Minnesota Department of Health Environmental Health Tracking and Biomonitoring Advisory Panel Meeting

OCTOBER 11, 2022

1:00 P.M. – 3:00 P.M.

Via Microsoft Teams

Minnesota Department of Health
Environmental Health Tracking and Biomonitoring
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Contents

Agenda Overview
DATE: 10/11/2022

Welcome & Agenda

1:00 p.m.

Chair Lisa Yost will welcome attendees to the meeting. Panel members are invited to introduce themselves, and we welcome new member Sona Psarska. Lisa will give an agenda overview.

Healthy Kids Minnesota: Updates and looking ahead

1:10 p.m.

MDH Epidemiologist Sheila Amenumey will give an update on partnerships and recruitment progress for Healthy Kids Minnesota 2022 and look ahead to planning for Healthy Kids Minnesota 2023. Panel members are invited to ask questions.

1:25 p.m. Discussion

Questions for the Panel

- Are there any modifications we should consider as we begin implementation of Healthy Kids Minnesota 2022 and planning for 2023?
- Do you have feedback on or suggested contacts for our proposed Healthy Kids Minnesota 2023 regions?

Feedback on results return from Healthy Kids Minnesota families

1:40 p.m.

MDH Program Director Jessica Nelson and Minneapolis Public Schools Early Childhood Screening staff Iftu Hunte and Suad Salad will report on interviews with Minneapolis participants' families about their experiences receiving their child's biomonitoring results. Panel members are invited to ask questions.

2:00 p.m. Discussion

Questions for the Panel

- What are your recommendations for moving forward with this important work?
- Given limited resources, what are the most effective approaches for continuing to get participant feedback and incorporating it into improved results return materials?

Water Gremlin: MDH role and perspective

2:30 p.m.

Stephanie Yendell, Supervisor, Health Risk Intervention Unit in MDH Environmental Health division, will discuss coordinated action by state and local agencies to curb lead exposure among children of workers at Water Gremlin Co., which produces lead fishing sinkers and battery terminals. Panel members are invited to ask questions.

Public Comments, Audience Questions, New Business

2:55 p.m.

Motion to Adjourn

3:00 p.m.

Healthy Kids Minnesota Program Updates

Background/Update

Healthy Kids Minnesota is a U.S. Centers for Disease Control and Prevention (CDC) funded program partnering with Early Childhood Screening (ECS) programs at local public health agencies and school districts to recruit preschool-age children for environmental chemical exposure screening. The 5-year program will rotate in five regions in the state (see map), focusing on one non-Metro and one Metro region per year. Our goal is to reach 250 – 300 children per community in each program cycle.

The first program cycle – Healthy Kids Minnesota 2021 – included Southeast Minnesota and Minneapolis. A total of 453 children were recruited with urine samples collected from August 2021 to March 2022. The MDH Public Health Lab (PHL) has completed all metals analyses for these urine samples and the first of three results mailings has been sent to families.

See the sections below (Feedback on Results Return from Healthy Kids Minnesota Families and Healthy Kids Minnesota Laboratory Update) for more updates on results return and laboratory analysis.

The second program cycle – Healthy Kids Minnesota 2022 – launched in August 2022 and includes Northeast Minnesota and St. Paul (see map).

Healthy Kids Minnesota 2022 Updates

Healthy Kids Minnesota 2022 financial contracts have been or are in the process of being established with the following partners:

- St. Paul Public Schools
- Cook County Public Schools/Cook County Public Health and Human Services
- Cloquet Public Schools/Carlton County Public Health and Human Services
- Duluth Public Schools/St. Louis County Public Health and Human Services
- Bois Forte Band of Chippewa Health and Human Services

Table 1 describes where each partner stands in the partnership process.

Table 1: Healthy Kids Minnesota 2022 Partnership Progress

HKMN 2022 Partners	Financial Contract	Staff Trained	Target number	Recruitment Started	Total Number Recruited/Samples
Cloquet Public Schools/Carlton County	Complete	Yes	60	Yes	35/33
Cook County Public Schools/Cook County	Complete	Yes	40	Yes	None
St. Paul Public Schools	Submitted	No	300	No	None
Duluth Public Schools/St. Louis County	In Progress	No	150	No	None
Bois Forte Band of Chippewa Health and Human Services	Submitted	No	40	No	None

Trainings are conducted by MDH Biomonitoring staff and include all aspects of the recruitment process and study logistics, including the informed consent process, survey administration, data privacy, data entry, and sample collection and storage.

Changes to Protocol and Eligibility Criteria

Changes have been made to the implementation of Healthy Kids Minnesota 2022 to maximize recruitment efforts and volume of urine collected. As discussed at the June Advisory Panel meeting, 33% of the samples collected had low urine volume during Healthy Kids Minnesota 2021 compared to the 2018 pilot project. To address this issue, a sentence has been added in the information sheet our partners mail or email to families before their scheduled ECS appointment. In staff training, we emphasized the importance of the quantity of urine collected and IRB approval that allowed the staff to collect the urine sample before the full consent is completed if the child must use the bathroom.

Additionally, changes have been made to our eligibility criteria based on the discussions at the June Advisory Panel meeting.

