NNPH 2024 Risk Factor Study

Evaluating Foodborne Illness Risk Factors and Regulatory Program Outcomes

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Food Protection Program

Environmental Health Services Division

Risk Factor Study Objectives

Identify compliance challenges faced by food establishment operators

Develop targeted intervention strategies to improve food safety compliance

Demonstrate public health outcomes from regulatory intervention over time

Risk Factor Study: Assessment Areas

- Five foodborne illness risk factors:
    1. Poor personal hygiene
    2. Contaminated equipment or protection from contamination
    3. Improper holding time and temperature
    4. Inadequate cooking
    5. Food from unsafe sources

- Other areas of interest:
    - Certified Food Protection Manager (CFPM) Presence
    - Food Safety Management System (FSMS) Development
    - Awareness of the nine major food allergens
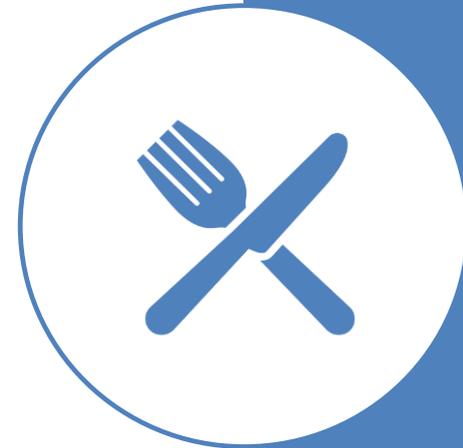
Methods

Population and Sample Sizes of Facility Types				
Facility Type	Population Size (N)	Confidence Interval (CI) & Margin of Error	Sample Size (n)	Total Surveyed (n_a)
Senior Independent Living	11	0.95 ± 0.10	11	8
Schools (K-12)	110	0.95 ± 0.10	52	52
Full Service Restaurants	411	0.95 ± 0.10	79	79
Fast Food Restaurants	537	0.95 ± 0.10	82	82
Deli Retail Food Stores	56	0.95 ± 0.10	36	37

Table 2. Population and Sample Sizes of Facility Types

Each establishment was randomly assigned a number to correspond with the Food Safety Management System (FSMS) to be assessed at the time of data collection:
1. Poor personal hygiene
2. Contaminated equipment or protection from contamination
3. Improper holding time and temperature
4. Inadequate cooking

Risk Factor Compliance Overall

**Percentage of Establishments OUT of Compliance By Risk Factor - All Facility Types Combined**
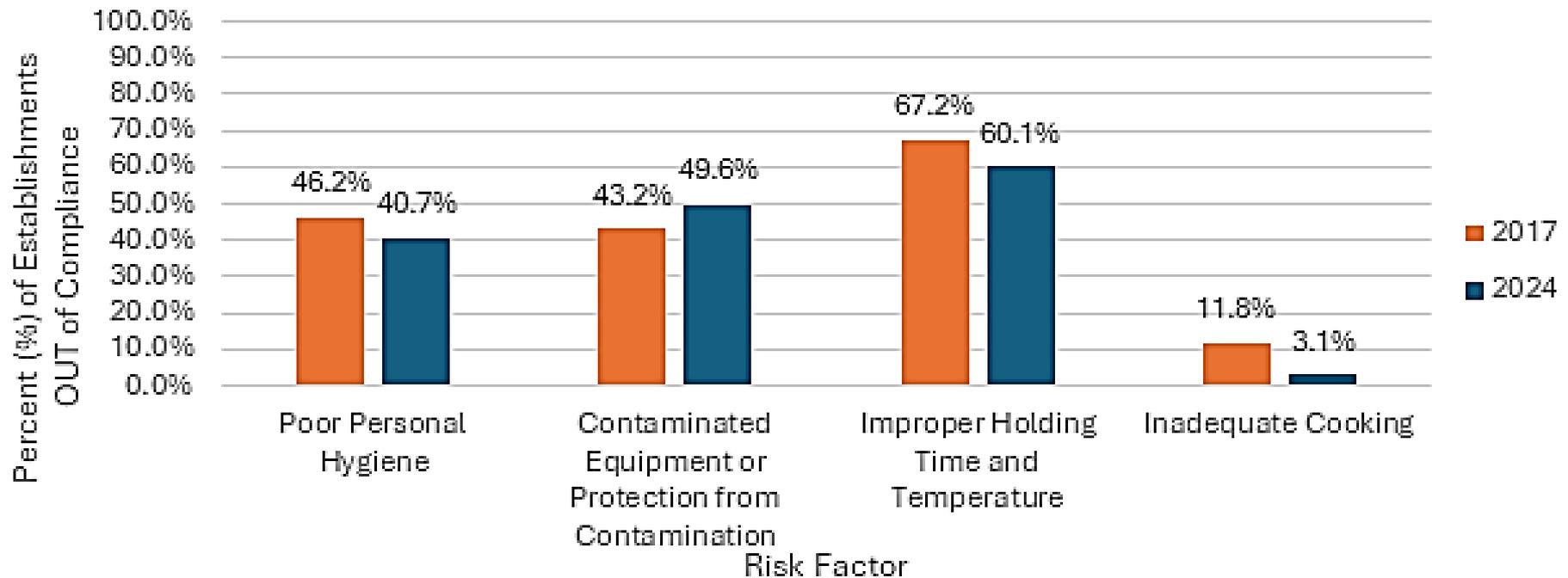
Figure 4. Percentage of Establishments Found OUT of Compliance by Risk Factor – All Facility Types Combined.

