Michigan Department of Health and Human Services (MDHHS)

Division of Environmental Health

Oscoda Area PFAS Exposure Evaluation Listening Sessions – July 30, 2020

Sessions Summary

Background

MDHHS held two listening sessions on July 30, 2020, to gather feedback from the community on conducting a potential per and poly-fluoroalkyl (PFAS) human exposure evaluation project. The objectives of this listening session were to:

1. Introduce the request received from several community members for MDHHS to address PFAS exposure in the area.
2. Describe a health study and an exposure assessment.
3. Begin forming a broad, diverse, and welcoming stakeholder group.
4. Identify priorities from the community for the public health investigation.
5. Identify community perception of who is potentially impacted.
6. Identify who is represented at the listening sessions.

Listening Session Details

Oscoda area residents, local officials, community-based organizations, and healthcare providers were the target audiences for these listening sessions. MDHHS mailed 583 session invitation letters and sent 53 invitation emails to local private well residents/owners, businesses, churches, associations, healthcare providers, and community members. MDHHS's press release was promoted by six outlets including northern Michigan news sites, District Health Department No. 2, and Need Our Water (NOW) Facebook pages.

MDHHS project staff gave the same presentation in the morning (10:30 a.m. to noon) and evening session (6:30 p.m. to 8 p.m.) via GoToWebinar. The presentation featured an overview of what we know about PFAS in the Oscoda area, different methods for PFAS exposure evaluations, and scientific concepts associated with evaluating PFAS exposure. Both poll questions and open-ended questions were administered to help MDHHS understand who was in the audience, what their concerns were, and how they perceived the virtual listening session format. The poll questions, response distributions, and a summary of open-ended questions and answers are listed in the listening session outcomes section. When summarizing audience questions, MDHHS staff kept question wording as close to verbatim as possible, only editing them for ease of understanding. The full slide deck can be found at on the MDHHS Find Your Area page under Iosco County.

Listening Session Outcomes

There were 26 attendees for both sessions who were not from MDHHS, the Michigan Department of Environment, Great Lakes, and Energy (EGLE), or universities. Most lived in the Oscoda area or visited regularly, and all participants had heard of PFAS before the listening session (Figure 1, Figure 2).

In general, attendees said that the listening session improved their knowledge of human PFAS exposure evaluations, and that they had enough time for questions or comments (Figure 7, Figure 8). They also said we could improve future meetings by providing more information (Figure 9; for example, data from other exposure evaluations, such as the study at the former Pease Air Force Base (AFB) in New Hampshire).

There are 15 people interested in participating in the yet-to-be assembled stakeholder group. MDHHS will be holding a smaller meeting with interested individuals towards the end of 2020 to discuss stakeholder roles and responsibilities and reevaluate membership interest.

Polls

Figure 1. Poll Question 1 (n=23)

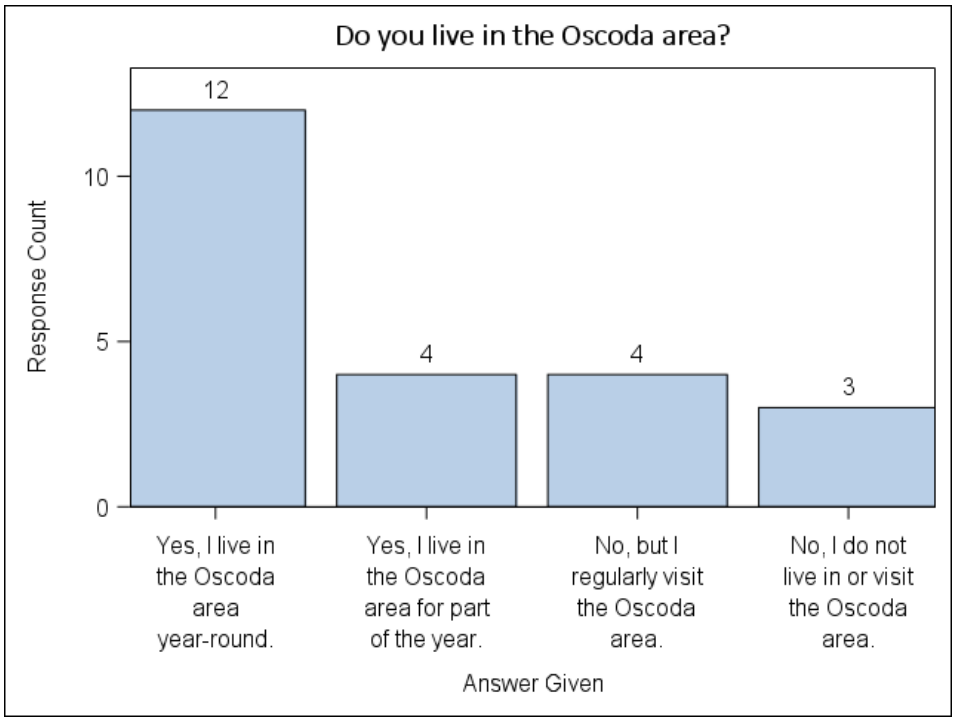


Figure 2. Poll Question 2 (n=24)

