

**IN THIS ISSUE: 2024 SHIGELLOSIS OUTBREAK**

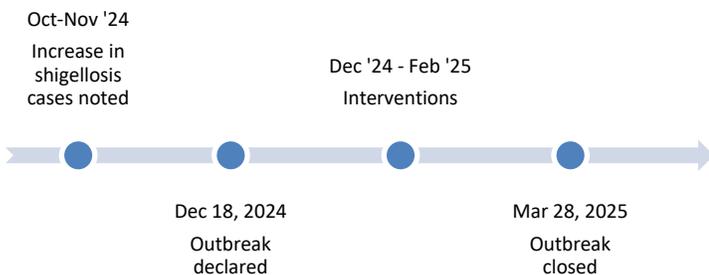
**After Action Report: 2024 Shigellosis Outbreak in Washoe County**

**Introduction**

Shigellosis is a gastrointestinal illness caused by the *Shigella* bacterium, most commonly *S. sonnei* and *S. flexneri* in the United States.<sup>1,2</sup> Transmission typically occurs through the fecal-oral route, including ingestion of contaminated food or water, direct contact with infected fecal matter, or sexual contact with an infected person.<sup>1</sup> Certain populations face higher risk, including young children, international travelers, men who have sex with men (MSM), individuals with weakened immune systems, and people experiencing homelessness—due to factors such as overcrowding, poor sanitation, and limited access to hygiene facilities.<sup>2,3</sup> Symptoms usually appear within 1 to 7 days of exposure and can range from mild or asymptomatic cases to more severe illness, including watery or bloody diarrhea, fever, abdominal cramps, tenesmus, and fatigue.<sup>1</sup>

On December 18, 2024, Northern Nevada Public Health (NNPH) declared a shigellosis outbreak after an unusual increase in reported cases in the unhoused population. Between October 2024 and January 2025, all shigellosis cases were identified and investigated. The outbreak was officially declared over on March 28, 2025. This report examines the characteristics of the outbreak, public health interventions implemented, and key lessons learned to inform future response efforts.

**Figure 1: Timeline of Shigellosis Outbreak Response, Washoe County, October 2024 – March 2025**

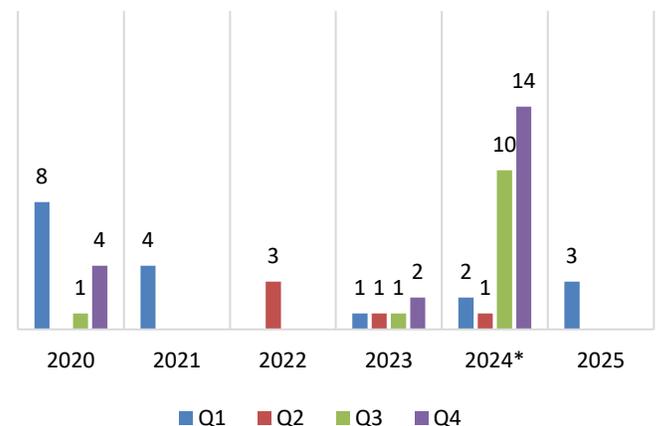


**Case and Outbreak Identification**

NNPH applied the surveillance case definition established by the Council of State and Territorial Epidemiologists (CSTE) to identify and investigate potential shigellosis cases. The health department further strengthened case investigation by reviewing whole genome sequencing (WGS) results to determine genetic relatedness among the isolates and by assessing cases for epidemiologic similarities.

An outbreak is defined as an increase in the number of cases from what we expect to see in a given time, location, and population.<sup>4</sup> To evaluate whether a shigellosis outbreak was occurring in Washoe County, NNPH compared recent shigellosis case counts to historical data from previous years. Shigellosis cases reported in the fourth quarter (Q4) of 2024 totaled 14 – markedly higher than the Q4 range of 0 to 4 cases observed in 2020 to 2023 (Figure 2). This notable increase indicated that the number of cases had exceeded expected counts, supporting the determination of an outbreak.

**Figure 2: Number of Shigellosis Cases by Quarter, Washoe County, 2020-2025**



\*2024 Q3 large family cluster not part of the outbreak.

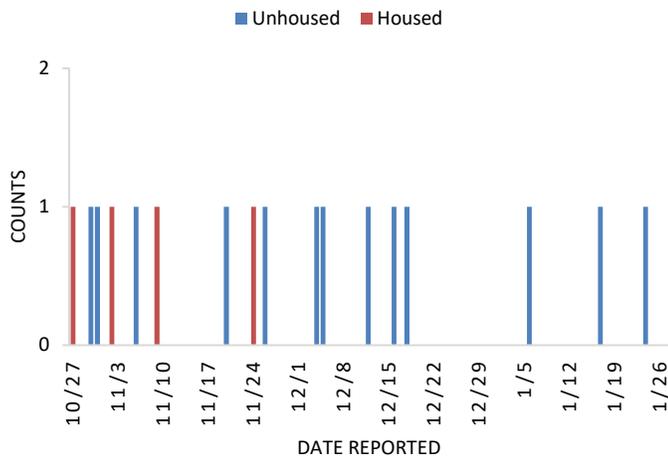
Source: Northern Nevada Public Health, Division of Epidemiology and Public Health Preparedness, Epidemiology Program

## Outbreak Epidemiologic Characteristics

Between October 2024 and January 2025, 17 cases were confirmed. Of those, 13 were determined to be part of an outbreak. Cases were excluded if WGS showed no genetic relationship to the outbreak strain, the infection was not locally acquired, or the case did not share key characteristics with other cases.

