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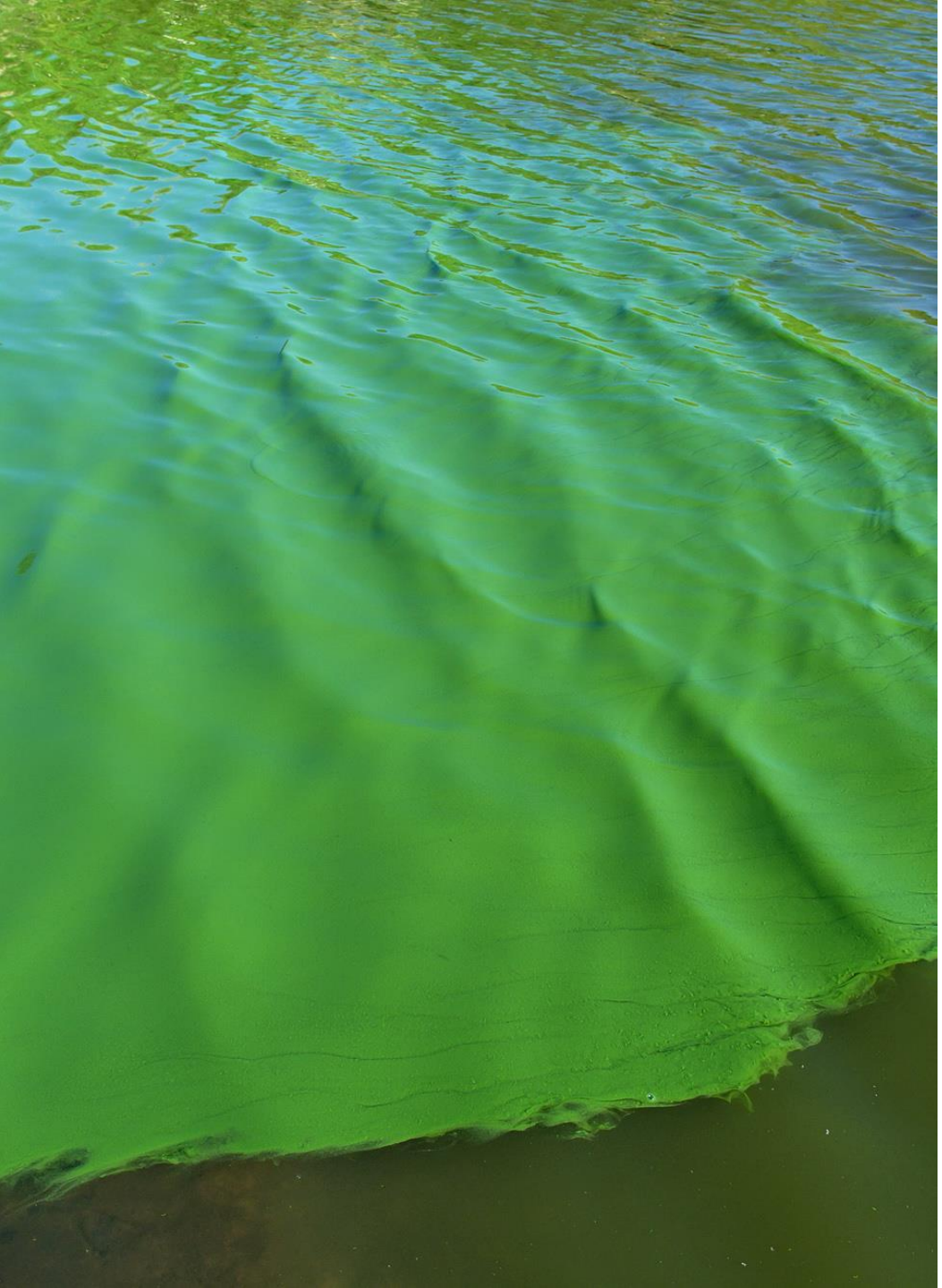
# Cyanobacteria Blooms: Raising Awareness in a Primary Care Setting

