protection Agency (EPA) certified lead sampling technicians. The promotoras meet with families in targeted communities to discuss and screen for lead poisoning.

Over time, the promotoras have continued to take on a more active role. In addition to the education and home screenings, they address the issues of code enforcement, an important first step in demanding rights, repairs, and relocation for affected tenants. Community members share a cultural understanding with the promotoras, which helps to facilitate education and dialogue about tenant rights.

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www.environmentalhealth.org/lead_poisoning.html

Dental Care

Tooth decay (dental cavities and caries) is one of the most common chronic infectious diseases for children in the United States. This preventable health problem begins early and worsens progressively with age. Seventeen percent of children between the ages of 2 and 4 years old have tooth decay. By age 8, approximately 52 percent of children have experienced decay, and by age 17, dental decay affects 78 percent of the youth population.[71]

Untreated caries can progress into infections and abscesses, leading to facial swelling, pain and discomfort. Children with serious dental problems can get to the point where their mouths hurt too much for them to eat, leading to malnutrition and stunted growth. School absenteeism due to both decay and other dental problems is estimated at 52 million hours each year.[72]

Table 7

Dental Health and Access to Dental Care for Children in the United States

	Percent of children with two or more years since last dental contact*	Unmet dental need*	Mouth and teeth in fair or poor condition**
White non-Hispanic	14.9	5.5	10.6
Black non-Hispanic	20.0	6.4	21.3
Hispanic	25.9	7.3	22.0
200% of poverty or more	14.3	4.0	9.9
Under 200% of poverty	24.1	10.2	19.5
Insured	15.8	4.8	13.7
Uninsured	35.9	15.2	22.8

* Children are ages 2 through 17

** Children are ages 2 through 18

SOURCES: Dental contact and unmet need: 2002 National Health Interview Survey.

Mouth and teeth condition: 1999-2000 National Health and Nutrition Examination Survey. Calculations by the Children's Defense Fund, 10/04.

The burden of untreated dental caries is concentrated among minority and low-income children in the United States. More Black (36 percent) and Latino children (43 percent) ages 6 to 8 have untreated dental caries than White children (26 percent) of the same age.[73] Children in low-income families are more than twice as likely as children in higher-income families to have untreated dental cavities and are 20 percent more likely not to have had a dental visit in the past year.[74]

A major factor contributing to infrequent use of dental services among low-income children with Medicaid coverage is the shortage of dentists who will treat them. Particularly in rural areas of the country, there are often times a limited number of dental providers. In other areas, few dentists are willing to treat Medicaid beneficiaries due to low provider payment rates and burdensome paperwork.[75] Fewer than one in five Medicaid-covered children visit a dentist during a given year.[76]

Approaches to Increase Dental Care and Reduce Tooth Decay

States are taking a variety of steps to improve low-income children's access to dental services, including raising Medicaid reimbursement levels to make them more comparable to commercial rates. States also are expanding efforts to educate families including those enrolled in Medicaid and CHIP about the importance of regular dental visits to prevent dental problems. In addition, states are working to establish networks and coalitions to explore state-specific solutions to dental service gaps.

In 2002, the Centers for Disease Control's Task Force on Community Preventive Services issued a report on oral health. Based on their findings, the task force recommended school-based dental sealant programs and community water fluoridation as key community strategies to prevent tooth decay. The Task Force found that these programs were particularly effective among low-income families, families without private dental care, and families who are at high risk for oral health problems.[77]

Childhood tooth decay is preventable when a combination of community, policy, professional, and individual measures are put into practice. In addition to water fluoridation and dental sealant programs, community programs must also address issues at the root of disparities in oral health care: health illiteracy and lack of awareness, apathy about preventive services, infant feeding practices, diet, language and cultural differences with providers, and lack of transportation to dental care providers.[78]

There are a number of program approaches that communities can use to address the systemic issues associated with lack of dentists, the geographic maldistribution of dentists, and the lack of minority dental professionals. Partnerships with dental schools can help introduce volunteer providers into the community; mobile clinics can serve rural areas without access; and scholarship programs and loan forgiveness initiatives can help increase the minority presence in the dental profession. Communities also have overcome the barriers to access by integrating dental services into primary medical care or other child health and education programs, including Head Start and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC).

The elements of successful community dental programs include:

- Involving the community in the planning and implementation of the program.
- Integrating dental services into primary care services.
- Integrating dental services into other children's health and education activities like Head Start or WIC.
- Creating partnerships with other community organizations or institutions.
- Creating partnerships with dental schools.
- Performing culturally sensitive outreach.
- Providing materials in the language of the community, i.e., Spanish, French, Cambodian, etc.
- Utilizing visual messaging for those who are not literate in any language.
- Instituting a school-based or school-linked pit and fissure sealant delivery program.
- Providing mobile programs for rural areas and schools.
- Offering transportation support to patients unable to get to the dentist's office or clinic.
- Offering clinic or dental office hours that are convenient for working parents.
- Stepping up recruitment and incentives for minority enrollment in dental schools.

One promising approach that exemplifies several of these elements in reducing disparities in oral care is profiled below. (Also see Appendix, page 61.)

Community DentCare Network (New York, New York)

The Columbia University School of Dental and Oral Surgery and Harlem Hospital Dental Services started the Community DentCare Network in 1996. The Network collaborates with numerous community groups and works through six school-based clinics, one mobile unit, and five community-based clinics. It serves approximately 50,000 patients each year. Each school-based clinic offers comprehensive diagnostic and preventive services to students during the day, including dental exams, cleanings, fluoride treatments, sealants, oral health education, and referrals for emergency services.

The Mobile Dental Center is fully equipped with two dental operation areas, x-ray equipment, waiting/oral health education area, and a handicapped accessible chairlift. It is staffed with a dentist, pediatric resident, dental hygienist, dental assistant, and a driver or data entry clerk. The mobile unit travels to over 45 local child care and Head Start centers throughout northern Manhattan during the school year, offering children 3-5 years old comprehensive dental care. Children requiring extensive treatment are referred to affiliated Community DentCare or Children's Aid Society dental clinics located throughout northern Manhattan. In addition to dental services, partner organizations help facilitate enrollment into Medicaid or Child Health Plus for uninsured children.

Through partnerships and collaborations, five community-based clinics provide dental services to people of all ages. As a result of the program's success, the Community DentCare Network has been recognized as a model program for 15 dental schools around the country.

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Asthma

Asthma is one of the few chronic illnesses that affects children more frequently than adults. While asthma rates have increased among all age groups in the United States, the greatest increases in prevalence have been among young children. Children from birth to age 17 are twice as likely to suffer from asthma as adults.[79] From 1980 to 1994, cases of asthma in children under the age of 5 more than doubled. Older children ages 5 to 14 also experienced substantial increases, with asthma rates nearly doubling between 1980 and 1994.[80] Today, asthma affects almost five million children and their families.

Asthma is a disorder of the respiratory system, in which the passages that enable air to pass into and out of the lungs periodically narrow, making it difficult to breathe. Asthma attacks can vary from mild to life-threatening and may involve shortness of breath, coughing, wheezing, and/or chest tightness or pain.[81] Poorly controlled asthma can result in costly emergency care and hospitalization. Children under 18 years made up 36 percent of all asthma-related outpatient visits and 38 percent of emergency department visits in 2002.[82]

Table 8

Asthma

	Percentage ever told they had asthma	
	Ages 1 to 18	**Ages 6 to 18**
All*	14.6	15.5
White non-Hispanic	13.9	14.8
Black non-Hispanic	19.2	19.7
Hispanic	13.2	14.4
200% of poverty or more	13.6	15.0
Under 200% of poverty	16.0	16.5
Insured	15.4	16.7
Uninsured	9.3	8.5

* Includes all children asked, ages 1 through 18, about asthma in interview regardless of race, income or health insurance status.

SOURCE: 1999-2000 and 2001-2002 National Health and Nutrition Examination Survey. Calculations by the Children's Defense Fund.

Although the prevalence of asthma is increasing for all children, Black and low-income children are disproportionately affected. Black children and children from poor families are not only more likely to have had asthma than White or Latino children and children from higher-income families, they also are more likely to have suffered asthma attacks.[83] Children with disabling asthma have almost twice as many restricted activity days and lost school days as children with impairments due to other types of chronic conditions.[84] Disabling asthma was 66 percent higher among Black children than among White children, and 46 percent higher among low-income children than among higher-income children.[85]

Racial and economic differences also exist in the number of hospital visits, emergency room visits, and deaths attributed to asthma. Black children under the age of five are almost three times as likely to be hospitalized for asthma as young White children. Additionally, hospital emergency department visits are four times higher for Black children under the age of 5 than they are for White children. Although the overall death rate in children with asthma is low, Black children ages 5 to 14 years of age are five times as likely to die from asthma as are White children of the same age.[86]

Race, poverty, and environmental factors are all contributors to the high number of asthma cases. For no one is the problem more severe than poor, inner-city youths. Funded by the National Institutes of Health, the National Cooperative Inner-City Asthma Study identified a number of asthma risk factors for Black, Latino, and White children in urban families including: high levels of indoor allergens, especially the cockroach allergen; high levels of tobacco smoking among family members and caretakers; and high indoor levels of nitrogen dioxide, a respiratory irritant produced by inadequately vented stoves and heating appliances.[87]

Approaches to Prevent and Manage Asthma

The lack of health insurance is a powerful barrier to appropriate asthma management, which is critically important for severe cases of asthma. Compared to similar children with health insurance, uninsured children with disabilities or chronic illness are seven times as likely to lack a regular source of health care and are almost five times as likely to lack needed medical care.[88] Access to comprehensive health care can give children the preventive treatment they need to both diagnose and control their asthma.[89]

School-based Asthma Management Programs

School-based asthma management programs are playing an important role in helping children cope with their asthma. One such program, the American Lung Association's Open Airways for Schools, empowers children to manage their asthma and potentially prevent an attack. Children ages 8 to 11 learn how to detect the warning signs of asthma and how to avoid environmental factors that can trigger an attack, such as animal hair, dust mites, smog, air pollution, and cigarette smoke. The volunteer-run program is playing a particularly vital role with disadvantaged, minority children, whose asthma often goes undetected and untreated. Approximately 18,631 schools nationwide are participating in Open Airways for Schools, reaching roughly 197,248 children. As a result of the program, parents reported taking more steps to control their child's asthma, helping to decrease hospital and emergency room visits. In New York City, for example, asthma hospitalization rates decreased by 35 percent from 1997 to 2000.

Source: American Lung Association, *Open Airways for Schools*. Retrieved from the Internet at www.lungusa.org/events/astopen.html.

Community organizations can be effective in helping to eliminate severe asthma outbreaks in children. These organizations can build upon promising approaches that other communities have used to address issues, such as lack of education about asthma prevention and inadequate cleaning of the home for children with asthma. Partnerships with local hospitals that have high emergency room rates due to asthma-related causes are ideal because intervention can help both parties. Also, collaborating with local schools and clinics is one of the most effective ways to educate families and increase awareness.

Asthma itself cannot be eliminated, but there are many things that can be done to eliminate severe asthma attacks and ensure children's healthy status, especially on a community level. Community programs are educating families to make changes within their homes and in their behaviors to improve the overall health

status of the community. Program elements and practices of successful community approaches include the following:

- Retaining ample funding sources in order to have a highly educated and dedicated staff.
- Working in partnership with different groups from the community.
- Achieving a well-balanced program through staff with a wide variety of backgrounds and training.
- Involving the community by training lay health workers to educate the surrounding population.
- Utilizing educators from the community who are familiar with culturally appropriate interventions and providing asthma management.
- Coordinating with community health centers to identify families at risk and in need of education.
- Making home visits and offering appropriate follow-up to make sure asthma practices taught in the classroom, including asthma reduction techniques, are being carried out at home.
- Evaluating asthma-reduction techniques in the home and determining their effectiveness.
- Equipping children with the tools they need to take control of their own asthma, such as educating them about medical procedures and increasing their confidence level in performing preventive tasks.
- Setting up recall systems to remind patients and families about important clinical visits.
- Creating a benchmarking system to monitor and evaluate a program's results.

The following is a promising approach that exemplifies several of these elements in reducing disparities in asthma in children. (Also see Appendix, page 67.)

Center for Pediatric Research (CPR) at Eastern Virginia Medical School (EVMS) (Norfolk, Virginia)

The CPR at EVMS is located in Norfolk, Virginia, and serves Norfolk as well as the surrounding cities in the Hampton Roads area. Because of the unusually high incidence of asthma in children throughout Hampton Roads, the CPR at EVMS primarily serves low-income populations in the Hampton Roads area, the largest percentage of which are African American.

The Center for Pediatric Research is the lead agency for the Healthy Homes for Newport News Initiative (HHNNI) and for the Consortium for Infant and Child Health (CINCH).

- *Healthy Homes for Newport News Initiative* (HHNNI) is a comprehensive home-based education and health intervention project funded by the U.S. Department of Housing and Urban Development, designed to reduce home hazards leading to injury and illness for children living in public housing communities in Newport News, Virginia. Asthmatic children from urban minority families often live in homes with multiple allergens and irritant exposures, including second-hand smoke, dust/pollen, cockroaches/pests, and mold/mildew. The target neighborhoods in Newport News contain the largest number of female-headed households, primarily African American, with the lowest median income families with children under the age of 18 in the entire city. The home environment is assessed via participant interview, visual inspection, and environmental sampling. A Community Health Ambassador (CHA) visits each enrolled home to provide asthma education, initiate and maintain support for families in our priority areas, collect and maintain reports as needed and serve as a bridge between the community and existing health professionals. HHNNI is in its first year of the three-year implementation period.

