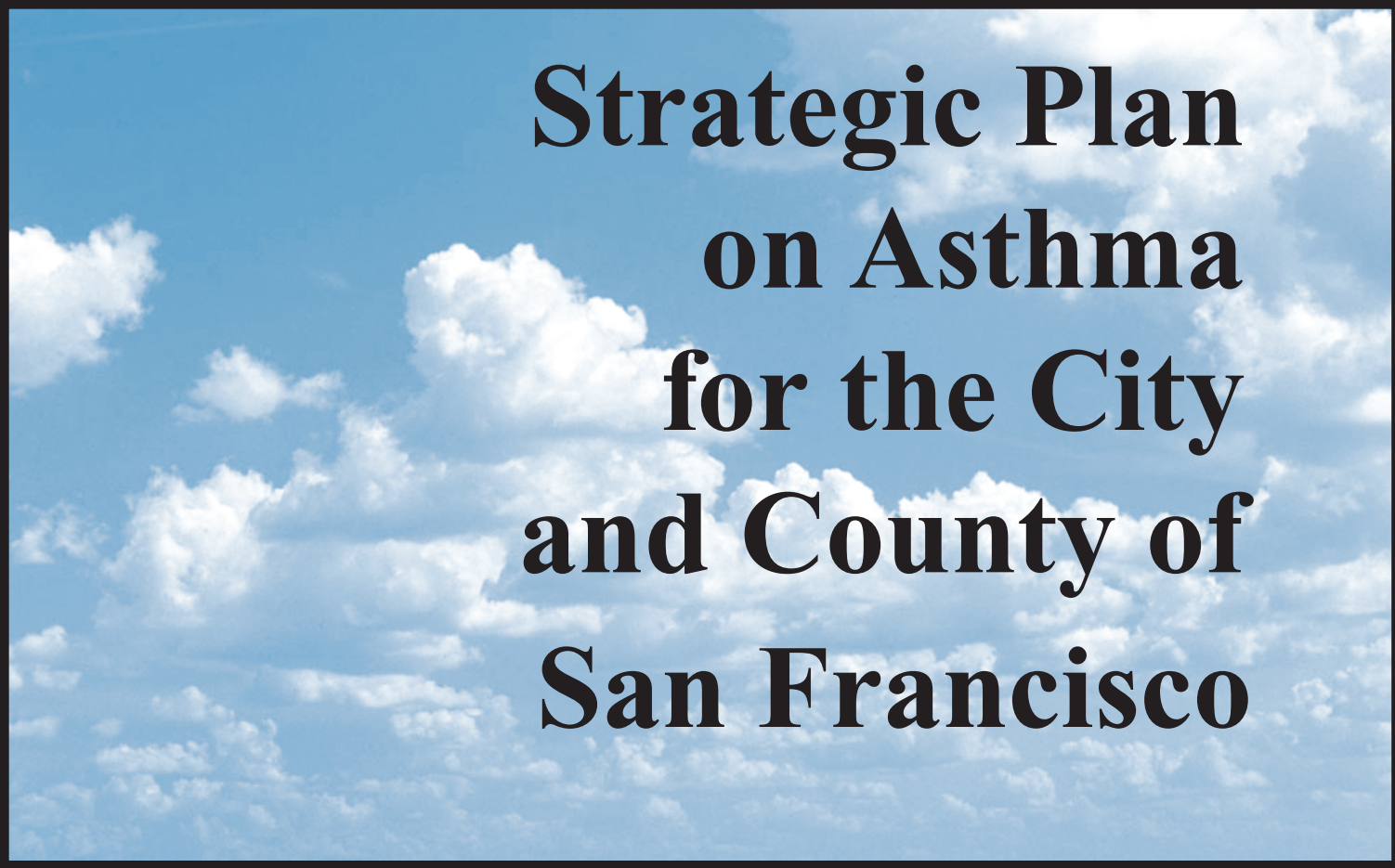


June 2003



**Strategic Plan
on Asthma
for the City
and County of
San Francisco**

The San Francisco Asthma Task Force

A legislated task force under the San Francisco Board of Supervisors

Dedication

We dedicate this strategic plan to the people of San Francisco who live with asthma.

And in memory of the children and adults who lost their lives due to asthma and their families, friends and loved ones.

San Francisco Asthma Task Force

Chair

Deanna Rossi, MPH, Wu Yee Children's Services

Vice-Chair

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Chair, Environmental Committee

Karen Cohn, MS, (April 2003 - present), San Francisco Department of Public Health

Former Chair: Jennifer Mann, PhD, MPH (October 2001 - March 2003), San Francisco Department of Public Health (former)

Chair, Schools and Child Care Committee

Marie Hoemke, RN, PHN, MPA, MA, San Francisco Unified School District (retired)

Chair, Clinical Committee

Peg Strub, MD, Kaiser Permanente of San Francisco

Other Voting Members

MariaElena Alioto, BA, Asthma & Allergy Network/Mothers of Asthmatics, University of California at San Francisco

Richard Castro, MD, University of California at San Francisco

Barbara Connor Andersen, MD

Carla Furtado, MPH, Blue Cross of California State-Sponsored Programs

Mary Higgins, RN, MBA, DBA, Bayview Hunters Point Adult Day Health Center

Lisa Kroon, PharmD, University of California at San Francisco

Julie McKown, RRT, St. Luke's Health Care Center

Veronica Lightfoot, MS, MA, George Washington Carver Elementary School

Ann Melamed, RN, MA, American Nurses Association, San Francisco Parent Teacher Association

Carolyn Noble, Building A Healthier San Francisco: A Citywide Collaborative, Hospital Council of Northern & Central California

Carl Rose, RT

Beth Saiki, MPH, American Lung Association of San Francisco & San Mateo Counties

Ann Togia, MPA, Bayview Hunters Point Health & Environmental Resource Center

Rose Toney, Top Ladies of Distinction, Inc.

Non-Voting Members

Trish Bascom, RN, MA, San Francisco Unified School District

James Calonico, MSW, PhD, San Francisco Department of Human Services

Joan Hall, US Department of Housing and Urban Development

Louise Hill, US Environmental Protection Agency, Region 9

Louise Kimbell, San Francisco Department of Building Inspection

Kasheica McKinney, San Francisco Housing Authority

Regularly Attending Non-Members

MayLing Dea, San Francisco Department of Building Inspection

Neil Gendel, JD, Healthy Children Organizing Project

Anne Kelsey, MPH, Regional Asthma Management and Prevention Initiative

Karen Yu, MPH, San Francisco Department of Public Health

Staff

Nancy Warren, MPH, Strategic Planning Consultant (Contracted by American Lung Association of San Francisco & San Mateo Counties)

Beth Saiki, MPH, Director of Strategic Planning Grants, American Lung Association of San Francisco & San Mateo Counties

Tirtza Rosenberg, Administrative Support, San Francisco Department of Public Health

Sponsors of San Francisco Asthma Task Force

Supervisor Sophie Maxwell, Legislative Sponsor, San Francisco Board of Supervisors, District 10
Rajiv Bhatia, MD, MPH, Organizational Sponsor, San Francisco Department of Public Health

Past Members

John Balmes, MD, University of California at San Francisco
Jean Circiello, US Environmental Protection Agency, Region 9
Anne Heinline, San Francisco Unified School District (retired)
Ben Loewy, PhD, MA, Asthma & Allergy Foundation of America, Northern California Chapter (former)
Jennifer Mann, PhD, MPH, San Francisco Department of Public Health (former)
Dale Spink, San Francisco Department of Human Services (retired)

Project Funders

The American Lung Association of San Francisco & San Mateo Counties secured funding for the strategic planning project from the following sources:

The California Endowment (major funder)
Kaiser Permanente/American Lung Association National Partnership on Asthma
First 5 California/California Department of Health Services

The San Francisco Department of Public Health provided access to funding from the First 5 California/California Department of Health Services

A Message from the Chair:

I would like to thank the members of the Asthma Task Force and the organizations for which they work, for all their time, dedication and expertise. I would especially like to thank the members of the Planning Committee for their guidance and leadership, including Maria Elena Alioto, Karen Cohn, Marie Hoemke, Julie McKown, Jennifer Mann, Dee Epps Miller, Beth Saiki, and Peg Strub. Tirtza Rosenberg, of the San Francisco Department of Public Health, was tremendously helpful with her administrative support to the task force. We are grateful to the American Lung Association of San Francisco & San Mateo Counties for procuring the funding and providing the staffing to coordinate the strategic planning project.

A special appreciation goes to Nancy Warren, our Strategic Planning Consultant, who made this outstanding plan possible!

Deanna Rossi, MPH
Wu Yee Children's Services

Acknowledgements

We wish to thank the following people for generously contributing their time and expertise to the development of our strategic plan. They contributed in a myriad of ways, through interviews, discussion groups, and/or participation in our strategic planning retreats.

Environmental Committee

Rajiv Bhatia, MD, Medical Director, Occupational & Environmental Health, San Francisco Department of Public Health
Rebecca Logue-Bovee, Executive Director, Housing Rights Committee of San Francisco
Marie Franklin, Executive Director, Shoreview Environmental Justice Movement
John Holtzclaw, PhD, Air Quality, Transportation & Land Use Committee, Sierra Club
Michael Lipsett, MD, JD, Air Toxicology & Epidemiology Section, Office of Environmental Health Hazard Assessment
Beverli Marshall, Director of Housing Management, San Francisco Housing Authority (former)
Melanie Marty, PhD, Director, Air Toxicology & Epidemiology Section, Office of Environmental Health Hazard Assessment
Jesse Mason, Outreach Job Developer, Bayview-Hunters Point Community Advocates
Sandra McNeel, DVM, Research Scientist, Environmental Health Investigations Branch, California Department of Health Services
Greg Miller, Director of Education, San Francisco Apartment Association
Janan New, Executive Director, San Francisco Apartment Association
Rick Ruvolo, Manager, Clean Air Program, San Francisco Department of Environment
Barbara Spark, Indoor Air Program Coordinator, US Environmental Protection Agency Region 9
Joe Speaks, Alternative Fuels Project, MUNI
Linda Weiner, Ambient Air Quality, American Lung Association of San Francisco & San Mateo Counties
Bill Zeller, Clean Air Transportation, Pacific Gas & Electric (PG&E)
Helen Zverina, Occupational and Environmental Health, San Francisco Department of Public Health

Schools and Child Care Committee

Arlene Ackerman, EdD, Superintendent, San Francisco Unified School District
Tom Ammiano, Former President, San Francisco Board of Supervisors
Trish Bascom, RN, MA, Executive Director, School Health Programs, San Francisco Unified School District
Paige Best, MPH, Health Services Manager, Kai Ming Head Start
John Bitoff, Director, Facilities Management, San Francisco Unified School District
Mildred Crear, RN, MPH, Director, Bureau of Maternal & Child Health, San Francisco Department of Public Health
Jayne Garcia, Health Services Manager, San Francisco Head Start
Stacey Herrera, RN, MSN, CPNP, Nurse Practitioner, Child Development Program, San Francisco Unified School District
Hene Kelly, Chair of Health & Safety Committee of United Educators of San Francisco; Chair of the San Francisco Unified School District Indoor Air Quality Policy Implementation Committee
Cheryl Magid, RD, Health & Nutrition Manager, Children's Council of San Francisco
Eric Mar, JD, Vice President, San Francisco Board of Education
Mary Marin, EdD, Director, Child Development Program, San Francisco Unified School District
Sophie Maxwell, San Francisco Board of Supervisors
Deborah McKnight, Executive Director, Special Education Services, San Francisco Unified School District
Gavin Newsom, San Francisco Board of Supervisors
Dorothy Quan, PHN, Child Care Health Project, San Francisco Department of Public Health
Sue Humbert-Rico, Child Care Advocate, Community Care Licensing, California Department of Social Services
Shelly Rosenblum, Indoor Air Quality Tools for Schools Program Coordinator, US Environmental Protection Agency Region 9
Veronica Thorne Dixon, PHN, Child Care Health Project, San Francisco Department of Public Health
Maria Luz Torre, Coordinator, Parent Voices, Children's Council of San Francisco
Jill Wynns, Former President, San Francisco Board of Education
Ava Yajima, JD, Child Care Law Center

Clinical Committee

JoAnn Blessing-Moore, MD

Bruce Blumberg, MD, Physician in Chief, San Francisco Kaiser Permanente Medical Center, Clinical professor of pediatrics, University of California at San Francisco

Homer Boushey, MD, Chief of Allergy & Immunology, University of California at San Francisco (consultant to Nat'l Asthma Education & Prevention Program Expert Panel Report)

Susan Janson, RN, NP, DNSc, Professor of Nursing and Adjunct Professor of Medicine, Harms / Alumnae Endowed Chair, Dept of Community Health Systems, University of California at San Francisco (consultant to Nat'l Asthma Education & Prevention Program Expert Panel Report)

Steven Lazarus, MD, Professor of Medicine, University of California at San Francisco

Vicki Legion, MPH, Director, Yes We Can Urban Asthma Partnership

Guillermo Mendoza, MD, Allergist, Kaiser Permanente of Vacaville (consultant to Nat'l Asthma Education & Prevention Program Expert Panel Report)

Tom Padgett, MD, Emergency Department, Kaiser Permanente of San Francisco

Christina Shea, MD, Assistant Physician in Chief, Kaiser Permanente of San Francisco

Laura Skabowski, MD, Integrated Asthma Care Management, Kaiser Permanente Regional Office, Oakland

Karen Smith, MD, former Medical Director, SF Health Plan

Shannon Thyne, MD, Medical Director, Pediatric Asthma Clinic & Children's Health Center, San Francisco General Hospital

Rajeev Venkayya, MD, Medical Director, Adult High Risk Asthma Clinic, San Francisco General Hospital

Dawn Woods, MD, Medical Director, Blue Cross MediCaid and Healthy Families

Community Committee

Richard Kreutzer, MD, Director, Environmental Health Investigations Branch, California Department of Health Services

Geraldine Chavez, parent of Ivy Monique Carmona who died of a severe asthma episode at the library next to her middle school in fall 2002.

