SFDPH
Environmental HEALTH
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Home-Based Education and Home Assessment Services

Promoting Healthy Homes to Prevent Disease and Injury to San Francisco Residents:

A Pilot Project for WIC Recipients (2008 – 2010)

"The connection between health and the dwelling of the population is one of the most important that exists"

~ Florence Nightingale

San Francisco Department of Public Health
Environmental Health Section
Children's Environmental Health Promotion

Report written by:

- David Lo, Assistant Health Educator, San Francisco Department of Public Health (SFDPH), Children's Environmental Health Promotion (CEHP)
- Contributing writer: Cynthia Comerford Scully [1], Senior Health Planner, SFDPH, Program on Health Equity and Sustainability (PHES)
- Contributing editors: Cynthia Comerford Scully, and staff of CEHP: Janet Palma, Karen Cohn, Karen Yu, Luz Agana, Meldy Hernandez

Home-visits conducted by CEHP health educators:

- Cynthia Melgoza, David Lo, Harriet Lem, Lisa Reyes

Project supervision:

- Karen Cohn, Program Manager, SFDPH CEHP

Project collaboration:

- Magdalene Louie, Program Coordinator, SFDPH, Women, Infants, and Children (WIC) Supplemental Nutrition Program

[1] The section on "Supplementary Neighborhood Assessment Data" was written by Cynthia Comerford Scully.

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Background:
Housing conditions and neighborhood environments have positive and negative impacts on people's health. Today, the most prominent environmental housing threats are lead-based paint; asthma triggers, such as moisture, mold and pest infestations; and hazardous gases, such as carbon monoxide and radon. Much of the burden of such exposures rests on children in low income families, as they are most likely to live in poor quality housing.

In San Francisco, affordable and safe housing is always in great demand. However, the high cost of living, scarcity of land, and limited supply of affordable homes force many low-income families to turn to relatively low-cost rental units. Some families may choose to live in uninhabitable and possibly illegally constructed or partitioned units to save money for other necessities. These families may have limited knowledge about their legal rights for safe and habitable homes.

The SFDPH CEHP aims to provide a holistic, comprehensive, and coordinated effort, combining education and in-home assessment, to prevent childhood diseases and injuries that result from housing-related hazards associated with unhealthy and unsafe homes.

Description of Project Services:
In developing the Home-based Education and Home Assessment Services for the WIC Recipients, the CEHP utilized the following goal statement to guide the values of the project:

> A safe and healthy home can provide a nurturing environment to raise children and contribute to a healthy life for the people who live there. Occupants have the responsibility to keep their residence clean, but they also have the right to live in safe and habitable homes that meet the requirements of the Health and Housing Codes.

WIC families with children less than three years of age were selected for this pilot project. WIC recipients are mainly minority children from low-income families. Research studies have shown that lead poisoning, asthma and many other environmentally-related diseases fall on low-income and minority children, who are more likely to live in poorly maintained housing.

The services provided to the participating families included education on environmental hazards and tenant rights; home assessment to identify and prevent hazards; assistance to remediate the identified hazards; and dissemination of information about economic resources.

Project Implementation:
From April to October 2008, CEHP provided service request letters describing project services to the WIC. Staff of WIC then sent out 5,906 letters to WIC families with children under three years old living in the targeted neighborhoods. Seventy-two families responded to our notification indicating their willingness to participate in the project. Ultimately, sixty-four families received our services.

Before the home visits started, staff of CEHP received in-service training on community resources and San Francisco Housing and Health Codes. Staff developed a screening checklist and educational materials.

Participating families expressed their concern about lead poisoning and damaged paint, structural damage and poor housing conditions, mold, pests, asthma triggers, and asbestos.

All home visits were conducted by CEHP's four bilingual (English/Spanish and English/Cantonese) health educators, who gave advice and assistance for empowering participating families to maintain their homes in a hazard-free condition, or referred families to code enforcement agencies or community organizations for further support in eliminating hazards.

Most families received follow-up contact by CEHP health educators to determine if the problems identified at the first visit had been corrected.

Supplementary Findings from Neighborhood Assessment Data:
More and more research studies show that where people live and their surrounding conditions influence health.

Staff of SFDPH PHES utilized GIS analysis to analyze and map the spatial distribution of social and physical characteristics that affect neighborhood health. Four study variables were selected to determine the types of built environment conditions, including occupancy conditions, built environmental hazards, vulnerable populations, and access to resources that correlate with the addresses of WIC recipients who participated in our project.

Results of the analyses provide further evidence of the vulnerability of families receiving WIC subsidies in relation to built environment health impacts. The findings validate our assumption that low-income families are subject to worse neighborhood conditions in addition to worse housing conditions than families of higher income.

Recommendations:
Both the SFDPH and the City and County of San Francisco (The City) as a whole have to play important roles in promoting healthy homes and neighborhoods for the prevention of disease and injury to San Francisco residents.

The SFDPH needs to develop strategies and actions to expand the home-based education and environmental assessment services to benefit more San Franciscans, as well as adopt new polices to further improve housing conditions and environments in San Francisco.

The City should allocate resources to implement new initiatives that support the most vulnerable populations in improving their home conditions, neighborhood environment, and quality of life.

Project Conclusion:
The City has to develop and implement a long-term housing policy that ensures all residents can secure affordable, healthy and safe homes in San Francisco.

I. BACKGROUND:

A. The Housing-Health Connection:

Housing and health have been linked since the late 19th century when outbreaks of tuberculosis (TB), typhoid, and cholera led to early housing and sanitary codes. Improvements in plumbing, sanitation, ventilation, overcrowding, and refrigeration helped eradicate the spread of these diseases. Today, the most prominent environmental housing threats are lead-based paint; asthma triggers, such as moisture, mold, pest infestations; and hazardous gases, such as carbon monoxide, radon. Much of the burden of such exposures rests on children in low-income families, as they are most likely to live in poor quality housing. In the past decade, environmental health science has gathered further substantial evidence indicating that various aspects of homes can have profound, direct, measurable effects on both physical and mental health outcomes of people.

In a research article, *"The Relationship of Housing and Population Health: A 30-Year Retrospective Analysis"*, which was published in the Environmental Health Perspectives (Volume 117/Number 4/April 2009), revealed that although other risk factors were also likely to be important, the health differences among lower-income and minority families compared with other populations suggested housing conditions might contribute to chronic disease in some populations (Jacobs et al. 2009). The article also quoted some other research findings that are worth mentioning because they show how housing conditions affect health, for example:

- "....Asthma rates are higher among children living in low-income communities." (Mannino et al. 2002).
- "....From 2001 to 2004, asthma in children living below the federal poverty level was 10.3%, compared with 6.4 – 7.9% in higher income families." (Moorman et al. 2007).
- "....Inadequate housing conditions appear to be an independent contributor to the risk of diabetes in urban, middle-age African-Americans." (Schootman et al. 2007).
- "....The condition of an individual's home appears to serve a marker for some important underlying factors beyond those of diet and heredity." (Grant 2007).
- "....Increases in headache and migraine could be related to neurotoxicant (e.g., pesticide) exposure in housing, which may be more common among families living in poor-quality housing that is more likely to have pest infestation problems." (Julien et al. 2008).

According to the *2008 National Center for Healthy Housing's State of Healthy Housing Report,* an estimated 5.7 million U.S. families lived in substandard housing or housing conditions that caused significant illness, injury and death, which were preventable through housing regulation, inexpensive repairs, ongoing maintenance, and small behavioral changes.

Statistics show that young children under three years old spend nearly 80% to 90% of their time at home, and environmental hazards in the home are harming millions of children in the United States each year. Therefore, environmentalists and health experts have taken more aggressive steps to advocate for "Healthy Homes" that promote safe, decent, and sanitary housing as a means of preventing disease and injury.

B. San Francisco's Lack of Affordable Housing and High Cost of Living:

In San Francisco, affordable housing is always in great demand by residents who choose to live in this small (approximately 49 square miles), but beautiful and economically vibrant city. The 2000 Census showed San Francisco had 16,600 residents per square mile and was considered as one of the densest large cities in the United States. According to the statistics provided by the California Department of Finance in 2009, the population in San Francisco had actually increased in the last 10 years to an estimated 845,559.

According to the San Francisco Affordable Housing Study commissioned by resolution of the Board of Supervisors of the City and County of San Francisco in 2000, and published in 2002, as the San Francisco housing data book, San Francisco had the second highest cost of home ownership among major regions in the United States. Only 7.3% of San Francisco households earned enough income to afford the median sale price of housing sold in early 2001 compared to 56.9% of households nationally. Statistics also showed San Francisco as a city of many renters - 65% of San Francisco's occupied units were rented in 2000, compared with only 34% nationally.

According to the *2005 to 2008 progress report on the Mayor's Policy Council for Children, Youth and Families, 29.8%* of San Francisco households paid more than 50% of their income for housing. An hourly wage of $29.60 was needed to afford a two bedroom apartment in San Francisco. The report also indicated that less than 20% of families could afford to purchase a median-priced home. A self-sufficiency standard study from the Center for Community Economic Development in 2008 indicated basic costs had skyrocketed in San Francisco since 2003. The annual rental housing cost of the self-sufficiency standard for San Francisco was $17,328 (i.e., $1,444 monthly). In addition to expensive housing, the increase of other costs of living, such as food costs rising by 15% and health care costs going up by 30%, had caused the Self-Sufficiency Standard for San Francisco to remain high at $57,658 a year for a family consisting of one adult, a preschooler and a school-age child. However, this standard far outstripped the annual income allowed for the eligible WIC participating families with the same size and family component.

WIC is a special supplemental nutrition program for women who are pregnant, breastfeeding, or have recently had a baby, infants, and children less than five years of age. The WIC Program provides supplemental foods (such as milk, cheese, cereal, eggs, beans, peanut butter, and juice), breastfeeding and nutrition education, and referrals to health care. One example of the WIC service eligible families, comprised of one adult, a preschooler and a school-age child, must meet federal income guidelines, 185% below federal poverty levels, which was $32,560 in 2008 (100% of the federal poverty level in 2008 is $17,600). The annual housing cost of the

self-sufficiency standard, which amounted to $17,328 ($1,444 per month), was 53% of the maximum allowable annual income of this WIC service eligible family group.

San Francisco's high cost of living, scarcity of land, and limited supply of affordable homes force many low-income families to turn to relatively low-cost rental units. Housing costs in San Francisco, for both renters and owners, are second only to that of New York City. Some families may choose to live in uninhabitable and possibly illegal or partitioned units to save money for other necessities. However, many of these low-rental and illegally constructed units in San Francisco are characterized with substandard living conditions, which include:

- Poor health conditions, such as:
  - Damaged lead-based paint
  - Indoor mold and dampness
  - Garbage accumulation; and
  - Insect and pest infestation.
- Unsafe structures and inadequate amenities, such as lack of:
  - Effective weatherproofing of windows, exterior walls, and roofs
  - Fully functional plumbing and gas facilities
  - Well-maintained stairs, floors, or common areas
  - Hot and cold running water
  - Adequate electrical plugs and phone jacks; and
  - Safe source of heat

C. Limited Knowledge of Tenant Rights among Low-Income, Immigrant Families:

In the 1998 American Housing Survey of 45 major U.S. cities published in the *State of Healthy Housing Report* by the National Center for Healthy Housing, the metro area overall ranking in terms of basic housing and healthy housing for San Francisco was 43rd and 44th in the country . Many low-income tenants may have limited knowledge about their legal rights for safe and habitable homes. This includes WIC service recipients, many of whom are new immigrants, struggling to make ends meet and trying to achieve social economic independence. These families may perceive housing as just a shelter, only a step away from homelessness. Fear of eviction, becoming homeless, paying high rent, and landlord retaliation are known factors contributing to their tolerance of poor living conditions.

D. Mission of the CEHP:

The CEHP, which began in 1993 as the Childhood Lead Prevention Program (CLPP), is a program of the Environmental Health Section (EHS) within the SFDPH. Since its inception, CLPP has made a significant impact in reducing childhood lead poisoning in San Francisco. In 1998, CLPP evolved into CEHP with an expanded mission to include provision of community and clinic outreach education, as well as home-based environmental evaluation and education for families with asthmatic children. Despite its successes, CEHP recognizes that much more work needs to be done to ensure that children are healthy and safe in their homes and community. Therefore, CEHP continually advocates for healthy housing and healthy environments for children and their families living in San Francisco.

Since 2000, CEHP has broadened its scope of work by adopting a proactive, holistic approach addressing multiple housing and environmental deficiencies that affect the health and safety of the occupants. CEHP's work encompasses:

- Promoting healthy homes, child-care, and school settings to ensure that children can develop to their full potential;
- Supporting coalitions and communities to advocate for policies and practices for boosting healthy homes and healthy neighborhoods; and
- Helping families by linking them to needed services or code enforcement agencies.