- *CINCH's Allies Against Asthma (AAA)* is a work group of CINCH that strives to improve the quality of life for children with asthma in Hampton Roads. AAA works to improve knowledge and compliance with the National Heart, Lung and Blood Institute (NHLBI) guidelines for the management of asthma care among primary providers, patients, families, schools and hospital emergency departments. AAA developed an asthma action plan that has been adopted by all seven school districts in Hampton Roads and local provider offices. AAA has implemented interventions at schools, in provider offices, and in the community at-large to increase knowledge and awareness of asthma. Although the formal evaluation of the Allies Against Asthma program will not be available until the end of 2005, initial findings suggest that the program was highly successful.

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Obesity

Obesity has not only reached epidemic proportions for adults in the United States, but also has become a health crisis facing children. The number of overweight children and teens tripled from 1980 to 2000. It is estimated that 15 percent of children and teens ages 6 to 19—almost 9 million young people—are overweight.[90] Another 15 percent are considered at risk of becoming overweight.[91] Even among preschool children between ages 2 and 5, more than 10 percent are overweight.[92]

While the prevalence of excessive weight and obesity has increased for both genders and across all racial, ethnic, and age groups, the increases have not been evenly distributed. Obesity is more prevalent in children living in lower-income households than it is in children in higher-income households.[93] From 1988 to 2000, the percentage of Black and Latino children who were overweight more than doubled while the number of overweight White children climbed by 50 percent.[94] From 1999-2000, non-Latino Black and Mexican-American adolescents ages 12 to 19 were more likely to be overweight (24 percent) than non-Latino White adolescents (13 percent).[95] Mexican-American children ages 6 to 11 were more likely to be overweight (24 percent) than non-Latino Black children (20 percent) and non-Latino White children (12 percent).[96] Non-Latino Black girls and Mexican-American boys are at particularly high risk of being overweight.

Table 9

Overweight*

	Percentage of All children ages 2 to 18			Children ages 6 to 18		
	at risk**	overweight	at risk OR overweight	at risk	overweight	at risk OR overweight
All***	14.6	14.7	29.3	15.4	15.9	31.3
White non-Hispanic	13.8	12.3	26.1	14.5	13.3	27.8
Black non-Hispanic	14.8	18.2	33.0	14.9	20.7	35.6
Hispanic	16.9	19.5	36.4	17.7	20.6	38.3
200% poverty or more	13.4	13.3	26.7	13.9	14.7	28.6
Under 200% of poverty	15.5	16.4	31.9	16.4	17.5	33.9
Insured	14.2	14.6	28.8	14.8	15.8	30.6
Uninsured	17.3	15.3	32.6	18.6	16.1	34.7

* Measured on children ages 2 through 18
** "At risk" of overweight are those children with a body mass for age (BMI) from the 85th percentile to less than the 95th percentile. "Overweight" designates those children with a BMI for age at the 95th percentile and above.
*** Includes all children measured, regardless of race, income, or insurance status.

SOURCE: 1999-2000 and 2001-2002 National Health and Nutrition Examination Survey. Calculations by the Children's Defense Fund, 10/04.

Overweight and obese children have a higher risk of heart disease, Type II diabetes, cancer, asthma, and joint problems. According to one study, almost 60 percent of overweight children ages 5 to 17 already have at least one risk factor for heart disease, such as high blood pressure or elevated insulin levels.[97] These conditions, which previously occurred only in adults, are becoming increasingly common in children and teens. Additionally, the psychological stress of social stigmatization imposed on obese children may be just as damaging as any physical problems. Children who are frequently teased can develop low self-esteem and depression.[98]

Furthermore, overweight kids tend to become overweight adults, continuing to put them at greater risk for heart disease, high blood pressure, and stroke. The probability of childhood obesity persisting into

adulthood is estimated to increase from about 20 percent at 4 years of age to roughly 80 percent by adolescence.[99] Approximately 112,000 U.S. deaths each year are associated with obesity.[100] The total direct and indirect costs attributed to excessive weight and obesity amounted to $117 billion in the year 2000.[101]

On an individual basis, the main causes of overweight and obese children are the same as those for adults—eating too much and moving around too little. According to the Centers for Disease Control and Prevention, only one-fifth (22 percent) of all U.S. children in grades 9–12 eat the recommended five or more servings of fruits and vegetables per day.[102] Physical activity can reduce the rates of excessive weight and obesity by offsetting the amount of calories consumed. However, less than half of all high school students are vigorously active on a regular basis, and 11.5 percent report no recent physical activity at all.[103] Activity levels for students are lower among minorities, with Black students in grades 9–12 less likely (54.8 percent) to participate in vigorous physical activity than Latino (59.3 percent) or White students (65.2 percent).[104]

Approaches to Preventing Obesity

While eating habits and physical activity are two direct actions that yield the positive energy balance that leads to weight gain, there are an infinite number of social, economic, cultural, psychological, biological, and political factors that shape and affect those two simple activities. A report by the Secretary of Health and Human Services and the Secretary of Education highlights the many aspects of American culture that discourage physical activity, including emphasis on cars rather than walking; unsafe community areas and playgrounds; and the appeal of television, video, and computer games.[105] The report recommends that more school-based and after-school programs, community programs, and health education programs be implemented. These can help to improve children's health status, self-esteem, and social skills and contribute to the reduction in the number of children who suffer from obesity.

Efforts must be concentrated in primary prevention. Moreover, because obesity is a condition attributed to learned behaviors, it is essential that children become the focus of interventions. Interventions with parents of very young children also can be productive. As their eating habits improve, so do the habits of their children. By assessing all of the factors that affect obesity, including culture and the neighborhood infrastructure, successful interdisciplinary programs, policies, and cultural adaptations may help curb this growing problem.

Elements of successful community obesity programs include:

- Providing convenient locations for the programs.
- Providing assistance with transportation to activities.
- Partnering with trusted and recognized institutions already in the community.
- Involving entire families in the program.
- Offering support to tribal/community leaders.
- Addressing the issues of healthy eating and physical fitness from the perspective of spirituality.
- Emphasizing group programs as opposed to programs for the individual.
- Helping programs tap into strong cultural pride and practices.
- Using culturally appropriate music and dance, such as Latin or hip-hop, to engage participants in exercise programs.
- Focusing on healthy cooking and recipes as part of education programs.

One promising approach that includes several of these elements in reducing disparities in obesity is described below. (Also see Appendix, page 74.)

Wings of America (Santa Fe, New Mexico)

Wings of America is an American Indian youth development program of The Earth Circle Foundation, Inc. established in 1988. The program utilizes the Native American tradition of running to help students become healthy, positive adults. By using traditional approaches to healthy living, the program is successful in infusing traditional practice and cultural empowerment in an activity that creates pride and responsibility for one's health.

Wings offers eight programs; all provide American Indian youth with the opportunity to train with running coaches, to compete nationally, and to take on leadership roles within the sport. While the organization does not offer scholarships, by giving these runners the opportunity to compete on a national level, the program has increased athletic scholarship opportunities. Since 1988, many of Wings runners have gone on to compete in collegiate athletics.

In addition to providing youth with an exercise outlet, the program offers a number of leadership and training programs, including the American Indian Running Coaches' Clinic, which is co-sponsored by NIKE. Training is also provided for high school and college youth interested in running camps for young children. Wings running teams have won over 17 team championships at national cross-country championship events.

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4
Common Characteristics of Community Programs

"The goal of eliminating disparities in health care by 2010 is ambitious. Yet in the 21st century, neither history nor humanity can settle for less."

David Satcher, M.D., Ph.D., U.S. Surgeon General and Assistant Secretary for Health (1998-2001)[106]

Across the six areas of children's health that have been described, the most effective community approaches for reducing health disparities in children share common themes. Community involvement is one of the most crucial elements. This means using community members as health workers, partnering with community organizations, and developing and using culturally sensitive materials. This creates for the community a feeling of ownership for the programs and their success. Accessibility to programs is also key; mobile units have been used effectively to greatly increase access. Program evaluation is also important in order to secure funding to create, maintain, and expand sustainable programs.

The common elements and lessons emerging from the promising approaches for reducing health disparities in children include:

- ***Begin with a community discussion/town hall meeting about the community's concerns and health disparities.***
  Find out what the concerns of the community are and identify approaches to address those concerns. A community discussion can help create awareness of health disparities, and the community will be best able to provide ideas on how to address those disparities. Once the community sees the health disparities as important, it will be more likely to utilize the program.

- ***Form a coalition with community members, clinicians, social workers, and health officials.***
  When developing a program, it is important to have many different kinds of people involved in a team to make sure all needs are being met. Community members are the most important part of the team because the intervention needs to address the disparities that are of greatest concern to them. Clinicians, social workers, and other healthcare practitioners should also be involved in order to find out how they can be more responsive to the community's needs. Public health officials can bring information about the health disparities, ideas for effective strategies to address them, and offer other potential resources.

- ***Use culturally sensitive materials.***
  Program success depends on whether the community is able to understand what is being taught. This includes not only translating materials into the language of the community, but also using focus groups with community members to help develop the types of information that are needed. Both literary and visual information needs to be culturally appropriate.

- ***Use community-based health workers.***
  In Latino communities, promotoras are effective in meeting the healthcare needs of children and families. Because promotoras live and work in the area, they are trusted and able to approach individuals in the community and perform home visits. They can provide information about and promote strategies to address health disparities that are directly responsive to community concerns. This same strategy can be utilized in a variety of cultural contexts.

- ***Incorporate the importance of primary preventive care visits.***
  If possible, the community programs should encourage regular primary care visits for children. Through these visits, many of the disparities could be reduced. For example, children at risk for lead poisoning could be screened when they go for their preventive care visit.

- ***Get a champion or advocate to promote the program.***
  In order to increase publicity, a champion or advocate should be found to highlight and promote the program. This person could be a local politician or media figure and could send information to the media, including television, radio, and newspapers, since visibility is key to effective outreach. This will create more awareness of both health disparities and possible strategies for addressing them.

- ***Partner with local schools, early childhood education programs, and faith communities.***
  Through partnerships in the community, healthcare programs can reach many people in one location. Local schools and early childhood education centers can collaborate in providing dental screenings and immunizations. Prenatal care and infant mortality programs may associate with churches in order to find women in need.

- ***Take programs to the children.***
  Mobile van programs bring services to rural areas, which are often under-served. They also can bring services to schools and early childhood centers, where many children can be reached in a short period of time.

- ***Undertake evaluations to ensure improved outcomes for children and achieve funding and sustainability.***
  Documenting results with well-designed evaluations can help reinforce strategies to improve health outcomes for children. They can also result in continued funding and increased program sustainability and help the program better serve the target population.

5

Recommendations to Eliminate Child Health Disparities

"Access to quality care is necessary, but not sufficient to eliminate children's health disparities. We cannot narrow the gap in health without addressing disparities in educational opportunity, employment, economic security, and housing."

Marian Wright Edelman, Founder and President of the Children's Defense Fund

Improved public health policies have contributed to the remarkable improvements in the health of our nation and are essential elements in addressing children's health disparities. We have witnessed dramatic declines in mortality from many common diseases in the early twentieth century through public health interventions and expanded and improved healthcare services.

Quality health care alone, however, cannot prevent children from being poisoned by lead paint in deteriorating homes or developing asthma from fumes emitted by inadequately vented stoves. Disparities in children's health reflect the inequities in social and economic well-being of children and their families. In 2004, 13 million American children, more than one in six, lived in families with an annual cash income below the government poverty level. In that year, 33.6 percent of Black children, 28.9 percent of Latino, 10 percent of Asian children, and 10.5 percent of White children were poor.[107] The racial gaps in the poverty rate testify to generations of social injustice that have created a system of unequal access to many sectors of American life, including education, housing, employment, financial institutions, and criminal justice.

Improvements in health have been achieved in conjunction with public policies that have enhanced economic and social environments for a large portion of the U.S. population. Recent gains in health for the U.S. population reflect achievements among the higher socioeconomic groups with lower groups continuing to lag behind.[108] The health status of low-income children continues to trail that of more affluent children, despite major investments in public health insurance.[109] In general, population groups that suffer the worst health status are those that have the highest poverty rates and least education.[110]

Practices to reduce health disparities must be implemented together with public policies that address broader social issues that lie at the root of these disparities. The health of populations is influenced by many factors outside the community itself, including social and economic factors and policies beyond the health arena. In its landmark publication, *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*, the Institute of Medicine stated that, "A broad and intensive strategy to address socioeconomic inequality, concentrated poverty in many racial and ethnic minority communities, inequitable and segregated housing and education facilities, individual behavior risk factors, as well as disparate access to and use of healthcare services is needed to seriously address racial and ethnic disparities in health status."[111] Strategies for reducing disparities in health outcomes must therefore include policies that focus on broader forces affecting community conditions.

A sustained campaign that promotes legislative, regulatory, educational and administrative reform will be required to eliminate racial and ethnic disparities in American health care. It must be shaped by an action plan with wide involvement from government, the private healthcare sector, professional medical and healthcare organizations and providers, academic medical centers, and community-based and minority advocacy organizations.[112] A combination of approaches that address individual, family, community, and societal factors has the best chance to change people's behavior and to sustain those behavioral changes over time.[113] Multiple steps on multiple fronts must be taken to prevent health disparities.

In a framework developed by the Prevention Institute, a non-profit organization dedicated to improving community health and well-being through primary prevention, the spectrum of prevention includes six levels of intervention. Each of these levels is applicable to the prevention of health disparities. They include: strengthening individual knowledge and skills, promoting community education, educating providers, fostering coalitions and networks, changing organizational practices, and influencing policy and legislation (see Table 10). These strategies are directed at improving health behaviors and access to quality care, and strengthening community conditions that influence health outcomes.

