

**The ABC's of
Lead Screening
for Children**

A Quick Reference for
Medical Providers



OUR MISSION

Eliminate childhood lead poisoning by the year 2010.

GOALS:

- To improve lead poisoning prevention and lead hazard awareness.
- To improve screening and treatment rates among medical providers in selected target areas.

OBJECTIVES:

- To increase health care providers' knowledge of the hazards and prevention of lead poisoning.
- To increase health care providers' awareness of screening guidelines and follow-up treatment of a lead poisoned child.
- Increase screening for children at risk for lead poisoning.
- Increase follow-up treatment of children with elevated blood lead levels.
- To increase utilization of community resources for lead poisoning.

UNDERSTANDING THE PROBLEM IN THE CITY OF HOUSTON:

Houston Department of Health and Human Services (HDHHS) and Childhood Lead Poisoning Prevention Program (CLPPP), identified ten high-risk zip codes in the City of Houston. A method of risk assessment, involving five risk factors for lead poisoning identified by the Centers for Disease Control and Prevention, was used:

- Historical prevalence of lead poisoning
- High-risk age group (one- and two-year olds)
- Poverty status
- Age of housing (pre-1950)
- Racial (non-white) and ethnic (Hispanic) minority status



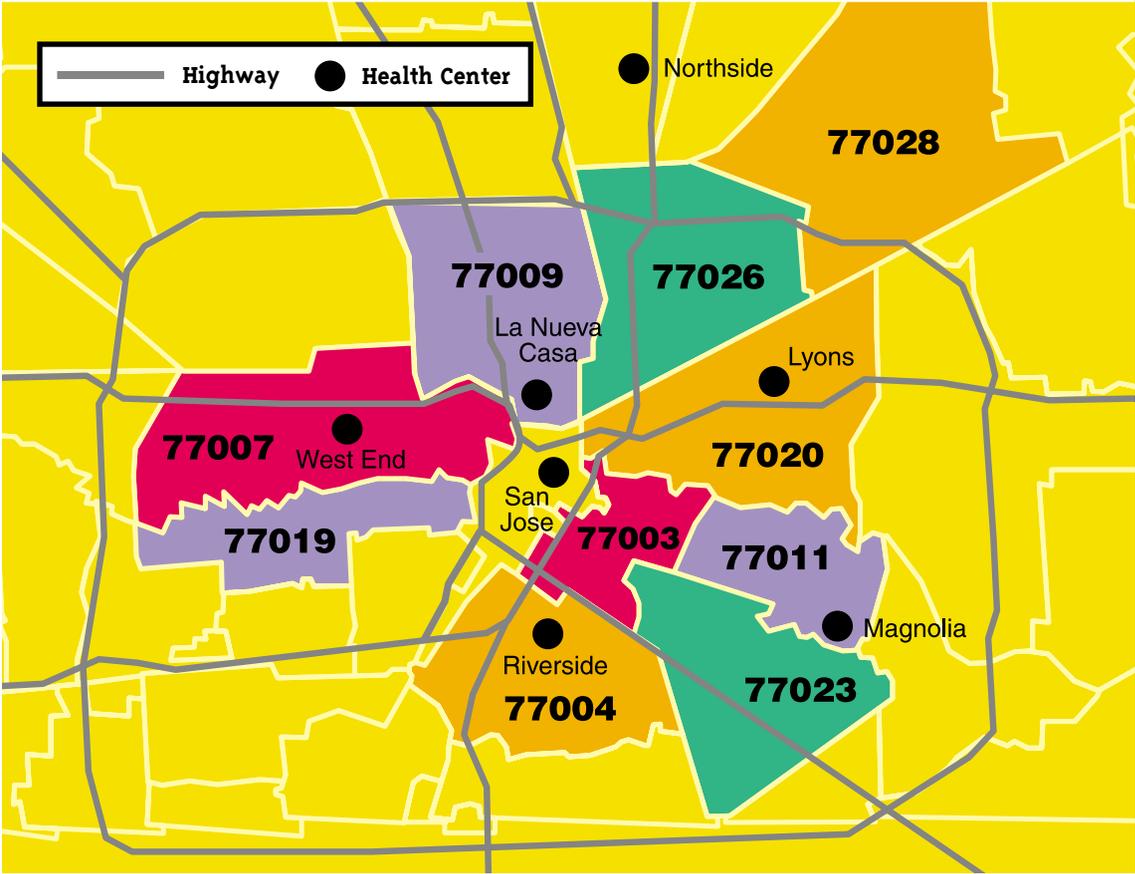
AT-RISK CHILDREN:

- Reside in or visit one or more of the following zip codes: 77003, 77004, 77007, 77009, 77011, 77019, 77020, 77023, 77026 and 77028.
- Reside in or visit a home built prior to 1978.
- Live in older homes, currently renovated or repainted.
- Are between the ages of 6 months and 72 months.
- Receive medical or social services from a publicly funded program.
- Have a parent or caretaker who is exposed to lead at work or as a hobby.
- Eat food that has been cooked or stored in lead glazed pottery.
- Use folk medicine that might contain lead such as Greta, Azarcon or Pay-loo-ah.

