

US EPA ARCHIVE DOCUMENT

# Retrospective Study on Pediatric Asthma and Air Quality

**Start Date: September 1996**

**Completion Date: May 1999**

## **Project Purpose:**

To assess the relationship between air quality and respiratory health in children in the Paso del Norte region.

## **Project Description:**

In response to concern about the relationship of air quality and respiratory health in children in the Paso del Norte region a retrospective epidemiologic study using hospital emergency room data has been designed. Objectives are to: 1) examine the temporal association between pediatric respiratory illness, measured by daily counts of asthma visits to emergency rooms, and daily levels of airborne contaminants; 2) explore the spatial association between residential areas of pediatric patients for respiratory illnesses and air quality; 3) work with local organizations to identify and address an environmental health concern on the U.S. Mexico border in a binational fashion; 4) initiate binational research collaboration on environmental health issues with health professionals and provide capacity building opportunities to improve and continue such research. The study area is the Paso del Norte airshed. The cities located in this airshed are El Paso, Texas, Sun Land Park, and Ciudad Juarez, Chihuahua. Parallel studies were developed in the U.S. and in Mexico. However, due to the difficulty in accessing daily emergency room visit data from the hospitals in Mexico, this study concentrated on the U.S. side. The study population is children who reside in the area and who are emergency room users at local participating hospitals. The age range was from 1 to 17 years. The study period was June 1, 1994 to December 31, 1995. The outcome is the count of daily emergency room visits by children for asthma. Data on all other pediatric emergency room visits was collected and divided into two comparison groups: other respiratory illnesses and all other illnesses. The data analysis consisted of two phases. First a descriptive analysis was conducted to identify short and long term trends in the data. Then time series modeling was done which incorporated the identified trends.

## **Final Outcomes:**

- Time series workshop conducted with Mexico study team
- Presentation of preliminary results to USMBHA at 1997 annual meeting
- Presentation of final results to CSTE 1998 annual meeting
- Community outreach materials developed
- Final report written and disseminated 1998
- Final report provided to local border communities. Presented in Joint Advisory Committee Meeting in Ciudad Juarez, May 1999.
- Project complete.

**Presentations or Publications:**

Ambient Air Quality and Acute Pediatric Respiratory Illness in the Paso del Norte Airshed. 1998. Report prepared by CDC/UTEP/ PSR.

**Project Contacts:**

Raquel Sabogal, CDC-NCEH (770) 488-3432 [zkq3@cdc.gov](mailto:zkq3@cdc.gov)

Beatriz Vera, Rio Grande/Rio Bravo Basin Coalition (915) 532-0399 [coalition@rioweb.org](mailto:coalition@rioweb.org)

Jim VanDerslice, Washington State DOH (360) 236-3183 [Jim.VanDerslice@DOH.WA.GOV](mailto:Jim.VanDerslice@DOH.WA.GOV)

**Project Participant(s):**

UTEP, CDC/NCEH, PSR, IMSS, Ciudad Juarez, EPA