The average age of the 13 cases in the outbreak was 49 years. The majority of cases were white (61%), male (69%), hospitalized (62%), and unhoused (85%). In addition to homelessness, other high-risk factors identified among the 13 cases include MSM, methamphetamine use, and coinfections with STDs.

**Figure 3: Number of Reported Shigellosis Cases by Housing Status, Washoe County, 10/27/2024-01/26/2025**



Source: Northern Nevada Public Health, Division of Epidemiology and Public Health Preparedness, Epidemiology Program

## Public Health Response

NNPH worked to implement a variety of public health interventions to mitigate transmission.

- **Publications**
  - A press release alerted the public and provided education and prevention on shigellosis.
  - An Epi News targeted providers with testing recommendations.
- **Collaboration with Environmental Health Services (EHS)**
  - Teams conducted a joint site visit to a local homeless shelter for assessment of

areas of high exposure and review of cleaning practices.

- Educational flyers were posted around the facility.
- The food team inspected local food distribution sites that provide meals for the homeless to ensure compliance with regulations.
- **Technical Assistance call with CDC**
  - NNPH staff met with the CDC along with the Office of State Epi and the Nevada State Public Health Laboratory partners for support regarding this outbreak.
  - CDC provided educational infographics and recommendations for focused interventions on the unhoused populations (e.x. hygiene kits, handwashing stations).
- **Collaboration with key stakeholder**
  - NNPH collaborated with the homeless shelter staff to help connect positive participants with epidemiologists. NNPH also met with the Regional Alliance to End Homelessness to provide updates and answer any questions.
  - Staff epidemiologists provided a final outbreak presentation to local hospitals and public health professionals during the quarterly Northern Nevada Infection Control (NNIC) call.

## Outcomes and Limitations

NNPH did not officially declare the outbreak over until March 28, 2025. NNPH opted to extend the official closure due to the nature of the affected population, who often face barriers to healthcare access, may not seek care, or go untested. Recognizing that reported cases likely represented only a fraction of actual infections, NNPH considered the true number of cases to be significantly underreported, which further justified the prolonged observation period.

NNPH conducted a review of the key challenges encountered. The most significant limitation was the

difficulty in reaching the affected, unhoused population. Approximately 53% of the cases were classified as lost to follow up, requiring medical records to complete case investigations. In instances where contact was made, individuals frequently provided only aliases for close contacts, preventing further outreach. Stigma and lack of access to care also hindered response efforts. NNPH attempted to collect stool samples at the homeless shelter but was unable to proceed due to the lack of proper specimen storage capacity onsite. Additionally, resource limitations restricted the implementation of CDC-recommended interventions, such as portable handwashing stations or hygiene kits. NNPH was also unable to assess antibiotic resistance during this outbreak, as susceptibility testing was not requested by healthcare providers – raising concern given the public health risks associated with antibiotic-resistant *Shigella*.

### Lessons Learned

Based on the outcomes and limitations, several key lessons learned were identified.

The outbreak highlighted the need for more effective strategies to reach unhoused persons, who often lack stable contact information and face barriers to healthcare. Approximately 53% of cases were lost to follow-up, emphasizing the importance of establishing stronger relationships with community partners, shelters, and street outreach teams to improve case tracking, education, and prevention efforts.

The response was hindered by gaps in preparedness and infrastructure, such as specimen storage capabilities at shelters and funding for key CDC-recommended interventions like hygiene kits and portable handwashing stations. A lack of susceptibility testing also exposed a gap in monitoring antibiotic resistance, a growing concern in public health. WGS data was beneficial in showing genetic relatedness among various cases and should continue to be used in future outbreaks as tool to support outbreak detection. Future responses would benefit from enhanced planning, dedicated emergency funds, and improved coordination with healthcare providers and public

health laboratories to ensure that critical public health tools can be implemented quickly and effectively.

### Reporting

The list of reportable communicable diseases and reporting forms can be found at:

<http://tinyurl.com/WashoeDiseaseReporting>

**Report communicable diseases to Northern Nevada Public Health. To report a communicable disease, please call 775-328-2447 or fax your report to the NNPH at 775-328-3764.**

### Acknowledgement

Thank you to all health care providers, infection control practitioners, laboratory staff, as well as schools and daycares for their reporting and collaboration to make this work possible.

### References

- 1 Red Book: 2024–2027 Report of the Committee on Infectious Diseases By: Committee on Infectious Diseases, American Academy of Pediatrics Edited by: David W. Kimberlin, MD, FAAP, Ritu Banerjee, MD, PhD, FAAP, Elizabeth D. Barnett, MD, FAAP, Ruth Lynfield, MD, FAAP, Mark H. Sawyer, MD, FAAP. <https://doi.org/10.1542/9781610027373>
- 2 Centers for Disease Control and Prevention. About *Shigella* Infection. Accessed December 2024. <https://www.cdc.gov/shigella/about/index.html>
- 3 Centers for Disease Control and Prevention. Public Health Considerations Among People Experiencing Homelessness. Accessed December 2024. <https://www.cdc.gov/shigella/php/public-health-strategy/index.html>.
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