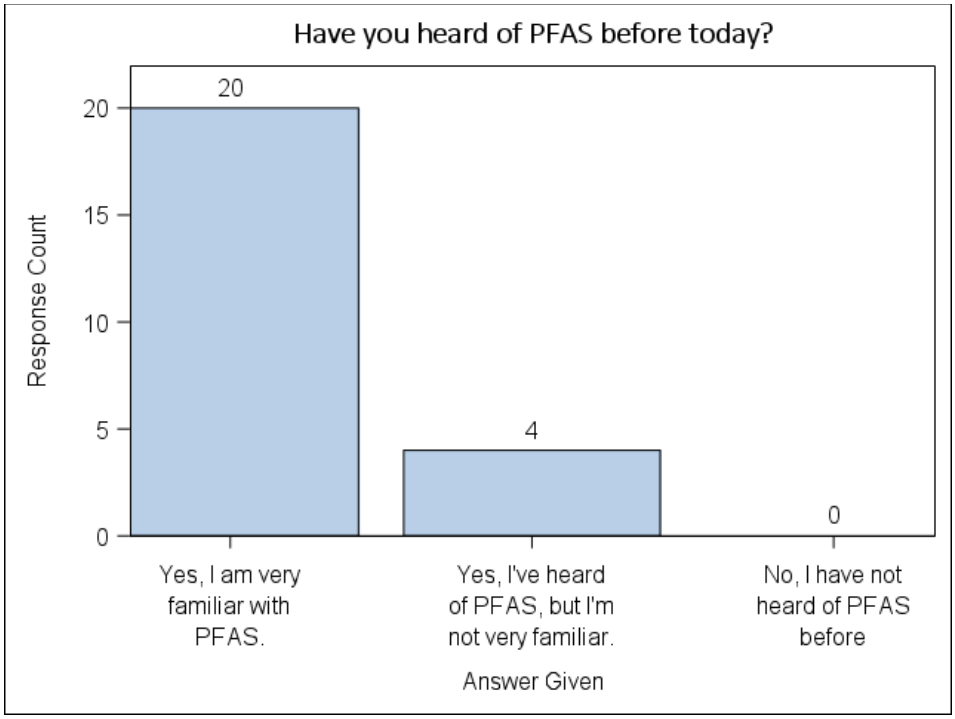


Figure 3. Poll Question 3 (n=24)

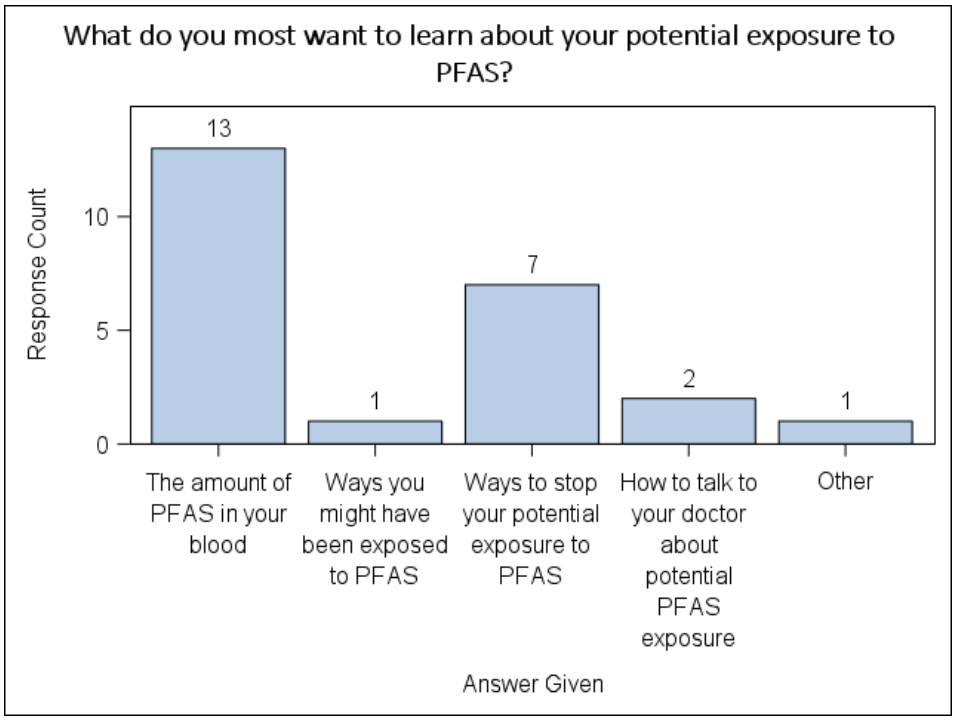


Figure 4. Poll Question 4 (n=22)

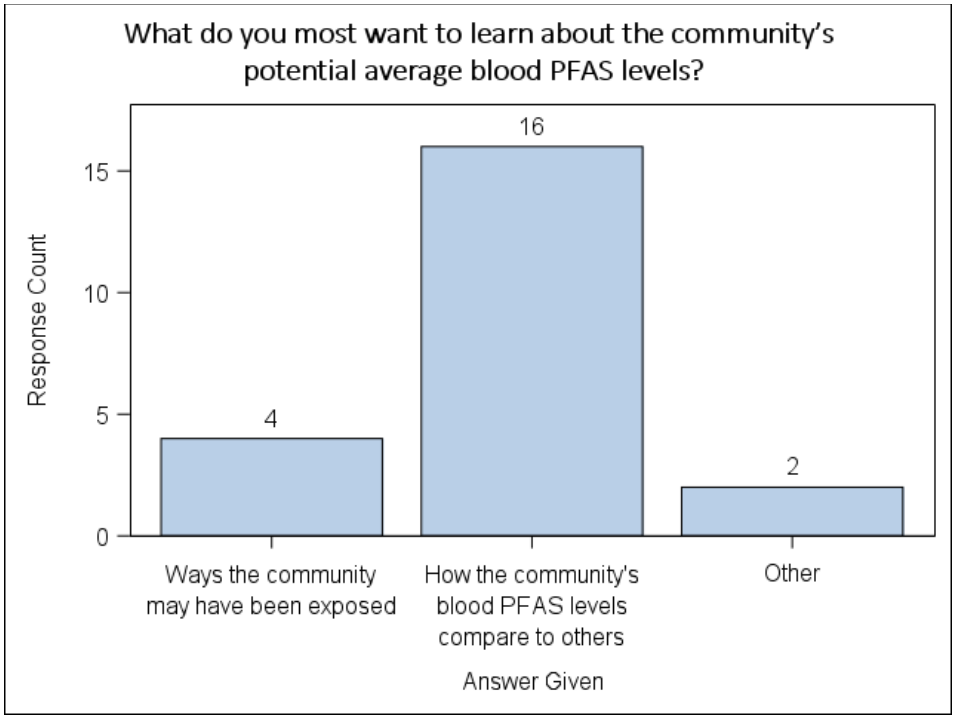


Figure 5. Poll Question 5 (n=19 [question was select all that apply])