Table 10

The Spectrum of Prevention

Level of Spectrum	Definition of Level
Influencing Policy and Legislation	Developing strategies to change laws and policies to influence outcomes
Changing Organizational Practices	Adopting regulations and shaping norms to improve health and safety
Fostering Coalitions and Networks	Bringing together groups and individuals for broader goals and greater impact
Educating Providers	Informing provider who will transmit skills and knowledge to others
Promoting Community Education	Reaching groups of people with information and resources to promote health and safety
Strengthening Individual Knowledge and Skills	Enhancing an individual's capability of preventing injury or illness and promoting safety

Larry Cohen, Rachel Davis, and Leslie Mikkelsen, "Comprehensive Prevention: Improving Health Outcomes through Practice," *Minority Health Today* Vol. 1 (March/April 2000): 38-41.

Specific recommendations for reducing health disparities in children and promoting healthy outcomes can be clustered under several of these prevention strategies. They include the following:

Strengthening Individual Knowledge and Skills

Enabling with the knowledge, motivation, and skills to adopt healthy behaviors.

- Advance broad public awareness of health disparities through public education campaigns that target the general public as well as specific neighborhoods and populations experiencing disproportionate adverse health outcomes.

- Increase individual knowledge of how to best access care, ask the appropriate questions during clinical encounters, and encourage individuals to participate in treatment decisions.

- Incorporate media efforts with community networks, such as faith institutions, workplaces, schools, and neighborhood associations for effective outreach campaigns on how to navigate the healthcare system.

- Increase individual knowledge about and address the broader social inequities underlying health disparities, such as poverty, education, employment, and housing.

Strengthening Community Capacity

Fostering community conditions most conducive to healthy behaviors through capacity building.

- Understand and address the role of race, ethnicity, and economic segregation in building healthy communities.

- Promote greater racial and economic integration of marginalized communities to create more equitable allocation of public resources.

- Incorporate community-building practices into the delivery of health services and broader community improvement efforts.

- Develop diverse, community-based coalitions to increase capacity of individuals, organizations, and communities to leverage resources and promote effective policies and actions to reduce health disparities.

- Build a constituency to promote and sustain change by investing in community organizing, social capital development, and political participation in improving community conditions conducive to good health.

- Promote social cohesion and connections within a community that will help foster support that is associated with the higher likelihood of making and maintaining positive health changes and addressing disparities.

- Use health impact assessments to identify health effects of broader policies from a wide range of sectors, including business, transportation, and economic development, on community health outcomes.

Improving Access and Quality of Care

Delivering the most appropriate health services to reflect individual and population characteristics and community conditions.

Community Health Programs

- Determine priorities for needed services through community-driven health assessments, including participation of community residents, to assess challenges and identify the organizations and support that represent community assets.

- Engage and employ lay community members to bridge cultural gaps and provide one-to-one outreach by including them in identifying key audiences, enrolling residents in programs, assisting residents in navigation of the community healthcare system, and serving as health educators.

- Integrate culturally competent practices into the delivery of services beyond the ability of providers to speak the resident's language, such as knowledge of the cultural norms, lifestyle, beliefs, and values of the population being served.

- Develop and maintain a broad-based network for the coordination and promotion of a continuum of disease-specific resources within a community, outside of the specific services offered by any one program.

- Invest significant time and resources in cultivating and reinforcing links with community providers (e.g., physicians, hospitals, clinics) and policy makers.

- Promote leadership development to foster growth and retention within the community-based organization that operates the health program(s).

- Actively engage in policy and advocacy roles to focus attention on specific concerns and promote changes in policies and laws that affect community health outcomes.

Healthcare Institutions

- Integrate cross-cultural education into the education and training of current and future healthcare professionals to increase awareness of disparities in the delivery of care and improve skills in treating patients from diverse backgrounds.

- Reflect the appropriate level of health literacy, language proficiency, and cultural norms for the populations being served in all key health information—including health education materials, pre- and post-procedure instruction, and informed-consent forms.

- Make workforce diversity a priority by hiring minorities throughout all levels of organizations.

- Encourage and strengthen programs that advance minority healthcare leadership and influence within institutions.

- Involve community representatives in the healthcare organization's planning and quality improvement meetings and in discussions about the delivery of services, either formally or informally.

- Allow providers flexibility in managing time with patients so that providers can adjust time to the most appropriate amount needed to educate each patient on specific health conditions, improve patient-physician communication, and address cultural and/or linguistic barriers.

- Collect, track, and report data on healthcare access, utilization, and health outcomes by patients' race, ethnicity, socioeconomic status and primary language to monitor and improve the quality of care delivered to all populations, including those that have experienced inequities in care.

- Develop evidence-based guidelines to help providers and health plans determine the most appropriate medical decisions about which treatment or services to provide based on the best available science.

Promoting Effective State and Federal Policies

- Ensure that the necessary public policies are in place to prevent and ameliorate child health disparities.
- Ensure healthcare coverage is available to every child through employer-based insurance or comprehensive public health programs, such as the State Children's Health Insurance Program (CHIP) and Medicaid.
- Provide appropriate reimbursements for public health programs so that a stable payment system can support an adequate supply of providers to care comprehensively for children with a wide variety of needs.
- Require health plans to provide broad, comprehensive coverage of children's health services, including immunizations, early screenings and other preventive health care, and specialized health and mental health screenings for children with disabilities.
- Strengthen safety net services, such as expansion of community health and mental health centers in under-served communities, and promote the use of alternative interventions, such as mobile clinics and in-home services, to reach hard-to-serve children and families.
- Require culturally competent training for healthcare professionals and other service providers, including school and child care personnel.
- Promote health workforce diversity initiatives to increase the number of racial and ethnic minorities in health professions, academia, government, and private health institutions.
- Encourage and strengthen programs that advance minority healthcare leadership in order to develop a cadre of professionals who may assume influential roles in reducing health disparities.
- Improve data collection, tracking, and analysis by expanding resources, obtaining current prevalence data, developing a coordinated information system, collecting and analyzing community level data, and developing uniform guidelines in diagnosis and treatment.
- Establish standardized performance indictors in measuring quality of health care and setting minimum standards for patient care.
- Enforce laws that prohibit discrimination in the assessment of health needs and the delivery of health care.
- Ensure coordination and collaboration among health, education, child welfare, mental health, and other social service agencies that are charged with meeting children's needs.

6 Conclusion

The continuing disproportionate burden of illness and death experienced by minority and low-income children remains a major obstacle to improving the nation's health. At the individual level, the personal cost of disparities can lead to significant morbidity, disability, and loss of income. At the societal level, the cost of expensive and avoidable complications resulting from the aggregated lack of preventive care, missed diagnoses, poorly managed care, and untreated conditions translates into billions lost in healthcare dollars and diminished productivity.

Studies have shown that preventive health care, such as prenatal care, newborn screening, and immunization, not only saves lives and improves health, but also saves money. One such study calculated that for every $1 spent vaccinating children against measles, mumps, and rubella, $16 is saved in medical costs to treat those illnesses.[114] Thus, prevention is not only cost-effective, but also part of a systematic and multi-dimensional approach to addressing and eliminating health disparities for children.

The potential impact of these disparities becomes even more profound when the projected growth of racial and ethnic minority populations is taken into account. Racial and ethnic minorities make up nearly one-third of the U.S. population, and that percentage is expected to grow. Minority children comprise 40 percent of the population under age 18.[115] Leading employers are recognizing that developing strategies to eliminate health disparities makes good business sense, considering that members of minority groups make up 41.5 percent of those entering the workforce between 1998 and 2008.[116]

Effective approaches to reducing and eliminating disparities require a deeper understanding of the ways that underlying social and environmental factors act as determinants of health and illness. Factors such as environmental contaminants, unsafe living conditions, lower socioeconomic status, and lack of access to medical care all contribute to increased rates of illness and generally poorer health outcomes. Addressing these factors through preventive care and effective community-based programs can help eliminate health disparities before they occur.

The health of communities is influenced by many factors beyond the individual, including social and economic factors, and policies beyond the public health arena. Effective strategies must simultaneously address individual behavior change and broader forces affecting community conditions. Overcoming health disparities will require sustained multi-dimensional efforts over many years that include addressing employment, poverty, education, housing, child welfare, and community development. Because of the long lasting impact of childhood conditions, our success in reducing health disparities among children will be key to improving the health of all children and the nation as a whole.

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APPENDIX:
Resources, Community Programs, and Selected Readings

The following is a list of organizations and selected readings that may be helpful to those seeking to learn more about disparities in health care and community programs designed to address them. Also listed here are descriptions of the community programs that CDF examined in the process of compiling this report.

A. Infant Mortality and Prenatal Care

Resources

1. The National Women's Health Information Center
   www.4woman.gov/faq/prenatal.htm
2. American Academy of Pediatrics
   www.aap.org
3. March of Dimes
   www.marchofdimes.com
4. African American Health Program
   www.onehealthylife.org

Community Programs

1. ***Community Voice, South Central Perinatal Council***

   Location: Lynchburg, Virginia

   Purpose: To raise awareness of racial disparities that exist surrounding infant mortality and to provide basic perinatal health information to community residents.

   Target Population: African Americans

   Structure: Community Voice began in 2000 to raise awareness and teach infant death reduction strategies through the training of Lay Health Advisors and town hall meetings. It partners with organizations in the community, including churches and community centers. Funding for the program is provided primarily by the March of Dimes.

   Services and Outreach: Community Voice offers classes to community residents on perinatal health topics, including SIDS, folic acid, pre-term labor, the importance of prenatal care, and substance use. Once trained, community members become Lay Health Advisors and teach other community members about these same perinatal care issues. They deliver health information at town meetings where they raise awareness, address issues, find solutions, and eliminate barriers.

Community Voice has developed a curriculum based on the Social Cognitive Theory entitled, "Taking It to the People," and a consumer handout called "Black Babies Are Dying." Both can be purchased on their Web site for use in training other communities. Lay Health Advisors are trained to "Think LIFE." LIFE is an acronym for:

Lay babies on their backs to sleep.
Increase your knowledge of pre-term labor.
Folic Acid taken everyday before and during the early months of pregnancy helps reduce the risk of neural tube defects.
Encourage early and regular prenatal care.

Key Practices:
- Train Lay Health Advisors.
- Partner with community organizations, such as child care centers and churches.

Notable Outcomes:
- Over 130 Lay Health Advisors trained
- Expansion to other cities (Danville, Virginia) and replication of the program or materials in other cities (Martinsville, Virginia; Charlottesville, Virginia; Nashville, Tennessee)
- Increased community awareness with over 3,500 community contacts
- Decreased African American infant mortality rates (African American infant mortality rates in Lynchburg, Virginia, decreased from a rate of 29.4 in 1999 to a rate of 5.5 in 2003.)

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2. *Missouri Bootheel Healthy Start*

Location: Sikeston, Missouri, and the five county areas of Scott, New Madrid, Mississippi, Pemiscot, and Dunklin counties

Purpose: To reduce infant mortality rate, low-birthweight births, and racial/economic disparities in death rates in the five-county project area.

Target Population: Low-income, minority families with high risk factors for poor birth outcomes

Structure: Started in 1997, the Missouri Bootheel Healthy Start program has a broad range of educational materials, including videos, brochures, pamphlets and billboards. Educational information is developed by committees, including residents, which makes the information more effective. In 2003 the program transitioned from primarily providing educational services to providing case management services.

Services and Outreach: Case managers and outreach specialists provide education in classroom settings and through one-on-one, in-home visits. They educate pregnant women on proper prenatal care, child development, and the importance of a healthy lifestyle. Case managers and outreach specialists focus on education for parenting skills, pregnancy topics, nutrition, breastfeeding, and a host of other health-related topics.

Community-based education is achieved through brochures, videos, pamphlets, and billboard campaigns. A Fatherhood First program is available, which teaches fathers job readiness skills, life skills, anger management, and how to develop healthy relationships with their children and families.

Key Practices:

- Use outreach specialists/case managers that are indigenous to the community.
- Use one-on-one case management, providing clients with individualized attention needed to provide education and training.
- Use community-based volunteers of the Regional Consortium and Local Councils to create partnerships throughout the region and sustain the legacy of healthy babies, strong families, and empowered communities.

Notable Outcomes: Bootheel Healthy Start was created eight years ago. Since that time, the program has served thousands of people through education, billboard campaigns, and national conferences. A national conference targeting fathers has been held six out of the last seven years. The program has received congressional awards for the consumer friendliness of its educational materials and outreach methods. The Regional Consortium has become a catalyst for a regionally coordinated approach to the problem of infant mortality and other public health concerns. Missouri Bootheel Healthy Start Regional Consortium applied for and received its 501(c)(3) status in 2003. The incorporation transition placed Missouri Bootheel Healthy Start Regional Consortium in a unique and well-qualified position to be the direct grantee for Healthy Start funds. The main purpose of this transition was to form a strong community-based organization to serve as the MBHS project grantee allowing the Regional Consortium to seek funding that will enhance MBHS services while attending to other critical needs of the Bootheel. Missouri Bootheel Healthy Start is now a program of the new organization, Missouri Bootheel Regional Consortium, Inc.

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3. *Black Babies SMILE (Start More Infants Living Equally Healthy), African American Health Program*

Location: Montgomery County, Maryland

Purpose: To increase the number of African American women of childbearing age who receive information on healthy lifestyle choices before, during, and after pregnancy.

