

# SNHD 2021 Risk Factor Study – Restaurants

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# Overview

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- ✦ Risk Factor Study (RFS); Program Standard 9 – Program Assessment
- ✦ Five foodborne illness (FBI) risk factors
- ✦ 2016 Risk Factor Baseline Study and Intervention Strategies
- ✦ 2021 Risk Factor Study: Restaurants

# Voluntary National Retail Food Regulatory Program Standards

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- Create a framework for jurisdictions to improve and expand their food safety program with the goal of reducing the occurrence of behaviors associated with foodborne illnesses
- Achieve national uniformity
- Program Standard 9 – Program Assessment: The process used to measure the success of the program in reducing the occurrence of FBI risk factors to enhance food safety and public health in the community

## Program Standards:

1. Regulatory Foundation
2. Trained Regulatory Staff
3. Inspection Program Based on HACCP Principles
4. Uniform Inspection Program
5. Foodborne Illness and Food Defense Preparedness and Response
6. Compliance and Enforcement
7. Industry and Community Relations
8. Program Support and Resources
9. Program Assessment



# Risk Factor Study: Purpose

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- To identify risk factors that require attention in order to develop strategies to reduce their occurrence.
- To evaluate trends over time to determine whether progress is being made toward reducing the occurrence of the identified risk factors.
- Desired outcomes:
  - Enable jurisdictions to measure their program against national criteria and to demonstrate improvement in food safety.
  - Help identify program elements that may require improvement or be deserving of recognition.

# SNHD Baseline Restaurant Risk Factor Study Report: 2016

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SNHD Risk Factor Study (Restaurants) Data  
September 19, 2016

## Occurrence of Foodborne Illness Risk Factors in Southern Nevada

Southern Nevada Health District (SNHD)  
Baseline Restaurant Risk Factor Study Report 2016

### INTRODUCTION AND PURPOSE

### METHODOLOGY

- A. Selection of Facilities
- B. Data Collection
- C. Quality Control

### RESULTS

- A. Data Items by Risk Factor
- B. Top 5 Data Items "IN" Compliance
- C. Top 5 Data Items "OUT" of Compliance
- D. Personal Hygiene
- E. Allergen Awareness
- F. Certified Food Protection Manager (CFPM)
- G. Number Marked "OUT" Reports
  - 1. Fast Food
  - 2. Full Service
  - 3. Combined
  - 4. Number of Data Items Marked "OUT" Comparisons

### INTERVENTION STRATEGIES

- A. Handwashing
- B. Cold Holding
- C. Allergen Awareness

### ACKNOWLEDGEMENTS

### APPENDICES

- A. Report and Notice of Inspection Copy left with Facilities
- B. Facility Type Reports-Full Data Tables
  - 1. Restaurants-Fast Food
  - 2. Restaurants-Full Service
  - 3. Restaurants-Combined

### REFERENCES

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- Plan: Conduct RFSs every five years for each facility category
  - Schools, Restaurants, and Retail Food Stores
- Mirrored the FDA methodology for selecting facility types and collecting data
  - Fast food –order and pay at a counter prior to receiving the meal
  - Full service –order at the table and pay after the meal is received
  - Confidence level of 90%±10% = 132 permits (66 each)





## Reducing Foodborne Illness Risk Factors

### 1. Poor Personal Hygiene

- Improper hand washing and/or not washing hands when necessary
- Bare hand contact with ready-to-eat foods
- Food service employees working while ill with symptoms, such as vomiting, diarrhea, sore throat with fever, jaundice, or exposed infected wounds or boils

### 2. Food from Unsafe Sources

- Food received from unapproved food sources and/or prepared in unpermitted locations
- Receipt of adulterated food

### 3. Improper Cooking Temperatures/Methods

- Cooking
- Reheating
- Freezing (kill step to eliminate parasites in fish)

### 4. Improper Holding, Time and Temperature

- Improper hot and cold holding of time/temperature control for safety foods (TCS)
- Lack of date/time marking for ready-to-eat TCS
- Improper use of time as a control
- Improper cooling of TCS

### 5. Food Contamination

- Use of contaminated/improperly constructed equipment
- Poor employee practices
- Improper food storage/preparation
- Exposure to chemicals



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# Five Foodborne Illness Risk Factors

- ✓ Poor Personal Hygiene
- ✓ Food from Unsafe Sources
- ✓ Improper Cooking Temperatures/Methods
- ✓ Improper Holding, Time and Temperature
- ✓ Food Contamination



# Intervention Strategy

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- Designed to address the occurrence of the risk factors identified in the RFS.
  - Purpose:
    - To attempt to reduce risk factor occurrence rates between data collection dates and assess their effectiveness over time.
  - Encouraged to incorporate various types of interventions such as code changes, educational and training activities, enforcement and compliance strategies, etc.