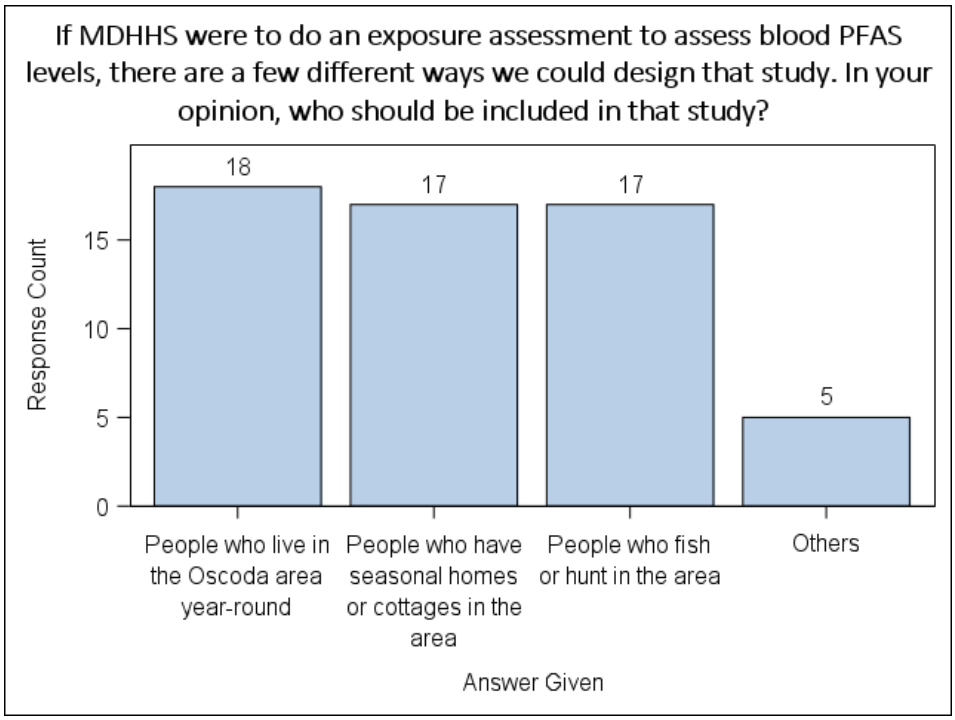


Figure 6. Evaluation Question 1 (n=23 [question was select all that apply])

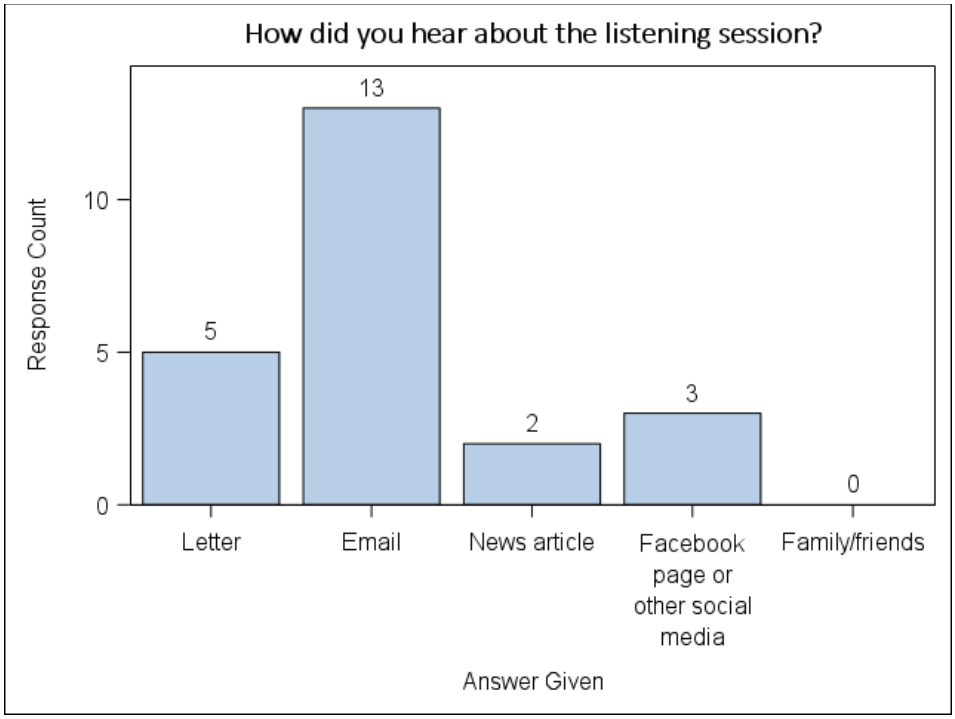


Figure 7. Evaluation Question 2 (n=19)