Other Important Contributors to our Planning Process

Tulay Can, American Lung Association of San Francisco & San Mateo Counties

Marian DiAngelo, Yes We Can Urban Asthma Partnership

Kerry Enright, CompassPoint

Joel Ginsberg, CompassPoint

Sarah He, Aide to Supervisor Sophie Maxwell, San Francisco Board of Supervisors

Jennifer James, Harder+Company

David Offman, MD, San Francisco Department of Public Health

Rachel Pitcher, Bayview Hunters Health & Environment Resource Center

Kathy Thomas Perry, Public Affairs, Kaiser Permanente of San Francisco

Megan Webb, Regional Asthma Management & Prevention Initiative (former)

Focus Groups

Finally, we also wish to thank our anonymous focus group participants for sharing their thoughts, experiences and insights with regards to asthma. Their participation greatly benefited our strategic planning process.

Tenants with Asthma

Landlords/Property Owners

Builders/Contractors, Architects, Industrial Hygienists

Principals

Teachers/Secretaries

Child Care Providers (center-based)

Child Care Providers (home-based)

Physicians, Nurse Practitioners

Nurses, Respiratory Therapists, Pharmacists

Adults with Asthma

Parents of Children with Asthma (English, Spanish and Cantonese)

Children with Asthma

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Introduction

Take a deep breath, San Francisco.

In an alarming new development, three children died of asthma within a few months of each other last year.ⁱ This cluster of deaths is particularly disturbing since the last time a child died from asthma was in 1987. One of the most troubling aspects of this tragedy is that virtually all deaths from asthma are preventable.

One of the risk factors for death from asthma is recent hospitalization. Sadly, San Francisco's hospitalizations tell the story of a high risk city, particularly for our most vulnerable residents. Our asthma hospitalization rates exceed the state average and are among the highest in the state for some groups. Of 58 California counties, San Francisco ranks 4th highest for all children's asthma hospitalizations, highest for Asian children, and second highest for Latino children.¹ Adults are also seriously affected. Among asthma hospitalizations for people of all ages, San Francisco is highest in the state for Asians, 4th for Latinos, and 5th for African Americans.

These are not winning numbers. Nor are our other soaring figures -- the high dollar amounts spent annually for hospitalized asthma patients - almost \$10 million.² While much of our asthma budget is spent on hospitalizations, dramatic savings can be realized with proper clinical management of the disease and basic environmental control measures.^{3 4}

But high hospitalization rates and skyrocketing costs don't even begin to touch on the breadth of human suffering caused by asthma in this city. While many people with asthma lead happy, productive, symptom-free lives, many with uncontrolled asthma endure breathless moments that interfere with their daily work and personal lives, causing them to miss work, school and social events. Some are undiagnosed, some are under-treated and others simply do not have the means to effectively manage their disease.

The good news is that San Francisco can win the fight against asthma. Asthma isn't a terminal illness - it's a chronic disease that can be effectively controlled by proper medical and environmental management. The San Francisco Asthma Task Force has outlined a citywide strategic plan to reduce the burden of asthma through management and prevention. Many of the recommendations described in this plan will not only benefit people with asthma but will strengthen our city's infrastructure in ways that will significantly improve the lives of every resident in this city. So, let's all breathe easier, San Francisco, because together we can clear up the asthma crisis.

ⁱ One four year old child died at home, one thirteen year old in a public library adjacent to her school and another four year old after an asthma attack in an SFUSD child development center. This last child was not a resident of San Francisco, but was enrolled in the SFUSD.

Executive Summary

The percentage of people with asthma has been steadily rising, reaching levels that the U.S. Department of Health Services describes as "epidemic." With an estimated 54,000 San Franciscans diagnosed with this condition, and with disproportionately severe outcomes among communities of color, asthma has become a serious public health issue with major financial consequences.⁵ The health and well-being of San Francisco's residents, families and communities are at stake.

Asthma is a chronic disease characterized by inflamed airways that result in recurring episodes of breathing difficulties. Symptoms may include coughing, wheezing, shortness of breath and chest-tightness. Inflammation makes the airways sensitive to various allergens and irritants in the environment, including dust mites, animal dander, pollen, mold, diesel emissions, and tobacco smoke. Asthma can be controlled through proper clinical and environmental management, reducing costly hospitalizations. This is a fight that our city can win -- and save money by doing so.

However, asthma is a complex disease that requires a multi-faceted response from many sectors within our city. For this reason, the San Francisco Asthma Task Force divided into four committees targeting four sectors highly impacted by asthma: Environmental, Schools and Child Care, Clinical Care, and Community. The committees developed up to ten recommendations each, the top five of which are listed here, plus two recommendations developed by the task force as a whole. The full list of each committee's recommendations can be found in its section. Together, these recommendations comprise a comprehensive plan to manage and prevent asthma for the City and County of San Francisco. What follows is a summary of each section of the plan.

Asthma and the Environment

Exposure to certain air pollutants exacerbates asthma and may even lead to the onset of asthma. San Francisco has consistently received high marks for its ambient air quality, mainly because prevailing winds blow our pollution to other parts of the Bay Area. However, this is based on one air monitor located in one section of the city which may fail to capture air quality problems in other neighborhoods. Studies have shown that areas near heavily trafficked roadways have elevated levels of diesel emissions and particulate matter (PM), which are known asthma triggers. It is critical for our city to monitor air quality in specific neighborhoods and at the same time to reduce exposure to outdoor pollutants known to worsen asthma such as diesel emissions and PM.

The term air pollution is commonly thought of in connection with outdoor air. However, exposure to indoor levels of pollutants may be far higher than outdoor levels.⁶ Unfortunately, many tenants with asthma, particularly lower-income tenants, live in sub-standard housing that worsens their asthma. Structural deficiencies in many buildings have allowed water infiltration which results in mold and mildew. Other buildings are rife with indoor pollutants that trigger asthma including second-hand smoke, dust mites, cockroaches, and fumes from toxic chemicals. Addressing the needs of low income tenants with asthma who don't have many housing options is imperative.

Top Five Environmental Recommendations

1. Create an inspection task force that includes the Department of Housing and Urban Development (HUD), San Francisco Housing Authority (SFHA), San Francisco Department of Building Inspection (DBI), San Francisco Department of Public Health (SFDPH), San Francisco Fire Department (SFFD), etc through a Memo of Understanding (MOU) to inspect each Housing Authority property every three years and create accountability mechanisms to bring code violations into compliance within one year (exact time frame to be determined by inspection task force) and priority life-safety hazards within 3 months (exact time frame to be determined by inspection task force). This task force shall review the purpose and effectiveness of the MOU in ten years from their inception date and make a recommendation to the Board of Supervisors as to whether or not to continue the MOU.
2. Create a set of standards and guidelines for comprehensive healthy housing, including distinction of roles for property owners, the public and institutions. Implement standards and guidelines through a 3-year pilot targeting a percentage of new SFHA housing and new government assisted rental housing.
3. Purchase of 2 portable PM and NOx** monitors by City. Develop monitoring plan to estimate variation in exposures in different parts of the city and in different seasons. Use monitoring data to reduce levels of outdoor air pollution, if necessary, and to increase health services to communities accordingly.
4. Develop a city wide collaborative group, including tenants, owners, advocates, and front line staff of San Francisco Apartment Association (SFAA), SFHA, HUD, DBI, SFDPH to address practical indoor air quality (IAQ) issues and evaluate how these groups work together.
5. Create an advocacy program that is housed in a clinical setting (like SF General Hospital) that would provide legal advocacy services (one major focus area would be housing) to patients with asthma.

** PM=particulate matter, NOx=oxides of nitrogen: Motor vehicle traffic is a major source of both of these air pollutants

Asthma in Schools and Child Care

Asthma is the most common chronic illness among children. Many children with asthma spend most or part of their day in school or child care. For this reason, children with asthma need proper support at school and child care to keep their asthma under control and to be fully active. Unfortunately, children frequently face obstacles to controlling their asthma in these settings. This comes at a cost: asthma that is out of control can hinder a child's attendance, participation and progress in school and child care. By helping children manage their asthma in these settings, schools and child care facilities are better positioned to achieve their core mission - educating children.

The school district and child care facilities must work to remove obstacles faced by children with asthma in order to promote their health and education. It is critical for the district to identify and track students with asthma. Equally important, the district must establish and implement standards for the management of asthma in the school setting as well as increase the ratio of school nurses to children. In addition, teaching school and child care staff about asthma is essential to preventing and responding to asthma emergencies. Finally, children have little control over their exposure to asthma triggers in the school and child care settings - building a supportive infrastructure to reduce these triggers is key to the management, and potentially prevention, of asthma in these settings.

Top Five Schools and Child Care Recommendations

1. Create a computerized database within the San Francisco Unified School District (SFUSD) to identify and track children with chronic illnesses.
2. Require asthma action plans for children with asthma in school (K- 12 & Special Education) and child care settings. These plans would be made available to key individuals at the school or child-care site.
3. Assess, develop, disseminate, and implement district-wide standards on the management and prevention of asthma in the school setting, including emergency protocols and indoor air quality (IAQ) and integrated pest management (IPM) policies. Establish and track performance indicators to measure progress in the implementation of these standards.
4. Mandate asthma training for all school and child care personnel -- including contractors and employees of city agencies interacting with children on school property or that have children in their buildings -- on an annual basis. Include city agencies overseen by Community Care Licensing.
5. A nurse for every school.

Asthma and Clinical Care

There have been many advances in the medical management of asthma. Effective treatments could allow most people with asthma to live basically symptom free. Unfortunately, not everyone has access to these treatments. Many are uninsured, underinsured or unclear how to use the treatments they've been prescribed. Access to care and education for people with asthma and for health care providers are important to guarantee proper asthma management.

Furthermore, many institutions lack the infrastructure to ensure quality clinical care at every level. San Francisco must strengthen key components of its asthma care delivery systems and create tracking for providers and care delivery systems to benchmark clinical performance.⁷ Continuous Quality Improvement (CQI) systems are designed to give health care providers feedback on asthma management and prescribing patterns, and to give institutions the means to identify high risk patients.

Top Five Clinical Recommendations

1.

Require "Standards of Care" for asthma and lobby for enhanced reimbursement for comprehensive care. Standards should include:

- *Accurate severity assessment - utilizing spirometry testing*
- *Allergy testing as needed*
- *Access to specialty care*
- *Access to medications and medical devices*
- *Access to case management as needed*
- *Asthma action plans*
- *Access to education and self-management training*
- *Home assessments to promote an optimal home environment where needed*
- *Culturally and linguistically appropriate asthma care*
- *On-going monitoring and evaluation*

2.

Develop, implement and publicize citywide performance improvement indicators (i.e. asthma report card). Reward providers of good care and centers of good care. Should not be punitive.

3.

Develop an incentive program for health care providers to attend a standardized asthma continuing education program. The continuing education program should be completed every two years and should include the following:

- *Chronic care model utilizing a team approach*
- *ER/urgent care management*
- *How to develop an asthma action plan*
- *Hands-on activities on how to use new medical devices*
- *How to be an effective patient educator*
- *Cultural competency*
- *Community resources*
- *We recommend using nationally recognized Continuing Education programs*

4.

Complete coverage by all payors for all medications, medical devices and resources needed to achieve quality of care.

5.

Implement internal site-specific performance system with a designated person to do the following:

- *Provide asthma case follow-up*
- *Provide feedback to providers about identified high-risk cases and their own practices*
- *Measure performance with consequences to site or specific provider for deficiencies*
- *Help providers perform better, by giving reminders, cues, and ways to identify and overcome barriers*

Asthma and the Community

Tracking/Surveillance

Thoroughly understanding the distribution and determinants of asthma at the community level is important for controlling, and perhaps preventing, asthma. We know that asthma affects some ethnic groups and some neighborhoods more than others but the specific reasons why are not well understood. Identifying the patterns of asthma in our city is the first step toward developing effective interventions to address the asthma crisis. Asthma surveillance and tracking, including ongoing prevalence studies and the use of existing databases to identify high-risk patients, are some of the important methods to use.

Surveillance/Tracking Recommendations

1. Devise a system to collect absenteeism data on asthma in schools (starting by piloting with a few schools).
2. Use the Lifetime Clinical Record to develop a system to identify high risk asthmatics and devise an action plan.
3. Ongoing prevalence studies - every 5 years - in schools to understand sub-groups and neighborhoods with greatest needs, severity and trends over time.
4. Support the California Department of Health Services asthma mortality study by requiring mandatory immediate reporting of all asthma-related deaths of those under 35 in San Francisco for the duration of this DHS study.
5. Analyze the costs of asthma-related hospitalizations and emergency care to document the potential savings for preventative services.

Public Awareness and Oversight

The San Francisco Asthma Task Force as a whole developed the remaining two recommendations. The task force identified a need for a citywide public awareness and education campaign around asthma that would support, and provide a context to, the implementation of the strategic plan. In addition, the task force identified a need to ensure the existence of a citywide body to oversee and monitor the implementation of the strategic plan.

