

Occurrence of Foodborne Illness Risk Factors in Southern Nevada

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

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Southern Nevada Health District (SNHD) Baseline Restaurant Data Collection Report 2016

INTRODUCTION AND PURPOSE

The Southern Nevada Health District (SNHD) is the local health authority for Clark County, Nevada, which encompasses the Las Vegas metropolitan area, in addition to the rural areas of the county. The SNHD's mission is "to protect and promote the health, the environment and well being of Southern Nevada residents and visitors" in support of the vision "healthy people in a healthy Southern Nevada." The SNHD is governed by a Board of Health with representatives from all major cities and Clark County, as well as professional representatives (a physician, a non-gaming business and a major hotel business representative). The Board of Health is issued regulatory authority by the Nevada Revised Statutes 439.366 **Powers and jurisdiction of district board of health and district health department; regulations of district board of health.**

SNHD is one of the largest local health districts in the nation covering approximately 8,000 square miles. It serves a population of more than 2 million residents representing 73 percent of the state's population, in addition to an average of 3.7 million visitors each month (44 million each year).

The Food Establishment Inspection Program (Food Ops) of the Environmental Health (EH) Division is responsible for regulating 19,600 annual permits and more than 4,900 temporary food establishments annually with a Food Operations staff of 55 Environmental Health Specialists (EHSs), Senior EHSs, EH Supervisors, and an EH Manager. A wide variety of food facilities can be found in Clark County. This includes many complex large-scale food operations found at casino properties; a wide range of ethnic restaurants serving foods from every corner of the world; commercial processing facilities; warehouses; retail food stores; and a variety of fast-food, full-service and gourmet restaurants. Food establishment size and number of persons served per day ranges from extremely small operations typical in all jurisdictions to those that serve thousands of meals daily.

The current *Southern Nevada Health District Regulations Governing the Sanitation of Food Establishments* adopted on January 28, 2010 (2010 Food Regulations) incorporated mainly the 2005 FDA Food Code with parts of the 2009 FDA Food Code. The SNHD is currently drafting a new version of our food regulations based on the 2013 FDA Food Code.

The SNHD enrolled in the FDA's Voluntary Retail Food Program Standards in July 2012. As part of Standard 9, a Risk Factor Study must be conducted to identify the risky behaviors and practices in food establishments that are most in need of priority attention in order to develop strategies to reduce their occurrence. The current plan is to conduct the Risk Factor Study over three years completing one of the three retail food service categories in each year. The results of the initial data collection for each of the facility types will serve as the baseline measurement from which trends will be analyzed. Subsequent data collection periods for each of the facility types are planned at three- to five-year intervals after the initial data collection for purposes of analyzing impacts of intervention strategies.

METHODOLOGY

The SNHD Risk Factor Study utilized models and forms provided in the FDA guidance document entitled, *Study on the Occurrence of Foodborne Illness Risk Factors in Selected Retail and Foodservice Facility Types (2013-2024), Protocol for the Data Collection in Restaurant Facilities*. The SNHD closely mirrored the FDA methodology for selecting facility types and collecting data. After discussing the recent changes to Standard 9 with our FDA Retail Food Specialist, it was decided to conduct the study on the industry segment of “Restaurants” during the first year. The other industry segments will be conducted on separate years in the 5-year self-assessment cycle.

The 2010 Food Regulations, as noted earlier, are based mainly on the 2005 FDA Food Code; however, there are some critical differences. The requirement in Southern Nevada for short-term cold holding is 45° Fahrenheit (°F). The FDA requirement is 41°F. In addition, the SNHD allows a plus-or-minus 2-degree variance on the temperature. Another major discrepancy with the Food Code is that the 2010 Food Regulations do not require each establishment to have a certified food protection manager (CFPM). While it is expected that the upcoming revision of the SNHD Food Regulations will bring them in line with the 2013 FDA Food Code, they have not yet been adopted. SNHD chose to use the 2009 FDA Food Code as the standard for the Risk Factor Study to allow for better comparison to national data.

Informational briefings describing the Risk Factor Study, its importance, and the general plan to accomplish it were delivered to the Food Ops Leadership group on December 2, 2015 and to the EH Food Ops staff during the Food Ops Staff Meeting on December 17, 2015.

The SNHD chose to mirror the FDA’s Risk Factor Study by identifying qualifying restaurant permits and categorizing them as either fast food or full-service restaurants. By definition, meals at fast food facilities were ordered and paid for at a counter prior to receiving the meal while full service meals were ordered at the table and paid for after the meal was received. This required reviewing a list of over 5,000 permits to determine qualification and categorization resulting in 2,362 fast food permits and 2,159 full-service permits.

Eligible restaurant lists were submitted to the FDA for analysis to determine the number of data collections needed for various confidence levels. The resulting sampling sizes were considerably higher than expected:

Confidence Level	# of Fast Food Permits	# of Full Service Permits	Total # of Permits
95%±5%	331	327	658
90%±5%	243	241	484
95%±10%	93	92	185
90%±10%	66	66	132

The initial intent was to reach a confidence level of 95 percent, plus or minus 5 percent, using five data collectors to conduct Risk Assessment Surveys on the assumed approximate 500 facilities with the study to be completed every 5 years. On February 10, 2016, a meeting was scheduled with SNHD’s informatics department to determine the best approach to the Risk Factor Study. By the end of the meeting, there was a revised plan. The revised plan had two phases: In phase one, random lists were developed to cover the 658 restaurants required to achieve a confidence level of 95 percent, plus or minus 5 percent, but initially only two of the five data collectors were used to collect data on the first 132 facilities to achieve a confidence level of 90 percent, plus or minus 10 percent. Once phase one is complete, a determination will be made as to the feasibility of completing the remaining 526 restaurants. Should it be determined that it is feasible to continue, the other three data collectors will be activated to assist.

On January 20, 2016, the FDA protocol was issued to the data collectors for their review. On January 27, 2016, ten data collectors (EH Specialist II's and Senior EH Specialists) attended a 5-hour training session with John Marcello, FDA Retail Food Specialist, on interpretation of the data items, marking instructions and how to conduct data collection. On February 22, 2016, the data collectors attended an FDA webinar to learn to use FoodSHIELD, a web-based database.

A. Selection of Facilities

For the 2016 SNHD Risk Factor Study, data was collected on the Restaurant segment divided into full service and fast food facility types. Facilities were selected utilizing Research Randomizer (www.randomizer.org) to generate random number lists which were applied to lists of facilities of each facility type. Four random number lists were created: full service primary, full service alternate, fast food primary, fast food alternate. FDA methodology was used for selecting alternate facilities for those on the primary list to substitute when needed. Any facility that declined to participate or was otherwise disqualified was removed from the study and replaced with the next available facility on the alternate list.

B. Data Collection

The randomly selected facilities were split among three data collectors (initially two data collectors, and a third was added). To assess risk factors, the three inspectors conducted unannounced surveys during which the field inspector interviewed the Person in Charge and conducted the equivalent of a routine unannounced inspection and gathered additional information in order to complete the FDA RETAIL FOOD PROGRAM FOODBORNE ILLNESS RISK FACTOR STUDY RESTAURANT DATA COLLECTION FORM. The data gathered was input into the FoodSHIELD database. The Person in Charge was informed of the reason for the data collection, that observations would not be shared with the routine inspector, and that the survey was non-regulatory in that it did not affect the facility's grade or inspection cycle; however, should an imminent health hazard be observed, the facility would be closed to protect public health and the facility would be disqualified from the study. An SNHD Report and Notice of Inspection Form was left at each facility documenting the visit, but it did not list observations made during the inspection (See Document Example in Appendix A).

Data was collected on 66 full service and 68 fast food facilities (134 facilities total) between February 22 and July 19, 2016. EH Management determined to conclude the study at this point, achieving a confidence level of 90 percent, plus or minus 10 percent.

C. Quality Control

To ensure uniformity, only three field inspectors were assigned as data collectors. The EH Supervisor of Training and Compliance (also an FDA Standard) accompanied each data collector on their first survey and again at random intervals to ensure quality control. The staff met regularly to discuss questions and concerns to maintain consistency. The FDA Regional Retail Food Specialist was consulted when clarification on how to mark a data item was needed. Upon completion, each data collection form was entered into the FoodSHIELD database.

RESULTS

As the SNHD 2016 data collection for the Risk Factor Study establishes our baseline for foodborne illness risk factors, we do not have previous data to compare against. The baseline data is detailed in reports generated from FoodSHIELD in Appendix B.

For each of the data items (DI), the inspector marked the item as:

- **IN**=Item observed to be “in compliance” with Food Code provisions.
- **OUT**=Item observed to be “out of compliance” with Food Code provisions. An explanation was provided in the comment section on the data collection form for each observations marked “OUT.”
- **NO**=Item was “not observed.” The “NO” notation was used when an item was a usual practice in the food service operation, but the practice was not observed during the time of the inspection. *For example if a restaurant cooks food and then cools it for later use, but was not doing so at the time of the survey, then data items pertaining to cooling practices and cooling temperatures were marked “not observable.”*
- **NA**=Item was “not applicable.” The “NA” notation was used when an item was not part of the food service operation. *For example, if a seafood department that conducts no cooking was selected for the study, then all data items pertaining to cooking were marked “not applicable.”*

A. Data Items by Risk Factor

The data collection is intended to be targeted to the assessment of the control of foodborne illness risk factors. It is not intended to be a comprehensive assessment of compliance with *Food Code/SNHD Food Regulation* requirements.

Data items 1 through 10 are considered primary data items. Each of the primary data items has been placed under the appropriate FDA foodborne illness risk factor category. Data items 11 through 19 are listed under the heading “Other Areas of Interest.” These food safety practices and procedures directly support active managerial control of the foodborne illness risk factor areas addressed under the primary data items. The table below places each data item into a risk factor category.