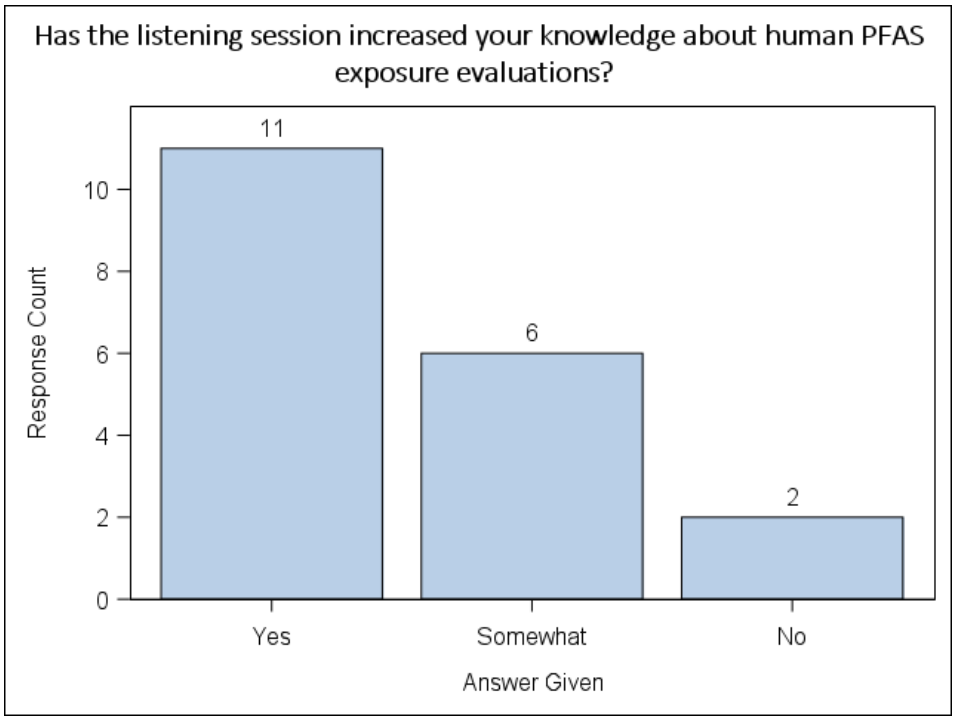


Figure 8. Evaluation Question 3 (n=19)

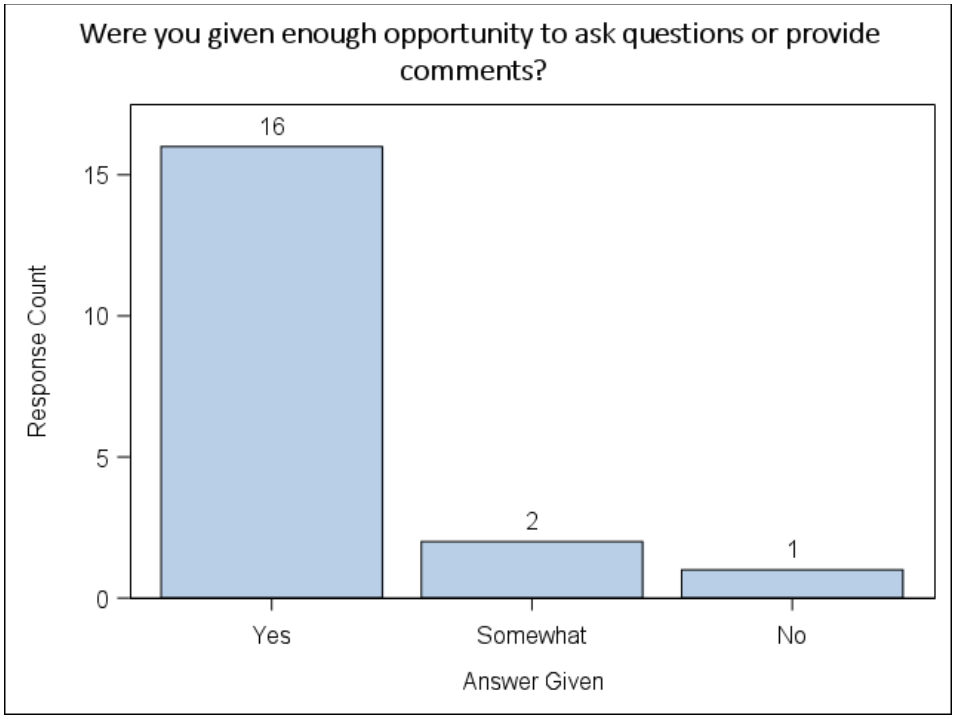


Figure 9. Evaluation Question 4 (n=13)

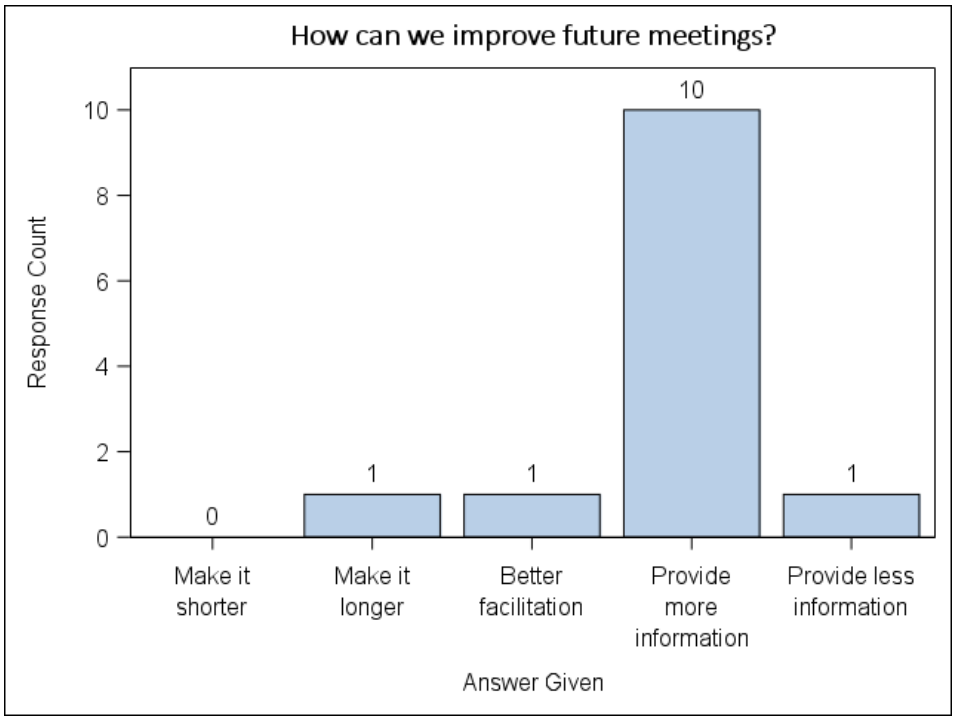


Figure 10. Evaluation Question 5 (n=20)

