MAY 2008

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PolicyLink

Breathing Easy from Home to School:

Fighting the Environmental Triggers of Childhood Asthma

Funding provided by:

The California Endowment

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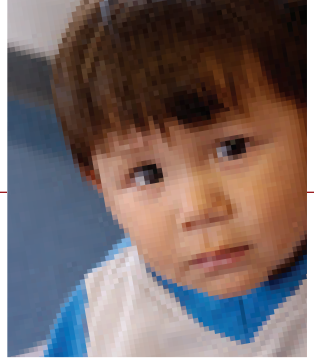

Preface

In Fall 2002, PolicyLink and The California Endowment published Fighting Childhood Asthma: How Communities Can Win, which highlighted the critical need to address childhood asthma and promising practices and policies. Much has changed since then; new coalitions have formed, new approaches have emerged, and new policies are being advocated and implemented. What has not changed is the critical need to address asthma, with one in seven children throughout the nation suffering from this chronic health problem, and low-income communities of color facing even higher rates.

Environmental triggers are important contributors to the high asthma rates among low-income communities and communities of color. Too many of these communities must contend with polluted highways, idling diesel trucks and buses, poorly constructed or dilapidated housing filled with mold, poorly maintained schools with inadequate ventilation, and a range of other environmental challenges. Reversing these trends will require innovative policy changes driven by the wisdom, voice, and experience of local community residents.

PolicyLink and The California Endowment share a commitment to ensuring that everyone can live, work, and play in healthy environments. The California Endowment funded Community Action to Fight Asthma (CAFA) to improve community environments in ways that improve the lives of children with asthma. CAFA is an initiative that brings together twelve coalitions from across California to shape local, regional, and state policies to reduce environmental triggers of asthma for school-aged children under the coordination and leadership of Regional Asthma Management and Prevention (RAMP). The coalitions have achieved many successes; several are highlighted in this report. PolicyLink, a national research and action institute advancing social and economic equity by Lifting Up What Works®, has provided technical assistance on policy advocacy to RAMP and CAFA over the past six years. This report benefits significantly from this collaboration and the experiences and insights of RAMP and the CAFA coalitions.

Breathing Easy from Home to School: Fighting the Environmental Triggers of Childhood Asthma presents impressive programs and policies being advocated for across the country. Based on the experiences and perspectives of local advocates, this report makes policy recommendations and provides suggestions on effective strategies for creating change. We hope that the report will be helpful to advocates, policymakers, the media, and others seeking to advance the movement for healthy communities.

This report is a compilation of experiences and policy approaches of those working to create healthier environments for children across the nation. We appreciate all those who shared with us their stories and their lessons. This report also benefited from the research and writing of Diana Bianco, Health Care Policy Consultant and Heather Tamir, Communications Consultant. The PolicyLink Center for Health and Place team – Shireen Malekafzali, Iman Mills, Judith Bell, Mildred Thompson and Rajni Banthia – contributed throughout the report. Marion Standish and Annalisa Robles of The California Endowment provided important support and input through the process. We are grateful for everyone's efforts.

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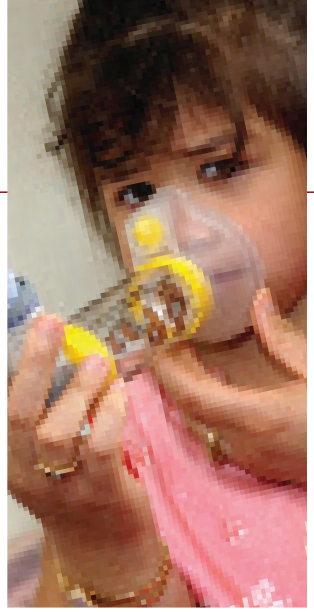

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Executive Summary

Struggling to breathe, wheezing, gasping for air–asthma attacks are a frightening event for children and their families. Too many children suffer from this chronic condition–one in seven children in the United States has asthma, and, in some communities, one in every four children has the disease.

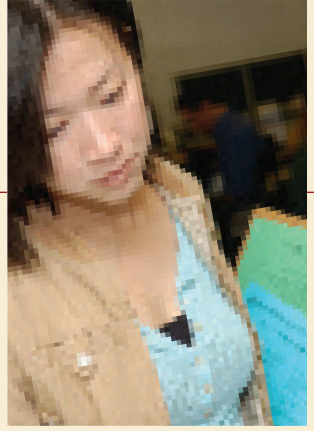
Asthma disproportionately affects low-income children, particularly African American and Latino youth. These children are exposed to an alarming array of environmental hazards that aggravate their asthma. Many live near highways, ports, and bus terminals that expose them to high levels of diesel pollution. They attend dilapidated schools with poor ventilation where chemical pesticides and cleaning products are utilized. And their homes are often poorly maintained public housing and rental units that are rife with mold and pest infestation.

Children facing these conditions have limited success controlling their asthma through medication alone. Change must focus on improving environments where children live, learn, and play. Many parents, organizations, and coalitions around the country recognize the importance of a comprehensive approach and are working to reduce air pollution, improve housing, and change air quality in schools.

This report describes how environmental conditions in three arenas–outdoors, and in homes and schools–aggravate asthma and highlights the efforts of groups that are pursuing promising policies and programs to improve the lives of children with asthma. The report urges policymakers, community leaders, coalitions, and others to support and expand on these successes to create and advocate for policy changes that build healthier communities for all children.

Outdoor Air Quality and Asthma

Asthma can be triggered by exposure to outdoor air pollutants. Trends such as urban sprawl, global warming, and the growing dependence on high-traffic ports exacerbate air pollution and negatively impact the health of children. Low-income people often bear the brunt of these problems–environmental justice researchers have demonstrated that low-income communities and communities of color face higher levels of pollution than the general population.



Fortunately, asthma advocates and others around the country are pursuing promising strategies to improve outdoor air quality. These efforts include the following approaches:

Promote Development According to Smart Growth Principles. Smart growth is an approach to designing, building, and redeveloping communities so that they are compact, accessible to transit, pedestrian-oriented, and supportive of mixed uses. In Seattle, public health advocates built "asthma-friendly" homes in a redevelopment that was based on smart growth. Policy changes, such as incentives to encourage developers to build new developments according to smart growth principles, could build on existing efforts and reduce pollution and asthma triggers.

Promote Improved Public Transportation. Public transportation investments that ensure convenient, affordable transit systems can reduce car use and improve air quality. West Harlem Environmental Action (WE ACT) in New York is partnering with civic, environmental, public health, labor, community, and business organizations on an advertising campaign that urges public transit riders to support a congestion pricing plan that will improve public transit and reduce traffic.

Ensure Consideration of Health Impact Assessments in Planning Decisions. Decisions about development and city planning can have a significant impact on health. New policy and regulatory frameworks consider health impacts in the review of municipal general plans and regional transportation plans that could affect outdoor air quality. Policymakers should build on these efforts and consider the inclusion of health impact assessments in the review of all sizeable development projects.

Address the Disproportionate Health Effects of Goods Movement on Low-Income Communities. There are many groups working to reduce pollution generated by trucks idling at ports and railyards. Coalitions and policymakers can promote regulations and legislation that minimize harmful diesel emissions in surrounding neighborhoods–many of which are low-income communities of color. For example, ports could charge fees on incoming products and use these funds to mitigate the environmental impact of pollution generated by goods movement on local residents.

Capitalize on the Attention to Global Warming Issues to Raise Awareness and Improve Air Quality. Ozone can damage lung tissue and cause breathing problems, including asthma and coughing. Policymakers and advocacy groups are working to reduce the environmental contributors to ozone. In one promising sign, 28 states and the District

of Columbia have passed legislation or adopted standards requiring electricity derived from renewable sources.

Hold Industries and Government Accountable. Coalitions and organizations around the country are ensuring compliance with existing laws, creating stronger air quality laws, and tracking the relationship between air quality and health. For example, the Merced/Mariposa County Asthma Coalition in California's Central Valley has used research, legislative advocacy, and grassroots organizing to demand better air quality standards from state and local officials.

The Indoor Environment: Asthma and Housing

While numerous air hazards exist outdoors, people spend 90 percent of their time indoors. The homes in which children live can have a significant impact on their asthma. Mold, cockroach and rodent allergens have been associated with difficulty breathing, wheezing, and coughing in asthmatic children. Substandard housing conditions such as poor ventilation, trash piles, leaking ceilings, and low-quality carpet promote mold growth and pest infestation.

People living in low-income housing often are limited in their ability to control asthma triggers in the home. Recalcitrant landlords and overwhelmed public housing authorities are often unresponsive to calls for housing improvements where many low-income children live.

Groups around the country have identified and pursued a number of policy approaches to improve housing conditions:

Advocate for Strong Housing Codes and Code Enforcement. Housing advocates and asthma advocates have worked in coalition to strengthen housing codes and enforcement. The Healthy Homes Greensboro Collaborative in North Carolina championed passage of a city ordinance tightening inspection requirements for rental properties and ensured ongoing implementation by highlighting improvements that resulted from effective enforcement.

Advocate for Systematic, Rather than Complaint-Based, Code Enforcement. Renters often worry that if they report housing problems to the local housing authority, they might face retaliation from their landlord. Under systematic code enforcement, rental properties are automatically inspected every few years, rather than only in response to complaints from tenants. The Greensboro ordinance requires proactive inspections: landlords cannot rent a unit unless they have a certificate that shows they are complying with the housing code.

Engage in Litigation Against Uncooperative Landlords. Lawyers have sought the elimination of health hazards in low-income housing and financial renumeration for tenants whose health has suffered as a result of substandard conditions. However, the cases are complex and expensive. Boston advocates have created a medical-legal partnership that connects pediatric providers and lawyers-providers refer patients for legal assistance and lawyers train staff about legal issues that patients may experience.

Secure Financial Coverage for Remediation from Health Insurers. Research has shown that asthma remediation efforts can reduce health care costs, yet few health plans provide benefits beyond medication and clinical services. Groups in Kansas and Michigan are advocating for home remediation to be included in health insurance benefits.

Ensure Public Housing Promotes Health for Residents. The Healthy Homes Initiative is a program of the U.S. Department of Federal Housing and Urban Development (HUD) that addresses multiple childhood diseases and injuries in the home by focusing on housing-related hazards. The Healthy Public Housing Initiative, a diverse coalition in Boston, is a Healthy Homes project that has used community health workers to assess and address asthma triggers for residents. They have improved ventilation, arranged for commercial cleaning, and taught non-toxic methods for pest control. The Healthy Homes Initiative addresses a vital need for housing improvement in many communities, and should be maintained and expanded so that more communities can benefit from the program.

Advocate for the Construction of Asthma-Safe Housing. Another important strategy is to build homes that contain few or no asthma triggers. Breathe Easy Homes in Seattle are built for low-income families specifically to alleviate indoor environmental triggers. The homes have had a dramatic effect on symptoms for children who live in them. Advocates should push for the creation of similar housing as well as promote green construction policies for new homes for low-income families.

The Indoor Environment: Asthma and Schools

The physical environment where children learn is as important to their health as the home in which they live. Schools with poor ventilation and increased mold and moisture have been linked to greater numbers of children reporting asthmatic symptoms. In addition, volatile organic compounds (VOCs) such as formaldehyde, found in construction materials, furnishings, and cleaning products, are known respiratory irritants and often found in schools.

Children in low-income communities of color are particularly impacted by poor indoor air quality at school. Many schools in low-income neighborhoods are old and were built using materials that may not pass current safety requirements; others were built on or near contaminated sites.

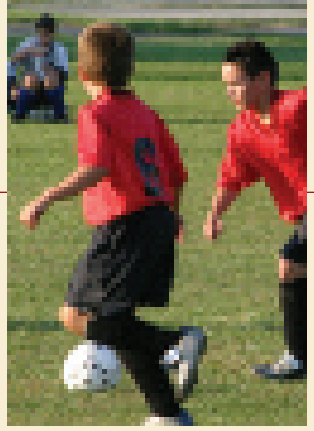
When schools have poor indoor air quality, health and school performance suffer. One study has shown that the higher the respiratory hazard within a school the lower the academic performance.

Just as advocates around the country are working to improve housing conditions, many groups are successfully seeking to change unhealthy school environments using a variety of policy approaches described below.

Advocate for Policies that Require School Indoor Air Quality Assessments and Remediation Plans. Tools for Schools, a resource created by the federal Environmental Protection Agency (EPA), includes an action kit, fact sheets, brochures, and software programs that provide information on improving school air quality. As a result of advocacy by the San Francisco Asthma Task Force, the San Francisco Board of Education passed a resolution requiring that all district schools implement programs to improve indoor air quality using the Tools for Schools model.

Secure Adequate Funding for School Construction, Maintenance, and Repair. Because school buildings have historically been paid for through local taxes, districts with low property values or small proportions of voters with school-aged children face a significant challenge in raising needed revenue leading to inequity in school quality in different communities. Lawsuits spearheaded by advocates in Arizona, California, New Jersey, and Ohio have increased funding for building repairs and equipment. These states also created facilities standards and directed funds to areas with the greatest need to resolve immediate health and safety issues.

