

Environmental Public Health Tracking and Biomonitoring

REPORT TO THE LEGISLATURE

MARCH 2017



PROTECTING, MAINTAINING AND IMPROVING THE HEALTH OF ALL MINNESOTANS

March 27, 2017

Chairs and Ranking Members
Health and Environment Committees
Minnesota State Legislature

Dear Legislators:

The Minnesota Department of Health (MDH) is pleased to share this Legislative Report on the progress of our Environmental Public Health Tracking and Biomonitoring Program, in accordance with Minnesota Statute 144.996, Subdivision 1.2.

Created in 2007 by the Minnesota Legislature, the Environmental Public Health Tracking and Biomonitoring Program was directed to gather and share with the public data on environmental hazards, chemicals in people (biomonitoring) and chronic diseases in Minnesota. This report showcases the progress we have made since our last report in 2015 as we continue to build our state's capacity for monitoring current trends, disparities and geographic patterns of environmental hazards, exposure and public health in communities, guided by the Environmental Health Tracking and Biomonitoring Advisory Panel.

Continuing investment in this program will enable MDH to track and share its progress in addressing Minnesota public health issues, such as mercury exposure in pregnant women and newborns, air quality in our cities, contaminants in drinking water, chronic diseases and health equity across diverse communities. Improving public access to current, accurate information helps citizens, communities and health officials make better decisions and policy to protect and improve the health of Minnesotans and future generations.

Sincerely,

A handwritten signature in black ink, appearing to read "Edward P. Ehlinger", with a stylized flourish at the end.

Edward P. Ehlinger, MD, MSPH
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Enclosure: 2017 Legislative Report

Environmental Public Health Tracking and Biomonitoring Program

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As requested by Minnesota Statute 3.197: This report cost approximately \$2,637 to prepare, including staff time, printing and mailing expenses.

Upon request, this material will be made available in an alternative format such as large print, Braille or audio recording. Printed on recycled paper.

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Introduction

First established by the Minnesota Legislature in 2007, Minnesota's Environmental Health Tracking and Biomonitoring program today brings together, in one place, data from statewide monitoring and surveillance of environmental hazards, human exposures and population health. Environmental epidemiologists study the connections between environment, exposures, health and social conditions, all of which are important to understanding how best to protect the health of Minnesota communities. Data and information gained from this work help inform, evaluate and guide policy decisions; support new funding for local actions; and track the progress of community and state programs working to improve public health.



In this report, we highlight key accomplishments of the program over the past two years, 2015 to 2017. Our format for this report includes three parts of the state program, each presented as individual fact sheets for copying and sharing.

Biomonitoring measures chemicals in people or *exposure* — the level of a chemical hazard in samples of blood or urine. Monitoring harmful chemicals in people helps us understand the sources of exposures, actions needed to prevent exposure and how environmental hazards impact public health. Biomonitoring in the public health laboratory builds capacity for emergency response, research and surveillance of population exposure to metals, pesticides, perfluorochemicals, endocrine disrupting chemicals and more.

Environmental Public Health Tracking gathers existing data on environmental *hazards*, such as radon and outdoor air pollution, along with data on their related *health* problems and analyzes it for geographic patterns, trends over time and associations.

Minnesota Public Health Data Access provides public health data on over 20 topic areas accessible to everyone through a web-based data portal. This product of the Minnesota Environmental Public Health Tracking program provides efficient, user-friendly and innovative access to data, saving state resources.

Since 2009, a federal cooperative agreement award has supported Minnesota's Tracking Program and the Minnesota Public Health Data Access portal as part of the National Tracking Network at the U.S. Centers of Diseases Control and Prevention (CDC).

Environmental Health Tracking & Biomonitoring Advisory Panel

Minnesota Statute 144.995-998 directed the Minnesota Department of Health (MDH) to establish the Environmental Health Tracking and Biomonitoring Advisory Panel to guide the Department's implementation of the program. Members representing key stakeholder groups, with a background in public health or related sciences, provide important guidance to the Commissioner of Health on program decisions. The panel advises the Commissioner and staff on the selection of chemicals and communities for ongoing biomonitoring, as well as data and topics for environmental public health tracking. They review project plans, progress, results, data interpretation and results communication.