From 2005 to 2007, CEHP initiated its Youth Civic Engagement Project with the hiring and training of 20 Youth Works Interns (high school students), and the participation of several community and City agency partners. The intent of the project was to build the capacity of San Francisco youth to promote healthy neighborhood policies and outcomes. Youth participants were exposed to current public health issues of concern, including and how to positively influence the impact of the built environment on community health.

In the summer of 2008, CEHP furthered its proactive role by collaborating with the SFDPH WIC to pioneer an innovative project, known as Home-based Education and Home Assessment Services for San Francisco WIC Recipients.

II. DESCRIPTION OF PROJECT SERVICES:

Promoting healthy homes has been one of the expanded missions of CEHP. It is a holistic, comprehensive, and coordinated effort, combining education and in-home assessment, to prevent childhood diseases and injuries that result from unhealthy and unsafe homes.

A. Goal and Core Objectives:

In developing the Home-based Education and Home Assessment Services for San Francisco WIC Recipients, CEHP utilized the following goal statement to guide the values of the program:

> A safe and healthy home can provide a nurturing environment to raise children and contribute to a healthy life for the people who live there. Occupants have the responsibility to keep their residence clean, but they also have the right to live in safe and habitable homes that meet the requirements of the Health and Housing Codes.

The Home-based Education and Home Assessment Services for San Francisco WIC Recipients had five core objectives:

- Increase WIC participants' awareness of housing-related health hazards, and provide culturally and linguistically appropriate materials.
- Impart knowledge to the participating WIC families that live in rented homes about safe and habitable homes as their basic tenant rights.
- Facilitate and empower participating families to take action in maintaining their homes in safe and decent living conditions, including use of code enforcement and community resources.
- Improve the socioeconomic and health status of the participating families, by linkage to community resources.
- Urge policymakers and advocates to invest additional resources and efforts in promoting affordable, healthy housing.

B. Anticipated Outcomes:

In achieving the stated objectives, the project anticipated the following outcomes:

- Participating families will comprehend elements of healthy homes and their rights for safe and habitable housing.
- Participating families will take necessary actions for maintaining their homes in safe and decent living conditions.
- Participating families will identify and remove any potential environmental health risks to their children, such as lead hazards, mold, pests, carbon monoxide, toxic chemical household products, etc., through education, in home assessment and linkage to code enforcement and community resources.
- Participating families will become aware of financial resources available in the community.
- CEHP will build collaboration among public health practitioners, housing/building specialists, property owners managers, tenants, and others who work in the community for improving home conditions.

C. Target Population:

WIC families with children less than three years of age were selected for this pilot project. WIC recipients are mainly minority children from low-income families. Research studies have shown that lead poisoning, asthma and many other environmentally-related diseases fall on low-income and minority children, who are more likely to live in poorly maintained housing. Younger children are prone to be exposed to in-home environmental hazards for the following reasons:

- They spend most of their time at home.
- They play and crawl on the ground and put their fingers into their mouths.
- They depend on adults to make their homes safe.

D. Service Scope:

The services provided to the participating families included:

- Parent education on environmental hazards and tenant rights for living in safe and habitable homes.
- Home assessment to identify and prevent hazards or any other potential health risks to children, such as mold, pests, asthma triggers, carbon monoxide, and chemical household cleaning products.
- Assistance to remediate the identified hazards by empowering participating families to resolve problems within their control through their self-initiated actions, such as doing regular house cleaning, and requesting their landlords to correct the hazards.
- Connecting participating families for issues not in their control to code enforcement agencies and community resource for assistance.
- Providing a free carbon monoxide detector and instructions for use to each participating family.
- Offering health promotional items to families with asthmatic children, such as allergy-proof covers for mattress and pillow, allergy vacuum bags, and squeegees.
- Disseminating information on economic resources, such as "Bank On San Francisco"[2], application for the San Francisco Working Families Credit[3], and resources for affordable homes and housing services.

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[2] In partnership with fifteen banks and credit unions in San Francisco, Bank on San Francisco is a collaborative program between the City and County of San Francisco and the Federal Reserve Bank of San Francisco that encourage and assist unbanked San Franciscan to open a free checking account - an important step toward financial security, saving for the future and establishment of a credit history that will help participants enter the financial mainstream and achieve their dreams.

[3] The San Francisco Working Families Credit is a commitment by the City of San Francisco to help low-income families keep more of what they earn. Eligible families can receive a $100 credit from the City in addition to their Earned Income Tax Credit payment, subject to available funds. This credit does not count as income for determining eligibility for most public benefit programs.

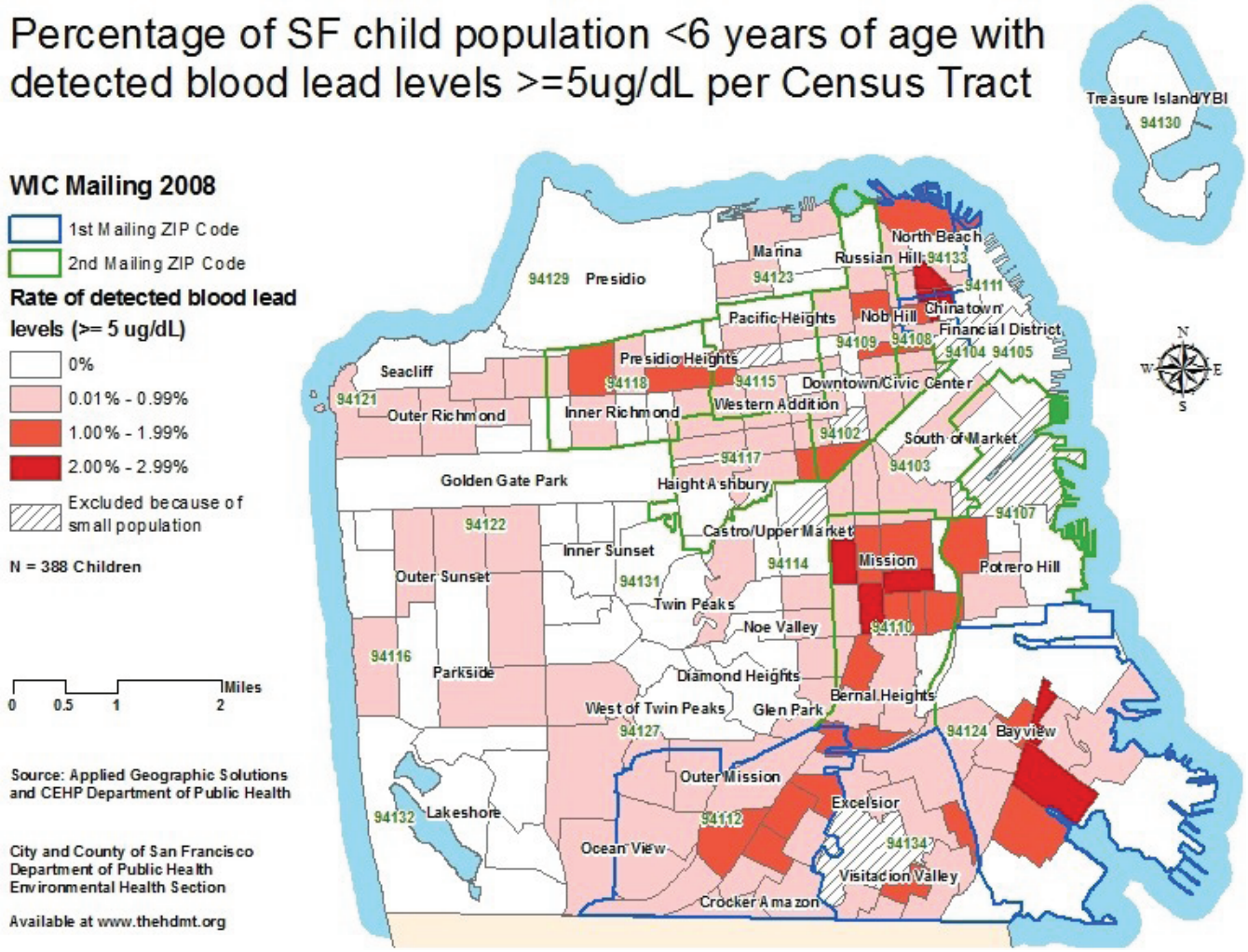
E. Methodology:

1. Identification of target neighborhoods and families:

The approach for identifying target neighborhoods is based on the percentage in San Francisco children less than six years of age with detected blood lead levels equal to or greater than 5µg/dL between April 1, 2006 and March 17, 2008 (see Figure 1). CEHP's data showed that neighborhoods in the following zip codes were found to contain older housing units and had comparatively higher rates of children with detected lead exposure.

ZIP Codes	Neighborhoods
94102	Tenderloin, Hayes Valley, and North of Market
94103	South of Market (includes parts of Financial District)
94108	Chinatown
94109	Nob Hill, Russian Hill, and Polk
94110	Mission
94112	Excelsior
94115	Western Addition, Japantown, and Pacific Heights
94117	Haight
94118	Richmond
94124	Bayview, Hunters Point
94133	Chinatown, North Beach, and Telegraph
94134	Visitacion Valley, and Portola

Figure 1[4]



III. PROJECT IMPLEMENTATION:

A. Implementation Steps:

1. Notification:

From April to October 2008, CEHP provided service request letters describing project services in three languages (English, Spanish, and Chinese, see Appendix 1, 2, and 3) to the WIC Program. Staff of WIC then sent out 5,906 letters to WIC families with children under three years old living in the targeted neighborhoods. A total number of 7,078 eligible children were identified, as some families had more than one eligible child in their families. Of these 5,906 letters, approximately 3,100 were printed in English and Spanish and were sent to families that indicated their preferred language in Spanish. The other 2,800 letters were printed in English and Chinese and were sent to families that indicated their preferred

[4] Courtesy of Jennifer McLaughlin, Health Planner, SFDPH PHES.

languages in English and/or Chinese. Data below shows the number of targeted children from each identified zip code:

ZIP Codes	Number of children under three years old received WIC services
94102	330
94103	279
94108	145
94109	329
94110	1,333
94112	1,708
94115, 94117	246
94118	138
94124	1,232
94133	308
94134	1,030
Total:	**7,078 potential children (from 5,906 WIC benefiting families)**

2. Development of a screening checklist:

Prior to the start of the home visit, a screening checklist was developed. The checklist focused on identifying lead hazards, possible asthma triggers, and toxic household cleaners (see Appendix 4).

3. Development and collection of educational materials:

Educational materials in English, Spanish, and Chinese related to lead poisoning prevention, identification and removal of asthma triggers, proper handling of household hazardous waste, carbon monoxide fact sheets, use of safe cleaning products, tenant rights for safe and habitable homes, San Francisco health code, San Francisco affordable homes, application for the San Francisco Working Families Credit, free tax services in community, and Bank on San Francisco resources were developed by CEHP or collected from various community organizations and City agencies, such as the Department of Environment, and the Mayor's Office of Housing.

4. In-service training for staff:

Housing experts from various non-profit agencies were invited to give in-service training to health educators and other CEHP staff, including Bay Area Legal Aid, Chinatown Community Development Center, Housing Rights Committee, San Francisco Apartment Association, and St. Peter's Housing Committee[5]. These trainings provided CEHP staff a chance to discuss how families in units that might be declared illegal for occupancy could be assisted to secure housing by non-profit housing rights and legal advocacy agencies.

5. Home visits:

All home visits were conducted by CEHP's four bilingual (English/Spanish and English/Cantonese) health educators. Each home visit was approximately ninety minutes in length and consisted of the following activities: 1) collecting basic family data and residence information, such as number of children under six years old, dwelling type, ownership type, length of stay

[5] St. Peter's Housing Committee was merged into Causa Justa: Just Cause in September, 2010.

at the residence; 2) providing educational information on lead poisoning prevention, removal of in-home asthma triggers, tobacco smoke cessation resources, and tenants rights for safe and habitable homes; 3) discussing issues regarding testing children for lead, removing identified asthma triggers and environmental hazards, and using easy and safe cleaning products; 4) conducting room-by-room visual screening to identify lead sources and other environmental hazards; and 5) checking for toxic household cleaning products being used. In addition to handing out educational materials, each family was also given a free carbon monoxide detector. Families with asthmatic children were given additional health promotional items, such as allergy-proof mattress and pillow covers, allergy-proof vacuum bags, and squeegees.

