PFAS and Public Health

Clean Wisconsin

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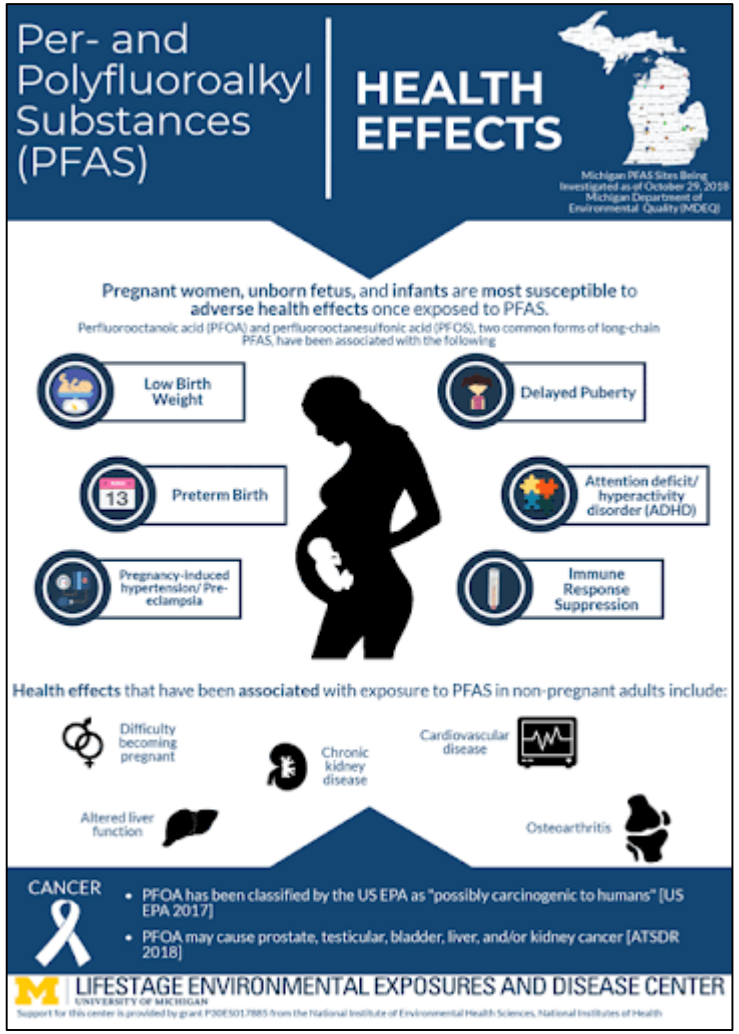
PFAS Drinking Water Standard

- *Public Health Benefits:* significant benefit from reduced PFAS exposure.
- Clean Wisconsin supports the proposed rule as it would set a uniform standard, specific procedures, and set PFAS limitations.
- The precautionary principle is followed in drinking water regulation to limit harm. Limiting harm to best protect public health should be the priority.
- A drinking water standard should be set at a low enough level that best protects public health.

Public Health Impacts

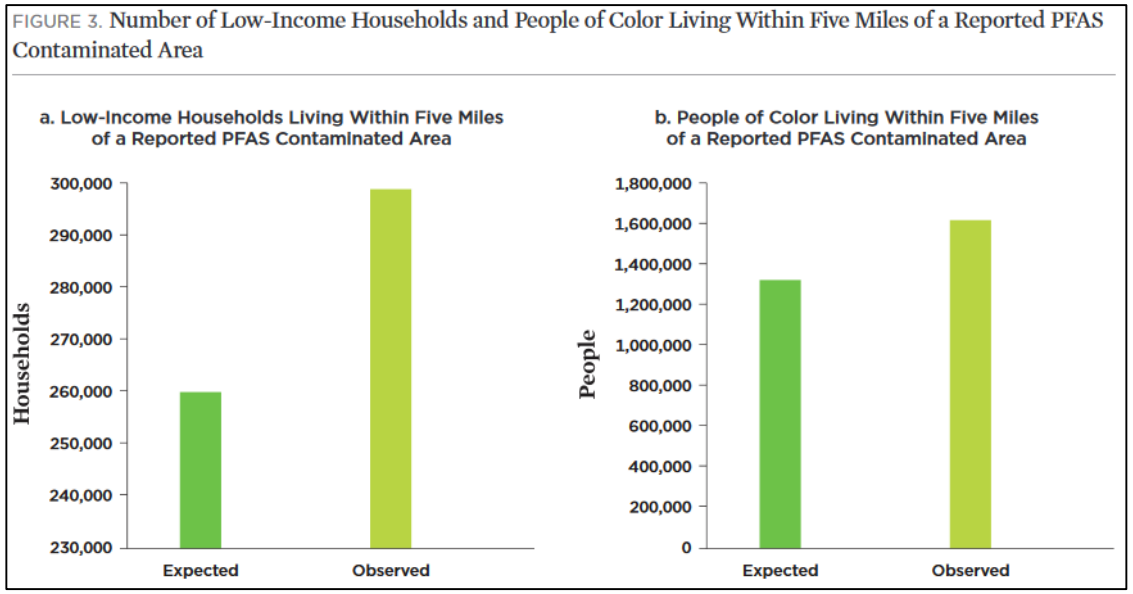
- PFAS pose the greatest risk to developing fetuses and infants.
- Lower infant birth weight.
- Interferes with hormones.
- Decreases women's fertility.
- Increased risk of serious conditions like high blood pressure or pre-eclampsia in pregnant women.
- Metabolic disease incl. increased cholesterol.
- Interferes with immune systems and vaccine response.
- Increases likelihood of kidney or testicular cancer.



