

Outbreak of Salmonella Thompson Associated with Chicken Served at an El Pollo Loco Restaurant in Modesto, California – February Through May, 2018

Final Report
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Agencies Involved

California Department of Public Health (CDPH), Food and Drug Branch (FDB), Food Safety Section, Emergency Response Unit (ERU)
CDPH, Food and Drug Laboratory Branch (FDLB)
CDPH, Division of Communicable Disease Control, Infectious Diseases Branch (IDB)
Stanislaus County Department of Public Health (SCDPH)
Stanislaus County Department of Environmental Health

This activity was conducted using the Incident Command System (ICS) including Unified Command and activation of various sections and units. Representatives from each of the regulatory partners involved in this activity participated in an after-action review to confirm details of the investigation and collaborate on areas for improvement.

Dates of Investigation

May 2018 – January 2019

Executive Summary

El Pollo Loco (EPL) is a chain of Mexican-style restaurants specializing in chicken that is marinated and cooked onsite at each location. Since 2000, the California Department of Public Health (CDPH), Emergency Response Unit (ERU) has assisted with the investigation of several *Salmonella* outbreaks associated with this restaurant chain.

From February through May 2018, an outbreak of *Salmonella* Thompson occurred, resulting in 47 cases. The outbreak was associated with a single EPL location on Oakdale Road in Modesto, California. Stanislaus County Public Health officials assisted with the investigation and requested ERU assistance with collecting and testing of environmental samples to support the outbreak investigation.

On May 31, 2018, ERU and local health officials initiated an inspection at the EPL location. After being informed of the outbreak, EPL corporate management voluntarily closed the restaurant on May 31, 2018. ERU collected 73 environmental swabs from food contact and non-food contact surfaces throughout the food preparation area of the restaurant. *Salmonella* Thompson was detected in four of these samples. Three of these isolates matched the outbreak strains by PFGE and the fourth was a different, but closely related strain. Isolates from the positive samples were also analyzed using whole genome sequencing (WGS). All four isolates were highly related to the available case-patient sequences, indicating a common source.

After closure, the restaurant was thoroughly cleaned and sanitized. This included replacement of equipment and cleaning and sanitizing of all surfaces. To verify the effectiveness of this enhanced sanitation, EPL hired a consulting company to swab surfaces throughout the facility for non-pathogenic indicator organisms. Any areas with elevated findings were re-cleaned, sanitized, and re-tested until satisfactory results were obtained. Additionally, EPL corporate management assisted the restaurant owner in developing new sanitation procedures and employee training. To verify the effectiveness of these new procedures, EPL management coordinated additional sampling for indicator organisms, which showed no ongoing sanitation deficiencies. In addition to the training, all employees were tested for *Salmonella* and medically cleared by Stanislaus County staff before being allowed to resume foodservice work. One employee tested positive for *Salmonella* Thompson and was linked to the outbreak strain by WGS. The restaurant was re-opened on June 12, 2018.

ERU conducted follow up environmental sampling on August 21, 2018 and January 8, 2019. Food contact and non-food contact surfaces were swabbed throughout the food preparation area of the restaurant, with a focus on areas of concern from the first round of sampling and potential sources for cross contamination. *Salmonella* was not detected in any of the follow up swabs.

In conclusion, *Salmonella* was detected in environmental swabs that was indistinguishable from the outbreak strains by PFGE and nearly identical by WGS indicating they likely came from a common source. Additionally, an employee was infected with an outbreak strain of *Salmonella* showing potential environmental and biological reservoirs for the outbreak organism in the restaurant. Evidence collected during this investigation suggested that cross-contamination or inadequate cooking of chicken may have resulted in illness to many customers and a single employee.

A Regulatory Letter was issued to restaurant management on January 13, 2020 summarizing the Investigation and informing firm management that there may be additional regulatory action if the corrective measures were not sustained. Due to historical *Salmonella* outbreaks linked to EPL, in addition to the high-risk chicken preparation methods, CDPH recommends continued monitoring for outbreaks or individual illnesses associated with this location and other EPL locations.

