

Notes from the Field

Outbreak of Norovirus Illness Caused by Consumption of Oysters Harvested from Galveston Bay, Texas — November–December 2022

Morgan Jibowu, MPH¹; Kaitlin Driesse, PhD¹; Sarah May, MPH¹; Amanda Wright, MPH¹; Tyler Swate, MPH¹; Caitlin Cotter, DVM¹

On December 7, 2022, the Texas Department of State Health Services (DSHS) Public Health Region 6/5 South (PHR 6/5S) and DSHS Consumer Protection Division were notified by Galveston County Health District of 10 consumer complaints of illness after consumption of raw (nine complaints) and smoked (one) oysters at local restaurants during November 27–December 4. Signs and symptoms began within 8 hours after consumption and included diarrhea, nausea, or vomiting. Initially, no consumers sought medical care. Oyster tags from three associated restaurant inspections determined that oysters were from Oyster Harvest Area TX 1 (TX 1) in Galveston Bay, Texas.

Also on December 7, the Florida Department of Health contacted DSHS to report its investigation of 37 cases of gastrointestinal illness associated with raw oyster consumption. The investigation also identified several TX 1 oyster tags. On December 8, 2022, representatives from the DSHS Foodborne Illness Team, Seafood and Aquatic Life Operations Branch, Consumer Protection Division, PHR 6/5S, and Galveston County Health District met to discuss the increase in reports of oyster-related gastrointestinal illness. It was determined that TX 1 had been the only area open for shellfish harvesting in Galveston Bay since December 1, 2022. Based on the increased reports of gastrointestinal illness and National Shellfish Sanitation Program (NSSP) guidelines, DSHS Consumer Protection Division closed TX 1 on December 8 and recalled all oysters harvested in TX 1 during November 17–December 7 (1,2). On December 9, the Florida Department of Health notified DSHS that three associated clinical specimens had tested positive for norovirus GII (Figure).

DSHS compiled resources for local health departments, restaurants, and consumers to provide education on the transmission and prevention of norovirus and proper disinfection protocols (Figure) and informed the Interstate Shellfish Sanitation Conference, which notified other member states. An outbreak-associated case was defined as the onset of diarrhea, nausea, or vomiting within 72 hours after consumption of oysters harvested from TX 1 during November 17–December 7, 2022 (the recall period). A press release was issued, which led to additional consumer complaints and highlighted the importance of public communication regarding foodborne outbreaks.

Noroviruses are a highly contagious group of gastrointestinal viruses and the leading cause of foodborne illness in the United States (3). Norovirus is primarily transmitted through direct contact with an infected person's stool, consumption of contaminated food or water, or direct contact with contaminated surfaces (3). Approximately 2,500 norovirus outbreaks are reported in the United States annually (3). Although reporting of sporadic cases is not required, norovirus outbreaks are reportable to both DSHS and CDC (3,4). As a result, norovirus outbreaks are primarily detected when persons report illness or health care providers report a suspected outbreak.

Investigation and Outcomes

During November 28–December 7, PHR 6/5S in southeast Texas reported 50 outbreak-associated norovirus cases from six counties. These cases represented 16% of the 322 cases reported nationwide from eight states* in association with this outbreak (5); 41 (82%) of the ill persons in Texas lived in Galveston County (5). Many reports were anonymous, which made collecting additional details or determining health department jurisdiction challenging. Restaurant address was used as a proxy in cases for which the patient's home address was not available. This activity was reviewed by CDC and was conducted consistent with applicable federal law and CDC policy.[†]

Among the 50 outbreak-associated cases among persons who lived within PHR 6/5S, the median age was 54 years (range = 28–83 years), 17 (34%) cases occurred in men, and 17 (34%) in women; the sex of 16 (32%) patients was unknown. The median incubation period was 1 day (range = 0–3 days); diarrhea was reported by 48 of 50 (96%) patients and vomiting by 42 (84%). No hospitalizations were reported.