Data Items Sorted by Risk Factor

Risk Factor Category	Data Items
Poor Personal Hygiene	1A, 1B, 2, 11A, 11B, 12A, 12B, 12C
Contaminated Equipment / Protection from Contamination	3A, 3B, 3C, 3D, 3E, 4A, 4B, 4C, 4D
Improper Holding Time / Temperature	5A, 5, 5C, 6A, 6B, 6C, 7A, 7B, 7C, 7D, 8A, 8B, 8C, 8D, 14A, 14B, 14C
Inadequate Cooking	9A, 9B, 9C, 9D, 9E, 9F, 10A, 10B, 10C
Foods from Unsafe Sources	16A, 16B, 16C, 16D, 17A, 17B, 17C, 17D, 17E, 17F, 17G, 17H
OTHER Chemicals	18A, 18B
OTHER Allergy Awareness	19A, 19B

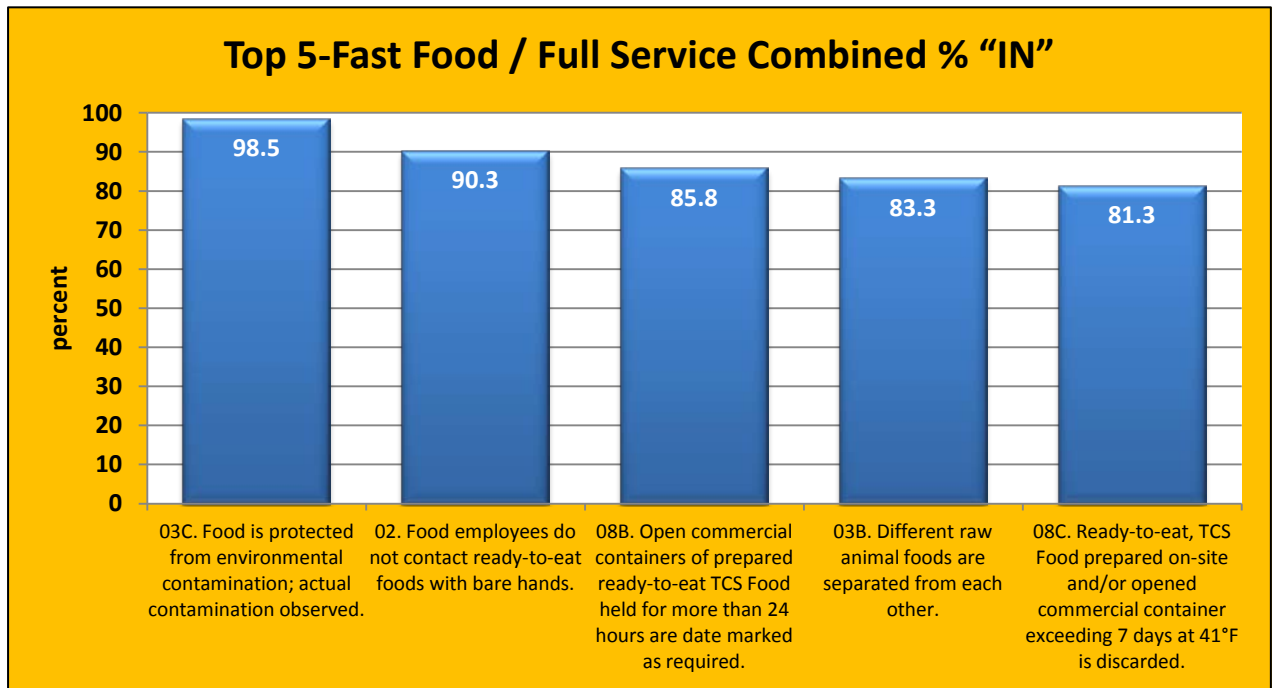
B. Top 5 Data Items “IN” Compliance

Primary data items (data items 1 through 10) were used to determine the top 5 Risk Factor data items marked “IN” compliance; percent “IN” was calculated using the total number of data collection findings (IN, OUT, NO, and NA). All items in the top 5 scored above 80 percent compliant, indicating control over these items in Southern Nevada. Actual contamination of food (3C) was only observed twice out of 134 observations. The most impressive of the Top 10, no bare hand contact with ready-to-eat food (2) was

found to be “IN” compliance 90.3 percent of the time (observed “OUT” 13 of 134 observations). This requirement was introduced to Southern Nevada in the 2010 Food Regulations and the results display industry compliance with a relatively new regulatory requirement. Date marking of opened commercial containers of prepared Ready-to-Eat Time/Temperature Control for Safety (RTE TCS) foods (8B) and discarding of all RTE TCS foods (8C) also have high compliance rates, 86 percent and 81 percent respectively. Date marking of RTE TCS food prepared on-site (8A), although not in the top 5, had a compliance rate of 78 percent.

Separating different raw animal foods properly from each other (3B) was observed “IN” 83.3 percent of the time, compared to raw animal foods separated from RTE foods (3A; not in the top 5) which was observed “IN” 77 percent of the time.

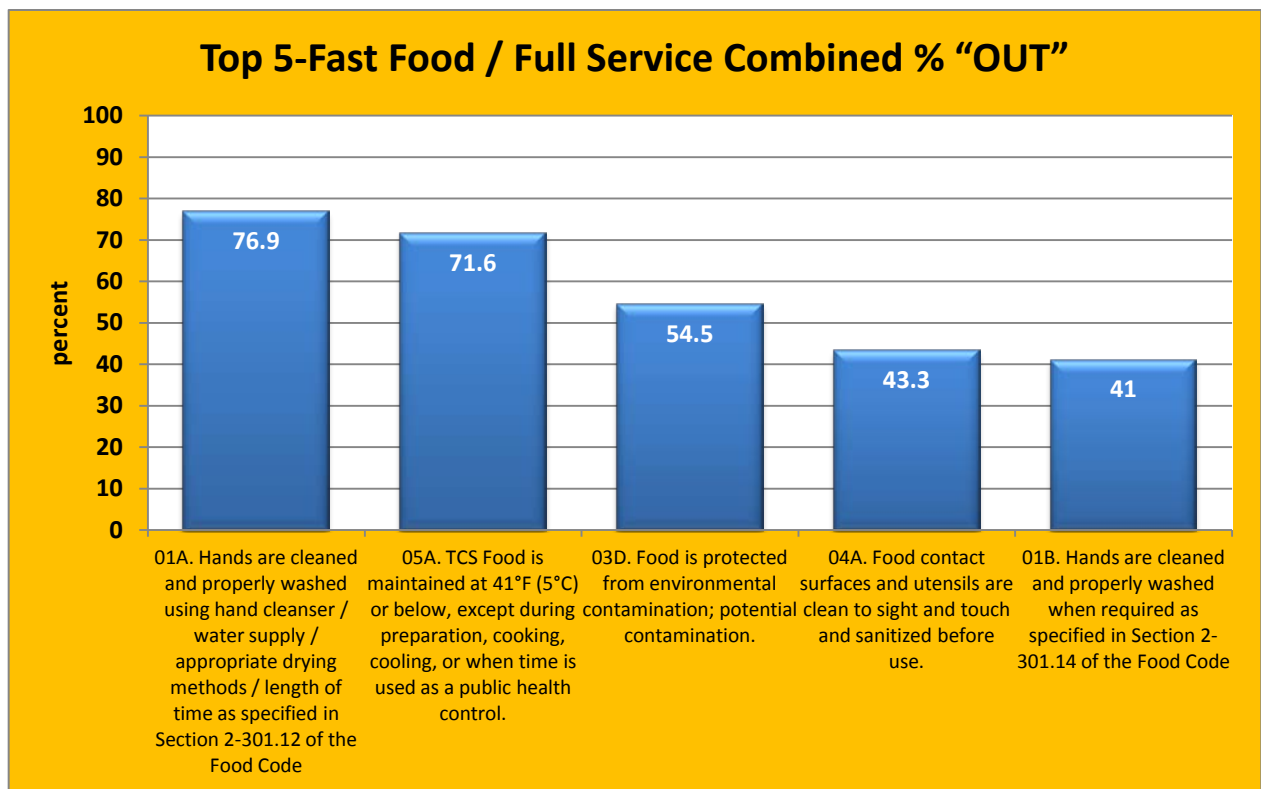
Data Item IN Compliance	Fast Food / Full Service Combined % “IN”	Risk Factor
03C. Food is protected from environmental contamination; actual contamination observed.	98.5	Contaminated Equip/ Protection from Contamination
02. Food employees do not contact ready-to-eat foods with bare hands.	90.3	Personal Hygiene
08B. Open commercial containers of prepared ready-to-eat TCS Food held for more than 24 hours are date marked as required.	85.8	Improper Holding Time/Temp
03B. Different raw animal foods are separated from each other.	83.3	Contaminated Equip/ Protection from Contamination
08C. Ready-to-eat, TCS Food prepared on-site and/or opened commercial container exceeding 7 days at 41°F is discarded.	81.3	Improper Holding Time/Temp



C. Top 5 Data Items “OUT” of Compliance

Percent “OUT” was calculated using the total number of data collection findings (IN, OUT, NO, and NA) and only primary data items (data items 1 through 10) were used to determine the top 5 Risk Factor data items marked “OUT” of compliance. Proper handwashing procedure (1A) had the highest percentage “OUT” at 76.9 percent. During the data collection, to follow the FDA model and strict enforcement of the Regulations, any handwash observed without a full fifteen second scrub outside the running water was marked as “OUT”. This is contradictory to the SNHD’s practice of education over violation for handwashing that is “close” to fifteen seconds and for scrubbing hands under running water. Washing hands when required (1B) had a better compliance rate (41 percent “OUT”), however attention is still needed. Cold holding of TCS foods (5A) was identified as “OUT” of compliance 71.6 percent of the time, identifying it as needing priority attention. As mentioned above, 2010 SNHD Regulations allow for storage of TCS foods at 45°F for up to 72 hours. During the data collection, to follow the FDA model, all TCS foods observed above 41°F were marked out. This accounts for a higher occurrence of “OUT” markings than what is addressed on current routine inspections. Protection from potential contamination (3D) and food contact surfaces cleaned and sanitized (4A) also fall into the top 5 data items “OUT” at 54.5 percent and 43.3 percent respectively.