Advocate for Asthma-Friendly School Construction and Renovation Practices. New schools can use "green" building materials in school construction and renovation to reduce environmental triggers of asthma. The Collaborative for High Performance Schools (CHPS) helps facilitate the design, construction, and operation of schools that are healthy, as well as energy and resource efficient, and oversees the nation's first green building rating program for schools. While some states are legislating green standards for schools, policymakers should expand these efforts.



Advocate for Schools to Use Green Cleaning Products and Non-Toxic Pest Control Methods. Many asthma advocates are working to ensure that schools use "green" cleaning products, which lessen exposure to irritants that can trigger asthma attacks. In 2007, advocates in Illinois helped pass a law to ensure green cleaning products are used in schools, the second state in the nation, after New York, to do so.

Similarly, groups around the country are promoting integrated pest management (IPM), which involves cleaning and use of non-toxic baits and structural repairs instead of chemical pesticides. The Centers for Disease Control and Prevention highlights IPM as one important way to ensure a healthy school environment for children with asthma

Create Pesticide-Free Protection Zones Near Schools. To address children's exposure to pesticides in schools next to agricultural fields, advocates are working to create pesticide-free protection zones around schools. In one example, residents, and environmental and health activists in California's Central Valley recently won new regulations to create pesticide buffer zones around schools, residential communities, and farm labor camps.

Ensure Healthy Air Quality Near Schools and in School Buses. Groups throughout the nation, such as coalitions affiliated with the New England Regional Asthma Council and Community Action to Fight Asthma (CAFA) in California, are tackling school bus pollution by advocating to limit bus idling near schools, and working to replace or retrofit diesel buses.

Conclusion

The movement to combat childhood asthma holds great promise. Parents, asthma advocates, environmental health and justice groups, housing organizations, community-based organizations, and concerned policymakers are coming together around the country to ensure that all children can live in healthy environments. These efforts should be expanded and replicated, and new, innovative approaches should be supported to provide children across the nation with opportunities to breathe with ease.

A comprehensive strategy built from this base could ignite and institutionalize meaningful changes to alleviate–and ultimately reduce–childhood asthma. All children should be provided the space to breathe freely where they live, learn, and play.

Introduction

Asthma and the Role of Community Factors

Struggling to breathe, wheezing, gasping for air—asthma attacks are frightening events for people with asthma and their families. Asthma, a chronic health condition, affects nearly one in seven children across the nation,[2] and in some communities it affects a disturbingly high rate of one in every four children.[3]

Asthma symptoms and attacks are often triggered by a range of environmental factors such as diesel and ozone pollution, poor ventilation, mold, and exposure to cockroaches, pesticide and other toxic chemicals, such as those used in building materials and cleaning products. In addition to triggering asthma, preliminary evidence suggests that high levels of outdoor air pollution contribute to the development of new cases of asthma.[5] While researchers continue to gather information about the causes of asthma, asthma rates continue to climb.[6]

Asthma affects all children, but it disproportionately affects low-income children, particularly African American and Latino children.[9] Children in low-income communities and communities of color are more exposed to environmental hazards in homes, schools, and outdoors than children in higher-income neighborhoods. Many live in communities with high ozone levels and near highways, ports, railyards, or bus terminals that expose them to high levels of diesel pollution. Their neighborhoods are often home to under-regulated polluting industrial plants. Indoors, they fare no better, going to dilapidated schools with poor ventilation or schools that use chemical pesticides and toxic cleaning products, and living in poorly maintained housing with mold and pests. Children in these communities will have limited success controlling their asthma with no escape from environments filled with asthma triggers.

9.9 million children and youth under 18 are affected by asthma nationwide.[1]

Asthma Triggers

- diesel pollution
- ozone pollution
- mold
- cockroaches and rodents
- dust mites
- tobacco smoke
- poor ventilation
- respiratory irritants in finishes, furnishing, and cleaning products[4]

Change therefore must focus on improving the air in environments where children live, learn, and play. A comprehensive approach is required to address the large-scale environmental issues contributing to asthma. Parents, organizations, and coalitions are pushing policymakers for environmental policy changes

that can significantly improve the lives of children with asthma.

This report highlights the evidence showing that environmental factors are connected to asthma. It sheds light on ways that community-based organizations and coalitions across the nation are working to address environmental triggers of asthma. Policy recommendations are offered that show great promise for addressing this issue and critical lessons are lifted up from local, state, and regional efforts that can be replicated in other communities. Policymakers and others can build upon these lessons to enact needed changes.

Outdoor Air Quality and Asthma

Asthma and its symptoms, including wheezing, coughing, and difficulty breathing, can be triggered by exposure to outdoor air pollutants such as nitrogen dioxide (NO2), particulate matter, ozone, and sulfur dioxide (SO2).[11] Asthma symptoms and more severe asthma attacks can lead to school absences and increased emergency room and doctors' visits.[12]

Stationary air pollution sources, such as oil refineries and factories, and mobile sources, including cars, trucks, and buses, produce sulfur dioxide and nitrogen dioxide-gases that contribute to the formation of ozone. Ozone is known to damage lung tissue and cause breathing problems, including asthma and coughing.[13] There is even preliminary evidence that ozone can contribute to the development of new cases of asthma among otherwise healthy children.[14]

Particulate matter, another form of air pollution-produced by wood-burning stoves, dust from farming and other mobile sources-contain tiny particles that can be inhaled into the lungs and can lead to lung damage, breathing problems, and asthma attacks.[15, 16] Diesel particulate has been shown to be particularly harmful to health.[17]

Rates for emergency department visits, hospitalizations, and death among children due to asthma are substantially higher in black children in comparison to white children.[8]

Asthma Prevalence Rate in Children[7]

- Puerto Rican (19%)
- Non-Hispanic Black (13%)
- Non-Hispanic White (8%)

Everyone is impacted by air pollution. Pollution in neighboring or even distant areas can affect a community's ozone levels. For example, pollution from industrial countries has been found in the Arctic ice caps. [21]

Yet, not all of us are impacted equally. Some groups suffer disproportionate consequences when it comes to asthma. Environmental justice researchers have demonstrated that low-income communities and communities of color face higher levels of pollution than other communities.[22] In addition, children are more vulnerable

than adults to the negative health implications of toxins in the air due to their developing lungs and their higher respiratory rates. Children on average take in larger volumes of air per unit of body weight in comparison to adults.[23]

To help address high levels of air pollution, environmentalists helped pass The Clean Air Act of 1970. This act set air quality standards to assure public safety, to protect the public from environmental contaminants, and to reduce the amount of pollutants released in the air. Nevertheless, some industries fail to comply with related laws and regulations, repeatedly ignoring them and amassing numerous violations.

Unfortunately, the Environmental Protection Agency (EPA) has not prioritized enforcement of industry compliance with the Clean Air Act. U.S. Justice Department statistics show that from 2001 to 2005, there was a 36 percent decline in both industry compliance prosecutions and convictions for environmental crimes. Additionally, the numbers of cases the agency opened declined 37 percent in the same time period.[24]

In addition to weak enforcement of existing air pollution standards, some land use, environmental, and economic trends have contributed to worsening outdoor air pollution and asthma. For example:

Nearly half (46 percent) of the U.S. population live in counties that have unhealthful levels of either ozone or particle pollution.[10]

Urban Sprawl

For over 50 years, jobs, population, and investments have been generally shifting away from cities and older suburbs to the fringes of metropolitan areas. This sprawling pattern of development has been linked to a range of problems, including greater reliance on cars and therefore increased air pollution.[25]

Global Warming

Overwhelming evidence now shows that global warming is occurring. Researchers on seven continents predict that, without intervention, temperature increases will lead to drought, heat waves, food shortages, diseases and ultimately, war, social upheavals, and economic instability.[26] Researchers have found that increased temperatures in urban environments increases ground-level ozone, which can trigger asthma attacks.[27] Research has also indicated that various other environmental conditions exacerbated by increased temperatures, such as increased pollen and desertification, also impact respiratory health, including asthma.

Globalization and Goods Movement

Transportation and communication systems have sped up the diffusion of goods and people across the globe. Unfortunately, lower-income communities and communities of color are frequently left to bear the burden of pollution

generated by the increasing goods movement infrastructure-such as heavily trafficked and expanding highways, bridges, railyards, airports, and ports.

These are challenging trends that call for new partnerships, increased public attention to outdoor air quality, and effective advocacy strategies to push for needed changes.

Fortunately, changing existing trends can create huge benefits. Research indicates great potential to improve asthma symptoms by improving air quality. For instance, during the summer Olympics of 1996 in Atlanta, Georgia, traffic was shut down in the center of the city with the result that air pollution significantly dropped. During that same time, visits to the doctor and hospitalization for childhood asthma in Atlanta dropped dramatically.[28] Also, scientists have shown that children's bodies are resilient. When a child's air quality improves, their respiratory growth improves. Studies show that while children who move to more polluted communities show poorer lung growth, children who move to cleaner communities have increased lung growth.[29, 30]

Promising Approaches: Advocates Taking Action

Around the country asthma advocates are working in innovative ways to improve outdoor air quality to achieve similar results. The following strategies highlight several of the most promising approaches.

Promote Development According to Smart Growth Principles. Smart growth represents an approach to designing, building, and redeveloping communities in ways that are compact, accessible to transit, pedestrian-oriented, and supportive of mixed uses. The principles of smart growth oppose urban sprawl and are supportive of health. They include design elements that decrease dependence on cars, and increase opportunity for physical activity.

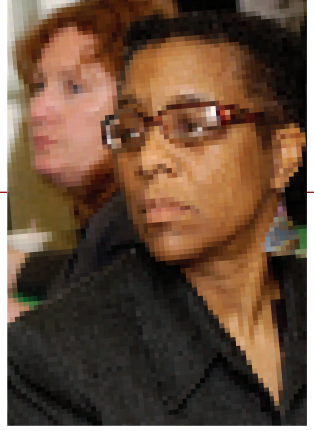
Air quality has been dramatically impacted by urban sprawl as residential developments expand farther away from urban economic centers. Dependence on cars and vehicle miles traveled[a] have significantly increased as the distances between work, home, and goods and services have grown–without attention to public transportation options. This increased dependence on cars contributes significantly to air pollution. Accordingly, there are natural alliances between advocates for smart growth and those working on asthma and other health issues through changes to the built environment.

> Studies show that children living near busy roadways are more likely than children living near less heavily trafficked roads to have asthma, to have deficits in lung function, and to need to visit the doctor for their asthma.[18, 19, 20]

Air quality and asthma advocates are tackling urban sprawl and increased dependence on cars in innovative ways. For example, in the rural Central Valley of California, advocates were successful in getting the local air district board to pass a rule requiring payments from developers to offset the impact on air quality for every new house, minimart, and office complex requiring increased vehicle trips. To reduce potential fees, developers can choose options for pedestrian access such as building sidewalks and by increasing green space.[31] Therefore, developers are incentivized to build according to smart growth principles to avoid costly impact fees.

Promote Improved Public Transportation. Asthma advocates and public transit advocates have a natural alliance. Public transit improvements can reduce car use, thereby improving air quality. Effective public transit also increases access to healthcare for those without cars, helping asthma patients' access doctors and emergency rooms whenever necessary to manage symptoms and even prevent death. Many communities are in need of transit investments to ensure convenient, affordable, fast, high quality transit systems available to all residents.

In 2008, West Harlem Environmental Action (WE ACT) is partnering with civic, environmental, public health, labor, community, and business organizations on an advertising campaign that urges public transit riders to support a congestion pricing[b] plan that will improve public transit and reduce traffic. Cecil Corbin-Mark, deputy director of WE ACT notes, "... congestion pricing isn't just about reducing traffic; it's also about generating revenue to make transit faster and healthier. This will benefit all New Yorkers, and especially those suffering from asthma and other respiratory illnesses." While the congestion pricing legislation recently failed to pass in New York, the coalition was successful in getting the attention of the governor, policymakers, and the public focused on the need to reduce traffic and increase air quality. Mayor Bloomberg denounced the decision saying it was "sad day for New Yorkers and a sad day for New York City." WE ACT will continue to build on the partnerships they've created and the support of the governor to develop innovative approaches to addressing poor air quality in Harlem.[32, 33]



Asthma advocates also have focused on improving transit systems. By gathering data about air pollution in Harlem, petitioning local government, partnering with elected officials and organizing local residents, WE ACT successfully convinced local transportation officials to minimize idling at local bus depots. They continue to advocate for the conversion of buses to cleaner vehicles, such as hybrid-electric buses. The case study on page 21. features more details on the multiple efforts of WE ACT to increase air quality in Harlem.

Ensure Consideration of Health Impacts in Land Use Planning Decisions. Asthma advocates note the critical connections between health and land use and are working to ensure that the health impacts of planning and development decisions are not ignored.[34] New policy and regulatory frameworks are needed to address health concerns in the development and review of urban planning policies, projects, and plans. There are a number of ways to ensure health impacts are considered in the planning process; health considerations can be incorporated into existing municipal general plans through a new health element or incorporated throughout all elements; specific development projects, area plans, zoning plans, and transportation plans can also incorporate an assessment of potential positive and negative health impacts. Health impact assessments can be done by advocates, the planning or health departments as an institutional policy, or mandated by local or state laws in the same way environmental impact assessments are required in a number of states.

