Wisconsin
Department of Health Services

Case Study: Building Partnerships for Wisconsin's Harmful Algal Blooms Program

Background

Wisconsin's Harmful Algal Blooms (HAB) Program has relied on partnerships from the beginning.

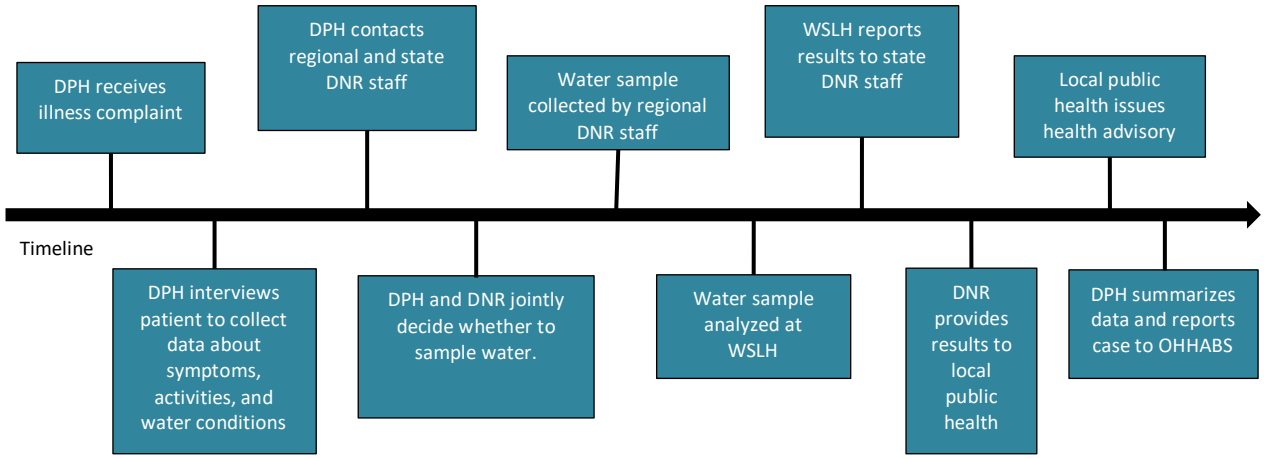
The program started in 2008 as part of CDC's Harmful Algal Bloom Illness Surveillance System (HABISS) project. As one of 10 pilot states participating in the HABISS project, Wisconsin carried out its activities through a core partnership consisting of the Division of Public Health (DPH) in Wisconsin's Department of Health Services (DHS), the Department of Natural Resources (DNR), and the State Laboratory of Hygiene (WSLH).

The HABISS project ended in 2013, but DPH found a way to maintain active surveillance for HAB-related illnesses and build upon the existing HAB program infrastructure and agency partnerships. DPH incorporated HAB surveillance activities into a CDC/Council of State and Territorial Epidemiologists (CSTE) Fellowship within DPH, which was supported by CDC and the Great Lakes Restoration Initiative. With support from the CSTE fellow, DPH was able to participate in the design and development of CDC's One Health Harmful Algal Bloom System (OHHABS), a system that launched in June 2016 to collect information about HABs and associated illnesses nationally. The state began reporting to OHHABS in 2017.

How the Program Works

Wisconsin uses a passive surveillance system in which citizens, medical and veterinary providers, local health authorities, lake associations, and others voluntarily report HAB-related illness complaints and cases to DPH. DPH receives HAB-related illness reports through direct email or telephone calls; an online illness reporting form on the DHS website; referrals from the Wisconsin Poison Center; referrals from DNR, local public health agencies, and lake associations; and referrals from WSLH following private client submissions for HAB testing. The following diagram shows how various agencies within the partnership work together during a HAB case investigation.

HAB case investigation workflow and responsibilities by agency



Benefits of Partnerships

Because Wisconsin has thousands of bodies of water, partnerships with state, local, and citizen organizations are essential to achieving program goals. Since the start of the HAB program, DPH has worked with over 15 organizations and groups, including lake associations; public health and environmental protection programs in bordering states; local land and water conservation departments; and other federal and local government organizations.