6. Advice and assistance for empowering participating families to maintain healthy housing:

In cases where any environmental hazards or problems, such as damaged paint, mold, pests, damaged building structures, were identified or revealed by the families during the home visit, the health educators would explain the importance and the need for remediation in order to prevent tenants from further exposure to these unhealthy or unsanitary conditions. Recommendations on the methods to improve the living conditions were given and discussed with families. If the environmental problems were within the control of the tenants, they would be advised to take consistent, self-initiated actions to improve their living conditions, such as dusting all surfaces regularly with a damp cloth, and/or removing mold using vinegar and soapy water. Renters were encouraged to approach their landlords or building managers to request corrective actions if the repairs were solely controlled by the landlords and in case of public housing by the San Francisco Housing Authority (SFHA). See next section for issues not resolved by contacting property owners/managers.

7. Referrals to code enforcement agencies or community organizations for further investigation and remediation:

When the identified hazards were found to be beyond the control of the renters, such as pest infestation in a multi-family apartment, or structural damage to the building, the tenants would be connected to the appropriate City regulatory agencies for code enforcement, or to community organizations for resolution of hazardous conditions.

8. Follow-up contacts by CEHP:

Most families whose homes were found to contain environmental hazards and/or structural damage received further contact by CEHP health educators, either by phone calls or additional home visits, to determine if the problems identified at the first visit had been corrected. Some families could not be contacted because of moving or discontinued phone numbers.

B. Findings and Data Analysis:

This section presents the project findings: 1) responses, 2) case distribution, 3) profile of participating families, 4) concerns of participants, 5) problems/hazards identified during home visit, 6) assistance and service referrals, and 7) summary of findings.

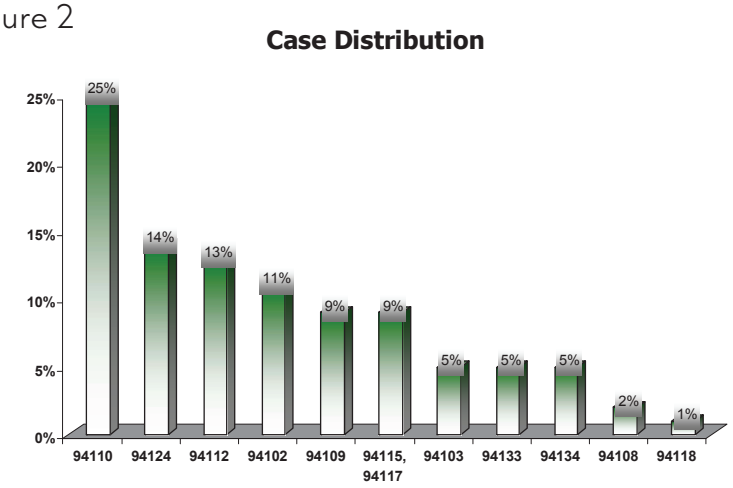
1. Responses:

The zip codes of 94110, 94112, and 94124, which contained more than 60% of the eligible participants, had the most response. Between the months of May 2008 and January 2010, a total number of seventy-two families responded to our notification indicating their willingness to participate in the project by phone call, mail, or faxing back our request service form. Sixty-four families received home-based education and home assessment services. Seven families either rescinded their decision or could not be contacted. One family did not meet the requirement of residing in San Francisco.

2. Case distribution:

Neighborhoods in zip codes 94110, 94112, and 94124 included more than 60% of the targeted participants and had thirty-three of the total sixty-four cases. The majority of home visits occurred in zip code 94110 (Mission neighborhood). Figure 2 shows the percentage of case distribution according to zip code.

Figure 2



Number of Cases (n = 64)	
94110 (Mission)	16
94124 (Bayview/Hunters Point)	9
94112 (Excelsior)	8
94102 (Tenderlion, Hayes Valley, & N.Market)	7
94109 (Nob Hill, Russian Hill, Polk)	6
94115, 94117 (Western Addition, Japantown, Pacific Heights & Haight)	6
94103 (South of Market & Financial District)	3
94133 (Chinatown, North Beach & Telegraph)	3
94134 (Visitacion Valley & Portola)	3
94108 (Chinatown)	2
94118 (Richmond)	1

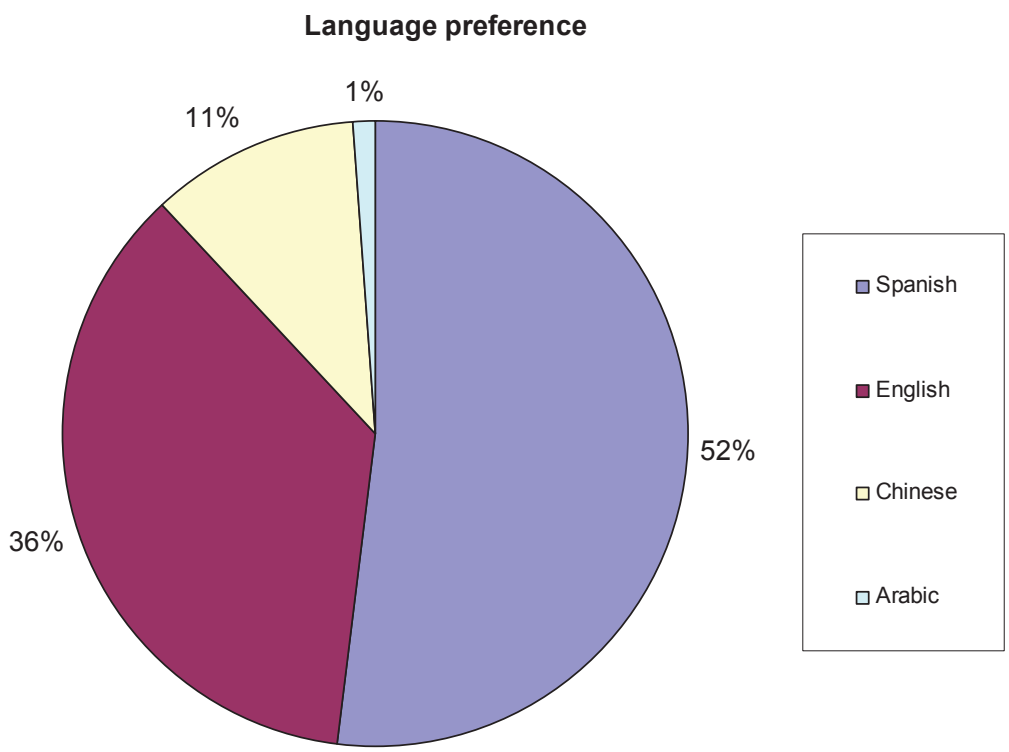
3. Profile of participating families:
a. Languages:

3. Profile of participating families:

a. Languages:

Figure 3 indicates that more than half of the participating families preferred the home-based education and home assessment to be conducted in Spanish (33 families, 52% of all families), followed by English (23 families, 36% of all families), Chinese (seven families, 11% of all families) and Arabic (one family, 1% of all families). This reflects the need for having linguistically competent and culturally sensitive staff for service delivery.

Figure 3



b. Family composition:

Altogether 64 families and 95 children under six years of age benefited from the home visits.

Table 1: **Families with the Number of Children Under Six Years of Age (N= 64 Families and N = 95 Children)**

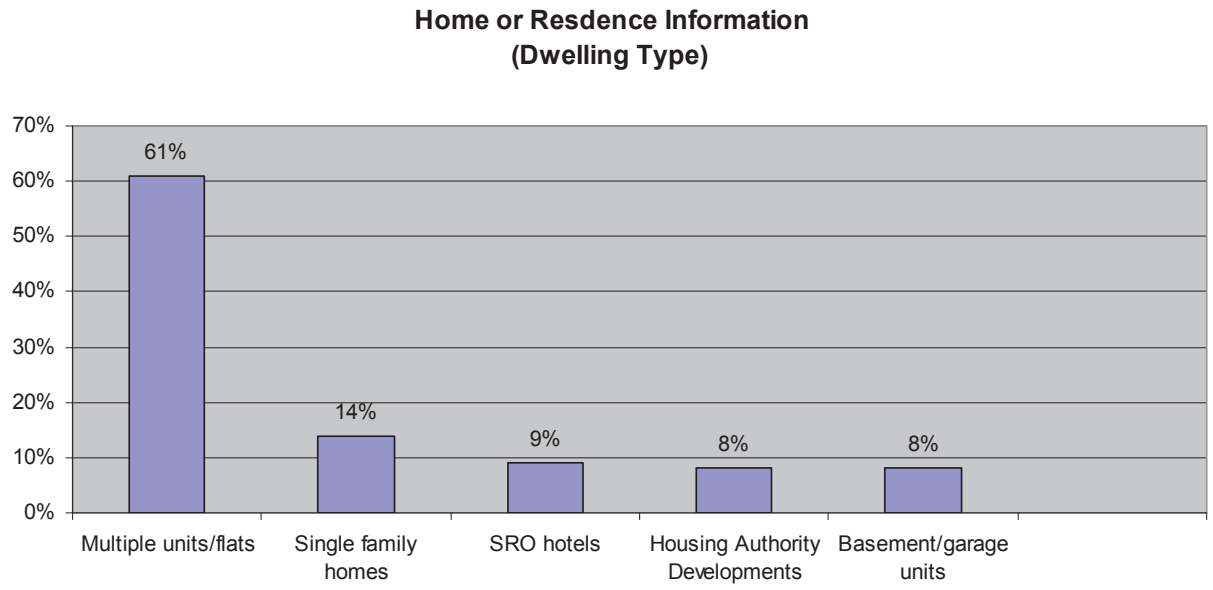
# of families	% of families	# of children
38	59%	1
22	35%	2
3	5%	3
1	1%	4

c. Home or residence information:

Thirty-nine families (61 % of all families) lived in multiple units/flats. Of these 39 families, two families were subtenants of sublet units within a flat. Nine families (14% of all families) resided in single family homes. Six families (9% of all families) lived in Single Residential Occupancy (SRO) hotels. Five families (8% of all families) lived in SFHA Developments and five families (8% of all families) lived in garage/basement units which were considered to be illegal dwellings by CEHP staff due to unpermitted construction. Of the five illegal dwellings, two were considered unsafe because of rotting walls due to water leaks in the bedroom and bathroom (picture 1), indoor pest problem, boarded window and rear door, paint chips on bare soil in the backyard, and accumulation of unwanted goods in the

backyard which resulted in pest harborage conditions (picture 2). Families who lived in these units were referred to St. Peter's Housing Committee for further assistance and were given recommendations for interim control, such as removing unwanted goods, covering bare soil, trimming over-grown vegetation, covering interior damaged paint with duct tape, maintaining home cleanliness, and storing garbage properly.

Figure 4



Picture 1: Rotting wall in bathroom

Picture 2: Accumulation of unwanted goods in backyard

Table 2: **Housing Tenure (N=64)**

Length of stay (years)	% of families	# of families
< 1	13%	8
1 – 2	20%	13
2 – 3	18%	12
3 – 4	16%	9
4 – 5	4%	3
5 – 6	9%	6
< 6	20%	13

Of the 64 families visited by CEHP health educators, only one was owner-occupied. Sixty-one families paid rent for their residence, and two families received free boarding from the owners who were their family members. Based on the data provided by the families, information pertinent to rent is analyzed as follows:

- Forty families disclosed the amount of their monthly rental. The range was between $151 and $2,200, with the average at $1,012, and the median at $1,000.
- Rent for six of the families, which represented slightly less than 10% of the participating families, was more than the monthly housing cost of the self-sufficiency standard ($1,400) for San Francisco in 2008.
- The range of monthly rent for the five families that lived in SFHA Developments was between $151 and $700. The average was $384. SFHA provides housing at a comparatively lower cost than general market rates.[6]
- The monthly rental range of families, excluding public housing and SRO hotel/illegal unit tenants, was between $780 and $2,200. The median was $1,100, and the average was $1,185, which was $259 less than the housing cost of the self-sufficiency standard for San Francisco.

[6] Extracted form the web-page of U.S Department of Housing and Urban Development (HUD) (February 25, 2010): The regulations of HUD allow Housing Authority (HA) to exclude from annual income the following allowances: $480 for each dependent; $400 for any elderly family or a person with a disability, and some medical deductions for families headed by an elderly person or a person with disabilities. Based on the family's application, the HA representative will determine if any of the allowable deductions should be subtracted from the applicant's family income. Annual income is the anticipated total income from all sources received from the family head and spouse, and each additional member of the family 18 years of age or older. The formula used in determining the TTP is the highest of the following, round to the nearest dollar.