Eliza A. Bradley
*University of Vermont*



# Cyanobacteria Blooms: Raising Awareness in a Primary Care Setting

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July to August 2023

# Problem Identification: Cyanobacteria

- Cyanobacteria is a common bacteria in freshwater around the US and is often found in lakes such as Lake Champlain. (2) Cyanobacteria can multiply quickly in water to form dense populations which are often called "blooms." (2)
- Cyanobacteria can produce toxins which can cause illness in humans upon exposure via multiple routes such through reactional activities, water consumption or contaminated food consumption. (2) Presentation of human illness from cyanobacteria blooms is variable, but reports have included acute gastroenteritis, skin rash, oral ulcers and other pathological presentations including, in extreme cases death. (6)
- In 2021, the Center for Disease Control and Prevention (CDC) reported from 16 states that there were 117 illnesses from harmful algal blooms, including cyanobacteria which occurred largely in freshwater during the summer months, with numbers peaking in August. (5)
- Cyanobacteria bloom season in Lake Champlain has steadily increased since monitoring began prolonging the length of time it is possible to be exposed to harmful blooms. (4)
- In Vermont, cyanobacteria is largely monitored and reported through visual inspection. This is done through both staff and volunteers and reported to the Cyanobacteria Monitoring Tracker. (2) However, many water sources are not routinely monitored.
- **It is therefore imperative to teach Vermonters what cyanobacteria blooms look like, and signs of illness in humans and animals so they can stay safe and healthy in the summer months.**

# Public Health Cost

- Estimates of global burden of disease caused by harmful algal blooms (including cyanobacteria blooms) indicate that each year the economic damage could be as high as 30.3 Million USD. (3)
- Public health impacts include decreased water quality, healthcare costs, loss of income from workplace, impact on businesses and many others
- The CDC reports that in 2021, that of cases of harmful algal bloom exposure resulting in illness 38% were between the ages of 18-45, and 46% were younger than 18. These exposures primarily occurred either at outdoor public areas or beaches. (5)
- In Vermont, Lake Champlain public beaches are most often closed to the public due to cyanobacteria blooms, which occurs on 2% of the days cyanobacteria reporting occurs. (1)
- From July 23rd to 29th, 2023, the Lake Champlain Committee received 130 reports about cyanobacteria with 23 of these reporting bloom conditions.

# Community Perspective

"Making more people aware of what cyanobacteria blooms look like would certainly be a benefit"

**Peter Isle, PhD**

*Project Leader, Lake Champlain Long-Term and Cyanobacteria Monitoring programs (Department of Environmental Conservation)*

"We want everyone to know what cyanobacteria blooms look like"

**Bridget O'Brien**

*Radiological and Toxicological Analyst (Vermont Department of Health)*

# Intervention and Methodology

Reviewed the literature, and found an appropriate information sheet for patients, and educational resource for physicians on cyanobacteria blooms

