



**Salmonella Gastroenteritis Outbreak
Among Patrons of Firefly on Paradise Restaurant – Las Vegas, Nevada
Interim Report**

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BACKGROUND

On April 26, 2013, the Southern Nevada Health District (SNHD), Office of Epidemiology (OOE) received reports of gastrointestinal illness from eight independent groups of patrons of Firefly on Paradise or the adjacent affiliated restaurant Dragonfly on Paradise (Firefly) located at 3900 Paradise Road, Las Vegas, NV 89109. All patrons from these groups ate at the restaurant during April 21-24, 2013. Ill patrons reported symptoms of diarrhea and/or vomiting after they consumed food from Firefly restaurant, and many sought medical care for their illness. In response to these illness reports, the SNHD initiated an investigation.

On April 26, 2013, the SNHD performed an investigative inspection and closed Firefly and Dragonfly restaurants to minimize ongoing risk of illness. The SNHD OOE, Environmental Health (EH) and Southern Nevada Public Health Laboratory (SNPHL) have been collaborating on the investigation and response to this outbreak. The Nevada State Health Division was also apprised of the outbreak investigation.

METHODS

Epidemiology: OOE staff performed telephone interviews with ill patrons to obtain more information regarding symptoms, food history, and illnesses among restaurant patrons. The SNHD foodborne illness complaint database was searched to identify other complaints against the restaurant in the 30 days prior to these complaints.

On April 26, 2013, OOE and EH staff visited the restaurant. OOE staff interviewed restaurant management and other employees regarding their illnesses in the past two weeks, their current illness status, their knowledge of other recent illnesses in restaurant staff and patrons, whether the restaurant had a sick employee policy, and if there were other customer complaints of illness.

A case is defined as illness in a person who consumed food served by Firefly restaurant during April 21-26, 2013 and experienced diarrhea (defined as ≥ 3 bouts of loose stools) and/or ≥ 1 episodes of vomiting during a 72-hour period after eating.

In order to perform a case-control study and do additional case-finding, OOE staff identified additional restaurant patrons who dined at Firefly during April 21-24, 2013 via contact information from OpenTable, an online restaurant reservation system.

Environmental Health: EH staff performed inspections of Firefly and Dragonfly restaurants on April 26, 2013 and an ongoing risk assessment for foodborne illness.

Laboratory: Ill restaurant guests and staff were requested to provide stool specimens for bacterial culture (*Salmonella*, *Shigella*, *Campylobacter*, *Escherichia coli* O157, *Yersinia*, and *Vibrio*), Shiga toxin-producing *E. coli* (STEC) testing, and norovirus RT-PCR testing.

Food specimens were collected for submission to the Nevada State Public Health Laboratory for pathogen testing.

RESULTS

Epidemiology: The epidemiologic curve to date is presented in the figure below, and shows the total of 86 identified ill persons who ate at Firefly during April 21-26, 2013.