Wisconsin has benefited from these partnerships in the following ways:

Increased reporting and capacity

DPH's partnerships with local health departments, volunteer groups, the Wisconsin Poison Center, veterinary and medical communities, and others have helped increase monitoring and surveillance sensitivity for HABs and related illnesses. For example, notifications of HAB-related illnesses received by the Wisconsin Poison Center now make up about one-third of all illness reports received by DPH. DPH shares information in a standardized way with CDC by reporting HABs and associated illnesses into OHHABS. The information collected through OHHABS helps Wisconsin and other partners and states increase their knowledge and information about HABs and their effects on people, animals, and the environment, contributing to regional and national public health efforts to prevent HAB-associated illnesses.

Increased awareness of HABs and Wisconsin DPH's HAB program

Getting the word out about HABs through a variety of channels is key to spreading awareness of HABs among different audiences. Local partners can increase the reach of key messages on HAB reporting and safety by using their own communication networks, and working together has helped Wisconsin standardize HAB advisory messaging (such as signage on beaches) across the state. Partners have helped DPH by giving presentations to citizen monitors and lake associations; creating informational YouTube videos for the public; helping develop a DPH Harmful Algal Bloom Toolkit to serve as a planning guide for public health and emergency response officials; and reaching out to veterinarians and medical professionals.

Improved environmental data sharing

Working together, partners can pool and exchange environmental data to increase the scope of HAB surveillance. For example, local and other state health departments often share information with DPH when HAB exposures are reported in border areas or their own state. Citizen monitoring groups tell local health departments when a HAB is suspected so health advisories can be issued.

Shared resources, knowledge, and experience

There are many benefits to sharing resources such as funding, personnel, and laboratories, including the continuation of HAB program operations if funding to one partner is reduced. Other examples from DPH's experience include:

- A new HAB surveillance project allowed DPH to share resources with local public health and DNR staff by piloting the use of microcystin strip testing at state park beaches.
- A local health department trained DPH staff on how to perform strip testing and helped DPH develop the sampling and strip testing protocols.
- WSLH performed complimentary testing of DNR samples while validating a new in-house laboratory test for cyanotoxins.
- Collaboration among a variety of professionals has given partners access to a wide range of experts. These professionals include lake biologists, water quality scientists, research scientists, veterinarians, physicians, epidemiologists, toxicologists, chemists, microbiologists, and public health nurses.

Timely sampling, assessment, and response

DNR's network of regional lakes staff samples water and assesses environmental conditions at water bodies in a timely manner in response to illness reports. Additionally, water testing time is faster thanks to availability of

new methods at the state public health lab. In turn, DPH is able to complete rapid public health risk assessments, disseminate health advisories, and—when necessary—recommend beach closures by local health departments and DNR more quickly.

Enhanced water quality

Data from Wisconsin's HAB Program (historical and current toxin data, with information on health risks associated with those bloom events) was used by a lake association to support passage of a local shoreland zoning ordinance to improve water quality protection.

Wisconsin DPH Harmful Algal Bloom Program Partners

DPH has collaborated with the following organizations and groups since the HAB program started in 2008.

- Wisconsin Department of Natural Resources
- Wisconsin Poison Center
- Wisconsin State Laboratory of Hygiene
- Wisconsin Veterinary Medical Association
- Wisconsin Veterinary Diagnostic Laboratory
- Local health departments
- Sanitary districts, or local authorities charged with protecting watershed areas, generally through wastewater and sewer management
- Local land and water conservation
- Nonprofit organizations with citizen groups who monitor waterways
- Lake associations
- Public health and environmental protection programs in bordering states (Michigan, Minnesota, Illinois, and Iowa)
- The Council of State and Territorial Epidemiologists
- CDC

Lessons Learned

- While partners are eager to participate in enhanced surveillance opportunities and projects, limited staff resources can still pose challenges when the time for implementation comes. Project planning should involve honest discussions among all partners about time commitments and competing priorities to maximize success.
- Using a small number of trained and experienced staff to perform environmental sampling ensures proper collection technique and specimen handling, improving confidence in the accuracy of results. Samples collected by people not experienced in HAB sampling have sometimes resulted in inaccurate results. Use trained staff and standardized sampling protocols.
- Working with partners to develop shared talking points for all partners helps foster consistent messaging and recommendations to protect public health, no matter which partner receives an inquiry.