Data Item OUT of compliance	Fast Food / Full Service Combined % “OUT”	Risk Factor
01A. 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	Personal Hygiene
05A. 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	Improper Holding Time/Temp
03D. Food is protected from environmental contamination; potential contamination.	54.5	Contaminated Equip/ Protection from Contamination
04A. Food contact surfaces and utensils are clean to sight and touch and sanitized before use.	43.3	Contaminated Equip/ Protection from Contamination
01B. Hands are cleaned and properly washed when required as specified in Section 2-301.14 of the Food Code	41	Personal Hygiene



D. Personal Hygiene

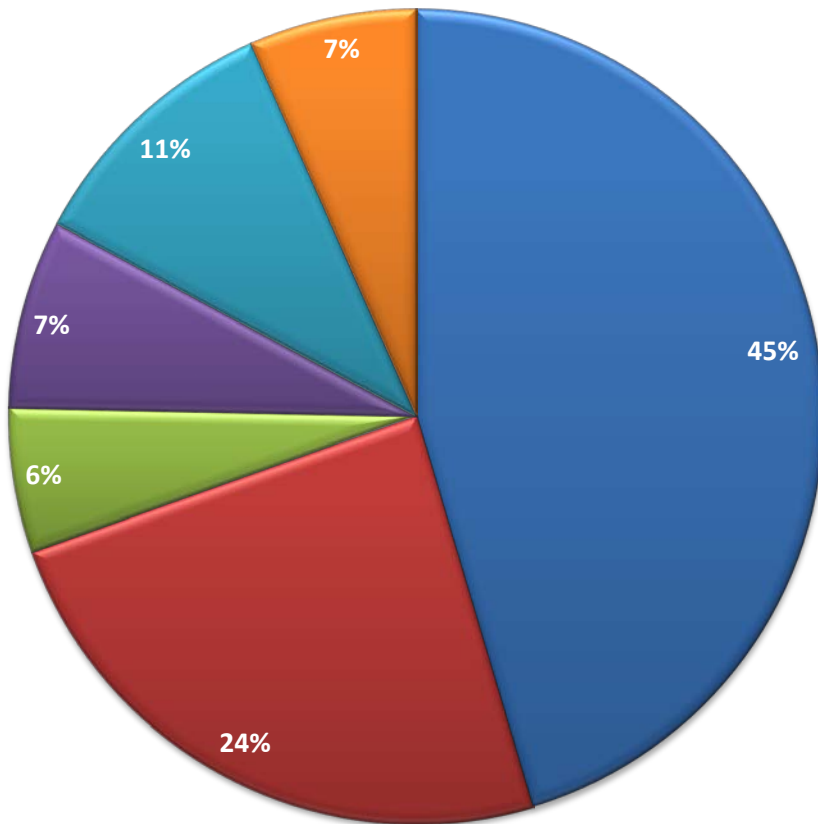
With personal hygiene having such an impact on foodborne illness, it warranted further analysis. The sum of the percentage data items 1A, 1B, 2, 11A, 11B, 12A, 12B, 12C marked out on the risk factor data collection was used to calculate the percentage each item contributed to the personal hygiene risk factor. (Note: Data items 12B and 12C were not marked “OUT” during the data collection.)

Full Service	% marked OUT	Personal Hygiene Composition
1A. Hands are cleaned and properly washed using hand cleanser / water supply / appropriate drying methods / length of time as specified	81.8	45%
1B. Hands are cleaned and properly washed when required as specified	43.9	24%
2. Food employees do not contact ready-to-eat foods with bare hands.	10.6	6%
11A. Handwashing facilities are conveniently located and accessible for employees.	10.6	6%
11B. Handwashing facilities are supplied with hand cleanser / disposable towels / hand drying devices.	19.7	11%
12A. Food Employees eat, drink, and use tobacco only in designated areas.	13.6	8%
TOTALS	180.2	100%

Fast Food	% marked OUT	Personal Hygiene Composition
1A. Hands are cleaned and properly washed using hand cleanser / water supply / appropriate drying methods / length of time as specified	73.5	46%
1B. Hands are cleaned and properly washed when required as specified	38.2	24%
2. Food employees do not contact ready-to-eat foods with bare hands.	8.8	6%
11A. Handwashing facilities are conveniently located and accessible for employees.	14.7	9%
11B. Handwashing facilities are supplied with hand cleanser / disposable towels / hand drying devices.	16.2	10%
12A. Food Employees eat, drink, and use tobacco only in designated areas.	8.8	5%
TOTALS	160.2	100%

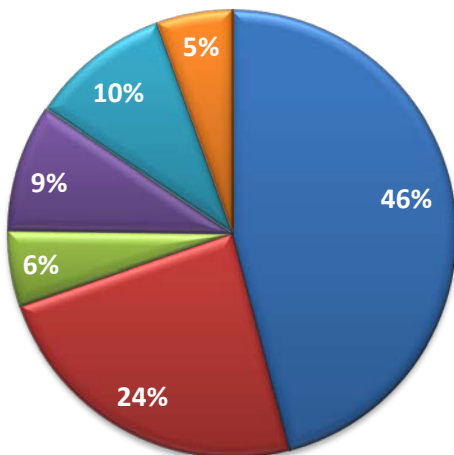
Full Service & Fast Food Combined	% marked OUT	Personal Hygiene Composition
1A. Hands are cleaned and properly washed using hand cleanser / water supply / appropriate drying methods / length of time as specified	76.9	45%
1B. Hands are cleaned and properly washed when required as specified	41	24%
2. Food employees do not contact ready-to-eat foods with bare hands.	9.7	6%
11A. Handwashing facilities are conveniently located and accessible for employees.	12.7	7%
11B. Handwashing facilities are supplied with hand cleanser / disposable towels / hand drying devices.	17.9	11%
12A. Food Employees eat, drink, and use tobacco only in designated areas.	11.2	7%
TOTALS	169.4	100%

Personal Hygiene Full Service and Fast Food Combined

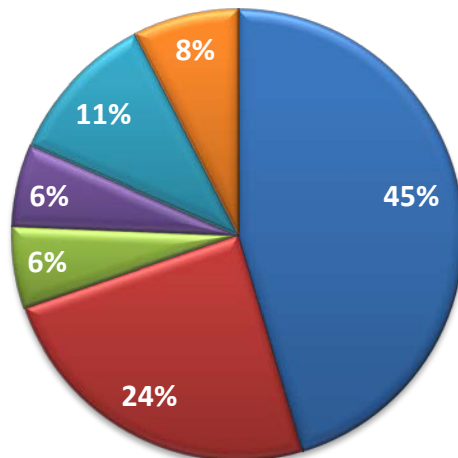


- 1A. Hands are cleaned and properly washed using hand cleanser / water supply / appropriate drying methods / length of time as specified
- 1B. Hands are cleaned and properly washed when required as specified
- 2. Food employees do not contact ready-to-eat foods with bare hands.
- 11A. Handwashing facilities are conveniently located and accessible for employees.
- 11B. Handwashing facilities are supplied with hand cleanser / disposable towels / hand drying devices.
- 12A. Food Employees eat, drink, and use tobacco only in designated areas.

Fast Food Personal Hygiene



Full Service Personal Hygiene



E. Allergen Awareness

While Major Food Allergen awareness is not currently considered one of the five critical risk factors for foodborne illness, it is an ever-growing area of public concern. Even the slightest cross-contamination for someone with a significant food allergy can lead to life-threatening reactions, up to and including anaphylactic shock and death. Accordingly, the statistics gathered (combined “OUT” at 70.9 percent) reflect that the Person in Charge needs to become more aware of the “Big 8” food ingredients that lead to allergic reactions (Milk, Eggs, Wheat, Soy, Peanuts, Tree Nuts, Crustacean Shellfish, and Fish) and what an allergic reaction to food looks like in a person so that appropriate measures can be taken to protect at-risk customers.

Conversely, there is a statistically significant amount of training for food employees that takes place (Combined “IN” at 64.2 percent). The desired results of this training would be retention of this information by employees so they can inform customers when their allergen of concern is present in the food, either as an ingredient, or by cross contamination. The key is to prevent an allergic reaction by a vulnerable person.

Fast Food					
Number of Information Statements	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
19B. Food employees are trained in food allergy awareness as it relates to their assigned duties.	42	61.8	26	38.2	68

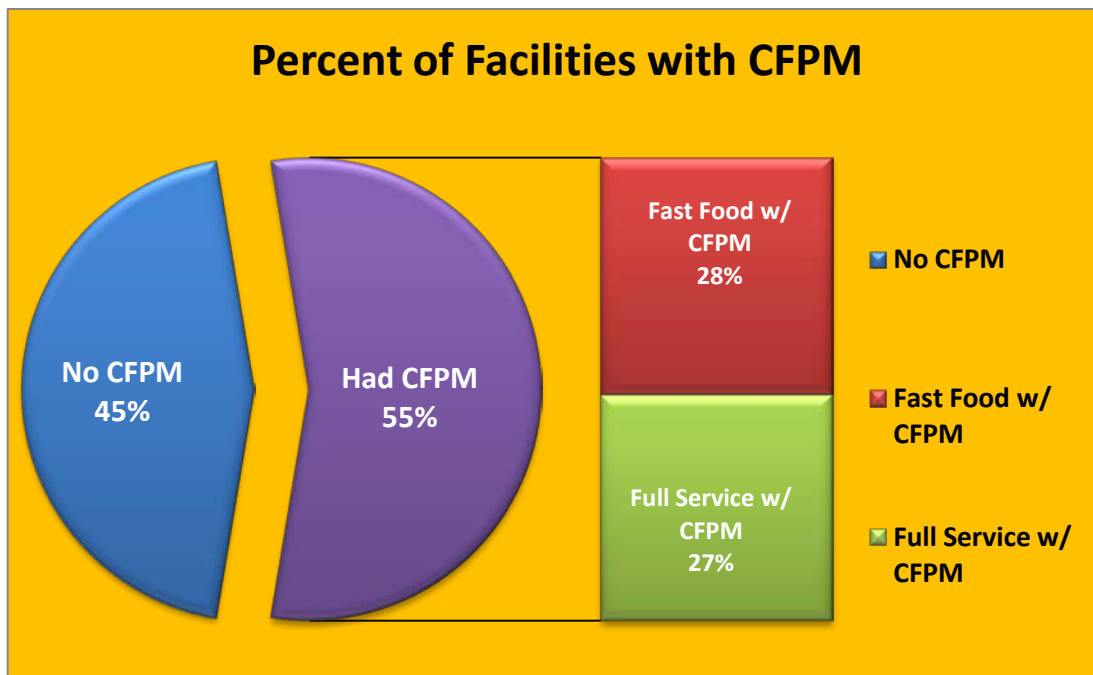
Full Service					
Number of Information Statements	IN	IN %	OUT	OUT %	TOTAL OBSERVATIONS (IN and OUT)
19A. The person in charge accurately describes foods identified as major food allergens and the symptoms associated with major food allergens.	21	31.8	45	68.2	66
19B. Food employees are trained in food allergy awareness as it relates to their assigned duties.	44	66.7	22	33.3	66

Combined					
Number of Information Statements	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
19B. Food employees are trained in food allergy awareness as it relates to their assigned duties.	86	64.2	48	35.8	134

F. Certified Food Protection Manager (CFPM)

Although the SNHD does not require a CFPM to be employed by each facility, data was gathered on whether each facility employed a CFPM or not. Only American National Standards Institute (ANSI) accredited courses were counted toward a CFPM, and the number of facilities with a CFPM include if the CFPM certificate was available and not available at the time of the survey.