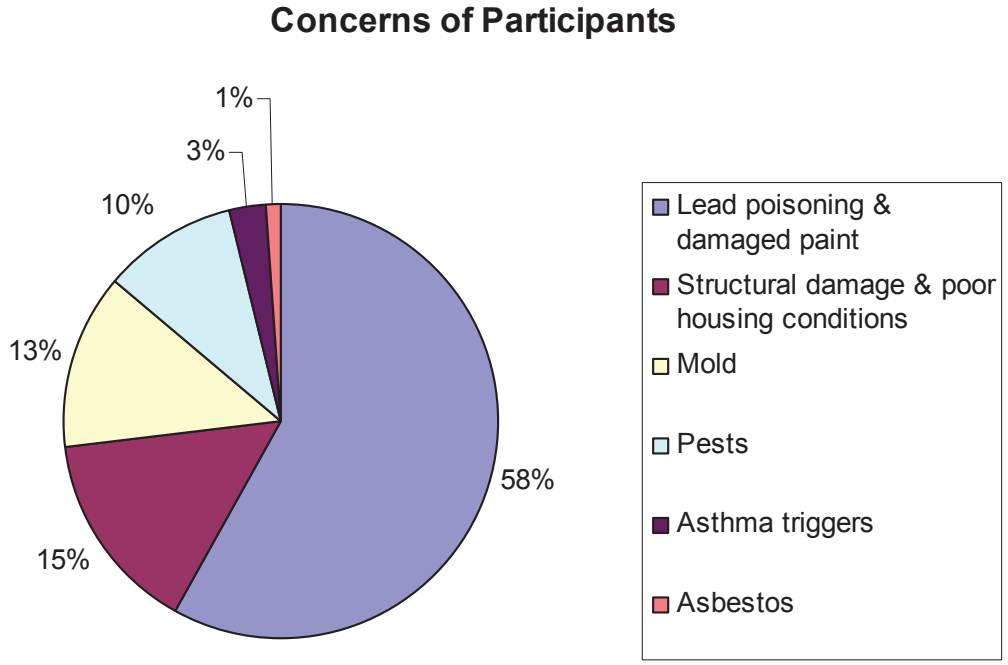
1. 30% of the monthly adjusted income. (Monthly Adjusted Income is annual income less deductions allowed by the regulations);
2. 10% of monthly income;
3. Welfare rent, if applicable; or
4. A $25 minimum rent or higher amount (up to $50) set by HA.

- The two families that lived in the subdivided units paid $450 and $500 respectively each month.
- Of the six SRO hotel participating families, three revealed their monthly rent as follows: $360, $400, $1400. The one that paid $1,400 had their own bathroom inside their unit, and the other two had to share communal bathrooms with other SRO hotel tenants.

4. Concerns of participants:

Families that responded to CEHP's letter regarding the offer of free home-based education and home assessment services had either single or multiple concerns. Figure 5 breaks down the participating families' reasons requesting our services: Thirty-nine families (58% of all families) had concerns about lead poisoning and damaged paint at their homes; ten families (15 % of all families) worried about the structural damage and poor housing conditions, such as leaky and broken windows; nine families (13% of all families) had concerns about mold growth; seven families (10% of all families) had concerns about pests, such as mice, bedbugs, cockroaches; two families (3% of all families) expressed an interest to learn more about asthma triggers; one family (1% of all families) had a concern about asbestos.

Figure 5



5. Problems/hazards identified during home visits:

There were 137 hazards/problems identified. Table 3 shows the number and the percentage of total hazards identified. Multiple problems/hazards existed in most of the homes. The findings revealed that like most cities in the U.S. with older housing, the notable environmental threats were lead from damaged paint, pest infestation, mold and moisture, structural damage of buildings, and in-home asthma triggers. Of the 64 families visited, 12 members in 11 families had asthma.

Table 3: **Problems/Hazards Identified During Home Visits (N=137)**

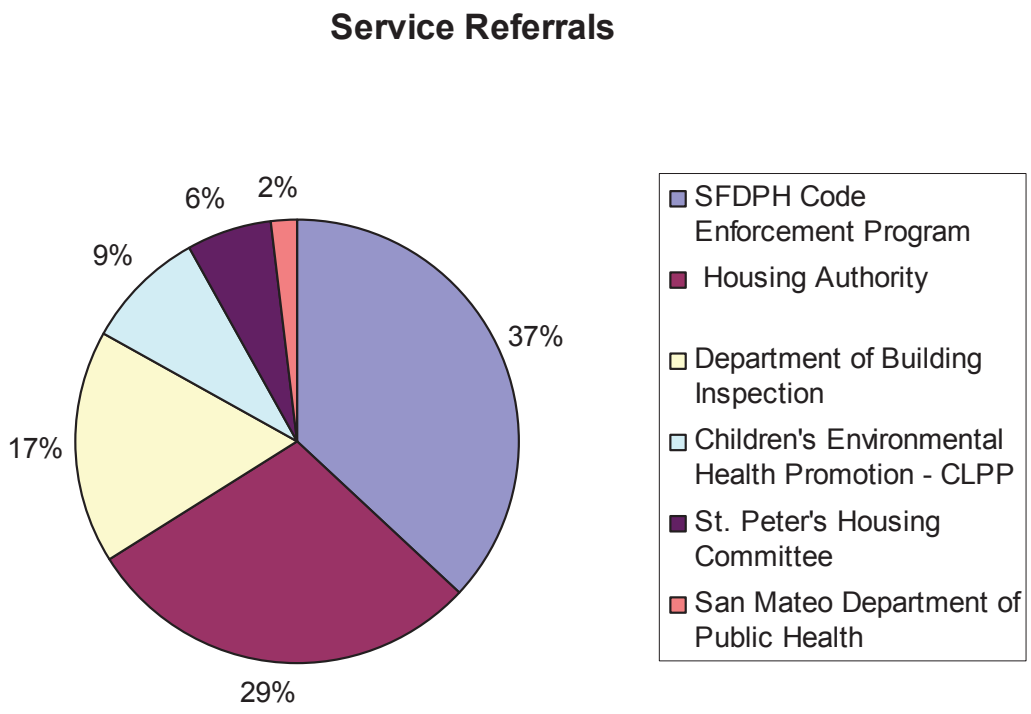
Damaged paint	36	26%
Pests	35	26%
Mold	32	23%
Water leaks	16	12%
Second hand smoke	6	4%
Clutter	2	1%
High humidity	2	1%
Inoperable windows	2	1%
Others*	6	6%

* Window low to ground, bare soil, bird waste, excessive use of insecticide, offensive odor and exposed wiring.

6. Assistance and service referrals:

Figure 6 shows that of the 64 families that were given home-based education and home assessment services, 48 families were found to have problems/hazards that needed correction. Twenty-nine families were connected to appropriate City departments or community agencies for further assistance. As some families had multiple housing/environmental issues that needed to be addressed, the total number of hazard referrals rose to 52. The other 19 unduplicated families that declined further assistance declared that they would either contact their landlords to request home repairs, or fix the problems themselves.

Figure 6



The following paragraphs describe the number and percentage of referrals to City programs or community agencies for further action in more detail.

- Referrals made to the SFDPH Environmental Health Code Enforcement Program (CEP) for investigation of mold, pests, bird waste and other nuisances: 15 families, 19 hazard referrals (37% of all referrals made), under authority of the San Francisco Health Code Article 11 (Appendix 5).
- Referrals made to SFHA for investigation of mold, water leaks, pests, paint deterioration and window hazards: four families, 15 hazard referrals (29% of all referrals made). All five participating families had environmental hazards that needed to be corrected by the SFHA. Four of these five families had multiple environment problems and were referred to the SFHA for follow-up services. One family made their own maintenance request to SFHA.
- Referrals made to the San Francisco Department of Building Inspection (DBI) for investigation of structural damage of residence: nine families, nine hazard referrals (15% of all referrals made).
- Referrals made to the CEHP – CLPP for investigation of damaged paint: five families, five referrals (9% of all referrals made), under authority of the San Francisco Health Code Article 11 (Appendix 5).

- Referrals made to the St. Peter's Housing Committee for housing rights counseling and mediation between landlords and tenants when the dwelling appeared to be illegal or uninhabitable: three families, three referrals (6% of all referrals made).
- Referrals made to the San Mateo Department of Public Health for elevated blood lead case follow-up because the family did not reside in San Francisco: one family, one referral (2% of all referrals made).

7. Summary of the findings:

Of the 64 families that participated in the project, 48 families (75% of all the participating families) lived in homes containing structural damage and environmental hazards. Among these 48 families, 19 families (40% of all families identified with structural damage and environmental hazards) did not give consent to CEHP staff to take further action because they thought that the identified problems were minor and could be fixed by themselves or by requesting their landlords to make corrections. Twenty-nine families (60% of all families identified with hazards) gave their consent to CEHP staff to connect them to the City's code enforcement agencies, such as the DBI, or the SFDPH CEHP and CEP, or the SFHA if they were SFHA tenants, for further investigation or necessary hazard correction actions because these families understood the importance of maintaining a "healthy home" in order to prevent disease and injury.

At the time this report was prepared, subsequent contacts to the participating families through phone calls, second home visits, and the tracking of our referral services and recommended actions confirmed that:

- Of all the 16 families with 19 referrals to the SFDPH CEP: 13 identified hazards from 12 families were abated after the landlords had received the Notice to Abate; two families moved out of their residences before obtaining further investigation; two families could not be tracked.
- Of all the nine families with nine referrals to the DBI for investigation of structural damage on their buildings: six families had their problems abated after the DBI had issued Notice of Violations (NOV) to the property owners; one family moved out of their residence before receiving further inspection; one family had action pending, although NOV had been served; one referral could not be tracked.
- Of all the five families with five referrals to the SFDPH CEHP - CLPP for further investigation and correction of damaged paint hazards received inspection from CEHP's lead inspector/assessor: four property owners of these five referrals were given Notice to Abate, as the other one was found to contain no lead hazards. All of the property owners that had lead hazard violations remediated the identified lead-paint hazards.
- Of all the five families with 15 hazard referrals to the SFHA: two families had their hazards abated; one family did not receive correction; two families had moved out of their units before receiving services.

Regarding the 19 families that did not give consent to CEHP staff for code enforcement referral, follow-up contacts revealed that 10 families alleged to have fixed the hazards themselves; four families had their problems corrected by their landlords; two families could not be contacted for confirmation of the results; two families had moved to other places before any repair work occurred; and one family admitted that they had not done anything to correct their hazards due to their busy schedule.

IV. SUPPLEMENTARY NEIGHBORHOOD ASSESSMENT DATA:

A. Rationale:

Growing bodies of literature suggest that where people live and their surrounding conditions influence health. Relative disadvantages in housing and exposure to pollution are likely to adversely affect health. A two-year study (published in the spring 2009 issue of the Journal of Allergy and Clinical Immunology) led by Ruchi Gupta, MD, MPH, a researcher at Children's Memorial Hospital and associate professor of pediatrics at Northwestern University's Feinberg School of Medicine, showed that neighborhoods with more community vitality, specifically economic potential, community amenities and social capital had lower asthma rates. Having a low income and living in substandard housing are known key predictors in environmental childhood diseases, such as asthma and lead poisoning. Understanding these disadvantages and their geographic patterns can help policy makers and community advocates target and plan programs more efficiently.

B. Methodology:

Staff of SFDPH PHES has constructed a public access database for San Francisco that allows interested parties to spatially analyze the economic and built environment disparities by neighborhoods (see **www.thehdmt.org** for further information).

GIS analysis was utilized to analyze and map the spatial distribution of social and physical characteristics that affect neighborhood health. We also assessed the housing quality and examined its relationships with the WIC recipients who participated in the CEHP's home-based education and home assessment services.

Four study variables were selected to determine the types of built environment conditions, including occupancy conditions, built environmental hazards, vulnerable populations, and access to resources that correlate with the WIC recipients who participated in the CEHP's home-based education and home assessment services.

C. Data Analysis:

All data were entered into a GIS system using ArcView software from ESRI. There were four sets of variables that we examined: 1) occupancy conditions, 2) built environmental hazards, 3) social and demographic data that identify vulnerable populations, and 4) access to resources using proximity analysis. Each set of variables (see Table 4) reflects empirical evidence that relates neighborhood conditions to health.

Table 4: **Variables Used for Neighborhood Analysis**

Occupancy conditions	Built environmental Hazards	Vulnerable populations	Access to resources
• Household size • Proportion of rental versus home ownership • Proportion of overcrowding	• Proximity to stationary sources of air pollution • Residing in a potential traffic hazard zone • Noise levels	• Average household income • Children and senior populations • Non-white populations • Household primary language other than English • High school graduation rate	• Proximity to parks • Proximity to recreation facilities • Proximity to public libraries • Proximity to public elementary schools • Proximity to supermarkets

D. Neighborhood Characteristics:

1. Occupancy conditions:

Overcrowding is linked with poor physical and mental health. Generally, overcrowding is considered to have main impact on the health of residents, particularly in terms of respiratory conditions, skin infections and meningitis, and possibly mental health. Overcrowding puts increased stress on health, infrastructure, such as water supply and sewage disposal systems, and is closely linked to housing standards and conditions. Worldwide, there are many studies that demonstrate evidence of the correlation between overcrowding and ill health, for example:

- *A report, entitled Families With Children Living In Single Room Occupancy (SRO) Hotels In San Francisco (2001),* stated that overcrowding could increase TB transmission in the hotel population. Statistics show that TB incidence and census tract measures indicate high TB rates in the Tenderloin, South of Market, Chinatown and the Mission District, where majority of the SRO hotels in San Francisco are located.
- In late 2003, a review study from the Center for Comparative Housing Research and the Health Policy Research Unit at De Monrfort University, Leicester, commissioned by the Office of the Deputy Prime Minister of the United Kingdom, yielded good evidence of a relationship between childhood overcrowding and meningitis. The same study also found an independent relationship between childhood TB infection and

overcrowding in deprived areas, such as the Bronx in New York (Drucker, E, Alcabes, P. Bosworth., Schell, B. (1994) "Childhood tuberculosis in the Bronx, New York", Lancet, 343, 1482-1485), as well as in adults.

