

OHHABS Data Entry and 2021 - HAB-Related Human Health Effects Recap



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What's OHHABS?



- OHHABS = **One Health** Harmful Algal Bloom System
- CDC surveillance system launched in 2016
- Voluntary reporting system
- Available to state and territorial public health departments and their partners
- Web-based, password-protected system
- Event-based, not real-time notification or case investigation system

For more information on OHHABS visit: <https://www.cdc.gov/habs/ohhabs.html>

Background & Purpose



- **One Health** is an approach which recognizes that the health of people is closely connected to the health of animals and our shared environment – (CDC)
- HAB adverse effects impact: economic, ecologic, human and animal health
- CDC analyzes and shares OHHABS data to better understand HAB occurrences, number of illnesses, where illnesses are occurring, and what are the signs and symptoms in humans and animals
- Understanding human and animal exposures can inform action to reduce exposure and prevent future illnesses.

Three Data Types Collected for OHHABS

- HAB events in fresh and marine water (environmental data)
- HAB-associated human cases of illness
- HAB-associated animal cases of illness (pets, livestock, wildlife)
 - Animal illnesses may serve as early warnings for potential human illness



Human Illnesses

Partners that help detect human illnesses include:



Healthcare providers



Poison control centers



General public



Animal Illnesses

Partners that help detect animal illnesses include:



Veterinarians



Wildlife biologists



Pet and livestock owners



HAB Events

Partners that help detect HAB events include:



