The Elimination of Childhood Lead Poisoning in Houston by 2010

I. Statement of Purpose:

Lead is the leading recognized environmental poison for children in City of Houston. Exposure to lead is associated with a range of serious health effects on children, including detrimental effects on cognitive and behavioral development with serious personal and social consequences that may persist throughout their lifetime. In response to the CDC's charge, the Houston Department of Human Services (HDHHS) has taken a leadership role in developing this strategic plan for the elimination of childhood lead poisoning in City of Houston by 2010.

II. Mission:

The mission of HDHHS' Community and Children's Environmental Health program is to eliminate childhood lead poisoning and lead hazards reduction as a public health problem, by working together with health, housing, and environmental organizations. This plan supports the HDHHS's mission relating to public health services.

Houston Department of Health and Human Services Mission

To work in partnership with the community to promote and protect the health and social well being of Houstonians.

Goals

- Collect, analyze, and disseminate health data.
- Prevent the spread of disease.
- Educate to promote and encourage healthy behaviors.
- Provide leadership, planning, and policy development.
- Protect against environmental hazards.
- Assure quality and accessibility of community-wide health and human services.
- Improve the public health infrastructure.

III. Scope of the Problem:

The problem of childhood lead poisoning is not geographically uniform. There are wide variations in the scope of this problem between various regions of the country and even between neighboring communities. Moreover, childhood lead poisoning, where it is prevalent, represents a symptom of larger, complex problems, affecting families. These problems include poverty, housing, family support structures, the community environment, and access to quality health care. However, lead poisoning remains one of the most common and preventable environmental health problems. This is borne out by the fact that the geometric mean blood lead levels of children between 1 and 5 years in the United States has declined from 15.0 µg/dL in the 1976-1980 NHANES Phase II study to a mean blood lead level of 2.7 µg/dL in 1991 -1994 NHANES Phase III study.[1] The decline in blood lead

[1]Centers for Disease Control and Prevention: **Screening Young Children for Lead Poisoning**, November 1997 p. 17.

levels is directly attributable to federal regulations prohibiting the use of lead in household paint (after 1978) and a host of other consumer products (crayons, candles, food containers).

The Centers for Disease Control and Prevention (CDC) in Atlanta, GA considers children between 6 months and 72 months of age exposed to houses built before 1950, to be at greatest risk. This is the age when the brain undergoes its greatest development and body weight is at its lowest. The CDC estimates that 3-4 million children between the ages of 6 months and 72 months of age are at risk for lead poisoning. Blood lead levels (BLLS) as low as 10 μg/dL are associated with harmful effects on children's ability to learn. Very high BLLs (≥ 70 μg/dL) can cause devastating health consequences, including seizures, coma, and death. It is currently estimated that 890,000 children in the United States have blood lead levels ≥ 10 μg /dL.[2]

IV. Risk Factors for Lead Exposure and Lead Poisoning:

According to the Texas Department of State Health Services Environmental Epidemiology and Toxicology Division approximately 239,000 children or 23% of the population under 72 months of age in the City of Houston have no health insurance or do not qualify for Medicaid. The primary reason that these children do not have insurance or qualify for Medicaid is that: (1) their parent/guardian does not have a job that provides medical insurance as a benefit and (2) their parent/guardian earns more money than current regulations allow for access to Medicaid insurance. In essence the majority of these children belong to families that are considered the working poor. At the he same time the children from families that live at or below the poverty level are at a higher-risk for lead poisoning than children from upper-income households.

Childhood lead poisoning is a complex health problem caused largely by lead exposure in a child's environment. A few of the most common sources of lead poisoning for children are: lead based paint, lead glazed pottery (jarros/jars) and tiles, certain vinyl mini-blinds, home remedies (Azarcon and Greta), toys and crayons (made with lead), contaminated soil, and automobile parts such as batteries and radiators. Lead can affect many organs and systems, and many complicating factors affect the health outcomes of children exposed to lead.

Race

In the U.S., African American children are at the highest risk for elevated lead levels nationwide. NHANES III data demonstrated prevalence of BLL at or above 10 μg/dL of 11.2 % of African American children ages one to five, compared to 2.3% of white children in the same age group; Hispanic children have prevalence rates intermediate to these.[14] When levels at or above 5 μg/dL were assessed, 47% of African American children, 28% of Mexican American children, and 19% of non-Hispanic white children age one to five had elevated blood lead levels.[2]

Poverty/Socioeconomic Status

Socioeconomic status (SES) is a powerful predictor of lead exposure. NHANES III data found that 13% of Medicaid recipients had BLL at or above 10 mcg/dL, and 42% had levels

[2]Ibid. p. 14.

at or above 5 µg/dL. Poor children are more likely to live in lead-contaminated environments, including older and dilapidated housing and deposits of lead from years of leaded gasoline, hazardous waste disposal, and lead-related industry.[10] Furthermore, there is accumulating evidence in both human and animal studies that socially and economically disadvantaged children may be *more* vulnerable to the effects of a given level of lead exposure.[7]