Public Awareness and Oversight Recommendations

- P1. Mount substantive public awareness and education campaigns around asthma in multiple community settings that would include clinical sites, schools and child care centers, city departments, and community-based organizations that provide services to children and families.
- P2. Transition the Asthma Task Force into a permanent body, charged with responsibility for oversight of implementation of recommendations from the strategic plan, with funding from the City.

Conclusion

Historically, asthma has been downplayed as a public health problem. However, with the high estimated prevalence of asthma in our City and our severe asthma outcomes, this stance must change. Unfortunately, there is no single, “silver bullet” solution. Asthma is a complex disease that requires multifaceted interventions involving many sectors within our city. The good news is that with a comprehensive and coordinated response, we can confront and contain this crisis. The San Francisco Asthma Task Force has outlined a strategic plan to do just that. Now we need your help to make these recommendations a reality.

San Francisco Asthma Task Force

The San Francisco Asthma Task Force is the only known legislated task force of its kind in the country. The task force was created when community activists, many of whom were from Bayview Hunters Point, joined forces with the Board of Supervisors to create a citywide response to the asthma epidemic. Signed into law in May 2001, the task force was charged with the responsibility to develop a citywide strategic plan to manage and prevent asthma.

The task force membership is broad-based and reflects the diversity of individuals and agencies required to respond to the multifaceted nature of asthma. Our membership comes from the following sectors: environmental epidemiology, tenants' rights, housing management, environmental health, building inspection, public health, schools, child care, parent associations, health education, clinical care (medicine, respiratory therapy, nursing and pharmacy), community activism, research, and health policy. There are a total of 30 seats on our task force, 10 of which are non-voting seats occupied by public agencies and departments.

The Asthma Task Force is divided into four committees: Environmental, Schools and Child Care, Clinical Care, and Community. Sophie Maxwell, member of the San Francisco Board of Supervisors, is our legislative sponsor. The San Francisco Department of Public Health serves as our organizational sponsor.

Asthma Task Force Mission

The mission of the San Francisco Asthma Task Force is to prevent asthma and to improve the quality of life for people with asthma, especially the underserved, who live or work in the City and County of San Francisco, by the use of advocacy, legislative action and citywide strategies.

Asthma Task Force Vision

San Francisco will be a model community where people with asthma, and all people, will live in a healthy environment that promotes an optimal quality of life.

Strategic Planning Process

The San Francisco Asthma Task Force began its strategic planning process in February 2002. The task force was fortunate to receive recognition and support for its ground-breaking effort through grants from The California Endowment, Kaiser Permanente/American Lung Association, and the First 5 California/California Department of Health Services. These grants, secured by the American Lung Association of San Francisco & San Mateo Counties, provided the task force with a fully-dedicated strategic planning coordinator and funding to carry out a range of strategic planning activities.

To conduct the strategic plan, the task force created four committees, each of which explored an important aspect of asthma: the Environmental Committee, the Schools and Child Care Committee, the Clinical Care Committee and the Community Committee. The committees operated semi-autonomously and were responsible for completing the section of the strategic plan relevant to their area. Most committees met bi-monthly and convened for general task force meetings once a month. A Planning Committee was established to guide the strategic planning process. This committee included the chair of the task force, committee chairs or designated members and the strategic planning coordinator. All committees were open to the public.

The first phase of the strategic planning process consisted of a needs assessment. The primary goal of the assessment was to solicit input from the larger community. Towards this end, the task force worked with a community research firm to conduct thirteen focus groups of key constituents who impacted or were impacted by asthma. Focus group participants were guaranteed anonymity in order to encourage frank discussion. Another focus group with children was conducted by a task force member.ⁱⁱ In addition, task force members interviewed 42 key stakeholders and opinion leaders at the local, state and national levels. The focus groups and stakeholder interviews provided valuable information on asthma-related needs and concerns as well as strategies and interventions to consider for our strategic plan. The focus groups and interviews were taped, transcribed and summarized; all stakeholders interviewed agreed to go on record with their comments. The task force also conducted basic literature reviews that included published studies, guidelines/standards, legislation/policies, and statistics.

The focus groups were as follows:

Environmental Focus Groups

Tenants with asthma
Property owners and managers
Builders/contractors, architects and industrial hygienists

Schools/Child Care Focus Groups

School principals
Teachers and secretaries
Center-based child care providers
Home-based child care providers
School principals
Teachers and secretaries

Clinical Care Focus Groups

Physicians and nurse practitioners
(specialists and primary care)
Allied health professionals
(nurses, respiratory therapists, pharmacists, asthma educators)

Community Focus Groups

Children with asthma
Parents of children with asthma
(3 Focus Groups: English, Spanish, and Cantonese)
Adults with asthma

ⁱⁱ Focus group of children facilitated by Mary Higgins at an asthma camp organized by the Bayview Hunters Point Health & Environmental Resource Center, summer 2002.

Since each of the committees encompassed such a large area, all topics within each area could not possibly be covered. In some cases, this required omitting topics which are important, but outside the scope of this plan. For example, occupational health is important, but the Environmental Committee decided it could not adequately address this issue in addition to its priorities -- residential indoor air quality and outdoor air quality. However, some of the committee's recommendations are relevant for occupational settings.

Following the completion of the needs assessment, each of the committees convened a series of strategic planning mini-retreats. The purpose of the retreats was to review the needs assessment materials; to identify key problem areas that emerged from the materials; to craft and discuss recommendations to address key problem areas; and to prioritize up to ten final recommendations for inclusion in the strategic plan. The format of the retreats was highly structured.

In the final phase of the strategic planning process, the entire Asthma Task Force gathered for an all-day conference where each committee presented their recommendations formally. The task force made modifications before unanimously approving the committees' recommendations with the exception of one recommendation which was voted down due to concerns about feasibility. The task force also crafted and approved two additional recommendations to meet areas of need not addressed by the committees. All but two members of the task force were present at the conference. In the end, the task force approved a total of 37 recommendations.

To prepare the strategic plan document, the chairs of the committees worked with the strategic planning coordinator and committee members to draft their specific "chapters" of the document. The purpose of the chapters is to outline the committee recommendations and to provide explanations of and justifications for the recommendations based on information from the needs assessment. The chapters were circulated to the key stakeholders and opinion leaders for their review and comments.

What Is Asthma?

Asthma is a chronic disease of the lungs that results in recurring episodes of breathing problems. Asthma is characterized by inflammation of the airways which makes them very sensitive to allergens and irritants in the environment. Exposure to allergens and irritants causes the airways to become more inflamed and swell, causes the muscles around the airways to tighten and produces excess mucus inside the airways. As a result, people with asthma find it hard to breathe. We call this reaction an "asthma attack" or an "asthma exacerbation." The most common symptoms are coughing, wheezing, tightness in the chest, and difficulty breathing though these symptoms can differ from person to person or exacerbation to exacerbation.

So far there is no cure for asthma, but most asthma can be controlled. In rare cases, a severe asthma attack can result in death. The majority of people with asthma can lead healthy and active lives by using a combination of medical treatment and environmental controls.

Prevention

How can we prevent asthma? This deceptively simple question underscores the complexity of asthma as a disease. In fact, discussion of preventing asthma occurs at two levels:

- preventing the development of the disease asthma, and;
- preventing asthma symptoms from occurring in those diagnosed with asthma.

Preventing the disease of asthma

What causes asthma is not clearly understood, so the answer to preventing its development is not an easy one. Researchers do know that family history is a predictor of asthma.⁸ Scientists have also produced a number of studies which indicate different causes though none are conclusive and some are contradictory to what would be expected. Some studies show associations between prenatal exposure to active maternal smoking and/or exposure to second hand smoke in early childhood and the development of asthma.⁹ Other research findings show associations between exposure to outdoor air pollutants, especially diesel exhaust, and new cases of asthma.¹⁰ And a final theory called the hygiene hypothesis posits that children who grow up in environments characterized by higher standards of hygiene, including higher use of antibiotics and vaccines, may be more likely to develop asthma.¹¹ Scientists continue to conduct research for more conclusive answers to explain what causes asthma.

Preventing asthma symptoms in those diagnosed with asthma

Preventing asthma symptoms or attacks among people diagnosed with asthma is fairly well understood. The right treatment regimen combined with reducing exposure to environmental triggers (allergens and irritants in the environment) allows most people with asthma to live free of symptoms. While triggers can vary from person to person, common triggers include dust mites, animal dander, cockroaches, mold, pollen, strong fumes, tobacco smoke, diesel exhaust, smog etc. Most efforts to reduce asthma triggers are focused on indoor environments, such as homes, schools, and workplaces. In addition, reducing outdoor air pollutants, such as diesel emissions, is another way to decrease asthma symptoms.

The use of medications is also recommended. There are two categories of medicines that are used to treat asthma: rescue medicines and long term control medicines. Rescue medicines, such as albuterol, are taken when asthma symptoms appear or before exposure to a trigger. These medicines work quickly to stop an episode from getting worse. Long-term control medicines, such as corticosteroid inhalants, work to prevent asthma exacerbations or attacks. These medicines help to reduce inflammation of the airways.

Asthma Statistics

Asthma is a serious public health problem. Nationally, the prevalenceⁱⁱⁱ of self-reported asthma increased 74% from 1980-1996.¹² Asthma is one of the most common chronic diseases in the United States, and is the most prevalent chronic illness among children in California.¹³ Statewide, an estimated 7 percent (2,268,300) of Californians have a diagnosis of active asthma.¹⁴ No reliable study on asthma prevalence exists for San Francisco. However, if we assume that city rates are equivalent to state estimates, then approximately 54,000 San Franciscans have active asthma.¹⁵

Asthma Hospitalizations: San Francisco vs. Other California Counties

Hospitalizations are a rare, severe and costly outcome of asthma. Hospitalizations are regarded as a risk factor for death and considered to be largely preventable. In the latest state report, San Francisco asthma hospitalization rates exceed average California state rates in all age and ethnic categories except one.¹⁶ The following shows our rank compared to other California counties:

- | Children | All Ages |
|---|---|
| ■ Highest in California for Asian children | ■ Highest in California for Asians |
| ■ 2nd highest in California for Latino children | ■ 4th highest in California for Latinos |
| ■ 4th highest for children of all ethnicities | ■ 6th highest for people of all ethnicities |

Asthma Hospitalizations Within San Francisco County

Preliminary data from the SFDPH indicates a decrease in city asthma hospitalizations from 1991-2000 (see Chart on Trends in SF Asthma Hospitalization, p.15).¹⁸ This is consistent with national data and California state data which both show a decline in asthma hospitalizations.^{19 20} The reason for the decline is unknown though several theories have been put forward. One is progress in broadening effective asthma treatment and management to a larger group of people. Certainly San Francisco has seen an increase in asthma management and prevention programs added by government agencies and private institutions, including medical and public health organizations. It may also be that persistent organizing on the part of asthma advocates has had a positive impact in terms of expanding access to treatment and use of environmental controls. Additional explanations for the decline may be the changing demographics of San Francisco and/or aggressive treatment in emergency departments to stabilize asthma. An emergency department emphasis on short term stabilization may have resulted in lower hospitalization rates but more frequent emergency department visits.

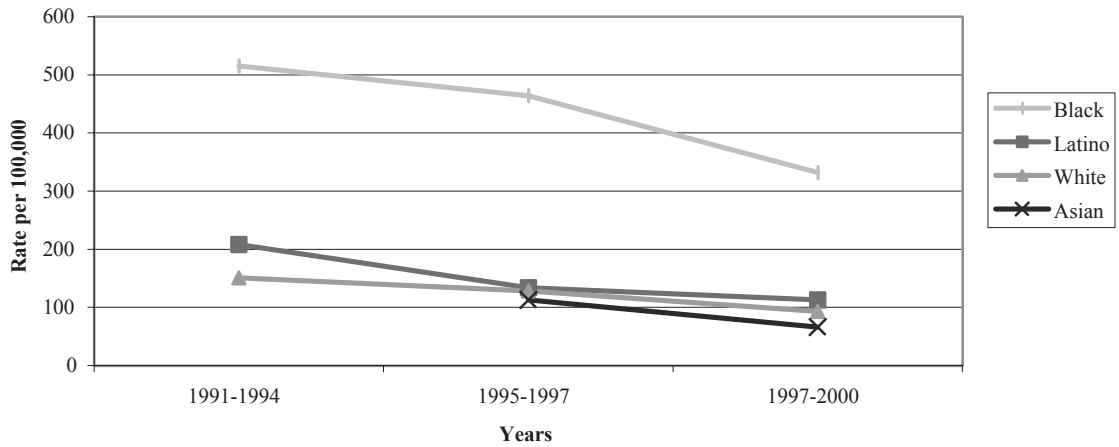
SF Asthma Hospitalization Disparities: Rates are highest among African Americans ^{iv}

However, despite these gains, San Francisco data, consistent with national data, indicate persistent disparities in asthma hospitalizations. Ethnicity, age and income continue to be factors associated with who bears a disproportionate share of the asthma burden.^{22 23 24} These disparities are reflected in the latest data available for the city. African Americans had over three times the asthma hospitalization rates of Whites. Children have nearly double the asthma hospitalization rates of adults. National data also indicates that gender is an issue with females more likely to be hospitalized than males, although local and state data analysis has not included gender.

ⁱⁱⁱ Prevalence equals the percentage of people who have a condition, in this case, active asthma. It should be noted that many more people are diagnosed with asthma who do not have symptoms.