The Environmental Health Tracking and Biomonitoring (EHTB) Advisory Panel meets regularly, 3-4 times each year, and meetings are open to the public. Agendas, notes and members' contact information are posted on the MDH website. A current roster of the EHTB Advisory Panel and the complete statute can be found in the appendices of this report.

Advisory Panel Highlights (2015-2017):

East Metro PFC Biomonitoring

- Reviewed ongoing University of Minnesota research into perfluorochemical (PFC) soil contamination and uptake in farm produce, and the potential for exposure to Hmong farmers. Supported ongoing engagement with the community to resolve concerns.
- Advised on analyses for comparing homeowners' and renters' exposure to PFCs.
- Advised on cancer risk messaging and state cancer registry analyses in the East Metro.

Mercury, Lead and Cadmium in Newborns and Pregnant Women

- Advised on strategies for recruiting pregnant women in diverse communities, including Hmong, Somali and Latina families.
- Reviewed early results and supported comparison of blood spots to cord blood levels.
- Advised on follow-up of elevated cases and communication.

Rural initiatives

- In response to a community request for biomonitoring, recommended that MDH do foundational work to gather available data on pesticide exposure, health concerns and feasibility of a project in the Central Sands region.
- Reviewed statewide private well sampling data from the Department of Agriculture for nitrates, manganese and pesticides.

Tracking

- Guided the development of new traffic hazard data and measures, and new drinking water quality data and measures; discussed ways to enhance online data on public water quality.
- Advised on the interpretation and communication of a report on impacts of air pollution reduction strategies for improving public health and reducing health disparities.

“Since it began 10 years ago, the MDH Environmental Health Tracking and Biomonitoring Program has been very successful in gathering data on environmental hazards, chemicals in people and chronic diseases in Minnesota, and in sharing this information with the public. But, the work is not done! This program will continue to help policy makers, citizens and communities make decisions that best protect public health in Minnesota, now and for future generations.”

*Pat McGovern, Advisory Panel Member
University of Minnesota*

“This coordinated approach to environmental health builds the support and evidence needed to protect the health of Minnesotans for the prevention and control of chronic disease.”

*Jill Heins Nesvold, Advisory Panel Member
American Lung Association of Minnesota*

Minnesota Biomonitoring

CHEMICALS IN PEOPLE

Reducing chemical exposures and addressing health equity

We are all exposed to chemicals in our air, water, food and consumer products. Some can be harmful to our health. Biomonitoring tells us about people's exposure to chemicals by measuring them in blood or urine. At MDH, we use biomonitoring data to:

- Measure and track changes in chemical exposures over time.
- Identify disparities in communities that are highly exposed.
- Inform and evaluate programs and policies to reduce exposures.

MN FEET study: measuring metals in women and babies

Mercury, lead and cadmium can be harmful to babies' health. An estimated 6,000 Minnesota children born each year are potentially impacted by elevated mercury exposure. MN FEET (Minnesota Family Environmental Exposure Tracking) at MDH is measuring these chemicals in Twin Cities women and babies.

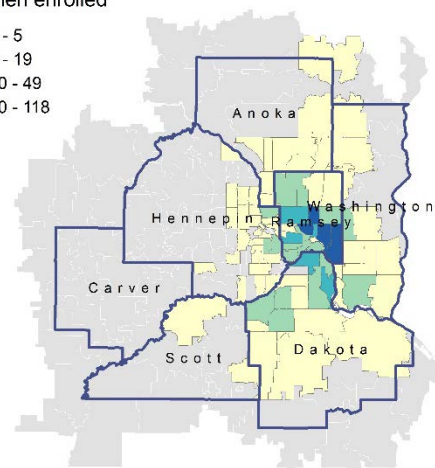
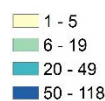
MN FEET is open to pregnant Asian, East African, Latina and White women. The study is finding differences in chemical levels between these groups and helping us learn how families can best protect their babies.

All participants receive their test results and information on reducing exposure.

Ongoing recruitment & follow-up

- **742 women** enrolled in 2nd trimester and completed phone survey.