Environmental Justice

- Low income and/or communities of color are more likely to live closer to industrial contamination sites.
    - Such sites are likely sources of PFAS contamination.

- <u>EXAMPLE:</u> The Union of Concerned Scientists published a report that looked at minority and low-income populations around 73 non-military PFAS contamination sites.
    - In Michigan, 48% more minorities and 49% more low income people lived within 5 miles of the state's 23 PFAS contamination sites than would be expected if the sites and populations were randomly distributed.



Environmental Justice

- Low-income and/or communities of color are more likely to live near a PFAS contamination site.
- Some underserved populations are heavily dependent on sustenance fishing, and PFAS bioaccumulates in wild fish.
  - Fish in contaminated areas will have even higher levels of PFAS than fish in other areas.
- Interactive effects of PFAS exposure with other environmental contaminants (e.g., lead) magnify the impacts of either exposure independently.

Public Health Costs of PFAS Contamination

- For European Economic Area countries, an analysis estimates the annual health impact-related costs from PFAS exposure of 52-84 billion Euros (approx. $62-100 billion USD). (Nordic Council of Ministers)
  - The analysis looks at a variety of health endpoints including kidney cancer, low birthweight, increased infection, hypertension, and increased all-cause mortality.

- The total cost of PFOA-attributable low birthweight births in the United States from 2003-2014 was $13.7 billion. (International Journal of Hygiene and Environmental Health)
  - Costs included direct hospital costs at the time of birth as well as lost economic productivity due to low birthweight births being associated with a variety of longer-term outcomes including lower lifetime earning potential.

Public Health Costs

- There is likely a significant benefit to the reduction in exposure to PFAS chemicals.
- Upgrading treatment systems to comply with PFOS and PFOA standards will have the ancillary benefit of removing some other PFAS compounds that are not being regulated and other harmful emerging chemicals not yet identified.

- NH and MI provided qualitative statements about the public health benefits and avoided costs of addressing PFAS in drinking water relating to enacting specific MCLs:
  - Given the potential for direct health care treatment costs, loss of income, and associated indirect costs, limiting exposure to the PFAS chemicals for which these rules establish MCLs will likely result in significant avoided costs.
  - Likely significant benefit to reducing exposure to [PFAS] through drinking water
  - Indirect costs such as reduced quality of life for both the sick individual and their family caregivers are often ignored or underestimated.

Home Valuation Costs

A report for the State of Minnesota in the legal action against 3M analyzed the impact of PFAS contamination in the east metro area of Minneapolis-St. Paul, MN.

- The report found that home values are reduced by 7.3% in Oakdale and reduced by 4.4% in other affected areas due to PFAS contamination.
  - EXAMPLE: the average house in Oakdale sold for $17,000 lower than expected (expected: $239,000). The average house other affected areas sold for $14,000 less than expected (expected: $320,000).

- Calculating cumulative past (dating back to 1971), present, and future (out to 2050) lost home value in the affected communities, the report found $1.5 billion in total lost home value damages due to 3M's PFAS contamination in the East Metro area.

Recreational Fishing Costs

- PFAS is known to accumulate in fish tissue, leading to some PFAS-related fish consumption advisories already in Wisconsin.

- A report of recreational fishing in the Twin Cities' east metro area found a 3-6% decline in visits to parks following the introduction of a PFOS advisory in an associated lake or river reach.
- Based on a willingness to pay study, they found that anglers would be willing to pay an average of $18 per trip to travel farther to fish to avoid a PFOS fish consumption advisory.
  - The annual impact was calculated to be $3.87 million in damages to the recreational anglers in the East Metro Area.