Environmental professionals



Researchers

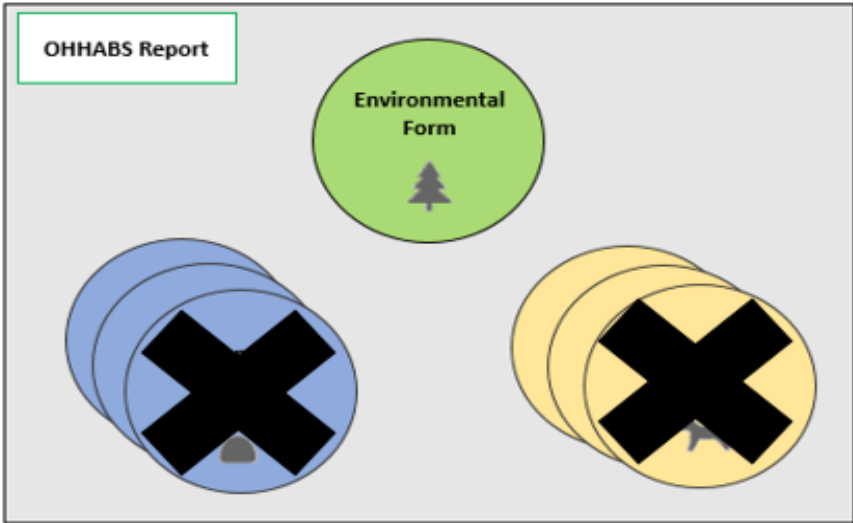


General public

Types of Data Collected in an OHHABS Report

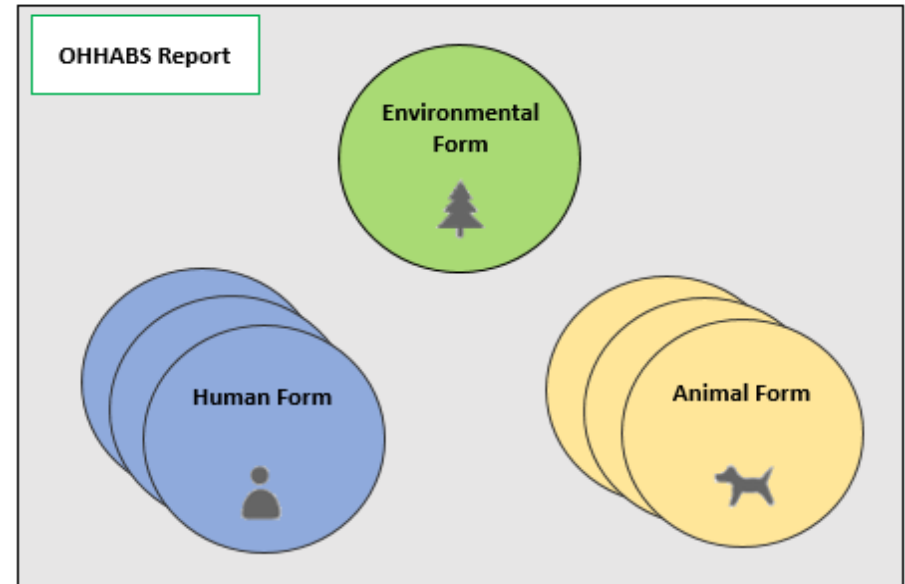
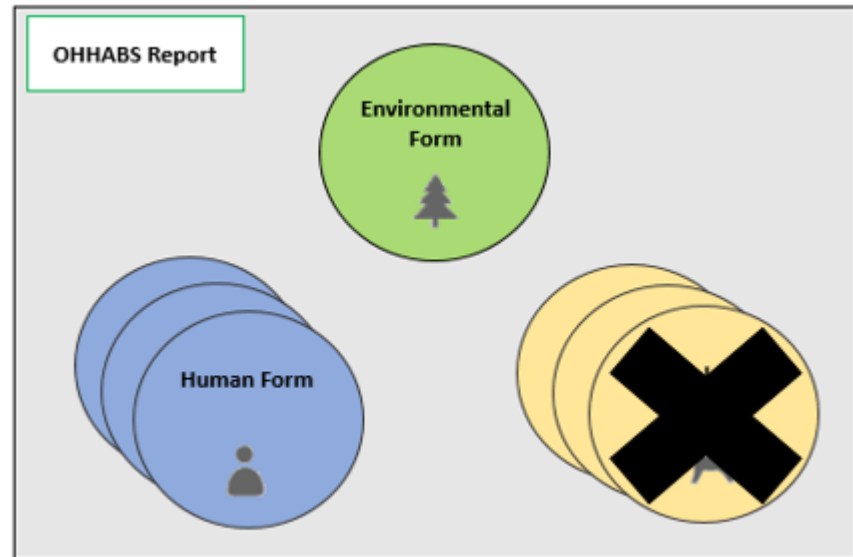
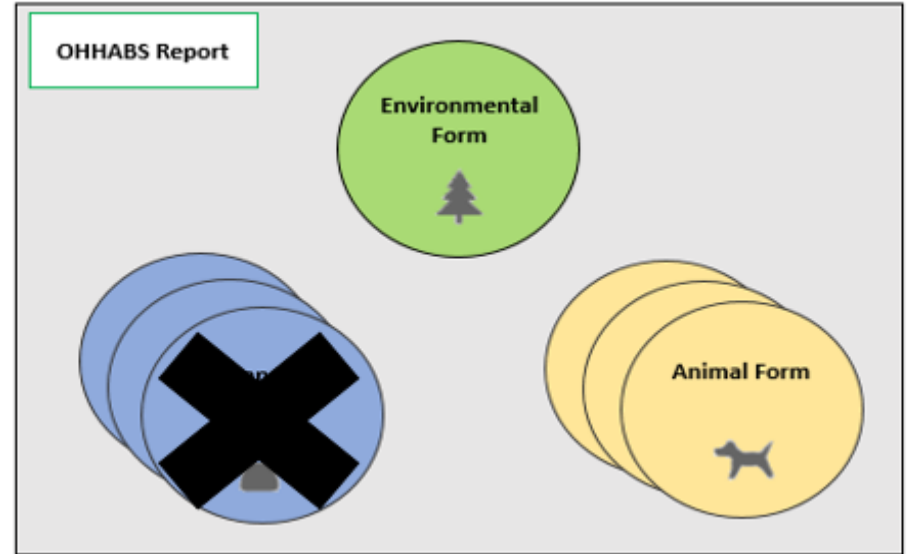
Form Type	Types of Data Collected
Environmental Form	<ul style="list-style-type: none"> • Location of the HAB event • Date of the events • Observed water body characteristics • Advisories and health warnings • Laboratory testing – event sample testing • Pathogens or toxins detected • Other data systems that contain associated information • Seafood catch or harvest location for HAB-associated foodborne illnesses
Human Form	<ul style="list-style-type: none"> • General case information (e.g., sex, age in years) • Exposures (e.g., activities, duration) Date of exposure & Location • Signs and symptoms of illness • Medical and health history • Clinical testing • Pathogens or toxins detected in clinical samples
Animal Form	<ul style="list-style-type: none"> • General case information (e.g., type of animal, single/group of animals) • Exposures (e.g. activities, duration) Date of exposure & Location • Signs of illness • Health information (e.g., veterinary treatment) • Clinical testing • Pathogen or toxins detected in clinical samples