Facility Type	# facilities with a CFPM	% per FACILITY TYPE ONLY with CFPM	% TOTAL with a CFPM
Full Service (n=66)	38	57.58	28.36
Fast Food (n=68)	36	52.94	26.86
Total Facilities (n=134)	74	55.22	55.22



G. Number Marked "OUT" Reports

The number of data items marked "OUT" for each data collection survey were also analyzed. For the purpose of this analysis, a data item was considered to be "OUT" if any of the observations in that data item were marked out. For example, if 3C was marked "OUT" but 3A, 3B, 3D and 3E were marked "IN," "NO," or "NA" data item #3 (food is protected from cross contamination) was marked "OUT." The tables below present the total number and percent of establishments by facility type that were observed to be "OUT" of compliance with between 0 and 10 primary data items (1-10); items 11-19 were not considered for this information. For example, the number "0" in the left hand column of the table below denotes that no OUT of Compliance observations were observed during the data collection. The number "1" denotes that a total of one out of ten was observed and so forth. The number of establishments in the second column of the table below represents the total number of facilities that had the corresponding number of primary data items OUT of compliance. The third column presents the percentage of establishment for that category. The cumulative percentage is a running summary of the percentage of establishments included in the analysis.

The mean (average) number of items marked "OUT" for fast food was 2.2, full service 2.7, and fast food and full service combined 2.5.

RISK FACTOR DATA ITEMS:

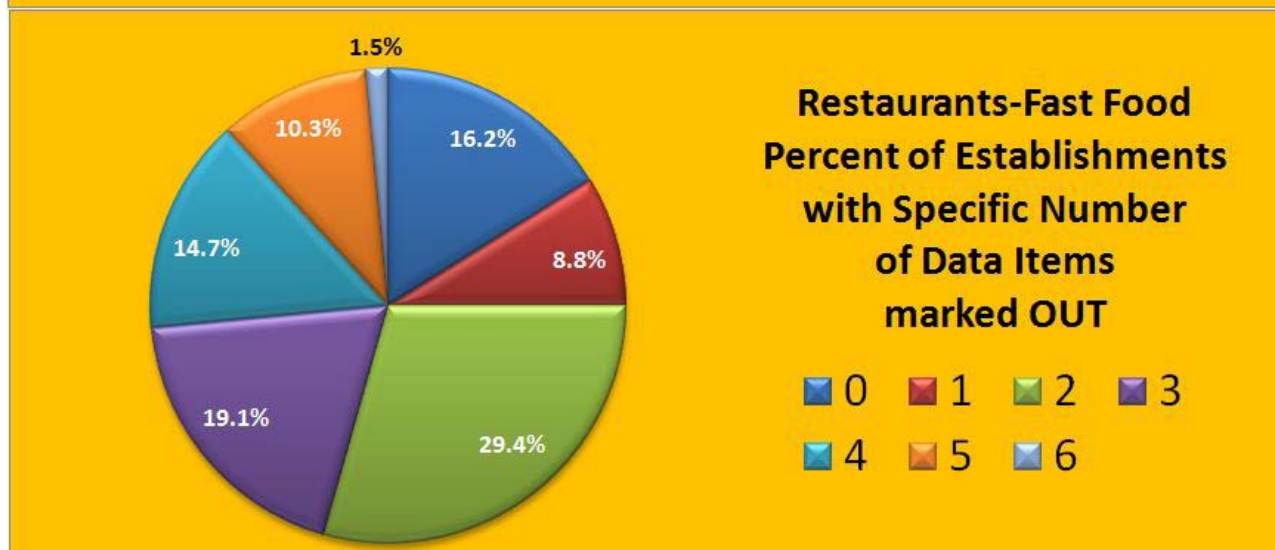
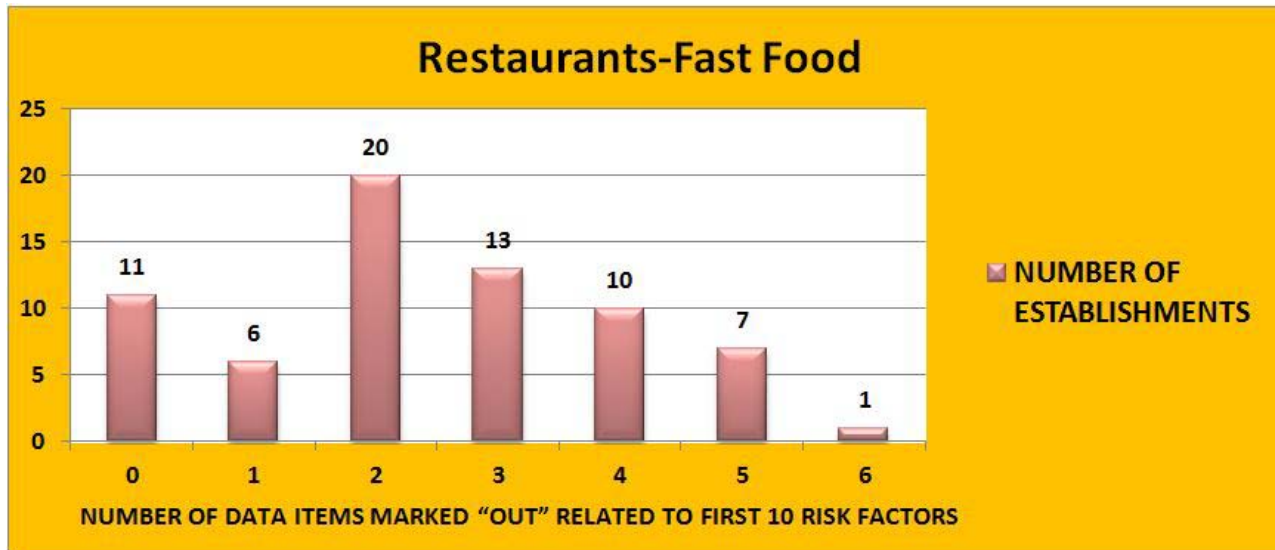
1. Employees proper handwashing
2. Food Employees do not contact ready-to-eat foods with bare hands.
3. Food is protected from cross-contamination during storage, preparation, and display
4. Food contact surfaces are properly cleaned and sanitized.
5. Foods requiring refrigeration are held at the proper 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
9. Raw animal foods are cooked to required temperatures.
10. Cooked foods are reheated to required temperatures.

1. RESTAURANT-FAST FOOD

NUMBER OF DATA ITEMS MARKED "OUT" RELATED TO FIRST 10 RISK FACTORS	NUMBER OF ESTABLISHMENTS	% OF ESTABLISHMENTS	CUMULATIVE % OF ESTABLISHMENTS
0	11	16.2	16.2
1	6	8.8	25
2	20	29.4	54.4
3	13	19.1	73.5
4	10	14.7	88.2
5	7	10.3	98.5
6	1	1.5	100
7*	0	0	100
8*	0	0	100
9*	0	0	100
10*	0	0	100

0 means no items were marked as OUT, 1 means one item was marked OUT, 2 means two items were marked OUT, ETC.

*GRAY MEANS THAT NONE OF THE ESTABLISHMENTS RECEIVED 7 TO 10 "OUT" MARKINGS

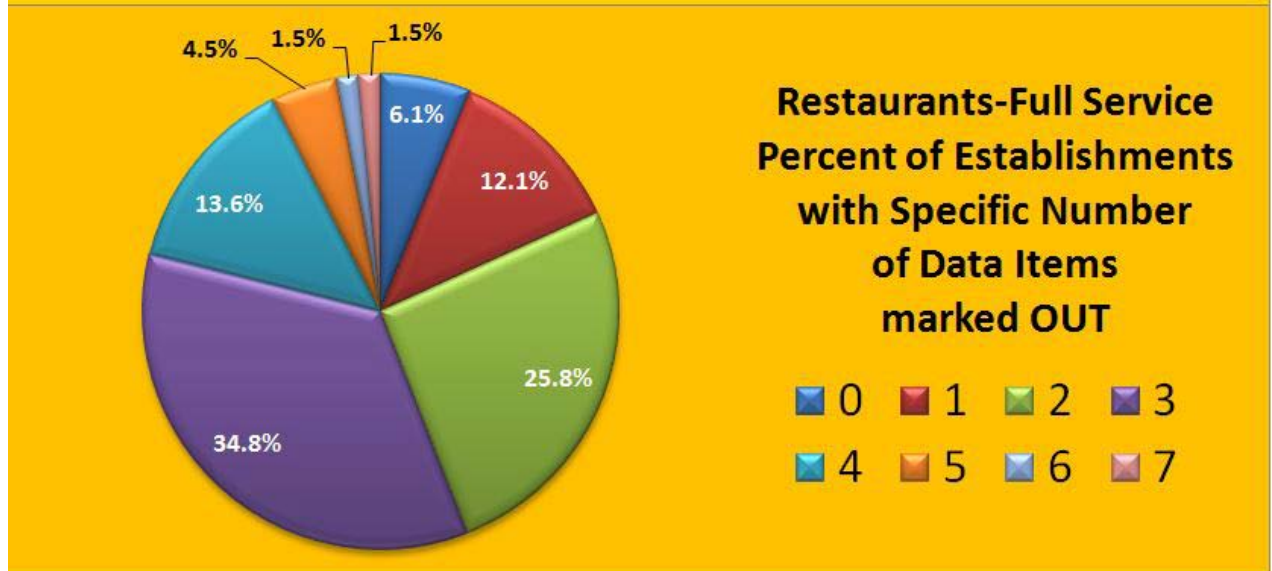


2. RESTAURANT-FULL SERVICE

NUMBER OF DATA ITEMS MARKED "OUT" RELATED TO FIRST 10 RISK FACTORS	NUMBER OF ESTABLISHMENTS	% OF ESTABLISHMENTS	CUMULATIVE % OF ESTABLISHMENTS
0	4	6.1	6.1
1	8	12.1	18.2
2	17	25.8	44
3	23	34.8	78.8
4	9	13.6	92.4
5	3	4.5	96.9
6	1	1.5	98.4
7	1	1.5	99.9
8*	0	0	99.9
9*	0	0	99.9
10*	0	0	99.9

0 means no items were marked as OUT, 1 means one item was marked OUT, 2 means two items were marked OUT, ETC.