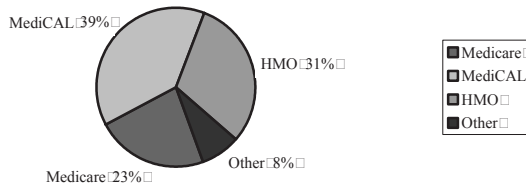
^{iv} 1997-2000 data were age adjusted using three age groups, 0-14, 15-64, 65+ and using the 1990 California Population as the standard population. The source of these data was the California Office of Statewide Health Planning and Development (OSHPD) and the SFDPH performed the analysis.

Trends in San Francisco Asthma Hospitalizations: 1991-2000
Comparison of change by ethnic group, all ages



Hospitalizations are costly both in terms of human suffering and the financial bottom line, with annual costs to San Francisco of almost 10 million dollars, according to the last analysis.^v MediCAL, a program for low income people, pays for the largest percentage of hospitalizations (39%) and when combined with Medicare (23%) this means that most hospitalizations (62%) are paid for by public monies (please see SF Asthma Hospitalization Charges Chart, below).²⁵ Yet, many with severe asthma eligible for MediCAL or Medicare can have difficulty accessing specialty treatment to prevent hospitalizations. Currently, the wait for the pediatric asthma specialty clinic at San Francisco General Hospital is over 3 months.

San Francisco Asthma Hospitalization Charges: 1994-1996
insurance type by percentage



Asthma Mortality

San Francisco had 281 asthma deaths for the period 1987 to 1997; consistent with national data, most deaths in San Francisco are in people sixty-five and over.²⁶ The Center for National Health Statistics describes children's deaths from asthma as "rare" and from 1988 to 2001, there were no asthma deaths in San Francisco's children under 15.^{27 28} Yet within six months in 2002, three children died in San Francisco.²⁹ Two were city residents and one a non-resident who died after an asthma attack at an SFUSD Child Development Center. This cluster of asthma deaths in children is a cause for concern.

^v The latest data we have on hospital charges is for 1994-1996. Most likely the dramatic reduction in hospitalizations has resulted in a drop in charges. However, the percentage of public monies paying for hospitalizations is probably unchanged.

*Asthma
and
the
Environment*

Overview

Perhaps no other city in the United States is as environmentally aware as San Francisco. Our city has enacted legislation that surpasses state and federal regulations to ensure that its citizens breathe the cleanest air possible. Unfortunately, even in San Francisco, equal access to clean air is not guaranteed for all communities and all residents.

Some neighborhoods are located near heavily trafficked roads and freeways or have high concentrations of substandard housing, exposing residents to a range of asthma triggers which are known to worsen and potentially cause asthma. Poor air quality, whether indoor or outdoor, compromises the health of every person with asthma in our city, especially the children, and diminishes the health of those without asthma. Since children's lungs are developing, chronic irritation of their lungs can result in a permanent decline in lung function.³⁰ Poor indoor air quality may add a significant burden since children spend most of their time indoors in close contact to a plethora of asthma triggers, such as dust mites, animal dander, cockroaches, and mold.

For these reasons, the Environmental Committee focused on indoor air conditions that may worsen asthma, such as barriers to healthy home environments and lack of asthma awareness. In addition, the Committee examined outdoor air issues that may aggravate or even cause asthma, such as living in areas with elevated diesel emissions.^{31 32}

The Environmental Committee has outlined a comprehensive program to reduce indoor and outdoor air pollutants that exacerbate, and potentially contribute to the onset of, asthma. As part of its needs assessment, the committee conducted three focus groups: tenants with asthma; property owners and managers; and builders/contractors, architects, and industrial hygienists. In addition, the committee interviewed 15 external stakeholders in indoor and outdoor air quality, including experts at the local, state and federal levels and environmental justice advocates. Literature reviews were conducted of relevant studies, reports, and existing standards and guidelines. Finally, members of the Environmental Committee drew on their backgrounds in environmental health, environmental epidemiology, health education, industrial hygiene, building and housing codes, public housing, and tenant organizing. At a series of three retreats, in which additional experts attended, the Environmental Committee reviewed the information gathered in the needs assessment; identified and discussed key problem areas; proposed recommendations to address the problem areas; and prioritized ten of the recommendations for inclusion in the strategic plan. The recommendations are as follows:

Environmental Recommendations

1. Create an inspection task force that includes the Department of Housing and Urban Development (HUD), San Francisco Housing Authority (SFHA), San Francisco Department of Building Inspection (DBI), San Francisco Department of Public Health (SFDPH), San Francisco Fire Department (SFFD), etc through a Memo of Understanding (MOU) to inspect each Housing Authority property every three years and create accountability mechanisms to bring code violations into compliance within one year (exact time frame to be determined by inspection task force) and priority life-safety hazards within 3 months (exact time frame to be determined by inspection task force). This task force shall review the purpose and effectiveness of the MOU in ten years from their inception date and make a recommendation to the Board of Supervisors as to whether or not to continue the MOU.
2. Create a set of standards and guidelines for comprehensive healthy housing, including distinction of roles for property owners, the public and institutions. Implement standards and guidelines through a 3-year pilot targeting a percentage of new SFHA housing and new government assisted rental housing.
3. Purchase of 2 portable PM and NOx** monitors by City. Develop monitoring plan to estimate variation in exposures in different parts of the city and in different seasons. Use monitoring data to reduce levels of outdoor air pollution, if necessary, and to increase health services to communities accordingly.
4. Develop a citywide collaborative group, including tenants, owners, advocates, and front line staff of San Francisco Apartment Association (SFAA), SFHA, HUD, DBI, SFDPH to address practical indoor air quality (IAQ) issues and evaluate how these groups work together.
5. Create an advocacy program that is housed in a clinical setting (like SF General Hospital) that would provide legal advocacy services (one major focus area would be housing) to patients with asthma.
6. Require that 15% of the fleets of private companies that contract with the City and operate in the city consist of zero to low emissions vehicles.
7. Revisit the Department of City Planning's master plan to determine where at-risk populations exist (e.g. schools, parks and recreation areas, and busy streets). Make zoning and planning decisions that take into consideration air quality issues.
8. Increase awareness of property owners on their role in providing healthy homes for people. Support a discussion among property owners on the value of housing to community well-being and the ethics of being a housing provider.
9. Create a city-supported structure (i.e. task force) for collaboration between affordable housing and environmental health groups.
10. Create incentives for property owners (R1 occupancy, i.e. apartments which are 3 units or more) to proactively deal with moisture issues.

** PM=particulate matter, NOx=oxides of nitrogen: Motor vehicle traffic is a major source of both of these air pollutants

Indoor Air: Healthy Housing

Healthy Housing refers to housing with characteristics that minimize hazards to residents' health. This includes housing designs that promote ample ventilation, use building materials and paint that have had time to off-gas toxic components, are adequately sealed against water or pest infiltration, and have smooth cleanable surfaces rather than carpeting and drapes. Of greatest importance to those with asthma, healthy homes minimize asthma triggers such as dust mites, mold, cockroaches and fumes. Finally, affordability is another important aspect of healthy housing, since income should not exclude people from adequate housing. The city may actually save money by investing in healthy housing since poorer urban neighborhoods have higher asthma hospitalization rates, which means that San Francisco is already paying dearly in dollars and residents' quality of life.³³

Property owners can help to ensure a healthier indoor environment by conducting regular maintenance and repairs on their rental properties so that structural problems do not become health problems. In addition, an initial investment in healthy housing by private owners may save millions in costly lawsuits over mold. At the same time, residents have the responsibility to make behavior changes to promote a healthier indoor environment by opening windows and using exhaust fans to ensure adequate ventilation; eliminating cigarette smoke; and for those with dust mite allergy, regularly washing bedding in hot water.³⁴

Standards and Inspections

Recommendation 2 would provide the City with the opportunity to develop model standards for new construction and renovation that would result in both subsidized and non-subsidized healthy housing. These standards would be piloted in a percentage of new and existing San Francisco Housing Authority (SFHA) and government-assisted rental housing. The need for healthy housing was emphasized in focus groups with tenants, contractors, architects and industrial hygienists. Interviews with key stakeholders, including the San Francisco Apartment Association (SFAA), echoed this concern.

Recommendation 2 would also specify the distinct roles of tenants, property owners, managers, and institutions including the SFHA in maintaining healthy homes. In the focus groups, both property owners/managers and tenants expressed confusion and frustration over who was responsible for maintaining a healthy indoor environment. In addition, both owners and tenants focus groups felt the public has difficulty navigating enforcement agencies to get an adequate response to their complaints.

In the past several years, complaints about mold in SFHA housing have escalated. Mold problems in public housing were mentioned in all of the focus groups and were noted in several external stakeholder interviews. Tenants with asthma in public housing expressed frustration over property managers' unwillingness to clean-up the moisture intrusion causing the mold.

"The hardest thing for me has been finding an apartment that you can afford that has wood floors. It's almost impossible. Most of the apartments that you get with housing does have carpeting..."

-Family member of child with asthma

"A lot of times mold and mildew problems are caused by people not opening up their windows or using ventilation when they shower. I had one case where these two young females just refused to open their bathroom window because they're afraid people peek in their windows."

-Property owner

"...the Housing Authority still has a lot of things that they have to do. Because I don't think that they're addressing the mold and mildew as far as I'm concerned. Everybody knows that Bayview Hunters Point has been discriminated against."

-Jesse Mason, Outreach Job Developer, Bayview Hunters Point Community Advocates

"Let the voice of the public housing population be heard in regards to the asthma problem...The number of people suffering from asthma in public housing is overwhelming. It appears to be a lower socioeconomic problem. If you look at the sheer number of people with these health concerns, public housing residents should receive a greater portion of the available resources designed to address these matters."

-Beverli Marshall, former
Director of Housing
Management, San Francisco
Housing Authority

Many expressed fear of losing their units if they complained. Participants from the builders'/contractors', architects' and industrial hygienists' focus group mentioned a variety of structural deficiencies that could result in housing problems that exacerbate asthma, such as inadequate ventilation, pests, and off-gassing of toxic chemicals.

Recommendation 1 creates an inspection task force with members from various government agencies that would evaluate the health and safety of SFHA housing, and identify all violations that can impact the health and safety of tenants with asthma. City agencies including the Department of Public Health (SFDPH), Department of Building Inspection (SFDBI), the Fire Department, along with Housing and Urban Development (HUD) and SFHA would physically inspect SFHA units every three years for code violations based on their respective code-books. This inspection task force would also develop and recommend to the Board of Supervisors accountability mechanisms to ensure that code violations are brought into compliance. Finally, ten years after its inception, the task force would review the effectiveness of their inspections and make recommendations to the Board of Supervisors whether or not to continue the Memorandum of Understanding.

Collaborations

Responsibility for indoor air quality crosses several City departments and federal agencies. To improve coordination between groups, **Recommendation 4** would create a city-wide collaborative of front-line staff from various departments and agencies to improve coordination and to identify and address gaps in codes, policies and procedures with the intent to promote healthier housing conditions. The collaborative would include staff from SFDPH Environmental Health, SFDBI, SFHA and HUD with backgrounds in health inspection, health education and building/housing issues who are responsible for evaluating, inspecting and/or recommending changes to address indoor air quality issues in residential housing. It is hoped that, together, staff from these departments and agencies can come up with creative strategies to address common indoor air quality problems in residential housing. They can potentially identify gaps in codes, policies and procedures, if any exist. The collaborative would also include representatives from the San Francisco Apartment Association, tenants and community advocates.

Recommendation 9 proposes there be a city-supported collaboration between proponents of affordable housing and environmental health groups. These two groups have complementary goals and could work together to advocate for healthy affordable housing in San Francisco.

The dearth of affordable healthy housing in San Francisco is a major public health problem. Three stakeholders mentioned that illegal housing is commonplace, especially among low-income residents who often cannot afford the rents charged for legal units. Tenants of illegal housing often live in crowded unhealthy conditions in exchange for lower rent.

These tenants are unlikely to report poor conditions to health or building inspectors for fear of eviction. Many of the affordable legal units available are old and suffer from deferred maintenance, posing their own health problems. For these reasons, it is important for affordable housing and environmental health groups to join forces to not only advocate for more affordable housing, but more affordable healthy housing.

Education and Advocacy

The Environmental Committee made two recommendations that specifically target property owners. **Recommendation 8** aims to educate property owners on their responsibilities to tenants. The education campaign would also encourage property owners to recognize the relationship between housing and community well-being. Most existing education programs focus on educating low income tenants with asthma on how to improve their home environments.³⁵ Some conditions, however, such as the presence of carpet, or improperly built or maintained structures that foster mold growth, are out of the tenants' control. In addition, limited resources and/or potential adverse consequences (e.g. keeping windows open to ensure proper ventilation in unsafe neighborhoods), further limit low-income tenants' ability to effect these changes.

Property owners have an obligation to provide healthy homes to their tenants. Regular maintenance and repairs to property not only create healthier housing, but also make good business sense. Often, repairs to ensure healthier housing simultaneously result in sound structural changes. For example, fixing leaks in plumbing not only reduces mold, but keeps property values high by ensuring that walls and ceilings won't crumble. In addition, proactive maintenance helps property owners and managers avoid escalating conflicts with tenants. If moisture intrusion problems are not addressed in the structure of the home, new mold growth is inevitable. Lawsuits regarding mold have escalated dramatically in the past few years and most insurers in California have discontinued mold coverage while others, such as State Farm, are not writing any new homeowner policies in the state.³⁶ Also, as suggested by a representative of SFAA, property owners and housing providers need to recognize their role in the social fabric of communities - healthy housing is a cornerstone of healthy communities. **Recommendation 10** creates incentives for property owners to proactively deal with moisture issues in their units.