1) In 2021, a child was ineligible if they were not potty trained. This criterion prevented some families from participating. In 2022, this eligibility was revised to include kids who are not potty trained but can use the urine hat. Only kids who cannot use the urine hat were ineligible.
2) In 2021, kids were ineligible if a sibling had already participated. This criterion now includes all siblings who are within the 3-6 year age group and are also scheduled for ECS screening.

Free Private Well Testing

Free private well testing is again available to families in in the Northeast region. We are grateful for the continuing partnership with Olmsted County's Southeastern Minnesota Water Analysis Laboratory (SEMWAL) and funding from MDH Environmental Health. The free private well testing kits are offered to any family approached to participate in Healthy Kids in the Northeast region. So far, seven families from Carlton County have received free well water test kits. We are incorporating follow-up phone calls to remind families to return the well kits.

Continuous Quality Improvement

Using REDCap, feedback surveys, and virtual check-in meetings with partners, MN Biomonitoring staff will continue to collect program quality indicators to assess and track recruitment and sample collection progress. The process during Healthy Kids Minnesota 2021 implementation allowed us to identify areas where process and quality improvements were needed.

We used the lessons learned and feedback from Advisory Panel members at the June 2022 meeting to improve the quality of recruitment and sample collection protocols.

Focus regions for Healthy Kids Minnesota 2023

The third program cycle will rotate to Central Minnesota (a 14-county region including the St Cloud area) and the West/Southwest Metro (a region of 18 school districts including Bloomington, Minnetonka, and St. Louis Park). Staff will start reaching out to potential partners in these areas this winter. Regions were selected based on MDH staff capacity and alignment with related agency initiatives.

Questions for Advisory Panel

- Are there any modifications we should consider as we begin implementation of Healthy Kids Minnesota 2022 and planning for 2023?
- Do you have feedback on or suggested contacts for our proposed Healthy Kids Minnesota 2023 regions?

Feedback on Results Return from Healthy Kids Minnesota Families

Background

A key question that MDH and other state biomonitoring programs are considering is how best to share individual results with biomonitoring participants in an accessible, informative way. This is challenging with the amount of technical information being presented. Of particular importance is making the materials accessible for participants who speak languages other than English and who have a range of educational and health literacy backgrounds.

Healthy Kids Minnesota results are sent to parents/caregivers in three mailings separated by chemical groups: metals; environmental phenols and pesticides; and phthalates, flame retardants, and air pollution markers (polycyclic aromatic hydrocarbons, or PAHs). The first mailing was sent in July 2022 and included results for the 12 metals.

The results packet was translated into Hmong, Somali, and Spanish. The English language example can be found on page 17, including:

- Cover letter
- Table of their child's urine results, including comparison values to the overall participant average and 95th percentile
- Information sheet describing each metal, common exposure sources, and ways to reduce exposure. The sheet included a link and QR code to an MDH web site with additional information and resources, including private well testing.

MDH contracted with Minneapolis Public Schools (MPS) to follow up with participant parents/caregivers to gather feedback about their experience receiving their child's metals results and with the program more generally. In August 2022, MPS multicultural staff conducted structured telephone interviews with a sub-set of Minneapolis families. Families who spoke languages other than English were prioritized. Calls were conducted in multiple languages.

Methods

Families who participated in Healthy Kids Minnesota at an MPS site and answered yes to a question about whether we could re-contact them to obtain feedback on the program were eligible for a phone interview. Of the 299 children who gave samples at an MPS site, 195 families (65%) consented to be re-contacted.

To select a sub-set of families to contact, we used non-probability purposive sampling of eligible families. This sampling design was chosen to ensure we interviewed families who spoke languages other than English, families reporting a range of demographic characteristics, and a varied distribution of biomonitoring results.

From the pool of 195 eligible families, we selected 64 to contact. We prioritized calling families in the following groups:

- Call all families who received results materials in languages other than English: Spanish, Somali, or Hmong (n=20).
- Call all families who spoke a language other than English in their interview but received the mailing in English (n=3). Other languages among interview participants included Oromo, Igbo, Vietnamese.
- Call all families who identified their child as American Indian/Alaskan Native (AIAN)/Native Hawaiian/Pacific Islander (NHPI) due to low representation (n=6).
- Additional families to interview were selected to balance ethnicity, caregiver's level of education, household income, and whether the child's results for two index metals (arsenic and manganese) were above or below the average and 95th percentile.

Families were called by MPS staff using their preferred language whenever possible. At least three call attempts were made, and all attempts and responses were documented in a secure REDCap database. Families could request that the packet be re-sent to them and to be contacted by MDH staff with questions about their child's results. The interview included a mix of quantitative and open-ended questions. Families who participated in the phone call received a $15 gift card to thank them for their time.

Preliminary Results

Here we share a preliminary summary of answers to a handful of interview questions. We will present more information at the October Advisory Panel meeting.

Families interviewed

Of the 64 families on the call list, 37 (58%) were successfully interviewed. Table 1 shows demographic information for families selected to be interviewed compared to those interviewed and those not interviewed. Of the 27 families not interviewed, none were refusals over the phone. All were marked as unable to interview due to maximum call attempts or an incorrect phone number.