Women enrolled



- **534 women** consented to have cord blood and urine collected at their babies' birth. Due to time lag between steps, this number will grow.
- **337 women** gave birth so far and had samples collected. Due dates go through August 2017.
- **15 participants had elevated results.**

Those with elevated results receive additional follow-up, including a home visit when needed. Elevated mercury cases are often linked to eating fish or use of skin creams that contain mercury during pregnancy.

Community engagement is key

MDH works with the HealthPartners Institute and SoLaHmo, a community-based research arm of West Side Community Health Services. St. Paul-Ramsey County Public Health, the

East Africa Health Project and others help to raise awareness about the study.

East Metro PFC Biomonitoring: tracking blood PFC levels

Since 2008, MDH has tracked blood levels of perfluorochemicals (PFCs) in people who live in the East Metro. PFCs have been used for many years to make products that resist stains, grease, water and heat.

Some East Metro drinking water sources were found to be polluted with PFCs in the early 2000s. A public health intervention, including installing filtration systems for polluted public and private wells, reduced PFCs in drinking water to below health-based limits.

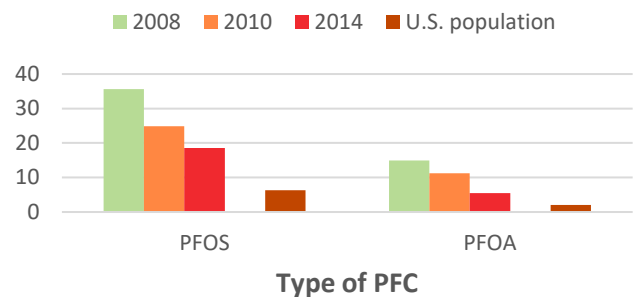
The East Metro PFC biomonitoring projects have been planned with input from the Environmental Health Tracking and Biomonitoring Advisory Panel.

Results show that efforts to reduce PFCs in water worked

- PFC blood levels are going down in 149 long-term residents of Oakdale, Lake Elmo and Cottage Grove. They were exposed to PFCs in drinking water before the public health interventions in 2006.
- PFC blood levels in 156 newer residents are similar to average U.S. population levels. They moved to Oakdale after the intervention.
- We did not see differences in PFC blood levels between people who rent v. own their homes, or between people of different income levels. Some PFCs were higher in non-Hispanic White people compared to other groups.

i The Economic Burden of the Environment on Children's Disease: The Cost of Prenatal Mercury Exposure in Minnesota. MDH, 2015.

Declining blood PFC levels in long-term East Metro residentsⁱⁱ



Addressing concerns: PFCs & health

Staff is working on outreach in the Hmong farming community to explore concerns about PFC exposure. We also monitor the scientific literature and address questions about PFCs and health. And, we are working to publish results from the PFC biomonitoring projects in a scientific journal.

Protecting future generations

The ongoing work of MN Biomonitoring will track chemical exposures in those most vulnerable: pregnant women, children and disadvantaged communities. This work will produce data to inform decisions and evaluate actions for protecting future generations and for advancing health equity.

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ii Levels shown are geometric means in µg PFC per L blood. U.S. population levels are from the 2011-12 National Health and Nutrition Examination Survey.

Environmental Public Health Tracking

DATA-DRIVEN APPROACHES TO UNDERSTAND ENVIRONMENTAL
IMPACTS ON THE HEALTH OF MINNESOTA COMMUNITIES

From Data to Action: Highlights from 2015 to 2016 Collaborations

Tracking health impacts of air pollution

MN Tracking and the Minnesota Pollution Control Agency (MPCA) released Life and Breath, our joint report on local health effects of fine particulate and ozone pollution across the Twin Cities. Even though air quality in Minnesota generally meets Federal standards, results show that air pollution causes significant health problems, even premature death. Our analysis also shows that addressing underlying inequities in chronic lung and heart diseases will reduce the health impacts of air pollution for all Minnesotans.

Supporting tribal environmental epidemiology capacity

MN Tracking collaborates with the Great Lakes Inter-Tribal Epidemiology Center and Fond du Lac Band of Lake Superior Chippewa on developing healthy homes indicators to track carbon monoxide poisonings, radon, private well arsenic and asthma hospitalization rates – a priority environmental health concern for tribal communities. Data will support prevention efforts.