Public participation in land use planning is also critical to ensure that health advocates and community residents are included in important decision-making processes. Often, those most impacted by land use changes are excluded from the planning process. Community-based organizations and coalitions are working to address these issues in a variety of ways.

In Detroit, a coalition of local community-based organizations, local residents, and partners from the University of Michigan used data and community advocacy to demand that health considerations be integrated into discussions about expanding a bridge from Detroit to Canada, which will create additional pollution in low-income communities of color in Detroit that are already disproportionately impacted by air pollution. The discussions are still underway, but the coalition has succeeded in getting policymaking bodies such as the Michigan Department of the Environment and the Michigan Department of Transportation to better incorporate community participation into their decision-making processes. Edith Parker, associate professor of Health Behavior & Health Education, and associate dean for Academic Affairs in the School of Public Health at the University of Michigan, notes that in addition to ensuring community input in these processes, another needed policy is to "ensure that health impacts are included in these types of decisions." "If they can do modeling for environmental impact assessments, they should be able to do modeling for health impacts as well."

Community Action to Fight Asthma, a network of asthma coalitions in California, successfully advocated to ensure that statewide infrastructure bond money is targeted to communities with the highest health risks, and that community participation in project decisions will be emphasized. Similarly, the case studies from Long Beach and Harlem on pages 19 and 21 show how other groups have worked to incorporate health considerations into expansion or development plans of highways, ports, and garbage truck transfer stations.

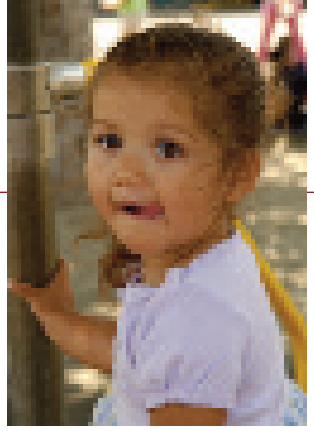
Address the Disproportionate Health Effects of Goods Movement on Low-Income Communities. There are also many groups across the nation working to reduce pollution generated by trucks idling at ports and by railyards. For example, in California, neighborhood assessment teams from the Long Beach Alliance for Children with Asthma gather information about inordinate pollution caused by the ports and goods movement and use it to advocate for stricter air quality requirements–see a case study onpages 19 and 21 for more details.

Capitalize on the Attention to Global Warming Issues to Raise Awareness and Improve Air Quality. The issue of global warming has increased public awareness of the urgency to reduce air pollution in an effort to control the global climate. There is an opportunity to capitalize on this expanded public attention to address the environmental contributions to asthma. Currently, 28 states and the District of Columbia have passed legislation or adopted standards requiring electricity derived from renewable sources.[35] There are also opportunities to expand "green" sectors of the economy, such as energy retrofitting and solar panel manufacturing. This can reduce greenhouse gases, benefiting children with asthma.

Asthma coalitions are using public attention on global warming to help reduce air pollution. For example, Virginia's Greater Roanoke Asthma and Air Quality Coalition is participating in a larger coalition, the Roanoke Valley Cool Cities Coalition, to address air pollution problems through the lens of global warming. They tackle energy policy as well as do outreach, education, and community actions to address global warming in concert with their work to fight asthma.[36]

Hold Industries and Government Accountable. Strategies for improving air quality focus on pressuring polluting industries, ensuring compliance with existing laws, creating stronger air quality laws, and tracking the relationship between air quality and health. Legal action by grassroots organizations, advocacy efforts by environmental justice organizations, and state legislative and regulatory agency changes have all contributed to improvements in air quality. For example, the Merced/Mariposa County Asthma Coalition, profiled on page 23, has organized residents in California's Central Valley to hold local and state officials accountable for improving air quality in the region.

In a national effort, environmental health and justice advocates, including asthma advocates, are urging the EPA to adopt stronger standards to limit air pollution. In 2007, advocates filed suit against



the EPA to address weak federal regulations on particulate pollution.[37]

In the absence of strong regulations and enforcement from the federal government, states are working to pass stronger statewide regulations. Eighteen states and seven environmental groups are suing the EPA to be allowed to have stricter state air quality standards than what is mandated at the federal level.

CASE STUDIES

HOW COMMUNITIES ARE WINNING THE FIGHT AGAINST ASTHMA

CASE STUDY:

Neighborhood Assessment Teams: Moms Fighting Pollution in Long Beach

Women on the neighborhood assessment team for the Long Beach Alliance for Children with Asthma (LBACA) find themselves in surprising places. They might be standing on the sidewalk counting the number of trucks going through their neighborhoods on the way to the Long Beach port. They might be at the port using a "P-trak" meter to measure particulate matter in the air. Or, as in the case of Martha Cota, they might be providing U.S. Senator Barbara Boxer with material for a hearing on air pollution caused by ships.

Martha joined LBACA's neighborhood assessment team after she and two of her sons were diagnosed with asthma. She heard about the team from one of LBACA's community health workers (CHW). LBACA's CHWs not only educate families about asthma and help them improve their indoor air environment, they also recruit mothers of children with asthma to advocate for better air quality in their neighborhoods.

Martha got involved because she saw first-hand how pollution from the Long Beach port exacerbated her family's asthma. Long Beach and the surrounding communities are affected by the ports of Long Beach and Los Angeles and the related goods movement activity. These neighborhoods lie within the wind corridor most affected by harbor, industry, freeway, and refinery pollutants, and the 710 freeway runs through the heart of these communities carrying more than 47,000 truck trips each weekday to and from the third largest port complex in the world.

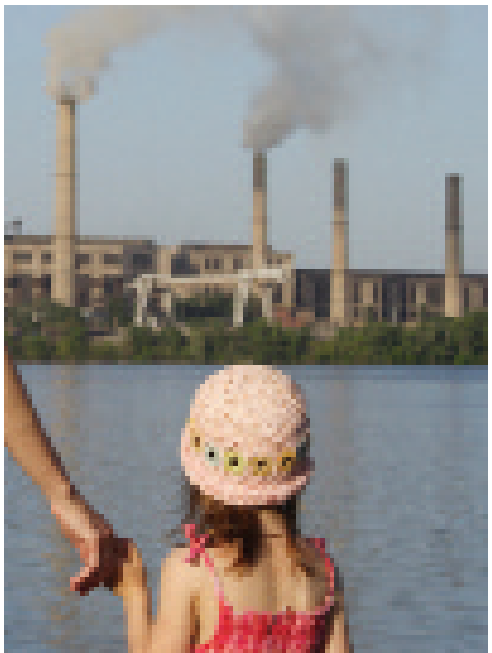
CONTINUED

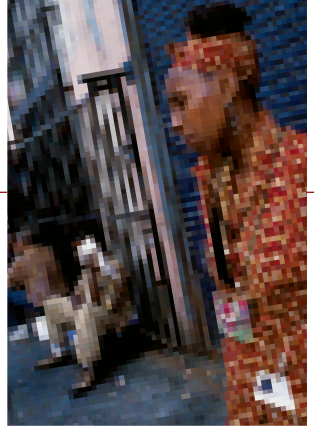
According to Martha, windy days are the worst because the diesel fumes from the port's trucks and ships blow into her neighborhood. Martha's concerns are real: in 2005, the California Air Resources Board found that the ports and goods movement throughout the state of California caused over 2,400 premature deaths annually, mostly from particulate pollution, and was responsible for 2,000 hospital admissions due to respiratory problems. Supporting data from the 2005 Los Angeles County Health Survey found that almost 20 percent of children in the Long Beach Health District have been diagnosed with asthma, significantly higher than national asthma rates.

LBACA's neighborhood assessment team–or the A-Team, as it is known–wants to change those statistics. The women gather data and share their findings–along with their personal experiences–to advocate for policies that will reduce air pollution.

Neighborhood assessment teams are trained by LBACA staff in leadership and advocacy skills. They also learn how to gather the data about pollution and truck traffic. These tasks provide helpful information for advocacy, but as important is how participating moms become empowered by this work. "By gathering data, these women find their voice," says Elina Green, project manager at LBACA. "Once they see the connection between health and pollution, they become advocates and tell their stories about living in a toxic community."

Members of the A-Team have testified at public hearings and have shared their experiences with port executives and government officials. When Senator Boxer held a local hearing on marine vessel pollution, she discussed Martha's family in her opening remarks.





HOW COMMUNITIES ARE WINNING THE FIGHT AGAINST ASTHMA

CASE STUDY:

Organizing + Data = Results Reducing Diesel Emissions in Harlem

Twenty-five percent of children under the age of 13 in Central Harlem have asthma–more than five times the national rate. Six of Manhattan's seven diesel bus depots are located in northern Manhattan next to schools, hospitals, and recreational facilities. West Harlem Environmental Action (WE ACT) believes the concentration of highly polluting diesel buses and high asthma rates are no coincidence.

For more than 15 years WE ACT has been working in partnership with neighborhood residents to reduce diesel pollution in Harlem. They've highlighted data linking pollution with asthma, educated the community about the dangers of diesel emissions, advocated for fewer buses and trucks coming through the neighborhood, and demanded that the Metropolitan Transportation Authority (MTA) use cleaner buses.

In 2001, WE ACT filed a complaint with the U.S. Department of Transportation alleging that diesel bus depots were disproportionately located in Manhattan's minority communities. They co-filed the complaint with civil rights attorneys who asserted that the high number of depots in northern Manhattan violated Title VI of the Civil Rights Act of 1964, an act barring federal funding for any program that discriminates based on race. To support the complaint, WE ACT did a land use analysis that showed a high proportion of people of color living near the depots.

The federal Department of Justice compelled the MTA to enter into mediation to resolve the suit and WE ACT organized residents to attend mediation meetings to share their personal stories with MTA representatives. The MTA committed to continuing negotiations with WE ACT and local residents to improve bus depot operations, train workers on the environmental health impacts of their work on local communities, monitor bus idling, and convert the fleet to cleaner vehicles such as hybrid-electric buses. Negotiations are ongoing and the MTA has begun to implement some of the programs WE ACT has recommended.

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To keep the pressure on the MTA, WE ACT organized community members to form Resident Oversight Councils (ROCs) to monitor MTA operations at each bus depot in Harlem. In 2006, ROC members and WE ACT held a joint hearing with the New York City Council to highlight the ongoing problems with air pollution in Harlem. They invited academics and health care providers to testify about air pollution levels, as well as the high number of respiratory cases they diagnosed in community residents. Community members also testified about their experiences living in a polluted neighborhood. After the hearing, the City Council passed a resolution asking the state to assume greater oversight of MTA operations and review MTA bus siting decisions to avoid a disproportionate effect on low-income and communities of color.

WE ACT and community residents also successfully reduced the number of highly polluting garbage trucks in their neighborhood. The 135th Street Marine Transfer Station–where garbage trucks unloaded their waste onto barges–was slated for expansion until WE ACT got involved. The Transfer Station was a source of significant pollution-more than 320 diesel garbage trucks came in and out of the station every day and their drivers often left the trucks idling.

In reaction to the expansion proposal, WE ACT and local residents established the Northern Manhattan Solid Waste Coalition, which included community members, elected officials, business groups, environmental organizations, and tenant associations. The coalition met with city council members and the mayor, coordinated a letter and postcard writing campaign, and organized public testimony against the expansion. As a result of their advocacy, the mayor transferred management of the property from the sanitation department to the parks department and agreed to shut down the transfer station permanently. WE ACT is now developing a planning process in partnership with the city to design a new use for the structure. A key component of the process will be public input to decide how the space would best serve the neighborhood.

HOW COMMUNITIES ARE WINNING THE FIGHT AGAINST ASTHMA

CASE STUDY:

The Merced/Mariposa County Asthma Coalition: Multifaceted Advocacy to Improve Air Quality in California's Rural Central Valley

The air quality in California's Central Valley is abysmal–it is home to five of the 10 most ozone polluted counties in the nation.[38] *When the Merced/Mariposa County Asthma Coalition (MMCAC) learned that a local regulatory board was going to approve a plan giving the Central Valley until 2024 to attain federal ozone standards, the group swung into action. Pollution exacerbates asthma and the Merced community was suffering: one in five children living in the San Joaquin Valley of California has asthma–four times the national average. In 2006, almost 10,000 children in the Central Valley visited the emergency room due to asthma. Merced County, located in the Valley, was no exception to this trend.*

The San Joaquin Air Pollution Control District plan to give the Central Valley until 2024 to achieve federal ozone standards did not satisfy local air quality advocates, including the MMCAC, who thought the Central Valley could reach air quality standards earlier–by 2017. The group had data to support this assertion: scientists from the International Sustainable Systems Research Center (ISSRC) in Southern California analyzed the local plan, and using data they had gathered about air quality in the area, concluded that the Central Valley could meet a 2017 deadline.

To get cleaner air sooner rather than later, the MMCAC began educating the community about the connection between air quality and asthma. "Childhood asthma is a huge point of traction for people in the valley. When we made the connection between the ozone plan and high rates of asthma, it really made a difference in mobilizing the community," said Mary-Michal Rawling, program manager at MMCAC.