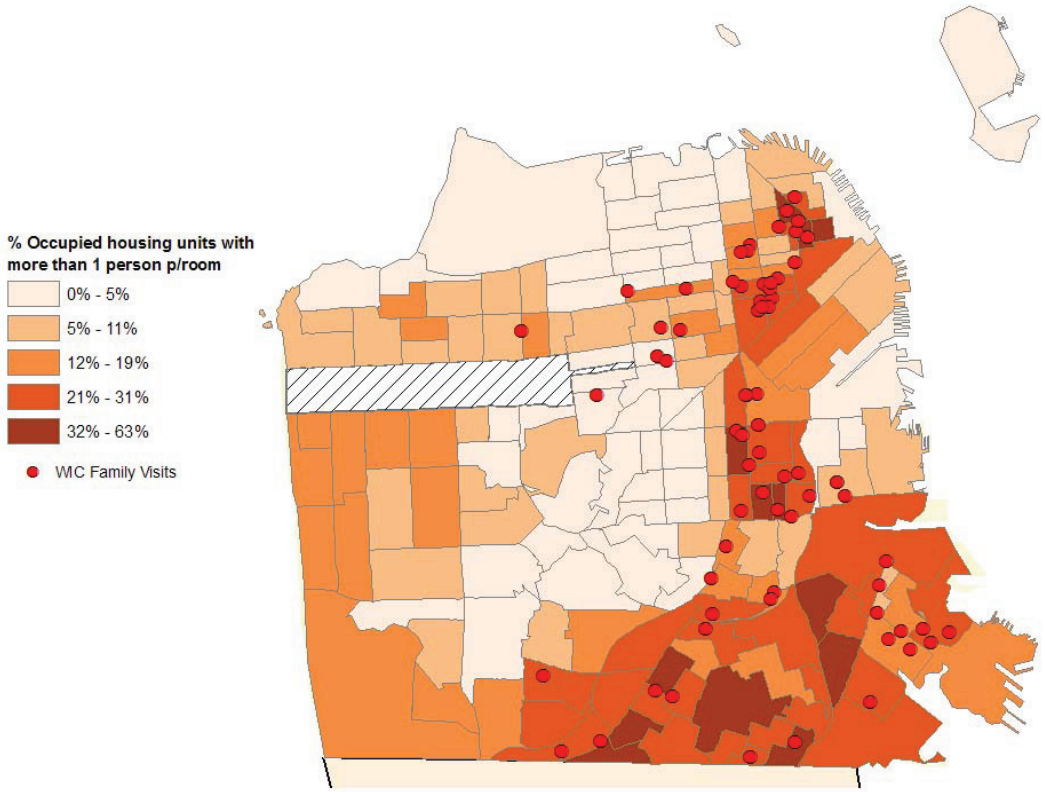
- A Western Australian Aboriginal Child Health Survey conducted in 2005 highlighted a relationship between overcrowding and the increased levels of life stressors, harmful alcohol use and community social problems.

The housing characteristics of those living in the neighborhoods of WIC recipients who participated in CEHP's home-based assessment services were analyzed. WIC recipients lived in areas which were more likely composed of renters (68.84%) and had slightly larger household size (+0.06). Furthermore, as compared to areas outside the WIC recipient neighborhoods, there was an increase of 7.12% of households found living in overcrowded conditions (see Table 5 and Figure 7).

Table 5: **Occupancy Conditions**

	Average household size	% Renters	% Owners	% Living in overcrowded conditions
San Francisco	2.00	61.00%	39.00%	14.00%
WIC Dataset	2.06	68.84%	21.59%	21.12%

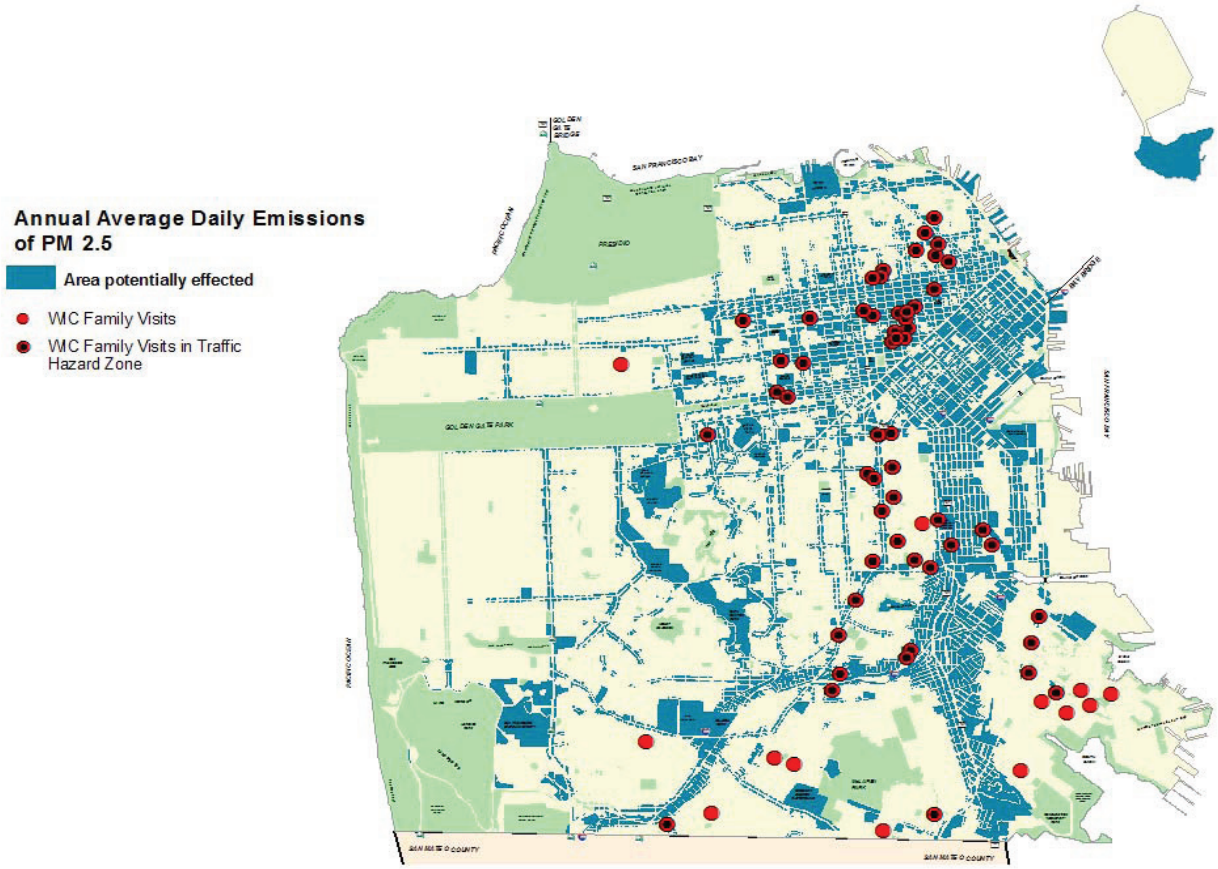
Figure 7: **WIC Families Residing in Overcrowded Conditions**



2. Built environmental hazards:

The public health risk of poor indoor environmental quality is a result of both hazards within home environments and environmental hazards outside home environments. Potential sources of air and noise pollution were analyzed. Eighty-two percent of the WIC recipients participating in the CEHP home-based education and home assessment services lived in a traffic hazard zone (defined as streets having an annual average traffic emissions with 0.2 $\mu g/m^3$ or greater of PM2.5) as compared with 68% citywide (see Figure 8).

Figure 8: **WIC Households Living within Potential Traffic-related Air Quality Hazard Areas**



Since actual emission data was not available for stationary Toxic Air Contaminant sources, proxy measures were used to show where the stationary air sources and their pollutants were located. Using ¼ mile buffers around each WIC recipient household, approximately 28% of the city's land mass was evaluated. Within that area, based on 2005 emissions data of the Bay Area Air Quality Management District, there were 167 stationary sources (13% of all San Francisco sources) that reported a total 505 emissions of 45 different Toxic Air Contaminants (9% of all emissions, see Table 6).

Table 6: **Built Environmental Hazards**

	Households in proximity of daily PM 2.5 Traffic Emissions 0.2 μg/m3 or Greater	No. of industrial stationary sources	No. of stationary source pollutants	Noise level (dBA)
San Francisco	68%	1268	5412	62
WIC Dataset	82%	167	505	70

Lastly, noise levels based on the citywide noise modeling were analyzed for the WIC recipient households. The average noise level for San Francisco is 62 decibels (dB) and the average for WIC recipients is 70 dB. Decibel ratings are logarithmic, such that an increase of:

3 dB = twice as much power, noticeably louder
6 dB = 4 times as much power, significantly louder
9 dB = 8 times the power, nearly twice as loud

Noise stress increases the body's generation of cortisol [7], which can trigger asthma in two ways. First, cortisol influences the expression of genes associated with asthma. Secondly, cortisol lowers immunity, thereby increasing susceptibility to upper respiratory infections. Viral infections can bring on asthma symptoms and lead to asthma attacks. In fact, stress by itself can create strong physiologic reactions that lead to airway constriction and changes in the immune system, which can worsen asthma symptoms.

3. Vulnerable populations:

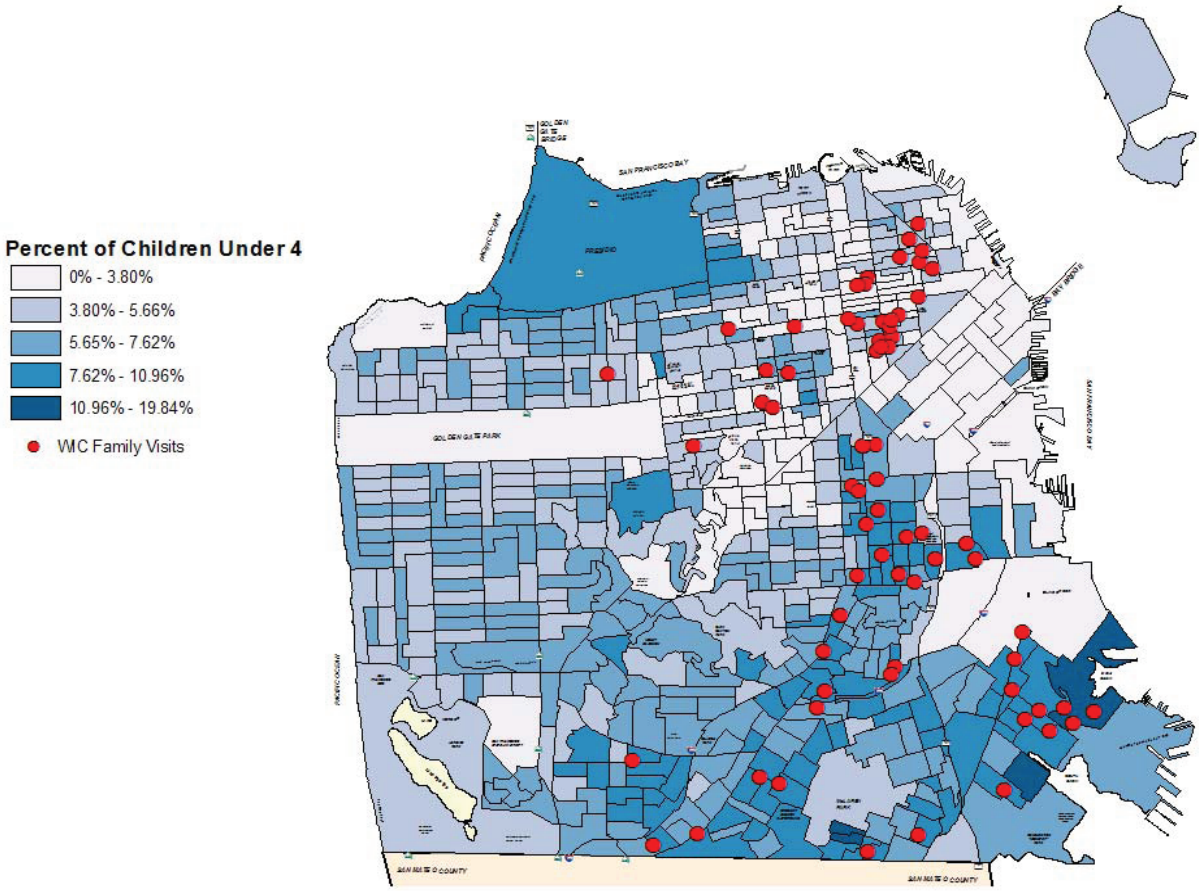
To understand how neighborhood socioeconomics compared with WIC families who participated in the CEHP's home-based education and home assessment services, we examined four different indicators (see Table 7) that typically represented vulnerable populations. We found that there was an increase in children under four (1.28%); an increase in minority populations (11.20%) and households where the primary language is not English (8.60%) in the areas that WIC recipients resided compared to San Francisco as a whole. The household median income was $21,700 less in areas that WIC recipients resided compared to the San Francisco median household income. There were also less seniors (1.39%) living in areas of the WIC recipients (see Figure 9).