Promoting health in all policies

MN Tracking supported state and local health impact assessments on transportation and climate adaptation plans through custom data requests, analysis and epidemiology expertise. City and state planners use health data to assess baseline status and disparities to prioritize resources and provide information for planning decisions.

Tracking impacts of disasters

MN Tracking continues to work with MDH's Emergency Preparedness & Response Section to build capacity for long-term health follow-up after chemical or radiological disasters. MN Tracking designed an online survey platform to identify at-risk populations and facilitate future health studies. MN Tracking coordinates planning for time-sensitive data collection with diverse stakeholders, including Minnesota Poison Control System, University of Minnesota, American Red Cross and MPCA. As a result, Minnesota is better prepared to answer critical public health questions about long-term health effects of disasters.

Who we are

Since 2007, Minnesota’s Environmental Public Health Tracking program (MN Tracking) collects and integrates environmental monitoring and public health data for our partners, providing a critical link for understanding environmental hazards and their impact on the health of Minnesota communities.

Key stakeholders:

- State and local agencies
- Healthcare systems
- Policy makers
- Academia
- Nongovernmental organizations
- Business & Industry
- Media
- General public

What we do

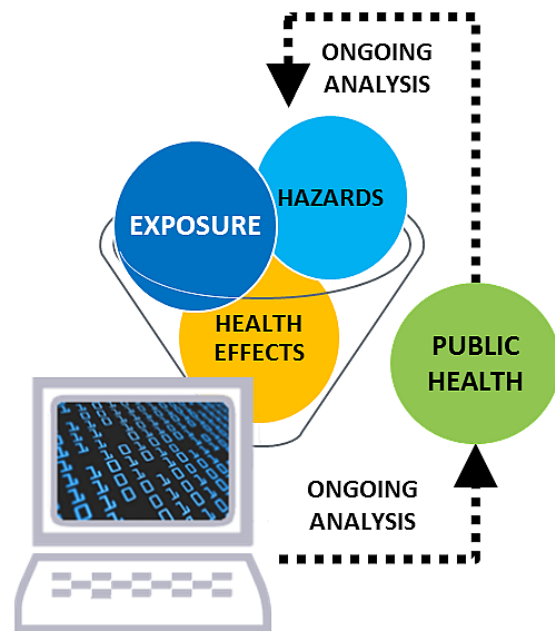
Advancing health equity

MN Tracking epidemiologists work to understand health disparities and inequities across Minnesota communities.

Environmental health analyses can identify at-risk populations for targeted outreach and planning.

Building workforce capacity

MN Tracking works to ensure that Minnesota’s public health work force has the data and tools to address critical environmental public health questions. MN Tracking trains local public health, students, legislators, the media and others. We build capacity for using data to inform actions that improve public health.



Scientific advisory panel

MN Tracking and Biomonitoring programs convene regular meetings of an external advisory panel to guide these programs in the selection of communities, chemicals and disease outcomes. Panel members provide guidance to the Commissioner of Health on related program decisions.

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Public Health Data Access Portal

ONLINE ACCESS TO MINNESOTA ENVIRONMENTAL PUBLIC HEALTH DATA & TRENDS

Hazard, exposure & health data

The MN Public Health Data Access portal – www.health.mn.gov/mndata – provides information on over 20 environment and health topics. The portal provides an efficient system for sharing data all in one place, avoiding costs of creating and maintaining multiple data access systems and reduces staff time responding to data requests.

Features of the portal include interactive data and maps, county profiles, analysis of trends and disparities, and downloadable data.

Public data for public health

Public access to environmental hazard, exposure and health data is critical to improve the health of all Minnesotans. Portal data are used to:

- Help people and communities make healthy choices;
- Compare environmental health trends over time and across Minnesota communities; and
- Track and evaluate the effectiveness of public health programs and policies.

The Environmental Public Health Tracking team works closely with local health departments, communities, academic institutions and many state partners to collaborate on developing, reporting and using data.

In 2015-16, portal data facilitated research studies, public health surveillance, grant applications and health impact assessments in Minnesota.