Target Population: African American women who reside in Montgomery County, Maryland

Structure: The Black Babies SMILE program is a division of the African American Health Program. The program was developed in 1999 when a town hall community meeting was held to discuss disparities in the community. The program offers free services and is administered by The People's Community Baptist Church. The focus is divided into education before pregnancy, nurse management during pregnancy, and campaigns to keep infants safe after pregnancy. The program partners with clinicians' offices and early childhood programs, such as Healthy Start, to recruit high-risk mothers, although most women are enrolled through word of mouth.

Services and Outreach: The Nurse Case Management Program was developed to improve maternal health and prevent perinatal deaths. The case managers visit women who are pregnant or have recently given birth. At home visits, they monitor weight gain, blood pressure, and offer in-home oral HIV testing. They encourage early prenatal care and help women seek social support. The frequency of visits can range from more than once a week to once a month. Follow-up, which may last until the child is 1 year old, includes home visits and phone contact. Breastfeeding is encouraged, and mothers who choose to do so may participate in their free breast pump loan program.

There are also prenatal and Baby Basics classes offered locally. Healthy Lifestyles classes are offered at local high schools to encourage a focus on preconception health. The program has partnered with local housing communities where classes on healthy lifestyles are also offered.

Key Practices:
- Offer in-home nursing services.
- Provide case management.
- Partner with the community, including churches, schools, housing communities, and Healthy Start.
- Provide community education.

Notable Outcomes: In 2004, the program was able to hire a second case manager, allowing them the capacity to work with 100 mothers and 60 newborns per year.

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4. *Health Link Program, Rowan County (North Carolina) Health Department*

Location: Rowan County, North Carolina

Purpose: To increase the health and well-being of children from birth to age 5 in the African American community.

Target Population: Children and families living in predominantly low-income African American communities

Structure: Health Link was established in 1998. Paid staff (health educator and a community outreach worker) provide one-on-one intensive support to families. Prenatal care education areas include child safety (SIDS prevention), breastfeeding, hazards of second-hand smoke and smoking cessation resources, folic acid, and child car safety seat education. Education and outreach workers also provide school readiness and parenting support.

Services and Outreach: Staff meet one-on-one, focusing on the entire family's needs to link them with resources to improve their health. Health Link provides free transportation for their clients to medical appointments. They contract with a local taxi company to provide transportation to those types of appointments not covered under Medicaid transportation benefits.

Key Practices:
- Utilize one-on-one support model, focusing on the needs of individual families.
- Offer transportation support for families experiencing barriers in access to care.
- Partner with community organizations, including schools, transportation companies, and local church youth groups.

Notable Outcomes: The Health Link program has had many individual successes and has maintained a continued presence in the community since it began.

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5. *Bridge to the Future, Nurses for Newborns Foundation*

Location: All hospitals with neonatal units in St. Louis, Missouri, and 29 surrounding Missouri counties. Also in Nashville, Tennessee, and 24 surrounding Tennessee counties

Purpose: To reduce infant mortality rates, prevent unnecessary emergency room visits, prevent repeat hospitalizations, prevent child abuse, and connect families to a medical home.

Target Population: Focuses on indigent families with "medically fragile" infants. Medically fragile includes premature, low-birthweight, drug or alcohol exposure, and some other conditions that affect infants.

Structure: Nurses provide free in-home visits to medically fragile infants who have limited access to health care. They provide health care, education, and positive parenting skills.

Services and Outreach: Nurses provide intensive parent education, access to community resources, safe home assessments, medical assessments, diapers, formula, and 24-hour on-call availability for a two-year period. Nurses also carry a cellular phone with them in order to assist patients in making physician appointments.

Key Practices:
- Offer in-home nursing services for medically fragile infants.
- Provide case management including coordinating the care of a family with many agencies and community resources.
- Provide individualized parenting skills and education.

Notable Outcomes: In 2002, 97 percent of those enrolled had no reports of child abuse or neglect; 91 percent had current immunizations; 96 percent had no unnecessary ER visits; 100 percent had no preventable hospitalizations; and 100 percent had a medical home. In 2003, there were 2,681 visits to 639 families, with 98 families being evaluated.

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B. Immunizations

Resources

1. Centers for Disease Control and Prevention – National Immunization Program
   www.cdc.gov/nip
2. Immunization Action Coalition
   www.immunize.org
3. Vaccines for Children Program
   www.cdc.gov/nip/vfc/
4. Every Child by Two
   www.ecbt.org

Community Programs

1. ***AFIX***

   Location: AFIX (Assessment, Feedback, Incentive, and Exchange) is operated through the offices of immunization providers because the focus of AFIX is on improving the delivery of recommended vaccines.

   Purpose: AFIX is a quality improvement strategy implemented by state and local immunization programs across the country. The Centers for Disease Control and Prevention's National Immunization Program provides guidance and technical assistance to the state and local immunization programs on how to implement AFIX in public and private immunization provider offices and clinics within their jurisdictions.

   Target Population: The state and local immunization programs that coordinate AFIX identify t he target population, but immunization providers are the primary recipients of AFIX activities.

   Structure: AFIX is a quality improvement strategy to raise immunization coverage levels and improve standards of practices at the provider level. The acronym for this four-part strategy stands for:

   Assessment of immunization coverage of public and private providers
   Feedback of diagnostic information to improve service delivery
   Incentives to recognize and reward improved performance
   e**X**change of information among providers

   Services and Outreach: The assessment and feedback portion of the AFIX process focuses on identifying areas of improvement in administering immunizations and how to assist the staff in improving the identified area. The data help determine provider performance and act as a catalyst to improve and maintain coverage levels. An assessment of performance enables providers to determine how well they are doing through systematic, routine examination of client records. The data collected through these assessments can be used to diagnose potential problems relating to service delivery and office policies.

Information gathered through the AFIX process is conveyed to clinic providers and their staff who subsequently develop their own solutions to improve coverage. Incentives include awards for sites with the highest levels of immunizations, and presentations by successful clinics at annual immunization meetings. Other successful strategies include coordinating with the Women, Infants, and Children (WIC) program, conducting reminder/recall phone activities, and providing performance feedback to nursing staff.

Key Practices:

- Implement feedback strategies to improve vaccination rates, which can influence provider practices in other preventive services such as anemia and lead screening.
- Focus on quality improvement and providing assessment for providers.
- Allow providers and staff to develop ways to boost low immunization rates, giving the community a chance to provide feedback.

Notable Outcomes: Practices issued by the National Vaccine Advisory Committee (NVAC) as well as the Advisory Committee on Immunization Practices (ACIP) endorsed the AFIX process and recommended its use by all public and private providers. In a private sector study of pediatric practices conducted by the CDC and the American Academy of Pediatrics, the median up-to-date coverage for the 4:3:1 series, which includes four doses of Diphtheria, Tetanus and Pertussis (DTaP), three doses of Polio, and one dose of Measles, Mumps and Rubella (MMR) at 24 months of age, increased from 78 to 87 percent in one year. Similar improvements were seen over a five-year period in community and migrant health centers that participated in a continuous quality improvement initiative. Health Centers in 10 states increased their levels for the 4:3:1 immunization series from 54 to 84 percent between 1996 and 2000.

The benefits and results of the AFIX process have been documented in several journal articles. Three articles of interest can be found on the following Web site:
http://www.cdc.gov/nip/afix/ImmunizProjs/pubs.htm

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www.cdc.gov/nip/afix/default.htm

2. *Chinatown Medical Services, Adolescent Chinese Hepatitis B Project*

Location: Philadelphia, Pennsylvania

Purpose: The Chinatown Medical Services (CMS, formerly Chinatown Pediatric Services) Adolescent Hepatitis B Project provides Hepatitis B awareness, education, vaccination, and screening opportunities to Philadelphia's Chinese community. The project operates in the heart of Philadelphia Chinatown, amidst a rapidly growing and diverse Chinese immigrant community.

Target Population: Participants in the program are all Chinese adolescents between the ages of 14 and 18.

Structure: Collaboration with the Fox Chase Cancer Center has enabled screening of adolescents seen at CMS. In the first year, the project detected a 10 percent Hepatitis B positive rate among the Chinese adolescent community. The CMS Hepatitis B Project is conducted in participation with the National Task Force on Hepatitis B Immunization, the Philadelphia Department of Public Health's Vaccine for Children Program, Fox Chase Cancer Center Research Center, Holy Redeemer Catholic School, South Philadelphia High School, and the Asian American Health Care Consortium of Philadelphia.

Services and Outreach: In the first year of the project, CMS provided bilingual (Chinese and English) school-based workshops on Hepatitis B at a local school and began working with the schools to identify immunization-delayed Chinese adolescents. CMS also, upon request, will visit area schools to educate teenagers regarding Hepatitis B. Free immunizations, provided by the Jefferson Chinatown Vaccination Project, are available for children who have no health insurance.

Key Practices:
- Provide the highest quality primary health services to the children of Chinatown and surrounding areas.
- Provide culturally sensitive and language appropriate health care.
- Speak English, Chinese (Cantonese and Mandarin), and Vietnamese.

Notable Outcomes: Between April 1, 2002 and October 10, 2002, CMS enrolled a total of 102 participants (restricted enrollment due to funding restraints). There were a total of 17 HbsAg positive patients out of the 97, which means 17 percent of participants had the Hepatitis B surface antigen marker of infectivity. They also found 12 out of 88 were HBsAb non-reactive, even though they had documented 3x HBV vaccines. These patients were called back to receive more shots.

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3. *Hazleton Immunization Clinic*

Location: Hazleton, Pennsylvania

Purpose: The purpose of this program is to increase immunization rates among the Hispanic/migrant population in Luzerne County. The main goals of the project are to decrease vaccine-preventable disease rates and to increase access to health care for this population.

Target Population: Hispanic and migrant children, ages 0 to 18 years old, in Luzerne County, Pennsylvania

Structure: Partners of this project include Christ Lutheran Church of Hazleton, the Northeast Migrant Education Program, and Hazleton Area School Districts. Immunization and health clinics are held in accessible community buildings, such as churches or local schools. Community agencies and members are able to refer children to the clinics in order to serve those who are urgently in need of care.

Services and Outreach: The program holds regular free immunization clinics for children and families in community churches. There are many immigrant families that have either not had their immunizations or who do not have records. At the clinics, an interpreter is available to aid in the information process. Before every clinic date, reminders written in the person's native language are sent out.

The outreach workers consist of two informal leaders in the community, an ophthalmologist and his wife. They are strong leaders of Hispanic descent who help newly arriving immigrants find the services they need.

A key outreach method involves sending out reminders and recall appointment notices, written in the native language, before each clinic date. The immunization clinics are held in community buildings, making them easily accessible to all members of the community.

Key Practices:
- Partner with the Department of Health.
- Create private and public partnerships.
- Use outreach workers.
- Develop culturally sensitive materials.
- Use reminder/recall system.

Notable Outcomes: The clinic recently found a new home at Christ Lutheran Church of Hazelton, after previously having to temporarily relocate to the Luzerne County State Health Center in Wilkes-Barre. Nevertheless, the Clinic has been successful in seeing approximately 25 clients per month.

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4. *National Immunization Program, Vaccines for Children's Program*

Location: The program spans the country with over 45,000 provider sites, including public health clinics, community health clinics, hospitals, and private providers.

Purpose: The National Immunization Program provides national guidance relative to vaccine preventable disease in children, adolescents, and adults. The Vaccines for Children (VFC) Program is an integral component of the National Immunization Program because it provides vaccines to children who are generally eligible for Medicaid in their home state. The goals of the program are to ensure children are receiving vaccines as a part of routine care, supporting the reintegration of vaccinations and primary care. The program strives to enhance access to vaccines in the physician's office and through local healthcare providers instead of only at federally qualified health centers or rural health centers.

Target Population: VFC provides government-funded vaccines to four categories of eligible children:

- Medicaid eligible children
- Children without health insurance
- American Indians and Alaskan Natives
- Children with health insurance, but whose insurance does not cover the cost of vaccines (These children must receive their shots at a federally qualified health center or rural health clinic.)

Structure: VFC was legislated by Congress in 1993 as part of the Omnibus Budget Reconciliation Act of 1993 and became active on October 1, 1994. The VFC Program is structured similarly in all grantee/state locations, because VFC legislation dictates administrative requirements for program participation. There are variations from state to state relative to how programs distribute vaccine, but the program is fairly standard in how vaccinations are delivered to eligible children.

Services and Outreach: The VFC program provides publicly purchased vaccines for use by all participating providers. The vaccines are administered to eligible children with no cost to the provider or the parent. There are currently over 45,000 provider sites throughout the United States, including public health clinics, community health clinics, hospitals, and private providers. All grantees/states have outreach mechanisms that are part of the program's core components and differ from grantee to grantee.

Key Practices:

- Decrease referrals to public health departments, thus, improving the continuity of care and promoting the "medical home" concept.
- Increase immunization rates and reduce delays in immunizations, subsequently, lowing the risk of serious illness or death from vaccine-preventable diseases.
- Ensure that all eligible children receive the benefits of newly recommended vaccines, thus strengthening immunity levels in their communities.
- Ensure that access to newly recommended vaccines for children in low-income and uninsured families does not lag behind that for children in middle- and upper-income families.

Notable Outcomes: In 2002, the VFC program served about 41 percent of children. In 2003, the CDC awarded $975 million in VFC funds to state, local, and territorial public health agencies for program operations and the purchase of vaccines.

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National Immunization Program Public Inquiries
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Atlanta, GA 30333

CDC Information Contact Center
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NIPINFO@cdc.gov
http://www.cdc/nip

5. *Spanish Language Infant Immunization Public Service Campaign*

Location: The campaign has conducted focus groups in 15 to 20 different cities throughout the United States within the last 10 years.

