EPIDEMIOLOGIC INVESTIGATION SUMMARY

SHIGELLA: GASTROINTESTINAL ILLNESS OUTBREAK AMONG RESIDENTS AND STAFF OF A FOSTER HOME IN CLARK COUNTY, NEVADA, 2014

Department of Health and Human Services
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PURPOSE

The purpose of this newsletter is to provide the scientific community, decision makers, healthcare providers, and the public a summary of the outbreak investigations conducted by the Division of Public and Behavioral Health.

BACKGROUND

On July 17, 2014, the Division of Public and Behavioral Health (DPBH), Office of Public Health Informatics and Epidemiology (OPHIE) was informed by the Southern Nevada Health District (SNHD) of a gastrointestinal (GI) illness among residents and staff of Facility "A". The problem was first identified by facility staff on June 16, 2014. Initial symptomology of the ill included diarrhea, abdominal cramps, and vomiting. The outbreak investigation began on July 17, 2014.

METHODS

Epidemiology

On July 17, 2014, DPBH provided recommendations to reduce and prevent the spread of illness in Facility "A", including the submission of outbreak case report forms to OPHIE until further notice, exclusion of symptomatic employees from the facility until 72 hours after symptoms resolved, and laboratory testing to identify the pathological agent(s).

A **confirmed case** was defined as a resident, staff member, or visitor of Facility "A" who was lab confirmed with *Shigella* since June 16, 2014.

A **probable case** was defined as a resident, staff member, or visitor of Facility "A" who was not lab confirmed with *Shigella* but had diarrhea and/or vomiting (along with possible other GI illnesses) since June 16, 2014.

A **suspect case** was defined as a resident, staff member, or visitor of Facility "A" who was not lab confirmed with *Shigella* but anecdotally had diarrhea and/or vomiting (along with possible other GI illnesses) since June 16, 2014.

Site Visit

The OPHIE outbreak Response Team and Southern Nevada Health District (SNHD) conducted a site visit at Facility "A" on July 18, 2014. The purpose of the site visit was to attempt to determine the source of the outbreak, inspect the facility to see if there were any discrepancies, and to conduct interviews with those who were ill. Interviews consisted of a 72 hour food history questionnaire because the *Shigella* is primarily spread through contaminated food.

Laboratory

Laboratory testing for GI illness was highly recommended for ill residents in order to identify the etiologic agent, target infection prevention measures and control the outbreak within Facility "A". Laboratory testing was focused on the presence of *Shigella* as well as rotavirus, *C difficile*, and norovirus.

One laboratory test was conducted and the specimen collected was a stool sample.