Based on HUD databases at www.huduser.org/databases/il.html, Houston have 402,626 families (42.25%) with ≤ 50% of AMI and 158,246 families (17.8%) in the jurisdiction wide area with <80% of AMI. In the target area there are **103,536 families** (74.4%) **with ≤ 50%** of AMI and **22,019 families** (15.8%) of in the jurisdiction wide area with **<80%** of AMI. Source: "Census 2000 summary File 3 (SF3) - sample data"

Housing

Lead-based residential paint is the most significant source of high-level lead exposure for children in the U.S. The highest risk is for pre-1946 housing, with continued high risk for all housing built before the federal ban on high-lead paint in 1977. Nationally, tens of millions of existing housing units were built prior to the ban, and many of these units are in increasingly dilapidated condition.[10] Multiple studies have demonstrated household lead dust as the major source of lead exposure for young children.[16] Regional differences in prevalence of elevated lead levels, with highest prevalence rates in the Northeast and Midwest, reflect differences in housing stock. Lead paint can also be disturbed during renovation of older housing if lead-safe work practices are not followed. [9]

Nutritional Deficiency

Children with iron or calcium deficiencies have been shown to have increased absorption of lead, and to be at significantly higher risk for development of elevated blood lead levels.[13,18] However, there is currently no solid evidence that supplementation with calcium or iron prevents elevated blood lead levels in children.[12]

Immigration status

While more data are needed, several studies have suggested that immigrants to the U.S., including foreign-born adopted children, appear to have an increased prevalence of elevated lead levels, reflecting a variety of environmental exposures in their countries of origin and/or a variety of cultural practices. Continued use of leaded gasoline, industrial emissions, cottage industries, traditional folk medicines, cosmetics, ceramics, and foods all have been noted as sources of lead exposure among immigrant populations.[19-21]

Pregnancy

Pregnant women and fetuses may represent a unique population in terms of demographics and exposure pathways to lead. Women can carry lead from any lifetime exposure stored in their bones for decades, or may be exposed to lead during pregnancy from environmental, occupational, or other sources.[15] During pregnancy, maternal lead may be mobilized from bone stores into the bloodstream and then cross the placenta or enter breast milk. Various reports have estimated the prevalence of elevated blood lead levels among adult women to be between three and nineteen percent.[22] Dramatic increases in the population of immigrant women in some communities may mean that the prevalence of elevated BLL among pregnant women is higher than previous estimates.

According to the CDC the children most at risk for lead poisoning are those who: 1) live in pre-1950 housing stock, 2) live at or below the poverty level, and 3) are a member of a minority community. A house or residence built before 1950 is considered to have had lead based paint at some time in its history, because it was not until 1950 that federal legislation was passed limiting the amount of lead that could be used in household paint.[3] In 1978 federal legislation banned the used of lead as an additive in household paints. Children who live at or below the poverty level are at risk because they tend to live in older housing and have a high risk of exposure to lead which their parents may bring home from their place of work (i.e., radiator shop, car mechanic, print shop, etc,). Children in minority communities may be more at risk due to other factors such as if their parents cook in ceramic cooking pots (jarro/jars) or use home remedies (Azarcon and Greta), although glazed pottery and tile have been discovered in the home of upper middle class families and non-minority families.

V. Bureau of Children's Environmental Health History

The Childhood Lead Poisoning Prevention Program (CLPPP) was funded in July 1992 by a grant from the CDC and in-kind contributions from HDHHS. Until July, 2003, when the Texas Department of State Health Services (TDSHS) began funding CLPPP, the program resided in the Division of Community and Personal Health. The purpose of the CLPPP was to conduct confirmatory screens on children for elevated blood lead levels, provide those children with a blood lead level $\geq$ 15 µg /dL with follow-up medical care and educate the public and health care professionals about the hazards of childhood lead poisoning. In accordance with CDC policies the CLPPP began to shift its focus away from being a screener to being a provider of medical follow-up care, educating the public and health care professionals, and providing assurance that Managed Care Organizations (MCOs) were screening children for blood lead poisoning and providing those children with follow-up care. In accordance with this policy the Children's Environmental Health and the HDHHS has become the screener of last resort for children 6 months to 72 months of age that did not have Medicaid coverage or insurance.[4] The program has conducted screening for approximately 170,000 children in the City of Houston.[5] .

The Lead-Based Paint Hazard Control Program (LBPHCP) was funded in 1994 by a grant from HUD and matching funds from the Houston Department of Housing and Community Development and in-kind contributions from HDHHS. Since inception the grant has resided in the HDHHS Environmental Health Division. The purpose of LBPHCP is to offer, as a grant, lead hazard reduction to qualified pre-1978 housing units where children < 6 years of age with an elevated blood lead level reside. Provides education and pays for the training as lead safe workers and lead supervisors to unemployed/underemployed individuals.

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In 2003 LBPHCP and CLPPP grants were consolidated, moving CLPPP to the Division of Environmental Health. A result of this consolidation was the recent creation of the "The Children's

[3]Lead was used in paint for two reasons: 1) it is a very high quality white pigment and 2) it is an excellent additive that prolongs the life of the paints finish and as a consequence to the surface on which it is placed. Lead is still used in Marine paint as a rust inhibitor and on metal roofs as a water-repellant coating.