OHHABS Report Scenarios



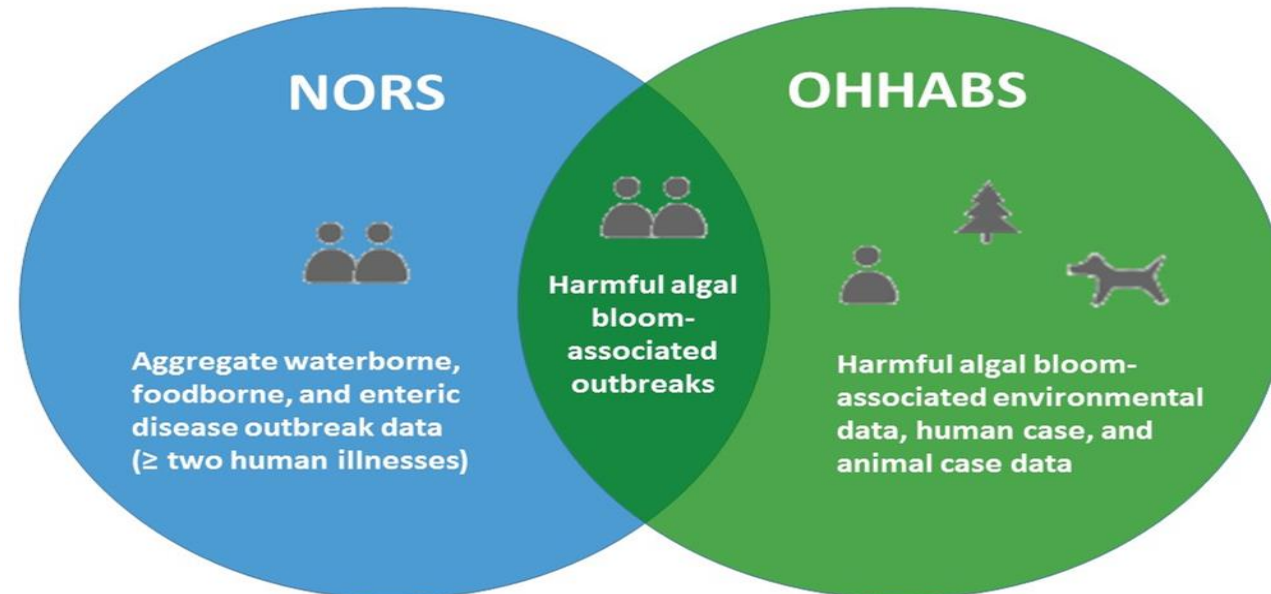
An OHHAB report for an event will always contain at least an Environmental form and may or may not include

- Human form(s)
- Animal form(s)



OHHABS and NORS

- **NORS = National Outbreak System**
- OHHABS is linked to NORS system
- HAB-associated outbreaks (\geq two human cases of illness) may be reported to OHHABS and NORS
- HAB-associated outbreaks data are collected differently in each system, although both share similar technical reporting features



OHHABS Case Definitions by Report Type

Table 1. Definition of a HAB event

Definition	Criteria		
HAB Event	Laboratory-based HAB data ¹	Observational or environmental data ²	HAB-associated illness ³
1. Suspect		Required to have 1	
2. Confirmed	Required		
3. Confirmed		Required	Required

Table 2. Definition of a Human HAB-associated case

Definition	Criteria							
Human HAB-associated Case	Exposure ¹	Signs/symptoms ²	Public health assessment ³	Professional medical diagnosis ⁴	Other causes of illness ruled out ⁵	Observational or environmental data ⁶	Laboratory-based HAB data ⁷	Clinical data ⁸
1. Suspect	Required	Required	Required					
2. Probable	Required	Required	Required			Required to have 1		
3. Probable	Required	Required	Required	Required	+/-	+/-	+/-	
4. Confirmed	Required	Required	Required	Required to have 1		+/-	+/-	Required
5. Confirmed	Required	Required	Required	Required	Required		Required	