Preliminary Conclusions and Actions

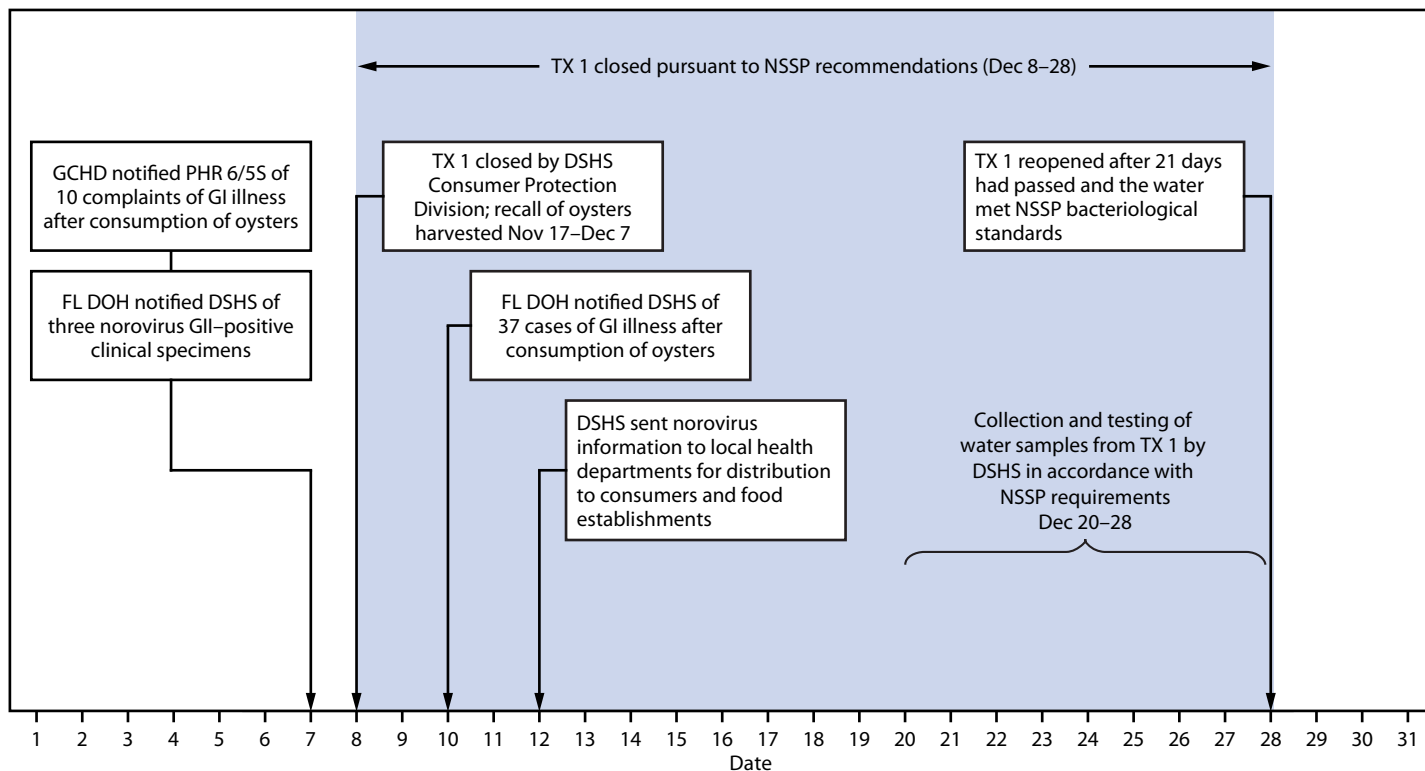
TX 1 remained closed for 21 days while water sampling and bacteriologic testing were conducted during December 20–28, pursuant to NSSP recommendations.[§] On December 28, 2022, the water met NSSP bacteriologic water quality standards, and TX 1 was reopened for harvesting (Figure). This outbreak underscores the importance of timely public communication and prompt investigation of enteric disease reports in quickly identifying an outbreak source and facilitating appropriate interventions.

* Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, Tennessee, and Texas.

[†] 45 C.F.R. part 46.102(l)(2), 21 C.F.R. part 56; 42 U.S.C. Sect. 241(d); 5 U.S.C. Sect. 552a; 44 U.S.C. Sect. 3501 et seq.

[§] <https://www.fda.gov/food/federalstate-food-programs/national-shellfish-sanitation-program-nssp>

FIGURE. Investigation of reports of gastrointestinal illness after oyster consumption — Texas Oyster Harvest Area 1, Galveston Bay, Texas, December 2022



Abbreviations: DSHS = Texas Department of State Health Services; FL DOH = Florida Department of Health; GCHD = Galveston County Health District; GI = gastrointestinal; NSSP = National Shellfish Sanitation Program; PHR 6/5S = Public Health Region 6/5 South; TX 1 = Texas Oyster Harvest Area 1.

Acknowledgments

Irina Cody, Texas Department of State Health Services Foodborne Team; Zulaiha Abdul-Salam, Mariana Fletcher, Donya Guyton, Belinda Hernandez, Angel Mascarenas, Jennifer Peebler, Maria Renovato, Shanique Rose, Ron Schultz, Sharon Stonum, Randy Valcin, Galveston County Health District; Tishara Coleman, Davonna Koebrick, Kirk Wiles, Texas Department of State Health Services Consumer Protection Division; Carlos Plasencia, Texas Department of State Health Services Public Health Region 6/5 South.

Corresponding author: Kaitlin Driesse, kaitlin.driesse@dshs.texas.gov.

¹Texas Department of State Health Services Region 6/5 South, Houston, Texas.

All authors have completed and submitted the International Committee of Medical Journal Editors form for disclosure of potential conflicts of interest. No potential conflicts of interest were disclosed.

References

1. National Shellfish Sanitation Program (NSSP). Guide for the control of molluscan shellfish: 2019 revision. Silver Spring, MD: US Department of Health and Human Services, Food and Drug Administration, National Shellfish Sanitation Program; 2020. <https://www.fda.gov/media/143238/download>
2. Texas Health and Human Services. Health advisory: outbreak of norovirus linked to raw oysters. Austin, TX: Texas Health and Human Services, Texas Department of State Health Services; 2022. <https://www.dshs.texas.gov/sites/default/files/IDCU/health/Alerts/Health-Advisory-Norovirus-Outbreak-2022.pdf>
3. CDC. Norovirus: virus classification. Atlanta, GA: US Department of Health and Human Services, CDC; 2023. <https://www.cdc.gov/norovirus/lab/virus-classification.html>
4. Texas Health and Human Services. Investigation guidance: emerging and acute infectious disease guidelines. Austin, TX: Texas Health and Human Services, Texas Department of State Health Services; 2023. <https://www.dshs.texas.gov/notifiable-conditions/investigation-guidance>
5. CDC. Norovirus: norovirus outbreaks. Atlanta, GA: US Department of Health and Human Services, CDC; 2023. <https://www.cdc.gov/norovirus/outbreaks/index.html>