[4]Approximately 90% of the children screened by the CLPPP did not have insurance or Medicaid.

[5]This includes Well Child screens conducted at HDHHS clinics and the two contract clinics (San Jose and Southwest clinics), the Lead Based Paint Hazard Control Program (LBPHCP), and follow-up screens by CLPPP nursing staff.

Environmental Health Bureau" (CEH). Some of the key factors for the progressive success of the CEH in the City of Houston are a unified vision through a comprehensive assessment of needs, unified administration and management, and the deliberate allocation of resources aimed at the creation of a continuum of seamless services and referrals in a cost effective way. It expanded the potential of addressing the educational needs, increased the network of stakeholders and community partners, fostered and promoted multidisciplinary program activities, and created a working environment to ensure that annual performance objectives are achieved

The CEH lead program provides screening, professional education, patient follow-up, referral to Ben Taub General Hospital (BTGH) for medical care, and referral to the Environmental Health Division for environmental investigations. The Children's Environmental Health provides screening in high-risk areas through elementary schools, community based clinics, and churches. HDHHS provides screening at Well Child clinics and through the Lead Based Paint Hazard Control Program's (LBPHCP) outreach activities. Finally, the Children's Environmental Health has established partnerships with various health care offices in high-risk areas in Houston to conduct screens that are analyzed at the HDHHS laboratory.[6]

The CEH provide public and health care professionals with education on childhood lead poisoning. The CEH staff participates in health fairs for schools, churches, community groups, and public health organizations such as the Hispanic Health Coalition or the African American Health Coalition. In addition the CEH has organized exhibits such as the "Lead Away" exhibit at the Museum of Health & Science in November and December 1997 in which approximately 13,000 participants attended. The Children's Environmental Health works with the CDC, the Texas Department of State Health Services (DSHS), and other private and public health care organizations to educate health care professionals on childhood lead poisoning. This includes organizing and conducting training seminars, developing educational videos, and providing educational materials to health care professionals.

HDHHS has three types of patient follow-up based upon the patient's blood lead level. Patients with a blood lead level $\geq$ 10-14 µg/dL are followed-up by licensed vocational nurses (LVNs) at the HDHHS clinics. Patient follow-up includes calling the parent/guardian to schedule a rescreen within 3-4 months and educating the parent/guardian about childhood lead poisoning. Patients with a blood lead level lead $\geq$ 15-24 µg/dL receive non-medical case management from public health investigators (PHIs) working in the CEH. Patient follow-up for children with a blood lead level $\geq$ 15-24 µg/dL includes receiving a confirmatory venous blood draw, educating the parent/guardian about childhood lead poisoning, completing a childhood lead poisoning risk-questionnaire with the parent/guardian, and referring the residence to an environmental investigator if the patient has a confirmed blood lead level $\geq$ 20 µg/dL. Patient follow-up for children with blood lead levels $\geq$ 25 µg/dL is considered medical case management. Medical case management includes the following: a confirmatory venous blood draw, completing the childhood lead risk questionnaire with the parent/guardian, educating the parent/guardian about childhood lead poisoning, referring the residence to an environmental investigator, and referring the

[6]Ben Taub General Hospital Lead Toxicity Clinic, Good Neighbor Clinic, Rusk Clinic, Southwest Community Clinic, San Jose Community Clinic, University of Texas at Kempwood Children's Clinic.

patient to Harris County Hospital District Ben Taub General Hospital (BTFH) Lead Toxicity Clinic for medical follow-up by a physician.

Environmental investigations are conducted by the CEH' inspectors risk-assessors and by HDHHS Bureau of Occupational Radiation Hazard Control (BORHC) on behalf of the Children's Environmental Health. The environmentalist inspects the child's residence or parents' work site in order to identify the source of the child's lead poisoning. This includes but is not limited to testing the paint, the soil, mini-blinds, ceramic pottery (jarro jars), and or toys that child may play with. The goal of an environmental investigation is to identify the source of the lead poisoning.

VI. LEAD POISONING PROBLEM IN HOUSTON

The City of Houston has a significant lead poisoning problem. However, the extent of the lead poisoning problem varies by location within Houston, by ethnic group, and by socioeconomic status. In 2000 a total of 191,587 children ≤ 6 years of age were living in the City of Houston jurisdiction, which is 9.8% of total population (Census 2000). TDSHS reported that in 2002 of the 27,082 children ≤6 years of age screened for lead, 26,206 children (96.8%) had <10µg/dL blood level and **876 children (3.2%) with EBLL ≥10µg/dL**. Such a high percentage of confirmed elevated blood lead levels indicate that Houston has a significant childhood lead poisoning problem compared to the national average. In addition, the City of Houston has several environmental and social factors which contribute to the city having a large percentage of children under the age of six at risk for childhood lead poisoning.