Table 7: **Vulnerable Populations**

	Population <4 years of age	Population >65 years of age	Non-white populations	Household primary language other than English	Median household income (2007)
San Francisco	5.48%	14.83%	45.96%	39.91%	$73,845
WIC Dataset	6.60%	13.44%	57.17%	48.50%	$52,145

[7] Source: Noise and Health, Volume 4, Number 16, July – Sept 2002

Figure 9: **Proportion of Population under Four Years**



4. Access to resources:

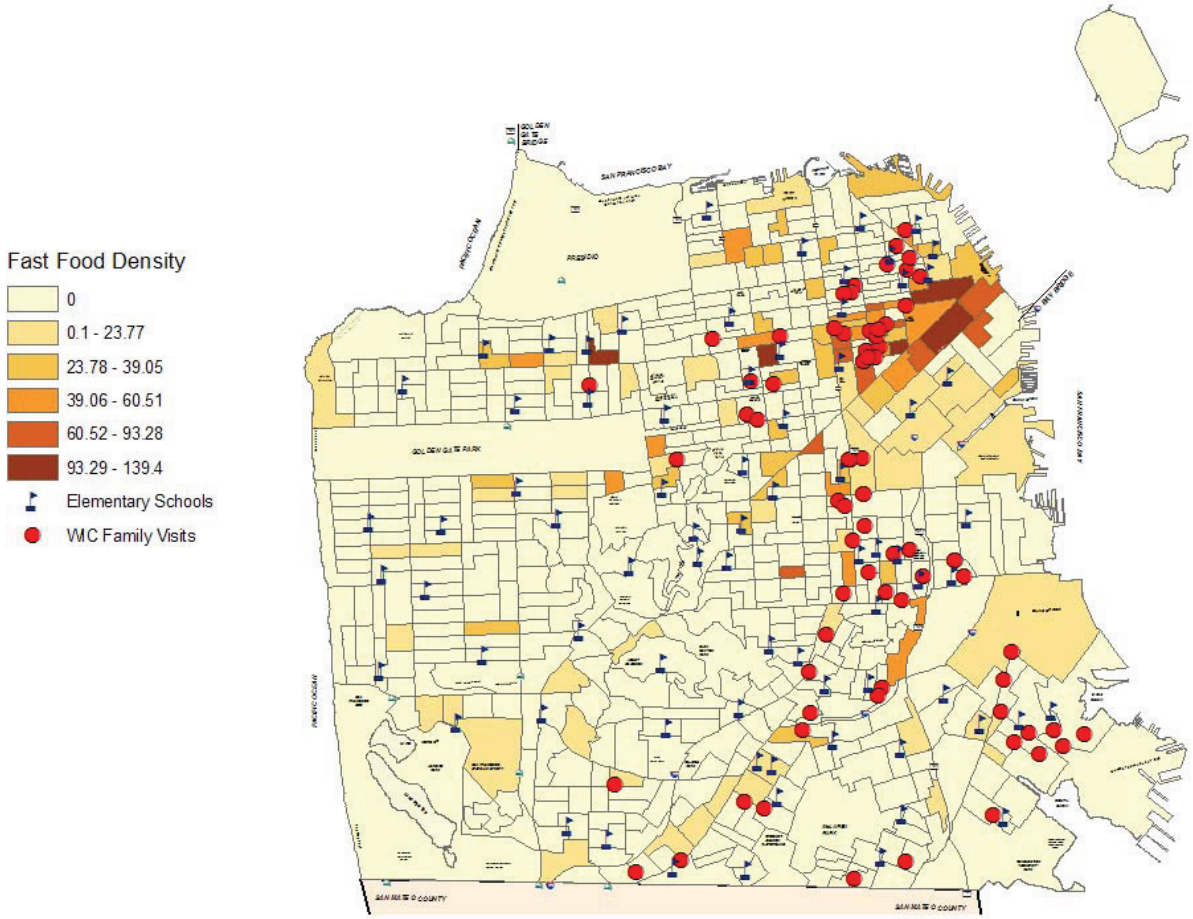
Being within walking distance of neighborhood goods and services promotes physical activity, reduces vehicle trips and miles traveled, and increases neighborhood cohesion and safety. We looked at the proximity of four positive resources (elementary schools, supermarkets, parks, recreational facilities) and one negative resource (fast food establishments). All median distances of the resources for WIC recipients, as compared to San Francisco residents, were within 0.10 of a mile. WIC recipients lived almost the same distance away from parks as all San Francisco residents (0.09 compared to 0.10), closer to libraries and slightly farther away from supermarkets, recreational facilities, and elementary schools. As with all San Francisco residents, WIC recipients lived closer to a fast food establishment than any of the resources mentioned (see Table 8 and Figure 10).

Table 8: **Proximity to Resources**

	Supermarkets(+)	Parks(+)	Recreational facilities(+)	Libraries(+)	Elementary schools(+)	Fast Food establishments(-)
San Francisco	0.20	0.10	0.24	0.49	0.23	0.07
WIC Dataset	0.26	0.09	0.26	0.40	0.29	0.10

* Median distances from households to resource in miles.

Figure 10: **Fast Food Density, Elementary Schools and WIC Recipients**



E. Neighborhood Assessment Conclusion:

These analyses provide further evidence of the vulnerability of families receiving WIC subsidies in relation to built environment health impacts. The findings validate our assumption that low-income families are subject to worse neighborhood conditions in addition to worse housing conditions than families of higher income.

V. RECOMMENDATIONS:

Safe, healthy and affordable housing is a basic necessity for every family. Without a decent place to live, people cannot be productive members of society, children cannot learn, and families cannot thrive (National Low Income Housing Coalition, 2003).

This section will attempt to explore the roles that both the SFDPH and The City as a whole could play in promoting healthy homes and neighborhoods to prevent disease and injury to San Francisco residents.

A. Programmatic Recommendations:

The following recommendations are the potential strategies and actions in which the SFDPH could continue to carry the program goals forward and expand the pilot program to more San Francisco residents. The SFDPH should:

- Expand the current pilot home assessment project just for the WIC participating families to other low-income families with young children (such as the Head Start Program participating families), and then to all families that have newborn babies as indicated by the Birth Records.
- Adopt the proactive approach of combining education and home assessment as policy.
- Fund operating costs within the Environmental Health for continuation and expansion of the healthy homes component.
- Provide integrated and comprehensive training which includes healthy home components for all home inspection staff of the EHS to enable them to offer education to families and holistically assess the home environment.
- Coordinate with other City agencies that enforce regulations for safeguarding healthy and habitable homes to respond to identified environmental problems in a timely, efficient and effective manner and to require necessary corrections.
- Collaborate with community organizations that provide housing resources and assistance to families to organize educational workshops and develop literature that help families understand and take proactive actions for promoting a better living environment for their families.
- Modify existing CEHP home assessment tools in reference to the *Healthy Housing Inspection Manual* developed by the U.S. Department of Health and Human Services and the U.S. Department of Housing and Urban Development (HUD).

B. Policy recommendations:

The SFDPH should also consider new polices to further improve health and quality of life for San Francisco residents:

- Move from a complaint-driven to a proactive home inspection process, such as annual inspection of multi-unit housing.
- Expand the health code regarding the smoking ban to include the entire interior of residential dwellings.
- Continually advocate for 2008 policy recommendations made by the San Francisco Asthma Task Force to the Mayor and the Board of Supervisors, including the following:

- Establish a Citizen Advisory Committee to promote public awareness and outreach projects that promote toxic use reduction through safe housekeeping, integrated pest management and safe home furnishings.

- Amend specific San Francisco Health, Housing and Building Codes to improve current healthy housing requirements. Subsequently, produce and mail Healthy Housing Guide to rental property owners, promoting their knowledge of modified Health, Housing and Building code requirements.

- Establish targeted and proactive use of City code enforcement resources for housing habitability.

- Use City resources to establish private property owner incentives that promote healthy housing best practices.

- Adopt healthy housing best practices for HOPE SF Task Force-guided Housing Authority repair and rebuild, and include a SFDPH healthy housing expert in an ongoing manner as a member of the HOPE SF Task Force to amplify knowledge of healthy housing best practices that support good indoor air quality and occupant health.

- Use City resources to promote developer healthy housing best practice and use of state tax credits related to healthy housing (e.g., smoke-free unit set asides) for affordable housing development and low-income owner-occupied housing rehabilitation.

- Integrate healthy housing best practices with the City's Green Building initiatives for market-rate housing development.

- Create requirements and incentives to promote developer healthy housing best practices, particularly in urban infill areas.

The City should allocate resources in implementing new initiatives to support the vulnerable populations, including eligible WIC participants and low-income families, on improving their home conditions, living environment, and qualities of life. Here are some suggestions for the new initiatives:

- Offering rental assistance, similar to the existing provision of HUD's Section 8 voucher program, to needy families that would allow these vulnerable populations to secure affordable and safe housing.
- Rendering subsidy to improve weatherproofing of homes and install energy-efficient windows.
- Giving assistance for retrofitting buildings' ventilation systems to filter out particulate matter.
- Providing incentives to encourage more neighborhood stores that sell fresh and nutritious food to take vouchers issued by the WIC Program.
- Increasing residents' convenience and accessibility to the purchase of fresh, nutritious, unprepared locally grown fruits, vegetables and herbs by expanding the number of farmers' markets sites.

VI. PROJECT CONCLUSION:

In sum, the home visit and education provided proved to be very effective. The pilot project demonstrates success and effectiveness in: 1) helping targeted families to identify a list of unsafe and unhealthy environmental hazards that they may not be aware of; and 2) reaching families who do not know their rights or fail to assert their rights because of fear of landlord retaliation. Many families were even empowered to take necessary actions to correct the problems, with or without the intervention of the City staff (Appendix 6, case studies).

In addition to taking a conventional complaint-driven approach, other City departments that help promote safe and habitable housing policy or regulate substandard housing conditions should be more assertive in helping all San Francisco families. The effectiveness of this pilot project proves the need for taking a more proactive approach on improving the qualities of life of San Franciscans.

Last but not least, the City and County of San Francisco has to be committed to develop and implement a long-term housing policy that includes building more affordable healthy housing, providing rental assistance to the low-income families, offering support to the property owners, and strengthening the existing health and housing codes to ensure that residents can secure affordable and safe housing in San Francisco.

VII. REFERENCES:

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APPENDIX 1: SERVICE REQUEST LETTER (ENGLISH)



April 20, 2008

Dear WIC client,

Did you know that as a resident in San Francisco, you have a right to healthy and safe housing? Lead poisoning can cause your child to have difficulty paying attention and do poorly in school. Developing children naturally explore their environment, touch everything and test how things feel in their mouths. Unfortunately, this could result in health effects.

Our program can provide you an assessment of your home to find if there are lead hazards or any other potential health risks to your child, such as carbon monoxide, mold or pests. If your child is under 3 years old and a participant of the San Francisco WIC program, we would like to provide this free service to you.

We can work together with the property owner to correct these hazards. We also help landlords who are eligible receive free City services to fix these hazards.

If you are interested in this offer, please fill out the bottom part of this letter, and either fax it back to us, or return it to your WIC office. You will be contacted by telephone to make a future appointment for this community service. If you have any questions, please call 415-554-8930, ext. 28.