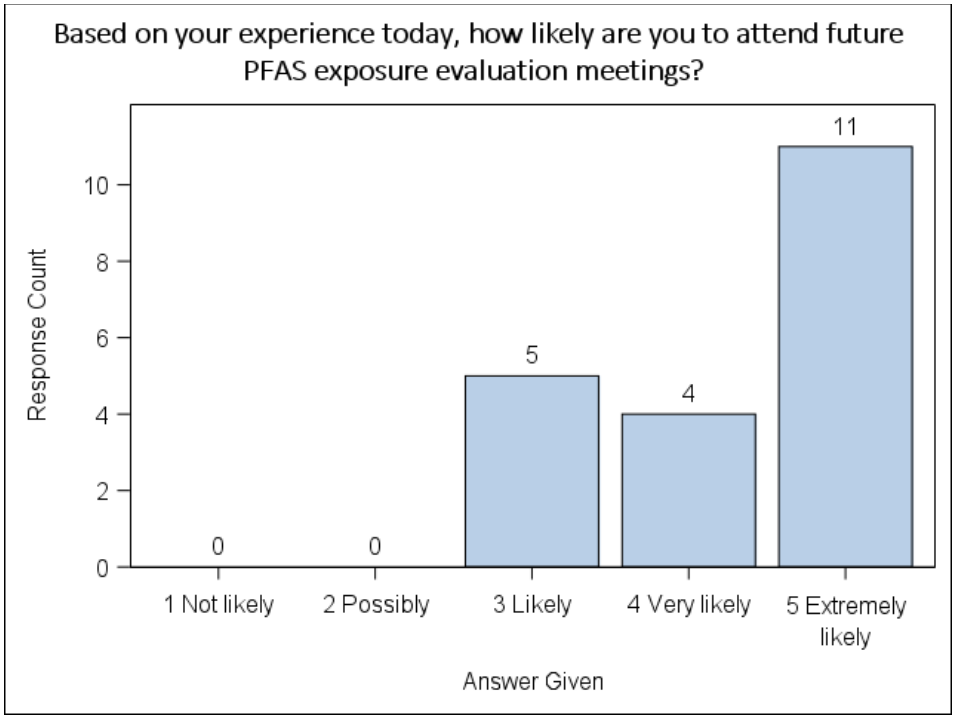
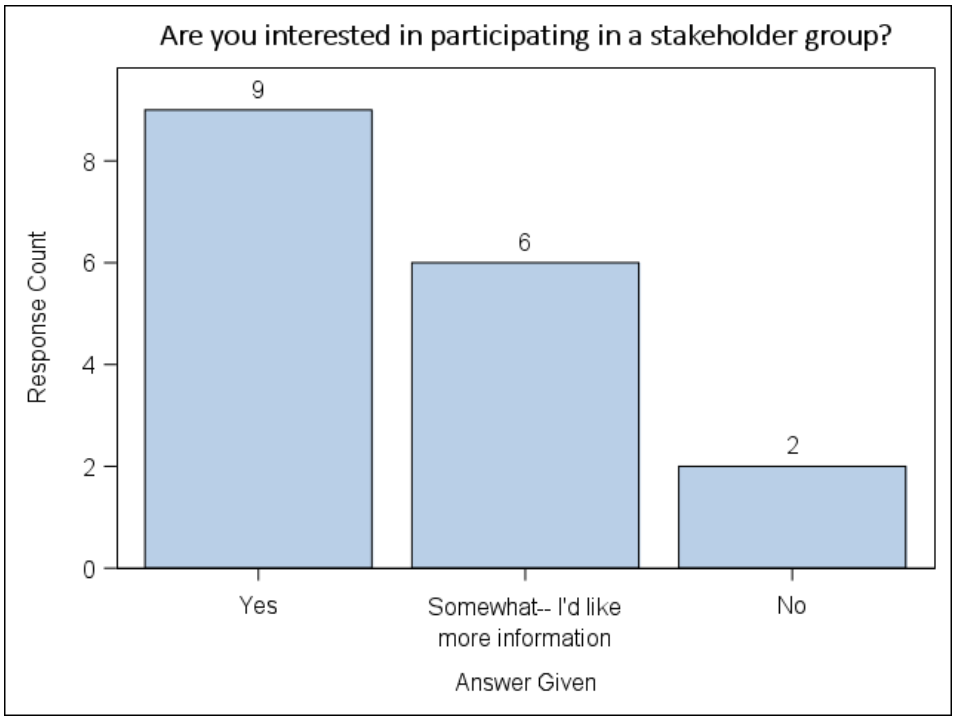


Figure 11. Evaluation Question 6 (n=16 [there was one repeated vote])



Questions and Answers

The following were questions asked by audience members and responses given by MDHHS, which are expanded upon in this summary.

Question: "In areas in Michigan where there are high PFAS levels like Oscoda, will PFAS testing become part of normal prenatal and newborn blood testing for people? Could that be added, or what would it take to get that type of testing added?"

Answer: Newborn Screening is a public health program required by Michigan law to find babies with rare but serious disorders that require early treatment. Currently, standard prenatal and newborn blood tests do not test for PFAS. Adding a test for different types of PFAS is not within the scope of this project. Additionally, there is not currently a clinical action level for blood PFAS.

