**BACKGROUND**

Harmful Algal Blooms (HABs) are caused by rapid overgrowth of aquatic cyanobacteria. Many cyanobacteria species produce cyanotoxins, which can cause severe illness in humans and animals.

Established in 2009 through the Centers for Disease Control and Prevention’s (CDC) Harmful Algal Bloom Illness Surveillance System (HABSS), Wisconsin’s HAB Surveillance Program collects data to track incidence of HAB-related illness, evaluate health impacts of HAB exposure, target outreach activities to increase HAB awareness, and inform public health interventions. Program activities are carried out through a partnership between the Wisconsin Department of Health Services (DHS), Division of Public Health (DPH), the Department of Natural Resources (DNR), and the State Laboratory of Hygiene (WSLH) (Figure 1).

During 2006-2014, DHS received 173 health complaints related to HAB exposure. Illnesses are reported voluntarily by citizens, medical and veterinary practitioners, the Wisconsin Poison Center, and referrals from other state and local agencies (Figure 2). After CDC funding for HAB surveillance was discontinued in 2013, case investigation and follow-up activities were integrated into a CDC/CSTE Applied Epidemiology Fellowship position.

**OBJECTIVES**

- Assess the state’s ability to detect, investigate, and confirm HAB-related illnesses (HABRI).
- Assess the state’s ability to protect public health by identifying water bodies where health advisories are needed.
- Identify ways in which the HAB surveillance system could be improved.
- Identify program activities to prioritize during periods of low capacity.

**METHODS**

- Using the CDC Updated Guidelines for Evaluating Public Health Surveillance Systems,1 system simplicity, flexibility, acceptability, timeliness, sensitivity, data quality, stability, Predictive Value Positive (PVP), representativeness, and usefulness were evaluated.
- Senior staff at each partner agency were interviewed and asked to reflect on program goals, performance, and barriers to optimal operation.
- Surveillance data were analyzed quantitatively, for example, to determine if survey data could be directly compared, using a t-test.

**RESULTS**

- Simple system operation.
- Excellent agreement between case assessment conclusions and water testing results (PVP).
- Excellent ability of DPH staff to recognize probable cases and determine if water conditions are still representative of those at exposure.
- Cyanobacteria and/or toxins present in 97.7% (n=43) of water samples collected in response to illness cases.
- Excellent case investigation and response timeliness when illnesses are reported are quickly resolved (Figure 5).
- Delayed illness reporting dramatically affects the program’s ability to collect representative samples and intervene to prevent additional exposures.

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**REFERENCES**


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