Table 2. Feedback interview population

	Selected for interview	Interviewed (number)	Interviewed (percent)	Not interviewed (number)	Not interviewed (percent)
Overall (total)	**64**	**37**	**58%**	**27**	**42%**
Language: English	**41**	23	62%	18	67%
Language: Spanish	**11**	8	22%	3	11%
Language: Somali	**7**	3	8%	4	15%

Language: Hmong	**2**	1	3%	1	4%
Language: Other	**3**	2	5%	1	4%
Caregiver's education: High school or less	**19**	13	35%	6	22%
Caregiver's education: At least some college	**22**	11	30%	11	41%
Caregiver's education: Advanced degree	**21**	11	30%	10	37%
Caregiver's education: Don't know or refused	**2**	2	5%	0	0%

Families' experiences with results materials

Tables 3-7 show responses to interview questions about the family's experience receiving their child's results for the total group and separately by preferred language (English v. non-English) and caregiver's education level.

All families contacted said they read at least some of the packet (Table 3), though 12 families (32%) requested that the information be re-sent to them because they had missed it/not received it the first time. Families with a non-English preferred language were less likely to have read the full packet, whereas families whose caregiver's education included an advanced degree were more likely to have read the full packet.

Table 3. How did you interact with the packet?

Response to: "Which option best represents how you interacted with the packet?"	Total sample count (percent)	Preferred language: English count (percent)	Preferred language: non-English count (percent)	Caregiver education: high school or less count (percent)	Caregiver education: college or some college count (percent)	Caregiver education: advanced degree count (percent)
I did not read the packet	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
I read some of it	15 (41%)	8 (35%)	7 (50%)	5 (38%)	6 (55%)	3 (27%)
I read all of it	21 (57%)	15 (65%)	6 (43%)	6 (46%)	5 (45%)	8 (73%)
Blank	1 (3%)	0 (0%)	1 (7%)	1 (8%)	0 (0%)	0 (0%)

Overall, 68% of respondents felt that the amount of information in the packet was the right amount (Table 4). For the three families who felt there was too little information, all had a preferred language of English and caregiver education included an advanced degree. For the three families who felt there was too much information, all had a non-English preferred language including Spanish, Hmong, and Somali, and therefore received translated materials in their preferred language.

Table 4. How was the amount of information in the packet?

Response to: "Overall, how would you describe the amount of information contained in the packet?"	Total sample count (percent)	Preferred language: English count (percent)	Preferred language: non-English count (percent)	Caregiver education: high school or less count (percent)	Caregiver education: college or some college count (percent)	Caregiver education: advanced degree count (percent)
Too little	3 (8%)	3 (13%)	0 (0%)	0 (0%)	0 (0%)	3 (27%)
The right amount	25 (68%)	17 (74%)	8 (57%)	9 (69%)	8 (73%)	7 (64%)
Too much	3 (8%)	0 (0%)	3 (21%)	1 (8%)	2 (18%)	0 (0%)
I don't know	5 (14%)	3 (13%)	2 (14%)	2 (15%)	1 (9%)	1 (9%)
Blank	1 (3%)	0 (0%)	1 (7%)	1 (8%)	0 (0%)	0 (0%)

Just over half of families (54%) said they understood their child's results, while 4 families (11%) said they did not (Table 5). For families with a non-English preferred language, only 36% said they understood the results while 21% said they did not. Families whose caregiver education included college/some college or an advanced degree were more likely to say they understood the results, though there were some families in all education levels who reported issues understanding the results.

Table 5. Could you understand your child's results?

Response to: "Were you able to understand your child's results?"	Total sample count (percent)	Preferred language: English count (percent)	Preferred language: non-English count (percent)	Caregiver education: high school or less count (percent)	Caregiver education: college or some college count (percent)	Caregiver education: advanced degree count (percent)
Yes	20 (54%)	15 (65%)	5 (36%)	5 (38%)	8 (73%)	7 (64%)
Somewhat	6 (16%)	5 (22%)	1 (7%)	2 (15%)	2 (18%)	2 (18%)
No	4 (11%)	1 (4%)	3 (21%)	3 (23%)	0 (0%)	1 (9%)
Blank	7 (19%)	2 (9%)	5 (36%)	3 (23%)	1 (9%)	0 (0%)

Respondents were mixed on whether including comparison values (the average and 95th percentile for all kids in Healthy Kids Minnesota 2021) for their child's results was helpful (Tables 6 & 7), and there was not wide-spread understanding of what these values represent.

Table 6. Was the average result helpful?

Response to: "Was having the average result for all of the children in Healthy Kids 2021 helpful as a comparison?"	Total sample count (percent)	Preferred language: English count (percent)	Preferred language: non-English count (percent)	Caregiver education: high school or less count (percent)	Caregiver education: college or some college count (percent)	Caregiver education: advanced degree count (percent)
Yes	23 (62%)	18 (78%)	5 (36%)	6 (46%)	8 (73%)	9 (82%)
No	4 (11%)	3 (13%)	1 (7%)	1 (8%)	2 (18%)	1 (9%)

I did not know what the average meant	4 (11%)	1 (4%)	3 (21%)	3 (23%)	0 (0%)	1 (9%)
Blank	10 (27%)	5 (22%)	5 (36%)	3 (23%)	1 (9%)	0 (0%)

Table 7. Was the 95th percentile helpful?