Question: "Could there be some sort of approach with making individual blood testing immediately available due to our long-standing exposure, and then maybe a combination of approaches with maybe an exposure reconstruction, combined with medical monitoring as part of the project? Is that a possibility to have a multi-faceted approach?"

Answer: Yes, there is an approach for individual blood testing. We are holding these listening sessions to move forward with blood testing if that is what the community wants. However, as far as we can tell with information we have at this time, historical exposure reconstruction and medical monitoring are not options for us. Here's why:

- Historical reconstruction requires information about the levels of each different type of PFAS in the water at the time of exposure, as well as information about how much water everyone drank at the time, if they used a filter, how often they used that filter, and other kinds of information that are not available. We do not think it is possible to get the level of information necessary for historical reconstruction for the Oscoda area.
- Medical monitoring is not a function of MDHHS. Medical monitoring was a consideration of a class action lawsuit for residents of the Parkersburg area of Northern West Virginia and Southern Ohio (http://www.c8sciencepanel.org/panel_background.html) associated with PFAS in drinking water. Medical monitoring will not be able to tell you whether a health condition was caused by PFAS.
- MDHHS is concerned an evaluation of current PFAS blood levels in relation to health outcomes in the area may not be able to identify an association between PFAS blood levels and health outcomes.
    - While we have seen some elevated drinking water levels in private wells in the area in the past, the levels are not as high as those studies where associations with health impacts have been observed (for example, in studies done by the C8 science panel). There may be some people who want to participate who had much higher exposure levels over 20 years ago when the Air Force Base was in operation and before the

drinking water at the base was switched to city water. Because it has been so long, their blood levels are likely to be much lower now and may not be different than national averages. If there are health impacts from that past exposure and the blood levels are low now, we would be less likely to see an association when comparing high PFAS blood levels and low PFAS blood levels with health outcomes. This could result in an incorrect conclusion if the true association was between high blood PFAS levels 20 years ago (which we cannot measure now) and health outcomes.

Question: "Can we collect community's blood and put it in some sort of crowdsourcing database? If we don't have enough community members to meet the criteria for a standard, why can't we crowdsource results?"

Answer: Crowdsourcing generally means gathering a large amount of data from many different groups of people for public use. While crowdsourcing data, or making data available to the public for analysis, may work in other projects, it presents some ethical and methodological issues in this case. First, we cannot publicly share personal identifying information or personal health information. It is against the law.

Second, in order to make accurate conclusions about PFAS and health, researchers need to have accurate information on exposure and accurate information on outcomes. A crowdsourced database would not be able to provide that information, as exposure information for many people is unknown and health outcomes may change over time.

Third, the specific number of community members needed to participate in a health study to identify associations with health outcomes varies based on the health outcome and the variability seen in the general population for a health outcome.

Question: "How broad is the well testing? Is there well testing in the Greenbush area? Have they found elevated levels that far out from the base?"

Answer: Currently there is no drinking water well testing in the Greenbush area. It is not in the area of concern, meaning that current data show the PFAS plume from the former Wurtsmith Air Force Base does not go past the northern tip of Van Etten Lake. You can view the most current data, as well as the conceptual site model, at the MPART website.

Question: "We see foam occasionally on Lake Huron. Is that related to PFAS?"

Answer: The Michigan Department of Environment, Great Lakes, and Energy (EGLE) does not currently have data for foam seen on Lake Huron.

EGLE often receives complaints about foam on a river or lake. This foam can occur naturally or because of environmental pollution. Naturally-occurring foam is off-white and/or brown, often accumulates in bays, eddies, or river blockage, and may have an earthy or fishy aroma. Foam with PFAS is generally a brighter white color and does not have the earthy or fishy aroma. If you suspect the foam is not naturally occurring, you can do either or both of these things:

- Fill out the foam sighting form: MiWaters Spill/Incident/Pollution form. You can include photos of the foam when you access this link.
- Call the 24-hour Pollution Emergency Alerting System (PEAS) hotline at 800-292-4706 to report the foam.

It doesn't matter if the foam is naturally-occurring or caused by PFAS, you should try to avoid touching it or rinse it off as soon as possible if you cannot avoid it. Naturally-occurring foam may contain harmful bacteria. Foam caused by PFAS can have much higher concentrations of PFAS than the waterbody it is found in. While PFAS does not move easily through the skin, it is good practice to rinse the foam off your body as soon as possible. For more information on PFAS in foam, please visit the MPART website and click the PFAS Foam tab.

Question: "Is your agency working with remediation agencies (with the Air Force) and EGLE? Were any EGLE site managers on the call today? Can you quickly describe your coordination with them routinely or advisory sharing?"

Answer: Yes, MDHHS staff regularly evaluate data provided by EGLE and the Air Force to evaluate risks to human health and provide public health recommendations and advisories when needed. MDHHS and EGLE staff regularly meet to discuss information related to PFAS in the Oscoda area.

Yes, the EGLE site managers joined the listening sessions.

Question: "My concern is all the talk about preexisting condition protections. Is individual data going to be public?"

Answer: By law, any data that we collect will remain confidential. Any results we publish will be provided as group results. We will ensure that the information provided to the public does not result in the ability for someone to trace your results back to you personally. MDHHS does not provide individual information to health insurance companies.

By law, health insurance companies cannot discriminate against you due to pre-existing conditions.

Question: "With PFAS blood testing, are you able to determine what type of PFAS is in your blood? And would you be able to say definitively that it is from AFFF versus Teflon, for example?"

Answer: If we tested your blood for PFAS, we would be able to tell you the different types and quantities of PFAS in your blood at the time of your blood draw for 39 types of PFAS. There are multiple types of PFAS in multiple products, so we would not be able to say *how you were exposed to the* different types of PFAS. Even if we knew all of a person's potential exposures, based on the science available today, we cannot link specific PFAS types to AFFF, Teflon, or any other PFAS-containing item.