Purpose: To increase the health literacy of the Hispanic and Latino communities across the country and address disparities, the project develops and produces culturally relevant and language appropriate immunization messages and media products targeted to Spanish-speaking parents of children under the age of 2.

Target Population: The focus groups and the campaign are intended to target the Hispanic and Latino communities across the country, preferably those with young children.

Structure: The program focuses attention on the problem of under-immunization of Hispanic children by increasing awareness among Hispanic parents of the importance of childhood immunizations and provides information to Hispanic parents about the benefits of immunizations. Development of campaign materials is conducted through focus groups, which are organized by a private social marketing company. The information gained from the focus groups is then developed into culturally and linguistically appropriate materials.

Services and Outreach: The campaign elements include television, radio, and printed public service announcements, video and radio news releases, posters, brochures, videos, and materials for providers' offices and clinics. The CDC also offers a free hotline for parents and community members to contact in Spanish, where all information is confidential.

The focus groups coordinated by the social marketing company reach out to members of the community in order to determine the correct and appropriate means for targeting the Hispanic and Latino communities. Once materials are printed in the culturally correct context, they are distributed throughout the Hispanic and Latino communities.

Key Practices:

- Create media coverage that is not simply translated from English into Spanish, but is culturally appropriate.
- Conduct focus groups from the community to address issues such as cultural dress, food, interaction between family members, and other questions in order to present the most comprehensive and culturally relevant information.
- Ensure that the information is creatively presented, on target, and real to the audience.

Notable Outcomes: Since 1995, the campaign has received more than $300 million in donated Spanish media. It also received more than 27 million impressions in 2002 and increased calls to its Spanish-language hotline. The program attributes 60 to 70 percent of calls to the hotline to the materials generated from the campaign.

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6. *Vaccine Education Center*

Location: The Vaccine Education Center is a national and international program located within the Children's Hospital of Philadelphia (CHOP). Materials and information can be obtained on the Center's Web site or by contacting the Center by email, fax, phone, or mail.

Purpose: The Vaccine Education Center seeks to dispel some of the common misconceptions and misinformation surrounding childhood vaccines. The goal is to communicate the facts about each vaccine as well as how vaccines are made, how and why vaccines work, who recommends them, whether they are safe, whether they are still necessary, and when they should be given.

Target Population: The Web site and materials are targeted towards parents, but are primarily distributed through healthcare professionals across the nation as well as abroad. The materials are designed to address the concerns of parents and patients across cultures.

Structure: The Center is an educational resource program that began in the fall of 2000 to provide information about vaccines and the diseases they prevent. Funding is provided by the Henle Chair for Immunological and Infectious Diseases and the Mabel Freeman Endowed Fund in Infectious Diseases, both from the Children's Hospital of Philadelphia and Kohl's Department Stores. Previous donors include Toys R Us Children's Fund, The Josiah Macy, Jr. Foundation, The Oxford Foundation, the Emily Koenig Memorial Fund, and the Centers for Disease Control and Prevention, Department of Health and Human Services.

Services and Outreach: The Center provides materials primarily to healthcare professionals across the nation as well as abroad. The materials are provided to healthcare professionals free of charge in limited quantities, but are designed to address parents and patients; all of the materials are available in English and Spanish. Anyone can download the informational sheets ("The Facts About Childhood Vaccines, Influenza: What You Should Know," and "Meningococcus: What You Should Know") from the Web site and can view the Center's videos, such as "Vaccines and Your Baby: Separating Fact from Fear," on the site (vaccine.chop.edu). They also have a same-titled booklet that can accompany or be independent of the "Vaccines and Your Baby" video. The Center also has a program, called Parents PACK, designed to communicate directly with parents. The program includes a monthly email newsletter for parents and a Web site (vaccine.chop.edu/parents) with information from various immunization colleagues, age-specific sections with related immunization issues, frequently asked questions and "contact us" sections for vaccine-related questions, and personal stories from families who have experienced vaccine-preventable diseases. The Center also has an email newsletter and annual symposium for healthcare professionals, holds town meetings for parents, and provides speakers nationally and internationally for vaccine-related issues.

The Vaccine Education Center has performed outreach activities to all 50 states and the District of Columbia as well as in U.S. territories and in more than 20 other countries. Their database contains contact information for over 24,000 healthcare professionals, including pediatricians, family practitioners, OB/GYNs, public health colleagues, and others.

Key Practices:

- Provide accurate, comprehensive and up-to-date information about childhood vaccines and preventable diseases to parents and healthcare professionals.
- Help providers bridge the gap for parents between misinformation about immunizations and raising healthy children—an important goal for the Center.

Notable Outcomes: Since the fall of 2000, the Vaccine Education Center has distributed the following quantities of materials:

Literature

- The Facts About Childhood Vaccines (fact sheet)
  - In English – over 4.35 million since 9/00
  - In Spanish – over 1.1 million since 9/01
- Vaccines and Your Baby (booklet)
  - In English – over 110,000 since 11/02
  - In Spanish – over 11,500 since 1/03
- Influenza: What You Should Know (fact sheet)
  - In English – over 1 million since 8/04
  - In Spanish – over 416,000 since 8/04
- Meningococcus: What You Should Know (fact sheet)
  - In English – over 1.1 million since 2/05
  - In Spanish – over 437,500 since 2/05

Videos and DVDs

- Vaccines: Separating Fact from Fear (video)
  - In English – over 64,000 since 4/01
  - In Spanish – about 5,000 since 1/03
- Vaccines and Your Baby (video)
  - In English – over 85,000 since 11/02
  - In Spanish – about 6,500 since 1/03
- Vaccines and Your Baby (DVD)
  - Bilingual – about 8,000 since 3/04

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C. Lead Poisoning

Resources

1. The Department of Housing and Urban Development (HUD), Homes and Communities Program
   http://www.hud.gov/offices/lead/outreach/communityoutreach.cfm
2. Environmental Health Coalition
   www.environmentalhealth.org
3. Children's Environmental Health Network
   www.cehn.org

4. Environmental Protection Agency
   www.epa.gov

5. Centers for Disease Control
   www.cdc.gov/nceh/lead/research/kidsBLL.htm

Community Programs

1. ***Environmental Health Coalition: Campaign to Eliminate Childhood Lead Poisoning (CeCLP)***

   Location: National City, California

   Purpose: To provide education to at-risk families and assist parents in getting their children tested for lead poisoning. Additionally, CeCLP maintains a lead-safe home registry on their Web site where potential renters/buyers can find out the lead-safe status of a pre-1978 unit within the city of San Diego.

   Target Population: CeCLP focuses on families residing in high-risk neighborhoods, which tend to be predominantly Latino families. According to the Environmental Health Coalition, 84 percent of children reported to have elevated blood levels in San Diego County are Latino.

   Structure: The high-risk neighborhoods are determined by looking at potential sources of lead including deteriorated lead-based paint, leaded pottery, and leaded dust and soil. The high percentage of Latino children affected by lead poisoning is due in part to their socioeconomic status, but it should also be noted that clay bean pots from Mexico, popular among the Latino community, are a common source of lead.

   CeCLP is a division of the Environmental Health Coalition (EHC). EHC is a private, non-profit organization founded in 1980 that provides technical and organizing assistance to populations in San Diego and Tijuana, Mexico, that are adversely affected by toxic chemicals. EHC operates four distinct campaigns to achieve this goal: the Border Environmental Justice Campaign, the Clean Bay Campaign, the Community Assistance Program, and CeCLP.

   Services and Outreach: CeCLP relies on the work of its community Lead-SALTA promotoras (Health Promoters Taking Action to Eliminate Lead Poisoning). The promotoras learn the proper role of nutrition, tenant rights, and develop the skills to conduct a home lead inspection and take samples of paint chips, soil, and dust. In fact, many of the promotoras are Environmental Protection Agency (EPA) certified lead sampling technicians.

   The promotoras meet with families in targeted communities to discuss and screen for lead poisoning. Community members share a cultural understanding with the promotoras, which helps to facilitate education and dialogue about tenant rights.

   Key Practices:
   - Use promotoras in community education and mobilization.
   - Provide materials in Spanish and English.
   - Address the problem from both a community and policy level.
   - Conduct home inspections and lead samplings.

Notable Outcomes: The promotoras have continued to take on a more active role. In addition to the education and home screenings, they address the issues of code enforcement, an important first step in demanding rights, repairs, and relocation for affected tenants.

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www.environmentalhealth.org/lead_poisoning.html

2. *Montefiore Medical Center Lead Poisoning Prevention Program*

Location: Bronx, New York

Purpose: To treat lead-poisoned children and their families and educate families at risk, other medical providers, and legislators in New York.

Target Population: Children who currently have lead poisoning and families at risk in New York

Structure: Begun in 1972, the Montefiore Medical Center Lead Poisoning Prevention Program addresses all aspects of childhood lead poisoning from diagnosis and treatment to education and research. The program provides environmental and social services support and distributes educational materials, publications, and reports.

Services and Outreach: The Montefiore lead staff operate a specialty lead clinic, run training programs, hold an annual conference, conduct workshops, give lectures, write articles, testify at hearings, sit on the CDC Committee for Lead Poisoning Guidelines, and conduct research.

Key Practices:
- Provide state-of-the-art clinical diagnosis, treatment, and management.
- Offer temporary housing in the Lead Safe House to patients' families while their homes are being made lead-safe.
- Educate New York healthcare providers and families at risk for lead poisoning.
- Engage in health policy advocacy.

Notable Outcomes: More than 1,000 children are seen in the out-patient lead clinic every year or are hospitalized for in-patient treatment, and, between 1991 and 2002, 270 families with 690 children stayed in the Lead Safe House while their homes were being de-leaded. In 1993, in recognition of its comprehensive, multidisciplinary approach to lead poisoning, the Montefiore Lead Program was named a New York State Regional Resource Center for Lead Poisoning Prevention.

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3. *Sixteenth Street Community Health Center, Department of Environmental Health*

Location: Milwaukee, Wisconsin

Purpose: To improve the health and well-being of Milwaukee's Near South Side residents by providing quality, family-based health care, health education and social services, free from linguistic, cultural and economic barriers.

Target Population: The target population includes the residents who live in the low-income multicultural neighborhood that surrounds the clinic. Half of the clinic's clients are under age 12, and the patient population is 75 percent Hispanic, 13 percent White, 7 percent Southeast Asian, 3 percent African American, and 2 percent Native American or Middle Eastern.

Structure: The Sixteenth Street Community Health Center has a Department of Environmental Health that focuses on advocacy, education, housing, and economic development activities. The Department of Environmental Health works collaboratively with municipal, state, and federal agencies to gather information about environmental conditions that affect the neighborhood. It has assembled a complete demographic and socioeconomic profile of the neighborhood as well as information on air and water quality and solid/hazardous waste sites within the community. The Department also works in partnership with other locally based organizations, the school system, and the private sector to provide education and services about environmental health issues to community residents.

Services and Outreach: Community-based outreach workers make door-to-door visits in targeted areas based on population density and numbers of young children. Children under age 6 are tested for lead poisoning, a home assessment for lead paint hazards is conducted, and education is provided to the family on how to avoid lead exposure. Appropriate referrals and follow-up visits have given families the tools they need to manage lead exposure to their children. Project workers also make presentations to schools and child care sites.

Key Practices:
- Partner with local organizations, school system, and private sector
- Provide home assessments and education
- Provide lead poisoning prevention brochures in English, Spanish, and Hmong

Notable Outcomes: In 1999, more than 80 percent of the children tested for a second time through this project did not show an increase in their blood lead level.

Contact Information:
Sixteenth Street Community Health Center, Department of Environmental Health
1337 S. Cesar E. Chavez Drive
Milwaukee, WI 53204
414-672-1353
www.sschc.org

4. *Office of Healthy Homes and Lead Hazard Control, U.S. Department of Housing and Urban Development*

Location: Nationwide

Purpose: To provide grants for lead hazard control and research programs as well as develop educational materials to help every child and family in America have a hazard-free housing environment.

Target Population: All families and children who do not live in a healthy housing environment

Structure: The Office of Healthy Homes and Lead Hazard Control offers an in-depth Web site with information about how to know if your home is healthy, listing state contacts for lead poisoning prevention, fact sheets, brochures, and posters.

Services and Outreach: At the federal level, outreach is provided via the information available on the Web site and through the National Lead Safe Clearinghouse (1-800-424-LEAD). There are fact sheets, brochures, and posters. The Web site also provides a link to state contacts for lead prevention poisoning. The office provides community education and outreach support for individuals and states, with materials available in several languages.

Key Practices:
- Web site available in English and Spanish
- Web-based brochures available in Laotian, Cambodian, and Hmong
- Directory of state contacts for lead prevention poisoning

Notable Outcomes: Reduction in lead poisoned children

Contact Information:
U.S. Department of Housing and Urban Development
451 7th Street, SW
Washington, DC 20410
202-708-1112
www.hud.gov/offices/lead

5. *Childhood Lead Screening and Prevention Programs, Rhode Island Department of Health*

Location: Throughout Rhode Island

Purpose: To enhance blood lead screening rates of children under 6 years of age.

Target Population: Children under 6 years of age who reside in Rhode Island

Structure: Rhode Island has a comprehensive plan to ensure children are screened for lead. Three specific lead screening efforts are detailed below.

1. **KIDSNET** is the state's integrated child health information system that links pediatric public health programs to each other and to healthcare providers and contains records of children born since January 1, 1997. KIDSNET's database houses lead screening data and serves as the tool to identify children screened *and* unscreened for lead poisoning.