Get the message... Wash Your Hands!

SOAPY

SOAPY

SOAPY

### How To Wash

- Rinse under warm, running water
- Apply soap
- Rub vigorously for at least 15 seconds
- Thoroughly rinse under warm, running water
- Immediately dry with disposable paper towels

### When To Wash

- When entering the kitchen
- After touching your face, hair, or skin
- After using the restroom
- After handling raw animal product
- After taking out the trash or cleaning
- After handling ANYTHING dirty!

**PRO TIP**  
Use paper towels to turn off faucet

**SNHD**  
Southern Nevada Health District

# 2017 Handwashing Intervention Strategy

- “Soapy”
- Inspector conducted a hand washing demonstration and discussed the importance of handwashing
- Educational materials:
  - Handouts
  - Stickers



Soapy defeats poo on Halloween



# ALLERGY AWARE KNOW YOUR MENU

## 8 ALLERGENS



## WHEN A CUSTOMER INFORMS YOU OF A FOOD ALLERGY

- ✓ Refer food allergy concern to Person In Charge.
- ✓ Remember to check the food preparation procedures for ANY possible cross contact, which can include frying the item in question in the same oil as an item that contains an allergen.
- ✓ If a food item is returned to the kitchen due to an allergen, DO NOT attempt to remove the allergen and send the food back. Trace amounts of allergens can trigger an allergic reaction.

## SYMPTOMS

IF A GUEST HAS A REACTION,  
CALL 911 IMMEDIATELY



RASH, HIVES,  
ITCHING,  
TINGLING



SWELLING



WHEEZING,  
DIFFICULTY  
BREATHING



LOSS OF  
CONSCIOUSNESS,  
DIZZY, FAINT



ANAPHYLAXIS  
*Confusion, slurred speech,  
pale skin, low blood pressure,  
tightening of the throat,  
difficulty swallowing*

# 2018 Allergy Intervention Strategy

- Allergen Awareness is not a foodborne illness risk factor, but it is an important issue in protecting the health of the public. Also required knowledge of the PIC.
- Inspector educated the PIC on the 8 major food allergens and symptoms of a reaction and discussed approaches that can be used to protect customers.
- Educational materials:
  - Handouts
  - Purple highlighter
  - SOP Templates

# 2021 Risk Factor Study: Restaurants



## Planning

Follow the same methodology from 2016 to be able to compare data. Use FoodShield database. Train team.



## Determine Team:

Project Coordinator: Christine Sylvis

Project Lead: Vanessa Ortiz


Data Collectors: Tara Edwards, Debbie Clark, Rachel Flores, and Kelsi Sullivan



Created list of facilities, determine number of inspections ( $90\% \pm 10\%$ ), create randomized lists:

Jackie Southam and Brittanie Blackard

**TABLE 1. DATA ITEMS (1-19) SORTED BY RISK FACTOR CATEGORY**

Risk Factor Category	Data Items
<b>Poor Personal Hygiene</b>	1: Employees practice proper hand washing. 2: Food employees do not contact ready-to-eat foods with bare hands.
<b>Contaminated Equipment / Protection from Contamination</b>	3: Food is protected from cross-contamination during storage, preparation, and display. 4: Food contact surfaces are properly cleaned and sanitized.
<b>Improper Holding Time / Temperature</b>	5: Foods requiring refrigeration are held at the proper temperature. 6: Foods displayed or stored hot are held at the proper temperature. 7: Foods are cooled properly. 8: Refrigerated, ready-to-eat foods are properly date marked and discarded within 7 days of preparation or opening.
<b>Inadequate Cooking</b>	9: Raw animal foods are cooked to required temperature. 10: Cooked foods are reheated to required temperatures.
<b>Other Areas of Interest</b>	11. Handwashing facilities are accessible and properly maintained. 12. Employees practice good hygiene. 13. Consumers are properly advised of risks of consuming raw or undercooked animal foods. 14. Time alone is properly used as a public health control. 15. Facilities have adequate equipment and tools for ensuring food temperature control and sanitization of food contact surfaces. 16. Special processes are conducted in compliance with issued variance/HACCP Plan, when required.  17. Food is received from safe sources. 18. Toxic materials are identified, used and stored properly. 19. Management and food employees are trained in food allergy awareness as it relates to their assigned duties