Recommendation 5 would provide legal services in a clinical setting to individuals and families with asthma who are struggling with housing issues and other basic problems that negatively impact their health. Consultation with lawyers would enable these individuals and families to assert their rights to safe and healthy housing, once other means have failed. This recommendation was inspired by the Family Advocacy Program at Boston Medical Center's Department of Pediatrics. Similar projects have been established throughout the country. This type of project in San Francisco could involve collaboration with local legal services programs, law schools, medical centers, and universities. To enhance

"... have the landlords allow us to take out the rugs if we need too...or change the old rugs for new ones..."

-Family member of child with asthma

"...my insurance company emails me all the time and says that this [mold] is the asbestos of the future."

-Builder/Contractor

"For instance I live right on Potrero Street, the street that goes to the freeway and we can't open the windows on that side of the building because all the black soot from the street and the emissions from the car will come right into the apartment. "

-Tenant (child care provider)

"... [the Air Resources Board is] saying in general the air quality in San Francisco is really good based on the results of that [one] monitor. And it may be they're right but until you look at different neighborhoods, especially near busy roadways or ...some of the point sources, you're not going to have a good sense of this."

-Michael Lipsett, JD, MD, Epidemiologist, Air Toxicology

"Kids...grow up hearing don't smoke, don't smoke, it's not good. Meanwhile, the diesel fumes from their school bus may be killing them."

-Rick Ruvolo, Manager, Clean Air Program, Dept of the Environment

its effectiveness, the program would make referrals to existing services such as the Bayview-Hunters Point Health and Environmental Resource Center (HERC), Yes We Can Urban Asthma Partnership and programs such as the Children's Environmental Health Promotion Program in the SFDPH Environmental Health Section.

Outdoor Air

Several studies show that polluted outdoor air negatively affects the health of people with asthma. Recent research indicates that residents of areas with busy traffic have a higher risk of asthma than people who live on less trafficked streets.³⁷ In particular, exposure to diesel emissions has been linked with increased prevalence of asthma.³⁸ Animal studies indicate that diesel exhaust particles may cause new cases of asthma.³⁹ Respirable particulate matter (PM) is a component of diesel emissions. Exposure to very small particles that are less than 10 microns in diameter, also known as PM10, have been shown to worsen asthma symptoms and respiratory function in people with asthma. Particles less than 2.5 microns (PM2.5) can go deeper into the lung and have an even greater impact on asthma symptoms and lung function.⁴⁰

Air Monitoring

Air pollutants, including respirable particles, are regulated by the US EPA and the California Air Resources Board, which have even stricter compliance standards.^{41 42} The Bay Area Air Quality Management District (BAAQMD) routinely monitors concentrations of ozone, nitrogen oxides (NOx), PM10 and PM2.5 throughout the region. However, the BAAQMD has only one stationary monitor that measures concentrations of these pollutants for San Francisco.^{vi} This single monitor may not effectively capture the full range of pollutant concentrations in different neighborhoods throughout the city.

Therefore, **Recommendation 3** calls for the City to purchase portable monitors that would measure small particles and NOx. Portable, real-time monitors could be used to determine if there are areas of San Francisco where particle standards are exceeded.

A few studies that show health effects with short-term exposures (e.g. 2-hour exposures) to PM10, PM2.5 and NOx justify the importance of having these additional monitors.⁴³ Recently, the City of Berkeley, using portable monitors, found that particle concentrations were quite elevated for a few hours each day near a recreational park at times of the day that did not correspond with rush hour traffic. They discovered that the elevated concentrations were due to idling garbage trucks waiting to drop their loads at a transfer station. This situation

^{vi} the monitor is located on Arkansas St. in an industrial area

was easy to correct and reduced concentrations substantially for children playing in the park.⁴⁴ Similarly, these monitors could be used to identify neighborhoods with high PM10 or NOx exposures. The recommendation proposes that there should be decreased pollutant emissions and increased services in these communities.

Several external stakeholders expressed concern about the proximity of schools, recreational areas, and parks to busy streets, especially those that are used by diesel buses. The Cal/EPA Office of Environmental Health Hazard Assessment (OEHHA) has identified the 5 most toxic air pollutants to children. Two of the five were selected based on their association with asthma -- acrolein and diesel exhaust particles.^{45 46} Motor vehicles are the most significant source of these two pollutants. NOx has been used as a proxy measure for motor vehicle traffic in many of the traffic studies.⁴⁷ Therefore, the highest NOx concentrations should be associated with the areas that are most heavily trafficked -- places in which diesel and acrolein concentrations are also elevated.

Recommendation 7 proposes that the Department of City Planning consider localized air quality issues when deciding placement of facilities and parks where sensitive populations, such as children and seniors, are frequently present. Measurements from the portable monitors could be used in making these decisions.

Emissions Reductions

Currently, San Francisco's Healthy Air and Smog Prevention Ordinance requires City Departments to purchase low emission vehicles.⁴⁸ **Recommendation 6** extends the Ordinance to include City contractors. Contractors with fleets of a sufficient size (minimum fleet size to be determined) would be required to use zero to low emissions vehicles for 15% of their fleet. Some contractors have made this change voluntarily. Working with the Department of the Environment's Clean Air Program, Norcal is converting their fleet of 38 garbage transfer trucks (not the trucks which pick up garbage in neighborhoods) from diesel to liquefied natural gas. This change allows them to carry more garbage and sharply reduces motor vehicle emissions.⁴⁹

Conclusion

Disproportionately high asthma hospitalization rates among some of San Francisco's ethnic communities suggest that the city can more successfully limit asthma's burden on health. We must mobilize our city's expertise, resources and will to ensure that clean indoor and outdoor air is available to all communities regardless of income, ethnicity or location. Once implemented, the San Francisco Asthma Task Force Environmental Committee's recommendations will substantially improve the health and well-being of people with asthma and all residents in the City of San Francisco.

"I think they should hire more people to at least try to help clean up the schools and stuff at places where they know many kids will be at. Parks too..."

-Child with asthma

"Certainly Sierra Club supports tighter auto and diesel emission standards. The trucks put a lot more miles on the road than buses, even in San Francisco."

-John Holtzclaw, Chair, Sierra Club Sprawl Campaign's National Transportation Committee

*Asthma
in Schools
and
Child Care*

Overview

The death of a child from asthma is an unimaginable tragedy - one that, until recently, was quite rare. Yet, last year three children died of asthma in San Francisco in only six months. A four year old died at a Child Development Center in the school district and a thirteen year old died at a public library adjacent to her middle school.^{vii} These deaths are particularly tragic since they appear to be a reversal of recent trends -- San Francisco had no children under 15 die of asthma from 1988-2001.^{50 51} Equally alarming is the fact that asthma is the most common chronic illness for which children are hospitalized in California and, possibly, San Francisco.^{52 53}

These troubling statistics underscore the important role that schools and child care centers need to play in addressing our asthma crisis. Many children with asthma spend most or part of their day in school or child care. For this reason, children with asthma need proper support at school and child care to keep their asthma under control and to be fully active. Unfortunately, children frequently face obstacles to controlling their asthma in these settings such as limited access to their medications and exposure to asthma triggers. This comes at a cost: asthma that is out of control can hinder a child's attendance, participation and progress in school and child care. Policies that help children with asthma can improve the school and child care environment for other children as well. The potential positive impact is huge: San Francisco Unified School District (SFUSD) alone has over 58,000 students in K-12 and 3,988 in their Child Development Program.⁵⁴

Recognizing these important connections, the Asthma Task Force devoted a committee to address asthma in the school and child care settings. As part of its needs assessment, the committee contributed to focus groups with principals, teachers, secretaries, child care providers and parents of children with asthma. In addition, the committee interviewed 17 key stakeholders and opinion leaders, including school and child care administrators, and conducted a literature review of relevant studies, reports, existing standards and guidelines, and current policies and legislation. The members of the committee also drew on their own backgrounds in school and child care health and administration, asthma education and advocacy, environmental health, asthma clinical care, and parent organizing. At a series of two retreats, the committee reviewed the information gathered in the needs assessment; identified key problem areas; crafted recommendations to address the problem areas; and prioritized ten of the recommendations for inclusion in the strategic plan. The recommendations are as follows:

"It's not a matter of expertise/technology, it's a matter of will and organization. The will, the will, that's the biggest barrier that I see."

-Sophie Maxwell, Supervisor of District 10, San Francisco Board of Supervisors

"We do want to have more training...we have other peoples children that we need to think about."

-Child Care provider

^{vii} The four year old was not actually a resident of San Francisco, but attended the SFUSD Child Development Program.

Schools and Child Care Recommendations

1. Create a computerized database within the San Francisco Unified School District (SFUSD) to identify and track children with chronic illnesses.
2. Require asthma action plans for children with asthma in school (K-12 & Special Education) and child care settings. These plans would be made available to key individuals at the school or child care site.
3. Assess, develop, disseminate, and implement district-wide standards on the management and prevention of asthma in the school setting, including emergency protocols and indoor air quality (IAQ) and integrated pest management (IPM) policies. Establish and track performance indicators to measure progress in the implementation of these standards.
4. Mandate asthma training for all school and child care personnel -- including contractors and employees of city agencies interacting with children on school property or that have children in their buildings -- on an annual basis. Include city agencies overseen by Community Care Licensing.
5. A nurse for every school.
6. Implement and monitor existing Indoor Air Quality (IAQ) and Integrated Pest Management (IPM) policies to ensure a healthy indoor environment.
7. Restructure the building facilities department to ensure implementation of IAQ and IPM policies:
 - To create an independent department responsible for health and safety; and
 - To increase staff to levels recommended by California Association of School Business Officials (CASBO).
8. Create special levy or bond at the city level to improve health and environment in the schools with oversight and accountability.
9. Require age-appropriate emergency protocols -- standardized, posted at site, etc -- on how to respond to asthma episodes in child care and school settings. The same protocols should be implemented in other settings such as city-funded sites and those monitored by Community Care Licensing.
10. Create, implement, and enforce standards for healthy environments in licensed child care facilities and day care homes.

Tracking System and Asthma Action Plans

Asthma is the most common chronic illness for which children are hospitalized in California.⁵⁵ Nationally, the proportion of children with asthma has risen 74 percent.⁵⁶ San Francisco has the fourth highest asthma hospitalization rate for children in the state.⁵⁷ This indicates a high level of uncontrolled asthma among children in San Francisco. Experts recommend tracking these high-risk children to help ensure that their asthma is brought under control.

Recommendation 1 proposes the creation of a computerized system to track all high-risk SFUSD children with chronic diseases. The proposed database would identify students with asthma and other chronic illnesses and provide key information to relevant district and school personnel on the management of each child's condition, such as symptoms, medications, triggers, and emergency procedures. Focus groups of principals, teachers, and secretaries as well as interviews with key stakeholders from the San Francisco Unified School District (SFUSD), the SFUSD Board of Education, the San Francisco Board of Supervisors and the San Francisco Department of Public Health (SFDPH) specifically point to the need for a computerized health tracking system.

The creation of a computerized database within the district to identify and track children with asthma calls for the input of information from student asthma action plans. **Recommendation 2** proposes instituting asthma action plans in all school and child care settings. An asthma action plan is an individualized management plan that is completed by a medical provider and gives information on the child's symptoms, medications, triggers, as well as emergency procedures and contact information.^{viii} Asthma action plans are an important tool to help schools and child care facilities manage asthma and prevent emergencies. A host of prominent state and national organizations recommend the use of asthma action plans by schools and child care facilities, including the California Department of Education (CDE) and California Department of Health Services (CDHS); Centers for Disease Control and Prevention (CDC); and the American Academy of Allergy, Asthma & Immunology (AAAAI), National Heart Lung and Blood Institute (NHLBI) and American Academy of Pediatrics. Likewise the focus groups with principals, teachers, secretaries, child care providers, and parents also recommend use of these plans.^{58 59 60}

In addition, asthma action plans will provide information needed to develop Individualized Education Plans (IEP), and Section 504 of the Rehabilitation Act of 1973. Section 504 requires "that the educational system provides a range of special accommodations and services necessary for students with special needs and disabilities, such as breathing problems, to participate in and benefit from public education programs and activities."⁶¹

"A health inventory form needs to be used systematically through school health services, the educational placement center, and computerized within our systems so that it is easy -- it's a centralized way of identifying the health issues that parents have -- that sounds to me like a failure on the part of the health office of the district."

-Eric Mar, Member, SFUSD Board of Education

^{viii} Such information would be shared in accordance with the Family Educational Rights and Privacy Act (FERPA) guidelines and with parental permission.

Training and Emergency Protocols

School district and child care staff need education on asthma management and emergency response as part of their professional development. Lack of basic understanding about asthma symptoms, medications, environmental control and emergency protocols compromises children's health, well-being and performance in school and can even endanger their lives. **Recommendation 4** calls for annual asthma training for everyone who works at school or child care sites. This recommendation will respond to the overwhelming concern expressed by school and child care staff that they do not know how to respond to an asthma emergency or how to prevent one. This issue was reiterated again and again in focus groups of principals, teachers, secretaries, child care providers and parents and in interviews with key stakeholders and a parent of one of the children who died of asthma last year. Many suggested that asthma training be included in the SFUSD training days required at the beginning of the year. Since numerous activities take place before and after the school day on school grounds and at child care locations, asthma training should be extended to all adults at those facilities that interact with children.

"Barriers to training are money, apathy, bureaucracy, and communication -- within school personnel, and between organizations."