Working with the Central Air Valley Coalition (CVAC), which includes local community organizations, social justice groups, and environmental organizations, organizers held educational meetings for community members in preparation for the air district meeting

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where the plan would be discussed. Despite significant community opposition, the air district passed the plan 9-2. The MMCAC was pleased that even two members voted against it: the dissenting members were appointees that MMCAC and others had worked to get on to the air district board.

The plan next went before the California Air Resources Board (CARB). As a result of community organizing, more than 100 people from the affected community asked the CARB to vote no. Although the CARB approved the plan, they also created a task force to consider how the Central Valley could reach the federal standards earlier than 2024. After multiple meetings, the task force identified specific ways the Valley could meet a 2017 deadline. Unfortunately, CARB decided to dissolve the task force without changing the attainment deadline.

Despite these disappointments, the advocates didn't stop their work. Opposition to the air district's plan was a rallying cry for asthma advocates and others concerned about the air quality in the Valley. They had educated themselves and the community, used technical information and studies to make their case, mobilized the community, and showed the CARB that Central Valley residents were involved and would stay involved.

Their organizing and advocacy paid off in the next legislative session as CVAC organized lobbying days and MMCAC mobilized their members to educate residents about the need for a wider range of appointees to the board. While previous attempts had failed, MMCAC and others finally succeeded in getting a bill to add four members with health and environmental expertise to the air district board. Now, MMCAC has been working with others to recruit for the four new positions.

Recommendations: Outdoor Air Quality and Asthma

The promising approaches highlighted above show how communities can advocate for systemic, long-term improvements to reduce childhood asthma. Below is a bulleted summary of the major strategies employed in these approaches and additional promising policies that advocates are pursuing.

- Provide incentives encouraging developers to build new developments according to smart growth principles, which will reduce pollution and reduce asthma triggers. Consider development impact fees for increased vehicle trips generated by new development.
- Advocate for affordable, accessible, and convenient public transit by adding new routes, improving existing transit systems, and ensuring affordable pricing, thereby reducing car use and related pollution.
- Pass and implement policies to reduce diesel truck idling in residential neighborhoods, near ports, and near school and afterschool facilities.
- Advance policies to replace or retrofit diesel buses used in existing public transit and school buses to limit emissions using the most modern technology.
- Encourage cities to add a health element to the city general plans, or for the infusion of health considerations throughout existing elements of the general plan.
- Advocate for the inclusion of health impact assessments during the review of all sizeable development projects, plans, and policies–including residential and commercial buildings, parks, school projects, as well as the construction or expansion of highways, ports, or new facilities that will emit pollution.
- Advocate for new parks and children's play areas to be located more than 500 feet from any major roadway.
- Advocate for community participation in air quality and land use policy decision-making processes, particularly from low-income communities and communities of color who are disproportionately impacted by poor air quality.
- Ensure that infrastructure spending is targeted to improve transportation systems in ways which improve air quality and increase public transportation access within the communities most impacted by poor air quality and health risks.
- Charge a fee on products coming into ports so that funds can be used to reduce the environmental pollution borne by low-income communities of color situated near ports, railyards, and other locations that move large quantities of goods.
- Initiate and support efforts to take legal action against inattentive federal, state, and local agencies responsible for maintaining air quality standards.
- Pass legislation to support tighter air pollution control standards–to reduce diesel, ozone levels, and particulate matter–with adequate and appropriate enforcement mechanisms and accountability by the enforcement body. Special attention should be given to communities most impacted by pollution.
- Advocate for policies and standards that require renewable energy resources be used to create electricity.

The Indoor Environment: Housing and Asthma

While numerous air hazards exist outdoors, most people spend 90 percent of their time indoors.[42] Indoor pollutant exposures are the result of complex interactions between the structure of the building, the building systems such as ventilation and heating, furnishings, the outdoor environment, and the activities of those inside the building.[43] It's also true that many air pollutants persist longer in indoor environments than outdoor.[44] Therefore the quality of air within a child's home is critical to their respiratory health.

Poorly maintained homes can result in air quality problems triggering asthma or creating allergic sensitization[c] which can later lead to the development of asthma.[45, 46, 47] Mold and cockroach and rodent allergens[d] have been linked to allergic sensitization to asthma[48] and difficulty breathing, wheezing, and coughing in asthmatic children.[49, 50] Unfortunately, poor building maintenance and construction can create conditions that promote mold growth and cockroach and rodent exposure–including leaky pipes, condensation from bad ventilation, holes and cracks in floors and walls, as well as trash piles and clutter that provide shelter for pests.[51]

Research also shows that volatile organic compounds (VOCs) such as formaldehyde and other chemicals off-gassing[e] from furniture and paints can contribute to asthma.[53] This is a particular concern for new furniture, especially in environments which may be poorly ventilated such as mobile homes or trailers. Other indoor environmental triggers that have been associated with increased asthma sensitization and susceptibility to asthma attacks include gas stoves, space heaters, tobacco smoke, animal dander, and dust mites.[54, 55] In addition to known indoor allergens, emerging evidence links pesticide exposure with asthma. Several studies have found evidence that exposure to indoor or outdoor pesticides are correlated with higher rates of respiratory diseases and asthma.[56, 57]

Exposure, early in life, to indoor allergens significantly increases a child's risk for developing asthma.[39, 40, 41]

Poor building construction and maintenance can create conditions that promote asthma triggers such as mold growth and cockroach and rodent exposure.[52]

While the indoor triggers of asthma can be identified, they are not always easily resolved. Substandard conditions in homes such as poor ventilation, pest problems, leaking ceilings or windows, or poor quality carpet are all known factors that contribute to poor indoor air quality. Once remediation needs are identified, families who rent often face challenges in correcting the problems. For example, pest control problems throughout an apartment complex cannot be handled by a single family, and renters cannot and should not

have to make expensive physical changes like carpet removal to their rental units. For these types of problems, tenants rely on their landlords to make needed changes to improve their health.

Tenants of low-income housing are often particularly limited in their ability to control asthma triggers in their home. Many low-income renters do not feel comfortable making requests of, or complaints to, their private landlords for fear of eviction. Renters have experienced retaliation from landlords for simple requests to maintain and repair a property in adequate and healthy conditions.

Just as there can be problems with private landlords addressing indoor asthma triggers, there can also be problems with housing provided by the government. Many public housing units were built in the 1940s and 1950s when minimal building standards were enforced. Insulation was not a requirement, resulting in inadequately insulated walls, which in turn can lead to increased moisture–one of the contributing causes of mildew and mold.[59] In one example of poor government housing, the Federal Emergency Management Agency (FEMA) supplied trailers as temporary housing to displaced residents after Hurricane Katrina in New Orleans. They later found formaldehyde at levels about five times higher than what is considered safe by the U.S. Centers for Disease Control and Prevention. Several years after Katrina, around 34,000 of these hazardous trailers are still occupied.[60]

Additionally, most public housing authorities routinely apply pesticides throughout their housing units (indoors and outdoors) to manage pest infestations. This often means spraying chemical pesticides within hallways two or three times a month without evidence of pests. This routine application of institutional applied pesticide leaves children living in public housing at risk. Such exposure can exacerbate respiratory symptoms and cause asthma attacks.

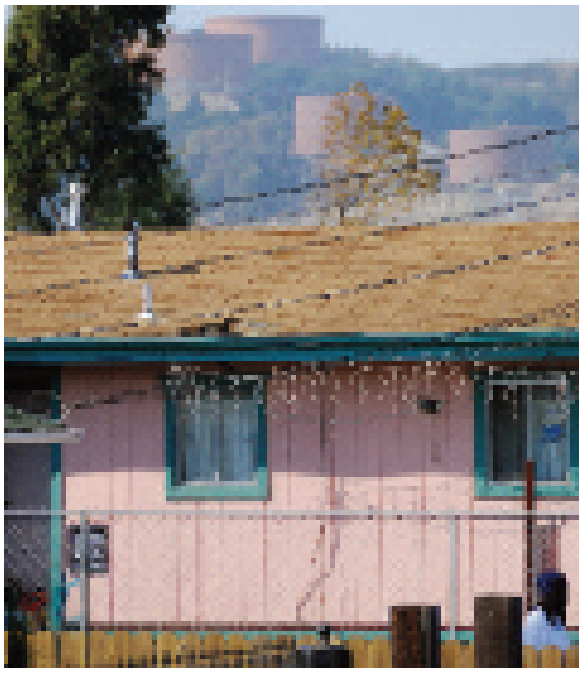
A survey found children living in Boston's public housing had significantly higher asthma rates (22 percent) than the national average (14 percent).[58]

Promising Approaches: Advocates Taking Action

Innovative new approaches are underway across the country to improve indoor air quality in homes. This work pays special attention to both improving the construction and siting of new housing as well as the renovation of existing housing. The following promising approaches include a diverse set of strategies using changes to institutional and public policy, litigation, and systematic policy enforcement.

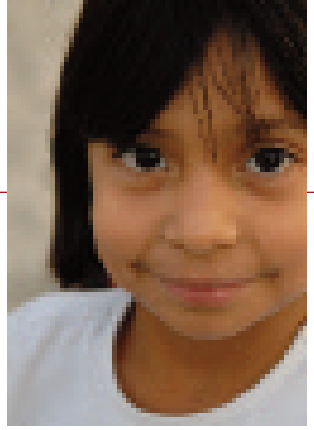
Advocate for Strong Housing Codes and Code Enforcement. To address structural and large-scale problems in rental housing, it is critical that landlords maintain their properties and respond promptly to problems

reported by tenants. Asthma advocates are working to promote stricter housing codes that would compel landlords to fix problems, such as pest infestation, mold, and mildew–all key asthma triggers. The Healthy Homes Greensboro Collaborative profiled on page 31 achieved passage of a city ordinance tightening inspection requirements for rental properties. They also ensured ongoing implementation by highlighting success stories that resulted from enforcement of the new law.



Advocate for Systematic, Rather Than Only Complaint-Based, Code Enforcement. Another challenge is that renters often worry that if they report housing problems to the local public housing authority they might face retaliation from their landlord. Undocumented workers face a particularly difficult challenge in addressing problems in their home environments because they are fearful of deportation. One policy that can help address this issue is systematic, rather than only complaint-based, code enforcement by local government. Under systematic code enforcement, rental properties are automatically inspected every few years rather than only in response to complaints from tenants. The law the Greensboro Collaborative advocated for requires proactive inspections: landlords cannot rent their property unless they prove they are in compliance with the housing code.

Engage in Litigation Against Uncooperative Landlords. Some lawsuits have sought monetary awards for health damage and for the elimination of health hazards such as mold and mildew in housing occupied by low-income tenants. However, the private attorneys who handled the cases stress the complexity of the litigation and the need for lawyers with specialized knowledge and experience. Second, litigation is very expensive due to a high volume of work that must be done in advance to be successful. Additionally, consultants must be hired to analyze data to show a causal link between the presence of hazards and illness. Medical records must be accessed, reviewed and analyzed by medical professionals. All of these



expenses mean that low-income residents will have a difficult time obtaining legal assistance even when their situations are egregious.[61]

As a means of making the litigation process easier to navigate, advocates in Boston have used a medical-legal partnership[f] approach, which provides an opportunity for pediatric providers to refer patients for legal assessment in situations where a non-medical obstacle is impairing the overall health of a child. In turn, the legal team provides ongoing training for the pediatricians, nurses, social workers, and other staff about legal issues that may be facing their patients. A referral mechanism allows providers to refer patients to expert legal teams. A member of the legal team will interview the child's parent or guardian about the situation and provide free legal help where appropriate.

Other advocates from across the nation have adopted similar approaches. A press release for a new medical-legal partnership in Indiana notes that, "... a child with chronic asthma may come in for treatment, only to return to an environment filled with [substandard] conditions that make his or her asthma worse, such as mold, old carpet or cockroaches. When there is a medical-legal partnership in place, the doctor can call upon an attorney to intervene with the landlord and get the substandard conditions cleaned up. The result is better health for the patient."[62]

Policymakers should identify ways to help support legal efforts to address poor housing conditions, such as medical-legal partnerships.

Secure Financial Coverage for Home Remediation from Health Insurers. Few health plans address the broader needs of asthma patients beyond medication and clinical services. Yet, research has shown that home remediation efforts can reduce health care costs. The Kansas City Healthy Homes Project, The Michigan Healthy Homes Project and the Greensboro Housing Coalition are a few of the programs across the nation that focus on advocating for home remediation to be included in local health insurance coverage. Provision of home remediation efforts can be key to asthma management, and could be funded by Medicaid and private insurers as a way to ultimately reduce health care costs.

Ensure Public Housing Promotes Health for Residents. Many public housing tenants face challenges to healthy housing, such as repeated pest infestations, improper ventilation, or mold. To address some of these issues, the U.S. Department of Housing and Urban Development (HUD) launched the Healthy Homes Initiative, building on HUD's previous lead hazard control programs. The Healthy Homes Initiative addresses multiple childhood diseases and injuries in the home by focusing on multiple housing-related hazards. The safety and health concerns addressed by the program include asthma, mold, pesticides, and allergens.

