

Agency: 303 Department of Health
Decision Package Code/Title: R5 Biomonitoring Laboratory Capacity
Budget Period: 2015-17
Budget Level: PL -Performance Level

Recommendation Summary Text:

Funding is requested to maintain and expand existing Public Health Laboratories (PHL) capacity to conduct biomonitoring to measure levels of environmental exposures among people living in Washington. Biomonitoring data provides a direct measure of human exposure to environmental chemicals including chemicals found in consumer products.

Fiscal Detail

Operating Expenditures		<u>FY 2016</u>	<u>FY 2017</u>	<u>Total</u>
001-1	General Fund State		639,000	639,000
Total Cost		0	639,000	639,000
Staffing		<u>FY 2016</u>	<u>FY 2017</u>	<u>Annual Avg</u>
FTEs		0.0	3.4	1.7

Package Description:

Biomonitoring measures the amount of environmental chemicals or their breakdown products (metabolites) in human blood, urine, hair or other body tissues. It tells us the amount of the chemical that gets into people from all sources combined, such as from consumer products, air, soil, water, dust, and food. Biomonitoring provides useful information to estimate the magnitude of chemical exposures among Washington’s population. Biomonitoring data can have a positive impact by helping to identify and address exposures among populations at risk of higher environmental exposures including low-income, minority and immigrant groups.

In 2009, the Washington State Department of Health (department) received a grant from the U.S. Centers for Disease Control and Prevention (CDC) to collect biomonitoring data in Washington State. This funding created the Washington Environmental Biomonitoring Survey (WEBS) program. The main goals of the grant were to:

- Increase the ability of the Washington State Department of Health's Public Health Laboratories to conduct biomonitoring testing.
- Measure the amounts of chemicals in the urine and blood in a sample of Washington residents. This includes people at average risk and those at high risk for exposure.
- Compare levels in Washington to those in the United States as a whole.
- Use this information to reduce exposures.

The WEBS project work established state-wide baseline levels for over 30 chemicals in the general population and looked at the exposure of subpopulations at risk. The data were compared directly with US values, showing similarity for some chemicals and differences in others. The studies of the at-risk populations resulted in positive actions by local health departments, educational programs, and even medical uses.

Federal funding ended in 2014. The department applied for but did not receive additional federal grant funding because of the CDC's national commitment to develop biomonitoring capabilities in areas where none previously existed.

The department is requesting funding for laboratory equipment and staff to continue to generate biomonitoring data in Washington. The department's biomonitoring laboratory will develop laboratory methods to measure environmental chemicals in selected populations and maintain existing biomonitoring laboratory methods developed over the past five years (e.g. arsenic, metals, pesticides, BPA and BPA substitutes, and phthalates). Testing will include measuring bisphenol A (BPA) and BPA substitutes in stored urine samples from a low-income population, measuring polychlorinated biphenyl (PCBs) in stored blood samples from a statewide adult population, and measuring manganese in stored urine samples from a statewide adult and child population. The information obtained from these tests will be used to reduce ongoing environmental chemical exposures.

Narrative Justification and Impact Statement:

What specific performance outcomes does the agency expect?

The department will conduct one study/project per year to include development of a new laboratory method and testing of existing or previously collected specimens. Existing samples may include use of stored urine specimens from past department biomonitoring studies, stored blood samples from the Department of Health Washington Adult Health Survey study, specimens collected as part of research studies (at UW, WSU, etc.) or samples available from other sources (e.g. BloodworksNW, other states collecting biomonitoring samples). We would establish partnerships with researchers/organizations to test specimens collected elsewhere.

1. Complete testing of stored general population and low-income study urine samples for bisphenol A (BPA) and BPA substitutes (BPS and BPF), conduct data analysis, and prepare reports and other communications of findings. Rationale: BPA has been banned in baby products and water bottles in Washington, and health and environmental agencies are concerned it is being replaced by BPS and BPF.
2. Develop new method to analyze manganese in urine. Analyze a subsample of stored general population urine for manganese using new method. Conduct data analysis and prepare reports of findings. Rationale: Manganese is a common contaminant in drinking water in parts of the state and emerging health data suggests it is more harmful than previously thought.
3. Develop new method to analyze PCBs in blood. Analyze stored blood samples from the Washington Adult Health Survey (WAHS) or consult with Advisory Committee to identify other samples or populations for testing (using existing samples or convenience samples). Rationale: Links to Ecology's Chemical Action Plan recommendations for PCBs.
4. Convene Advisory Committee in 2016 and periodically thereafter to gather input on projects and set priorities.