Response to: "Was having the 95th percentile for all of the children in Healthy Kids 2021 helpful as a comparison?"	Total sample count (percent)	Preferred language: English count (percent)	Preferred language: non-English count (percent)	Caregiver education: high school or less count (percent)	Caregiver education: college or some college count (percent)	Caregiver education: advanced degree count (percent)
Yes	21 (57%)	16 (70%)	5 (36%)	6 (46%)	6 (55%)	9 (82%)
No	1 (3%)	1 (4%)	0 (0%)	0 (0%)	1 (9%)	0 (0%)
I did not know what the 95th percentile meant	9 (24%)	5 (22%)	4 (29%)	4 (31%)	3 (27%)	2 (18%)
Blank	6 (16%)	0 (0%)	6 (43%)	3 (23%)	1 (9%)	0 (0%)

Take-aways/next steps

Despite best practice plain language and language translation, these results show that:

1) The current approach to results communication is not working for some families.
2) There are differences in families' understanding and engagement with their child's results based on preferred language and caregiver's educational attainment.

Staff will use feedback from interviews and discussions with partners, and recommendations from the Advisory Panel meeting, to improve literacy level and accessibility of upcoming results return materials. We are exploring external contractors to help to improve our results return materials with a particular focus on ensuring they are useful and accessible to families from all cultural and language communities.

Questions for Advisory Panel

- What are your recommendations for moving forward with this important work?
- Given limited resources, what are the most effective approaches for continuing to get participant feedback and incorporating it into improved results return materials?

DEPARTMENT OF HEALTH

Protecting, Maintaining and Improving the Health of All Minnesotans

Dear family,

Thank you for being part of Healthy Kids Minnesota 2021! Over 450 kids from Minneapolis and Southeast Minnesota participated.

What is in this packet?

- Your child's results for the **12 metals** we measured and the average for other kids in the program.
- Fact sheet about metals and tips for reducing exposures.

Why did we measure metals in kids?

Children's developing bodies are especially sensitive to chemicals that are found in our environment – in our air, water, soil, food, and products we use. Measuring metals and other chemicals that may harm health gives us a picture of children's chemical exposures across the state. Results will help inform families and address community concerns, help us promote policies and programs to reduce childhood exposures, and create healthy neighborhoods and homes for kids.

What can you learn from your child's metals results?

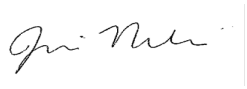
- You can see how your child's results compare to other children's results in Healthy Kids. This can tell you if your child's results are higher or lower than average.
- You can learn common ways that children can be exposed to these metals and ways to reduce exposure.
- ***For certain metals we contacted families whose children had results we were concerned about.***

What can't these results tell you?

- They can't tell you whether your child will have a certain health outcome from an exposure.
- They can't tell you how your child was exposed.
- They can't tell you about your child's long-term exposure to these metals. Results from urine show recent exposures.

Please email or call if you have questions about your child's results. We will mail results for the other chemicals in separate mailings as they are ready. Again, thank you very much for participating in Healthy Kids Minnesota!

Sincerely,



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Additional MN Biomonitoring Updates

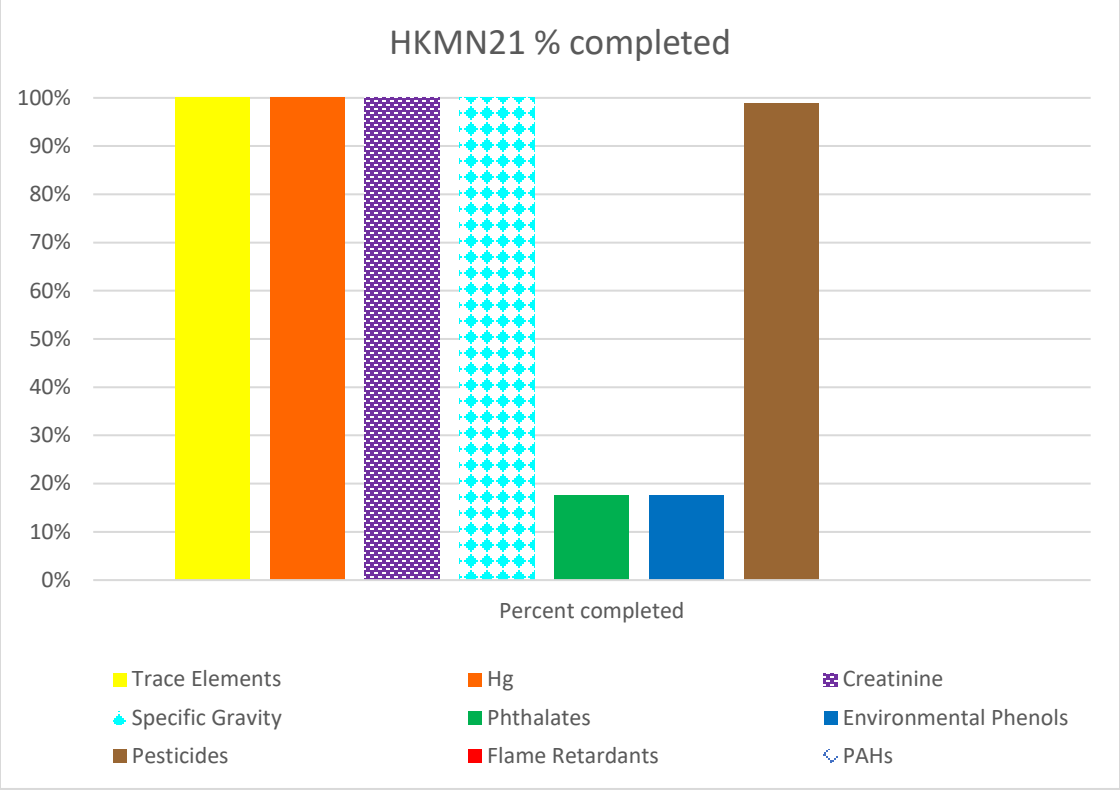
Healthy Kids Minnesota Laboratory Update

