

New Jersey Biomonitoring Grant Program Overview and Update

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Goals of NJ Biomonitoring Program

- **Goal 1 – Laboratory Capability and Capacity Building**
 - Methods for PFCs, PCBs, metals, and metals speciation
- **Goal 2 – Investigational Support – Location Specific**
 - PFC exposure study
- **Goals 3 & 4 – Investigational Support - Statewide – Vulnerable Subpopulations**
 - Biomonitoring study using blood donors and clinical laboratory samples
 - Expectant mother biomonitoring study
- **Goal 5 – Increased Collaboration and Communication**
- **Goal 6 – Permanence and Sustainability**

Project 1: Environmental Contaminant Levels in Blood and Urine Specimens from New Jersey Clinical Laboratories and Blood Banks

OBJECTIVES

- Determine metals, PFCs and PCBs in blood and urine among NJ residents (20-74 years old) using remnant clinical laboratory and blood bank specimens.
- Establish biomonitoring data for the target analytes based on gender, age, geographic location and race to screen for disparities across the study population in NJ.
- Demonstrate laboratory capability and capacity to conduct biomonitoring in NJ for environmental pollutants, and to develop the infrastructure to respond to acute exposure incidents

Project 2: Assessing PFNA Body Burdens Following Drinking Water Intervention

OBJECTIVES

- Determine if individuals residing in communities with PFNA-contaminated drinking water have higher PFNA serum levels than the general population.
- Evaluate the effectiveness of interventions implemented to reduce exposure to PFNA in drinking water by monitoring serum concentrations of PFNA over time
- Estimate the half-life of PFNA in the body
- Estimate serum: drinking water ratios for PFNA, and assess how they may inform the risk assessment of PFNA in drinking water
- PFOA, PFOS, PFHxS and other PFCs listed in the CDC method will also be measured

Project 3: Assessing Environmental Exposure of Pregnant Woman to Toxic Metals and PCBs (To Be Developed)

- **Subjects**
 - Expectant mothers
- **Target Analytes**
 - Metals and PCBs
- **Sample collection**
 - Recruitment from hospitals, OB/GYN offices, and insurance providers

Progress

Goal 1: Laboratory Capability and Capacity Building

- PFCs - Validation of method in progress
- PCBs - Method under development
- Metals – Speciation method under development

Goal 2: Investigational Support – Location Specific

Project 2 (assessing PFNA)

- IRB application – approval pending
- Outreach for subject recruitment and sample collection in progress
- Questionnaire (on sources of PFCs exposure) under development

Progress (continued 2)

- **Goals 3 & 4: Investigational Support - Statewide - Vulnerable Subpopulations**

Project 1 – NJ general population exposure

- Study plan completed
- Partnerships with clinical labs/blood banks developed
- Planning for sample collection underway
- IRB application approved

Project 3 – Assessing Environmental Exposure of Pregnant Women to Toxic Metals and PCBs

- Under development

Progress (continued 3)

Goal 5: Increased Collaboration and Communication

- Formed New Jersey State Biomonitoring Program
- Established New Jersey State Biomonitoring Commission (inaugural session on December 8, 2014)
- Outreach and partnerships

Goal 6: Permanence and Sustainability

- Laboratory capabilities and capacity established (Goal 1)
- Foundation built in Goal 5
- Pursuing additional state funding as early as 2017



Challenges

Project specific

- Hiring staff
- Obtaining IRB approvals
- Managing large numbers of samples (LIMS, storage)
- Reporting data

General

- Building a coherent biomonitoring program
 - Harmonizing efforts and priorities across environmental, epidemiological and laboratory programs
- Transitioning from grant funding to state funding