2. **Managed care organizations** have partnered with the Lead Program to compile a list of children who have not been screened for lead according to their claims' data. The primary care provider is contacted for follow-up. The Lead Program matches the data and provides technical assistance, while the managed care organization receives lists of unscreened children, contacts the primary care provider, and reports outcomes.

3. **Screening the underinsured and uninsured.** Compliance with lead screening is required as documentation for school entry, regardless of insurance status. The Lead Program supports two pediatric clinics that provide no-cost lead screening to children under 72 months of age who are uninsured or underinsured.

Services and Outreach:

- KIDSNET's data are used to:
    - Calculate the statewide lead screening rate, using KIDSNET's population as a denominator.
    - Generate mailing addresses to reach parents to remind them to test their 18-month-old children.
    - Offer participating pediatric providers the ability to run on-demand reports of unscreened children in their practice, by different categories.
- Twice a year, children enrolled in participating managed care organizations who are 24 to 26 months of age and have no record of being screened for lead are identified. The list of children is sent to the Department of Health and electronically matched against its lead poisoning surveillance database. For children who have not had a screening, the managed care organization contacts the child's primary care provider and determines whether the child has been screened. If the child has not, the physician's office is asked to follow up. When the children are 28 to 30 months old, a list is made to see how many have been screened as a result of this intervention. The proportion of 24-month-old children who are screened for lead is calculated annually and used as a requirement that managed care organizations must meet for compliance with the Medicaid agency contract.
- No-cost lead screening is offered throughout the year to all children under age 6 who are uninsured or underinsured. This helps young children meet the school entry requirement in a timely manner while their families get established in the state and obtain medical insurance.

Key Practices:

- Partner with state health department's child registry (KIDSNET)
- Partner with managed care organizations
- Communicate with child's primary care provider
- Monitor children who have not been screened

Notable Outcomes:

- Using data from KIDSNET and the Lead Elimination Surveillance System (LESS) in Rhode Island, 75 percent of 18-month-old children are screened for lead poisoning at least once. This is one of the highest lead screening rates in the nation.
- In the spring of 2005, 82.4 percent of 24-month-old children enrolled in managed care organizations that provide insurance for the Medicaid population were screened for lead at least once by that age.
- Hundreds of children under age 6 every year receive no-cost lead screening tests at two clinics supported by the Lead Program.

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D. Dental Care

Resources

1. American Academy of Pediatric Dentists
   www.aapd.org
2. American Dental Association
   www.ada.org
3. Children's Dental Health Project
   www.cdhp.org
4. Hispanic Dental Association (HDA)
   www.hdassoc.org
5. National Maternal and Child Oral Health Resource Center
   www.mchoralhealth.org
6. The Center for Health and Health Care in Schools
   www.healthinschools.org

Community Programs

1. ***Community DentCare Network, Columbia University School of Dental and Oral Surgery***

Location: Northern Manhattan, New York

Purpose: To ensure that northern Manhattan's low-income, under-served and uninsured residents have access to comprehensive, affordable, and quality dental care.

Target Population: Children, adults, and senior citizens in need of affordable dental care in northern Manhattan

Structure: The Community DentCare Network was started in 1996 by the Columbia University School of Dental and Oral Surgery and Harlem Hospital Dental Services. The program collaborates with numerous community groups and works through six school-based clinics, one mobile unit, and five community-based clinics. It serves approximately 50,000 patients per year.

Services and Outreach: Each school-based clinic offers comprehensive diagnostic and preventive services to students during the day, including dental exams, cleanings, fluoride treatment, sealants, oral health education, and referrals for emergency services.

The Mobile Dental Center is fully equipped with two dental operation areas, x-ray equipment, waiting/oral health education area, and a handicapped accessible chairlift. The Mobile Dental Center is staffed with either a dentist, pediatric resident, dental hygienist, or dental assistant, and a driver. The Center travels to over 45 local day care and Head Start centers throughout northern Manhattan during the school year, offering children 3 to 5 years old comprehensive dental care. Children requiring extensive treatment are referred to affiliated Community DentCare or Children's Aid Society dental clinics located throughout northern Manhattan. In addition to the dental services, partner organizations help facilitate enrollment into Medicaid or Child Health Plus for uninsured children.

Through partnerships and collaborations, five community-based clinics provide dental services to people of all ages.

Key Practices:
- Partner with local public schools, community-based health clinics, and dental schools.
- Operate mobile unit to reach under-served.
- Integrate dental services into Head Start and child care centers.

Notable Outcomes: The Community DentCare Network is a model program for 15 dental schools around the country.

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http://communitydentcare.columbia.edu

2. *Kids in Need of Dentistry (KIND)*

Location: Denver, Colorado, and surrounding areas

Purpose: To provide quality, comprehensive dental care to children up to the age of 18 from families with marginal incomes.

Target Population: Impoverished children in the Denver and surrounding areas, including children with limited access to dental care because of economic and cultural barriers

Structure: The KIND program was started in 1912 and the Mobile Dental Clinic (Miles for Smiles program) was added in 1999. KIND provides mobile services through two different programs. The Mobile Dental Clinic provides services to children in rural and under-served urban communities in Colorado. Most services are provided during a single visit to prevent requiring parents to take additional time from work.

The Chopper Topper program has portable dental office equipment that travels to schools to provide free dental screenings and preventive sealants on site in order to prevent future tooth decay. Volunteer dentists, dental assistants, hygienists, and staff provide services.

Services and Outreach: The Mobile Dental Clinic offers comprehensive dental services, especially in the rural areas outside of Denver. The mobile van also travels to awareness activities, such as health fairs, school education programs, and conferences.

The Chopper Topper program offers free dental screenings and sealants by using a mobile van that travels to local schools. KIND also offers outreach programs that provide education and screenings at local schools and Head Start centers.

Key Practices:

- Integrate dental services into other children's health activities, including Head Start.
- Partner with other community organizations.
- Operate school-based programs.
- Provide mobile programs for rural areas.
- Accommodate working parents' schedules.

Notable Outcomes: KIND is the first access program in the country to earn the endorsement of the American Dental Association. In addition, it is one of only two charities in the country to have been endorsed by the American Academy of Pediatric Dentistry.

Contact Information:
Kids in Need of Dentistry
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Denver, Colorado 80210
303-733-3710
1-877-544-KIND
info@kindsmiles.org

3. *Access to Baby and Child Dentistry (ABCD)*

Location: Washington State (in 23 out of 39 counties)

Purpose: To increase access to preventive and restorative dental care for Medicaid-eligible children from birth to age 6 and ultimately to decrease oral disease rates.

Target Population: Medicaid-eligible children from birth to age 6, with a focus on enrollment into the program by the age of 1

Structure: ABCD is a state-wide partnership of Washington Dental Service Foundation, the state Medical Assistance Administration, the University of Washington School of Dentistry (Pediatric Department), local health departments, and dental societies.

Dental providers are offered training by the University of Washington in early pediatric dental techniques, which allows them to receive enhanced Medicaid reimbursements. Dentists learn about using the lap-to-lap examination procedure (which allows the child to lie between the parent's and dentist's laps to feel more comfortable) and preventive therapies such as fluoride varnish. Dental offices also receive sensitivity training and often have multilingual staff and materials available to reduce cultural barriers. Local dental societies encourage their members to become ABCD providers.

The Washington Dental Service Foundation provides three-year start-up grants to ABCD programs in Washington along with technical assistance to achieve long-term program sustainability and program evaluation.

Services and Outreach:
Local health jurisdictions identify and enroll families, and provide case management and program promotion. Health jurisdictions often partner with community programs such as WIC, Head Start, and the United Way to assist with outreach and client referral.

In addition to referring children to ABCD programs, Head Start is a strong promoter of oral health, and many programs use the Cavity Free Kids curriculum. This curriculum was developed by the Washington Dental Service Foundation to help teachers, parents, and children learn about the importance of dental disease prevention. More than 80 percent of Head Start programs in the state have been trained, and 63 percent of those programs have implemented the Cavity Free Kids curriculum in their classrooms.

Private dental practices provide services to Medicaid-enrolled children younger than age 6. Dental services provided in a typical ABCD visit include a periodic oral examination and family oral health education, along with fluoride varnish application and restorative procedures if necessary. Client families are given counseling aimed at reducing the number of no-shows, increasing home care compliance, and promoting prevention. Parents are encouraged to bring their child in for their first dental visit by their first birthday.

To address older children from low-income and minority backgrounds, Dental Camp was developed by the University of Washington and Washington Dental Service Foundation. Its goal is to expose at-risk middle school children to the importance of oral health and dental careers. Through fun, hands-on activities, students take a dental IQ test, make dental impressions, and "fill" teeth with wax. The camp has reached more than 400 children in the last three years.

Key Practices:

- Partner with statewide and community organizations, such as Head Start.
- Increase Medicaid reimbursements for providers.
- Provide parental education about importance of oral health preventive care.
- Offer oral health preventive and restorative services.

Notable Outcomes:

Access to care

- In Washington, counties with ABCD programs have:
  - Low no-show rates (from <1.0 to 8.9 percent)
  - Increased utilization rate from 22 percent in 1997 to 34 percent in 2004
  - Increased utilization of dental services among children under 2 years: 3.2 percent in 1997 to 13 percent in 2004
- Parent survey results comparing baseline (2000) with follow-up (2003):
  - The percentage of ABCD children that had seen a dentist at least once a year increased substantially from the baseline to follow-up surveys: from 35 to 94 percent.
  - The percentage of parents who rated their children's oral health as "excellent" in 2003 was nearly twice as high as in 2000 (49 percent versus 25 percent).
- Dentist survey results (2003):
  - Nearly 80 percent of ABCD dentists rated their experiences with the program as "excellent" or "good," and they were more likely than non-ABCD dentists to emphasize their willingness to treat young Medicaid-insured patients.

Recognition

- 2005: The W.K. Kellogg Foundation named the ABCD program as one of three national innovative oral health models. Oral Health America gave ABCD an "A" grade in its report titled "A for Effort."
- 2003: Winner of the "Heroes of Health Care" award for collaboration from the Washington Health Foundation
- 2000: ABCD named a "best practice" by the American Academy of Pediatric Dentistry

- The ABCD program has been cited in the *American Journal of Public Health, Journal of the American Dental Association,* and *Public Health Reports* as a successful community-based program addressing children's oral health disparities.

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4. ***SMILEmobile/Community Dentistry and Oral Disease Prevention, Dentistry at the University of Rochester, Eastman Dental Center***

Location: Rochester, New York

Purpose: To provide preventive and basic dental care services primarily for under-served children in the inner-city Rochester area and surrounding rural communities.

Target Population: Under-served and socioeconomically disadvantaged children in the inner-city Rochester area and surrounding rural communities. They include 14 elementary schools in Rochester, seven Head Start programs, and three rural clinics.

Structure: Services are provided in three ways: through a SMILEmobile mobile oral health van, permanent satellite clinics in inner-city schools, and community health centers.

Services and Outreach: The SMILEmobile Dental Health Program parks next to host inner-city schools for six to eight weeks, providing services to the students, including a complete oral examination, x-rays, cleaning, fluoride treatment, sealants, fillings, stainless steel crowns and referrals for specialty services if needed.

Four permanent satellite clinics located in inner-city schools and community health centers in Rochester and the surrounding counties offer the same services as the mobile clinic. The satellite clinics are fully staffed and provide services to students and other area Head Start and school-age children.

Key Practices:
- Integrate dental services into other health activities, such as Head Start.
- Maintain a diverse workforce dedicated to rendering culturally competent care.
- Establish community-based collaboration with the school district, state and county health departments, Head Start, and community dentists.
- Recruit dental residents to work in rural areas.
- Operate mobile programs for inner city and rural communities.
- Perform community outreach activities including visits to classrooms, develop age appropriate curriculum, and participate in health fairs.

Notable outcomes:
- Decreased community dental health disparities through regular, accessible, affordable and convenient dental services
- Community awareness of acute and chronic oral health conditions

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5. *Tooth Tutor Dental Access Program, Vermont Department of Health, Office of Oral Health*

Location: 120 elementary schools in Vermont

Purpose: The intent of the Tooth Tutor Dental Access Program is to put most of its resources toward children who do not have a dentist. The goal of this program is to promote a dental intervention program that will increase the number of children receiving oral preventive services and routine care in a dental office.

Target Population: The target population is children who either don't have a dentist, their last dental visit was over a year ago, or no information was provided on the school health history.

Structure: School districts that consider dental health and access to care to be a priority can use the Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) reinvestment money to hire a dental hygienist or other health professional to carry out the Tooth Tutor Dental Access Program. The dental hygienist is the liaison between the children and the community dentist and also provides education. Currently, funding is provided by EPSDT and a three-year Robert Wood Johnson Foundation grant.

Services and Outreach: The first goal of the program is to encourage students in grades 1-6 to participate in the Fluoride Mouthrinse Program. This is encouraged only if the students are drinking non-fluorinated water. The Department of Health provides training and supplies free of charge.

The second goal of the program is to establish rapport with the local community dentists by explaining the Tooth Tutor Program. The targeted group may need assistance in locating a dental home. The dental hygienist introduces him/herself to area dentists and their offices to facilitate obtaining appointments for children. As a result of the visual exam, the dental hygienist is able to provide information about the student's dental status and whether a preventive, restorative or emergency appointment is needed.

A paper screening of the children will determine which students do not have a dental home. Information for the paper screening is obtained ideally from the student's school health history. Targeted children are those without a dentist, those who have not seen a dentist in the last year, or those who have provided no information. A dental fact sheet, *Something to Smile About,* is sent to parents to provide information about regular check-ups, fluoride, and sealants.