Unduplicated Children under Age 6 Residing in Houston, Texas Receiving Blood Lead Testing in 2002 By Age and Blood Lead Level*

Jurisdiction – City of Houston		
Blood Lead Level (µg/dL) [2]	**Number of Children Under 6 Years**	**Percent of Total**
< 10	26,206	96.8 %
≥ 10 and < 20	723	2.7 %
≥ 20	153	0.6 %
Total Tested	27,082	100.0 %

* Source: TDSHS Childhood Lead Poisoning Prevention Registry

Primary Sources of Lead Poisoning

Lead Paint

The primary cause of lead poisoning in Houston is lead based paint. According to the 1990 census approximately 10% of the housing stock in Houston, Texas was built before 1950. Housing built prior to 1950 is universally agreed to have a potential lead based paint hazard because it was not until 1950 that the federal government began placing limits on the amount of lead that could be used in residential household paints. In addition, within the 610 loop upwards of 25% of the housing stock was built before 1950. In some zip codes it is as high as 35%.

The majority of the confirmed childhood elevated blood lead levels in Houston occur within the zip codes that have a high-percentage of pre-1950 housing stock. In fact eight zip codes

residing within the 610 Loop or immediately bordering it account for 39.3% (3,645) of the confirmed elevated blood lead levels within the City of Houston.

Ceramic Pottery

The second leading cause of elevated lead levels in Houston is due to the use of ceramic cooking pots and jars (jarros--pronounced "harros") produced in Mexico. Lead glazed pottery made in Mexico is primarily used by Hispanics for cooking purposes. The lead glaze in the pottery is absorbed by the food which is cooked in the ceramic pots and jars. Thus, when a child eats any food cooked in these ceramic pots and jars they ingest the lead. Over a period of several months this can lead to elevated blood lead levels.

The ceramic pots and jars are sold legally by many stores and flea markets within the City of Houston, because as long as the ceramic pots and jars are clearly labeled "Not for Cooking" or "Not for food Storage" they can be sold. However, many immigrants from Mexico and other Latin American countries used the ceramic pots and jars in their own countries for cooking and continue to do so once they are in the United States. In addition, the CLPPP has identified many upper income and non-Hispanic households that have used the ceramic pots and jars as containers for fruits and vegetables for their own families. Fruits and vegetables even if they are not cooked in the ceramic pots and jars can absorb the lead glaze through their skins and when the fruits and vegetables are eaten by the households children they took can have elevated lead levels.

Home Remedies

Finally, the third lead cause of confirmed elevated blood lead levels in Houston, is home remedies. Home remedies are most commonly associated with Asian and Hispanic ethnic groups. The most common home remedies identified in Houston are Azarcon and Greta. Azarcon and Greta are home remedies which are used to treat upset stomachs. The treatments seems to relieve upset stomachs, however, Azarcon and Greta are often 60-80% pure lead by volume. This means that a young child can be given upwards of 1 to 2 teaspoons of almost pure lead as a treatment. This can lead to very high elevated blood lead levels ≥ 25 µg/dL.

VII. RECOMMENDED LEAD POISONING SCREENING GUIDELINES

Screening Recommendations for children on Medicaid

The Medicaid screening guidelines for the State of Texas recommend that all children currently enrolled in Medicaid be screened for blood lead poisoning at their 12 month and 24 month Well Child check-up and screen children that are between 36-72 months of age who have **never** been screened for blood lead poisoning. [7]

The purpose of screening children at their 12 month and 24 month check-up is to identify children with elevated blood lead levels early in their development stages. Studies by the CDC and the U.S. Department of Health and Human Services have repeatedly demonstrated that children on Medicaid are at a higher risk for having blood lead poisoning than children in the general population. This is because children on Medicaid are poor (live at or below

[7]Medicaid regulations currently require all children on Medicaid be screened at 12 months and 24 months of age for childhood lead poisoning. Detection and Management of Childhood Lead Poisoning, Texas Department of Health, Winter 1996, p. 3.

the poverty level), typically reside in older housing stock (pre-1978 and pre-1950), and their parents typically work in jobs that have increased exposure to lead (battery and radiator shops, print shops, etc.).[8]

Screening Recommendations for Children that reside in high-risk areas

The Community and Children's Environmental Health program defines a geographic location as a **high-risk** area if it meets the following criteria: 1) 25% of the households live at or below the poverty level, 2) more than 20% of the residences were built before 1950, 3) 25% of the population are members of a minority group, and 4) historical evidence that significant percentage (10%) of children in this area have tested positive for blood lead poisoning.

Based on Census 2000 data, the City of Houston has 514,501 pre -1978 rental and owner occupied housing units (71.63%) in its jurisdiction. Based on Census 2000 data, the City of Houston has 37,720 pre -1940 housing units in its jurisdiction. Of these 16,149 are rental units and 12,103 are located in the targeted area. **Sixteen Zip codes have been classified as per high risk target areas.** According to Census 2000, between 18%-54% resident turnover rate in pre-1940 units within a 15 month period of time is observed.

The Community and Children's Environmental Health recommends that all children that reside in a **high-risk** area be screened for blood lead poisoning.