Background

El Pollo Loco (EPL) is a chain of Mexican-style restaurants specializing in chicken that is marinated and cooked onsite at each location. The chain consists of both corporate-owned and franchised restaurants in California, Arizona, Nevada, and other southern and southwestern states. The California Department of Public Health (CDPH), Food and Drug Branch (FDB), Emergency Response Unit (ERU) has been involved in prior foodborne illness outbreak investigations involving this chain extending back through the year 2000. The findings in these historical outbreaks indicate that cross contamination and under-cooking of chicken may have resulted in illness.

From February through May 2018 the CDPH, Infectious Diseases Branch (IDB) detected an increase in the number of *Salmonella enterica* serovar Thompson (*S. Thompson*) cases reported in Stanislaus County. The following case definition was developed by IDB staff: *Salmonella* Thompson infection in a Stanislaus County resident or visitor with illness onset (or isolation, if onset date is unknown) from February 15, 2018 through October 9, 2018, with isolate matching pulsed-field gel electrophoresis (PFGE) XbaI pattern JP6X01.0002, JP6X01.0211, or JP6X01.0171. A total of 47 cases met the case definition and illness onset dates were February 23, 2018 through May 30, 2018. The epidemiological investigation determined that 17 out of 19 cases interviewed reported eating at a single EPL location in Modesto, California. Additional information on the epidemiological portion of this investigation may be requested from IDB.

IDB staff notified Stanislaus County Public Health officials of the outbreak and Stanislaus County Environmental Health inspectors initiated an inspection at the location on May 25, 2018. Additional information on the Stanislaus County Environmental and Public Health investigations may be requested from those agencies.

Initial Environmental Assessment

On May 31, 2018, ERU staff initiated an environmental assessment at El Pollo Loco in Modesto, CA (801 Oakdale Road). The facility was inspected by Stanislaus County Environmental Health Department staff and they notified store management of this location's association with the outbreak. The ERU team collected 73 environmental swabs from food contact and non-food contact surfaces throughout the restaurant with a focus on food preparation areas (Attachment 1 – Lines 1-73). These samples were submitted to the CDPH Food and Drug Laboratory Branch (FDLB) for *Salmonella* testing.

On June 9, 2018, a company hired by EPL management collected samples from food contact and non-food contact surfaces throughout the restaurant (Attachment 2). These samples were analyzed by a private laboratory for the presence of *Enterobacteriaceae spp.*, a non-pathogenic indicator bacterium. Swabs were collected from non-food contact surfaces throughout the restaurant after sanitizing treatments.

