Methods and Results of Environmental Analyses in the National Birth Defects Prevention Study

Moderator: Peter Langlois, Birth Defects Epidemiology and Surveillance Branch, Texas Department of State Health Services, Austin, TX

This scientific session will discuss methods and challenges of assessing environmental exposures during pregnancy as well as present results of environmental analyses using NBDPS data.

- Peter Weyer (IA) will discuss the exposure assessment approach for drinking water disinfection byproducts (DBPs) in the NBDPS. This includes linkage of residential geocodes to public water systems, attaching appropriate water monitoring data, and calculating individual exposure levels to DBPs. He will also summarize preliminary results of analyses of risk for orofacial clefts; this is the first in a series of NBDPS studies planned on evaluating risk from drinking water DBPs.

- Janice Panichello (UT) will discuss how errors in geocoding impact linkage of the maternal address to the water system providing drinking water at her home. In her research, some of the errors had no impact (i.e. the address still ended up in the same water system). Other errors, though, place the mom in a water system with different levels of arsenic than the one she actually lived in.

- Tom Luben (NC) will describe how geographic information systems (GIS) are being used in the NBDPS to examine the associations between environmental pollutants and birth defects. These GIS applications include locating the study participants by geocoding addresses (assigning mapping coordinates), using proximity analysis of pollutant source as a surrogate for exposure, and integrating environmental monitoring and/or modeling data into the analysis of the birth defects.

- Mahsa Yazdy (MA) will discuss her research on spatio-temporal clustering of gastroschisis and present results from Massachusetts and Texas.

More information on NBDPS and its methods can be found on pages 3-4.