Laboratory analysis for Healthy Kids Minnesota 2021

- 453 samples have been collected and received by the PHL for Healthy Kids Minnesota 2021.
- Creatinine and specific gravity analyses have been completed for all samples.
- Pesticides analysis has been completed for all samples.
- Environmental phenols analysis has begun. We are capable or running roughly 50 samples/week and expect to be completed by the end of November.
- The analysis of samples for urinary plasticizer metabolites (phthalates) began in May 2022. We recently identified an issue with the stability of our standards for this method and, after consultation with subject matter experts at the CDC, are reevaluating the preparation and storage of our standard solutions. We are anticipating resuming analysis as soon as someone is hired, hopefully in early November.

Figure 1 shows the percent of the 453 samples that have been analyzed for each of the methods in the Healthy Kids Minnesota program.

Figure 1. Percentage of completed laboratory analyses



We have also been performing follow-up testing for 10 Healthy Kids Minnesota 2021 participants for trace elements and arsenic speciation. The lab assembles recollection kits and coordinates a courier to deliver these specimens from the participant's home to our laboratory.

Sample collection lessons learned

The protocols used for Healthy Kids Minnesota 2021 sample collection, storage, and shipping need improvement.

- A number of specimens were received with very low volume and we could not perform all of the analyses.
- Also, many sample containers were leaking when they arrived at the lab.

The protocol has been modified to emphasize the minimum sample volumes required during training and to reduce leakage during sample storage and shipping.

Laboratory analysis for Healthy Kids Minnesota 2022

We have collected 33 samples for HKMN22, and completed analyses for trace elements, creatinine, and specific gravity for all 33.

This winter, part of the BEC lab will be closed due to planned renovations to the air handling system. We anticipate being shut down from January 20 through February 20, 2023 and will not run analyses for organic analytes during this time.

Staffing

A fellow has been hired through the Association of Public Health Laboratories (APHL) Laboratory Fellowship program. Gemira Harris started at the end of August and is helping with both biomonitoring and emerging contaminants projects.

The Environmental Laboratory Manager, Paul Moyer, retired in February, and Stefan Saravia, was hired in June as his replacement. We are in the final steps of hiring a new Biomonitoring and Emerging Contaminants (BEC) Unit supervisor.

Two research scientists resigned over the summer. The hiring process has begun for both of those positions as well as hiring another research scientist position that has been vacant for several years.

CLIA audit

All laboratories that report test data back to human subjects must follow the Clinical Laboratory Improvement Acts (CLIA) federal regulations. The Public Health Laboratory recently completed its biannual CLIA audit. The BEC Unit had no "findings" but there were a few suggestions for areas of improvement around record keeping. These were very minor suggestions and overall the audit went very well.

Related Publications

The National Academies of Sciences, Engineering, and Medicine released the report, *Guidance on PFAS Exposure, Testing, and Clinical Follow-Up*, in July. The committee was charged with advising the Agency for Toxic Substances and Disease Registry (ATSDR) and the National Institute of Environmental Health Sciences (NIEHS) on PFAS testing and clinical care for patients exposed to PFAS. The report is available at: https://nap.nationalacademies.org/catalog/26156/

CNN, as part of its White Lies series about the harms of skin lightening products, has published an animated video explainer on the health harms caused by mercury exposure in skin whitening creams. The published video can be viewed at: https://edition.cnn.com/videos/health/2022/09/28/mercury-skin-whitening-products-risks-as-equals-lon-orig.cnn

The September issue of the American Journal of Public Health features a Supplement on Ubiquitous Lead: Risks, Prevention–Mitigation Programs, and Emerging Sources of Exposure. There are many articles about childhood lead exposure and biomonitoring, including an article, Tackling the Lead Gremlins: A Response to Take-Home Lead Exposure in a Minnesota Industrial Facility, 2019, by MDH and Ramsey County scientists about the Water Gremlin situation Stephanie Yendell will be discussing at the Advisory Panel meeting.

MN Tracking Updates

New funding CDC funding cycle awarded

CDC's National Environmental Public Health Tracking Network recently launched a new five-year grant cycle to modernize and advance environmental health surveillance. Minnesota joins 29 state and local public health departments to continue and extend our programs and partnerships. As we look forward and plan for the years to come, MN Tracking staff are working with partners to specifically elevate environmental health surveillance, analysis, and data communication in the areas of climate and health, syndromic surveillance, children's environmental health, and environmental justice.