WHAT CAN YOU DO AS A HEALTH CARE PROVIDER?

- Assess risk.
- Screen via blood test.
- Manage or refer to appropriate follow-up services.
- Educate parents or caretakers to avoid or eliminate lead hazards.
- Provide anticipatory guidance and developmental education.
- Use available resources and become involved with environmental health issues in our community.

HIGH-RISK ZIP CODES



EXPOSURE AND PATHOPHYSIOLOGY

Primary Sources of Lead Today:

- Paint
- Dust
- Soil
- Some folk medicine (e.g., Greta, Azarcon)
- Lead glazed pottery

How Lead Enters the Body:

- Ingestion – Hand-to-mouth activity (pica)
- Inhalation – Dust particles
- Transplacental Transfer – Passes from exposed mother to fetus via placenta

**LEAD
POISONING
CAN BE
ASYMPTOMATIC!**

SOME PROBLEMS ASSOCIATED WITH LEAD POISONING

Physical:

- Constipation
- Persistent tiredness
- Nausea/stomachaches
- Anemia
- Appetite loss
- Headaches

Psychological:

- Irritability
- Insomnia
- Hyperactivity
- Reduced attention span
- Lower IQ
- Developmental delay



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RECOMMENDATIONS FOR BLOOD LEAD SCREENING FOR ALL CHILDREN

- Screening with a blood lead test is the only way to determine whether a child is exposed to lead.
 - As of Jan.1, 2001, Texas Department of Health (TDH) screening guidelines recommend all children be screened twice with a blood lead test at ages 12 months and 24 months. Medicaid also requires testing at age 36 – 72 months (once) if the child has not previously been screened. Administering a risk-assessment questionnaire instead of a blood lead test does not meet Medicaid requirements.
 - Report all blood lead results to the Texas Department of Health, Austin, TX (800-588-1248).
 - Medicaid requires the first blood sample drawn from a child be sent to the TDH Laboratory.
- Evaluate and either manage or refer children with elevated blood lead levels to appropriate follow-up agencies. (e.g., CLPPP)
 - Children between the ages of 6 months and 72 months who are not eligible for Medicaid may be referred to the Houston CLPPP for screening (713-794-9349).
 - Non Medicaid children with blood lead test results 10 micrograms per deciliter (10µg/dL) or greater should be reported to the Houston CLPPP for appropriate follow-up.

A screening blood specimen can be obtained using either venipuncture or capillary. A blood lead test obtained by a capillary specimen, 10µg/dL or greater, must be confirmed using a venous blood sample.

IF BLOOD LEVELS ARE:

0 – 9
µg/dL

LOW LEVEL

- Child is not considered lead poisoned.
- Provide risk reduction education.
- Re-screen in one year using Medicaid guidelines or risk assessment questionnaire.

10 – 14
µg/dL

MILDLY ELEVATED

- Confirm elevated capillary results with venous blood specimen.
- Re-screen every 3-4 months.
- If results remain 10-14 µg/dL for two consecutive screenings, re-screen every 6 months until 72 months of age or until 2 consecutive tests are <10µg/dL.
- Provide nutritional and risk reduction education.

15 – 19
µg/dL

MODERATELY ELEVATED

- Confirm with venous blood within 6 weeks.
- If blood is confirmed 15-19 µg/dL, provide parents with lead poisoning prevention education, which includes nutrition, personal hygiene and housekeeping (damp mopping and wet wiping, frequent handwashing, etc.) and controlling pica.
- Conduct an environmental assessment interview (e.g. TDH form #M-100). This is the first step in identifying the source of lead.
- Re-screen in 3-4 months via venipuncture.
- If results remain 15-19 µg/dL, re-screen every 6 months or until 3 consecutive tests are <15µg/dL.
- If an environmental investigation or home visit is needed, it can be requested from the local or regional health department.

IF BLOOD LEVELS ARE HIGH:

20 – 24
µg/dL

- Confirm with venous blood within 7 days.
- If blood is confirmed 20-24 µg/dL, provide parents with lead poisoning prevention education.
- Request an environmental inspection immediately or refer to the appropriate agency.
- Re-screen in 2 months via venipuncture.
- If results remain 20-24 µg/dL for four consecutive screenings, conduct a complete medical evaluation including physical exam, developmental assessment and laboratory assessment.

25 – 44
µg/dL

- Confirm with venous blood within 5-7 working days.
- If blood is confirmed 25-44 µg/dL, provide parents with lead poisoning prevention education.
- Refer for an environmental inspection immediately and conduct or refer for a complete medical evaluation. It is very important to identify and remove the child from the source of contamination.
- Some physicians may advise oral medication (chelation therapy). Call your local or regional health department for a physician or institutions willing to provide guidance.
- Re-screen in 2 months via venipuncture.