The following list of zip codes meets the minimum criteria for a **high-risk** area as identified in the preceding paragraph. The Community and Children's Environmental Health recommends that children residing in the following zip codes receive universal screening:

Target Area – 77002, 77003, 77004, 77005, 77006, 77007, 77008, 77009, 77011, 77012, 77019, 77020, 77023, 77026, 77030, 77098		
Blood Lead Level (µg/dL)[(2)]	**Number of Children Under 6 Years**	**Percent of Total**
< 10	4,819	94.6 %
≥ 10 and < 20	241	4.7 %
≥ 20	36	0.7 %
Total Tested	5,096	100.0 %

*Source: TDSHS Childhood Lead Poisoning Prevention Registry

General Screening Recommendations

A patient whose parent/guardian has private insurance or who is self-paying should be administered the primary parent questionnaire developed by the Department of State Health Services (DSHS) and listed in the "Get the Lead Out" manual issued by the Department of State Health Services [9] The primary parent questionnaire was developed as a tool for physicians and health care providers to screen children that are assumed to not be at high risk for lead poisoning because of their socioeconomic status, race/ethnicity, and the housing they

[8] Centers for Disease Control and Prevention: Screening Young Children for Lead Poisoning, p. 60, November 1997.

[9] A copy of the Primary Parent Questionnaire is attached to the addendum.

reside in.[10] The primary parent questionnaire asks the parent/guardian nine questions regarding the patient's housing, eating habits, environment, and hobbies. A parent or guardian that answers "Yes" or "I don't Know" to any of the questions should be screened for blood lead poisoning by capillary or venipuncture blood lead draw. **A patient that resides in one of the "high-risk" zip codes should be screened for blood lead poisoning even if the parent answers "No" to all of the questions in the questionnaire due to the historical high prevalence of elevated blood lead levels in those zip codes.**

VIII. STRATEGIC GOALS & OBJECTIVES:

We identified five major goals for eliminating child lead poisoning in Houston as a public health problem by 2010. Included under each goal are objectives for achieving the goal, short- and long-term strategies for achieving each objective, and performance measures to evaluate achievement of each objective. Short-term strategies are defined as those that will be in the planning and development stage within one year. Long-term strategies will take longer than one year to develop.

STRATEGIC GOAL: 1

LEVERAGE DOLLARS FOR MAKING HOUSING LEAD SAFE

Objective 1.1: Identify organizations to leverage resources to make housing lead safe.

This objective will identify organizations and agencies with resources that, while meeting their goals, can lead toward making housing lead safe.

Short-term Strategies

- Explore the availability of funding through US Department of Housing and Urban Development (HUD) Programs:
- Mark to Market resources. The overall goal of the Mark to Market program is to reduce federal spending on housing subsidies by making it financially feasible for multifamily properties currently charging rents greater than comparable market rents to survive and offer quality, market-competitive housing at comparable market rents. As part of this process, eligible properties work with a Participating Administrative Entity to identify appropriate market rent, identify improvements necessary for the property to be competitive in the marketplace, and identify methods of restructuring the finances of the property in order to make operating at comparable market rents financially feasible.

    - o Section 504 Housing Repair and Rehabilitation Loans and Grants
    - o Section 533 Housing Preservation Grant Program

[10]Studies conducted by the CDC and confirmed by statistics from the CLPPP database indicate that children from families that live at or below the poverty level, and who are members of minority groups have a higher blood lead level than children that live above the poverty level and are not members of minority groups.

- Home Owner-Occupied Assistance Program
- Weatherization Assistance Program

- Explore availability of funding through Texas Department of Housing and Community Affairs Home Owner Occupied Housing Assistance.
- Explore the feasibility of a Houston application for a Medicaid waiver for window replacement in properties where children were lead poisoned. Rhode Island received an 1115 waiver to use Medicaid funds to pay for lead abatement.
- Explore the availability of funding through the Department of Family and Protective Services (DFPS) to abate properties with foster children.
- Explore the availability of grants from EPA, HUD, CDC, and private foundations.
- Make recommendations concerning best use of funds: remediation versus abatement.

Performance Measure

- Prepare a written report of the research results.

Objective 1.2: Explore new revenue sources and other mechanisms for leveraging funds.

Develop and implement collaborative efforts to increase funding and knowledge of childhood lead poisoning and lead hazard reduction.

Short-term Strategy

- Continue to support the Lead Coalition and promote the inclusion of governmental and private organizations to promote childhood lead poisoning prevention and solicit funding.

Long-term Strategies

- Explore the feasibility of:
  - A Texas state tax on paint to generate additional funds for lead abatement.
  - A fee on lead users or manufacturers that have been major contributors to environmental lead contamination. A 1991 California law imposes such a fee. As in California, Houston would use these funds to screen children and lead hazard reduction.
  - A tax on the industrial use of lead.
  - Refocusing or increasing property transfer taxes to generate funds for lead abatement.
  - A Low-Income Housing Tax Credit (LIHTC) program for lead abatement projects through which investors can take state and federal tax credits in exchange for investments in lead abatement projects. Under the current LIHTC, investors get a 10-year federal income tax benefit in exchange for immediate cash infusions for new construction and restoration projects to produce reasonably priced apartments for low-income families and the elderly.
  - Increasing commercial property taxes to generate more funds for lead abatement projects.