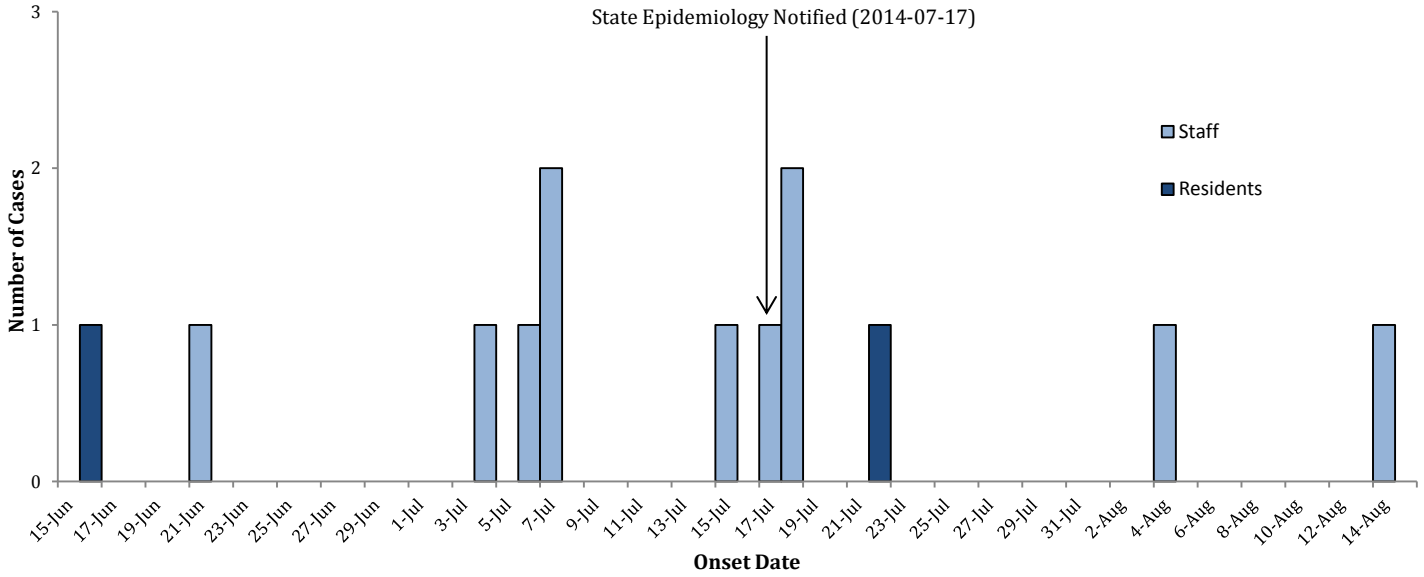

Figure 1. The epidemic curve of a Shigella outbreak (n=13) associated with a foster home in Clark County, Nevada, from June 16-Aug 14,

Mitigation

In order to prevent further spread of illness, the OPHIE Outbreak Response Team disseminated recommendations for the prevention and control of *Shigella* outbreaks to facility "A".

RESULTS

Epidemiology

A total of 13 cases (12 probable and 1 confirmed) were reported. Illness onset occurred between June 16 and August 14, 2014. The epidemic curve is presented in Figure 1 and shows the distribution of illness onset dates.

The peak illness onset dates were July 7 and 18, 2014. Among the 13 cases, the average age was 36 years old (range 13-56 years) and males comprised 61.5% of the cases.

Symptomatic cases reported diarrhea (84.6%), abdominal pain (76.9%), nausea (46.2%), vomiting (38.5%), fever (7.7%), and headache (7.7%). The average duration of illness for cases was approximately 10 days (range five – 12 days). The resident attack rate was 5.7%, the staff attack rate was 78.6%, and the overall attack rate was 26.5%.

Site Visit

During the site visit, the OPHIE Outbreak Response Team interviewed five individuals who were ill to obtain their 72 hour food history. During the interviews it was discovered that 5 of 6 supervisors that attended a weekly meeting became ill. During the meeting, lunch was provided by a local restaurant; the non-ill supervisor brings their own lunch to the meetings. The restaurant was inspected by SNHD environmental health, and multiple significant violations were found which could lead to the transmission of *Shigella*; no food samples were taken for testing.

Several recommendations were given to the facility by SNHD. The recommendations included: clean and disinfect the facility as directed by SNHD, reinforce hand washing for staff, and distribute hand sanitizer. Other recommendations were directed at staff that handled food, and included the reinforcement of proper food handling techniques, proper glove use, and discarding leftover food after 3 days. The facility also stated they were going to purchase thermometers for their refrigerators and food.

Laboratory

The one laboratory specimen collected tested positive for *Shigella*.

Mitigation

After the cause of the outbreak was determined to be *Shigella*, DPBH reiterated to the facility the same information given at the start of the outbreak for preventing and controlling *Shigella* outbreaks along with recommendations given during the site visit.

CONCLUSIONS

A GI illness outbreak occurred among residents and staff at Facility "A", a rehabilitation center in Clark County, Nevada, from June 16 through August 14, 2014. Confirmatory test results indicated *Shigella* was the causative agent and the mode of transmission was believed to be foodborne.

In total, 13 persons were classified as cases; 11 staff and 2 residents of the facility. Symptoms included diarrhea, abdominal pain, nausea, vomiting, fever, and headache with illness duration lasting an average of 10 days. Staff of the facility had the highest attack rate at 18.9% and one resident required hospitalization. The epidemiologic link between cases was believed to be the facility in which the residents lived and the staff worked.

The outbreak ceased July 3, 2014.

RECOMMENDATIONS

To prevent such *Shigella* outbreaks in the future, the following public health measures are recommended:

- Wash Hands frequently with soap and water especially after using the restroom, changing diapers, and before preparing food and beverages.
- Do not let those with diarrhea prepare food or beverages for others.
- Properly dispose of soiled linens, diapers, and other items.
- Properly disinfect areas that may have come into contact with soiled items.
- Do not allow those who are ill with diarrhea prepare food/beverages or participate in recreational swimming until they are shown to be no longer carrying *Shigellosis* bacterium or they have had no diarrhea for at least two days.

REFERENCES

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2. State of California-Health and Human Services Agency. *Shigellosis Fact Sheet*. September 2012. Retrieved September 10, 2014, from: http://www.cdph.ca.gov/HealthInfo/discond/Documents/Shigellosis.pdf

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