- EXAMPLE: Wisconsin receives $2.3 billion annually from fishing related economic activity. Hunters and anglers spend $4 billion in Wisconsin, support 56,000 jobs and generate $375 million in local and state revenue.

Potential Dairy Industry Costs

- There is the potential for impacts to the dairy industry. PFAS can contaminate dairy products if the farm's water, feed, or soils are contaminated.
- Farms may be contaminated by PFAS from nearby military bases using aqueous film-forming foam (AFFF), fields being spread with contaminated sludge, and discharge from nearby industrial sources. All three potential pathways exist in Wisconsin.
- Given the importance of the dairy industry to Wisconsin, and the presence of known PFAS contamination pathways, this potential cost could be considered.

<u>NM Case Study:</u>

- PFAS contamination of groundwater near Cannon Air Force Base where AFFF was used affected the Highland Dairy, a 4,000 head farm that supported more than 40 employees.
- Due to the contamination, the dairy's permit to produce milk as suspended by the New Mexico Department of Agriculture, resulting in the farm dumping 15,000 gallons a day and laying off most employees.
- Without the revenue from milk sales to pay for feed, and unable to sell the cows, the farm is facing reality of needing to euthanize the herd.

Reducing exposure, improving public health

A study looked at reproductive outcomes in people with water from Oakdale, MN's public water system compared to people drinking public water in other, PFAS unaffected communities both before and after Oakdale installed treatment in 2006.

- Prior to installation, Oakdale residents had worse health impacts than residents in unaffected communities.

- Following the treatment installation Oakdale residents showed <u>better reproductive outcomes and did not have increased risks</u> of preterm births or low birthweight births.
  - Risks in other affected communities that did not install treatment remained elevated compared to the unaffected communities.

- Installing treatment to address PFAS drinking water contamination will improve reproductive outcomes. Oakdale shows that clearly.

- This study provides evidence that addressing the problem does in fact improve public health.

Testing

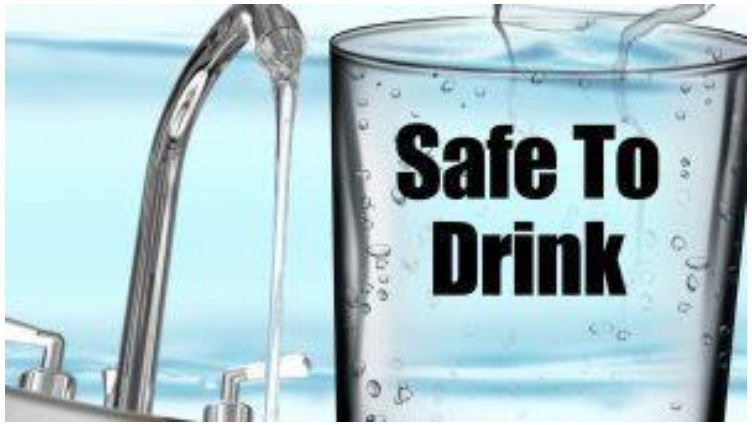
- We need to test public drinking water supplies in Wisconsin for PFAS.
  - People have the right to know what's in their water.
  - Need to understand the scope of the contamination to execute this rule properly.
  - Need Wisconsin data.

- Other states like MI, IL, OH, MN have all done testing and based on these and other states that have already done testing, we can expect about 5% of water supplies to come back with high PFAS levels that would require further action.

- The more we test the more we know.
  - EXAMPLE: Sept. 15, 2020 DNR/DHS do not eat advisory for deer liver in 5-mile area surrounding JCI/Tyco site in Marinette.

Summary

- Cleaning up PFAS contamination in a way scientists recommend to protect public health should be the priority when addressing PFAS in drinking waters.
- There is a clear and significant benefit to reducing exposure from PFAS that can come from a statewide drinking water standard.
- There is a significant benefit to the reduction in exposure to PFAS chemicals given health effects.
- Indirect and direct harms from PFAS pollution need to be taken into consideration:
  - Disproportionate impacts to low income and/or communities of color,
  - impact of environmental contamination (soil and water),
  - impacts to public health and associated costs,
  - impact to home values,
  - recreational fishing costs,
  - potential impact to the dairy industry.
- Clean Wisconsin supports science-based PFAS standards that most importantly protect public health.



- This is about maintaining protection of public health, welfare and safety in Wisconsin's drinking water.
- Everyone deserves access to clean, safe drinking water.
- We need to start testing for and better understanding where PFAS contamination is and cleaning it up immediately.
- People should no longer be unaware that they are drinking unsafe levels of PFAS.

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