45 – 69
µg/dL

- Confirm with venous blood within 3-5 working days.
- If blood is confirmed 45-69 µg/dL, provide parents with lead poisoning prevention education and conduct a complete medical evaluation or refer to the appropriate agency.
- Medical treatment and chelation therapy should be conducted under the guidance of a physician experienced in the treatment of lead poisoning.
- Begin or refer for medical management and environmental assessment, and assure the removal of the child to a safe environment within 48 hours.
- Re-screen in 1 month via venipuncture.

> 69
µg/dL

- **This is a medical emergency.**
- Confirm with venous blood **immediately**, and refer to the appropriate agency.
- Medical treatment and environmental assessment must begin **immediately**.



QUESTIONS TO ASK PARENTS TO ASSESS RISK FOR LEAD POISONING

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- Does your child live in or regularly visit a house or other building built before 1978 with peeling or chipping paint inside or outside the home?
 - Do you reside or does your child visit a caretaker in any of the following zip codes: 77003, 77004, 77007, 77009, 77011, 77019, 77020, 77023, 77026 or 77028?
 - Does your child have a parent, brother, sister, housemate or playmate being treated or who has been treated for lead poisoning?
 - Does your child play in areas of bare soil near painted buildings, painted porches or near roads with heavy traffic?
 - Has there been any paint removal, scraping or renovation work done in or near your home?
 - Does your child frequently put toys, paint chips, or dirt in his/her mouth? Does your child chew on windowsills or blinds? (pica behavior)
 - Is anyone in your home exposed to lead at his or her work site? Does the child live near an industry likely to release lead? (i.e., radiator repair, construction, paint removal, other lead-related trades/hobbies)
 - Does your family use glazed pottery for cooking or storing food?
 - Does anyone in your family use folk medicine to treat child illness? (e.g., Greta, Azarcon, Pay-loo-ah, or others that may contain lead)

RESOURCES

Houston Lead Based Paint Hazard Control Program

8000 N. Stadium Dr.
Houston, TX 77054
Tel 713-794-9217

Ben Taub Hospital Toxicity Clinic

1504 Taub Loop
Houston, TX 77030
Tel 713-873-2595

Harris County Childhood Lead Poisoning Prevention Program

2223 West Loop South
Houston, TX 77027
Tel 713-439-6369

Texas Gulf Coast Childhood Lead Poisoning Prevention Coalition

Houston, TX Tel 713-798-0824

Lead Poisoning Prevention Branch Centers for Disease Control and Prevention

Atlanta, GA Tel 404-639-2510
www.cdc.gov/nceh/lead/lead.htm

Texas Department of Health Childhood Lead Poisoning Prevention Program

Epidemiology Department
Texas Health Steps
Literature and Forms
1100 West 49th Street
Austin, TX 78756-3199
Tel 1-800-588-1248
[www.tdh.state.tx.us/lead/
leadhome.htm](http://www.tdh.state.tx.us/lead/leadhome.htm)

Alliance To End Childhood Lead Poisoning

Washington, DC
Tel 202-543-1147 www.aeclp.org

U.S. Environmental Protection Agency (EPA)

Washington, DC
www.epa.gov/lead/leadpbed.htm

U.S. Department of Housing and Urban Development (HUD)

Washington, DC
Tel 1-800-424-5323
www.hud.gov/lea/leatips.html

National Lead Information Center

Lead Information and
Clearinghouse
Tel 1-800-424-LEAD (5323)
www.epa.gov/lead/nlic.htm

Houston Department of Health & Human Services Childhood Lead Poisoning Prevention Program

8000 N. Stadium Dr.
Houston, TX 77054
Tel 713-794-9349
Fax 713-794-9468



REFERENCES

- U.S. General Accounting Office, Medicaid: Elevated Blood Lead Levels in Children, GAO/HEHS-98-78, Feb. 1998
- Centers for Disease Control and Prevention, Update: blood lead levels, U.S., 1991-1994
- Advisory Committee on Childhood Lead Poisoning Prevention, Centers for Disease Control and Prevention: Recommendations for Lead Screening of Young Children Enrolled in Medicaid; Targeting a High-Risk Group for Lead Screening, MMWR Reports and Recommendations, Dec. 8, 2000
- CDC, Working with Medicaid: A Resource Guide for Childhood Lead Poisoning Prevention Programs, 2001
- Texas Department of Health – 2001 Texas Medicaid Service Delivery Guide
- Texas Department of Health, Childhood Lead Poisoning Prevention Program, Screening Guidelines, Jan. 2001
- Alameda County Community Development Agency, Lead Poisoning Prevention Department, Oakland, CA, “Connecting Points for Healthy Kids,” 1998
- City of Houston Department of Health and Human Services, Childhood Lead Poisoning Prevention Program

SPECIAL ACKNOWLEDGEMENTS

“ABC’s of Lead Screening for Children” funded by Environmental Protection Agency (EPA), Grant, #X-98668901-0, 2001, Houston Department of Health and Human Services “ABC’s of Lead Screening for Children” available at www.ci.houston.tx.us/department/health/leadpoisonpage.html