- A Lead Elimination Assurance Program, modeled after the traditional Home Equity Assurance Program (HEAP). The purpose of HEAP is to prevent property values from dropping in certain neighborhoods. The Lead Elimination Assurance Program would apply to neighborhoods designated as high risk for lead poisoning and lead hazards. Residential owners would voluntarily participate by paying a nominal amount of money into a fund. These funds would pay for lead abatement expenses in that designated area. Residential owners may need more incentives to participate in a Lead Elimination Assurance Program because having a lead-free house does not always translate to an increase in market value.
- Establishing a fee-for-service registry of lead safe houses and using the fees for abatement and remediation.
- Imposing a fine for industries causing lead contamination.

- Develop private-sector partnerships and leverage funds, in-kind support or charitable contributions from organizations such as home improvement chains, the paint industry, etc.

Performance Measure

- Prepare a written report addressing the establishment of partnerships and an innovative work plan securing additional funding toward meeting this goal.

STRATEGIC GOAL 2

FOSTER COMPLIANCE WITH LEAD SAFE HOUSING PRACTICES

Objective 2.1: Motivate property owners to make their properties safe so that no child becomes lead poisoned.

Short-term Strategy

- Promote adoption of lead safe work practices (LSWP) for paint repair, remodeling, window replacement, building maintenance, and apartment turnover by making LSWP training widely available for free or at low cost.

  - Initiate the plan as a voluntary initiative
  - Bring the 5-hour LSWP training course to communities in Houston.

Long-term Strategies

- Advocate with Houston area lenders (conventional and affordable housing lenders) to require LSWP training as a condition to granting contracts for remodeling/rehab work, especially on large-scale projects. Incorporate the HUD model in lending contracts —HUD requires that any contractor working on a federally funded project

must have a subcontractor licensed in lead abatement.

- Educate COH building department inspectors to look for lead hazards. Mandate the building department inspectors to identify unsafe work practices and to refer suspected lead hazards to the state or local Children's Environmental Health for referral to appropriate agencies.

- Create an education campaign, in cooperation with rental-property owner associations, Houston Association of Realtors (HAR) on the importance of lead-hazard disclosure rules and the dangers of lead poisoning. Distribute information to rental property owners through their associations, title offices, banks, and permit offices.

- Identify insurance companies that will offer lead liability insurance discounts to property owners if a property is deemed lead safe,

- Explore certification of lead safe homes and create a seal of approval that property owners can use to advertise rentals and sales.

- Explore a tax exemption program that would cost out window replacement, removal of lead hazards or other actions to make housing child safe.

- Foster partnerships between contractors, builders' groups, college training programs, health care providers, and the Department of State Health Services to explore collaborations to maximize resources (e.g. colleges would offer free LSWP training to window contractors; in exchange, window contractors would discount their windows for 2 years; the ongoing benefit would be that those contractors would be educated in LSWP).

- Explore the development of a 50-50 plan through which property owners and city share the cost of making homes lead safe.

- Explore the feasibility of requiring permits for any renovation that would disturb lead surfaces: window replacement, porch replacement or repair. Issuance of a permit would depend on whether the contractor can show evidence of training in LSWP.

- Explore making LSWP training a condition of conducting business involving lead in Houston.

- Explore adoption of state rules and regulations and/or legislation to focus on primary prevention — to find and remediate lead hazards before a child is poisoned.

- Explore certification of designated neighborhoods as lead safe and offer property tax freezes or rebates to those districts.

- Explore the feasibility of establishing a registry of addresses of houses contaminated with lead-based paint to help identify housing in need of abatement and remediation and track completion of these activities.

Performance Measure

- Prepare a written report of the research results.

STRATEGIC GOAL 3

PREVENT EXPOSURE OF CHILDREN TO NON-PAINT LEAD SOURCES

Objective 3.1: Identify and label products containing lead so families can protect children from lead exposure

Short-term Strategy

- Create a reference booklet of existing products that contain lead. The list will include, at a minimum, products identified by the Consumer Products Safety Commission (CPSC). Post the reference booklet on the HDHHS website.

- Provide public potentially at risk with educational material on how to protect their children from lead exposure, including miming water in the morning prior to use to flush the lines.

Long-term Strategies

- Add products to-the reference booklet as new products containing lead are identified.

- Explore whether changes to regulatory laws are needed for manufacturers and importers: border patrol, state representatives, senators, manufacturers, FDA.

    - Promote the requirement to label products containing lead.
    - Promote the requirement to list hazards to children on the product label, when there is no regulatory authority to remove the lead.
    - Improve network of community stakeholders to help reduce use of folk remedies of lead-containing products and cultural practices leading to childhood lead exposure. Improve relationship to share data and collaborate on many projects including the Strategic Screening Targeted Areas at Risk (STAR) program, which consists of a collaboration of the CEH, Texas Department of State Health Services (TDSHS), the Texas Department of State Health Services Head Start and Texas Health Steps programs; the Harris County Education. Community based organizations, such as de Madres a Madres, Mothers for Clean Air; the Fifth Ward Coalition of Churches, YouthBuild, WorkSources, HDHHS Immunization and Dental services, Texas Gulf Coast Childhood Lead Poisoning Prevention Coalition, Harris County Health and Environmental Services Lead program and other agencies within Houston and Harris County.