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Laboratory Results

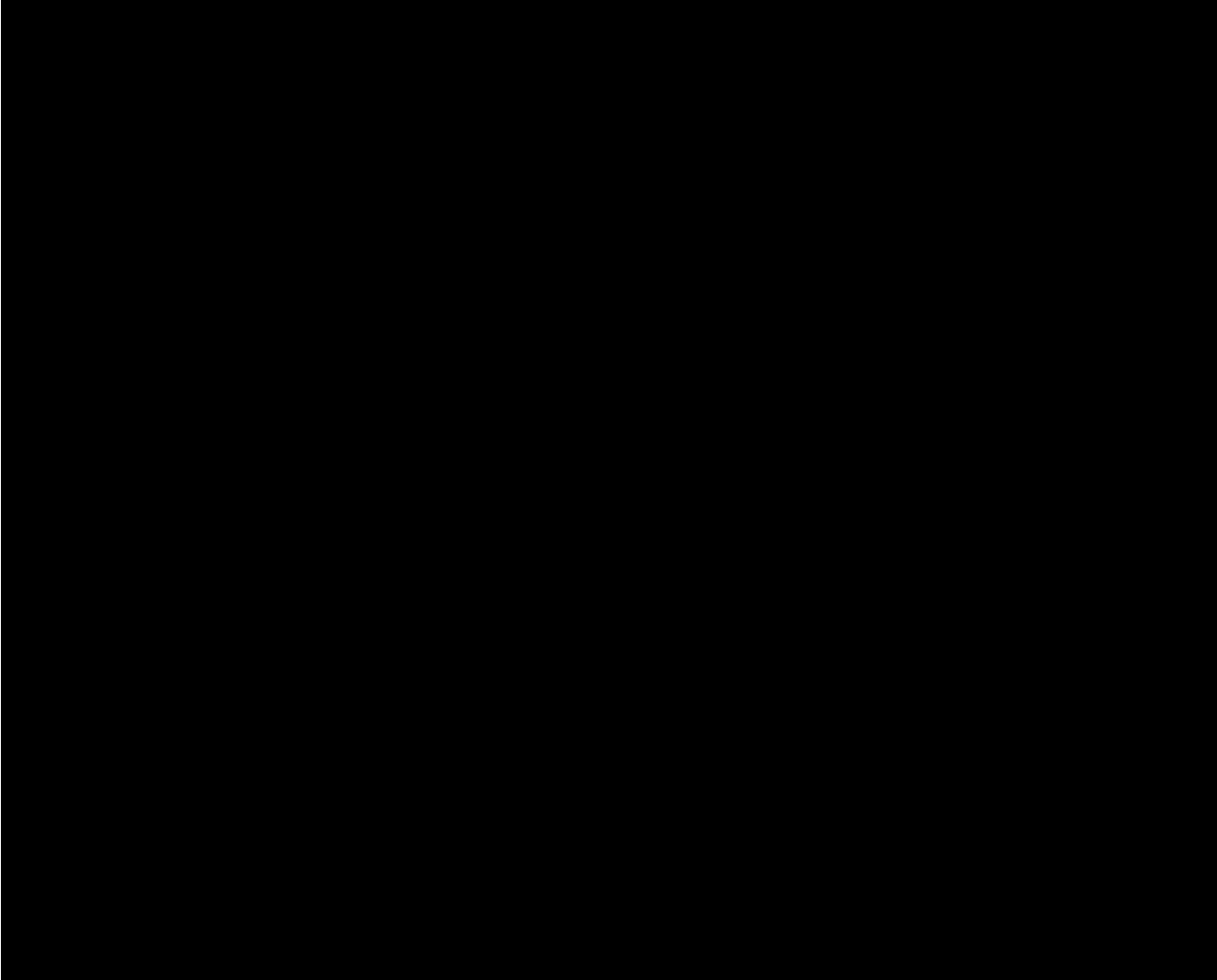
Environmental Samples

ERU Collected

FDLB staff reported that S. Thompson was detected in four of the 73 samples collected by ERU staff on May 31, 2018 (Figure 1). The locations of these positive samples are also depicted on a layout of the restaurant (Figure 2). Three of the four S. Thompson isolates matched one of the outbreak strains. The additional sample was a different, but closely related S. Thompson isolate. On June 15, 2018, ERU staff notified EPL management of these results (Attachment 3).

Location	S. Thompson Strain ID	Outbreak match
Front of small refrigerator	0211	Yes
Ceramic drain	0211	Yes
Outside of garbage can	0903	No
Mop head	0211	Yes

FIGURE 1 - SUMMARY OF POSITIVE SAMPLES COLLECTED 5/31/18



Firm Collected

EPL management received results for the indicator bacteria testing and reported these results to ERU on June 17, 2018. *Enterobacteriaceae* was not detected in most samples. Three locations were positive for indicator bacteria: (1) the handle of a small refrigerator in the fryer area, (2) the ice maker near the drive through window, and (3) the soda machine near the drive through window. These results were reported to EPL management, a few days after the initial cleaning and sanitizing. According to management, the positive areas were cleaned, sanitized, and sampled again. *Enterobacteriaceae* was *not* detected in the second set of samples.

Whole Genome Sequence Analysis

Isolates from the positive samples collected by ERU were also analyzed using whole genome sequencing (WGS). Out of the 47 case-patients in this outbreak, 25 case-patient isolates also had WGS results available. When compared to the isolates from the environmental swabs, all

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the available case-patient isolates were closely related (0-4 single-nucleotide polymorphisms (SNPs) – NCBI cluster ID PDS000032705.531).

This WGS information, combined with the PFGE results, indicate a common source for the environmental and clinical isolates.