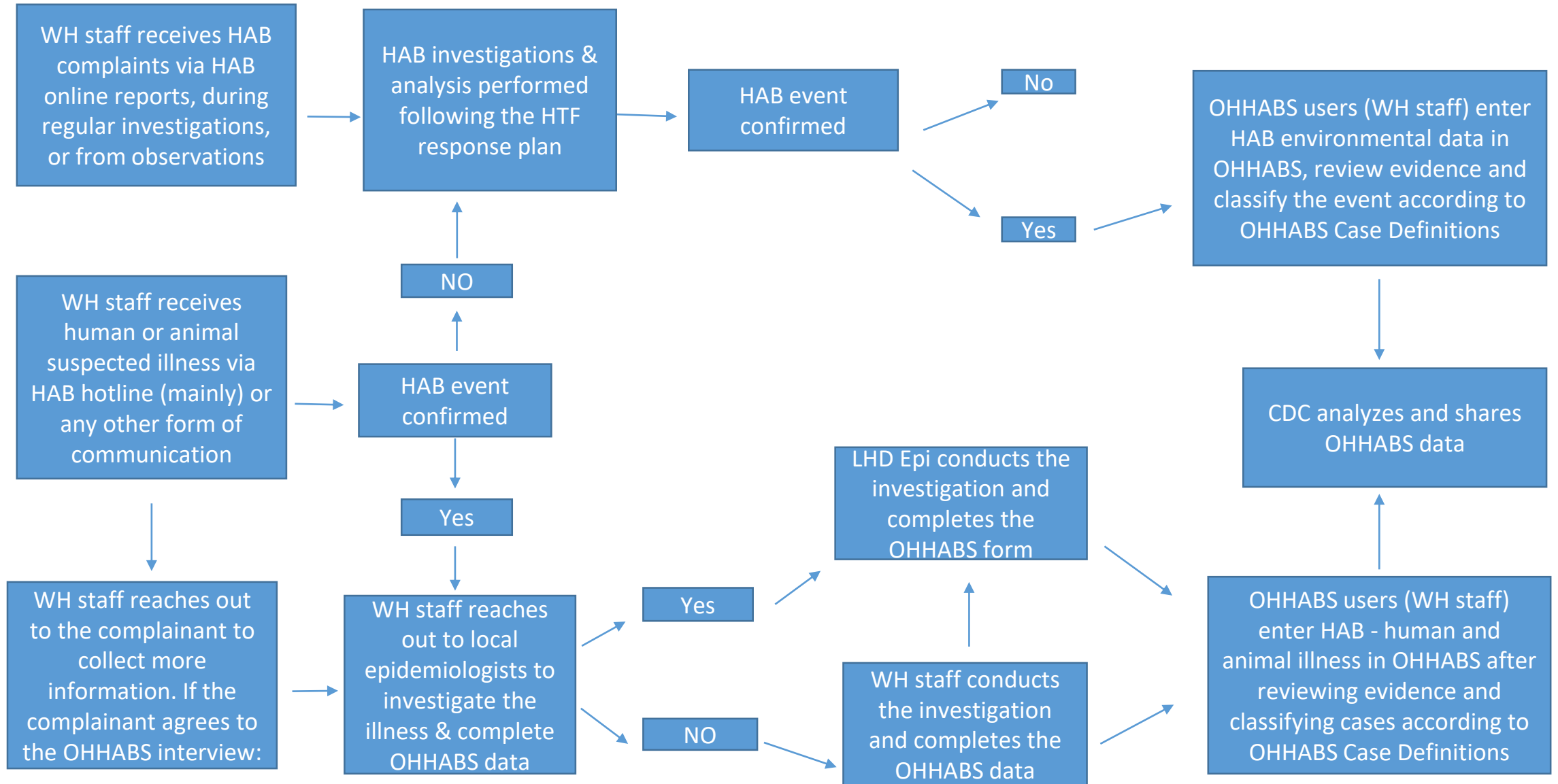
Table 3. Definition of an Animal HAB-associated case

Definition	Criteria								
Animal HAB-associated Case	Exposure ¹	Signs ²	Public health assessment ³	Professional medical diagnosis ⁴	Other causes of illness ruled out ⁵	Observational or environmental data ⁶	Laboratory-based HAB data ⁷	Clinical data ⁸	
1. Suspect	Required	Required	Required						
2. Probable	Required	Required	Required			Required to have 1			
3. Probable	Required	Required	Required	Required	+/-	+/-	+/-		
4. Confirmed	Required	Required	Required	Required to have 1		+/-	+/-	Required	
5. Confirmed	Required	Required	Required	Required	Required		Required		

VDH OHHABS Case Definition

HAB events (environmental forms) *mostly* fall under “confirmed”
HAB-associated Human and animal illness *could* fall under “suspect” or “probable”