Healthy Homes demonstration projects must spend at least 65 percent of their federal funds carrying out remediations for housing problems, with the remaining funds used for education and outreach activities, and building capacity to ensure that the projects are sustained. To effectively engage local residents, some Healthy Homes projects have trained and hired local residents also known as community health workers/promotoras to conduct in-home assessments, provide education and support, and link residents to remediation options when needed.

The Boston case study on page 33 is an example of some of the successes that have been achieved through Healthy Homes projects. The Healthy Homes program addresses a vital need for housing improvements in many communities. This important program should be maintained and expanded so that more communities can benefit.

Advocate for the Construction of Asthma-Safe Housing. Many efforts to improve housing conditions focus on improving existing housing, but another important strategy is to build new homes in ways that reduce asthma triggers. There are voluntary healthy housing construction guides, such as the American Lung Association's Healthy House Program, and trainings, such as the National Center for Healthy Housing's "Building Healthy Homes" and "Essentials for Healthy Homes Practitioners," that can be used by architects and builders to ensure the construction of asthma-safe housing. The case study describing Seattle's Breathe Easy Homes on page 36 highlights an effort to address this issue in low-income housing.

Other efforts involve the location of housing. In Otay-Mesa, south of San Diego, the San Diego Regional Asthma Coalition is engaging local businesses and the local chamber of commerce to stop developers from building 5,500 units of new housing in a largely industrial area near a major freeway. The businesses chose to partner with the coalition because they feared that once housing was constructed near their factories they might have to relocate because of health concerns. As a result of the advocacy by the asthma coalition and their partners, Otay-Mesa officials scrapped their original plans and have not yet offered a new proposal.

HOW COMMUNITIES ARE WINNING THE FIGHT AGAINST ASTHMA

CASE STUDY:

The Healthy Homes Greensboro Collaborative

Greensboro, North Carolina is rated as one of the top 10 asthma capitals in the country by the Allergy and Asthma Foundation of America.[63] The Healthy Homes Greensboro Collaborative, a project of the Greensboro Housing Coalition, wants to change that by improving housing. By December 2008, the group hopes to reduce unsafe and unhealthy housing in the city by half.

A key to achieving their goal was passage of a city ordinance that requires proactive inspections: landlords cannot rent a unit unless they have a certificate that shows they are complying with the housing code. Before the law passed, inspections were based on complaints. Tenants often wouldn't complain because they feared eviction, or in the case of immigrants, deportation. Even if tenants did complain and code inspectors cited the landlord, it was rare that someone would follow up to ensure that violations were remedied.

Now, rental units must be initially certified and re-certified every five years. Plus, penalties for landlords are significant. Since the ordinance has passed, around 8,000 (about 20 percent of all) rental units have come into compliance, especially by correcting problems such as pest infestation, mold and mildew–key asthma triggers.

Once the law went into effect, advocates faced another advocacy task–to ensure that it was enforced. The collaborative, a group that includes housing planners, immigrant groups, asthma advocates, and neighborhood associations, used a public awareness strategy to achieve this goal. They organized a bus tour of poorly-maintained housing for community leaders, elected officials, and others. The collaborative also attracted the attention of a local reporter, which led to the publication of a front-page story in the local paper. After the article ran, the collaborative was inundated with requests to join the upcoming bus tour.

CONTINUED

CASE STUDIES

The collaborative used this attention to develop a positive relationship with city code inspectors. They helped the code inspection agency publicize how the ordinance provided them with a new tool to help address unsafe housing. What was once an adversarial relationship turned into a partnership–the inspectors later ended up joining the Healthy Homes Collaborative.

The bus tours have continued helping to ensure ongoing enforcement. A year after the first tour the buses visited units that had been fixed as a result of the law. Most recently, as part of the bus tour, the collaborative gave an award to landlords that had once been at the top of the violation list, but had made progress in remedying problems in the rental units.

The collaborative knows that they can't just use one strategy to make housing safer. While the passage of the inspection ordinance and its successful implementation has improved the state of rental units, the collaborative has continued to do public education, educate medical providers on the link between health and housing, and offer repair programs to help low-income owners fix their rental properties.

Recommendations: Indoor Air Quality and Asthma

As evidenced by the case studies and promising approaches, there are many important policy opportunities for communities to expand on and replicate throughout the nation to ensure healthy homes for all children. Below is a list of the strategies discussed in this section and additional promising policies advocates have begun to work on.

- Ensure that housing codes address environmental triggers of asthma.
- Advocate for strong code enforcement practices, including strong penalties and follow-up on landlords who do not meet housing standards.
- Promote systematic housing code enforcement policies rather than only complaint-based inspections to ensure that residents' fear of retaliation from landlords will not prevent their

HOW COMMUNITIES ARE WINNING THE FIGHT AGAINST ASTHMA

CASE STUDY:

Improving Indoor Air Quality through Research, Advocacy, and Education

Like other groups around the country, advocates in Boston, New York City, and Los Angeles have recognized that overcrowded, substandard housing affects the health of residents, especially children with asthma. Coalitions in these three cities created projects to better understand the link between health and housing and to take action. All the groups have identified the same keys to success: educating, organizing and empowering residents; creating diverse coalitions; and undertaking research and using the results to make the case for achievable and sustainable policy change.

Since 2001, the Healthy Public Housing Initiative (HPHI) in ***Boston*** *has involved residents in research and action to improve public housing conditions. The project has focused on safe and economical pest control, and reducing asthma triggers, including dust mite exposure and poor air quality, for residents of public housing. In the first phase of the project, public housing residents trained as community health advocates (CHAs) surveyed 238 families about environmental issues in their homes. The results were alarming. Homes were infested with cockroaches and mice. Desperate residents were using pesticides extensively, including using illegal and restricted pesticides in their homes to try and get rid of them. Almost 50 percent of households had a high enough concentration of cockroach allergens to trigger asthma, and nearly 60 percent of the tested children showed allergic sensitivity to them.*

To mitigate the problems, project staff tried better ventilation, brought in new mattresses, arranged for commercial cleaning, and taught non-toxic methods for pest control. Then the CHAs went back and did the surveys again. The results were dramatic. Among them: a 50 percent reduction in reported asthma symptoms, improving coughing/wheezing, activity limitations, and sleep among the 60 children targeted for assistance.

Using these findings, the group is entering HPHI Phase Two: Healthy Pest-Free Housing Initiative. During the second phase of the project, the team is organizing residents and

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training them to lead efforts to improve housing. They are undertaking an education campaign about healthy housing targeted at residents and they are working towards sustaining their work.

A diverse coalition of groups have participated in HPHI: schools of public health from local universities, the local asthma coalition, the housing authority, the city's public health commission, and tenant organizing groups. The most important participants have been the residents. They conducted surveys and inspections as community health advocates and continue to do environmental assessments in homes.

In ***New York City****, the Coalition for Asthma Free Homes is also advocating for healthier homes. Working with a city councilmember, the group has proposed changes to the city's methods for reducing asthma triggers. One major recommendation is that the city boost penalties on landlords for mold, mildew, and vermin infestations. They also are recommending better education and training for inspectors and landlords in identifying mold and what causes it.*

The coalition based its recommendations in part on a report by the Fifth Avenue Committee, an economic and social justice group, and an immigrant worker organization, La Union de la Communidad Latina. The groups held five focus groups and surveyed low-income renters in Brooklyn's Sunset Park neighborhood asking residents about their health. Asthma topped the list of ailments. In one-third of the surveyed households, at least one member had asthma or another respiratory problem. Among that group, 90 percent reported that housing conditions exacerbated their illnesses. The coalition has used this information in their advocacy efforts to change the housing code.

As in Boston, the work in New York City has depended on the participation of

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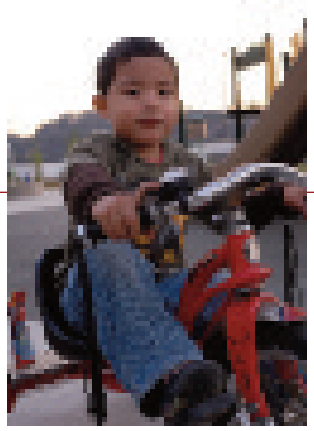
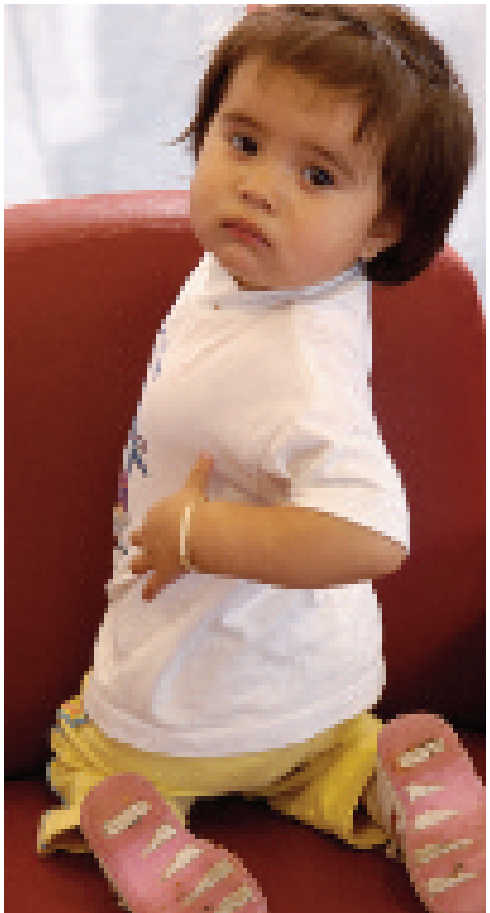


many groups including asthma advocacy organizations, faith-based organizations, housing and immigration groups, environmental justice organizations, and economic development groups.

In ***Los Angeles****, Better Neighborhoods, Same Neighbors: A Public Health Approach to Slum Housing and Neighborhood Stability is a community-based public health initiative that includes practitioners, doctors, health promoters, tenant organizers, lawyers, and researchers. Since 1998, a coalition of four groups–Los Angeles Community Action Network (LA CAN), Strategic Actions for a Just Economy (SAJE), Esperanza Community Action Housing Corporation, and St. John's Well Child and Family Center have taken a multipronged approach to improve health by improving housing. St. John's provides health assessments and exams, and compiles data on illnesses that prevail in slum housing. They then refer certain patients to Esperanza. Esperanza goes into homes to interview residents and assess housing conditions. SAJE and LA CAN are tenant organizers and educate tenants about their rights, help them find legal counsel, and press landlords to improve their properties.*

In April 2007, Better Neighborhoods, Same Neighbors published a report documenting eight years of research. Shame of the City: Slum Housing and the Critical Threat to the Health of L.A. Children and Families sets the stage for another level of advocacy for policy change. The paper provides research documenting the link between poor health and substandard housing and outlines policy solutions. The advocates are continuing to battle for policymakers to take action to improve the health of local residents by improving housing conditions.



HOW COMMUNITIES ARE WINNING THE FIGHT AGAINST ASTHMA

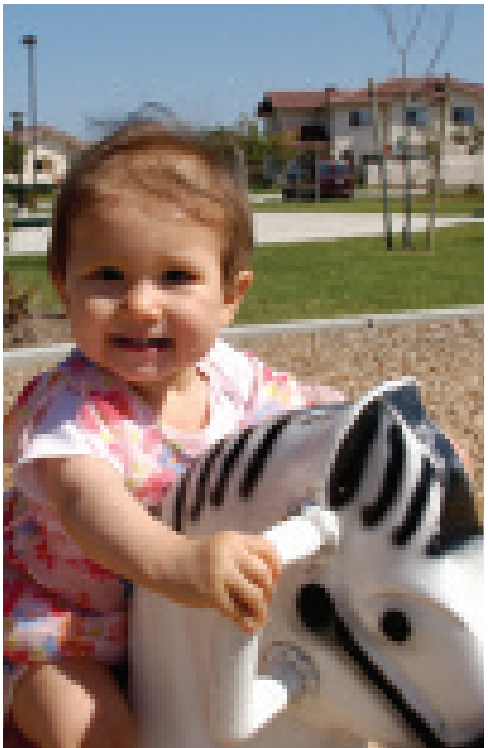
CASE STUDY:

Designing Homes So People Can Breathe Easy

When Jordy Okimow exercised or danced with friends, he was almost always stopped in his tracks by an asthma attack. That was before he moved into a new asthma-friendly home in a mixed-income housing development in West Seattle. Jordy's family is one of thirty-five who live in a Breathe Easy Home, a house designed for low-income families who have a child suffering from asthma.

Jordy's story is typical of children living in the homes. A recent study has shown that the design, materials, and construction of the homes have a dramatic effect on asthma triggers, symptoms, and urgent care visits for the children who live in them. The additional cost for new construction is modest–between $5,000 and $7,000 per home.

