One Health Surveillance and Harmful Algal Blooms

Bureau of Epidemiology

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Project Summary

Develop a surveillance program to capture cyanobacterial toxin-related disease in domestic animals to help prevent exposure in humans

Utilize Florida mosquito virus surveillance as a template:

- Use animal data for surveillance.

- Development and use of a veterinary case definition.

- Improved ease of reporting and education to enhance reporting.

- Use data-based triggers for public notification and communication.

Major Takeaways

- Case definitions provide data consistency.

- Partnerships with others provide:
    - Standardized information for stakeholders, including human and veterinary health care providers and the public.
    - Multiple sampling data sources to trigger automatic public notification on ProtectingFloridaTogether.gov.

- Work with laboratories - harmful algal bloom toxin panel for veterinary testing.

- Development of in-person veterinary education and online educational tools for veterinarians and pet owners.

Why Use Animals for Surveillance?

Behavioral differences increase exposure risk for pets and livestock compared to people:

- Ingestion of untreated water and other contaminated material in or near water.
- Swimming through large blooms.

- Earlier trigger for public notification.

- Better characterization of veterinary cyanobacterial toxicosis can help inform human health (i.e., risk factors, clinical presentation, testing).

- Engages pet and livestock owners; educate on both human and veterinary health aspects.

Research Priorities

The following were the research priorities identified in 2019 which apply to the work of the Florida Department of Health.

- Identify all toxins, risks, and levels of toxicity, including microcystin, stress.
- Develop more clear diagnostic criteria for (veterinary and human) health care providers.

New Data Gaps

- Increase veterinarian awareness about cyanobacterial toxicoses and value of optional reporting.

- Increase owner and veterinarian awareness of available cyanobacteria environmental data.

- Cyanobacterial toxin toxicity levels in domestic animals are not well characterized.

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