Performance Measure

- Prepare a written report addressing the development of a reference booklet of lead products, its availability to the public, the findings of any legislative changes, and promotional efforts for labeling

Objective 3.2: Provide public awareness about the dangers of exposing children to non-paint lead sources.

This objective will target educational efforts toward:

- Pregnant women
- Parents
- Store owners and employees of botanicas, convenient stores, mini-marts, flea markets
- Child care providers
- WIC/Immunization clinics
- Medical providers, prenatal clinics, and lay midwives
- Insurance groups that provide health care benefits for children
- Vendors that import items that may contain lead
- Concession vendors that use products containing lead
- Workers that use lead and pose a risk for take home exposure
- Churches
- School fairs
- PTAs

Short-term Strategy

- Develop outreach materials addressing products containing lead, leaded pipes in older homes and hobbies/occupations that could lead to take home exposure of children:
  - Presentations
  - Flyers/brochures
  - Newsletter/newspaper articles
  - Radio/television announcements

Long-term Strategies

- Develop outreach materials addressing products containing lead, leaded pipes in older homes and hobbies/occupations that could lead to take home exposure of children:
  - Billboards
  - Posters
  - Public transportation
  - Grocery sacks
  - Fast food chains: placemats
  - Newspaper/magazine articles

- Use the Lead Coalition to promote public awareness.
- Gather support from local agencies, neighborhood associations, Parent Teachers Associations, etc.

Performance Measure

- Prepare a written report on material developed, dissemination to targeted groups, and survey results lead-awareness training.

Objective 3.3: Assure water is lead safe.

Short-term Strategies

- Gather data from agencies responsible for lead testing in water, types of tests used and other issues. Sources include, but are not limited to, the following:
  - Environmental Protection Agency (EPA)
  - Texas Commission on Environmental Quality (TCEQ)
  - Department of State Health Services (DSHS)
  - Cities

- Determine adequacy of current testing/data collection:
  - Are there deficiencies which may not show up in current testing?
  - Are there additional standards needed to assure safe water at point-of-use systems?
  - How are tap sampling locations determined?

- Develop recommendations for standard testing methodology:
  - Locations
  - Frequency

Long-term Strategies

- Implement random water testing in targeted areas.
- Analyze the results of random water testing. Coordinate with:
  - Health and Human Services Commission (HHSC)
  - DSHS
  - TCEQ
  - Texas Rural Water Association (TRWA)

- Identify the extent of any problems noted and notify:
  - Public
  - Legislature
- Target federal, state and local resources needed to correct any noted problems, including, but not limited to, the following:
  - Funding sources
  - Legislation/regulations/codes

- Implement any needed corrections.

- Monitor water for lead safety on an ongoing basis.

Performance Measure

- Gather, analyze, evaluate, and summarize data
- Develop recommendations for testing
- Analyze random testing, report findings
- Any problems are identified
- Resources are identified and plans are developed for correcting any noted problems
- TCEQ adopts corrective guidelines to achieve desired lead levels
- Report of compliance is issued by 2010.

STRATEGIC GOAL 4

INCREASE IDENTIFICATION OF CHILDREN UNDER AGE 6 YEARS WHO ARE AT RISK FOR LEAD POISONING

Objective 4.1: Increase screening of children under age 6 years.

Short-term Strategies

- Explore options for screening plans: a targeted screening plan directed at high risk populations under age 6 years vs. mandatory testing of all children under age 6 years:
  - Review validated screening questionnaires adopted by other states for identifying high risk populations in need of blood lead testing.
  - Review literatures and studies supporting each type of screening plan.

- Explore the feasibility of mandatory testing of all children.

- Target locations where young children spend time and/or organizations serving young children for screening. These locations/organizations may include, but are not limited to, the following:
  - Day care provider sites (licensed and unlicensed homes, centers)
  - WIC sites
  - Immunization Clinics
  - Head Start programs

- Early Intervention programs
- Public schools (children under age 6)

- Explore the feasibility of routinely checking the blood lead level at the same time the hematocrate is routinely checked on babies at approximately one year of age.

Long-term Strategies

- Target lead awareness to mothers of newborns.
  - Provide mothers of newborns with list of screening guidelines:
    Send information through the mail.
    Send reminder when birth certificate is sent.
  - Work with public schools to target teenage mothers.

- Target information to grandparents and extended families. Many grandparents have custody of their grandchildren.
- Work with high risk areas of the city to determine how Houston Children's Environmental Health bureau can help them locate resources and develop strategies to target high risk populations.

Performance Measure

- A written report is developed outlining options that are explored and the final recommendation.
- A validated screening questionnaire is adopted, if targeted screening is selected.
- Analysis of data indicates increased screening.

Objective 4.2: Educate health care providers about lead issues.