WIC & Children's Environmental Health Promotion Special Project

PLEASE WRITE INFO & PRINT CLEARLY

Parent/Guardian last name _____ First name _____

Current address _____ Zip Code _____

Telephone _____ Alternate telephone _____ Best time to call _____ (morning/afternoon/evening)

Preferred language (circle one) English Putonghua (Mandarin) Cantonese Spanish Other

Child name _____ Date of Birth _____

Medical Provider _____

Your WIC office location _____

APPENDIX 2: SERVICE REQUEST LETTER (SPANISH)



Abril 20, 2008

Queridos padres o guardianes clientes de WIC

¿Sabia que como residente de San Francisco, usted tiene derecho a vivienda segura y saludable? El envenenamiento de plomo puede causar dificultad en que su niño ponga atención y haga mal en la escuela. Durante su desarrollo los niños naturalmente exploran sus alrededores, tocan todo y examinan como se sienten las cosas en sus bocas. Desafortunadamente, esto podría resultar afectándoles la salud.

Nuestro programa puede proveerle una inspección en su casa para encontrar si hay peligros de plomo o algún otro peligro a la salud de si niño/a, tales como monóxido de carbono, moho, o alguna plaga. Si su niño/a tiene menos de 3 años y es participante del programa WIC de San Francisco, nos gustaría proveerle este servicio gratis.

Nosotros podemos trabajar justos con el dueño de la propiedad para que arregle los peligros encontrados. También ayudamos a dueños que son elegibles para recibir servicios de la Ciudad gratis para compones esos peligros.

Si esta interesado en esta oferta, por favor llene la parte de abajo de esta carta, y mándela ya sea por fax o llévela a la oficina de WIC. Usted seria contactado por teléfono para hacer un cita. Si tiene alguna pregunta, por favor llame al 415-554-8930, ext. 28

Proyecto especial de WIC & CEHP

POR FAVOR ESCRIBA LA INFORMACION & ESCRIBA CLARAMENTE

Apellido de padre o guardián _____ Primer Nombre _____

Dirección actual _____ Código Postal _____

Teléfono _____ Teléfono alternativo _____ Mejor tiempo para llamar____ (por la mañana/tarde/noche)

Idioma preferido (circule uno) Ingles Cantones Español Otro

Nombre del niño/a _____ Fecha de nacimiento _____

Proveedor medico _____

APPENDIX 3: SERVICE REQUEST LETTER (CHINESE)



二零零八年四月二十日

尊敬的婦女、嬰兒及兒童(WIC) 服務受助家庭：

你是否知道身為三藩市（舊金山）居民的你是擁有居住在健康及安全房屋的權利？存在環境裡的鉛能引致孩子鉛中毒。受鉛影響的孩子會產生注意力及學習困難。成長中的兒童在天性驅使下喜歡探索周圍環境，亦愛用手觸摸每一物件，及用口感覺東西。不幸地，他們這些發展過程中的自然行為卻可能導致他們健康受損。

我們的兒童環境衛生促進計劃將與WIC 攜手合作向有三歲以下孩子的WIC 受助家庭提供免費檢查鉛危害、哮喘誘發物、和其它家居內影響兒童健康的潛在危險情況（例如一氧化碳、霉菌或害蟲）。

在服務過程中如果發現樓房內存有危害健康的情況，我們會協調業主合力尋求解決方法。若有需要，我們定必幫助合資格的業主申請三藩市市政府提供的免費維修家居鉛危害服務。

如果你對我們的服務有興趣，請填寫本信下面的申請表格。你可以傳真表格給我們或交還表格給你所屬的WIC 辦公室。我們將會致電聯絡你以安排家訪日期。如有任何問題，請致電 :415-554-8930。

WIC 及兒童環境衛生促進計劃特別項目

請清晰填寫你的資料
家長/監護人姓氏_____ 名字_____
住址_____郵區號碼 _____
電話_____其它聯絡電話_____致電的最佳時間_____（上午/下午/晚上）
圈上在服務提供時你選擇使用的語言：英語 普通話（國語）或廣東話 其它_____
孩子的姓名_____ 出生日期_____
醫生 _____
你接受WIC 服務的地點_____

APPENDIX 4: SCREENING CHECKLIST

Screening date: _____ Screening conducted by: _____

Contact person: _____ Telephone number: ( ) _____

Address: _____

Number of children under six years old: _____

General home or residence information: _____

Dwelling type		Ownership type	
○ Single family unit	○ Basement	○ Owner occupied	○ Subsidized/Section 8
○ Multiple unit/Flat	○ Garage	○ Rental	○ Housing Authority

○ May not be authorized by code (explain) _____

Year built of house or building (based on official record, estimated guess, _____

confirmed by the family): _____

Length of stay at this address: _____ _____
Years Months

Owner's Name: _____

Address: _____

Phone: ( ) _____

P.S. The following 3 questions were added midway of the project: _____

Issues of concerns (i.e., why requested services): _____

Monthly rental: _____

Child/children tested for lead: _____ _____ _____
Yes No Result, if yes

A. LEAD HAZARDS IDENTIFIED

PRESENCE OF DAMAGED PAINT AT PRE-1979 HOMES Visible cracking, peeling, deteriorating paint	**SUGGESTION(S) FOR THE FAMILY**
❑ Window ❑ Door ❑ Ceiling ❑ Exterior Wall ❑ Interior wall ❑ Baseboard ❑ Stairs ❑ Other (Specify): _____	**Interim control:** • Use duct-tape to cover the damaged paint • Use barrier, such as furniture, to prevent children from contacting the damaged paint • Move bed away from the damaged area **Permanent control:** • For renter, inform landlord to hire lead certified contractors to fix the damaged paint (a list of lead certified contractors given) • For property owner, provide "Lead Paint Hazards on Your Property" brochure and a list of lead certified contractors • Other _____ **Services offered:** • Consent for referral to CEHP for further services ____ **YES** (Initial) _____ **NO** ➔ **Date of referral:** _____ ➔ **CEHP investigator assigned:** ____ ➔ **Result:** _____ • Consent for referral to MOH for lead hazard reduction service ____ **YES** (Initial) _____ **NO** ➔ **Date of referral:** _____ ➔ **MOH staff assigned:** _____ ➔ **Result:** _____

PRESENCE OF PAINT DEBRIS ON SOIL	SUGGESTION(S) FOR THE FAMILY
❑ Front of the house ❑ Back of the house ❑ Backyard ❑ Front yard ❑ Side of the house ❑ Other (Specify): _____	**Interim control:** • Do not allow children to get close to the areas with paint debris and soil **Permanent control:** • Plant vegetation to cover the bare soil • Cement the soil • For renter, inform landlord to hire lead certified contractors to clean up the paint debris (a list of lead certified contractors is given) **Services offered:** • Consent for referral to CEHP for further services ____ **YES** (Initial) _____ **NO** ➔ **Date of referral:** _____ ➔ **CEHP investigator assigned:** ___ ➔ **Result:** _____ • Consent for referral to MOH for lead hazard reduction service ____ **YES** (Initial) _____ **NO** ➔ **Date of referral:** _____ ➔ **MOH staff assigned:** _____ ➔ **Result:** _____

PRESENCE OF SUSPECTED LEAD-CONTAMINATED ITEMS	SUGGESTION(S) FOR THE FAMILY
❑ Recalled toys ❑ Recalled metallic jewelries, accessories, key-chains ❑ Candies and spices ❑ Lead ceramic wares, crystal ❑ Home remedies ❑ Pre-1996 vinyl mini blinds ❑ Other (Specify):	**Interim control:** • Provide client "Think If Your Child Is Safe At Home" flyer • Check the following websites for learning about the recalled children's items: **http://www.cpsc.gov** **http://www.cdc.gov/nceh/lead/Recallsdefault** • Inform families of lead hazards and urge them to stop using the lead-contaminated items

B. LEAD-RELATED CONSTRUCTION WORK GOING ON

VIOLATIONS FOR DISTURBANCE & REMOVAL OF LEAD-BASED PAINT	SUGGESTION(S) FOR THE FAMILY
❑ Open flame burning or torching ❑ Hydro-blasting or high-pressure wash without containment or barriers ❑ Dry manual scraping or sanding; machine sanding or grinding; abrasive blasting or sandblasting without proper containment or use of a HEPA vacuum local exhaust tool ❑ No restricted access ❑ No ground protection (i.e., 1 layer of 6 mil or 2 layers of 3-mil plastic sheets)	**Services offered:** • Consent for referral to DBI for follow-up service ____ **YES** (Initial) _____ **NO** ➔ **Date of referral:** _____ ➔ **DBI inspector assigned:** _____ ➔ **Result:** _____

❑ No containment or barrier within the work area ❑ No floor or furniture protection ❑ Work debris found beyond the work area ❑ Other (Specify): _____	

2. PRESENCE OF POSSIBLE ASTHMA TRIGGERS:

POSSIBLE ASTHMA TRIGGERS Is there any member of the family with asthma **___ YES ___ NO**	**SUGGESTION(S) FOR THE FAMILY**
1. DUST MITES: • Dust mite and allergy proof covers: Are the beddings and pillow of the person with asthma encased by allergy proof covers? **___ YES ___ NO**	• If no, give client information about the purchase of allergy proof covers
• **Mattress Location:** Is the mattress of the person with asthma located directly on the floor? **___ YES ___ NO**	• If yes, raise the mattress off the floor (e.g. put the mattress on a bed frame) • Other _____
• **Carpeting:** Is there carpet in the home that may collect dust and allow dust mites to grow in it? **___ YES ___ NO**	• If yes, vacuum carpets two times per week using microfiltration bags or a HEPA filtered vacuum • Change vacuum bags when they are ½ full

	• Steam clean carpets once a year when humidity is low • Replace old and worn-out carpet with hard surface floor (e.g. hardwood, vinyl, tile) • Other _____
• **Area Rugs:** Are there area rugs in the room that may contain dust and dust mites? **___ YES ___ NO**	• If yes, vacuum both sides of area rugs; be careful not to spread dust • Wash rugs monthly and dry them outdoor in the sun or in a dryer at high temperature • Other _____
• **Fabric Furniture & Curtains:** Is there fabric covered furniture or fabric curtains that may collect dust and allow dust mites to grow? **___ YES ___ NO**	• Vacuum upholstered furniture weekly • Replace old upholstered furniture with vinyl covered furniture (or leather covered furniture) • Wash curtains frequently in hot water and dry them in a dryer at high temperature • Replace fabric curtains with washable shades • Other _____
• **Dust Collecting Items:** Are there many items and surfaces that collect dust? **___ YES ___ NO**	• If yes, dust all surfaces weekly with a damp cloth • Store items in containers or cabinets to reduce dust collection • Reduce the number of items and surfaces that collect dust • Other _____
2. MOLD GROWTH: • Is mold present? **___ YES ___ NO** If yes, list all areas where mold is found:_____ _____ _____	• If yes, provide information on controlling mold & mildew • Clean and remove mold using vinegar and soapy water • Move furniture away from interior walls to allow better ventilation. **For Bathroom Only:** • Wash shower curtains weekly

❍ Visible ____Yes ____ No

❍ Odor ____Yes ____ No

- **Humidity:**
  Is the relative humidity above 70%, which can allow mold and dust mites to grow?

  ___ YES ___ NO

  The ideal **humidity** should be 50% or lower to prevent mold and dust mites from growing

- **Water Leaks:**
  Are there water leaks?

  ___ YES ___ NO

If yes, where?

❍ Faucets/pipes

❍ Roof, ceiling

❍ Windows

❍ Doors

❍ Toilet

❍ Sink

- Use bathtub instead of the shower head to reduce moisture
- Turn on ventilation fan or open window when taking a bath or a shower
- Use a squeegee or towel to dry off the tub and surrounding walls after use
- Other _____

Services offered:

Consent for referral to DPH's Code Enforcement Program for indoor mold nvestigation

___ YES ___ NO

➔ Date of referral: _____

➔ DPH investigator assigned: _____

➔ Result: _____

- If yes, provide client information on maintaining good ventilation
- Other _____

- If yes, repair all leaks promptly
- Other _____

• **Exhaust Ventilation:** Is there an operable exhaust fan above kitchen stove? **___ YES ___ NO** Is there an operable window in the kitchen? **___ YES ___ NO** Is there an operable exhaust fan in the bathroom? **___ YES ___ NO** Is there an operable window in the bathroom? **___ YES ___ NO**	• If not, install an exhaust fan above the stove. The exhaust fan should be turned on when cooking • If not, install a new exhaust fan above the stove. The exhaust fan should be turned on when cooking • If yes, the bathroom fan should be turned when showering • If yes, open the window to allow moist air to escape to the outside. • Other_____
3. PETS Are there pets or animals that may create allergens? **___ YES ___ NO** ❍ Cat ❍ Dog ❍ Bird ❍ Other _____	• If yes, find another home or another place in the home for the animal(s) • Keep animals out of area where the asthma person sleeps • Keep animals off of furniture used by the asthma person • Clean and wash (if appropriate) the animals regularly • Other_____
4. PESTS: **___ YES ___ NO** ❍ Mice or rats ❍ Cockroaches ❍ Flies ❍ Mosquitoes ❍ Fleas ❍ Other (Specify): _____	• If yes, wash dishes soon after eating so that there is no food scraps available for pests to eat • Sanitize or wipe food preparation areas • Keep all food in tightly-sealed containers or plastic bags with twist ties • Put all garbage in plastic trash bags that are sealed with a knot or twist tie and take garbage outside every day • All garbage cans should have tightly fitting lids • Wet mop hard-surfaced areas several times per week.