*GRAY MEANS THAT NONE OF THE ESTABLISHMENTS RECEIVED 8 TO 10 "OUT" MARKINGS

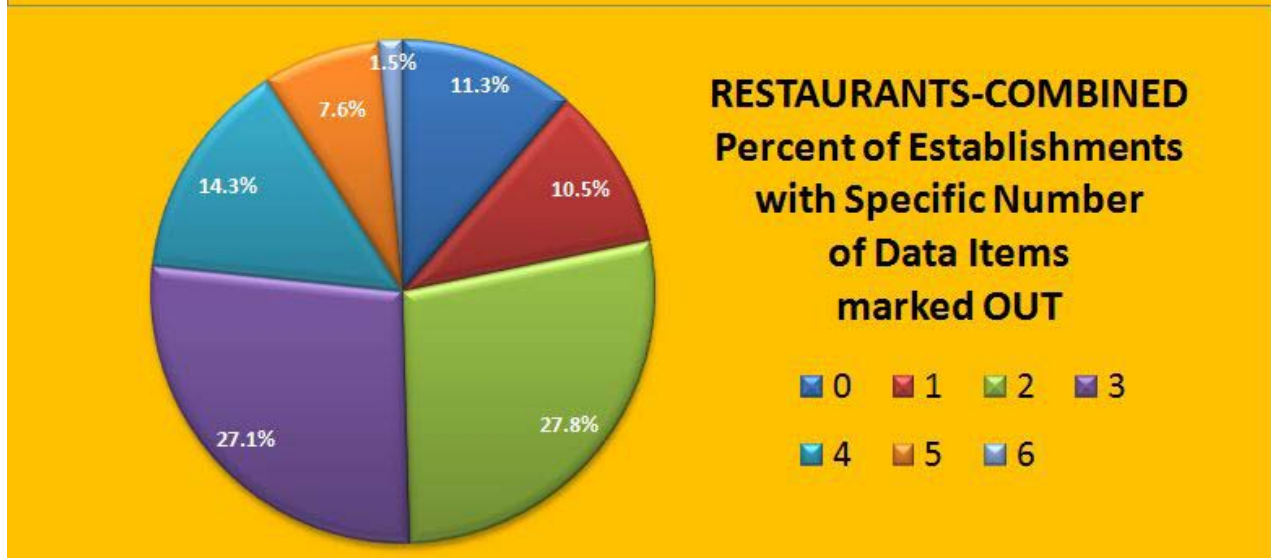
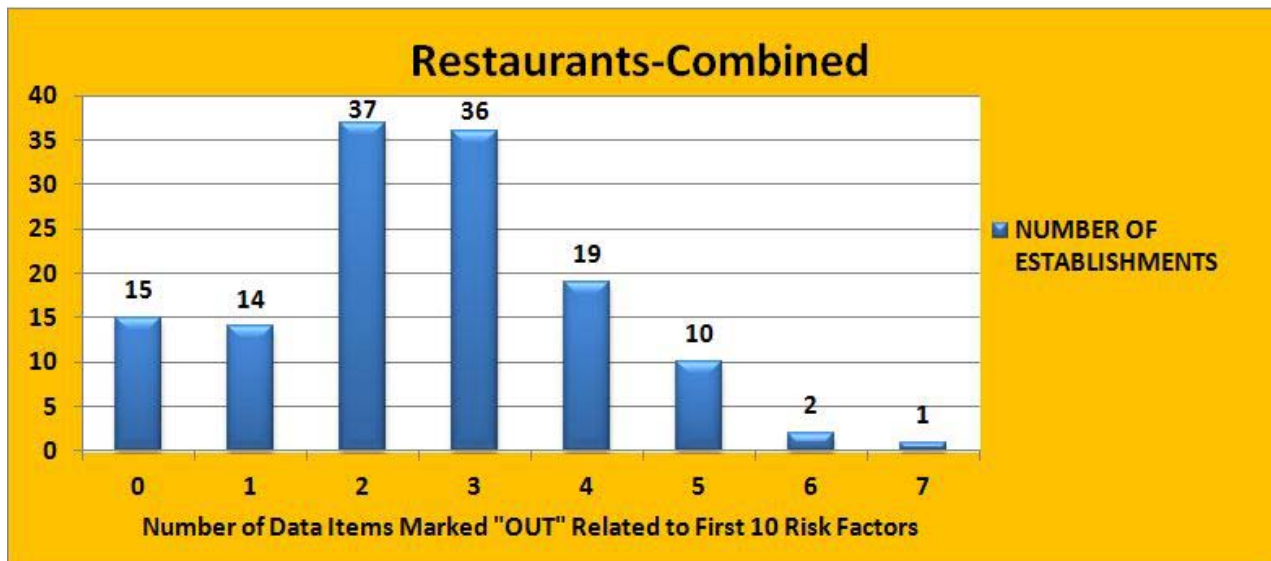


3. RESTAURANTS-COMBINED

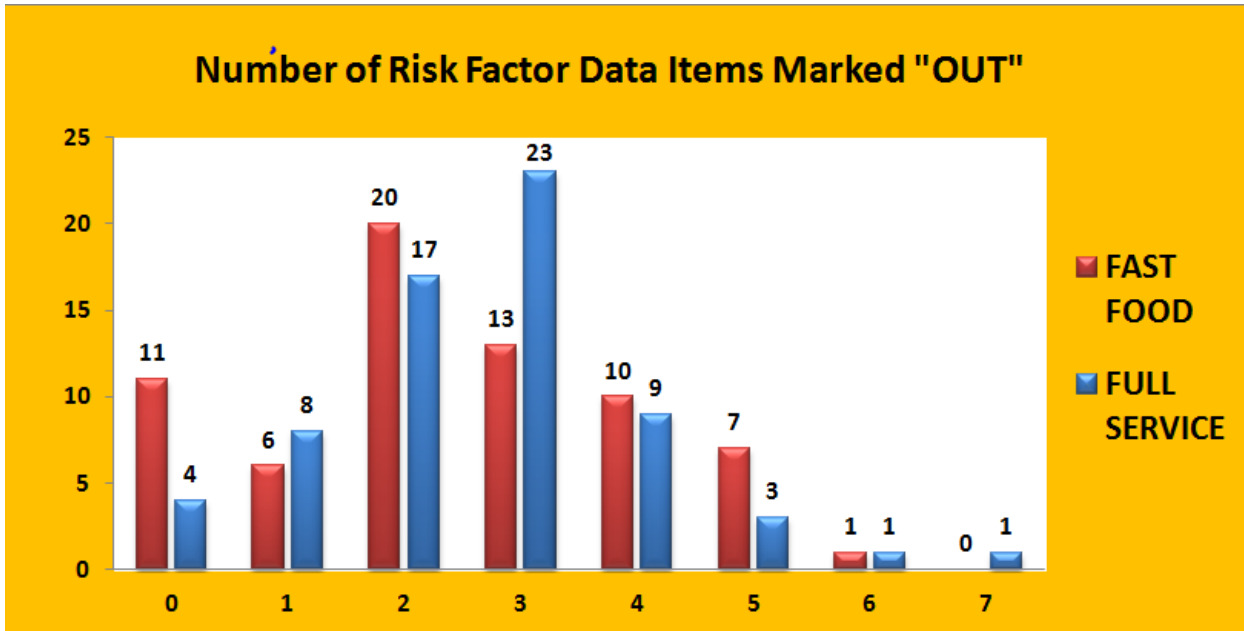
NUMBER OF DATA ITEMS MARKED "OUT" RELATED TO FIRST 10 RISK FACTORS	NUMBER OF ESTABLISHMENTS	% OF ESTABLISHMENTS	CUMULATIVE % OF ESTABLISHMENTS
0	15	11.2	11.2
1	14	10.4	21.6
2	37	27.6	49.2
3	36	26.9	76.1
4	19	14.2	90.3
5	10	7.5	97.8
6	2	1.5	99.3
7	1	0.7	100
8*	0	0	100
9*	0	0	100
10*	0	0	100

0 means no items were marked as OUT, 1 means one item was marked OUT, 2 means two items were marked OUT, ETC.

*GRAY MEANS THAT NONE OF THE ESTABLISHMENTS RECEIVED 8 TO 10 "OUT" MARKINGS



4. Number of Data Items Marked "OUT" Comparisons



INTERVENTION STRATEGIES

A. Handwashing

As per the Centers for Disease Control and Prevention, the spread of germs from the hands of food workers to food is an important cause of foodborne illness outbreaks in restaurants. In fact, it has caused 89 percent of outbreaks in which food was contaminated by food workers. Proper handwashing can reduce microorganisms on workers' hands. It can also reduce the spread of pathogenic microorganisms from hands to food and from food to other people. Improving food worker handwashing practices is critical.

The SNHD plans to work with the regulated food facilities through industry meetings and will involve Food Operations inspectors in developing intervention strategies to improve food handlers' handwashing practices. The plan will be implemented in calendar year 2017. The current idea is to incorporate education utilizing a hands-on exercise focusing on handwashing technique during the first inspection at each facility for the 2017 calendar year. Development will include a name/title for the intervention strategy, discussion topics, exercise specifics, and EH staff training. The goal of involving industry and regulatory staff in the development of the strategy is to increase awareness, ownership, and enthusiasm.

B. Cold Holding

The SNHD EH Division is currently working on new Food Regulations that will align closely with the 2013 FDA Food Code, including removing the current allowance for cold holding of TCS foods at 45°F for up to 72 hours. Once the new Food Regulations are adopted by the SNHD Board of Health, the EH Division will provide training on the updates to regulatory staff as well as the regulated industry. As this will be one of the major updates to the Food Regulations, it will be emphasized during trainings.

C. Allergen Awareness

This Risk Factor Study has brought to light the need for increased allergen awareness. The person in charge at the facility is required by regulation to have sufficient knowledge to describe which foods are identified as major food allergens and to recognize the signs and symptoms experienced by a person who is suffering a reaction to one of the major food allergens. This current hot topic in food safety is evolving in the restaurant industry as regulators struggle to protect the public, enforce regulation, and create practical requirements that can be put into place in the operation of a food establishment. Although allergen awareness is not a foodborne illness risk factor, and not included in the primary data items of this Risk Factor Study, it is still an important issue in protecting the health of the public. The SNHD plans to have an educational campaign promoting allergen awareness, which will be implemented in calendar year 2018.

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The Risk Factor Study project was led by David Greer and overseen by Christine Sylvis. This report was compiled and written by Christine Sylvis, David Greer, and Nancy Hall.