Short-term Strategies

- Provide mail outs information and one-on-one trainings including, but not limited to, the following:
  - Medicaid testing requirement and the screening methodology that is adopted in accordance with Objective 4.1, above
  - Data analysis identifying at-risk groups and at-risk areas
  - Steps to take when a child has an elevated blood lead level
  - The state law requiring blood lead reporting
  - HDHHS resources to refer for environmental investigation and lead hazard reduction

- Identify Medicaid providers who are failing to screen children to encourage screening.
- Provide physicians with the results of environmental investigations on their patients.

Long-term Strategies

- Require health care providers to follow the adopted screening plan.

- Develop and provide incentives to physicians and physician groups.
- Advocate for early testing with HMO umbrella organization.
- Establish disincentives for failing to screen.
- Set goals for improving blood lead testing by Medicaid providers (i.e. Medicaid providers should be testing all children — currently testing is at 18%, establish a goal of 10% increase each year).
- Develop a protocol for lead to be included and taught at the schools of nursing, medicine and dentistry.
- Work with medical school residency programs in Houston to inform new doctors about the guidelines.
- Develop a card for child that includes information about immunizations and lead screening since children often see multiple providers.

Performance Measure

- Develop a written report of efforts, successes, and failures toward the goals.
- Analyze data and review if strategies have affected screening rates.

Objective 4.3: Coordinate with WIC and the Bureau of Immunizations to incorporate lead screening into their protocols.

Short-term Strategies

- Collaborate with the Bureau of Immunizations to develop strategies for coordination of efforts.
- Develop linkages between various databases to better track children.

Long-term Strategies

- Develop method for continuity of records and medical care.
- Coordinate with WIC to conduct dual-purpose blood testing for anemia and lead.

Performance Measure

- Develop a written report addressing efforts, successes, and failures in incorporating lead screening into WIC and immunizations protocols and linking.

Objective 4.4: Educate licensed child care providers.

Long-term Strategies

- Provide information to licensed in-home day care providers.
- Explore the possibility of including training in continuing education for child care providers.
- Explore the possibility of requiring certification of lead safe housing as part of the licensing requirement.

Performance Measure

- Surveys are administered indicating increased awareness of lead issues and the screening plan among child care providers.

Objective 4.5: Establish and foster partnerships to increase public knowledge of lead hazards.

Long-term Strategies

- Foster partnerships with the following organizations:
  - Medicaid programs, Department of Human Services programs, faith-based organizations, celebrities, grocery stores, and other places where diapers and formula are sold and lead screening could be accomplished
  - Houston schools -- educate teen mothers and future parents about lead
  - Community colleges — advocate including education about lead in curriculum.
  - Ministerial alliances — partner with churches to offer screening after Sunday services
  - Home visitors (e.g. public health and home health nurses) -- educate families
  - Baby product company (e.g. Johnson & Johnson) -- include printed message about lead screening on bag/box, create a public service announcement
  - Community based organizations -- disseminate information through local businesses
  - Community health educators to include lead as a topic
  - Medical, nursing, public health, social work and related schools • to include lead as a topic

- Establish local affiliate of United Parents against Lead.

Performance Measure

- Develop a written report addressing efforts, successes, and failures to partner with these organizations.

STRATEGIC GOAL 5

RAISE AWARENESS ABOUT CHILDHOOD LEAD POISONING AMONG DECISION MAKERS AND THOSE WITH THE POWER TO MAKE HOUSING LEAD-SAFE

Objective 5.1: Develop a public awareness campaign.

This objective will be accomplished through the Houston Lead Coalition. (See Objective 1.2)

Short-term Strategies

- Identify existing campaigns in other jurisdictions.
- Survey current knowledge base in order to develop a baseline with which to gauge the success of the public awareness campaign.

Long-term Strategies

- Develop a public awareness campaign directed to decision makers.
- Compile reports and data on lead poisoning in Houston, Texas and nationally for public awareness campaign.
- Collect families' personal stories about children with lead poisoning to have ready for opportunities that arise.
- Develop a web site on which to maintain information about lead poisoning and lead poisoning activities.
- Develop a campaign slogan.
- Develop a speakers' bureau through which to identify and train a diverse group of people, especially parents and guardians of children with lead poisoning, to speak publicly about lead poisoning.
- Target the following individuals/entities:
    - Local, state and federal legislators: councilmen, county commissioners, mayors, state and federal senators and representatives
    - Government officials: health departments, housing departments, boards of education
    - Media: TV, radio and print
    - Others: philanthropic foundations, unions, clergy. bankers, realtors, insurers, healthcare administrators, healthcare providers, academics, associations, community-based organizations

- Consider the following points in developing the campaign:
    - Legislators need to be educated about childhood lead poisoning and the impact on constituents in their legislative district.
    - The focus of the campaign should be prevention of lead poisoning.
    - Possible education points:
        - The relationship between lead poisoning and behavior disorders that interfere with learning
        - The cost of services for a lead poisoned child vs. the cost of making housing safe

Performance Measure

- A public awareness campaign is developed and implemented.
- A written report is developed addressing efforts to target the individuals/entities identified above.
- Analysis of data shows a greater awareness among policy makers.

- Determine if activities have impacted decision makers' actions relating to lead safe housing and addressing issues relating to children with elevated blood lead levels.

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