-Hene Kelly, Chair of Health & Safety Committee of United Educators of SF

In addition to staff trainings, posted emergency protocols can be lifesaving in an asthma emergency. The unusual cluster of asthma deaths among children in San Francisco last year underscores the need for visible, multi-lingual instructions detailing how to respond to an asthma emergency. Since asthma symptoms manifest differently at different ages, posters describing symptoms and procedures to follow must be relevant to the age range of children in the facility. Posted protocols, such as those detailing how to perform the Heimlich maneuver in restaurants, have been shown to save lives in crisis situations where adults are untrained or simply panic in the moment. The most persuasive testimony on this subject was that of a parent whose child died of asthma in a public library where there was no staff training or posted protocol. **Recommendation 9** would require the mandatory posting of age-appropriate emergency protocols at child care and school sites.

"...We have 500 kids in our school and 1 school secretary. Is it really the school secretary's role to handle [medication]...?"

-Teacher or school secretary

School Nurses

Staff training and emergency protocols, however, are no substitute for trained clinical professionals. Focus groups of principals, secretaries, teachers, parents and children stressed the need for nurses in schools. Secretaries, who are often in charge of medications at the elementary school level, described feeling overwhelmed by this responsibility and stated that providing medications is outside their scope of work. Members of the Board of Education and the Board of Supervisors echoed this concern.

"We want nurses...There is just no way that the classroom teacher who gets [a] \$500 stipend a year for being a health advocate can actually ... cover the health needs at the school. It looks good on paper...[but] we need public health nurses..."

-Principal

Recommendation 5, a nurse for every school, responds to this urgent need. School nurses provide one-on-one attention to students with asthma; help monitor asthma-related policies and protocols at the school site; and provide support to teachers and staff on asthma-related issues at the school sites. School nurses are recommended by major clinical associations, educational organizations and public health agencies. These organizations differ only as to whether there should be a nurse in every school (CDC,⁶² AAAAI, NHLBI, American Academy of Pediatrics,⁶³ American School Health Association⁶⁴) or a nurse per every 750 students (National Association of School Nurses⁶⁵). Currently, the San Francisco Unified School District employs 26 school nurses with 25 nurses serving 58,000 children in 117 schools⁶⁶ - this translates to 1 nurse for every 2,320 students, which is three times higher than the minimum standard. Furthermore, the Child Development Program (CDP) has only 1 nurse serving 3,988 children at 36 CDP sites⁶⁷ where at least 100 or more of these small children are reported to have serious chronic diseases.⁶⁸ In an earlier era in San Francisco, when school health services were administered by the SFDPH, school nurses were commonplace, even in schools with the least funding.⁶⁹ As school health services in San Francisco have deteriorated, the need for nurses has increased exponentially due to the dramatic rise in complicated, potentially life-threatening, chronic diseases such as asthma.

"...really we don't have a nurse at our school. So either I tell somebody that I'm having an attack or whatever; and then I handle it myself...and do the best I can do."

-Child with asthma

Policies to Manage and Prevent Asthma

Asthma is a complex and multifaceted condition that requires a systematic response in the school and child care settings. According to the CDC, a comprehensive and coordinated asthma strategy should include policies and procedures that cover the following areas: identification and tracking; asthma action plans as well as 504 Plans and Individualized Education Plans as needed; emergency protocols; medications; environmental control; exercise and physical activity; staff and student training; and linkages to the larger community. Policies and procedures should be mutually reinforcing, widely disseminated, and monitored.

Recommendation 3 proposes creating, disseminating, implementing and monitoring district-wide standards for the management and prevention of asthma in the school setting.

"When I see schools that have really solid approaches to asthma or any type of issue -- diabetes -- they have coordinated teams at a school. All the support providers, general education and special education, come together and come up with strategies. That's the most effective process that I have seen."

-Deborah McKnight, Special Education Services

Currently, SFUSD asthma policies could be characterized as incomplete, fragmented, unknown and unenforced. Many of the focus group participants and interviewees spoke of the multiple gaps in policies and procedures, including existing policies that are not implemented, such as a clear and effective medication policy. For example, school principals and other staff are often uninformed about the medication policy and create their own procedures on-site, such as not permitting students to carry their asthma inhalers with them during the school day. In fact, SFUSD policy states that students have the right to carry their inhalers with them as long as their parents and medical providers complete the proper paperwork. This paperwork, however, can be easily missed by parents as it is embedded in the middle of a thick student handbook, as is other information relevant to asthma. In the focus groups, parents and children with asthma revealed that they were not aware of this medication policy, as well as other policies, and reported that some schools required that their inhalers be kept in a locked cabinet at the secretary's desk. Medications stored in an administrative office may force students who are suffering from asthma attacks to walk significant distances when they have difficulty breathing.

Usually school won't give medication and will call us to pick up the child.

-Cantonese-speaking family of child with asthma

Parents and school personnel are also widely uninformed about additional protections such as the Individuals with Disabilities Education Act (IDEA), more commonly known as Special Education, and the 504 plans which provide another mechanism for schools to meet the needs of high-risk students who have health concerns and, by law, must be made available to all qualified students.⁷⁰ Students with asthma or allergies are to have access to inhalers and nebulizers, and schools may be required to remove asthma triggers from the classroom.⁷¹

Environmental Issues in the Schools

In 1998 the school district adopted policies on indoor air quality (IAQ) and integrated pest management (IPM).⁷² SFUSD was commended as the first school district in the state to establish a set of IPM guidelines, and for launching the *Indoor Air Quality (IAQ) Tools for Schools* program. Unfortunately, because no funding was attached to either the IAQ or IPM policies, they have been only partially implemented, including the *IAQ Tools for Schools* program.

Recommendation 6 calls for these policies to be fully executed.

Poor indoor air can exacerbate asthma and in some instances may even contribute to the onset of asthma.⁷³ IAQ problems account for the greatest number of complaints to the California Department of Education.⁷⁴ Children are especially vulnerable to poor indoor air quality. Since children's lungs are still developing, chronic irritation of their lungs from air pollutants can result in a permanent decrease in lung function. Air fouled by allergens and irritants, such as dust mites, mold, paint fumes, perfumes, animal dander, pollens, pesticides, etc. also adversely affects student learning and reduces teacher and staff productivity.⁷⁵ In addition, poor indoor air can increase student absenteeism which will cost the school more since schools lose money when children are absent. A necessary complement to any IAQ policy is Integrated Pest Management (IPM), which replaces reliance on toxic chemicals with behavioral and structural changes, such as sealing building cracks and eliminating food sources outside school cafeterias, to prevent cockroaches and other pests from entering buildings.

To support the implementation of the IAQ and IPM policies, **Recommendation 7** calls for restructuring the Facilities Management Department and adding more staff. Our proposal entails creating a new division within the department that would provide oversight on health and safety issues with regards to school maintenance, renovation, and construction. This division would have independent authority and support from top management. According to stakeholders, the only program in the district that specifically focuses on indoor air quality issues is being carried out by the Indoor Air Quality Policy Implementation Committee, an unofficial and unfunded group that includes staff from the district and partnering agencies who are already extremely busy with their regular jobs.

"We're going to have to do more to make our facilities places where children don't come to school and get sicker."

-Arlene Ackerman, SFUSD
Superintendent of Schools

"It's been hard because when you breathe in dirty air or something, like the schools that ain't clean enough. I think they should hire more people to start cleaning up the schools and stuff and getting rid of all that dust and stuff."

-Child with asthma

Current staffing levels in the Facilities Management Department are extraordinary low. In the early 1980s there were over 600 custodians for school facilities; today, there are fewer than 300 custodians and a greater number of school facilities, many of which are aging, poorly designed and suffer from deferred maintenance.⁷⁶ For this reason, staff increases should include custodians, engineers (including an HVAC system specialist), and technicians to regularly change filters. Facility and custodial staffing levels should be set, at a minimum, by those levels that are recommended by the California Association of School Business Officials (CASBO); cuts below these levels should be understood to have health impacts.⁷⁷

In contrast to the school district, Community Care Licensing, which governs child care facilities, has no IAQ and IPM policies in place. The lack of these policies directly impacts the health of children with asthma under five and all young children who spend a portion of their day in child care. Without environmental controls, children in these facilities - some of which are housed in garages - have no protection from contaminated indoor air, including the overuse of toxic pesticides and hazardous cleaning materials. Meanwhile, diagnoses of asthma in children under the age of five have increased 160 percent.⁷⁸ Participants in the child care focus groups expressed concern about the lack of IAQ and IPM standards. **Recommendation 10** addresses this urgent need by calling for Child Care Licensing and/or other agencies with authority, to develop, disseminate and enforce basic IAQ and IPM standards for all child care facilities. The decentralized nature of child care, as compared to a centrally administered school district, makes standards difficult to monitor and enforce. Yet, Child Care Licensing has control over whether or not a facility is able to operate - that alone could provide a powerful incentive for facilities to comply.

Funding

Schools cannot be expected to carry out programs without proper financing. Drastic budget cuts at the federal, state, and local levels have led to a devastating round of budget cuts for SFUSD. This endangers existing programs and prevents the development of new programs. Neither the School Health Programs Department (SHPD) nor the Facilities Management Department have a funding source that is reliable, adequate and accountable. Grants comprise more than 90 percent of the SHPD budget.⁷⁹ This over-reliance on soft money hinders the department's financial stability and limits its capacity to address health issues outside of the parameters of its grants. SHPD recently secured two grants to address asthma, which is a major accomplishment. However, the grants are both too small and too short term to adequately address the scope of the district's asthma burden. Similarly, the Facilities Management Department has insufficient funding to ensure safe and healthy school environments. The public needs to recognize the true cost of maintaining, renovating and constructing school facilities.

"[Our elementary school] had...a severe mold and mildew problem. And they had the carpets removed and...tile put in...But it was a big long battle to get it done. It was not just one phone call..."

-School teacher or secretary

I think we're going to have to go back to the voters; we should ask for life and safety and health needs; [and] for facility maintenance issues that will create better school environments for young people."

-Arlene Ackerman, SFUSD
Superintendent of Schools

Other cities have crafted creative solutions to finance school initiatives. For example, Seattle persuaded voters to fund special programs in the schools through a citywide referendum.⁸⁰ The referendum has been so successful it has been renewed several times. This example inspired **Recommendation 8**, a citywide levy to finance school health and environment programs which includes mechanisms for oversight and accountability. San Franciscans have consistently supported bond measures for education and the environment. There's every reason to believe they would support one for school health and environmental health.

Conclusion

These recommendations offer a comprehensive program to ensure safe, healthy and supportive school and childcare environments for children with asthma. The San Francisco Unified School District is a unique school district that already has many of the basic structures in place that are needed to carry out these asthma recommendations. Many of these recommendations improve the district's policies, procedures and infrastructure not only for children with asthma, but for all children in the district, some of whom may go on to develop asthma if these recommendations are not implemented. Through increased training, tracking, staffing, policy development and funding, SFUSD can be a model school district not only for our state but for the country. The recommendations targeting child care facilities strive to pro-actively address our most vulnerable population, young children with asthma under five.

NOTE TO READER: Please refer to the Community Section of this report which includes a recommendation for asthma prevalence studies to be conducted through the school district every five years. On January 11, 2000, the Board of Education adopted Resolution No. 912014A5, "Authorization/Require a SFUSD District-Wide Asthma Study." To date, this resolution has not been implemented due to lack of funding.

*Asthma
and
Clinical
Care*

Overview

Asthma is the most common chronic disease in children and one of the most common chronic diseases in adults.⁸¹ Over 2.3 million Californians and approximately 54,000 city residents are diagnosed with active asthma.⁸² Though there is no cure for asthma, it can be controlled through medical and environmental management. The most recent data shows that San Francisco has high asthma hospitalization rates compared to other California counties. Indeed, our city has the highest asthma hospitalization rate for Asians, the fourth highest for Latinos, and the fifth highest for African Americans. San Francisco has the fourth highest asthma hospitalization rate for children. Within our city, African Americans have the highest rates of any ethnic group -- more than triple those of Whites.⁸³

Hospitalization data represent the most severe manifestations of asthma. Asthma is considered to be an ambulatory-care-sensitive condition which means that with consistent effective ambulatory care (i.e. outpatient care), a large portion of hospitalizations are preventable.⁸⁴ As such, the high asthma hospitalization rates in San Francisco may signal a failure of our current systems of care to adequately control and manage the disease, especially in lower income communities of color. It is critical for San Francisco to improve access to consistent and effective asthma care, including proper diagnosis, treatment and education. Such an investment will not only reduce costly hospitalizations from asthma, but improve the health and well-being of individuals and families with asthma in our city.⁸⁵

The Clinical Committee has outlined a comprehensive program to make high quality asthma care available to the people of San Francisco. As part of its needs assessment, the committee contributed to five focus groups: one with physicians and nurse practitioners; one with allied health professionals including nurses, respiratory therapists, and pharmacists; three focus groups of parents of children with asthma; and one focus group of adults with asthma. In addition, the committee interviewed 13 experts and/or external stakeholders from various health systems. Literature reviews were conducted of relevant studies, reports, and existing standards and guidelines. Members of the committee also drew on their own backgrounds - the committee included asthma experts, allergists, internists, pediatricians, researchers, a pharmacist, a respiratory therapist and asthma educators. At a series of two retreats, which additional asthma experts attended, the committee reviewed the information they gathered from the needs assessment; identified key problem areas; crafted recommendations to address the problem areas; and prioritized ten of the recommendations for inclusion in the strategic plan. The recommendations are as follows:

"I think inadequate attention has been paid to asthma education of the community at large, especially in contrast to the significant educational efforts directed towards AIDS or breast cancer. I see very little of that around asthma or most other chronic illnesses. What distinguishes AIDS and breast cancer is the political activity behind them directed by patient groups with a lot of clout."