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B. FACILITY TYPE REPORTS-FULL DATA TABLES
1. RESTAURANTS-Fast Food

RESTAURANT-FAST FOOD								
Number of INFORMATION STATEMENTS	IN	IN %	OUT	OUT %	NO	NO %	NA	NA %
1. Employees practice proper handwashing								
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	18	26.5	50	73.5	0	0	0	0
1B. Hands are cleaned and properly washed when required as specified in Section 2-301.14 of the Food Code	42	61.8	26	38.2	0	0	0	0
2. Bare hand contact restriction								
2. Food employees do not contact ready-to-eat foods with bare hands.	62	91.2	6	8.8	0	0	0	0
3. Food is protected from cross-contamination during storage, preparation, and display								
3A. Raw animal foods are separated from ready-to-eat foods.	52	75.4	4	5.8	1	1.4	12	17.4
3B. Different raw animal foods are separated from each other.	50	69.4	4	5.6	4	5.6	14	19.4
3C. Food is protected from environmental contamination-actual contamination observed.	68	100	0	0	0	0	0	0
3D. Food is protected from environmental contamination-potential contamination.	33	48.5	35	51.5	0	0	0	0
4. Food contact surfaces are properly cleaned and sanitized								
4A. Food contact surfaces and utensils are clean to sight and touch and sanitized before use.	41	60.3	27	39.7	0	0	0	0
4B. Equipment food contact surfaces and utensils are cleaned and sanitized properly using manual warewashing procedures.	30	44.1	12	17.6	26	38.2	0	0
4C. Equipment food contact surfaces and utensils are cleaned and sanitized properly using mechanical warewashing equipment.	18	24.3	3	4.1	18	24.3	35	47.3
4D. Other (describe in the comments section)	0	0	1	1.5	0	0	67	98.5
5. Foods requiring refrigeration are held at the proper temperature								
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.	26	38.2	42	61.8	0	0	0	0
5B. Raw shell eggs are stored under refrigeration that maintains ambient air temperature of 45°F (7°C) or less.	24	32.4	2	2.7	18	24.3	30	40.5
6. Foods displayed or stored hot are held at the proper temperature								
6A. TCS Food is maintained at 135°F (57°C) or above, except during preparation, cooking, cooling, or when time is used as a public health control.	39	55.7	14	20	9	12.9	8	11.4
6B. Roasts are held at a temperature of 130°F (54°C) or above.	0	0	1	1.3	16	21.1	59	77.6
7. Foods are cooled properly								
7A. Cooked TCS Food is cooled from 135°F (57°C) to 70°F (21°C) within 2 hours and from 135°F (57°C) to 41°F (5°C) or below within 6 hours.	6	7.9	5	6.6	34	44.7	31	40.8
7B. TCS Food (prepared from ingredients at ambient temperature) is cooled to 41°F (5°C) or below within 4 hours.	4	5.5	4	5.5	41	56.2	24	32.9
7C. Proper cooling methods / equipment are used.	12	17.4	8	11.6	28	40.6	21	30.4
7D. Other (describe in the temperature chart and comments section)	1	1.5	0	0	0	0	67	98.5

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

RESTAURANT-FAST FOOD								
Number of INFORMATION STATEMENTS	IN	IN %	OUT	OUT %	NO	NO %	NA	NA %
8. Refrigerated, ready-to-eat foods are properly date marked and discarded within 7 days of preparation or opening								
8A. Ready-to-eat, TCS Food (prepared on-site) held for more than 24 hours is date marked as required.	51	73.9	12	17.4	2	2.9	4	5.8
8B. Open commercial containers of prepared ready-to-eat TCS Food held for more than 24 hours are date marked as required.	53	77.9	6	8.8	7	10.3	2	2.9
8C. Ready-to-eat, TCS Food prepared on-site and/or opened commercial container exceeding 7 days at ≤ 41°F is discarded.	55	80.9	0	0	13	19.1	0	0
9. Raw animal foods are cooked to required temperature								
9A. Raw shell eggs broken for immediate service are cooked to 145°F (63°C) for 15 seconds. Raw shell eggs broken but not prepared for immediate service cooked to 155°F (68°C) for 15 seconds.	5	6.5	0	0	36	46.8	36	46.8
9B. Pork; Fish; Beef; Commercially-raised Game Animals are cooked to 145°F (63°C) for 15 seconds.	7	9.3	0	0	39	52	29	38.7
9C. Comminuted Fish, Meats, Commercially-raised Game Animals are cooked to 155°F (68°C) for 15 seconds.	17	23.3	0	0	33	45.2	23	31.5
9D. Poultry; stuffed fish; stuffed meat; stuffed pasta; stuffed poultry; stuffed ratite; or stuffing containing fish, meat, poultry, or ratites; wild game animals are cooked to 165°F (74°C) for 15 seconds.	21	28.8	0	0	34	46.6	18	24.7
9E. Roasts, including formed roasts, are cooked to 130°F (54°C) for 112 minutes or as Chart specifies and according to oven parameters per Chart (NOTE: This data item includes beef roasts, corned beef roasts, pork roasts, and cured pork roasts such as ham)	0	0	0	0	23	29.1	56	70.9
9F. Other Cooking Observations (describe in the Comment Section and Temperature Chart).	0	0	0	0	9	12	66	88
10. Cooked foods are reheated to required temperature OBSERVATION								
10A. TCS Food that is cooked and cooled on premises is rapidly reheated to 165°F (74°C) for 15 seconds for hot holding.	3	4.1	0	0	42	56.8	29	39.2
10B. Commercially-processed ready-to-eat food, reheated to 135°F (57°C) or above for hot holding.	7	10	0	0	54	77.1	9	12.9
11. Handwashing facilities are accessible and properly maintained								
11A. Handwashing facilities are conveniently located and accessible for employees.	58	85.3	10	14.7	0	0	0	0
11B. Handwashing facilities are supplied with hand cleanser / disposable towels / hand drying devices.	57	83.8	11	16.2	0	0	0	0
12. Employees practice good hygiene								
12A. Food Employees eat, drink, and use tobacco only in designated areas.	62	91.2	6	8.8	0	0	0	0
12B. Food Employees experiencing persistent sneezing, coughing, or runny nose do not work with exposed food, clean equipment, utensils, linens, unwrapped single-service, or single-use articles.	68	100	0	0	0	0	0	0
13. Consumer advisory								
13. Consumers are properly advised of risks of consuming raw or undercooked animal foods.	13	18.8	6	8.7	0	0	50	72.5

RESTAURANT-FAST FOOD								
Number of INFORMATION STATEMENTS	IN	IN %	OUT	OUT %	NO	NO %	NA	NA %
14. Time alone is properly used as a public health control								
14A. When time only is used as a public health control for 4 HOURS , the food establishment follows procedures to serve or discard food as specified in Section 3-501.19 of the <i>Food Code</i> .	12	15.2	3	3.8	17	21.5	47	59.5
14B. When time only is used as a public health control for 6 HOURS , the food establishment follows procedures to serve or discard food as specified in Section 3-501.19 of the <i>Food Code</i> .	0	0	0	0	15	19.2	63	80.8
15. Facilities have adequate equipment and tools for ensuring food temperature control and sanitization of food contact surfaces								
15A. Refrigeration / cold holding units have sufficient capacity to maintain TCS Foods at 41°F (5°C) or below.	63	91.3	6	8.7	0	0	0	0
15B. Hot holding units have sufficient capacity to maintain TCS Foods at 135°F (57°C) or above.	57	81.4	2	2.9	4	5.7	7	10
15C. Refrigeration and hot storage units are equipped with accurate ambient air temperature measuring device.	62	91.2	6	8.8	0	0	0	0
15D. Accurate temperature measuring device, with appropriate probe, is provided and accessible for use to measure internal food temperatures.	63	92.6	5	7.4	0	0	0	0
15E. Accurate temperature measuring devices and/or tests kits provided and accessible for use to measure sanitization rinse temperatures and/or sanitization concentrations.	66	97.1	2	2.9	0	0	0	0
15F. Other (describe in the comments section)	0	0	0	0	0	0	68	100
16. Special processes are conducted in compliance with issued variance/ HACCP plan, when required								
16A. Food establishment conducts reduced oxygen packaging without a variance as specified in Section 3-502.12 of the <i>Food Code</i> .	0	0	0	0	16	19	68	81
16B. Food establishment performs specialized process in accordance with approved variance and HACCP Plan when required.	0	0	0	0	8	10.5	68	89.5
16C. Juice packaged in the food establishment is treated under a HACCP Plan to reduce pathogens or labeled as specified in Section 3-404.11 of the <i>Food Code</i> .	0	0	0	0	10	12.8	68	87.2
17. Food is received from safe sources								
17A. All food is from regulated food processing plants / No home prepared/canned foods.	67	98.5	1	1.5	0	0	0	0
17B. Shellfish are from NSSP-listed sources. No recreationally caught shellfish are received/sold.	3	3.8	0	0	12	15	65	81.3
17C. Food is protected from contamination during transportation/receiving.	4	5.9	1	1.5	63	92.6	0	0
17D. TCS Food is received at a temperature of 41°F (5°C) or below OR according to Law.	1	1.5	0	0	67	98.5	0	0
17E. Food is safe and unadulterated	67	98.5	1	1.5	0	0	0	0
17F. Shellstock tags/labels are retained for 90 days and filed in chronological order from the date the container is emptied.	0	0	0	0	13	16	68	84
17G. Written documentation of parasite destruction is maintained for 90 days for fish products.	0	0	1	1.3	12	15	67	83.8
18. Toxic materials are identified, used, and stored properly								
18A. Poisonous or toxic materials, chemicals, lubricants, pesticides, medicines, first aid supplies, and other personal care items are properly identified, stored, and used.	62	91.2	6	8.8	0	0	0	0

RESTAURANT-FAST FOOD								
Number of INFORMATION STATEMENTS	IN	IN %	OUT	OUT %	NO	NO %	NA	NA %
19. Management and food employees are trained in food allergy as it relates to their assigned duties								
19A. The person in charge accurately describes foods identified as major food allergens and the symptoms associated with major food allergens	17	25	51	75	0	0	0	0
19B. Food employees are trained in food allergy awareness as it relates to their assigned duties.	41	60.3	27	39.7	0	0	0	0