Topic	Charts	Maps	Query	County
Air quality	●		●	●
Asthma	●	●	●	●
Birth defects	●			
Cancer	●	●	●	●
Carbon monoxide poisoning	●		●	●
Chemicals in people: biomonitoring	●			
<i>Childhood lead exposure</i>	●	●	●	●
COPD	●	●	●	●
Developmental disabilities	●			
<i>Diabetes</i>	●			
<i>Drinking water quality</i>	●	●	●	●
Environmental tobacco smoke	●			
<i>Health insurance</i>	●	●	●	●
Heart attacks	●		●	●
<i>Heat-related illness</i>	●	●		●
Immunizations	●	●		●
<i>Lyme disease</i>	●	●		
Obesity	●	●		
<i>Oral health</i>	●	●	●	●
Pesticide poisonings	●			
Poverty & income	●	●	●	●
<i>Reproductive & birth outcomes</i>	●	●	●	●
<i>Radon</i>	●	●		●
Smoking	●			

Topics in bold italics added 2015-2016.

Portal Enhancements & Outreach – Highlights from 2015-16

- **Childhood lead exposure** data using the new reference level of 5 mcg/dL show that in 2015, about 1 percent of children under age six had elevated blood lead level.

- To identify user interface enhancements, MN Tracking conducted portal **usability testing** in 2016.

Technology upgrades improve data access, increase efficiency of data sharing, and save financial resources and staff time-on-task.

- New **Lyme disease data** indicate a growing public health threat. The range of Lyme disease is expanding.

Minnesota is one of the first states to display county-level Lyme disease cases.

- The connections between diabetes, income and employment are shown in the new statewide data on **diabetes disparities**. Diabetes prevalence in MN is at an all-time high.

Understanding population risk factors is critical for prevention programs.

- New **childhood immunization maps** show coverage rates across Minnesota counties and school districts. While vaccination rates remain high, we still have not met the Healthy People 2020 goal of 95 percent coverage for kindergartners.

Interactive maps can help target immunization resources.

- **Drinking water quality** data is now available for individual water systems. New maps and an interactive query tool provide quick and customized information on multiple contaminants in surface and ground water.

Promoting public health action: radon risks and home testing in MN

Radon is a serious public health issue in MN, and the second leading cause of lung cancer in Minnesota after tobacco use. Seventy-eight percent of counties have average radon levels in the highest category.



In 2016, MN Tracking and Indoor Air Programs developed new measures for tracking radon levels and testing rates in Minnesota.

The project was innovative. The team carefully analyzed radon test results from eight private Minnesota radon labs to provide county information while protecting privacy.

Public health action through public outreach

- *Radon test kit orders doubled during the outreach in July and August 2016.*
- *Broad public outreach achieved using partner collaboration, social and traditional media.*

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Appendix 1 – Environmental Health Tracking and Biomonitoring Statute

144.995 Definitions; Environmental Health Tracking and Biomonitoring

(a) For purposes of sections 144.995 to 144.998, the terms in this section have the meanings given.

(b) "Advisory panel" means the Environmental Health Tracking and Biomonitoring Advisory Panel established under section 144.998.

(c) "Biomonitoring" means the process by which chemicals and their metabolites are identified and measured within a biospecimen.

(d) "Biospecimen" means a sample of human fluid, serum, or tissue that is reasonably available as a medium to measure the presence and concentration of chemicals or their metabolites in a human body.

(e) "Commissioner" means the commissioner of the Department of Health.

(f) "Community" means geographically or nongeographically based populations that may participate in the biomonitoring program. A "nongeographical community" includes, but is not limited to, populations that may share a common chemical exposure through similar occupations, populations experiencing a common health outcome that may be linked to chemical exposures, populations that may experience similar chemical exposures because of comparable consumption, lifestyle, product use, and subpopulations that share ethnicity, age, or gender.

(g) "Department" means the Department of Health.

(h) "Designated chemicals" means those chemicals that are known to, or strongly suspected of, adversely impacting human health or development, based upon scientific, peer-reviewed animal, human, or in vitro studies, and baseline human exposure data, and consists of chemical families or metabolites that are included in the federal Centers for Disease Control and Prevention studies that are known collectively as the National Reports on Human Exposure to Environmental Chemicals Program and any substances specified by the commissioner after receiving recommendations under section 144.998, subdivision 3, clause (6).