MN Public Health Data Access Portal content updates

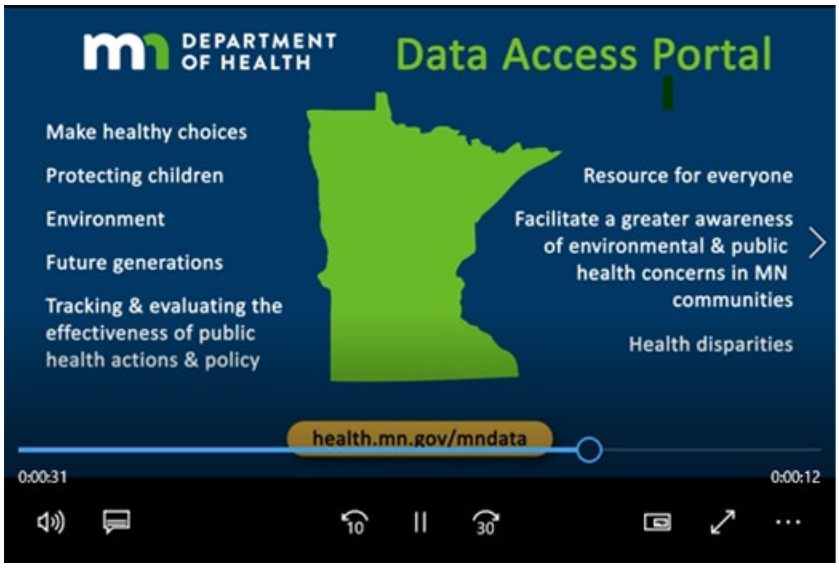
Oral Health – National Survey of Children's Health

Heat-related illness

Cold-related illness This is the first topic created in a new software. Our move toward use of Tableau is twofold: 1) provide more interactivity and data manipulation by users, and 2) long-term costs savings in IT expenditures.

How to Use the Portal video series

Tracking program recently launched a series of short how-to videos intended to help a wide variety of audiences effectively navigate and get the most out of data and tools. Six themed videos are available on the MDH YouTube channel and via the MN Public Health Data Access Portal.



Section Overview: Other Information

This section contains documents that may be of interest to panel members.

- Upcoming Advisory Panel meeting dates
- Environmental Health Tracking and Biomonitoring Advisory Panel Statute
- Advisory Panel roster
- Biographical sketches of Advisory Panel members
- Biographical sketches of staff

Upcoming Advisory Panel Meeting Dates

Advisory Panel meetings in 2023:

February 14, 2023

June 13, 2023

October 10, 2023

Unless otherwise announced, these meetings will take place from 1-4 pm via Microsoft Teams

144.998 ENVIRONMENTAL HEALTH TRACKING AND BIOMONITORING ADVISORY PANEL STATUTE

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 specific 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 section 144.995 to 144.998.

Environmental Health Tracking & Biomonitoring Advisory Panel Roster as of September 2022

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Biographical Sketches of Advisory Panel Members

Jay Desai is the Manager of the Chronic Disease and Environmental Epidemiology Section within the Division of Health Promotion and Chronic Disease at MDH. The Section includes the Environmental Epidemiology, the Minnesota Cancer Reporting System, and the Sickle Cell Data Collection program. It also includes the Long-Term Surveillance of Chronic Disease and Disabilities Annex, a program designed for response and recovery in emergency situations such as the COVID-19 epidemic. Jay received his Epidemiology doctorate from the University of Minnesota, is a chronic disease epidemiologist, and has worked in academic research and public health practice at the University of Minnesota, HealthPartners Institute, and the Minnesota Department of Health since 1993. He has a strong interest in diabetes, diabetes prevention, obesity, cardiovascular disease, chronic kidney disease, gout, cancer prevention, sickle cell disease, their underlying behavioral risk factors, and social determinants of health. He is also interested in implementation science and health equity. At MDH Jay spent 16 years as the epidemiologist for the Minnesota Diabetes Program. At HPI he worked on primary care clinical decision support; using EMR's for diabetes, cardiovascular disease, and obesity surveillance; diabetes prevention in low income individuals, and HPV vaccination in underserved communities. Jay is also a standing member of the NIH Healthcare and Health Disparities study section.

Tom Hawkinson is the Senor Industrial Hygienist for Stantec Consulting Services Inc. (formerly Wenck Associates) in Golden Valley, Minnesota. He completed his MS in Public Health at the University of Minnesota, with a specialization in industrial hygiene. He is certified in the comprehensive practice of industrial hygiene and a certified safety professional. He has worked in EHS management at a number of Twin Cities based companies, conducting industrial hygiene investigations of workplace contaminants and done environmental investigations of subsurface contamination, both in the United States and Europe. He has taught statistics and mathematics at both graduate and undergraduate levels as an adjunct and is on faculty at the Midwest Center for Occupational Health and Safety, which is a NIOSH-sponsored education and resource center at the University of Minnesota's School of Public Health.