2. RESTAURANTS-Full Service

RESTAURANT-FULL SERVICE								
Number of INFORMATION STATEMENTS	IN	IN %	OUT	OUT %	NO	NO %	NA	NA %
1. Employees practice proper handwashing								
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	12	18.2	54	81.8	0	0	0	0
1B. Hands are cleaned and properly washed when required as specified in Section 2-301.14 of the Food Code	37	56.1	29	43.9	0	0	0	0
2. Bare hand contact restriction								
2. Food employees do not contact ready-to-eat foods with bare hands.	59	89.4	7	10.6	0	0	0	0
3. Food is protected from cross-contamination during storage, preparation, and display								
3A. Raw animal foods are separated from ready-to-eat foods.	52	78.8	14	21.2	0	0	0	0
3B. Different raw animal foods are separated from each other.	65	98.5	1	1.5	0	0	0	0
3C. Food is protected from environmental contamination-actual contamination observed.	64	97	2	3	0	0	0	0
3D. Food is protected from environmental contamination-potential contamination.	29	43.9	37	56.1	0	0	0	0
3E. Other (describe in the comments section)	0	0	2	3	0	0	65	97
4. Food contact surfaces are properly cleaned and sanitized								
4A. Food contact surfaces and utensils are clean to sight and touch and sanitized before use.	35	53	31	47	0	0	0	0
4B. Equipment food contact surfaces and utensils are cleaned and sanitized properly using manual warewashing procedures.	27	40.9	2	3	37	56.1	0	0
4C. Equipment food contact surfaces and utensils are cleaned and sanitized properly using mechanical warewashing equipment.	39	57.4	10	14.7	11	16.2	8	11.8
4D. Other (describe in the comments section)	0	0	0	0	0	0	66	100
5. Foods requiring refrigeration are held at the proper temperature								
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.	13	19.7	53	80.3	0	0	0	0
5B. Raw shell eggs are stored under refrigeration that maintains ambient air temperature of 45°F (7°C) or less.	40	60.6	6	9.1	14	21.2	6	9.1
5C. Other (describe in the temperature chart and comments section below)	0	0	0	0	0	0	66	100
6. Foods displayed or stored hot are held at the proper temperature								
6A. TCS Food is maintained at 135°F (57°C) or above, except during preparation, cooking, cooling, or when time is used as a public health control.	45	68.2	8	12.1	12	18.2	1	1.5
6B. Roasts are held at a temperature of 130°F (54°C) or above.	1	1.4	1	1.4	35	50	33	47.1
6C. Other (describe in the temperature chart and comments section)	0	0	0	0	0	0	66	100

RESTAURANT-FULL SERVICE								
Number of INFORMATION STATEMENTS	IN	IN %	OUT	OUT %	NO	NO %	NA	NA %
7. Foods are cooled properly								
7A. Cooked TCS Food is cooled from 135°F (57°C) to 70°F (21°C) within 2 hours and from 135°F (57°C) to 41°F (5°C) or below within 6 hours.	14	21.2	8	12.1	39	59.1	5	7.6
7B. TCS Food (prepared from ingredients at ambient temperature) is cooled to 41°F (5°C) or below within 4 hours.	2	2.9	4	5.9	56	82.4	6	8.8
7C. Proper cooling methods / equipment are used.	14	21.2	13	19.7	36	54.5	3	4.5
7D. Other (describe in the temperature chart and comments section)	0	0	0	0	0	0	66	100
8. Refrigerated, ready-to-eat foods are properly date marked and discarded within 7 days of preparation or opening								
8A. Ready-to-eat, TCS Food (prepared on-site) held for more than 24 hours is date marked as required.	53	80.3	12	18.2	0	0	1	1.5
8B. Open commercial containers of prepared ready-to-eat TCS Food held for more than 24 hours are date marked as required.	62	93.9	3	4.5	0	0	1	1.5
8C. Ready-to-eat, TCS Food prepared on-site and/or opened commercial container exceeding 7 days at ≤ 41°F is discarded.	53	80.3	1	1.5	12	18.2	0	0
8D. Other (describe in the comments section)	0	0	0	0	0	0	66	100
9. Raw animal foods are cooked to required temperature								
9A. Raw shell eggs broken for immediate service are cooked to 145°F (63°C) for 15 seconds. Raw shell eggs broken but not prepared for immediate service cooked to 155°F (68°C) for 15 seconds.	9	12.7	2	2.8	51	71.8	9	12.7
9B. Pork; Fish; Beef; Commercially-raised Game Animals are cooked to 145°F (63°C) for 15 seconds.	15	22.4	0	0	48	71.6	4	6
9C. Comminuted Fish, Meats, Commercially-raised Game Animals are cooked to 155°F (68°C) for 15 seconds.	23	34.3	2	3	38	56.7	4	6
9D. Poultry; stuffed fish; stuffed meat; stuffed pasta; stuffed poultry; stuffed ratite; or stuffing containing fish, meat, poultry, or ratites; wild game animals are cooked to 165°F (74°C) for 15 seconds.	19	28.4	2	3	43	64.2	3	4.5
9E. Roasts, including formed roasts, are cooked to 130°F (54°C) for 112 minutes or as Chart specifies and according to oven parameters per Chart (NOTE: This data item includes beef roasts, corned beef roasts, pork roasts, and cured pork roasts such as ham)	0	0	0	0	46	67.6	22	32.4
9F. Other Cooking Observations (describe in the Comment Section and Temperature Chart).	1	1.3	0	0	13	16.5	65	82.3
10. Cooked foods are reheated to required temperature OBSERVATION								
10A. TCS Food that is cooked and cooled on premises is rapidly reheated to 165°F (74°C) for 15 seconds for hot holding.	4	6	0	0	59	88.1	4	6
10B. Commercially-processed ready-to-eat food, reheated to 135°F (57°C) or above for hot holding.	2	3	0	0	61	92.4	3	4.5
10C. Other Reheating Observations (describe in the Comments Section and Temperature Chart below)	0	0	0	0	0	0	66	100
11. Handwashing facilities are accessible and properly maintained								
11A. Handwashing facilities are conveniently located and accessible for employees.	59	89.4	7	10.6	0	0	0	0
11B. Handwashing facilities are supplied with hand cleanser / disposable towels / hand drying devices.	53	80.3	13	19.7	0	0	0	0

SNHD Risk Factor Study (Restaurants) Data
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RESTAURANT-FULL SERVICE								
Number of INFORMATION STATEMENTS	IN	IN %	OUT	OUT %	NO	NO %	NA	NA %
12. Employees practice good hygiene								
12A. Food Employees eat, drink, and use tobacco only in designated areas.	57	86.4	9	13.6	0	0	0	0
12B. Food Employees experiencing persistent sneezing, coughing, or runny nose do not work with exposed food, clean equipment, utensils, linens, unwrapped single-service, or single-use articles.	66	100	0	0	0	0	0	0
12C. Other (describe in comments section)	0	0	0	0	0	0	66	100
13. Consumer advisory								
13. Consumers are properly advised of risks of consuming raw or undercooked animal foods.	45	68.2	17	25.8	0	0	4	6
14. Time alone is properly used as a public health control								
14A. When time only is used as a public health control for 4 HOURS , the food establishment follows procedures to serve or discard food as specified in Section 3-501.19 of the <i>Food Code</i> .	11	13.3	7	8.4	29	34.9	36	43.4
14B. When time only is used as a public health control for 6 HOURS , the food establishment follows procedures to serve or discard food as specified in Section 3-501.19 of the <i>Food Code</i> .	1	1.3	0	0	18	24	56	74.7
14C. Other (describe in the comments section)	0	0	0	0	0	0	66	100
15. Facilities have adequate equipment and tools for ensuring food temperature control and sanitization of food contact surfaces								
15A. Refrigeration / cold holding units have sufficient capacity to maintain TCS Foods at 41°F (5°C) or below.	56	84.8	10	15.2	0	0	0	0
15B. Hot holding units have sufficient capacity to maintain TCS Foods at 135°F (57°C) or above.	59	89.4	1	1.5	5	7.6	1	1.5
15C. Refrigeration and hot storage units are equipped with accurate ambient air temperature measuring device.	58	87.9	8	12.1	0	0	0	0
15D. Accurate temperature measuring device, with appropriate probe, is provided and accessible for use to measure internal food temperatures.	59	89.4	7	10.6	0	0	0	0
15E. Accurate temperature measuring devices and/or tests kits provided and accessible for use to measure sanitization rinse temperatures and/or sanitization concentrations.	62	93.9	4	6.1	0	0	0	0
15F. Other (describe in the comments section)	0	0	1	1.5	0	0	65	98.5
16. Special processes are conducted in compliance with issued variance/ HACCP plan, when required								
16A. Food establishment conducts reduced oxygen packaging without a variance as specified in Section 3-502.12 of the <i>Food Code</i> .	1	1.1	1	1.1	24	26.7	64	71.1
16B. Food establishment performs specialized process in accordance with approved variance and HACCP Plan when required.	1	1.3	2	2.5	14	17.7	62	78.5
16C. Juice packaged in the food establishment is treated under a HACCP Plan to reduce pathogens or labeled as specified in Section 3-404.11 of the <i>Food Code</i> .	0	0	0	0	8	10.8	66	89.2
16D. Other (describe in the comments section)	1	1.5	0	0	0	0	65	98.5

RESTAURANT-FULL SERVICE								
Number of INFORMATION STATEMENTS	IN	IN %	OUT	OUT %	NO	NO %	NA	NA %
17. Food is received from safe sources								
17A. All food is from regulated food processing plants / No home prepared/canned foods.	65	98.5	1	1.5	0	0	0	0
17B. Shellfish are from NSSP-listed sources. No recreationally caught shellfish are received/sold.	15	19.7	0	0	12	15.8	49	64.5
17C. Food is protected from contamination during transportation/receiving.	1	1.5	0	0	65	98.5	0	0
17D. TCS Food is received at a temperature of 41°F (5°C) or below OR according to Law.	2	3	0	0	64	97	0	0
17E. Food is safe and unadulterated	64	97	2	3	0	0	0	0
17F. Shellstock tags/labels are retained for 90 days and filed in chronological order from the date the container is emptied.	10	11.8	3	3.5	19	22.4	53	62.4
17G. Written documentation of parasite destruction is maintained for 90 days for fish products.	17	22.1	2	2.6	13	16.9	45	58.4
17H. Other (describe in comments section)	1	1.5	0	0	0	0	64	98.5
18. Toxic materials are identified, used, and stored properly								
18A. Poisonous or toxic materials, chemicals, lubricants, pesticides, medicines, first aid supplies, and other personal care items are properly identified, stored, and used.	55	83.3	11	16.7	0	0	0	0
18B. Other (describe in the comments section)	1	1.5	0	0	0	0	65	98.5
19. Management and food employees are trained in food allergy as it relates to their assigned duties								
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	0	0	0	0
19B. Food employees are trained in food allergy awareness as it relates to their assigned duties.	44	66.7	22	33.3	0	0	0	0
19C. Other (describe in the comments section)	0	0	0	0	0	0	66	100

3. RESTAURANTS-Combined

RESTAURANT-COMBINED								
Number of INFORMATION STATEMENTS	IN	IN %	OUT	OUT %	NO	NO %	NA	NA %
1. Employees practice proper handwashing								
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	31	23.1	103	76.9	0	0	0	0
1B. Hands are cleaned and properly washed when required as specified in Section 2-301.14 of the Food Code	79	59	55	41	0	0	0	0
2. Bare hand contact restriction								
2. Food employees do not contact ready-to-eat foods with bare hands.	121	90.3	13	9.7	0	0	0	0
3. Food is protected from cross-contamination during storage, preparation, and display								
3A. Raw animal foods are separated from ready-to-eat foods.	104	77	18	13.3	1	0.7	12	8.9
3B. Different raw animal foods are separated from each other.	115	83.3	5	3.6	4	2.9	14	10.1
3C. Food is protected from environmental contamination-actual contamination observed.	132	98.5	2	1.5	0	0	0	0
3D. Food is protected from environmental contamination-potential contamination.	61	45.5	73	54.5	0	0	0	0
3E. Other (describe in the comments section)	0	0	2	1.5	0	0	133	98.5