The last component is the Tooth Tutor classroom dental health education program for grades K-6. The Vermont Department of Health provides the Tooth Tutor Curriculum and all supplies. The supplies include a canvas tooth tote, videos, a large tooth model and demo toothbrush, a storybook for the kindergarten level, toothbrushes for first grade, floss for third grade, a mouth guard sample for fifth grade, and lesson plans for all levels including transparencies, experiments, and parent information.

Key Practices:

- Use classroom dental health education to promote good oral health habits.
- Establish relationships with community dentists.
- Provide support to find children a dental home.

Notable Outcomes: Vermont has 120 schools participating, which is approximately 50 percent of its elementary schools. In the 2004-2005 school year, 79 percent of the students had a dental home in September, but this number increased to 94 percent by June. One-half of these children needed only preventive dental care.

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802-863-7341
rmacdon@vdh.state.vt.us

E. Asthma

Resources

1. American Lung Association
   www.lungusa.com
2. Asthma and Schools
   www.asthmaandschools.org
3. U.S. Environmental Protection Agency
   www.epa.gov/asthma
4. Keep Kids Healthy – Child Asthma Center
   www.keepkidshealthy.com/asthma

Community Programs

1. ***The Minority Asthma Partnership Coalition, Arthur Ashe Institute for Urban Health***

   Location: Located in SUNY Downstate University Medical Center in Brooklyn, New York

   Purpose: The Minority Asthma Partnership Coalition's slogan is "Act Against Asthma." Their main goal is to provide education on prevention and treatment to the surrounding communities with high rates of asthma incidences.

   Target Population: Led by the Arthur Ashe Institute for Urban Health (AAIUH), the coalition delivers outreach, education, and disease management services to asthmatics in three under-served areas of Brooklyn—Bedford Stuyvesant/Crown Heights, Flatbush/East Flatbush and East New York. The coalition selected these neighborhoods because of their disproportionate high prevalence and incidence rates of asthma, hospitalizations, and deaths. African Americans are the largest minority population in this area, followed by Caribbean immigrants and the Latino population.

   Structure: In an effort to treat and prevent asthma through community coalition building, AAIUH and 20 community partners were awarded a three-year grant from the New York State Department of Health. The grant was awarded to fund the Minority Partnership Asthma Coalition. Partnerships within the community included local schools, faith-based organizations, personal care establishments, and libraries.

Services and Outreach: The Minority Asthma Partnership Coalition coordinates programs and services oriented towards educating children with asthma and produces materials including a resource guide. The resource guide is targeted toward children and aims to educate them on asthma-related topics. Utilizing the Brooklyn library, one of the community partners in the coalition, The Minority Asthma Partnership Coalition, held a "Read Aloud" event with children from the community and a player from the New York Knicks who also has asthma. The goals of the event were to promote asthma education through encouraging children to talk about their asthma problems, get them to read information about asthma, and learn how to detect an asthma attack.

Key Practices:

- Work in partnership with different groups from the community to help further the cause of The Minority Asthma Partnership Coalition.
- Involve a wide range of organizations working with the target population to assist in advertising for events, in finding locations to hold events, and securing funding for educational programs and materials.

Notable Outcomes: Information not available.

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2. *Palmetto Health Baptist Columbia Asthma Collaborative*

Location: Columbia, North Carolina, and surrounding communities

Purpose: The purpose of the programs, Open Airways and Camp EZ Breathin', is to promote asthma education to surrounding communities while helping support those children who already have asthma. This support includes helping the children become self-sufficient in controlling their own asthma attacks.

Target Population: Indignant children living in the area, as well as minority and low-income children

Structure: Introduced at Palmetto Health Baptist Columbia in 1996, the Asthma Collaborative was part of a nationwide focus on improving asthma care. Today, Palmetto Health continues in partnership with the American Lung Association to support the Open Airways program and Camp EZ Breathin'.

Services and Outreach: Open Airways is a school-based asthma-centered educational program for elementary school-age children. The American Lung Association supplies the materials for Open Airways. The program is administered through school nurses in collaboration with Palmetto Health Children's Hospital. The nurses assist the hospital in encouraging children to attend Camp EZ Breathin' every year.

Camp EZ Breathin' is a several day residential camp held each summer for children in the Midlands who have respiratory disorders. Palmetto Health also provides a pediatric asthma support group managed through Palmetto Health Children's Hospital outpatient center. The program serves indigent children ages 6 to 14 years old. The camp is two to three days in length and has been both a day camp and an overnight camp in past years. The camp provides a chance for these children to learn how to control their asthma while offering a fun-filled camping experience they otherwise would not have because of their economic situation.

The children are split into two age groups, 6- to 10-year-olds and 10- to 14-year-olds. In addition to participating in normal camp activities such as swimming, hiking, and white-water rafting, the children have lessons in asthma prevention and treatment. At the end of their camping experience, children are expected to know the names of all their medications, how to administer the medications, and demonstrate their peak flows and graphs.

Key Practices:

- Teach children to manage and control their asthma themselves, creating self-sufficiency and confidence.
- Utilize a creative and fun way to learn about health practices.
- Partner with several organizations, including hospitals, schools, and the American Lung Association.

Notable Outcomes: The program has no defined statistical analysis of the success of the camps, but the number of children attending grows each year.

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3. *Center for Pediatric Research (CPR) at Eastern Virginia Medical School (EVMS)*

Location: Norfolk, Virginia, and surrounding cities in the Hampton Roads area

Purpose: Because of the unusually high incidence of asthma in children throughout Hampton Roads, the CPR at EVMS is actively working with the community to improve the lives of these children.

Target Population: Programs serve primarily low-income populations in the Hampton Roads area in which the largest percentage of residents are African American.

Structure: The Center for Pediatric Research is the lead agency for the Healthy Homes for Newport News Initiative (HHNNI) and for the Consortium for Infant and Child Health (CINCH). Allies Against Asthma is a work group of CINCH that strives to improve the quality of life for children with asthma in Hampton Roads.

Healthy Homes for Newport News Initiative (HHNNI) is a comprehensive home-based education and health intervention project, funded by the U.S. Department of Housing and Urban Development, designed to reduce home hazards leading to injury and illness for children living in public housing communities in Newport News, Virginia. Asthmatic children from urban minority families often live in homes with multiple allergens and irritant exposures, including second-hand smoke, dust/pollen, cockroaches/pests, and mold/mildew. The target neighborhoods in Newport News contain the largest number of female-headed households, primarily African American, with the lowest median income families with children under the age of 18 in the entire city. The home environment is assessed by participant interview, visual inspection, and environmental sampling. A Community Health Ambassador (CHA) visits each enrolled home to provide asthma education, initiate and maintain support for families in our priority areas, collect and maintain reports as needed, and serve as a bridge between the community and existing health professionals.

CINCH's Allies Against Asthma (AAA) Work Group works to improve knowledge and compliance with NHLBI guidelines for the management of asthma care among primary providers, patients, families, schools, and hospital emergency departments. AAA developed an asthma action plan that has been adopted by all seven school districts in Hampton Roads and local provider offices. AAA has implemented interventions at schools, in provider offices, and in the community at-large to increase knowledge and awareness of asthma.

Key Practices:
- Sustain adequate funding sources to retain highly educated and dedicated staff.
- Maintain a staff that has a wide variety of backgrounds and training to achieve a well-balanced program.
- Involve the community through training lay health workers to educate the priority population.

Notable Outcomes: Although the formal evaluation of the Allies Against Asthma program will not be available until the end of 2005, initial findings suggest that the program was highly successful. HHNNI is in its first year of the three-year implementation period.

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4. ***Community-Based Childhood Asthma Management Project***

Location: Waianae Coast Comprehensive Health Center (WCCHC) located in Waianae, Hawaii

Purpose: Waianae has among the highest asthma prevalence in Hawaii, especially in its Native Hawaiian pediatric population. By providing a community-based asthma management program, the program seeks to reduce inappropriate medical utilization and improve the quality of life in their pediatric asthma population. They also aim to decrease WCCHC's Emergency Department Pediatric asthma utilization rates.

Target Population: Native Hawaiian children from birth to 18 years of age

Structure: Over a period of three years, 88 children with asthma participated in the community-based asthma management program. During this time, an automated asthma tracking system was developed. The WCCHC established a standard system of care based on the National Asthma Education and Prevention Program Expert Panel Report Guidelines for the Diagnosis and Management of Asthma (NAEPP Asthma Guidelines) adapted for cultural sensitivity. A coordinated team care approach was implemented in the asthma management program.

Services and Outreach: Community health workers who are specially trained in asthma management provide comprehensive asthma education in a culturally appropriate manner to pediatric asthma patients. Patients are seen in the clinic, home or office, and each visit (with an average of 2-4 visits) is documented in their medical chart.

Key Practices:
- Use educators from the community who are familiar with culturally appropriate interventions.
- Help create healthy communities by ensuring adequate infrastructure and resources.
- Believe other healthcare institutions also may be positively affected by the development of multidisciplinary team-implemented, culturally adapted, and scientifically based disease management programs.
- Complete an evaluation that proves the benefits of the program.

Notable Outcomes: Among 40 individuals served by the program, there was a significant decrease in both per capita expenditures and asthma-related visits after the community health worker (CHW) intervention. Average per capita charges decreased from $735 to $181. Emergency Department (ED) visits decreased from 60 to 10. Overall asthma-related visits decreased from 1.5 to 0.25 per person after the initial CHW encounter.

These results were replicated during the 2000-2001 intervention period where average per capita charges decreased from $310 to $129 and ED encounters dropped from 32 to 10 after the first CHW encounter. In addition, the number of high emergency room utilizers, defined as those presenting to the ED two or more times for asthma-related diagnoses, sharply decreased from 176 in 1998 to only 16 in 2001. Quality of life improved, with 72 percent fewer nighttime and 96 percent fewer daytime symptoms reported after CHW intervention during the pilot study.

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5. *Childhood Asthma Initiative (CAI)*

Location: New York and Washington, D.C.

Purpose: To improve access to health care and facilitate the provision of comprehensive and quality asthma care for thousands of medically under-served children and families.

Target Population: The program targets three subgroups within the medically indigent population—homeless families served by the New York Children's Health Project; residents of low-income housing utilizing the South Bronx Center for Children and Families in New York; and housing project residents served by the D.C. Children's Health Project in the Anacostia section of Washington, D.C.

Structure: Since its founding in 1987, the Children's Health Fund has been dedicated to meeting the complex and challenging healthcare needs of under-served children. In December 1997 the Children's Health Fund launched the Childhood Asthma Initiative with private funding. The multi-disciplinary model espoused by the initiative consists of three integrated components: quality clinical care for asthma patients, community education regarding asthma diagnosis, treatment and prevention, and attention to the psychosocial impact of the illness. The aim of these three components is to reduce the medical, educational, and psychological risk factors for this chronic disease.

The New York Children's Health Project (NYCHP) and the South Bronx Health Center for Children and Families (SBHCCF) are affiliated with the Children's Hospital at Montefiore Medical Center. The D.C. Children's Health Project is affiliated with the Children's National Medical Center. The association of these programs with an academic medical center is a vital element of the Children's Health Fund's healthcare delivery model, as it allows the organizations to attract high quality professional staff and ensures access to sub-specialty and other hospital services. Access to continuous primary care and capacity for specialty referral is particularly important for the medically under-served as many other aspects of their lives are characterized by ever-present instability. The programs of the Children's Health Fund represent a model of healthcare stability for the most medically needy children and families.

Services and Outreach: A hallmark of the clinical component of the Childhood Asthma Initiative is the documentation of asthma severity indicators at every well child visit. Asthma is one of the leading diagnoses in the pediatric population and a significant cause of pediatric hospitalizations. Thus, the Childhood Asthma Initiative recognizes the importance of consistent documentation of asthma severity during the primary care encounter. Patients receive an initial asthma assessment and additional periodic evaluations of their asthma status at four-month intervals. Pediatric providers follow the guidelines for asthma management outlined by the National Heart, Lung and Blood Institute of the NIH. Another innovative aspect of the New York CAI programs is the availability of allergy testing in the primary care setting. Patients of the NYCHP and the SBHCCF who have persistent asthma are tested by their primary care physician for common allergens known to adversely affect the respiratory status of the most medically fragile asthma patients.

Community Education: The Childhood Asthma Initiative has intensified outreach to parents, health and child care providers, and other adults in the South Bronx in order to reinforce the need for creating an asthma friendly community through educational asthma workshops. In addition, asthma education is also available to students in elementary through high schools to increase awareness and knowledge about asthma. Children have increased their knowledge about asthma by as much as 62 percent. The Children's Health Fund CAI Family Asthma Guide, a low-literacy,

bilingual education resource, has been a valuable tool in both the clinical and community education settings, helping to create the link between the two components. Increasing awareness and encouraging communication between the patient and the primary care provider has produced very positive results for CAI.

In addition, psychosocial services are available for families of asthma patients, who often experience the anxiety and depression that accompanies chronic illness. This stress can interfere with the family's ability to effectively manage the child's illness. Psychosocial services assist families in dealing with the external and innate psychological stressors that impede effective asthma management. Patients have access to on-call services 24 hours a day, seven days a week.

Key Practices:

- Develop and support programs that provide continuous and consistent quality health care within the challenging environment in which these families live
- Provide comprehensive asthma management, including allergy testing in the primary care setting
- Do outreach to children with asthma and their family members through educational activities in shelters, schools, and other community settings
- Provide support to children and families for the psychosocial stressors that negatively impact asthma management

Notable Outcomes: The latest review of the New York program reveals that hospitalization decreased from 29 percent of asthma patients for the 12 months before initial assessment to 2 percent of patients for the period prior to follow-up assessment. Emergency department use declined from 61 percent of patients during the year prior to initial assessment to 19 percent of patients for the period prior to follow-up assessment.