The concept behind Breathe Easy Homes–homes for low-income families built specifically to alleviate indoor environmental asthma triggers–was suggested by a community activist involved in High Point, the mixed-income development where the homes were built. The Breathe Easy Homes are a natural fit with High Point's emphasis on low-impact, sustainable design in an urban setting. The High Point development includes "green" housing, a natural drainage system to protect salmon habitat, and twenty acres of land for parks, open spaces, and playgrounds.



The idea for the homes soon grew into a partnership between the Seattle Housing Authority, the Public Health Department–

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Seattle and King County, Neighborhood House (a community-based organization), and the University of Washington's School of Public Health and Community Medicine. The collaboration between researchers, community organizers, architects, engineers, and health and housing personnel from the city and county was critical to the success of the project. Neighborhood House helped with recruitment and translation; the researchers, engineers, and architects used their knowledge from years of research on asthma triggers in housing; and city and county workers provided the knowledge and infrastructure to make the homes a reality. The federal Department of Housing and Urban Development, the major funder of the High Point redevelopment project, provided the resources to build the Breathe Easy Homes.

Researchers from Public Health and the University of Washington had been working for years on strategies to reduce the environmental triggers of asthma in low-income housing. Having community health workers partner with families to reduce asthma triggers in the home was successful. But their efforts to retrofit homes and apartments to make them more asthma-friendly were frustrated by the limits of working with aging rental units. Landlords and occasionally tenants were often reluctant to make renovations.

The new construction of the Breathe Easy Homes provided an unprecedented opportunity to demonstrate that modest improvements in new construction could lessen the impact of asthma on children who suffer from it. Special features in Breathe Easy Homes, such as enhanced barriers to moisture intrusion, use of products that emit little or no irritant gases, hard flooring, and extra ventilation systems improve overall indoor air quality and reduce indoor air pollutants.

To live in a Breathe Easy Home, a tenant must meet and sustain income criteria for public housing and agree to lease requirements specific to the asthma-friendly homes. Participants volunteer to follow a lifestyle to ensure the highest possible air quality for the children, including no smoking, no pets, and restricting use of certain cleaning agents that irritate the lungs. Another key component is the involvement of community health workers who work with families on asthma education, optimizing the home's special features, and ensuring the family understands the lease guidelines.

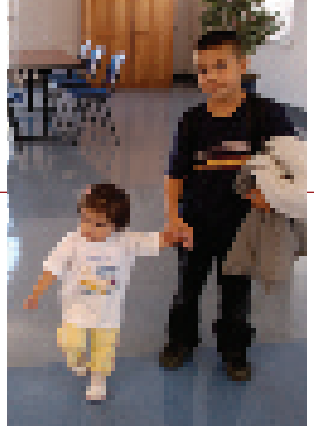
CONTINUED

CASE STUDIES

Given the positive health outcomes associated with the Breathe Easy Homes, replication by other communities around the country is likely. The Seattle Housing Authority is building 25 additional Breathe Easy Homes at High Point with assistance from the Enterprise Foundation. Project leaders also hope to make healthy housing more widely available through regulation and incentives, and by promoting partnerships between health departments and housing authorities. Possibilities for policy change include incorporating healthy homes principles into local housing codes, enhancing housing inspection requirements, and providing tax incentives that promote the inclusion of healthy home features. Other possibilities include training contractors and others in healthy homes practices so that they can build healthier homes and educate homeowners and renters.

units from being inspected and having housing codes enforced.

- Ensure collaboration between environment, health, and housing agencies and community-based organizations to ensure an efficient and coordinated effort to address environmental health concerns within housing.
- Identify collaborations, such as medical-legal partnerships, to address poor housing conditions which trigger asthma and other health conditions.
- Establish a litigation fund to pay for up-front expenses (air testing, data analysis, etc.) for private and pubic interest attorneys pursuing legal efforts to force the correction of asthma triggers in housing occupied by low-income tenants.
- Advocate for use of Medicaid funds for environmental assessment and needed physical remediation.



- Advocate for private health plans to expand coverage to pay for home assessments, remediation efforts, integrated pest management education, and purchase of equipment such as mattress covers that can help reduce asthma triggers.
- Ensure ongoing funding and expansion of the Department of Housing and Urban Development's Healthy Homes Program to expand the reach of this effective program to more communities nationwide.
- Promote tobacco-free common areas in low-income housing developments.
- Advocate for creation of affordable housing that is developed with attention to preventing asthma triggers (e.g., appropriate attention and materials for insulation and air quality, ventilation, as well as smooth flooring instead of carpeting).
- Promote green construction policies in the building of new home for low-income families.
- Require that affordable public housing be developed at a minimum of 500 feet from a busy roadway or highway. If this requirement cannot be met, mandate the inclusion of appropriate heating, ventilation, and air conditioning (HVAC) systems to ensure clean air.
- Advocate for renovation and new construction of homes to be free of asthma triggers using asthma as a disability, thereby ensuring rights under the American Disability Act (ADA) to asthma-friendly indoor facilities.

The Indoor Environment: Schools and Asthma

Schools as well as homes harbor the environmental triggers of asthma-the presence of mold, mildew, poor ventilation, and pests such as cockroaches and rodents. Thus, children are often impacted by poor air quality in the two indoor environments where they spend the vast majority of their day. For information on the specific links between indoor environmental factors and asthma, see the "Indoor Environment: Housing and Asthma" section starting on page 26.

Though focused on schools, concerns outlined in this section also relate to conditions in childcare facilities, afterschool programs, and recreational facilities where children spend much of their time indoors. Attention to the prevention of asthma triggers and remediation of problems in these environments also must be addressed.

Schools with poor ventilation, and increased mold and moisture, have been linked to greater numbers of children reporting asthmatic symptoms. In addition, volatile organic compounds (VOCs) such as formaldehyde, found in construction materials, furnishings, and cleaning products are known respiratory irritants and often found in schools. One study found that schools with higher concentration of VOCs also had higher prevalence of asthma.[65]

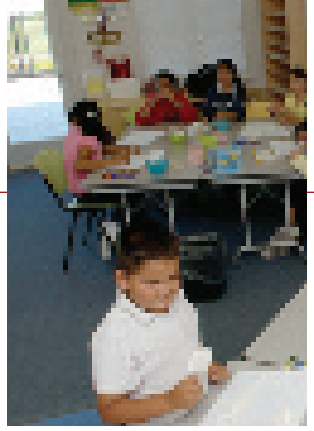
Furthermore, there is a link between asthma, unhealthy buildings, and school performance.[66] Children suffering asthma attacks often miss school days and can fall behind in their schoolwork. One study has shown a critical link between indoor air quality and school performance–the higher the respiratory hazard within a school the lower the academic performance. Moreover, the study found that indoor air quality in schools influences children's concentration and general ability to learn in the classroom.[67] Thus, when it comes to the consequences of asthma symptoms and triggers, children's school work as well as their health suffers.

School performance can have lifelong implications as educational attainment also influences health in the long term. People who do not have a high school diploma, a college education, or a graduate degree tend to be sicker than their counterparts with more formal schooling.[68] Evidence of education influences the type of job one can secure as well as their earning potential, both of which impact health. Reducing asthma rates will go a long way towards improving attendance and academic performance, and impacting the life trajectory of children who are affected. A U.S. Department of Education study found that schools serving low-income communities have the poorest school indoor air quality in comparison to other communities.[69]

Children in low-income communities are particularly impacted. Often schools in low-income communities are poorly maintained and have environmental triggers that exacerbate asthma. A 1999 report on the condition of America's public school facilities by the United States Department of Education found that over four in 10 (43 percent) schools had at least one of six environmental conditions that were unsatisfactory, and over two-thirds (68 percent) of those schools had at least two or more unsatisfactory conditions. The survey also found that schools serving low-income communities had the worst indoor air quality. Schools with the highest concentrations of poverty, defined as 70 percent or more of students eligible for free or reduced price lunches, were 18 percent more likely than schools with the lowest concentrated poverty to have at least one unsatisfactory environmental condition.[70]

> After a school suffered serious moisture damage, the number of students diagnosed with asthma increased three times in the next three years in comparison to three years prior to the moisture damage.[64]

Many of the facilities in low-income neighborhoods are old and were built using materials that may not pass current safety requirements; others were built on or near contaminated sites. Furthermore, schools serving a high proportion of children of color are more likely than other schools to be overcrowded–and overcrowded schools are more likely to use portable classrooms and to report that at least one building is in less than adequate



condition.[71] Portable classrooms, which are temporary instructional spaces such as trailers, have been linked to high levels of asthma triggers because of the presence of "airborne chemicals; the presence of potential pollutant sources; the performance of heating, ventilating, and air-conditioning systems; factors such as light, noise, temperature, and relative humidity; the presence of mold and other biological contaminants; and pollutant and allergen levels in floor dust."[72]

It is also important to note that indoor air quality in schools sometimes intersects with outdoor air quality. Studies have found relationships between school proximity to freeways and asthma attacks.[73, 74] Schools serving higher proportions of children of color are more likely to be in heavily trafficked areas.[75] Furthermore, children who ride in a diesel school bus may be exposed to up to four times more toxic levels of pollution compared to someone driving in a car directly behind the bus. Diesel-fueled school buses represent more than 86 percent of all public school buses nationwide.[76]

Promising Approaches: Advocates Taking Action

Throughout the nation successful approaches are being implemented institutionalizing healthier school policies. The following include several of the most promising approaches that are being implemented by communities.

Advocate for Policies that Require School Indoor Air Quality Assessments and Remediation Plans. At the national level, the EPA has produced an extensive "Indoor Air Quality Tools for Schools Action Kit" that asthma advocates have used to promote environmental assessments and improvements in schools. This 19-step asthma management plan and checklist has been effective in alerting schools to chemical pollutants in buildings, assisting teachers in preventing classroom triggers, improving ventilation systems, and increasing awareness of animal allergens from classroom pets or pests. While this type of program can be helpful in addressing asthma triggers in schools, it is still not followed by most schools. In 2005, a self-reported questionnaire administered to a representative sample of schools found that only 42 percent of schools in the United States reported having an indoor air quality management program.[77]

There has, however, been some movement by school districts and states to mandate policies that would require assessment and better management of indoor air quality. As described on page 49, advocacy by the San Francisco Asthma Coalition resulted in a school board resolution requiring that all San Francisco schools implement the EPA's Indoor Air Quality Tools for Schools program. Minnesota now requires all public school districts to have an effective and district-specific indoor air quality management plan.[78]

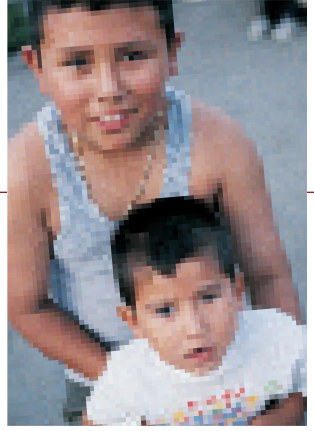
In 2001, the Los Angeles Unified School District (LAUSD) instituted a policy for routine health and safety inspection for all schools in its district. The results have shown great success. In 2003, the schools were rated 39 percent poor, 59 percent fair and only 3 percent good. In contrast, in 2006, the

ratings were only 7 percent poor, 74 percent fair, and 19 percent good.[79] Based on the LAUSD program, the EPA developed a tool to assess health and safety issues in all school environments called the Healthy School Environment Assessment Tool (Healthy SEAT).

Secure Adequate Funding for School Construction, Maintenance, and Repair. Historically, school buildings have been paid for by local taxpayers. This has meant that districts with low property values or those with small proportions of voters with school-aged children faced significant challenges in raising needed revenue for renovation of existing facilities or needed programming, leading to inequity in school quality between different communities. Lawsuits in Arizona, California, New Jersey, and Ohio led these states to increase funding for building repairs and equipment. In addition, these states created facility standards, conducted facility assessments, increased overall funding for school facilities, and directed funds to areas with the greatest need to resolve immediate health and safety issues.[80]

For new schools, asthma advocates are engaged in efforts to ensure there is adequate funding budgeted for constructing new schools, as well as maintaining and repairing the schools. To ensure that indoor air quality considerations are included, advocates such as the Asthma Regional Council of New England recommend that school renovation or construction projects require bidders to include provisions for minimizing asthma triggers in their proposals.[81] Regional Asthma Management and Prevention, the coordinating organization for the California asthma network Community Action to Fight Asthma, also emphasizes the importance of adequate ongoing funding for school maintenance personnel.

It is also important to consider possible contaminants in the land where schools will be built. The Los Angeles Unified School District, for example, invested $21 million in a new school, the Belmont Learning Center. Unfortunately, the district learned too late that they had built the school on a contaminated site with dangerous air quality impacts, including elevated levels of



methane and other dangerous gases. Students never attended the school and the district abandoned it. In a program that can serve as a model for other efforts, the school district instituted an air quality task force responsible for comprehensive routine health and safety inspections of all of the district's 900 schools, focusing on both indoor and outdoor conditions *(see section above for more information)*.

Advocate for Asthma-friendly School Construction and Renovation Practices. In the renovation of existing schools or the construction of new schools, "green" building materials[g] can be used to ensure good indoor air quality and be designed in ways that intentionally reduce environmental triggers of asthma. The Collaborative for High Performance Schools (CHPS) helps facilitate the design, construction, and operation of schools that are healthy, as well as energy and resource efficient. CHPS oversees the nation's first green building rating program designed for schools. They also conduct school trainings for stakeholders, and provide technical information on best practices as well as a directory of services and products.