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# Data Items Assessed During Risk Factor Surveys

# Results: 2016 v. 2021 Top 5 Primary Data Items Marked “IN”

Table 12. Rank Comparison of the Top 5 Primary Data Items Marked “IN” – 2016 versus 2021

Data Item “IN” Compliance	2016 % “IN”	2016 Rank	2021 % “IN”	2021 Rank
3C. Food is protected from environmental contamination; actual contamination observed.	98.5	1	95.5	2
2. Food employees do not contact ready-to-eat foods with bare hands.	90.3	2	96.3	1
8B. Open commercial containers of prepared ready-to-eat TCS Food held for more than 24 hours are date marked as required.	85.8	3	79.9	4
3B. Different raw animal foods are separated from each other.	83.3	4	64.9	8
8C. Ready-to-eat, TCS Food prepared on-site and/or opened commercial container exceeding 7 days at 41°F is discarded.	81.3	5	73.1	5
8A. Ready-to-eat, TCS Food (prepared on-site) held for more than 24 hours is date marked as required.	77.8	6	80.6	3

- Four of the five top primary data items marked “IN” were ranked in the top five in both 2016 and 2021:
  - Actual contamination of food (3C)
  - No bare hand contact with ready-to-eat food (2)
  - Discarding expired RTE TCS foods (8C)
  - Date marking of opened, commercially packaged RTE TCS food (8B)
- Compliance separating raw animal foods from each other (3B) decreased - removing it from the top 5 “IN” compliance in 2021.
- Date marking of TCS food prepared on site held for more than 24 hours (8A) improved ranking from #6 to #3.

# Results: 2016 v. 2021 Top 5 Primary Data Items Marked “OUT”

**Table 13. Rank Comparison of the Top 5 Primary Data Items Marked “OUT” – 2016 versus 2021**

Data Item “OUT” of compliance	2016 % “OUT”	2016 Rank	2021 % “OUT”	2021 Rank
1A. Hands are cleaned and properly washed using hand cleanser / water supply / appropriate drying methods / length of time as specified in Section 2-301.12 of the Food Code	76.9	1	31.3	5
5A. TCS Food is maintained at 41°F (5°C) or below, except during preparation, cooking, cooling, or when time is used as a public health control.	71.6	2	65.7	1
3D. Food is protected from environmental contamination; potential contamination.	54.5	3	50	2
4A. Food contact surfaces and utensils are clean to sight and touch and sanitized before use.	43.3	4	39.6	3
1B. Hands are cleaned and properly washed when required as specified in Section 2-301.14 of the Food Code	41.0	5	36.6	4

- The top five primary data items marked “OUT” of compliance remained the same, with different ranking order:
  - Proper handwashing procedure (1A)
  - Washing hands when required (1B)
  - Protection of food from potential contamination (3D)
  - Food contact surfaces cleaned and sanitized (4A)
  - Cold holding of TCS foods (5A).
- All the items showed increased improvement with washing hands as required (1A) being statistically significant.



# Handwashing: Pre- and Post- Intervention Strategy

Hand Washing % "OUT": Pre- and Post- Handwashing  
Intervention



- The Handwashing Intervention Strategy (2018) was likely a successful component in the decrease in the number of observed violations associated with hand washing.
- There was an overall decrease in the percent of "OUT" of compliance hand washing observations for fast-food, full-service, and total combined facilities in 2021.
  - Not washing hands as required (1A) decreased significantly across all facility types.
  - Data item 1A went from the top concern in 2016 to a ranking of fifth place in 2021.

