Evaluation of Environmental Health Status along the Arizona-Mexico Border

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Protecting Children’s Environmental Health Along the U.S.-Mexico Border Region Symposium
Presentation Outline

• SERI overview
• Goals and objectives
• Arizona-Mexico border region overview
• Environmental health challenges
• Data gaps and issues that hinder environmental health surveillance
Who We Are

• Nonprofit established in 1994
• Work in Arizona and northern Mexico
• Environmental Justice issues
• U.S.-Mexico border environmental issues
• Community participatory projects
Goals and Objectives

• Collect, compile and analyze trends to understand environmental health status along the Arizona-Mexico border

• Report will be used to:
  – identify data gaps
  – inform decision making and policies
  – guide future research and resources
Border Region Overview

San Luis AZ - San Luis Colorado, Sonora
Agriculture
Intense pesticide use
Yuma Marine Corps Air Station
(Superfund site)

Douglas AZ - Agua Prieta, Sonora
Smelter for copper mines from Bisbee
Agriculture

Naco AZ – Naco, Sonora
Lukeville AZ – Sonoyta, Sonora
Sasabe AZ – Sasabe, Sonora
Border Region Overview

Nogales AZ – Nogales, Sonora
Maquiladoras
Multiple Myeloma and Lupus Clusters

Tucson
Tucson International Airport Area (TIAA) superfund site
Lead and Blood Lead

Unique exposures in Arizona

• Proximity to Arizona-Mexico border
e.g. Leaded paint brought from Mexico

• Immigration
e.g. Imported goods such as pottery and spices

• Mining
  – some areas in AZ have soils naturally high in lead and mining activities can make lead naturally available
Blood Lead

Percentage of Children with Blood Lead Concentration >5 µg/dL by County

- data based on ~20% of screened at risk children
- overall decrease in all four counties to < 5 µg/dL beginning of 2009
- ** data from Jan-Jun 2015
Blood Lead

• Percentage of children screened is low
  – ADHS plans to increase screening rate to 85% in targeted ZIP codes in three years

• Current target screening is based on a risk index
  e.g. % of population that identify themselves as Hispanic or Latino and speaks Spanish
  • Missed opportunities to identify other cases of lead poisoning
Eliminating Lead Exposure

• ADHS recommends all children in target ZIP codes to be screened at 12 and 24 months
  – outside ZIP codes should receive risk assessment questionnaire

• Need for grants to assist and eliminate lead exposure and poisoning from the source

• Organizations providing education on prevention of lead poisoning should include non-Hispanic immigrant communities
Children Served by Water Supply Systems with Violations of Drinking Water Requirements

- data based on 13 schools with reported violations
- approximately 4% of children attending schools are served by water supply with at least one violation
Drinking Water and Contaminants

- Of the 13 schools, 4 were served by water supply systems that did not meet all applicable health-based drinking water requirements
  - Arsenic; 12 ppb (*MCL 10 ppb)
  - Coliforms
  - Disinfectants byproducts; Total Trihalomethanes (TTHM); 0.102 mg/L (MCL 0.08 mg/L)

* MCL – maximum contaminant level as regulated by EPA
Drinking Water and Contaminants

• In 2007 estimated that 5% of the Arizona population was on private wells
  – over 100,000 wells serving approximately 300,000 people
  – ~3000 new wells are added each year
  – these wells fall outside the state and federal monitoring requirements

• Need to assess water quality status in rural communities
  – need for resources, education and training
• high particulate readings due to drought conditions and several very high wind days
Criteria Air Pollutants
Pima County

- steady at 95% of the ozone standard
Challenges that Hinder Surveillance

• Gaps in services along border communities and therefore not all environmental health indicators are monitored
  – especially on the Mexico side of the border

• When data available in Mexico, may be difficult to access if not stored in an online database

• Working in partnership with binational agencies
  – improve data sharing platforms
3. Environmental Protection Agency (EPA): Safe Drinking Water Information Systems  
http://iaspub.epa.gov/enviro/sdw_form_v3.create_page?state_abbr=AZ
4. Environmental Protection Agency (EPA): National Ambient Air Quality Standards  
http://www3.epa.gov/ttn/naaqs/criteria.html
5. Environmental Protection Agency (EPA): What are the Six Common Air Pollutants ?  
http://www3.epa.gov/airquality/urbanair/
6. Pima County Department of Environmental Quality (ADEQ): 2014 Air Quality Summary Report  