Asthma advocates are promoting green building standards throughout several states. Massachusetts has adapted these standards for their schools, and Illinois recently passed a law that requires schools to be built and constructed to meet green building standards.[82, 83]

Advocate for Schools to Use Green Cleaning Products and Non-Toxic Pest Control Methods. Many asthma advocates are working to ensure that schools use "green" cleaning products,[h] which lessen exposure to irritants that can trigger asthma attacks. In 2007, asthma advocates in Illinois helped pass a law to ensure green cleaning products are used in schools. A more detailed case study highlights their process on page 45. Illinois became the second state in the nation with a green cleaning act. New York passed the first legislation on green cleaning products, and Connecticut, Massachusetts, and Washington legislators have considered legislation on green cleaning as well.

Asthma advocates are also working to promote integrated pest management (IPM), which involves cleaning and use of non-toxic baits and structural repairs instead of chemical pesticides. The Centers for Disease Control and Prevention highlights IPM as one important way to ensure a healthy school environment for children with asthma.[84] Shifting to IPM can be highly cost-effective. The EPA notes that Monroe County, Indiana, "achieved a 92 percent reduction in pesticide use, enabling them to also direct their cost savings to hire a district-wide coordinator to oversee pest management in the schools."[85]

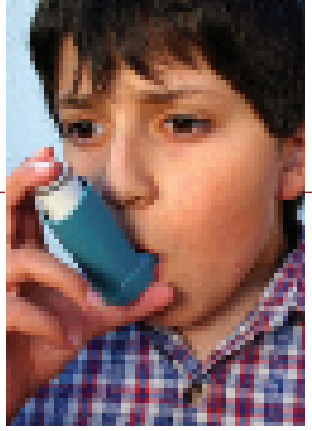
States around the nation have instituted laws to limit the exposure of students to pesticides on school property. For example, California has right-to-know requirements which mandate parental and children's pre-notification of any pesticide use, as well as documentation of all pesticides used on school premises. [86] In another example, Massachusetts requires all schools,

daycare facilities, and school-age childcare programs in the state to develop an indoor and outdoor IPM plan, and comply with strict requirements regarding pesticide applications, careful protection of children, and parental notification.[87] Other states and organizations are working to eliminate pesticide use altogether from school premises, not relying on IPM to minimize pesticide use. A Connecticut research and policy organization, Environment and Human Health Inc., was successful in banning all pesticides used to maintain school lawns and athletic fields from kindergarten to 12th grade schools statewide.[88]

Create Pesticide-Free Protection Zones Near Schools. To address children's exposure to pesticides in schools next to agricultural fields, advocates are working to create pesticide-free protection zones around schools. In one example of the severity of pesticide exposure in schools, an Associated Press investigation found that between 1996 and 2005, 590 people in California were sickened by pesticides at schools, and more than a third of the cases were due to pesticide drift[i]. [89]

To address this issue, residents, and environmental and health activists in California's Central Valley–the agricultural center of California–recently won new regulations to create pesticide buffer zones around schools, residential communities, and farm labor camps. Two years ago, Californians for Pesticide Reform, a coalition of 185 members, began organizing efforts to limit pesticide exposure of children in schools. They went door-to-door collecting information on residents' exposure to pesticide drift, gathered information on the harmful health consequences of pesticides, and made continuous calls and visits to Tulare County's agricultural commissioner voicing their concerns over constant exposure to pesticide drift.

To persuade the commissioner to use his authority to create a quarter-mile pesticide-free buffer around schools, the coalition began a petition campaign–gathering over 1,200 signatures–and conducted their own air samples indicating pesticides were drifting into schools and residential neighborhoods from surrounding farms.[90] Armed with evidence and support, the



coalition was successful in getting new regulations to prohibit aerial spraying (the mechanism of pesticide application most prone to drift) of restricted-use pesticides within a quarter-mile of all schools in session, as well as residential communities and farm labor camps. This regulation will help reduce the amount of pesticides in Tulare County that drift into the air children and families breathe.[91]

Ensure Healthy Air Quality Near Schools and in School Buses. Coalitions throughout the nation, such as those affiliated with the New England Regional Asthma Council and Community Action to Fight Asthma in California, are also tackling school bus pollution by advocating limits on bus idling near schools, and by working to replace or retrofit diesel buses. The Connecticut case study on page 48 highlights these types of efforts.

Other efforts seek to ensure that schools are not sited right next to polluting highways. For example, state legislation was passed in California to prohibit schools from being built within 500 feet of a highway.[92]

CASE STUDIES

HOW COMMUNITIES ARE WINNING THE FIGHT AGAINST ASTHMA

CASE STUDY:

From School House to State House: The Healthy Schools Campaign Organizes Parents and Convinces Legislators to Improve Student Health

West Town, a largely Latino community in Chicago, has high rates of asthma and obesity–28 percent of children have asthma and 73 percent of children are overweight or obese. So when the Healthy Schools Campaign invited West Town Leadership United, a neighborhood organization, to join a new effort to combat asthma and obesity, the executive director said yes. The Partnership to Reduce Disparities in Asthma and Obesity in Latino Schools, established in November 2004, is a coalition of community-based organizations, environmental justice groups, county government, and the University of Illinois, that engages parents in school-based efforts to reduce asthma and obesity. Over the past four years the partnership has grown from working in two schools to organizing parents in 30 schools.

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When the partnership began, the first order of business was an information campaign to show parents that their communities were disproportionately suffering from asthma and obesity. Organizers used data that highlighted the difference in asthma and obesity rates depending on the racial composition of neighborhoods. The focus on disparities helped parents see that addressing these chronic conditions was not just about health, but also about social justice.

Parents recognized that schools were a natural venue to improve health. Approximately 30 parents joined their local school councils, the primary avenue for parental involvement with school policymaking. By participating on these councils, parents convinced their schools to establish school wellness policies that promote physical activity, healthy eating, and the use of toxin-free cleaning products.

The partnership organized parents to work beyond their individual schools. Parents and organizers developed a set of policy recommendations to improve school environments to promote health, organized postcard campaigns and rallies, testified at Board of Education meetings, and generated numerous stories in the media about the connection between children's health and school policies. Parents and community members also lobbied state senators and representatives for legislation that would make school environments healthier.(see related box on Illinois' green cleaning bill).

The partnership's strategies continue to bear fruit. At a recent breakfast to educate parents and principals about creating a healthy school environment, more than 80 percent of the 140 attendees came from districts with a significant Latino presence, confirmation that the partnership's efforts were working. Hearing about the partnership, parents recruited their principals to come to the breakfast, hoping to convince them to create a healthier school environment. Parents knew that their children's health–and their ability to learn–depended on it.

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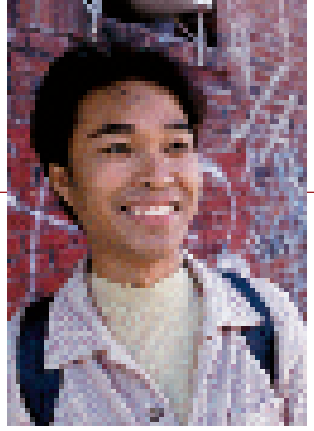
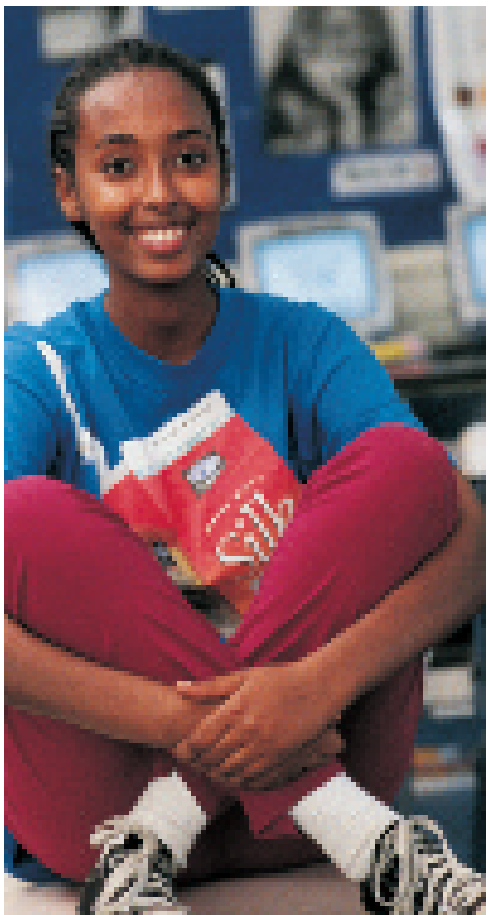


The Healthy Schools Campaign not only organizes individual parents and communities to focus on change building by building, they also advocate on a state level. Working in a broad coalition that included parents, school nurses, unions, the American Lung Association, and businesses, the campaign spearheaded an effort that resulted in the passage of the nation's second Green Clean Schools Act in 2007. The law requires all schools in Illinois to purchase only environmentally sensitive cleaning supplies. Since children, especially those with asthma, are at a high risk from polluted air and chemical exposures from conventional cleaning products, advocates knew this law could make a big difference in the health of the state's children.

Opposition to the legislation centered on increased expense and a concern that green leaning products didn't do the same job as more traditional cleaners. The coalition supporting the legislation organized testimony to refute these concerns. School facility managers of schools that used green cleaning products testified that the products were comparable to more traditional cleaners. Distributors testified that the costs wouldn't be higher for green cleaning products. School administrators said when they "went green" school attendance went up. And school nurses talked about the ill effects of toxic chemicals on the health of students.



The coalition credits its success to a diverse coalition, a focus on schools, careful messaging, and highlighting the positive experience of schools that had used green cleaning products. The Healthy Schools Campaign has been contacted by advocates around the country that hope to pass similar legislation in their states.

CASE STUDY:

School Buses are Hazardous to Children's Health: State Legislation to Limit Idling in Connecticut

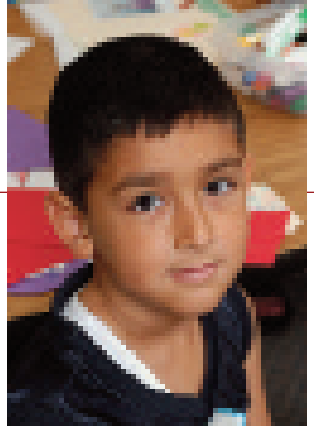
Each day, 24 million students ride to and from school on buses. What most people probably don't know is that the buses are dangerous for children even when the vehicles aren't moving: the diesel emissions from idling buses pose a significant health hazard.

Environment and Human Health Inc. (EHHI), a Connecticut research and policy group, knew the dangers of idling buses in exposing children to diesel pollution. School teachers often complained that classrooms filled up with diesel fumes as the school buses idled, waiting for children to get on and off the bus. While there was an administrative regulation that limited idling time, the state didn't monitor or enforce it. Nor was there data showing the high levels of diesel emissions students were exposed to when buses idled.

EHHI decided to gather data themselves. They had fifteen students wear air monitoring equipment throughout their day. Working with scientists, they also compared emissions from moving and idling buses, analyzed differences between types of buses, and monitored the effect of having bus windows open and closed. They also measured the length of time buses idled.

The results were alarming. The air monitoring equipment worn by students showed that their exposure to diesel on the bus was 5 to 15 times their normal exposure. On average, school buses were idling for thirty minutes as students boarded the bus and another thirty as they unloaded. The buses were emitting diesel from the front and tail ends of the vehicles, filling the buses with diesel fumes. When the driver closed the doors, the diesel fumes were locked in with the children.

EHHI published a report summarizing its findings and took it to state lawmakers. Their highest priority was to prohibit bus idling. Connecticut's Department of Environmental Protection, the state's Parent Teacher Association (PTA), and the school bus driver's union all joined EHHI in supporting a new bus idling law. The data, coupled with the diverse coalition, made a compelling case–in 2002 the Connecticut legislature passed a law prohibiting school bus idling for more than three minutes.



CASE STUDY:

Partnerships and Persistence: Improving Indoor Air Quality in the San Francisco Unified School District

In 2005, the San Francisco Board of Education passed a resolution requiring that all district schools implement programs to improve indoor air quality. The resolution specified that schools use Tools for Schools–a resource created by the federal Environmental Protection Agency (EPA) that includes an action kit, fact sheets, brochures, and software programs that provide information on improving school air quality. The new mandate required the superintendent of San Francisco Unified School District to develop a plan for institutionalizing Tools for Schools within four months, with implementation by all schools to be completed by 2010.

The San Francisco Asthma Task Force was the driving force behind the resolution. The task force is different than many other asthma coalitions-it is sponsored by the city and reports to San Francisco's Board of Supervisors. The mayor of San Francisco formed the task force in 2001 in partnership with community activists concerned about the prevalence of asthma in their neighborhoods. The group convinced the mayor that the city should get involved given the high rates of asthma in San Francisco, especially among vulnerable populations. The task force's membership is broad and includes representatives from community-based organizations, city agencies, schools and tenants' rights groups, as well as neighborhood activists and parents of children with asthma.