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F. Obesity

Resources

1. American Obesity Association
   www.obesity.org
2. USDA Food and Nutrition Information Center
   www.nal.usda.gov/fnic
3. Center for Weight and Health – University of California, Berkeley
   http://nature.berkeley.edu/cwh
4. Action for Healthy Kids
   www.actionforhealthykids.org

Community Programs

1. ***Coronary Artery Risk Detection in Appalachian Communities (CARDIAC)***

   Location: West Virginia

   Purpose: To raise awareness of cardiovascular disease (CVD) and diabetes risk factors among the population. The goal is to help achieve West Virginia's Healthy People 2010 objective of decreasing mortality from heart disease to less than 200 per 100,000 people (baseline 323.5 in 1998).

   Specific aims include providing an opportunity for West Virginia's health science students to learn concepts of health promotion/disease prevention at the local community level and partner with state government, secondary and higher education, and the private sector to reverse the obesity epidemic in West Virginia.

   Target Population: The target population is all 5th grade students and their families in West Virginia. A kindergarten project has been implemented in four counties, while several counties have a high school teen focus.

   Structure: Facilitated by West Virginia University, this project is a partnership between the West Virginia Department of Education and the West Virginia Rural Health Education Partnership (WVRHEP), a component of higher education in West Virginia. This program expanded statewide in 2003.

   Services and Outreach: The Coronary Artery Risk Detection in Appalachian Communities (CARDIAC) program utilizes a traditional population-based approach through its work in the schools and community, and a high-risk individualized approach directed toward those relatively few families who have a strong genetic predisposition to premature heart disease. Children and parents are eligible to have heart disease risk factor screenings, which include a family history of heart disease and diabetes, and measurements for body mass index, blood pressure, and blood cholesterol. By screening 10,000 children per year, the program identifies children who have blood cholesterol levels above 200 mg, in which case they offer to screen the entire family free of charge. Providing these families proper treatment can dramatically lower morbidity and mortality over a short time period.

   The project has three components: surveillance, interventions, and NIH and CDC sponsored research. The interventions consist of Healthy Hearts, a Web-based instructional module for 5th and 6th graders about healthy lifestyles; CARDIAC Family Fun (healthy food preparation, "putting health back into 4-H") in partnership with the Cooperative Extension Service; and West Virginia

Health Care Providers on the Move, a pilot project assisting practitioners in promoting walking and good nutrition for their patients.

Key Practices:

- Use preventive methods such as screening for cholesterol, hypertension, and obesity.
- Utilize a population-based approach through its work in the schools and community.
- Use an individualized approach to identify those relatively few families who have a strong genetic predisposition to premature heart disease.
- Screen the entire family to identify adults at risk by virtue of their children's risk status (also called cascade screening).

Notable Outcomes: As of 2005, 31,658 children have participated in the CARDIAC program. Among the program's findings are that 27.7 percent of children screened are overweight (Body Mass Index [BMI] over 95th percentile), almost twice the national average; 13.5 percent are hypertensive; 13 percent have elevated cholesterol levels; and 31.3 percent have an abnormal fasting lipid profile (characterized by high LDL, low HDL, or elevated triglyceride levels). Approximately 5 percent of children tested have clinical evidence of hyperinsulinemia, a known precursor for Type II diabetes. In terms of parental screening, 58 percent of mothers and 76.5 percent of fathers tested had abnormal lipid profiles.

CARDIAC has identified BMI, itself indicative of obesity, as the single most important heart disease risk factor. Other risk factors tend to cluster around this indicator. Through its school-based screening model, they have also found that a small population of children and families carry a disproportionately high share of the burden of cardiovascular disease due to genetic predisposition.

Healthy Hearts has documented improvement in knowledge, attitudes, and behaviors (www.healthyhearts4kids.org). This year they hired an outcomes manager to help better measure what they do and determine outcomes. Their research to date is mostly behavioral, looking at barriers to change health beliefs and practices among their rural Appalachian population.

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2. *Choosy Kids*

Location: West Virginia University in Morgantown, West Virginia

Purpose: The program's number one goal is to emphasize the development of healthy preferences early in a child's life. The program also strives to involve parents and adults in order to develop community leaders who make health decisions.

Target Population: The program's primary ethnicity is White, mainly from the surrounding Appalachian area, with the second highest ethnicity being Asian. Ten to 15 percent of participants are developmentally delayed, while another 10 percent are economically disadvantaged.

Structure: Choosy Kids Club is an after-school program for elementary school children from a tri-county area. The program stresses active lifestyles based on healthy decisions. The University offers a wide range of classes for very young and preschool-age children. The Kids Club meets twice a week with a lead teacher and West Virginia University students, with a background in early childhood development and physical education, who serve as "personal trainers" for the children.

Services and Outreach: Parents are a key element of the program's success. In the programs for younger children, parents are encouraged to attend sessions with their children and become involved in the learning process. Parents are provided information about the content of the club meetings and given a "take home message" so they can continue to practice with their children throughout the week. Parents are encouraged to be good "play partners" in order to enhance the lessons taught at the club meetings and make the program fun for the kids.

At club meetings, children participate in fun and healthy activities, learning how to make healthy choices regarding food and activities. Each family is assigned a "personal trainer" who personalizes the program and activities.

Key Practices:
- Involve parents because they are key decision-makers regarding food and activities.
- Teach young adults to be early childhood and physical educators who will advocate for healthy practices in their own community once they graduate.
- Use a children's character, "Choosy," to create models for healthy preferences early in a child's life.

Notable Outcomes: The program has not performed any formal evaluation, but the program director has conducted numerous parent surveys. Although these results have not been published, the parents' comments and feedback have helped the program evolve and become a success. Survey data from parents also has revealed overwhelming improvements in children's behavior as a result of the program. (See the program's Web site, www.bechoosy.org, for more information.)

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3. *Wings of America*

Location: Santa Fe, New Mexico

Purpose: The program uses running as a catalyst to empower American Indian and Alaskan Native youth to take pride in themselves, their cultural identity, and to develop a healthy and balanced lifestyle.

Target Population: American Indian youth in the Santa Fe area

Structure: Wings of America is an American Indian youth development program of the Earth Circle Foundation, Inc. established in 1988. The program utilizes the Native American tradition

of running to help students become healthy, motivated adults. By using traditional approaches to healthy living; the program has been successful in incorporating traditional practices and cultural empowerment into an activity that creates pride and responsibility for one's health.

Services and Outreach: Wings offers eight programs; all provide American Indian youth with the opportunity to train with running coaches, to compete nationally, and to take on leadership roles within the sport. While the organization does not offer scholarships, by offering these runners the opportunity to compete on a national level, the program has increased athletic scholarship opportunities. Since 1988, many of Wings runners have gone on to compete in collegiate athletics.

In addition to providing youth with an exercise outlet, the program offers a number of leadership and training programs including the American Indian Running Coaches' Clinic, which is co-sponsored by NIKE. Training also is provided for high school and college youth interested in running camps for young children. Wings running teams have won over 17 team championships at national cross-country championship events.

Key Practices:
- Use running to empower children to take care of the mind and body.
- Partner with local organizations.
- Encourage corporate sponsorship.

Notable Outcomes: Information not available.

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4. *SPARK (Sports, Play, and Active Recreation for Kids)*

Location: The main office for the program and research is in San Diego, California. However, the program is implemented in Head Start programs, WIC programs, preschool, elementary, middle and high schools, as well as after-school programs nationwide.

Purpose: SPARK is designed to maximize class activity time without sacrificing learning. Their mission statement is to "Create, Implement and Evaluate." The overarching goal is to teach physical education from a public health approach instead of a sports-oriented approach. Making physical activity a lifetime habit through behavior change is an important core component of the program.

Target Population: SPARK programs serve thousands of children all over the country, targeting a variety of cultures and socioeconomic levels. For schools with limited resources, third party providers have helped fund the program to make it available to all children. Each program targets specific grade levels, as follows:

- Early Childhood: Preschool, ages 3-5
- Elementary PE: Grades K-2 and 3-6
- Middle School PE: Grades 6-8
- High School PE: Grades 9-12
- After School: Grades K-8
- Lifelong Wellness: Level I, Grades 4 or 5; Level II, Grades 5 or 6

Structure: SPARK is a combination of innovative elementary and high school education curricula and staff development programs that have been validated by the Program Effectiveness Panel of the United States Department of Education. The SPARK programs, which evolved from a research study supported by the National Institutes of Health Heart, Lung, and Blood Institute, currently offers materials and services to schools, university grant programs, recreation departments, after-school programs, and hospital community outreach and health organizations.

SPARK trainers travel to schools and community organizations to instruct teachers and educators on how to implement the program. Components of the program include training on how to instruct more effectively, how to incorporate physical activity into lesson plans, and how to "disguise" physical activity as fun. The main goal of the SPARK trainers is to set up the infrastructure of the program at a site and then let the site educators continue with the program.

Services and Outreach: Each SPARK program is an all-inclusive package that includes:

Assessment/Evaluation: SPARK meets the specific needs of a particular school or agency by employing extensive needs assessments, in-service evaluation, program evaluation, and teacher assessment tools.

Curricula: The SPARK programs use fun, interactive, and inclusive books that are easy to read and understand and simple to teach. Each SPARK program has its own age-specific curriculum, tailored to the school or agency's target population and grade level.

Staff Development: The SPARK program's workshops are "hands on." Teachers/leaders learn by doing, becoming motivated by their staff of trainers, and feel more comfortable teaching movement concepts. Workshops are conducted on dates and at times convenient for participants. Trainers travel worldwide to "share their SPARK."

Equipment: SPARK offers the option to purchase equipment packages from Sportime, their corporate sponsor for sports equipment.

Follow-up/Consultation: The SPARK programs are committed to institutionalizing concepts and methods. SPARK maintains an 800 number (800-SPARK PE) and email address (spark@sparkpe.org) for multiple layers of support and lifetime consultation.

Key Practices: SPARK is the "New PE." SPARK classes are more inclusive, active, and fun. To date, more than 35 papers have proven that students who participate in SPARK PE demonstrate achievement in the following variables:

- Moderate to vigorous activity (above *Healthy People Goals 2010* objective)
- Fitness
- Sports skills
- Enjoyment of physical education classes
- Academic achievement (SPARK PE kids did as well or better on standardized tests than non-SPARK PE students despite spending 200-300 percent more time out of the classroom.)
- High activity levels away from school

Notable Outcomes: SPARK is the only physical education program to show significant improvement in all areas. SPARK honors include:

Citation in *Physical Activity and Health: A Report of the Surgeon General* as a "school-based solution to our nation's healthcare crisis"

"Exemplary program status" from the U.S. Department of Education

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5. ***Generation Excellence***

Location: Immokalee, Florida, in Collier County

Target Population: Demographics of the Immokalee population include 6.3 percent White, 17.7 percent Black and 71 percent Hispanic. The median age in Immokalee is 24.7 years, and in Naples, the county seat, 60.7 years. Immokalee accounts for 28.5 percent of the Hispanic or Latino population and 36.8 percent of the sub-standard housing units in the county. More than 90 percent of elementary school children are economically needy.

Purpose: Generation Excellence is a community intervention program that aims to decrease the incidence of heart disease and diabetes by promoting physical activity and nutrition education as a preventive measure through a number of programs implemented within Immokalee.

Structure: General Excellence offers a range of preventive services. In order to provide these services, the program partners with local organizations, including the District School Board of Collier County, Collier County Parks and Recreation, Florida Gulf Coast University School of Nursing, and local dieticians.

Services and Outreach: The Generation Excellence program at Lake Trafford Elementary School uses students' mean resting heart rate as an evaluation measure. The program included all the grades at the school. Resting heart rate decreased in the overall group of children with 100 percent of the students achieving below the norm of 95 beats per minute. The program also presented information for parents to raise awareness about physical activity levels for their children.

Some of the interventions included: Exercise with fun activities like playing tag, supermarket games, and rollerblading. Teachers introduced Dole's five-a-day software at the computer lab to teach nutrition. Art projects included drawing self-portraits, making mosaic salad, and reading nutrition labels from the supermarket game. Mini-science projects included experiments using chemical strips to find out the fat and sugar content of foods.

Generation Excellence also promotes its intervention services at outreach activities throughout the community. At the daily community screenings and health fairs, community members can have their blood glucose and blood pressure measured and then receive education about what these results mean in terms of their health.

Key Practices:

- Utilize innovation, variety, and technology in developing the program.
- Encourage ownership of the program through committed instructors and school support.
- Recognize students through hallway displays and give out t-shirts for successful attendance at the end of the year.
- Recognize teachers with a certificate of appreciation and by sending them to a local training if available.
- Require evaluation of the program through reporting of attendance, resting heart rates, and pedometer steps.

Notable Outcomes: The program implemented blood pressure and blood sugar screenings at community sites, starting in July 2000. In an eight-month period, the program screened 795 individuals in partnership with Florida Gulf Coast University. Of the individuals identified, 51 out of 223 (23 percent) who previously had abnormal blood pressure readings came under control during that period. The program defined blood pressure as "under control" when the blood pressure reading was under 140/90 mm/Hg at least twice at subsequent screenings, or the client was put under a doctor's care. During the same period, based on screenings and referrals, 19 additional individuals were newly diagnosed as having diabetes, which meant that more than two new cases per month were identified.

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