-Bruce Blumberg, MD, Physician in Chief, San Francisco Kaiser-Permanente Medical Center, Clinical Professor of Pediatrics, UCSF

Clinical Care Recommendations

1. Require "Standards of Care" for asthma and lobby for enhanced reimbursement for comprehensive care. Standards should include:
 - *Accurate severity assessment - utilizing spirometry testing*
 - *Allergy testing as needed*
 - *Access to specialty care*
 - *Access to medications and medical devices*
 - *Access to case management as needed*
 - *Asthma action plans*
 - *Access to education and self-management training*
 - *Home assessments to promote an optimal home environment where needed*
 - *Culturally and linguistically appropriate asthma care*
 - *On-going monitoring and evaluation*
2. Develop, implement and publicize citywide performance improvement indicators (i.e. asthma report card). Reward providers of good care and centers of good care. Should not be punitive.
3. Develop an incentive program for health care providers to attend a standardized asthma continuing education program. The continuing education program should be completed every two years and should include the following:
 - *Chronic care model utilizing a team approach*
 - *ER/urgent care management*
 - *How to develop an asthma action plan*
 - *Hands-on activities on how to use new medical devices*
 - *How to be an effective patient educator*
 - *Cultural competency*
 - *Community resources*
 - *We recommend using nationally recognized Continuing Education programs*
4. Complete coverage by all payors for all medications, medical devices and resources needed to achieve quality of care.
5. Implement internal site-specific performance system with a designated person to do the following:
 - *Provide asthma case follow-up*
 - *Provide feedback to providers about identified high-risk cases and their own practices*
 - *Measure performance with consequences to site or specific provider for deficiencies*
 - *Help providers perform better, by giving reminders, cues, and ways to identify and overcome barriers*
6. Patient informed asthma education which is culturally and linguistically appropriate.
7. Develop an active case-finding system which enables direct referral to specialty care. Include high risk prospect/ER follow-up and case-finding in pharmacies, schools.
8. Create a citywide tracking system of asthma as a chronic disease to:
 - *Share data between systems*
 - *Measure improvement/outcomes*
9. Create a permanent CQI (continuous quality improvement) sub-group/task force to assist with identifying population and specific outcomes to be measured; oversee and implement CQI process as described in Recommendation 2. Secure buy-in from providers and big payors.
10. Get third party payors and other systems of care to issue reports to prescribers/facilities on ratios of asthma rescue medications to asthma controller medications based on prescriptions filled. Ensure that there is a designated person in place to work with those who need to improve these medication ratios.

Asthma Standards of Care

The National Institutes of Health (NIH) National Heart, Lung & Blood Institute (NHLBI) has issued a comprehensive set of asthma clinical care guidelines for health care providers which are considered to be the gold standard of care.^{86 87} **Recommendation 1** calls for the adoption of these guidelines by health care providers and medical institutions in San Francisco. Focus group participants and key stakeholders expressed concern over lack of provider adherence to the guidelines and emphasized the importance of adopting these guidelines to improve health outcomes. In addition, this recommendation further extends these guidelines by outlining a blueprint for high quality asthma care in San Francisco.

Recommendation 1 also proposes enhanced reimbursement for a higher level of asthma care and asthma services provided. Focus group participants expressed frustration over inadequate reimbursement rates for asthma care and asthma services. The city should advocate for higher MediCal reimbursement rates for enhanced care and services for patients with persistent and unstable asthma. Our current financing under MediCal makes prevention-oriented care unfeasible, especially for our most high-risk asthma patients.^{88 89} Two states, Maryland and Minnesota, have adopted the more accurate health-status-based reimbursement rates.⁹⁰ California and, more specifically, San Francisco can be the third example.

Diagnosis and Assessment

Key to the medical management of asthma is an accurate assessment of disease severity. Spirometry testing is the gold standard for both the diagnosis of asthma and the assessment of disease severity. It provides a more objective assessment of disease severity.⁹¹ Key stakeholders recommended that spirometry testing be widely available and expressed concern that objective assessments of asthma severity are not widely conducted, sometimes leading to inappropriate treatment regimens and poor health outcomes. Currently, there are no spirometers in the district health centers.

Allergy testing is another important assessment tool when indicated. Once sensitivity to specific allergens is determined, the clinicians can then educate their patients about the importance of avoiding these allergens to prevent asthma exacerbations. Common allergens and irritants in the home environment include dust mites, mold, warm-blooded pets, pests, household chemicals and second-hand smoke.⁹² Community health workers, such as those in the Yes We Can Urban Asthma Partnership, could be a valuable resource for providing home assessment services to help patients identify and reduce allergens and irritants. **Recommendation 1** includes access to spirometry testing and allergy testing and home assessments as indicated.

"I really think that prioritizing kids and asthma, and education about asthma, and appropriate treatment about asthma is going to go a long way ..."

-Shannon Thyne, MD, Medical Director, Pediatric Asthma Clinic & Children's Health Center, San Francisco General Hospital

"More choices, these clinics should provide more choices and more education."

-English-speaking family of a child with asthma

Medications, Medical Devices and Resources

Patients lack consistent access to the medications, medical devices and resources needed to properly manage asthma. **Recommendation 4** requests that all payors adopt a comprehensive, high quality, cost-effective formulary of medications and medical devices (spacers, peak flow meters) and prevention supplies for asthma management. Focus group participants and key stakeholders expressed frustration over the varying and incomplete coverage of medications, medical devices and prevention supplies across the major payors.⁹³ They also pointed out that when devices and supplies are covered by payors, the authorization process to secure these items is unnecessarily cumbersome. All payors should streamline a system to ensure easy access to medical devices and prevention supplies.

Case Management and Specialty Care

Focus group participants and key stakeholders emphasized that people with difficult to control asthma benefit from specialty care and a provider team approach. Asthma case management, highlighted in **Recommendation 1**, goes several steps beyond patient education and facilitates regular contact with patients; follow-up on prescription refills; and assessments of the environment. Asthma case management is used by Kaiser Permanente Medical Center and San Francisco General Hospital and has been shown to improve patients' quality of life while reducing costly emergency department visits and hospitalizations.^{94 95 96} Case management is most effective in the context of an interdisciplinary provider team approach. This approach calls for physicians, nurse practitioners, physician assistants, pharmacists, nurses, respiratory therapists, asthma educators, medical assistants, and community health workers to work together as a team with the patient, to provide consistent, quality asthma care. Partnerships between providers and their patients are critical to helping patients understand and take control of their asthma.

"Like it was all closing in, like it was tight and everything and it was hard for me to breathe. And I couldn't really focus on what I was doing so I had to sit down and try to breathe in. But I was like all hot and everything so I just had to really just sit down."

-Child with asthma, describing an asthma attack

"More continuity in the treatment of asthma, so the parent isn't confused on how to show the child how to use the inhaler because they are getting mixed messages."

-English speaking family of a child with asthma

An extension of the provider team approach is the community health worker model. This model utilizes lay health workers from high-risk communities to provide necessary in-home services. These services include a home assessment survey which helps patients identify and reduce allergens and irritants in their home environment. Community health workers also bridge cultural and linguistic gaps between clinicians and families. The Yes We Can Urban Asthma Partnership is a leader in this arena and has incorporated community health workers into the provider teams at the Pediatric Asthma Clinic at SFGH and Mission Neighborhood Health Center.

Equally important is access to specialty care for high-risk asthma patients. **Recommendation 7** requests the development of an active case-finding system that enables direct referrals to specialty care, e.g. allergists, pulmonologists and/or asthma specialty clinics. Emergency departments, and other entities such as pharmacies and schools, should routinely conduct case-finding and make referrals. As focus group participants and key stakeholders note, often times users of the emergency department do not get the kind of follow-up, treatment and education needed to bring their asthma under control. Fortunately there are two asthma specialty clinics at SFGH: the Pediatric Asthma Clinic and the Adult High Risk Asthma Clinic. Both clinics, however, have wait lists - the pediatric clinic has a three-month wait list.⁹⁷

Patient Education

Asthma can be a complex disease to manage and is often overwhelming for patients and their families. Patient and caregiver self management training is essential to helping patients understand and take control of their asthma. Education, particularly when it is interactive, is also critical to establishing the patient-provider partnership that is so important to manage asthma. As revealed in focus groups of clinicians and patients, many clinicians do not have the time to educate their patients. Trained allied health professionals, as part of a provider team approach, can supplement and effectively provide patient asthma education. [Recommendations 1 and 6](#) call for access to patient asthma education and self-management training.

Another key to educating and empowering patients to manage their disease is the provision of a written self-management plan or an asthma action plan, as highlighted in [Recommendation 1](#). Prepared by clinicians, this plan provides patients with step-by-step information to manage their asthma. Additional copies of the plan should be given to parents of patients to make available to their child's school or child care facility. In San Francisco, clinicians do not consistently write self-management or asthma action plans.⁹⁸ Without a written plan, patients have difficulty understanding how to manage their disease, reducing compliance. Lack of asthma action plans also places schools and child care facilities at risk for potential asthma emergencies.

Equally important to establishing an effective provider/patient partnership is culturally and linguistically appropriate education and care. San Francisco is an ethnically and culturally diverse city. Health care providers must work to understand and, when appropriate, incorporate cultural beliefs about asthma, which may differ radically from a traditional Western viewpoint. Increasing communication and trust between patients and providers will improve patient compliance and health outcomes. Culturally and linguistically competent staff should be available at all levels of health service delivery. Community health workers can be an excellent resource in this regard. Both [Recommendations 1 and 6](#) emphasize the importance of culturally and linguistically appropriate education and care.

Provider Team Education

As focus group participants pointed out, not all health care providers are familiar with the widely disseminated NIH/NHLBI set of comprehensive asthma clinical care guidelines.⁹⁹ Furthermore, health care providers are not always able to keep-up with the very latest advances in the treatment and management of asthma. The entire interdisciplinary provider team should receive comprehensive education/training on asthma, including physicians, nurse practitioners, physician assistants, pharmacists, nurses, respiratory therapists, asthma educators, medical assistants, and community health workers. There are lectures and conferences that offer provider education on asthma, but providers often lack time or don't recognize the need to attend these courses. For this reason, [Recommendation 3](#) requests an incentive program for providers to attend a standardized asthma continuing education program.

"And so then on the patient's side still there's 'I don't have a disease. I don't have chronic disease.'"

-Karen Smith, MD, former Medical Director, San Francisco Health Plan

"We wish to have Chinese brochure about asthma and how to prevent it. I don't even know what is asthma."

-Cantonese-speaking family member of a child with asthma

"There is a great deal of misunderstanding about asthma and fear of medications among the lay community. Most patients have not received the appropriate kind of education and self-management training that would help them live with asthma, recognize when it is getting worse, and the actions they must take to control it. So the chief message I'm spreading to all these patients is that asthma is controllable and that with the necessary knowledge and skills they can learn to take control of the disease."

Susan Janson, RN, NP, DNSc, FAAN, Professor of Nursing and Adjunct Professor of Medicine, Harms/Alumnae Endowed Chair Department of Community Health Systems, UCSF

Continuous Quality Improvement

Knowledge of NIH/NHLBI asthma clinical care guidelines does not guarantee that these guidelines are followed by providers and health care delivery systems. Indeed, wide dissemination of the guidelines and provider education on the guidelines has not resulted in consistent adherence to the guidelines. In San Francisco we still find that the practices of many clinicians are inconsistent with the guidelines. Clinicians commonly prescribe quick-relief medications, to treat acute asthma symptoms, without also prescribing corticosteroids for long term asthma control.¹⁰⁰ This places patients with persistent asthma at risk for repeated asthma exacerbations, which over time may lead to progressive disease.

Several key stakeholders emphasized the importance of developing internal site-specific systems to track and monitor adherence to asthma clinical care guidelines within the city's medical facilities. These systems can be designed to give clinicians timely feedback on their clinical practices (i.e. prescribing patterns); how they differ from other clinicians within their institution; and how their patient outcomes compare to others with the same diagnosis. Clinicians can receive this information to benchmark their own practices against norms and best practices.¹⁰¹ Potential indicators for tracking include prescribing patterns; the use of spirometry testing; the provision of asthma education; number of hospitalizations and ED visits; and the presence of asthma action plans in charts. Kaiser Permanente has developed a software program that enables its clinicians to track and compare their own patients and prescribing patterns with those within the system at large. The program is widely used within Kaiser and has had a remarkable impact on clinical practices and health outcomes.¹⁰²

Recommendation 5 calls for the establishment of performance improvement systems in medical facilities with a designated person to provide follow-up to clinicians. **Recommendation 10** proposes that third-party payors issue reports to prescribers/facilities on ratios of quick-relief medications to long-term control medications based on prescriptions filled.

Key stakeholders also felt it was important to advocate for the establishment of a citywide asthma report card on clinical practices for the city's medical facilities and third-party payors, as indicated in **Recommendation 2**.¹⁰³ The report card would not be punitive and would take into account variations in patient volume and patient population, including the disease severity, socio-economic status, linguistic variations, and ethnic/racial make-up of the population. The report card would reward providers and centers of excellent care. This recommendation would require a solid working relationship between payors; a mutual agreement between payors to collect, share and disseminate data; and a desire among payors to work towards change. To implement an asthma report card, **Recommendation 9** calls for the establishment of a citywide continuous quality improvement task force. The task force would work to secure buy-in from providers and big payors; identify populations and specific outcomes to be measured; and implement and oversee the asthma report card process.

Citywide Tracking System

Recommendation 8 proposes the establishment of a system to share asthma data to measure improvements and outcomes. This system could increase the effectiveness of asthma treatment by revealing patterns in patient demographics and clinician practices. This would require funding, oversight, cooperation and strict adherence to regulations to protect patient privacy as outlined in the Health Insurance Portability and Accountability Act of 1996 (HIPAA).