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

RESTAURANT-COMBINED								
Number of INFORMATION STATEMENTS	IN	IN %	OUT	OUT %	NO	NO %	NA	NA %
4. Food contact surfaces are properly cleaned and sanitized								
4A. Food contact surfaces and utensils are clean to sight and touch and sanitized before use.	76	56.7	58	43.3	0	0	0	0
4B. Equipment food contact surfaces and utensils are cleaned and sanitized properly using manual warewashing procedures.	57	42.5	15	11.2	62	46.3	0	0
4C. Equipment food contact surfaces and utensils are cleaned and sanitized properly using mechanical warewashing equipment.	57	40.1	13	9.2	29	20.4	43	30.3
4D. Other (describe in the comments section)	0	0	1	0.7	0	0	133	99.3
5. Foods requiring refrigeration are held at the proper temperature								
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.	38	28.4	96	71.6	0	0	0	0
5B. Raw shell eggs are stored under refrigeration that maintains ambient air temperature of 45°F (7°C) or less.	64	45.7	8	5.7	32	22.9	36	25.7
5C. Other (describe in the temperature chart and comments section below)	0	0	0	0	0	0	134	100
6. Foods displayed or stored hot are held at the proper temperature								
6A. TCS Food is maintained at 135°F (57°C) or above, except during preparation, cooking, cooling, or when time is used as a public health control.	84	61.8	23	16.9	21	15.4	8	5.9
6B. Roasts are held at a temperature of 130°F (54°C) or above.	1	0.7	2	1.4	51	34.9	92	63
6C. Other (describe in the temperature chart and comments section)	0	0	0	0	0	0	134	100
7. Foods are cooled properly								
7A. Cooked TCS Food is cooled from 135°F (57°C) to 70°F (21°C) within 2 hours and from 135°F (57°C) to 41°F (5°C) or below within 6 hours.	20	14.1	13	9.2	74	52.1	35	24.6
7B. TCS Food (prepared from ingredients at ambient temperature) is cooled to 41°F (5°C) or below within 4 hours.	6	4.3	8	5.7	98	69.5	29	20.6
7C. Proper cooling methods / equipment are used.	26	19.3	21	15.6	65	48.1	23	17
7D. Other (describe in the temperature chart and comments section)	1	0.7	0	0	0	0	133	99.3
8. Refrigerated, ready-to-eat foods are properly date marked and discarded within 7 days of preparation or opening								
8A. Ready-to-eat, TCS Food (prepared on-site) held for more than 24 hours is date marked as required.	105	77.8	24	17.8	2	1.5	4	3
8B. Open commercial containers of prepared ready-to-eat TCS Food held for more than 24 hours are date marked as required.	115	85.8	9	6.7	7	5.2	3	2.2
8C. Ready-to-eat, TCS Food prepared on-site and/or opened commercial container exceeding 7 days at < 41°F is discarded.	109	81.3	1	0.7	24	17.9	0	0
8D. Other (describe in the comments section)	0	0	0	0	0	0	134	100

RESTAURANT-COMBINED								
Number of INFORMATION STATEMENTS	IN	IN %	OUT	OUT %	NO	NO %	NA	NA %
9. Raw animal foods are cooked to required temperature								
9A. Raw shell eggs broken for immediate service are cooked to 145°F (63°C) for 15 seconds. Raw shell eggs broken but not prepared for immediate service cooked to 155°F (68°C) for 15 seconds.	14	9.4	2	1.3	88	59.1	45	30.2
9B. Pork; Fish; Beef; Commercially-raised Game Animals are cooked to 145°F (63°C) for 15 seconds.	22	15.4	0	0	88	61.5	33	23.1
9C. Comminuted Fish, Meats, Commercially-raised Game Animals are cooked to 155°F (68°C) for 15 seconds.	40	28.4	2	1.4	72	51.1	27	19.1
9D. Poultry; stuffed fish; stuffed meat; stuffed pasta; stuffed poultry; stuffed ratite; or stuffing containing fish, meat, poultry, or ratites; wild game animals are cooked to 165°F (74°C) for 15 seconds.	40	28.6	2	1.4	77	55	21	15
9E. Roasts, including formed roasts, are cooked to 130°F (54°C) for 112 minutes or as Chart specifies and according to oven parameters per Chart <i>(NOTE: This data item includes beef roasts, corned beef roasts, pork roasts, and cured pork roasts such as ham)</i>	0	0	0	0	70	47.3	78	52.7
9F. Other Cooking Observations (describe in the Comment Section and Temperature Chart).	1	0.6	0	0	22	14.3	131	85.1
10. Cooked foods are reheated to required temperature OBSERVATION								
10A. TCS Food that is cooked and cooled on premises is rapidly reheated to 165°F (74°C) for 15 seconds for hot holding.	7	5	0	0	102	72.3	32	22.7
10B. Commercially-processed ready-to-eat food, reheated to 135°F (57°C) or above for hot holding.	9	6.6	0	0	115	84.6	12	8.8
10C. Other Reheating Observations (describe in the Comments Section and Temperature Chart below)	0	0	0	0	0	0	134	100
11. Handwashing facilities are accessible and properly maintained								
11A. Handwashing facilities are conveniently located and accessible for employees.	117	87.3	17	12.7	0	0	0	0
11B. Handwashing facilities are supplied with hand cleanser / disposable towels / hand drying devices.	110	82.1	24	17.9	0	0	0	0
12. Employees practice good hygiene								
12A. Food Employees eat, drink, and use tobacco only in designated areas.	119	88.8	15	11.2	0	0	0	0
12B. Food Employees experiencing persistent sneezing, coughing, or runny nose do not work with exposed food, clean equipment, utensils, linens, unwrapped single-service, or single-use articles.	134	100	0	0	0	0	0	0
12C. Other (describe in comments section)	0	0	1	0.7	0	0	133	99.3
13. Consumer advisory								
13. Consumers are properly advised of risks of consuming raw or undercooked animal foods.	58	43	23	17	0	0	54	40

SNHD Risk Factor Study (Restaurants) Data
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RESTAURANT-COMBINED								
Number of INFORMATION STATEMENTS	IN	IN %	OUT	OUT %	NO	NO %	NA	NA %
14. Time alone is properly used as a public health control								
14A. When time only is used as a public health control for 4 HOURS , the food establishment follows procedures to serve or discard food as specified in Section 3-501.19 of the <i>Food Code</i> .	23	14.2	11	6.8	46	28.4	82	50.6
14B. When time only is used as a public health control for 6 HOURS , the food establishment follows procedures to serve or discard food as specified in Section 3-501.19 of the <i>Food Code</i> .	1	0.6	0	0	34	22.1	119	77.3
14C. Other (describe in the comments section)	0	0	0	0	0	0	134	100
15. Facilities have adequate equipment and tools for ensuring food temperature control and sanitization of food contact surfaces								
15A. Refrigeration / cold holding units have sufficient capacity to maintain TCS Foods at 41°F (5°C) or below.	119	88.1	16	11.9	0	0	0	0
15B. Hot holding units have sufficient capacity to maintain TCS Foods at 135°F (57°C) or above.	117	86	3	2.2	9	6.6	7	5.1
15C. Refrigeration and hot storage units are equipped with accurate ambient air temperature measuring device.	120	89.6	14	10.4	0	0	0	0
15D. Accurate temperature measuring device, with appropriate probe, is provided and accessible for use to measure internal food temperatures.	122	91	12	9	0	0	0	0
15E. Accurate temperature measuring devices and/or tests kits provided and accessible for use to measure sanitization rinse temperatures and/or sanitization concentrations.	128	95.5	6	4.5	0	0	0	0
15F. Other (describe in the comments section)	0	0	1	0.7	0	0	133	99.3
16. Special processes are conducted in compliance with issued variance/ HACCP plan, when required								
16A. Food establishment conducts reduced oxygen packaging without a variance as specified in Section 3-502.12 of the <i>Food Code</i> .	1	0.6	1	0.6	40	23	132	75.9
16B. Food establishment performs specialized process in accordance with approved variance and HACCP Plan when required.	1	0.6	2	1.3	22	14.2	130	83.9
16C. Juice packaged in the food establishment is treated under a HACCP Plan to reduce pathogens or labeled as specified in Section 3-404.11 of the <i>Food Code</i> .	0	0	0	0	18	11.8	134	88.2
16D. Other (describe in the comments section)	1	0.7	0	0	0	0	133	99.3
17. Food is received from safe sources								
17A. All food is from regulated food processing plants / No home prepared/canned foods.	132	98.5	2	1.5	0	0	0	0
17B. Shellfish are from NSSP-listed sources. No recreationally caught shellfish are received/sold.	18	11.5	0	0	24	15.4	114	73.1
17C. Food is protected from contamination during transportation/receiving.	5	3.7	1	0.7	128	95.5	0	0
17D. TCS Food is received at a temperature of 41°F (5°C) or below OR according to Law.	3	2.2	0	0	131	97.8	0	0
17E. Food is safe and unadulterated	131	97.8	3	2.2	0	0	0	0
17F. Shellstock tags/labels are retained for 90 days and filed in chronological order from the date the container is emptied.	10	6	3	1.8	32	19.3	121	72.9
17G. Written documentation of parasite destruction is maintained for 90 days for fish products.	17	10.8	3	1.9	26	16.5	112	70.9
17H. Other (describe in comments section)	1	0.8	0	0	0	0	131	99.2

RESTAURANT-COMBINED								
Number of INFORMATION STATEMENTS	IN	IN %	OUT	OUT %	NO	NO %	NA	NA %
18. Toxic materials are identified, used, and stored properly								
18A. Poisonous or toxic materials, chemicals, lubricants, pesticides, medicines, first aid supplies, and other personal care items are properly identified, stored, and used.	117	87.3	17	12.7	0	0	0	0
18B. Other (describe in the comments section)	1	0.7	0	0	0	0	133	99.3
19. Management and food employees are trained in food allergy as it relates to their assigned duties								
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	0	0	0	0
19B. Food employees are trained in food allergy awareness as it relates to their assigned duties.	86	64.2	48	35.8	0	0	0	0
19C. Other (describe in the comments section)	0	0	0	0	0	0	134	100

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