Question: "How much participation would you need from the community for a successful study?"

Answer: It depends on the type of study we would do, the average amount and types of PFAS in the community's blood, and the variability of the amount of PFAS in people's blood in the community. One potential objective is to compare Oscoda-area average blood PFAS levels to national averages. The more different those two averages are, the fewer study participants we need to detect a significant difference. The more similar those two averages are, the more participants we need to detect a significant difference.

We have calculated how many study participants we would need based on the types of PFAS, average amounts of PFAS, and variability of blood PFAS levels in the community. Our calculations range from 200 individuals to 8,400 individuals, depending on these different factors.

Question: "Do people have a place to report health conditions?"

Answer: MDHHS does not have a public website or database for people to self-report health conditions.

Question: "Are you only going to be sampling water from people that use well water? Would you sample houses on municipal water?"

Answer: We are hoping to work with community members to determine the specific questions they want addressed. This will inform whose water we sample or re-sample. If we did sample well water and municipal water, we would account for those differences in the analysis.

Question: "Does the Pease study have any application to what we're looking to do here?"

Answer: MDHHS is constantly learning from other PFAS studies in Michigan and other states. MDHHS has reviewed the New Hampshire reports on exposure assessments in the Portsmouth area and have also followed the Pease study that CDC/ATSDR are currently conducting. There are some important differences between the Pease site in Portsmouth, New Hampshire and the Oscoda area.

In the Pease study, CDC and ATSDR are recruiting participants to evaluate their PFAS blood levels, health measures like cholesterol levels and thyroid function, and medical history to learn how PFAS may affect human health. Portsmouth, New Hampshire and the surrounding areas were selected for the study because residents were exposed to drinking water from wells that contained PFAS as recently as 2014 and soon after this exposure was discovered (2015), a preliminary blood testing program gathered individual blood data for 1,578 people.

A study in the Oscoda area would be different from Pease because we do not have information about PFAS levels in individuals' drinking water or blood dating back to when the primary drinking water source on the Air Force base was switched from wells to municipal water. This is a missing piece of the puzzle that makes it impossible to do a valid health study in the Oscoda community.

MDHHS researchers do regularly speak with researchers from other PFAS sites around the country, such as Pease, to share study successes, challenges, and methods.

Question: "Have you ever directly advised the Air Force to stop doing that, polluting Clark's Marsh?"

Answer: MDHHS does not hold regulatory authority, so we are unable to advise or require clean-up actions. Under Base Realignment and Closure, the United States Air Force is responsible for investigating and if necessary, addressing any environmental contamination caused by the Air Force while operating Wurtsmith and has invested in over $85 million in cleanup actions. The Michigan Department of Environment, Great Lakes, and Energy (EGLE) became aware of PFAS concentrations in groundwater in March 2010 when EGLE staff performed sampling at a former fire training area on the base. EGLE, the agency that does have regulatory authority for civilian sites in Michigan, has been investigating the extent of the PFAS contamination in the area surrounding the Air Force Base for more than a decade. More information about their efforts can be found on the MPART website.

MDHHS has issued a number of health advisories for the Oscoda area, including a 'Do Not Eat' advisory for deer taken within five miles of Clark's Marsh in Oscoda Township, Eat Safe Fish guidelines for fish caught in the Au Sable River and Van Etten Lake, and a 'Do Not Eat Foam' advisory for Van Etten and Cedar lakes. The advisories issued by MDHHS are to inform public health and are not regulatory.

Question: "Has MDHHS reviewed a drinking water system sampling and modeling studies of WAFB old distribution system before 1997?"

Answer: Yes, MDHHS is familiar with these studies. The purpose of the capture zone study that this question referred to was to determine the potential for PFAS exposure through contaminated drinking water, not necessarily to model the amount of PFAS in the water supply. EGLE, formerly the MDEQ, found that water supply wells at the WAFB were likely impacted by PFAS from 1978 to 1997. The full capture zone report is available as well as other reports on the MPART website.

Question: "Could PFAS have caused a family member's cancer?"

Answer: Unfortunately, scientists are unable to say whether PFAS were the cause of any individual's illness. Studies are only able to make associations at a population level, never the individual level. This means that scientists can make conclusions about associations in general, but cannot say whether a chemical caused an individual's illness. To date, there is limited information on the association between PFAS and various human cancers (see the ATSDR Toxicological Profile for Perfluoroalkyls). Previously, ATSDR has published a Health Consultation, Re-evaluation of Past Exposures to VOC Contaminants in Drinking Water, which includes information about possible health risks due to exposure to volatile organic compounds in drinking water at the former Wurtsmith Air Force Base.

Question: "Is there any data regarding the health effects of PFECHS yet?"

Answer: Very few published studies are available and fewer still contain the information required to draw conclusions about the health risks associated with exposure to PFECHS, a type of PFAS. The MPART Human Health Workgroup has published a white paper on the current knowledge of physiochemical properties, environmental contamination, and toxicity of PFECHS. They will continue to review and evaluate new information related to PFECHS.

Animal (Daphnia, a small crustaceans or water flea) and plant (Chlorella, a green algae) studies have found that exposure to PFECHS was associated with cellular changes, which could be indicative of oxidative stress (Niu et al., 2019) or endocrine disruption (Houde et al., 2016). Oxidative stress and endocrine disruption are both bodily processes that can cause health problems. However, not enough is known at this time to be able to ascertain at what rate these effects occur in humans who may be exposed to this type of PFAS.

The citations for these articles are:

Houde, M., et al., Endocrine-disruption potential of perfluoroethylcyclohexane sulfonate (PFECHS) in chronically exposed Daphnia magna. Environmental Pollution, 2016. 218: p. 950-956.

Niu, Z., et al., The effect of environmentally relevant emerging per-and polyfluoroalkyl substances on the growth and antioxidant response in marine Chlorella sp. Environmental pollution, 2019. 252: p. 103-109.