Partnership Suggestions for Other Health Departments

- Think outside the box. Cast a wide net and include as many program areas and disciplines as possible.
- Reach out – locally and nationally. Find contacts in the agencies you are interested in and start a dialogue.
- Form multi-agency working groups to bring together experts in HAB ecology, lakes management, public health, drinking water systems, and environmental toxicology.
- Don't forget to look within your own agency for opportunities for collaboration.
- For state health departments, become familiar with the resources and partnerships that already exist at the local/county levels within your state.
- Talk to other states about their HAB partners to get new ideas.
- Keep it going! Cultivate and maintain the relationships your program has already developed. Pass along contacts when new staff join the program.

Wisconsin Harmful Algal Blooms Program Resources

The following are some resources developed by Wisconsin's HAB Program:

Publications

- Wisconsin Department of Health Services, Division of Public Health. (2014). Wisconsin Harmful Algal Blooms Toolkit. (PDF file). Retrieved from https://www.dhs.wisconsin.gov/publications/p0/p00853.pdf
- Wisconsin Department of Health Services, Division of Public Health. (2011). Harmful Algal Blooms in Wisconsin's Lakes. (Brochure). Retrieved from https://www.dhs.wisconsin.gov/publications/p4/p45069.pdf

Presentations

- Dieckman, J.L. (1 April 2016). Health Effects Related to Harmful Algal Bloom Exposure. Presented at the Wisconsin Lakes Partnership Convention, Stevens Point, WI. Retrieved from http://www.uwsp.edu/cnr-ap/UWEXLakes/Documents/programs/convention/2016/FridayConcurrent/Session9/JordanDieckman_HealthEffectsRelatedtoHarmfulAlgalBloomExposure.pdf
- LaLiberte, G.D. (1 April 2016). Blue-green Algae in Wisconsin: Their Identification, Potential Health Effects, and Determination of Safe Levels for Recreation. Presented at the Wisconsin Lakes Partnership Convention, Stevens Point, WI. Retrieved from http://www.uwsp.edu/cnr-ap/UWEXLakes/Documents/programs/convention/2016/FridayConcurrent/Session9/GinaLaLiberte_BluegreenAlgaeInWisconsin.pdf
- Koske, S.E., E. Wollenburg, and M.A. Werner. (14-18 June 2015). Evaluation of the Wisconsin Harmful Algal Bloom Surveillance Program, 2009-2014. Poster session presented at the *Council of State and Territorial Epidemiologists Annual Conference,* Boston, MA. Retrieved from https://cste.confex.com/cste/2015/webprogram/Paper4641.html

Newsletter, magazine, and trade publications

- LaLiberte, G.D. (August 2015). Learn more about Blue-Green Algae. *Wisconsin River TMDL Newsletter*, August 2015: 4-5. Retrieved from http://dnr.wi.gov/topic/TMDLs/documents/WisconsinRiver/newsletter/NewsletterAug2015.pdf
- LaLiberte, G.D. (2014). Summertime, and the living is… green? *Lake Tides Newsletter*, 39(2): 4-5. Retrieved from http://www.uwsp.edu/cnr-ap/UWEXLakes/Documents/resources/newsletter/vol36-vol40/vol39-2LTspring2014websmall.pdf
- Koske, S.E. (July 2014). Keep Harmful Algal Bloom-Related Illness on Your Differential List this Summer; The Wisconsin Division of Public Health Seeks to Increase Illness Reporting with Veterinarians' Help. *Wisconsin Veterinary Medical Association Voice*, July 2014: p. 14. Retrieved from https://issuu.com/wvma/docs/wvma-nl-july-2014_web/14

Outreach Materials

- Wisconsin Department of Natural Resources (WIDNRTV). (3 Aug 2012). *Blue-Green Algae.* (Video file). Retrieved from https://www.youtube.com/watch?v=CGG50pfBEhI