AWRA 2007 SUMMER SPECIALTY CONFERENCE
Vail, Colorado
June 25-27, 2007

ROCKY MOUNTAIN BIOMONITORING CONSORTIUM ACTIVITIES AND ACCOMPLISHMENTS

Helen Flowers*, The Rocky Mountain Biomonitoring Consoritum

ABSTRACT: The goal of the Rocky Mountain Biomonitoring Consortium (RMBC) is to implement and expand a regional laboratory-based biomonitoring program to assess the extent and nature of human exposures to environmental toxicants, including estimates of background exposure to naturally occurring and industrial chemicals that have the potential to cause harm, and to help prevent disease resulting from such exposures. In order to accomplish the goals, the RMBC is developing regional laboratory capacity by implementing demonstration projects. The consortium obtained IRB approvals, trained analytical staff, developed QA/QC procedures, developed sampling protocols, collected and analyzed specimens, and disseminated the results. The demonstration projects included the evaluation of collected urine samples for arsenic, metals and phthalates, as well as developing methods for the utilization of newborn screening blood spots. The evaluation of clinic samples for chemical terrorism agents was completed. RMBC demonstrated successful collaboration of the six Rocky Mountain States among laboratorians, epidemiologists, local public health agencies, and other partners.

Major findings/accomplishments: Lab capacity has expanded and 5 out of 6 state laboratories are actively engaged in biomonitoring sample analysis with over 1,000 samples evaluated to date and 2,000 more samples planned for evaluation. Arsenic speciation capability was developed and implemented. Blood spot methodology was developed for mercury and lead. Phthalate metabolite in urine methods were developed and implemented. Urine arsenic and metals exposure assessment was implemented in all RMBC states.

Significance of finding/accomplishments: RMBC identified populations consuming high levels of arsenic and uranium and drinking water and conducted public health interventions to reduce these exposures. This included dissemination of information and individual counseling on ways to mitigate exposures. It was also determined that New Mexico has levels of uranium in urine that are significantly elevated by 2 to 7 times that reported in NHANES. Fish/seafood ingestion, tobacco, fish oil and dietary supplement consumption positively correlated with arsenic and urine. When corrected for the above, determined drinking water concentration also correlated with arsenic in urine. New Mexico legislation has resulted from our biomonitoring efforts including several initiatives and an appropriation to further characterize and mitigate mercury exposures.

***** Chief Environmental Epidemiology, New Mexico Department of Health, 5301 Central Ave., NE, Ste. 900, Albuquerque, NM 87108, USA, Phone: 505-841-5893, Fax: 505-841-5895, Email: len.flowers@state.nm.us