

US EPA ARCHIVE DOCUMENT

U.S.-Mexico Border 2012 Initiative for Pediatric Lead Exposure Identification and Risk Reduction

Start Date: 1996

Completion Date: 2000

Project Purpose:

To address community concern regarding pediatric lead exposure; to build capacity of local health personnel and authorities for sustained blood lead surveillance; and to identify potential sources of exposure.

Project Description:

Lead is an environmental toxicant that can cause anemia, seizures, and, in extreme cases of exposure, coma and death. Levels of exposure as low as 10 ug/dL have been associated with behavioral and learning problems in young children. Younger children are more likely to be exposed by placing toys or fingers contaminated with lead-laden dust in their mouths, while older children are more likely to be exposed from the soil and air outside. Known childhood exposure sources include leaded gasoline, industrial emissions (lead-related industries), lead-based paint, folk remedies, home hobbies, and "take-home" lead from parental jobs (clothes, hair, car, shoes).

The Pediatric Lead initiative involved the participation of several State, Federal, and non-governmental organizations within both the US and Mexico. In Tijuana, Dr. Ericson of UC-Irvine (UCI) conducted an epidemiologic study assessing blood lead levels with an emphasis on health education, infrastructure, and case management. The National Center for Environmental Health at the Centers for Disease Control and Prevention (CDC/NCEH), conducted binational assessments in Arizona-Sonora and New Mexico-Chihuahua at the request of the local health authorities. The Texas Department of Health (TDH) measured blood lead levels in children as part of a comprehensive environmental health survey.

Final Outcomes:

1. The UCI-managed Tijuana blood lead investigation has been completed and the final report written. Local personnel were trained, community education was conducted, children with elevated blood lead levels are receiving follow-up through case management, and a laboratory for blood lead analysis was established.
2. CDC/NCEH conducted two field investigations; Arizona-Sonora border region in March 1998 and New Mexico-Chihuahua border region in January 1999. Convenience sampling was used in both studies and recruited children ages 1- 6 years old through attendance in kindergartens, Head Start programs and special events planned at community centers.
 - CDC/NCEH coordinated with state health departments to train local health providers and community volunteers (e.g. "promotoras" and emergency medical technicians) to use portable blood lead analyzing technology.
 - CDC/NCEH donated portable blood lead analyzers and collection supplies to the state health departments to promote on-going blood lead surveillance on both sides of the border.
 - Final report for the Sonora-Arizona investigation was completed.
 - Final report for the New Mexico-Chihuahua investigation was completed.
 - Results from both border pediatric lead assessments will be published as one journal article in a peer-reviewed journal (2004)
3. A survey of the health and environmental conditions of the Texas border counties and colonias was completed in December 1997 by the Office of Border Health, Texas Department of Health.

Final Outcomes:

Completed reports for each project completed.

Presentations or Publications:

Childhood Lead Assessment in Tijuana, Baja California, Mexico A Binational Study in the California-Baja California Region, Fall 1999. Prepared by UCI.

Publication Pending: Binational Study of Pediatric Blood Lead Levels Along the US-Mexico Border Region. Prepared by CDC.

Survey of Health and Environmental Conditions In Texas Border Counties and Colonias. Technical Report, June 2000. The executive summary is available on the following site:
http://www.epa.gov/orsearth/pdf/exsumrev_hetbcc.pdf. Prepared by TDH.

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Project participants:

TDH, NMDH, ADHS, CDHS, EPA/ORD, CDC, PAHO, Mexican Border States (Baja California, Sonora, Nuevo Leon, Tamaulipas, Coahuila, Chihuahua), and Mexican Federal Agencies, SSA, UCI