Sarah Kleinschmidt is an epidemiologist with more than 20 years of experience in population-based epidemiologic research and infectious disease clinical trials. She joined the 3M Company in 2016 and serves as an epidemiologist within the Corporate Occupational Medicine Department where she evaluates the health experience of employee groups. Prior to joining 3M, Dr. Kleinschmidt was an occupational epidemiologist for DuPont in Wilmington, DE and taught epidemiology at the University of Delaware as an Adjunct Instructor. She has also held research positions at the University of Iowa, Illinois Department of Public Health, and Southern Illinois University School of Medicine. She earned a B.S. and M.S. in biology from the University of Illinois at Springfield, and a M.S. and Ph.D. in epidemiology from the University of Iowa with specialized training in both infectious disease and occupational epidemiology.

Jenni Lansing is the Sr. Environmental Research Analyst for the Minneapolis Health Department – Environmental Programs. She has been with the City for 10 years and during that time her work has included community air monitoring, pollution reduction projects with businesses, and drinking water protection at transient noncommunity water systems. Ms. Lansing has a B.S. in

Fisheries and Wildlife Conservation Biology from the University of Minnesota - Twin Cities and a M.S. in Environmental Sciences from the University of Colorado.

Zeke McKinney is a board-certified Occupational and Environmental Medicine (OEM) physician who works at the HealthPartners Clinic in St. Louis Park, MN. He is additionally board-certified in Public Health & General Preventive Medicine, Clinical Informatics, and Lifestyle Medicine. He completed all of his medical training here in Minnesota. His professional interests are in preventing work-related illness/injury, improving data-driven decision-making in clinical contexts, environmental toxicology, health equity, environmental justice, public safety medicine, managing complex impairment/disability, and increasing the health literacy of patients and communities. He practices clinical occupational and environmental medicine in the Twin Cities, and he is one of few clinicians in Minnesota who evaluates work and community-related environmental toxicologic exposures. He is the Minnesota physician contact for the Pediatric Environmental Health Specialty Units (PEHSU), a national resource for environmental medical information in partnership with ATSDR and CDC.

Jill Heins Nesvold serves as the National Director of Lung Health for the American Lung Association. Her responsibilities include program oversight and evaluation related to asthma, chronic obstructive lung disease (COPD), influenza, and quality improvement. She holds a master's degree in health management and a short-course master's degree in business administration. She has published extensively in a variety of public health areas.

Ruby Nguyen is an assistant professor at the University of Minnesota School of Public Health Division of Epidemiology & Community Health. She received her PhD in Epidemiology from Johns Hopkins University. Ruby's research focuses on maternal, child and family health; the etiology of reduced fertility; pregnancy-related morbidity, and infertility and later disease. Currently, Ruby is conducting a longitudinal study examining the role of endocrine disrupting chemicals in child development. From 2016-2017, Ruby was Co-Principal Investigator of a statewide prevalence study investigating violence against Asian women and children.

Sona Psarska is a research scientist at the Minnesota Pollution Control Agency predominantly working on human health risk assessment projects. Among her responsibilities are maintaining various risk-based values and providing human health risk assessment support to remediation and other agency programs. She has a Master of Science in Land and Atmospheric Science from the University of Minnesota. Prior to joining the MPCA, she worked in environmental consulting where, among other projects, she worked on complex pollutant fate and transport evaluations and risk assessments for industrial clients.

Cathy Villas Horns is the Hydrologist Supervisor of the Incident Response Unit (IRU) within the Pesticide and Fertilizer Management Unit of the Minnesota Department of Agriculture. She holds a Master of Science in Geology from the University of Delaware and a Bachelor of Science in Geology from Carleton College and is a licensed Professional Geologist in MN. The IRU oversees or conducts the investigation and cleanup of point source releases of agricultural chemicals (fertilizers and pesticides including herbicides, insecticides, fungicides, etc. as well as wood treatment chemicals) through several different programs. She has worked on complex sites with Minnesota Department of Health and MPCA staff, and continues to work with interagency committees on contaminant issues. She previously worked as a senior

hydrogeologist within the IRU, and as a hydrogeologist at the Minnesota Pollution Control Agency and an environmental consulting firm.

Eileen Weber is a nurse attorney and Clinical Associate Professor Ad Honorem at the University of Minnesota School of Nursing (active retiree status). She founded the Upper Midwest Healthcare Legal Partnership Learning Collaborative. She earned her Doctor of Nursing Practice degree in Health Innovation and Leadership in 2014 from the University of Minnesota. She earned her RN diploma from Thomas Jefferson University Hospital in Philadelphia, PA, her BSN summa cum laude from the University of Minnesota, and her JD in the founding class of the University of St. Thomas School of Law in Minneapolis. Her clinical experience and past certifications have largely been in urban critical care and emergency nursing. She has served as vice-president of the Minnesota Nurses Association, earning awards for political action and outstanding service. She represented nursing on the Minnesota Health Care Commission, was a regular editorial writer for the St. Paul Pioneer Press and an occasional op-ed contributor for the Star Tribune. She founded Friends of Grey Cloud and worked with environmental leaders at the local, regional, state and national levels to protect Lower Grey Cloud Island from harmful development and to conserve the Grey Cloud Sand Dune Prairie. She has extensive experience in legislative lobbying, community activism, and political campaign management. Her scholarly work is focused on the intersection of law, public policy, and interprofessional healthcare practice and education.