(i) "Environmental hazard" means a chemical or other substance for which scientific, peer-reviewed studies of humans, animals, or cells have demonstrated that the chemical is known or reasonably anticipated to adversely impact human health.

(j) "Environmental health tracking" means collection, integration, analysis, and dissemination of data on human exposures to chemicals in the environment and on diseases potentially caused or aggravated by those chemicals.

144.996 Environmental Health Tracking; Biomonitoring.

Subdivision 1. **Environmental health tracking.** In cooperation with the commissioner of the Pollution Control Agency, the commissioner shall establish an environmental health

tracking program to:

- (1) coordinate data collection with the Pollution Control Agency, Department of Agriculture, University of Minnesota, and any other relevant state agency and work to promote the sharing of and access to health and environmental databases to develop an environmental health tracking system for Minnesota, consistent with applicable data practices laws;
- (2) facilitate the dissemination of aggregate public health tracking data to the public and researchers in accessible format;
- (3) develop a strategic plan that includes a mission statement, the identification of core priorities for research and epidemiologic surveillance, and the identification of internal and external stakeholders, and a work plan describing future program development and addressing issues having to do with compatibility with the Centers for Disease Control and Prevention's National Environmental Public Health Tracking Program;
- (4) develop written data sharing agreements as needed with the Pollution Control Agency, Department of Agriculture, and other relevant state agencies and organizations, and develop additional procedures as needed to protect individual privacy;
- (5) organize, analyze, and interpret available data, in order to:
 - (i) characterize statewide and localized trends and geographic patterns of population-based measures of chronic diseases including, but not limited to, cancer, respiratory diseases, reproductive problems, birth defects, neurologic diseases, and developmental disorders;
 - (ii) characterize statewide and localized trends and geographic patterns in the occurrence of environmental hazards and exposures;
 - (iii) assess the feasibility of integrating disease rate data with indicators of exposure to the selected environmental hazards such as biomonitoring data, and other health and environmental data;
 - (iv) incorporate newly collected and existing health tracking and biomonitoring data into efforts to identify communities with elevated rates of chronic disease, higher likelihood of exposure to environmental hazards, or both;
 - (v) analyze occurrence of environmental hazards, exposures, and diseases with relation to socioeconomic status, race, and ethnicity;
 - (vi) develop and implement targeted plans to conduct more intensive health tracking and biomonitoring among communities; and
 - (vii) work with the Pollution Control Agency, the Department of Agriculture, and other relevant state agency personnel and organizations to develop, implement, and evaluate preventive measures to reduce elevated rates of diseases and exposures identified through activities performed under sections 144.995 to 144.998; and
- (6) submit a biennial report to the chairs and ranking members of the committees with jurisdiction over environment and health by January 15, beginning January 15, 2009, on the status of environmental health tracking activities and related research programs, with recommendations for a comprehensive environmental public health tracking program.

Subd. 2. **Biomonitoring.** The commissioner shall:

- (1) conduct biomonitoring of communities on a voluntary basis by collecting and analyzing biospecimens, as appropriate, to assess environmental exposures to designated chemicals;

(2) conduct biomonitoring of pregnant women and minors on a voluntary basis, when scientifically appropriate;

(3) communicate findings to the public, and plan ensuing stages of biomonitoring and disease tracking work to further develop and refine the integrated analysis;

(4) share analytical results with the advisory panel and work with the panel to interpret results, communicate findings to the public, and plan ensuing stages of biomonitoring work; and

(5) submit a biennial report to the chairs and ranking members of the committees with jurisdiction over environment and health by January 15, beginning January 15, 2009, on the status of the biomonitoring program and any recommendations for improvement.

Subd. 3. **Health data.** Data collected under the biomonitoring program are health data under section 13.3805.