# Allergen Awareness: Pre- and Post-Intervention Strategy

Table 15. Comparison of Allergen Awareness and Training for Fast-Food, Full-Service, and Combined – 2016 Versus 2021

Number of Information Statements	2016 Fast-Food					2021 Fast-Food				
	IN	IN %	OUT	OUT %	TOTAL OBSERVATIONS (IN and OUT)	IN	IN %	OUT	OUT %	TOTAL OBSERVATIONS (IN and OUT)
19A. The person in charge accurately describes foods identified as major food allergens and the symptoms associated with major food allergens.	18	26.5	50	73.5	68	34	48.6	36	51.4	70
19B. Food employees are trained in food allergy awareness as it relates to their assigned duties.	42	61.8	26	38.2	68	47	67.1	23	32.9	70
Number of Information Statements	2016 Full-Service					2021 Full-Service				
	IN	IN %	OUT	OUT %	TOTAL OBSERVATIONS (IN and OUT)	IN	IN %	OUT	OUT %	TOTAL OBSERVATIONS (IN and OUT)
19A. The person in charge accurately describes foods identified as major food allergens and the symptoms associated with major food allergens.	21	31.8	45	68.2	66	40	62.5	24	37.5	64
19B. Food employees are trained in food allergy awareness as it relates to their assigned duties.	44	66.7	22	33.3	66	46	71.9	18	28.1	64
Number of Information Statements	2016 Combined					2021 Combined				
	IN	IN %	OUT	OUT %	TOTAL OBSERVATIONS (IN and OUT)	IN	IN %	OUT	OUT %	TOTAL OBSERVATIONS (IN and OUT)
19A. The person in charge accurately describes foods identified as major food allergens and the symptoms associated with major food allergens.	39	29.1	95	70.9	134	74	55.2	60	44.8	134
19B. Food employees are trained in food allergy awareness as it relates to their assigned duties.	86	64.2	48	35.8	134	93	69.4	41	30.6	134

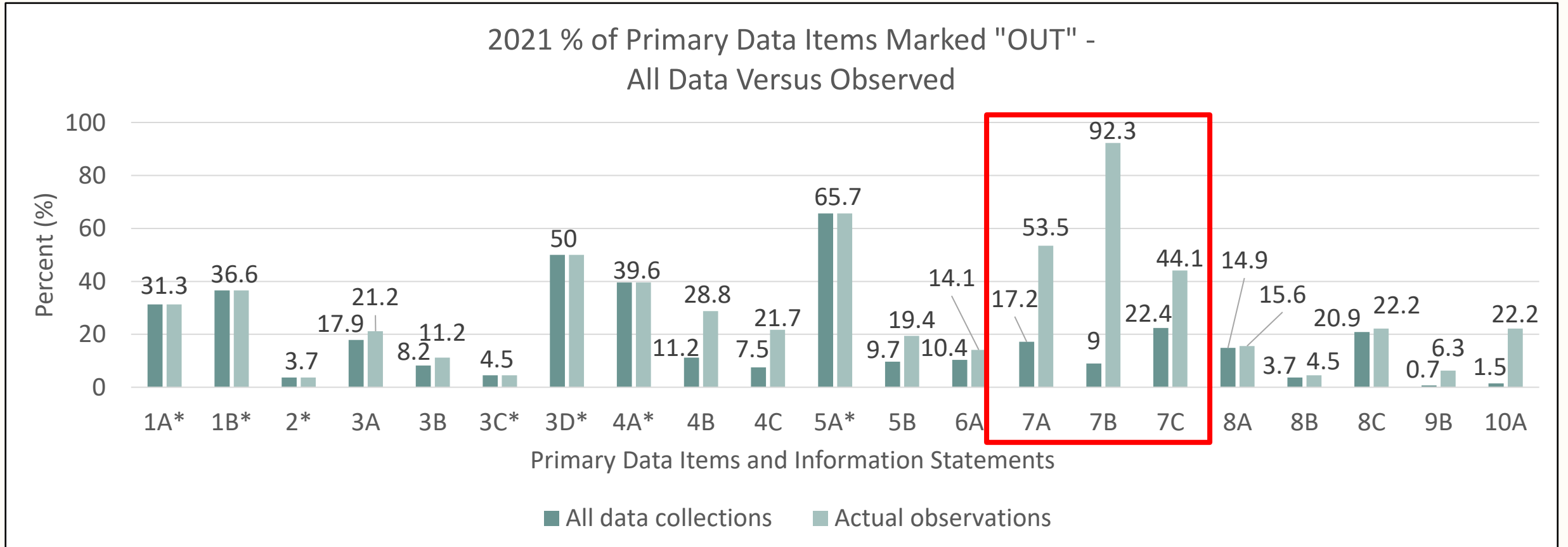
# Alternative Analysis of Data Items Marked “OUT”