Conclusion

There have been major advances in the medical treatment of asthma in the past two decades. However, an infrastructure is needed to put these advances into practice on a citywide level. San Francisco must strengthen key components of its asthma care delivery systems and create both tracking and feedback mechanisms for benchmarking clinical performance.¹⁰⁴ San Francisco must provide high quality care for people with asthma. By providing this care, we stand to improve the health, well-being and quality of life for residents, families and communities. Creating a model of high quality asthma care will enable our delivery systems to make inroads into effectively addressing other chronic diseases.

*Asthma
and
the
Community*

Overview

Asthma is a disease that affects communities as profoundly as it does individuals. While all of San Francisco is impacted, some neighborhoods and ethnic groups suffer more than others. San Francisco has higher asthma hospitalization rates of Asians and Latinos than other counties in California.¹⁰⁵ Within the city, asthma hospitalization rates of African Americans are triple those of other ethnic groups.¹⁰⁶ The majority of asthma hospitalizations are covered by public insurance, indicating that low income people with asthma suffer from a higher number of asthma hospitalizations.¹⁰⁷ Currently, we do not know whether the source of these disparities is higher asthma prevalence, greater disease severity, environmental exposures, poor medical management or some combination of these.¹⁰⁸ Tracking or surveillance systems can help provide the information necessary to develop effective strategies to fight this epidemic.

As part of its needs assessment, the Community Committee interviewed people with asthma from diverse backgrounds and one committee member led a focus group of children with asthma. Quotes from these interviews and focus group are sprinkled throughout this report. In addition, the committee gathered information on existing tracking systems and gaps in these systems and interviewed one expert stakeholder in this area. Finally, the Community Committee members drew on their own backgrounds in asthma education, epidemiology, case management, marketing and community activism. The committee convened for a retreat and reviewed the information they gathered from the needs assessment; identified key problem areas; and created and prioritized five recommendations for asthma tracking. The Asthma Task Force as a whole created two additional recommendations related to community awareness and oversight at its final strategic planning conference.

"The data alone shouldn't be driving policy, but advocacy in many cases would benefit by using data...the problem is that data sometimes doesn't support certain advocacy positions and that there aren't any advocacy positions for some problems that the data demonstrates. So it would be nice if data played a slightly stronger role in the asthma political arena."

-Richard Kreutzer, MD, Chief,
Environmental Health Investigations
Branch, CA Dept of Health Services

Surveillance/Tracking Recommendations

1. Devise a system to collect absenteeism data on asthma in schools (starting by piloting with a few schools).
2. Use the Lifetime Clinical Record to develop a system to identify high risk asthmatics and devise an action plan.
3. Ongoing prevalence studies - every 5 years - in schools to understand sub-groups and neighborhoods with greatest needs, severity and trends over time.
4. Support the California Department of Health Services asthma mortality study by requiring mandatory immediate reporting of all asthma-related deaths of those under 35 in San Francisco for the duration of this DHS study.
5. Analyze the costs of asthma-related hospitalizations and emergency care to document the potential savings for preventative services.

Public Awareness and Oversight Recommendations

- P1. Mount substantive public awareness and education campaigns around asthma in multiple community settings that would include clinical sites, schools and child care centers, city departments, and community-based organizations that provide services to children and families.
- P2. Transition the Asthma Task Force into a permanent body, charged with responsibility for oversight of implementation of recommendations from the strategic plan, with funding from the City.

Public Awareness and Oversight

Just as all communities are not equally affected by asthma, all communities are not equally knowledgeable about asthma. San Francisco needs a public awareness campaign to disseminate information about asthma to a wider audience. Such a campaign not only has the potential to heighten public awareness about asthma, but also to increase public pressure to reduce the burden of asthma. Past public awareness campaigns about health issues like HIV have shown that the public can become extraordinarily well-educated about complex diseases. HIV education and awareness combined with community activism has had a major impact on health policy. Now is the time to mount an equally substantive public campaign focused on asthma ([Recommendation P1](#)). Finally, the Asthma Task Force should be transitioned into a permanent body to ensure that asthma remains a priority for the city and to make certain that asthma is addressed in a comprehensive and coordinated manner, as outlined in this strategic plan ([Recommendation P2](#)).

Asthma Surveillance/Tracking

Asthma is a chronic disease that can be difficult to manage and assess. Yet without a basic understanding of the scope of asthma in San Francisco, we lack some key pieces to the asthma puzzle. An asthma surveillance/tracking system that targets several key outcomes over time -- diagnosis, office visits, emergency department visits and hospitalizations and mortality data -- would be enormously useful.

Currently, the state analyzes mortality data and hospitalization data on a county level. These data capture the most acute asthma cases. Emergency Department visits, another measure of acute asthma, will be available statewide in the next few years. While these data are useful for measuring severe asthma, they do not provide a complete picture of the burden of asthma, supporting the need for a more comprehensive surveillance/tracking system. The Community Committee's asthma surveillance/tracking recommendations will help complete the picture with school-based prevalence data; a system to identify the most high risk and underserved asthma patients; and timely reporting of asthma mortality data.

An asthma surveillance/tracking system should differ markedly from traditional surveillance/tracking systems developed for infectious diseases, such as measles, mumps, and sexually transmitted diseases (STDs).¹⁰⁹ These diseases require mandatory reporting of all cases for the purpose of controlling future infections. Some have argued for an asthma registry based on this traditional model, with mandatory reporting of all asthma cases. However, an asthma registry would not be appropriate for several reasons. Since asthma is a chronic disease, an asthma registry would include a number of people who, though technically diagnosed with asthma, have had no symptoms in many years.^{110 111} In addition, since asthma is a common disease affecting an estimated 10% of the population (about 76,000 San Franciscans) the effort required to follow this population would be enormous and would not inform asthma interventions any more effectively than ongoing systematic prevalence surveys of representative samples in the population.¹¹² Many of the Community Committee's recommendations are intended to lay the groundwork for a comprehensive asthma surveillance/tracking system for the City of San Francisco, without use of an asthma registry.

"I think it's important that those with asthma get optimal treatment, but I also think that the real public health question is why we have increasing prevalence. And if we don't start to steer more attention and resources to that fundamental question I think down the road there will be a lot of regret."

-Richard Kreutzer, MD, Chief,
Environmental Health Investigations
Branch, CA Dept of Health Services

School-based Data

The California Health Interview Survey (CHIS) promised county level estimates of asthma prevalence (percentage of people with asthma) and of activity limitations, symptom severity and other morbidity due to asthma.¹¹³ However, due to extremely low sample sizes and response rates, CHIS prevalence estimates are unreliable. In fact, the San Francisco Department of Public Health (SFDPH) has issued a memorandum cautioning employees in the use of these data. Since CHIS data do not provide reliable prevalence estimates, **Recommendation 3** advocates for school-based prevalence studies every five years in the San Francisco Unified School District (SFUSD). These surveys would provide estimates of asthma prevalence for San Francisco children as well as information on prevalence differences by neighborhood. Schools provide a cost-effective way to capture this information and given high response rates, we could assess the asthma burden of children who go to public schools. In addition, the Board of Education enacted a resolution stating that an asthma prevalence study be conducted.¹¹⁵ Now is the time for that resolution to be implemented.

"People do die of asthma. There are at least 5,000 deaths a year in the United States. Last year there were over 600 deaths in CA. All of these deaths from asthma are preventable. If we could identify people at risk and get them the proper treatment, their deaths could be prevented."

-Susan Janson, RN, NP, DNSc, FAAN, Professor of Nursing and Adjunct Professor of Medicine, Harms/Alumnae Endowed Chair, Department of Community Health Systems, UCSF

Recommendation 1 proposes documenting asthma-related school absences. Such information would not only illuminate the extent to which asthma affects children's school attendance but also provide valuable information on the financial costs of asthma-related school absences to the district. The San Francisco Unified School District's (SFUSD) operating budget is negatively affected by student absenteeism so it would be useful to find out the extent to which asthma-related school absences result in financial losses for the SFUSD.

Mortality Data

From 1988 to 2001, there were no asthma deaths among children younger than 15. However, in a six month period in 2002, three children died of asthma in San Francisco (one was a nonresident who attended a child development center in the San Francisco Unified School District). This disturbing constellation of deaths is viewed by the Asthma Task Force as a wake-up call. **Recommendation 4** advises that San Francisco provide support for an existing statewide mortality study by asking for the timely citywide reporting of all asthma deaths in the city to the state. Recently, the Environmental Health Investigations Branch (EHIB) of the California Department of Health Services received funding from the Centers for Disease Control and Prevention to look in-depth at all Californians under 35 who have died of asthma. The study's purpose is to search for potential patterns in these deaths in order to prevent future deaths in this age group.

In San Francisco, cause of death, which is listed on all death certificates, is currently not immediately entered into a vital statistics database. Instead, death certificates are sent to the state for them to enter cause of death into the database, delaying local awareness about asthma deaths for at least a year. As a result, an asthma death cannot be confirmed immediately except by word-of-mouth. Considering this recent cluster of deaths, immediate and official reporting of asthma deaths should occur; such a policy would keep our city informed about any changes in trends as well as support the EHIB study.

Tracking and Analysis

Recommendation 2 calls for using a unique source of health data for tracking asthma. Office and emergency department visits and hospitalizations are recorded for every patient in the SFDPH Community Health Network (CHN), which primarily serves low income residents. This information is collected in the Lifetime Clinical Record (LCR) database, which could be used to provide longitudinal information on people with asthma who rely on public clinics and hospitals for their primary health care. Since information on the number of clinic visits and hospitalizations would be available on individual patients over time, the database would enable CHN to identify high-risk patients with asthma in its patient population. Action plans could then be devised for each of these patients to improve medical management of their disease.

Finally, asthma hospitalizations are costly and mostly preventable.

Recommendation 5 advocates for analyzing asthma-related costs and documenting potential savings for preventative services. Money that is re-directed to preventive care will ultimately reduce city expenditures for acute care services, which are costly in dollars and human suffering.

Conclusion

Even with limited information one thing is clear: asthma is a disease of disparities. Why do some communities have a greater prevalence of asthma and poor asthma outcomes? Why don't more communities have access to the information that is already available on asthma? We need to expand our knowledge base to understand asthma patterns in San Francisco. At the same time, we need to disseminate the information on asthma that currently exists to the public at large. With this information, San Francisco can develop appropriate strategies to reduce asthma among those groups that experience the greatest suffering.

Endnotes

Introduction

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Executive Summary

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¹¹⁰ Warren N. *Potential Data Sources for Asthma Surveillance at a County and State Level in California*. Bay Area Regional Asthma Management and Prevention Initiative, 1999. <http://www.rampasthma.org/research2.htm>

¹¹¹ Interview with Richard Kreutzer, MD, Chief, Environmental Health Investigations Branch, CA Department of Health Services, October, 2002.

¹¹² California Health Interview Study, 2001. <http://www.chis.ucla.edu/>

¹¹³ On January 11, 2000, the Board of Education adopted Resolution No. 912014A5, "Authorization/Require a SFUSD District-Wide Asthma Study". To date, this resolution has not been implemented due to lack of funding.

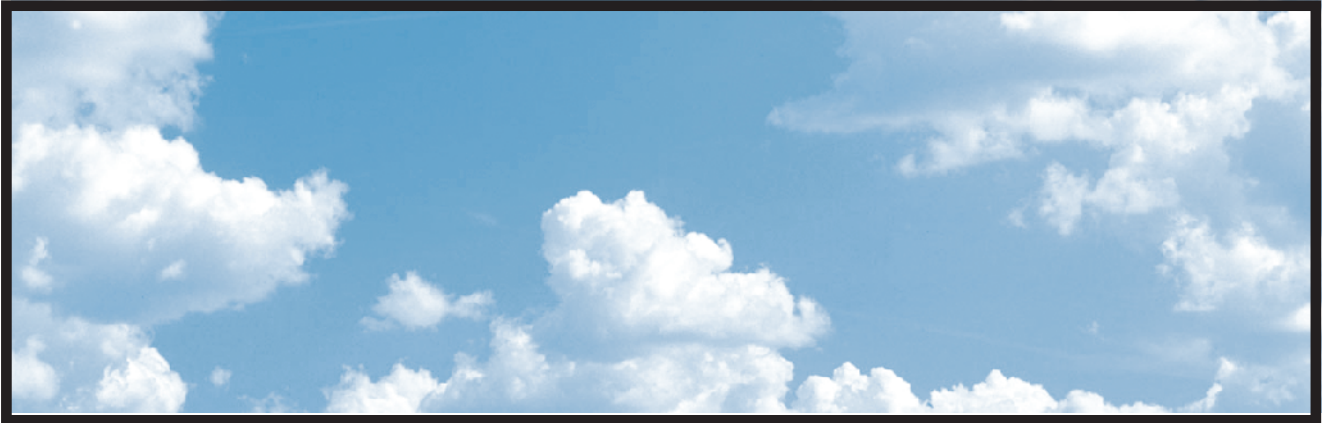
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This strategic plan was generously supported by:

The California Endowment

Kaiser Permanente/American Lung Association

First 5 California/California Department of Health Services

via the San Francisco Department of Public Health.

San Francisco Department of Public Health

which provided administrative support and the printing and distribution of this plan.

and the

American Lung Association of San Francisco & San Mateo Counties

which procured the funding and provided the staffing to coordinate the project.

The San Francisco Asthma Task Force

A legislated task force under the San Francisco Board of Supervisors