Question: "What are the average PFAS blood levels found in humans living around PFAS contamination sites? For example, in Rockford?"

Answer: The average PFAS blood levels found in residents living around PFAS contamination sites vary by site and contamination history. Results from the North Kent County Exposure assessment were

published in September. A copy of the preliminary report, which includes average blood levels for a number of different PFAS, is available at Michigan.gov/DEHbio (click on NKCEA).

Question: "Has MDHHS conducted literature searches, routinely, around contaminated sites and PFAS levels in blood?"

Answer: Yes, MDHHS environmental epidemiologists and toxicologists conduct weekly literature searches for new PFAS literature, including articles about the PFAS levels in blood of people who live and work around contaminated sites.

Question: "Isn't the Air Force at Wurtsmith required to conduct a Risk and Exposure Assessment in the next couple years? Are you going to be involved with the Air Force when they do their assessment? Do you know when that is and how it is related to this? Can you provide that answer in the next town hall?"

Answer: Any investigation we do will be separate from the Air Force. The Air Force will be conducting a human health risk assessment but to our knowledge will not be conducting blood and urine sampling. They have not released full details on their upcoming human health risk assessment, but MDHHS will continue to monitor the information and stay up to date on their actions.

Question: "For any of the blood studies that you would be doing, would it be weighted based on how long someone actually lived in Oscoda or spent time here?"

Answer: Yes, these factors would be considered in our analysis, among others.

Question: "In other studies, are there any follow ups if people do have high levels of PFAS for maybe another test in three or five years? Or is it too early in the planning stage for that?"

Answer: Some epidemiological studies are designed to be longitudinal in nature – meaning, they track the same people over time to determine the rate that chemical levels increase or decrease over time and what health effects may be linked to those exposures. Other epidemiological studies, like an exposure assessment, are designed to identify the source(s) and level of exposure. Generally public health starts with a risk assessment and exposure assessment to determine risk of exposure, how much exposure has occurred, and if some populations are more likely to have been exposed than others. Based on conclusions of the exposure assessment, MDHHS will determine if there is a need for more information or additional protective measures. All study and response efforts are contingent on MDHHS having sufficient funding at the time to support these actions.

Question: "How do we know what the half-life of PFAS is in humans? Are there studies that inform that?"

Answer: Yes, there are laboratory animal and human studies that inform this. Half-lives of various PFAS in humans are based on the studies performed in workers and from other communities with many people drinking from city water supplies. A summary of those findings can be viewed in Section 1.2 - Summary of Health Effects of ATSDR's Toxicological Profile for Perfluoroalkyls.

Question: "How can we find more information about this project?"

Answer: Contact info:

- Taylor Sullivan (Project Epidemiologist)

  Sullivant4@michigan.gov

  517-512-0197

- Puneet Vij (Project Toxicologist)

  Vijp@michigan.gov

  517-582-4104

- Sue Manente (Project Community Engagement Specialist)

  Manentes@michigan.gov

  517-281-6091

Question: "How can I join the stakeholder group for this project?"

Answer: You can email Sue Manente at ManenteS@Michigan.gov or send questions and comments to MDHHS-PFAS@Michigan.gov. You can also call us with questions or comments at 844-464-7327. We are currently inviting community members to contact us expressing interest in joining the stakeholder group and have a plan in place to assemble a representative group from the community.

Discussion and Next Steps

Using information from the poll questions and open response questions, key community concerns are summarized below.

Key concerns

- Many people were concerned about continuing exposure to PFAS.

    - Although the exposure via drinking water has been addressed (filters offered for private well owners with PFAS impacts more recently and change in the water supply for the Air Force Base many years ago), PFAS exposure can occur in other ways.
    - Some people may still be exposed to PFAS through their diet, especially those who rely on hunting and fishing for food, or through other recreational activities.
- People were concerned about getting sick because of PFAS exposure and want to know if PFAS caused their sickness.
    - MDHHS noted that human health studies cannot determine that chemical exposure has caused any individual's illness; studies can only determine if there is an association between exposure and health at the **population level.**
- People most want to learn the amount of PFAS in their blood, ways to stop their potential exposure to PFAS, and how to talk to their doctor about potential PFAS exposure.
- The audiences were very interested in how the community's blood PFAS levels compared to others – specifically, those living in the Rockford area in Kent County, Michigan, and near Pease AFB in New Hampshire.
- Coordination between MDHHS, EGLE, and the Air Force was brought up multiple times.
- Foam on Lake Huron was an exposure concern.

Community reactions to further exposure investigations

- No one at the listening session was opposed to an exposure assessment.
- If MDHHS did a study, almost everyone thought that people who live in Oscoda for all or part of the year and people who fish or hunt in the area should be included (Figure 5, Poll Question 5). There was also a comment that veterans should be included.
- There were questions about study design (e.g., how many study participants we would need for various study possibilities). All questions are listed above in the Q&A section.
- Some attendees responded that they would be suspicious of results if a study found their community has blood PFAS levels similar to the national average. It would make them lose faith in the study. Another attendee said these results would lessen concern about exposure.
- Some attendees were concerned that an exposure assessment might have a negative impact on the tourism industry if high blood levels of PFAS are found.

Next Steps

- MDHHS will form a stakeholder group of community members to inform the development and implementation of the project, particularly in the area of recruitment.
- An informational meeting for those who expressed interested in being a stakeholder for this project will be held at the end of this year.
- Materials from the listening session are posted at Michigan.gov/Envirohealth → Find Your Area, Iosco County.

The Michigan Department of Health and Human Services will not exclude from participation in, deny benefits of, or discriminate against any individual or group because of race, sex, religion, age, national origin, color, height, weight, marital status, gender identification or expression, sexual orientation, partisan considerations, or a disability or genetic information that is unrelated to the person's eligibility.