	• If owner occupied, provide appropriate information on pest control • Seal cracks or openings to prevent pests from entering • Install screen door and windows to prevent pests from entering • Repair torn window screens to prevent pest entry • Thoroughly wipe and vacuum the home after treating for pests • Other _____ • **Services offered:** *Consent for referral to DPH's Code Enforcement Program for follow-up services* **___ YES** (Initial) **___ NO** **➔ Date of referral:** _____ **➔ DPH investigator assigned:** _____ **➔ Result:** _____
5. Tobacco Smoke: *Do smokers live in or visit the home?* **___ YES ___ NO**	• If yes, ask the smokers to smoke outside the home • Inform smoker that smoke particles can adhere to clothing which can be a source of irritant • Provide information on health risks of tobacco smoking and how to quit • Provide the California no-smoking hotline: 1800-NO-BUTTS (1-800-66-2887) or 1-800- 844-CHEW (1800-844-2439) for English; 1- 800-45-NO-FUME (180-456-6386) for Spanish; 1-800-838-891 for Mandarin and Cantonese; 1-800-778-8 440 for Vietnamese; 1-800-556-5564 for Korean; 1800-933-4TDD (1-800-933-4833) for hearing handicapped • Other _____
6. Are there any fuel burning appliances being used in the home? **___ YES ___ NO**	• Install a carbon monoxide detector if any fuel burning appliance is used in the home (a carbon monoxide detector is given to the client at the home visit) • Give carbon monoxide fact sheet

• Explain the use of a carbon monoxide detector, and help put in battery and properly mount it. If the detector sounds an alarm when installed, immediately call PG&E for assistance. Call 9-1-1 and seek medical attention if anyone experiences possible carbon monoxide poisoning symptoms. Contact PG&E or a qualified professional to have the appliance inspected. • Battery installation and mounting completed at time of home visit • Mark: Indication OR No indication	• Client to sign the Disclaimer

3. HEALTHY HOME:

USE OF TOXIC HOUSEHOLD CLEANER & STORAGE OF TOXIC MATERIALS	SUGGESTION(S) FOR THE FAMILY
❍ Bleach ❍ Cleaners, e.g., mildew remover ❍ Wood furniture polish spray/liquid ❍ Chemical spray cans ❍ Anti-bacterial soap ❍ Windex ❍ Pesticides ❍ Paint ❍ Solvents ❍ Used battery	• Easy and safe cleaning products fact sheet be given and explained • Toxic materials recycling fact sheet be given

❍ Mercury thermometer ❍ Used fluorescent light ❍ Used motor oil and filter ❍ Others: _____	

PRESENCE OF UNSANITARY CONDITIONS (Indoor mold and pest infestation mentioned above are part of the unsanitary conditions)	**SUGGESTION(S) FOR THE FAMILY**
❍ Neglected & overgrown weeds and vegetation ❍ Offensive Odors ❍ Stagnant or standing water causing mosquito breeding ❍ Safety hazards ❍ Bird & Animal Waste ❍ Too many pets living in the home ❍ Garbage accumulation ❍ Inoperative vehicles on private property	• **Services offered:** *Consent for referral to DPH's Code Enforcement Program for further services* ___ **YES** (Initial) ___ **NO** ➔ **Date of referral:** _____ ➔ **DPH investigator assigned:** _____ ➔ **Result:** _____

Appendix 5: San Francisco Health Code Article 11 – Prohibited Public Health Nuisance

(a) No person shall have upon any premises or real property owned, occupied or controlled by him, or her, or it any public nuisance.

(b) The following conditions are hereby declared to be a public nuisance:

1. Any accumulation of filth, garbage, decayed or spoiled food, unsanitary debris or waste material or decaying animal or vegetable matter unless such materials are set out for collection in compliance with Section 283 of this code.
2. Any accumulation of hay, grass, straw, weeds, or vegetation overgrowth.
3. Any accumulation of waste paper, litter or combustible trash unless such materials are set out for collection in compliance with Section 283 of this code.
4. Any buildings, structures, or portion thereof found to be unsanitary.
5. Any matter or material which constitutes, or is contaminated by, animal or human excrement, urine or other biological fluids.
6. Any visible or otherwise demonstrable mold or mildew in the interiors of any buildings or facilities.
7. Any pest harborage or infestation including but not limited to pigeons, skunks, raccoons, opossums, and snakes, except for pigeon harborages that comply with Section 37(e) of this Code
8. Any noxious insect harborage or infestation including, but not limited to cockroaches, bed bugs, fleas, scabies, lice, spiders or other arachnids, houseflies, wasps and mosquitoes, except for harborages for honey-producing bees of the genus Apis regulated by the California Food and Agriculture Code Sections 29000 et seq. which are not otherwise determined to be a nuisance under State law.
9. Any article of food or drink in the possession or under the control of any person which is tainted, decayed, spoiled or otherwise unwholesome or unfit to be eaten or drunk. The term "food" as used in this subparagraph includes all articles used for food and drink by humans, whether simple, mixed or compound.
10. Any lead hazards which are within the control of the Owner or Manager of the building, structure or property. Unless otherwise stated in this Article, the term "lead hazards" as used in this subparagraph shall have the same meaning as that set forth in Section 1603 of this Code. For the purposes of this subparagraph, the term "children" as used in Section 1603 of this Code shall mean any person who is up to 72 months of age. For the purposes of this subparagraph, any paint, both interior and exterior, found on buildings and other structures built before 1979 is presumed to be leadbased paint, such presumption may be rebutted by competent ev dence demonstrating that such paint is not lead-based paint.
11. Any vacant lots, open spaces, and other properties in the City and County of San Francisco, which become infested with poison oak (Toxicodendron diversilobum) or poison ivy shrub (Rhus toxicodendron) hereafter referred to as poisonous growth.
12. Any violation of Section 37 of this Code.
13. Any violation of Section 92 of this Code.
14. Any violation of Section 590 of this Code.
15. Any violations of rules or regulations the Director adopts to implement the provisions of this Article or applicable provisions of State law.
16. 16. Anything else that the Director deems to be a threat to public health and safety.

Appendix 6: Case Studies

A. City's code enforcement and change of life style leading to the improvement of home environment

A monolingual Chinese-speaking mother with her husband and one-year-old child lived in a one-bedroom rental unit located at the coastal side of San Francisco. The home was evaluated for mold found on the tile-wall of the bathroom and the wall of the bedroom closet (Picture 3). Before receiving the home-based education and assessment services, the mother had no clue as to why mold grew on the walls of the bathroom and inside the closet. The service was provided by a Chinese-speaking health educator, who explained to her about the environmental conditions that contributed to the occurrence of indoor mold, such as dampness in the air, condensation, lack of ventilation, and low temperature.

Picture 3: mold on the wall of the bedroom closet

The home assessment identified the following in-home conditions that might have led to the mold problems:

- **Bathroom without exhaust fan and operable window:** moist air could not escape to the outside when bathroom was in use.
- **Broken heater:** house temperature was low during cold days; property owner did not repair and replace the broken heater, although the family had already reported the damage of heater.
- **Leaky pipe under the bathroom sink:** water dripped down from the pipe.
- **Too many items hoarded inside the closet:** the tenants put too many items, such as clothes and boxes, inside the tiny closet of the unit. Apparently, the closet was without good ventilation.

Suggestions and follow-up action/services for reducing and preventing mold:

1. DPH staff made referrals to the Housing Inspection Section of DBI for further investigation or possible code enforcement because the problems could only be handled by the landlord who was apparently uncooperative in response to tenant's request for the repair of property's structural and equipment damage. For this case, the landlord failed to provide a safe source of heating system, and well-maintained weatherproofing window and faucet, although the law requires him to do so.

2. DPH staff gave advice and guidance to the tenant for developing her strength and skills in the elimination and prevention of hazards when the problems were within the control of tenant. For this case, actions taken by client included:

- Putting fewer items inside the closet to allow ventilation.
- Opening the bathroom window when the bathroom is in use once the bathroom window is repaired.
- Turning on the heater when the indoor temperature is low once the broken heater is fixed or replaced with a new one.
- Using a squeegee or towel to dry off the tub, the ceiling and surrounding walls after use.

In the beginning, the tenant was reluctant to let DPH refer her case to DBI for the investigation of broken heater and inoperable bathroom window because she feared that her landlord might retaliate by reducing services or even evict her family. Furthermore, she was worried that her case might be assigned to an inspector who did not speak Chinese.

Upon understanding tenant's fear and worry, DPH staff gave the tenant written information and verbal explanation in her native language (Chinese) regarding tenants' rights for a safe and habitable home. The DPH staff also assured the client that he would discuss her problems with the housing inspector. Finally, client gave consent to DPH for referring her case to DBI.

Aftermath:

DBI:
A housing inspector from DBI communicated with DPH staff about the results of his investigation and his action for removing the in-home hazards. DBI issued a Notice of Violation (NOV) to the property owner for the repair of broken heater, leaky pipe and inoperable window. Before repair was done, DBI required the property owner to immediately clean all visible mold found inside the unit.

Landlord:
On receiving DBI's NOV, landlord immediately sent a housekeeper to clean all visible mold (Picture 4). A few days later, he sent a technician to repair the broken heater, the leaking pipe and the inoperable window.

Picture 4: post remediation

Tenant:
Tenant took DPH staff's advice to reduce items inside the closet. In addition, she and other members of the family open the bathroom window when the bathroom is in use.

KEYPOINTS:

- This is a case of a mono-lingual, Chinese-speaking immigrant living in substandard housing and showing reluctance to seek her landlord's help to improve her home environment for several reasons: fear of landlord's retaliation or eviction, uninformed about the conditions that contributed to the growth of mold, unaware of her rights for a safe and habitable home.
- DPH's intervention in this case illustrates the effective approach of having staff with appropriate language skills and cultural competence to help relieve the anxiety and uncertain feelings of monolingual non-English speaking clients. With the provision of clear information and explanation in clients' native languages, clients understand the causes of environmental problems as well as how to fix the problems by getting help from their landlord or from code enforcement.
- DBI's intervention in this case demonstrates the significance of code enforcement which requires landlords to be legally responsible for improving the living condition of their property and bringing the substandard housing units up to code.

B. Collaborative relationship between tenants and landlords leading to the improvement of home environment

A mother of a fifteen-month-old child requested home assessment service because she was concerned about her child's exposure to lead paint. The family lived in a rental unit built in 1945. At the home visit, some areas of the house, including baseboard, door (Picture 5), were identified with minor damaged paint. As the areas with damaged paint were accessible to the child, the mother was advised to contact her landlord for repairs.


Picture 5: damaged paint on the door

While waiting for the landlord to remediate the hazard, the mother was advised to put duct-tape on all areas with damaged paint as an interim control of lead hazard exposure. In addition to performing room-by-room visual screening to identify lead hazards, DPH staff also provided lead poisoning prevention education to the client and explained to her the importance of lead screening.

DPH staff explained to the tenant the following two options:

- Self-approach to the landlord for requesting repairs, or
- Allowing certified lead inspector/assessor of CEHP to exercise code enforcement.

Tenant took the first option because she wanted to adopt a friendly approach first. Only when the landlord did not do anything upon her request, she then would like to try the code enforcement approach.

Aftermath:

Tenant:
Tenant contacted her landlord and made a request to fix the damaged paint. Landlord responded positively. Before the landlord could hire construction workers to repair and repaint the areas with damaged paint, the tenant had put duct tape on the problem areas as an interim control.

Landlord:
Landlord showed a positive response to tenant's request. Construction workers were hired to fix all the areas with damaged paint (Picture 6).

Picture 6: post remediation

KEYPOINTS:

- This case indicates client's power to make a positive change. Instead of relying on City's code enforcement to solve housing problems, seeking mutual understanding and cooperation between landlord and tenant can resolve the problems.
- Landlords' positive attitude in responding to clients' requests can be a very crucial main force leading to the improvement of the living environment.
- The Home-based Education and Assessment Services facilitate collaborative and conciliatory relationship between landlord and tenant. This mild approach might help establish trust between the two parties in future issues of home improvement.

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Environmental Health Section
Children's Environmental Health Promotion

1390 Market Street, Suite 410
San Francisco, California 94102

Phone: 415.252.3800
Fax: 415.252.3889
www.sfdph.org

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