144.997 Biomonitoring Pilot Program.

Subdivision 1. **Pilot program.** With advice from the advisory panel, and after the program guidelines in subdivision 4 are developed, the commissioner shall implement a biomonitoring pilot program. The program shall collect one biospecimen from each of the voluntary participants. The biospecimen selected must be the biospecimen that most accurately represents body concentration of the chemical of interest. Each biospecimen from the voluntary participants must be analyzed for one type or class of related chemicals. The commissioner shall determine the chemical or class of chemicals to which community members were most likely exposed. The program shall collect and assess biospecimens in accordance with the following:

(1) 30 voluntary participants from each of three communities that the commissioner identifies as likely to have been exposed to a designated chemical;

(2) 100 voluntary participants from each of two communities:

(i) that the commissioner identifies as likely to have been exposed to arsenic; and (ii) that the commissioner identifies as likely to have been exposed to mercury; and

(3) 100 voluntary participants from each of two communities that the commissioner identifies as likely to have been exposed to perfluorinated chemicals, including perfluorobutanoic acid.

Subd. 2. **Base program.** (a) By January 15, 2008, the commissioner shall submit a report on the results of the biomonitoring pilot program to the chairs and ranking members of the committees with jurisdiction over health and environment.

(b) Following the conclusion of the pilot program, the commissioner shall:

(1) work with the advisory panel to assess the usefulness of continuing biomonitoring among members of communities assessed during the pilot program and to identify other communities and other designated chemicals to be assessed via biomonitoring;

(2) work with the advisory panel to assess the pilot program, including but not limited to the validity and accuracy of the analytical measurements and adequacy of the guidelines and protocols;

(3) communicate the results of the pilot program to the public; and
 (4) after consideration of the findings and recommendations in clauses (1) and (2), and within the appropriations available, develop and implement a base program.

Subd. 3. Participation. (a) Participation in the biomonitoring program by providing biospecimens is voluntary and requires written, informed consent. Minors may participate in the program if a written consent is signed by the minor's parent or legal guardian. The written consent must include the information required to be provided under this subdivision to all voluntary participants.

(b) All participants shall be evaluated for the presence of the designated chemical of interest as a component of the biomonitoring process. Participants shall be provided with information and fact sheets about the program's activities and its findings. Individual participants shall, if requested, receive their complete results. Any results provided to participants shall be subject to the Department of Health Institutional Review Board protocols and guidelines. When either physiological or chemical data obtained from a participant indicate a significant known health risk, program staff experienced in communicating biomonitoring results shall consult with the individual and recommend follow-up steps, as appropriate. Program administrators shall receive training in administering the program in an ethical, culturally sensitive, participatory, and community-based manner.

Subd. 4. Program guidelines. (a) The commissioner, in consultation with the advisory panel, shall develop:

(1) protocols or program guidelines that address the science and practice of biomonitoring to be utilized and procedures for changing those protocols to incorporate new and more accurate or efficient technologies as they become available. The commissioner and the advisory panel shall be guided by protocols and guidelines developed by the Centers for Disease Control and Prevention and the National Biomonitoring Program;

(2) guidelines for ensuring the privacy of information; informed consent; follow-up counseling and support; and communicating findings to participants, communities, and the general public. The informed consent used for the program must meet the informed consent protocols developed by the National Institutes of Health;

(3) educational and outreach materials that are culturally appropriate for dissemination to program participants and communities. Priority shall be given to the development of materials specifically designed to ensure that parents are informed about all of the benefits of breastfeeding so that the program does not result in an unjustified fear of toxins in breast milk, which might inadvertently lead parents to avoid breastfeeding. The materials shall communicate relevant scientific findings; data on the accumulation of pollutants to community health; and the required responses by local, state, and other governmental entities in regulating toxicant exposures;

(4) a training program that is culturally sensitive specifically for health care providers, health educators, and other program administrators;

(5) a designation process for state and private laboratories that are qualified to analyze biospecimens and report the findings; and

(6) a method for informing affected communities and local governments representing

those communities concerning biomonitoring activities and for receiving comments from citizens concerning those activities.

(b) The commissioner may enter into contractual agreements with health clinics, community-based organizations, or experts in a particular field to perform any of the activities described under this section.

144.998 Environmental Health Tracking and Biomonitoring Advisory Panel.

Subdivision 1. **Creation.** The commissioner shall establish the Environmental Health Tracking and Biomonitoring Advisory Panel. The commissioner shall appoint, from the panel's membership, a chair. The panel shall meet as often as it deems necessary but, at a minimum, on a quarterly basis. Members of the panel shall serve without compensation but shall be reimbursed for travel and other necessary expenses incurred through performance of their duties. Members appointed by the commissioner are appointed for a three-year term and may be reappointed. Legislative appointees serve at the pleasure of the appointing authority.