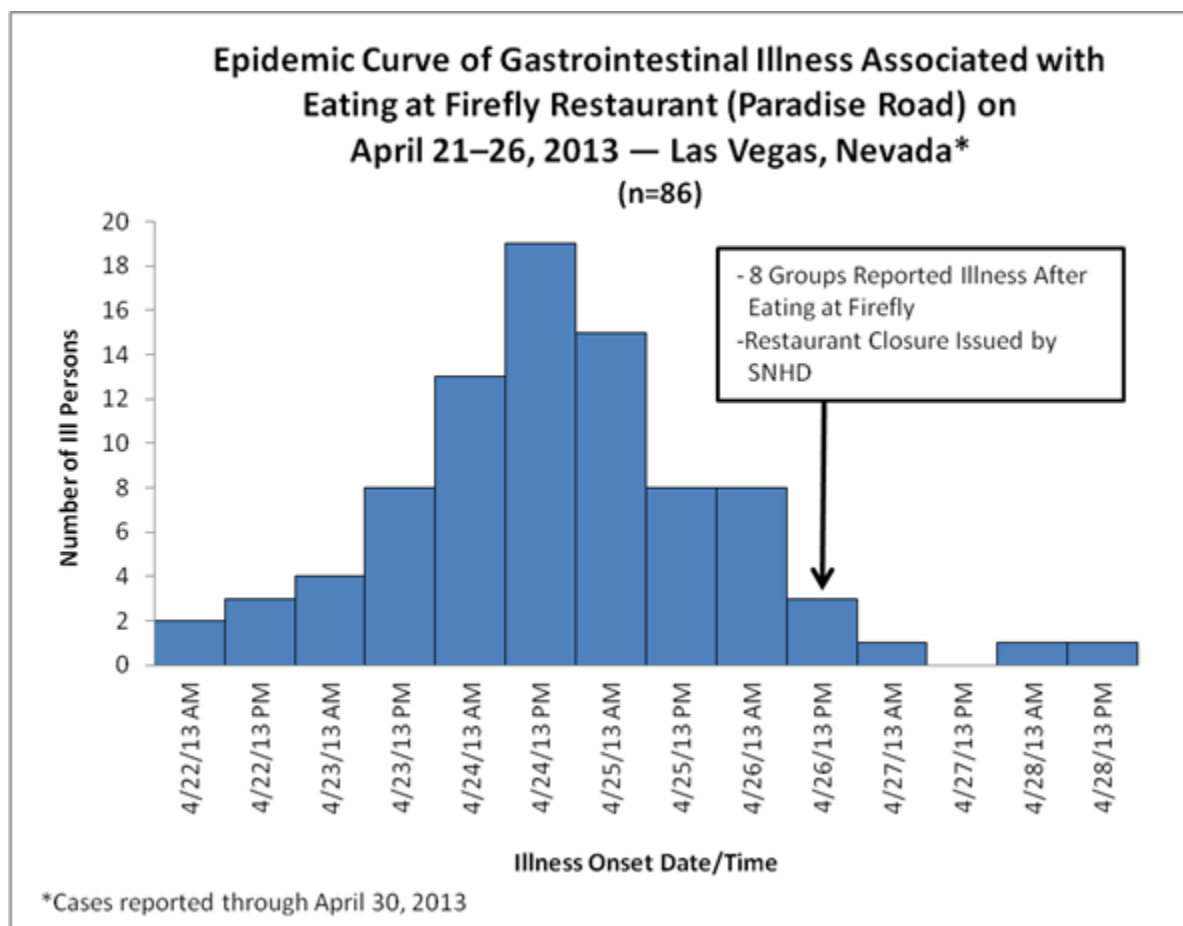


Figure. The number cases (N=86) by illness onset date reported through April 30, 2013. Firefly on Paradise restaurant. Las Vegas, Nevada. April 21-25, 2013.

A total of 40 employees worked the dinner shift at Firefly on April 26, 2013. Of these, 33 were interviewed including three employees who were identified as having been recently ill with gastrointestinal symptoms; these workers were asked to submit stool specimens.

The restaurant has a sick employee policy and employees may call-in sick when necessary. There was one customer complaint of illness to the restaurant.

Thirty-three patron phone numbers were obtained from the OpenTable online reservations.

Environmental Health: Firefly restaurant uses two adjacent permitted kitchens, Firefly on Paradise (SNHD Permit Number PR0013375) and Dragonfly on Paradise (SNHD Permit Number PR0015008), to prepare food for their customers. The inspection found that numerous conditions existed that could contribute to an outbreak of a foodborne disease and included: Inadequate holding of food, inadequate cooling, improper handwashing, employee bare hand contact with ready to eat food, improper food storage practices, improper cleaning practices, and improper thawing of food.

The results of the inspection were 44 demerits for Firefly and 47 demerits for Dragonfly on Paradise. Both facilities were closed by SNHD for excessive demerits and for being associated with a large cluster of reports of illness (SNHD Regulations Governing the Sanitation of Food Establishments 8-304.11).

Thirty samples of various foods were collected during the inspection and submitted to the SNPHL for possible testing to determine which food item(s) could have been the source of the illness.

Inspections were also conducted on April 29, 2013 of the two other Firefly restaurant outlets located in Clark County. Firefly Westside located at 9560 W. Sahara, Las Vegas received 30 demerits, and Firefly on Eastern located at 11261 S. Eastern received 6 demerits.

Laboratory: Of the 14 stool specimens collected from ill restaurant patrons, seven were positive for *Salmonella* species, one was negative for *Salmonella*, and results of six samples are pending.

The SNPHL submitted eight food items collected from Firefly restaurant to the Nevada State Public Health Laboratory for analyses.

CONCLUSIONS

At least 86 patrons and 3 employees who consumed food and/or drinks at Firefly during April 21-25, 2013 may have contracted *Salmonella* infection.

FUTURE ACTIONS

1. Firefly should rectify faulty food storage equipment and practices to ensure that food will be maintained at proper temperatures.
2. The SNHD OOE staff will continue to collect information about customers who ate at Firefly during April 21-26, 2013 to establish illness occurrences among restaurant patrons, and to conduct a case-control study to identify specific food item(s), if any, were associated with illness.

3. The SNHD EH staff will continue to review Firefly's food preparation methods to identify possible lapses in food safety procedures, and to require restaurant management to provide and implement a comprehensive food safety plan.
4. The SNHD OOE staff will continue to monitor the foodborne illness database for additional complaints of illness to determine whether the outbreak is limited to this establishment or has spread to the general community.
5. The SNPHL will perform pulsed field gel electrophoresis on the submitted specimens that were positive for *Salmonella* to determine if illnesses among patrons from the different groups were linked.

RECOMMENDATIONS

1. Food-service workers who test positive for *Salmonella* must be excluded or restricted from work per the FDA Food Code, and will require approval from the SNHD to return to work.
2. Restaurant employees should also be cautioned about how *Salmonella* is transmitted and be made aware of the heightened importance of hand hygiene through washing with soap and water. Information about salmonellosis can be found at the SNHD website <http://www.southernnevadahealthdistrict.org/health-topics/salmonellosis.php>
3. Food service workers should also be educated to the ways to clean and sanitize food preparation surfaces. Types of acceptable sanitizer solutions for use in a food establishment are located at the SNHD website <http://www.southernnevadahealthdistrict.org/ferl/sanitizer-fact-sheet.php>
4. The restaurants are advised to cook all potentially hazardous foods thoroughly. Menu items intended not to be cooked to the recommended temperatures should be noted on menus, with an appropriate warning to consumers about the potential health hazards of eating undercooked foods.
5. All suspected cases of *Salmonella* infection related to this outbreak should be reported to the health authority. Illness clusters (*e.g.* restaurants, schools, hotels) are reportable under Nevada Administrative Code sections 441A.525 and the SNHD Regulations Governing the Reporting of Diseases, Exposures, and Sentinel Health Events section 4.9. Reports should be made to the SNHD Office of Epidemiology at (702) 759-1300, option 3, and can be made 24 hours a day, seven days a week.