



Shown above is the waterborne parasite *Cryptosporidium*. Georgia uses syndromic surveillance to quickly identify potential “Crypto” cases associated with pools, water parks, and other recreational water activities. Use of syndromic surveillance has become standard practice in Georgia for rapidly detecting and responding to outbreaks.

Lessons Learned

- **The near real-time reporting** of syndromic surveillance coupled with Georgia’s ability to do keyword searches on its system add value to the public health response. Syndromic surveillance enables Georgia to identify potential diseases of concern, clusters, and outbreaks.
- **Collaboration and communication** across local and state public health departments are essential. Partnerships with local media services and the business community can lead to a timely, more effective response.

Georgia Uses Syndromic Surveillance to Identify Cryptosporidiosis Outbreak at Water Park

Public Health Problem

For the past decade, Georgia’s North Central Health District (NCHD) has identified increases in *Cryptosporidium* in Houston County and shared this information with the community. *Cryptosporidium*, often called “Crypto,” is a microscopic parasite that causes the diarrheal disease cryptosporidiosis. The parasite is commonly spread through drinking water and recreational water and is extremely tolerant of chlorine. Crypto is the leading cause of waterborne disease among people in the United States.^{1,2} In 2016, after being notified of plans for a new recreational water park, the NCHD Environmental Health (EH) staff informed the park owner of the risks associated with Crypto in recreational water. The park opened in July 2018, and within 1 month, local public health epidemiologists saw evidence of a Crypto outbreak associated with the park.

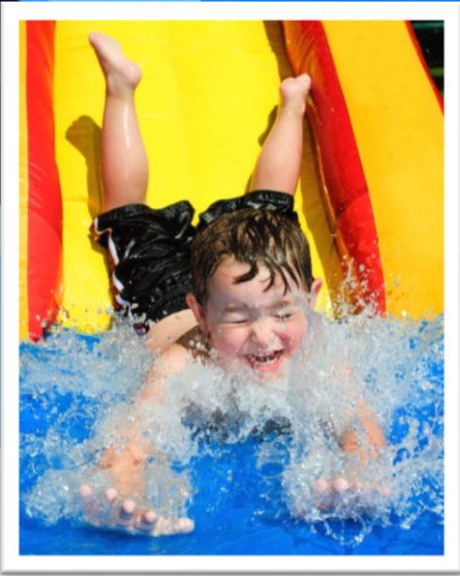
Actions Taken

On July 5, 2018, NCHD’s EH staff learned from the owner’s social media post that a new water park would open the next day. EH staff knew the water park was being built and recognized that it had not obtained state-required permits. NCHD staff quickly worked with the owner and employees to ensure that all pools were properly maintained—however, the park did open without proper permits.

On August 8, 2018, NCHD was notified of possible illnesses associated with the new water park in Houston County. Park attendees had complained of illness to the manager of the water park, who passed along the information to NCHD. NCHD requested contact information for the initial complainants and assistance from the Georgia Department of Public Health (DPH), Acute Disease Epidemiology Section (ADES), to review syndromic surveillance data.

On the morning of August 9, ADES epidemiologists provided historic syndromic data suggesting two potential cases. By the end of the day, the two potential cases were laboratory confirmed, two potential cases were pending laboratory results, and two suspect cases were epidemiologically linked with the laboratory confirmed cases. Local epidemiologists and environmental health specialists worked with the water park owner and staff to close the park until proper chlorine levels were achieved to inactivate the *Cryptosporidium*. The park was cleared to reopen on

1. U.S. Dept. of Health and Human Services, Centers for Disease Control and Prevention (CDC). Healthy Swimming: Hyperchlorination to Kill *Cryptosporidium* When Chlorine Stabilizer is in Water. Recommendations for Aquatic Staff. Available from: <https://www.cdc.gov/healthywater/swimming/pdf/hyperchlorination-to-kill-crypto-when-chlorine-stabilizer-is-in-the-water.pdf>
2. CDC. Parasites—*Cryptosporidium* (also known as “Crypto”) [online] 2019. [cited 2020 Jan 24]. Available from URL: <https://www.cdc.gov/parasites/crypto/index.html>



Actions Taken, continued

August 11. Georgia requires healthcare providers to report *Cryptosporidium* within 7 days, and the state syndromic surveillance system updates most hospital chief complaints every 24 hours. Due to the incubation period of the parasite and the potential for unreported cases, NCHD requested ongoing assistance from ADES epidemiologists to use syndromic surveillance to identify potential cases instead of relying on traditional passive surveillance techniques. The epidemiologists used Georgia's syndromic surveillance system to search chief complaints by keyword and to look at predefined syndromes. In addition, an electronic survey was distributed to season passholders via email, social media, and traditional media to identify symptomatic individuals who had visited the water park.

Outcome

The case definition for the outbreak was a person who attended the water park in Houston County in July or August 2018 with diarrhea lasting 2 or more days. A total of 119 cases of potential *Cryptosporidium* infection were associated with this outbreak. Of these, 20 cases were laboratory confirmed, 17 of which were identified through syndromic surveillance. An additional 99 cases were epidemiologically linked through case contacts or survey responses. At least 47 people sought healthcare, and 4 were hospitalized. The ability to rapidly detect potential cases through syndromic surveillance within the first week of the outbreak prompted health officials to expand the dates of concern and to investigate additional recreational water facilities.

The water park was shut down two more times because of ongoing disease transmission associated with continued use of the facility by infected individuals after the onset of symptoms and during their contagious period. Since the outbreak ended, the water park owner has set up secondary disinfection protocols for newly added water park features and has increased signage for infection control policies. Other closures included an apartment complex pool, a community pool, and a splash pad that people visited after showing symptoms. Staff at these facilities worked with NCED EH to hyperchlorinate the water and obtain education on prevention techniques. None of these facilities reported secondary outbreaks. Local outbreak response practices now include syndromic surveillance for early detection and rapid response to potential outbreaks.

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The findings and conclusions of this report are those of the authors and do not reflect the official position of the Centers for Disease Control and Prevention.

This success story shows how NSSP:

- Improves Data Representativeness
- ✓ Improves Data Quality, Timeliness, and Use
- ✓ Strengthens Syndromic Surveillance Practice
- ✓ Informs Public Health Action or Response