Subd. 2. **Members.** (a) The commissioner shall appoint eight members, none of whom may be lobbyists registered under chapter 10A, who have backgrounds or training in designing, implementing, and interpreting health tracking and biomonitoring studies or in related fields of science, including epidemiology, biostatistics, environmental health, laboratory sciences, occupational health, industrial hygiene, toxicology, and public health, including:

(1) at least two scientists representative of each of the following:

(i) nongovernmental organizations with a focus on environmental health, environmental justice, children's health, or on specific chronic diseases; and

(ii) statewide business organizations; and

(2) at least one scientist who is a representative of the University of Minnesota.

(b) Two citizen panel members meeting the scientific qualifications in paragraph (a) shall be appointed, one by the speaker of the house and one by the senate majority leader.

(c) In addition, one representative each shall be appointed by the commissioners of the Pollution Control Agency and the Department of Agriculture, and by the commissioner of health to represent the department's Health Promotion and Chronic Disease Division.

Subd. 3. **Duties.** The advisory panel shall make recommendations to the commissioner and the legislature on:

(1) priorities for health tracking;

(2) priorities for biomonitoring that are based on sound science and practice, and that will advance the state of public health in Minnesota;

(3) specific chronic diseases to study under the environmental health tracking system;

(4) specific environmental hazard exposures to study under the environmental health tracking system, with the agreement of at least nine of the advisory panel members;

(5) specific communities and geographic areas on which to focus environmental health tracking and biomonitoring efforts;

(6) specific chemicals to study under the biomonitoring program, with the agreement of

at least nine of the advisory panel members; in making these recommendations, the panel may consider the following criteria:

- (i) the degree of potential exposure to the public or specific subgroups, including, but not limited to, occupational;
- (ii) the likelihood of a chemical being a carcinogen or toxicant based on peer-reviewed health data, the chemical structure, or the toxicology of chemically related compounds;
- (iii) the limits of laboratory detection for the chemical, including the ability to detect the chemical at low enough levels that could be expected in the general population;
- (iv) exposure or potential exposure to the public or specific subgroups;
- (v) the known or suspected health effects resulting from the same level of exposure based on peer-reviewed scientific studies;
- (vi) the need to assess the efficacy of public health actions to reduce exposure to a chemical;
- (vii) the availability of a biomonitoring analytical method with adequate accuracy, precision, sensitivity, specificity, and speed;
- (viii) the availability of adequate biospecimen samples; or
- (ix) other criteria that the panel may agree to; and
- (7) other aspects of the design, implementation, and evaluation of the environmental health tracking and biomonitoring system, including, but not limited to:
 - (i) identifying possible community partners and sources of additional public or private funding;
 - (ii) developing outreach and educational methods and materials; and
 - (iii) disseminating environmental health tracking and biomonitoring findings to the public.

Subd. 4. Liability. No member of the panel shall be held civilly or criminally liable for an act or omission by that person if the act or omission was in good faith and within the scope of the member's responsibilities under sections 144.995 to 144.998.

Information Sharing

On or before August 1, 2007, the commissioner of health, the Pollution Control Agency, and the University of Minnesota are requested to jointly develop and sign a memorandum of understanding declaring their intent to share new and existing environmental hazard, exposure, and health outcome data, within applicable data privacy laws, and to cooperate and communicate effectively to ensure sufficient clarity and understanding of the data by divisions and offices within both departments. The signed memorandum of understanding shall be reported to the chairs and ranking members of the senate and house of representatives committees having jurisdiction over judiciary, environment, and health and human services.

Effective date: July 1, 2007

This document contains Minnesota Statutes, sections 144.995 to 144.998, as these sections were adopted in Minnesota Session Laws 2007, chapter 57, article 1, sections 143 to 146. The appropriation related to these statutes is in chapter 57, article 1, section 3, subdivision 4. The paragraph about information sharing is in chapter 57, article 1, section 169.

Appendix 2 - Environmental Health Tracking and Biomonitoring Advisory Panel Roster

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