Lisa Yost is a Principal Consultant at RAMBOLL ENVIRON, an international consulting firm. She is in their Health Sciences Group, and is based in St. Paul, Minnesota. She completed her training at the University of Michigan's School of Public Health and is a board-certified toxicologist with expertise in evaluating human health risks associated with substances in soil, water, and the food chain. She has conducted or supervised risk assessments under CERCLA, RCRA, or state-led regulatory contexts involving a wide range of chemicals and exposure situations. Her areas of specialization include exposure and risk assessment, risk communication, and the toxicology of such chemicals as PCDDs and PCDFs, PCBs, pentachlorphenol (PCP), trichloroethylene (TCE), mercury, and arsenic. Lisa is a recognized expert in risk assessment and has collaborated in original research on exposure issues, including background dietary intake of inorganic arsenic. She is currently assisting in a number of projects including a complex multi-pathway risk assessment for PDDD/Fs that will integrate extensive biomonitoring data collected by the University of Michigan. She is also an Adjunct Instructor at the University of Minnesota's School of Public Health.

Biographical Sketches of Staff

Sheila Amenumey is currently the Biomonitoring Epidemiologist at MDH. Sheila collaborates with the Biomonitoring Program Director and key stakeholders leading the various biomonitoring projects including Healthy Kids Minnesota, the statewide project focused on children's environmental health. She completed her MPH in Maternal and Child Health and PhD in Water Resources Science (Water Quality Hydrology Emphasis) at the University of Minnesota. Prior to her work with the biomonitoring program, Sheila worked with the Maternal and Child Health Section at MDH. Her role as the Maternal and Child Health Epidemiologist involved leading and collaborating with external partners in conducting program evaluation across multiple federal adolescent health grants, and assisting them in monitoring program outcomes and achievement of their health and education goals for the youth they serve. Before coming to MDH, Sheila conducted water quality research at the University of Minnesota to determine the impact of agriculture on water quality.

Carin Huset has been a research scientist in the Environmental Laboratory section of the MDH Public Health Laboratory since 2007. Carin received her PhD in Chemistry from Oregon State University in 2006 where she studied the fate and transport of perfluorochemicals in aqueous waste systems. In the MDH PHL, Carin provides and coordinates laboratory expertise and information to program partners within MDH and other government entities where studies require measuring biomonitoring specimens or environmental contaminants of emerging concern. In conjunction with these studies, Carin provides biomonitoring and environmental analytical method development in support of multiple analyses.

Tess Konen graduated from the University of Michigan's School of Public Health with a master's degree in Occupational Environmental Epidemiology. She completed her thesis on the effects of heat on hospitalizations in Michigan. She worked with MN Tracking for 2 years as a CSTE Epidemiology Fellow where she was project coordinator for a follow-up study of the Northeast Minneapolis Community Vermiculite Investigation cohort. She currently is an epidemiologist working on birth defects, pesticides, and climate change, and is developing new Disaster Epidemiology tools for MDH-HPCD.

Jessica Nelson is Program Director and an epidemiologist with MN Biomonitoring. She works on design, coordination and analysis of biomonitoring projects, and has been the Principal Investigator for the Healthy Rural and Urban Kids, MN FEET and PFAS studies. Jessica received her PhD and MPH in Environmental Health from Boston University School of Public Health where her research involved the epidemiologic analysis of biomonitoring data on perfluorochemicals. Jessica was the coordinator of the Boston Consensus Conference on Biomonitoring, a project that gathered input and recommendations on the practice and uses of biomonitoring from a group of Boston-area lay people.

Kathy Raleigh is an epidemiologist for MN Tracking. She completed her PhD in Environmental Health at the University of Minnesota's School of Public Health and her MPH in Environmental and Occupational Health at the University of Arizona. She has worked on a variety of environmental health projects including: pesticide exposure in children, occupational asthma, mercury exposure in women and children, and occupational exposure to PFOA. Prior to coming

to MN Tracking, Kathy was working on maternal and child health projects both internationally with USAID and, more recently, at MDH. She will also be working on the coordination and collection of hospital discharge data, including heart disease and asthma surveillance projects for MN Tracking with a focus on health disparities.

Blair Sevcik is an epidemiologist with MN Tracking at the Minnesota Department of Health, where she works on the collection and statistical analysis of public health surveillance data for MN Tracking. Prior to joining MN Tracking in January 2009, she was a student worker with the MDH Asthma Program. She received her Master of Public Health degree in epidemiology from the University of Minnesota School of Public Health in December 2010.

Jessie Shmool supervises the Environmental Epidemiology Unit at MDH and is the Principal Investigator for the Environmental Public Health Tracking program. Jessie received her MPH from the Mailman School of Public Health at Columbia University and DrPH from the University of Pittsburgh, where her training and research focused on exposure assessment, GIS and spatial statistics, community-engaged research methods, and environmental health disparities. Prior epidemiology studies have examined social susceptibility to air pollution exposure in chronic disease etiology and adverse birth outcomes.

Lynn Treadwell, Minnesota Public Health Data Portal Coordinator, is an experienced digital communications leader with a solid understanding of websites and application development, social media and digital marketing communications in the health and government sectors. Lynn brings over 10 years of experience in developing optimized online user experiences and digital communications to the position. She will provide stewardship to Minnesota's public health data portal focusing on audience understanding and interactive development best practices. Lynn has an AAS in graphic design, attended the School of Journalism at University of Minnesota and has a mini-Master's in Marketing from St. Thomas University.