Employee Testing

On May 31, 2018 Stanislaus County Department of Public Health staff began collecting stool specimens from all restaurant employees for *Salmonella* testing. Employees were excluded from working at food facilities until they were tested and received negative results. According to summaries provided to ERU staff by Stanislaus County Department of Public Health staff, one employee tested positive for *Salmonella* with one of the outbreak PFGE patterns (JP6X01.0211). The affected employee was treated and cleared by retesting before being allowed to resume foodservice work.

Corrective Actions

Upon notification of the outbreak, restaurant management closed this location on May 31, 2018. They replaced and/or deep cleaned all equipment and surfaces in the restaurant, including replacing nearly all the cookware and storage containers. Sanitizing was performed by a third-party company. The EPL corporate food safety team worked with restaurant management to revise standard operating procedures and retrained all employees on new chemicals and procedures. All actions were completed prior to the store's reopening on June 12, 2018. On July 17, 2018 ERU received a written letter detailing these and future corrective actions.

Follow Up Sampling

To verify the adequacy of EPL's corrective actions, ERU conducted two additional environmental assessments at this facility. Samples collected during both events were collected and submitted to FDLB according to standard ERU procedures. These environmental sampling events were both coordinated with the local public health and environmental health departments; however, staff members from Stanislaus County were not present for either event.

Initial Follow Up

On August 21, 2018, ERU conducted an unannounced follow up assessment at the Modesto EPL location. During the assessment, ERU staff collected 76 environmental swabs from food contact and non-food contact surfaces in the food preparation area of the restaurant (Attachment 1 - Lines 74-149). The team focused sampling on areas that were positive during the May sampling, areas where EPL's testing indicated potential sanitation concerns, and areas that presented the highest risk of contamination to ready-to-eat foods. FDLB reported

that *Salmonella* was not detected in any of these samples. These results were shared with EPL management.

Second Follow Up

To verify the longer-term effectiveness of EPL's corrective actions, on January 8, 2019, ERU conducted an unannounced follow up assessment at the Modesto EPL location. During the assessment, ERU collected 50 environmental swabs from food contact and non-food contact surfaces in the food preparation area of the restaurant (Attachment 1 - Lines 150-198). The team focused sampling on areas that presented the highest risk of contamination to ready-to-eat foods and areas that had tested positive in previous sampling. FDLB reported that *Salmonella* was not detected in any of these samples. These results were also shared with EPL management.

No significant food safety concerns were identified in any of the follow up sampling conducted by ERU staff.

Firm Monitoring of Sanitation Program

In addition to ERU's follow up verifications, the EPL food safety team conducted ongoing sampling for *Enterobacteriaceae*. Any deficiencies were corrected by EPL management with retraining employees and retesting the area following an additional sanitation step.

Summary of Outbreak Investigation Findings

This outbreak was identified by CDPH IDB staff and quickly linked by epidemiological data to the EPL location at 801 Oakdale Road in Modesto, CA. Evidence collected by ERU staff during the environmental assessment, along with data collected during employee testing, indicated that this restaurant was the source of many illnesses in the community.

Due to evidence collected during this outbreak, the association of other EPL locations with historic *Salmonella* outbreaks, and the risks of cross-contamination between raw and cooked chicken at EPL, CDPH will continue to monitor for outbreaks or individual illnesses associated with this location and other EPL locations.

Regulatory Actions

A Regulatory Letter was issued to restaurant management on January 13, 2020 summarizing the association with illnesses and investigational findings (Attachment 4). The letter acknowledged the corrective actions taken by the firm up to that date and informed the restaurant owner that further regulatory action may be taken if additional illnesses are associated with this restaurant. Additionally, the letter formally requested results of all sampling so that ERU management could monitor the effectiveness of the new processes. These records were supplied, reviewed, and no food safety concerns were identified.

Attachments

Attachment 1 – Master ERU Environmental Sampling Log and Results

Attachment 2 - EPL Environmental Testing Results

Attachment 3 - Summary of Positive Results from 5/31/2018 Sampling

Attachment 4 - Regulatory Letter Dated 1/13/2020