VDH – OHHABS Process Flow



2021 - OHHABS Environmental Data Summary

- **10** Environmental forms were submitted to OHHABS Reporting System:
 - **Lake Anna: Pamunkey Branch** (Upper & Middle) = **3** human reports
 - Lake Anna: Terry's Run Branch MID
 - Lake Anna: North Anna (Upper, Middle, Lower)
 - North Fork Shenandoah near Bethel Road
 - North Fork Shenandoah – near Strasburg
 - Lower River Road
 - NFSR - HAB activity associated with 4 human complaints, **3** submitted to OHHABS
 - **Middle of James River – near the mouth of Chickahominy River** = **1** human report
- All case definitions were classified as **“confirmed”** except for the Middle of James River, which was classified as **“suspected”**

2021 - Suspected HAB - Health Effects

Overview:

- We received **12** HAB-suspected human health effects
- Out of the 12 cases we were able to interview and submit data for **7** cases

The cases are classified based on HAB events observational and laboratory data

Activity Location	# of Complaints	# of OHHABS Forms	OHHABS Classification
Lake Anna - State Park	1	0	0
Lake Anna U. Pamunkey	6	3	Probable
ODU – Phytoplankton Lab	3	2	Probable
NFSR	1	1	Probable
James County SP – Mouth of Chickahominy River	1	1	Suspected

2021 Summary - Lake Anna HAB-Suspected Health Effects

- First HAB advisory issued on 7/1 - for U. Pamunkey Branch
- 7/9 -7/14 we received 6 complaints all from U. Pamunkey
- We were able to interview 3 cases – these cases also submitted to NORS by OEPI as water illness outbreak

# of Cases	Location of exposure	Date of Recreation Activity	Illness Onset	Symptoms & Signs	Illness Recovery
1	Upper & Mid Pamunkey	7/2/21 - (swimming)	7/4/21	<ul style="list-style-type: none"> • Vomiting, diarrhea, fever – one person • Cold like symptoms 	7/12/21 Continued until 7/22/21 for one person
1 couple	Upper Pamunkey	7/5 – 7/7/21 - (multiple activities including swimming)	7/4 – 7/7/21	<ul style="list-style-type: none"> • Vomiting & diarrhea – one person • Skin infection – one person* 	7/8 – 7/22

2021 – North Fork Shenandoah River Suspected Health Effects

# of Case	Location of exposure	Date of Recreation Activity	Illness onset	Symptoms & Signs	Illness recovery
1 - Called VDH on 8/2/21	Seven Bends State Park	6/29 – 7/8/21 Taught fly fishing – in the water for several hours each day	7/9/21	<ul style="list-style-type: none"> Cough, congestion, sore throat, and post nasal drip Skin rash 	Continued until the interview date (8/2)
3 - Lab staff Reported via email on 8/3/21	ODU – Phytoplankton Lab	7/30/21 and previous dates - Handling, processing, and analyzing NFSR mat materials Occupational	30 min - 4 hours after processing the mat material	<ul style="list-style-type: none"> Mainly neurological: Dizzy, oral & tongue numbness, muscle weakness, light-headed , and generalized numbness Respiratory symptoms - wheezing and shortness of breath Nausea and skin irritation also reported 	15 minutes after staff left the Lab

**Mode of exposures:
Inhalation & skin contact**

Mouth of Chickahominy River

- **9/5/21** VDH received a complaint through online HAB report. A lady was recreating at James County Regional Park at the mouth of Chickahominy River on **7/6 for 3 hours**
 - Recreation activities: kayaking, paddling
 - Exposure: inhalation, skin contact
 - Symptoms: allergic reaction (anaphylaxis-like symptoms) later on the same day. She received medical help at home from the paramedics personnel (**911 call**)
- Unknown HAB information from the location during the time of recreational activities
- **we looked at** HAB data on **7/7/21** from James River, ~5 miles downstream from the location through the long-term **Chesapeake Bay monitoring program**: cell counts ~ **(3.000 - 17.820 cell/ml)**
- Based on VDH advisory criteria (cell counts/cyanotoxins), this concentration wouldn't pose public health risk - suspected

Challenges and next steps

- Very difficult to identify and characterize HAB-associated illnesses
 - Lack of availability to test human or animal specimen for HAB
 - More common water-illness diseases share similar symptoms and signs as HAB –associated illness
 - Difficulty to tie the presence of toxins in natural WB sampling to illness after exposures
- Successful public health interventions require collaboration of the human health, veterinary health, and environmental health communities
- Review and modify laboratory and field collection procedures - PPE as necessary



THANK YOU!!!!!!!

**To report health effects contact the
HAB Hotline: 1-888-238-6154**

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