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$$\% \text{ “OUT” of compliance using the total number of data collection findings} = \frac{\text{Total number “OUT” of compliance for the information statement}}{\text{Total number of observations (IN, OUT, NO, NA)}} \times 100$$

$$\% \text{ “OUT” of compliance using actual observations} = \frac{\text{Total number of “OUT” of compliance for the information statement}}{\text{Total number of observations (IN, OUT)}} \times 100$$

# Analysis of Data Items Marked “OUT” – All Data vs. Actual Observations



**1A. Hands are cleaned and properly washed using hand cleanser / water supply / appropriate drying methods / length of time as specified in Section 2-301.12 of the Food Code.**

**1B. Hands are cleaned and properly washed when required as specified in Section 2-301.14 of the Food Code.**

**2. Food employees do not contact ready-to-eat foods with bare hands.**

**3A. Raw animal foods are separated from ready-to-eat foods.**

**3B. Different raw animal foods are separated from each other.**

**3C. Food is protected from environmental contamination - actual contamination observed.**

**3D. Food is protected from environmental contamination - potential contamination.**

**4A. Food contact surfaces and utensils are clean to sight and touch and sanitized before use.**

**4B. Equipment food contact surfaces and utensils are cleaned and sanitized properly using manual warewashing procedures.**

**4C. Equipment food contact surfaces and utensils are cleaned and sanitized properly using mechanical warewashing equipment.**

**5A. TCS Food is maintained at 41°F or below, except during preparation, cooking, cooling, or when time is used as a public health control.**

**5B. Raw shell eggs are stored under refrigeration that maintains ambient air temperature of 45°F or less.**

**6A. TCS Food is maintained at 135°F or above, except during preparation, cooking, cooling, or when time is used as a public health control.**

**7A. Cooked TCS Food is cooled from 135°F to 70°F within 2 hours and from 135°F to 41°F or below within 6 hours.**

**7B. TCS Food (prepared from ingredients at ambient temperature) is cooled to 41°F or below within 4 hours.**

**7C. Proper cooling methods / equipment are used.**

**8A. Ready-to-eat, TCS Food (prepared on-site) held for more than 24 hours is date marked as required.**

**8B. Open commercial containers of prepared ready-to-eat TCS Food held for more than 24 hours are date marked as required.**

**8C. Ready-to-eat, TCS Food prepared on-site and/or opened commercial container exceeding 7 days at 41°F is discarded.**

**9B. Pork; Fish; Beef; Commercially-raised Game Animals are cooked to 145°F for 15 seconds.**

**10A. TCS Food that is cooked and cooled on premises is rapidly reheated to 165°F for 15 seconds for hot holding.**





Closed facilities



Inaccurate hours of operation



Access to facilities

Closed dining rooms, drive thru only



Slow business – less food handling observed



Communication with data collectors

Microsoft teams



IT issues with FoodShield website

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## 2021 Risk Factor Study: Data Collection Challenges



# Summary

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- All top 5 % OUT risk factors identified in 2016 decreased in occurrence
- Intervention Strategies were successful
  - Handwashing “as required” = statistically significant increase in compliance after the implementation of handwashing intervention.
  - Allergen awareness “identifying major food allergens and symptoms” = statistically significant increase in compliance after allergen intervention strategy.
    - *Increase in facilities that provide allergen training to employees*
- Alternate analysis identified cooling practices and methods may require an intervention strategy in the future.

# Questions?

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Thank you!!

- EH Management, especially Chris Saxton, Larry Rogers, and Aaron DelCotto
- Vanessa Ortiz (Team Lead) and Tara Edwards, Debbie Clark, Rachel Flores, and Kelsi Sullivan (Data Collectors)
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  - NACCHO Mentorship Program (grant) for funding the 2017 Handwashing Intervention Strategy
  - FDA Cooperative Agreement (grant) for funding the 2018 Allergy Intervention Strategy