Biomonitoring data provides useful and direct measurements of environmental exposures in people and is a widely used tool for monitoring exposures in populations. Biomonitoring data can be used to monitor trends in exposures over time, identify highly exposed populations and establish preventive actions to reduce exposures.

Performance Measure Detail

Activity: A011 - Public Health Laboratory

Is this DP essential to implement a strategy identified in the agency's strategic plan?

Goal 1: Protect everyone in Washington from communicable diseases and other health threats.

Objective 3: Ensure the safety of our environment as it impacts human health.

Does this decision package make key contributions to statewide results?

The following sections of the Governor's Results Washington are affected by this request:

Goal 3: Sustainable Energy and a Clean Environment

Goal 4: Healthy and Safe Communities

What are the other important connections or impacts related to this proposal?

Biomonitoring data is sought after by environmental regulatory agencies, including the US Environmental Protection Agency, the US Department of Defense, the US Geological Survey (monitoring fracking wastes), and the CDC and Agency for Toxic Substances, and Disease Registry. California and other states collect biomonitoring data to characterize population exposures and to inform environmental policies.

Department of Ecology - Provide biomonitoring data in support of Chemical Action Plan Development and resulting policies.

Biomonitoring data can be useful to local health departments in identifying public health hazards and for identifying and confirming prevention activities. The data can also be generated in collaboration with communities with higher exposures to develop prevention activities, and inform policy.

What alternatives were explored by the agency and why was this alternative chosen?

To maintain some core biomonitoring capacity, a portion of our 2015-2017 decision package supported this work and would have measured environmental exposures among pregnant women in the state; however, this package did not make it into the enacted budget. Additionally during the 2015 legislative session HB 1472 required biomonitoring work that also could have maintained core capacity, this bill was not enacted.

What are the consequences of not funding this package?

The department will lose the existing laboratory capacity and expertise to conduct biomonitoring. Rebuilding this capacity will be costly in both time and funding. Currently there is the expertise and infrastructure to conduct biomonitoring, including trained and experienced lab, epidemiology and toxicology staff, an existing biomonitoring database, biomonitoring laboratory methods already in production and stored urine and blood samples from previous studies. There is an existing plan for biomonitoring activities for the next 1-3 years that was developed under the previous grant with input from the advisory committee. This plan relies on testing stored urine and blood specimens for additional chemicals using new methods that will be developed over the next 1-3 years. These specimens were collected as part of prior population study and are due to be disposed of in the next 1-3 years. Rebuilding this capacity will be costly; training new people to the competency levels required by our laboratory certification takes more than 6 months. Re-establishing and re-validating laboratory methods would take 3 – 6 months per method. Laboratory instruments may be moved to make way for

active projects and restoring laboratory space for instruments is costly. A steep learning curve for new laboratory staff, epidemiologists and toxicologists will add more delay.

What is the relationship, if any, to the state capital budget?

N/A

What changes would be required to existing statutes, rules, or contracts, in order to implement the change?

N/A

Expenditure and revenue calculations and assumptions:

Revenue:

None

Expenditures:

Starting in fiscal year (FY) 2017 and ongoing, staff will include 1.0 FTE Chemist 3 to develop and validate new laboratory methods and maintain certification of existing biomonitoring lab methods; 1.0 FTE Chemist 2 to analyze biomonitoring specimens; 1.0 FTE Epidemiologist 3 to develop biomonitoring studies, prepare human subjects applications, conduct data analysis of results, prepare reports and other communications of study findings for technical audiences and stakeholders and convene and work with Advisory Committee; 0.1 FTE WMS2 Laboratory office director to oversee biomonitoring activities and approve and report lab results; 0.30 FTE Toxicologist 3 to assist with developing priorities and new studies, conduct risk assessment and interpretation of biomonitoring results, assist with preparing reports and other communications of study findings, and serve as liaison to environmental agencies. Equipment costs will be \$50,000 per year for 5 years to buy new Gas Chromatograph with a tandem mass spectrometer detector (GC/MS-MS) for testing persistent chemicals in blood specimens (e.g. PCBs, flame retardants, etc.) and \$98,000 for lab equipment service agreements and lab supplies.
(FY 2017 - 3.4 FTE and \$639,000)

Which costs and functions are one-time? Which are ongoing? What are the budget impacts in future biennia?

All costs are ongoing.

<u>Object Detail</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Total</u>
A Salaries and Wages		329,000	329,000
B Employee Benefits		99,000	99,000
E Goods and Services		147,000	147,000
J Capital Outlays		59,000	59,000
T Intra-Agency Reimbursements		5,000	5,000
Total Objects	0	639,000	639,000