The composition of the task force, as well as its unusual relationship with the city, helped when it came to convincing the school district, parent associations, school board members, and school facilities personnel to support the resolution. The variety of expertise and perspective represented within the task force was key–parents talked about their every day experiences of asthma, city agency personnel shared their ideas about how the program could succeed within the existing bureaucracy, and school officials who had worked with Tools for Schools discussed the advantages of the program.

CONTINUED

CASE STUDIES

Task force staff and members were persistent in their advocacy. They met repeatedly with those who would be responsible for implementation to demonstrate the value of Tools for Schools. They worked to identify resources to fund a program coordinator and other implementation costs. They also modified the resolution in response to concerns they heard from school district personnel.

While the passage of the Tools for Schools resolution was a significant success, implementation hasn't been easy. Two years passed before the school district gave the resolution any attention. Finally, as a result of advocacy by the task force, the school district procured a grant from the EPA to help fund a coordinator. In the meantime, the task force–impatient for action–began training schools to use Tools for Schools. The school district has hired a coordinator and implementation has started in earnest. But task force members are not resting on their laurels. They want indoor air quality concerns to become second nature to school district personnel. They hope to use their partnerships and their persistence to keep their concerns–and the health of children–on the front burner.

Recommendations: Indoor Air Quality and Schools

As shown above, advocates are working to ensure schools provide clean environments for children to learn safely–free of asthma triggers. Below is a summary of the approaches just discussed, with additional innovative policies advocates are working to implement.

- Require indoor air quality assessment and management plans in all schools, child development centers, and daycare sites.
- Advocate for allocation of funds targeted for physical remediation in schools, recreation centers and daycare centers, starting with those with the poorest air quality.
- Advocate for increased funding for the replacement of dilapidated schools and ensure equitable distribution of these funds.
- Promote policies to ensure that school maintenance personnel are prepared to address asthma triggers and are adequately funded.

- Promote policies to ensure that architects and developers developing new schools or renovating existing schools use construction design and materials that will reduce asthma triggers.
- Ensure that schools are built on sites that will not be harmful to students. This should include considerations of the land on which schools are built and ensuring that schools are not built within 500 feet of highways or busy roadways.
- Promote the use of green cleaning products in schools.
- Advocate for integrated pest management to be implemented in schools to minimize pesticide use.
- Ban pesticide use altogether from school premises, particularly from lawns and athletic fields.
- Prohibit the use of pesticides near schools through pesticide-free buffer zones.
- Pass and implement policies to limit school bus idling and diesel truck idling near schools.
- Promote policies to replace or retrofit diesel school buses.

Ingredients for Success: Themes from the Case Studies

The organizations and projects profiled in this report show advocates working in different venues–schools, housing, and neighborhoods–to address the environmental triggers of asthma. They use a variety of strategies to change policy on an institutional, local, and state level. There are, however, common themes in their work that highlight important ingredients for success.

Most of the projects profiled work in broad-based coalitions and rely on innovative partnerships and alliances to change policy and programs. The Breathe Easy Homes project in Seattle brought together the local housing authority, the health department, researchers, and community-based organizations to build asthma-friendly homes. In Greensboro, the Healthy Homes Collaborative, which got legislation passed to certify rental units as safe housing, includes housing planners, immigrant groups, health care advocates and neighborhood associations.

In some efforts, asthma coalitions are front and center–such as the Merced/Mariposa County Asthma Coalition working with partners to improve air quality in the San Joaquin Valley. In other campaigns, organizations that focus on healthy schools or environmental issues–such as the Healthy Schools Campaign in Illinois or Environment and Human Health in Connecticut–mobilize groups, including asthma advocates, to lobby legislators or employ other advocacy strategies.

Many of the efforts depend on the involvement, expertise, and commitment of community members and others personally affected by childhood asthma. The neighborhood assessment team of the Long Beach Alliance for Children with Asthma is comprised of mothers whose children have asthma–they monitor air pollution and count trucks in the neighborhood. The parents who join school wellness teams in Chicago through the Partnership to Reduce Obesity and Asthma in Latino Schools have a personal stake in the

policies of the schools their children attend. Resident oversight councils in Harlem ensure that city and state agencies meet their commitments to reduce air pollution.

The right message is key to involving community members. When talking with Latino parents, organizers in Chicago framed the high prevalence of asthma and obesity as a social justice issue. In the San Joaquin Valley, advocates showed the connection between asthma and air pollution to mobilize residents, many of whom were motivated by skyrocketing rates of childhood asthma, rather than a concern about environmental air quality.

Data is a powerful force for change. In Connecticut, Environment and Human Health used scientific evidence to show legislators that idling buses exposed children to unusually high levels of diesel pollution. WE ACT in Harlem demonstrated to policymakers through studies that polluting entities are disproportionately located in northern Manhattan, predominantly affecting low-income and communities of color. Breathe Easy Home researchers in Seattle have shown the effectiveness of the new homes through follow-up studies and research that demonstrates improved health for residents.

A multipronged approach is critical to addressing the environmental triggers of childhood asthma. Los Angeles health and housing advocates work in coalition to provide health assessments to residents, compile data on illnesses that prevail in slum housing, and issue reports that link poor health and substandard housing and make specific suggestions for policy change. The Long Beach Alliance for Children with Asthma trains mothers of children with asthma to monitor air pollution, and also works in coalition with other groups to change policies at the ports of Los Angeles and Long Beach. The Healthy Homes Greensboro Collaborative garners media attention by giving bus tours of dilapidated housing to ensure that the housing code is enforced, while also offering repair workshops to assist owners in fixing their rental properties.

If at first you don't succeed …

All of the projects profiled in this report are committed to long-term, sustainable policy change and they know that change often takes time. Change requires perseverance, determination, and dedication. Advocates in the San Joaquin Valley learned first hand not to give up when they failed to convince the Air Pollution Control District to meet federal ozone levels by 2017. Instead, they raised community awareness about the air district's power and successfully lobbied for a state law to change the composition of the district's board. WE ACT, by the same token, has persevered for more than 15 years to address air pollution in Harlem–sometimes they've had great successes, like ridding the neighborhood of more than 300 polluting garbage trucks, while other times they've struggled to get the attention of the city's transportation officials.

Advocates also know that once good policy is passed, successful implementation is critical for any real changes to take hold. Environment and Human Health in Connecticut educated bus drivers about the new bus idling law. In Greensboro, after healthy housing advocates got a bill passed to require certification of rental housing, they continue to take policymakers and journalists on bus tours to monitor improvements and they've publicly recognized landlords that have complied with the law to provide an incentive for others to follow.

Concluding Comments

Too many children are suffering from asthma. One in seven children nationwide is affected by this potentially debilitating disease which impacts not only health, but a child's ability to learn and play comfortably within their home, school, and outdoor environments.

Asthma triggers lurk in everyday environments. Those caring for children with asthma must miss work to take their children to the hospital, be vigilant with their children's asthma medications, and live with the fear that their child's asthma may be triggered in the most common places.

Fortunately, promising practices and policy opportunities are emerging as parents, environmental health and justice groups, housing organizations, and community-based organizations forge important alliances and garner the attention of the public and policymakers. These approaches constitute an important platform for igniting a movement to alleviate–and reduce–childhood asthma. All children should be able to breathe easily–where they live, learn, and play.

Appendix I: List of Interviewees

People across the nation contributed insight and information to this report. The following is a list of those who were interviewed.

Outdoor Air Quality and Asthma

Elina Green
Project Manager
Long Beach Alliance for Children with Asthma

Peggy M. Shepard
Executive Director

Anhthu Hoang
General Counsel
WE ACT for Environmental Justice
(West Harlem Environmental Action, Inc.)

Mary-Michal Rawling
Program Manager

Melissa Kelly-Ortega
Program Associate
Merced/Mariposa County Asthma Coalition

The Indoor Environment: Housing and Asthma

Elizabeth McKee-Huger
Executive Director
Greensboro Housing Coalition
Greensboro, North Carolina

Tim K. Takaro
Associate Professor
Faculty of Health Sciences, Simon Fraser University
Seattle, Washington

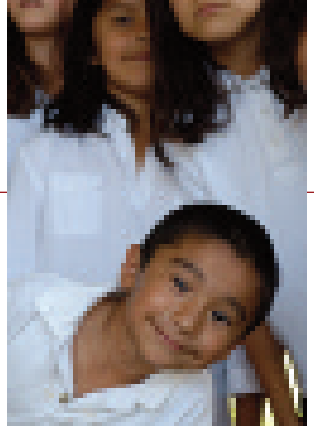
James Krieger
Chief, Chronic Disease and Injury Prevention Section
Public Health-Seattle and King County
Seattle, Washington

Denise Sharify
Community Health Program Manager
Neighborhood House
Seattle, Washington

Margaret Reid
Director, Asthma and Diabetes Prevention and Control Program
Boston Public Health Commission
Boston, Massachusetts

Irene Tung
Coordinator of Organizing
Make the Road by Walking New York
Brooklyn, New York

Jim Mangia
President and Chief Executive Officer
St. John's Well Child and Family Center
Los Angeles, California



The Indoor Environment: Schools and Asthma

Rochelle Davis
Executive Director

Guillermo Gomez
Chicago Director
Healthy Schools Campaign
Chicago, Illinois

Nancy Adleman
President
Environment and Human Health Inc.

Stephanie Manfre
Asthma Advocacy Coordinator
San Francisco Asthma Task Force
North Haven, Connecticut

Anjali Nath
Director of Asthma Programs
Breathe California
San Francisco, California

David Chatfield
Director
Californians for Pesticide Reform
Delano, California

Expert Interviews

Claire Barnett
Executive Director
Healthy Schools Network, Inc.
Washington, D.C.

Nsedu Obot Witherspoon
Executive Director
Children's Environmental Health Network
Washington, D.C.

Deborah Moore
Executive Director
Green Schools Initiative
Berkeley, California

Ted Schettler
Science Director
Science and Environmental Health Network
Ames, Iowa

Ralph Scott
Community Projects Director
Alliance for Healthy Homes
Washington, D.C.

Gina Solomon
Senior Scientist
National Resources Defense Council
Associate Clinical Professor at University of California, San Francisco
San Francisco, California

Edith Parker
Associate Professor of Health Behavior & Health Education, and Associate Dean for Academic Affairs
School of Public Health at the University of Michigan
Ann Harbor, Michigan

Rebecca Morley
Executive Director
National Center for Healthy Housing
Columbia, Maryland

Notes:

[a] Vehicle miles traveled (VMT) is defined by the United States Energy Information Administration as the number of miles that residential vehicles are driven in a specified length of time, generally a day or a year.

[b] Congestion pricing is the practice of charging motorists more to use a roadway, bridge, or tunnel during periods of the heaviest use. Its purpose is to reduce automobile use during periods of peak congestion, thereby easing traffic and encouraging commuters to walk, bike, or take mass transit as an alternative. Transportation Alternatives, (2008), http://www.transalt.org/campaigns/congestion, (last accessed April 9, 2008).

[c] Allergic sensitization is a process by which a person becomes increasingly allergic to a substance through repeated exposure to that substance. As the allergy develops, the response becomes worse with even short exposures to low concentrations eliciting severe reactions. Environmental Protection Agency, (2008), http://es.epa.gov/ncer/publications/research_results_synthesis/ceh_report_508.pdf , (last accessed April 10, 2008).

[d] An allergen is a substance that can cause an allergic reaction. Allergens are substances that are recognized by the immune system as "foreign" or "dangerous" in some people but cause no response for most people. Medlines, (2008), http://www.nlm.nih.gov/medlineplus/ency/article/002229.htm, (last accessed April 10, 2008).

[e] Off-gassing is the evaporation of volatile chemicals in non-metallic materials at normal atmospheric pressure. This means that building materials can release chemicals into the air through evaporation. This evaporation can continue for years after the products are initially installed. Nature Neutral, Build Well...Live Well, http://www.natureneutral.com/learnOff.php, (last accessed April 16, 2008).

[f] A medical-legal partnership is a collaboration of legal services and medical providers, which work together to address the social causes that contribute to illness. The aim is to improve the health and well-being of low-income families through attention to addressing the environments which perpetuate illness. For example, in this partnership, doctors can contact lawyers to intervene to ensure remediation of substandard housing which is continually triggering a child's asthma.

[g] Green building materials are composed of renewable, rather than nonrenewable resources. Green materials are environmentally responsible because impacts are considered over the life of the product (Spiegel and Meadows, 1999). Ross Spiegel and Dru Meadows, *Green Building Materials: A Guide to Product Selection and Specification*, John Wiley & Sons, Inc., New York, 1999.

[h] Green cleaning products offer safer alternatives to regular cleaning products, which can include harsh chemicals that are harmful for humans and the planet.

[i] Pesticide drift is the movement of airborne spray droplets, vapors, or dust particles away from a target area. Pesticide drift can be difficult to manage because the full range of drift cannot be detected visually. Due to temperature, and wind conditions, pesticides can drift long distances away from their target.

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