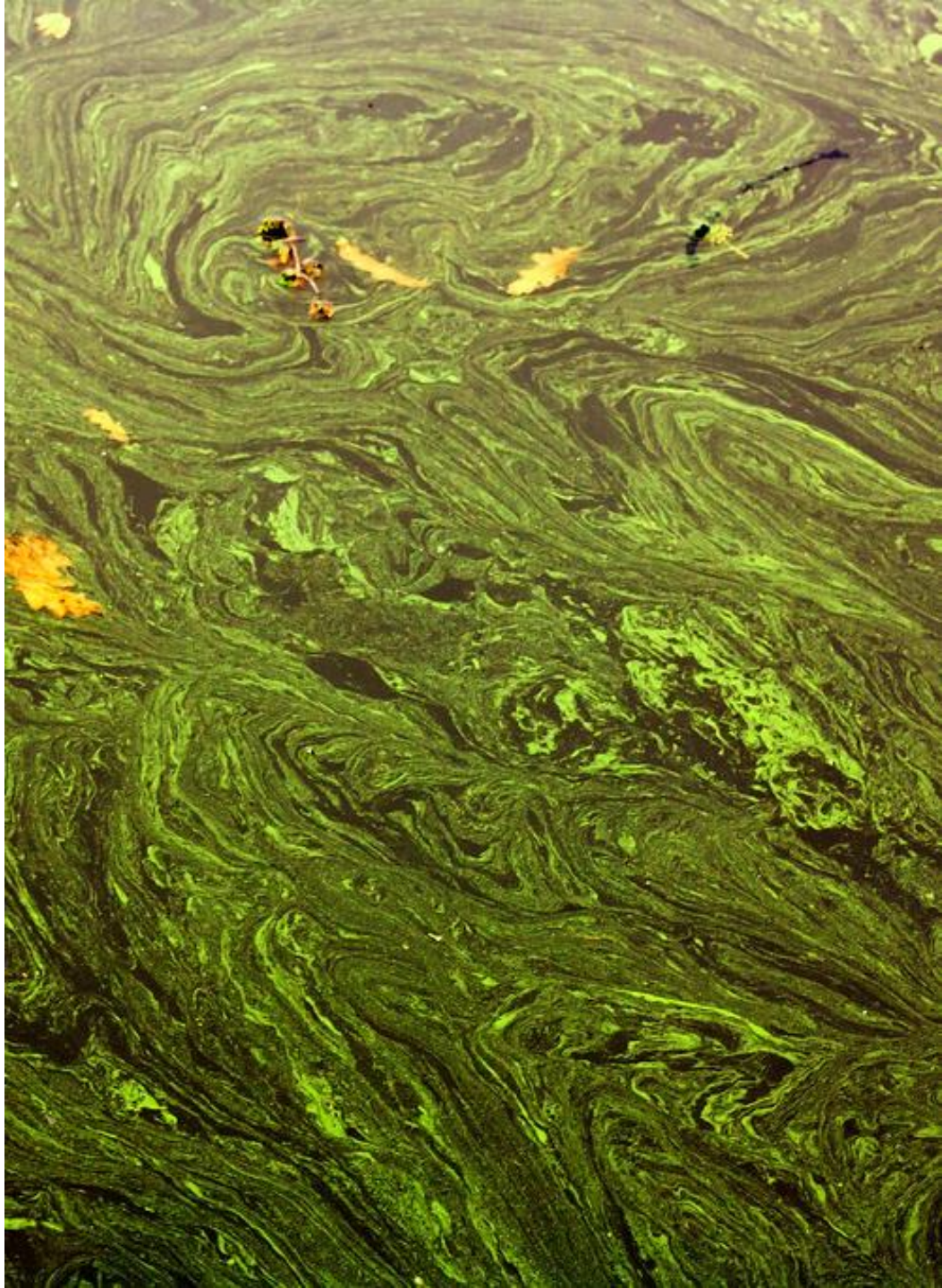
Selected the Vermont Department of Health's Cyanobacteria information sheet for patient education

Selected the Center for Disease Control and Prevention's Physician Reference for Cyanobacteria Blooms as a resource for physicians

Distributed handouts and physician resources at Hinesburg Family Medicine Practice and South Burlington Family Medicine Practice

# Results and Response Data

- Time scope of this project limited qualitative data
- Informational materials to help with both the identification of cyanobacteria blooms and signs of cyanobacteria sickness were distributed to two family medicine practices who serve populations interacting with Lake Champlain
- Discussion of the project with physicians in different practices about next steps, and how to implement further awareness led to ideas for future interventions



# Evaluation of Limitations and Effectiveness

- Limitations
  - Time: clinic time is already limited and adding a topic that might only pertain to specific individuals is not plausible
  - Scope: limited intervention to two clinics, wider dissemination would be helpful in reaching a broader population
- Effectiveness
  - Able to find clear resources online to help educate patients and providers
  - Patients might not read the bulletin board, and therefore, may not obtain the information on Cyanobacteria

# Recommendations for Future Projects

Dot phrase creation for physicians to include in notes for patient education if patients mentioned concerns about cyanobacteria exposure or identification

Complete a random survey of individuals in the Burlington area to assess what the public levels of knowledge are surrounding cyanobacteria bloom identification

Design an intervention to educate patients swimming in fresh water about cyanobacteria monitoring programs and identification

# References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# Image References

- Slide One
  - https://commons.wikimedia.org/wiki/File:Cyanobacteria_Aggregation2.jpg
- Slide Three
  - https://www.healthvermont.gov/sites/default/files/documents/pdf/ENV_THO_cyano_sign_red_closed.pdf
- Slide Six
  - https://www.flickr.com/photos/jimmysymons/15636345407/
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