Areas for Improvement

Data Items Identified for Intervention – 2024 Risk Factor Study		
Data Item and Description	**Risk Factor**	**% OUT (All Facility Types Combined)**
01: Employees practice proper handwashing *	Poor Personal Hygiene	38.4%
03: Food is protected from cross contamination	Contaminated Equipment or Protection from Contamination	37.6%
05: Foods requiring refrigeration are held at the proper temperature *	Improper Holding Time and Temperature	43.4%
07: Foods are cooled properly	Improper Holding Time and Temperature	31.3%
08: Refrigerated, RTE foods are properly date-marked and discarded within 7 days of preparation or opening *	Improper Holding Time and Temperature	33.9%

Table 13. Data Items Identified for Intervention – 2024 Risk Factor Study.

Risk Factor Compliance: Key Statistics

- **Over half of full service restaurants** were recorded as OUT of compliance in practicing proper handwashing.

- **3 in 4 senior independent living facilities** were recorded as OUT of compliance for protecting food from cross contamination.

- **6 in 10 full service restaurants** were recorded as OUT of compliance for proper refrigeration of temperature controlled for safety foods.

- **Over half of deli departments** were recorded as OUT of compliance for proper refrigeration of temperature controlled for safety foods.

- **Over half of full service restaurants** were recorded as OUT of compliance for proper datemarking of refrigerated, ready-to-eat foods.

Food Safety Management System Development & Compliance

Median Number of Primary Data Items OUT of Compliance by Facility Type and FSMS Development				
	Degree of FSMS Development			
	Non-Existent	Underdeveloped	Well developed	Well developed and documented
Facility Type				
Restaurants - Fast food restaurants	4(3), n=5	3(7), n=29	1(4), n=23	0(6), n=23
Restaurants - Full service restaurants	3(3), n=2	4(7), n=55	2(5), n=19	1(3), n=3
Retail Food - Deli	1(0), n=1	3(4), n=10	2(4), n=13	1(3), n=12
Schools (K-12)	0(0), n=0	0(0), n=6	0(3), n=22	0(2), n=24
Senior Independent Living	0(0), n=0	3(3), n=5	1(0), n=2	1(0), n=1

Table 4. Median (Range) Number of Primary Data Items OUT of Compliance by Facility Type and FSMS Development. Median (range) of primary data items recorded as out of compliance per establishment in each facility type and degree of food safety management system (FSMS) development. Data is calculated by only including instances in which a primary data item was recorded as OUT and primary data items with NA or NO results were excluded. Total number of establishments (n) is included in each category of facility type and degree of FSMS development.

# Food Safety Management Systems Development
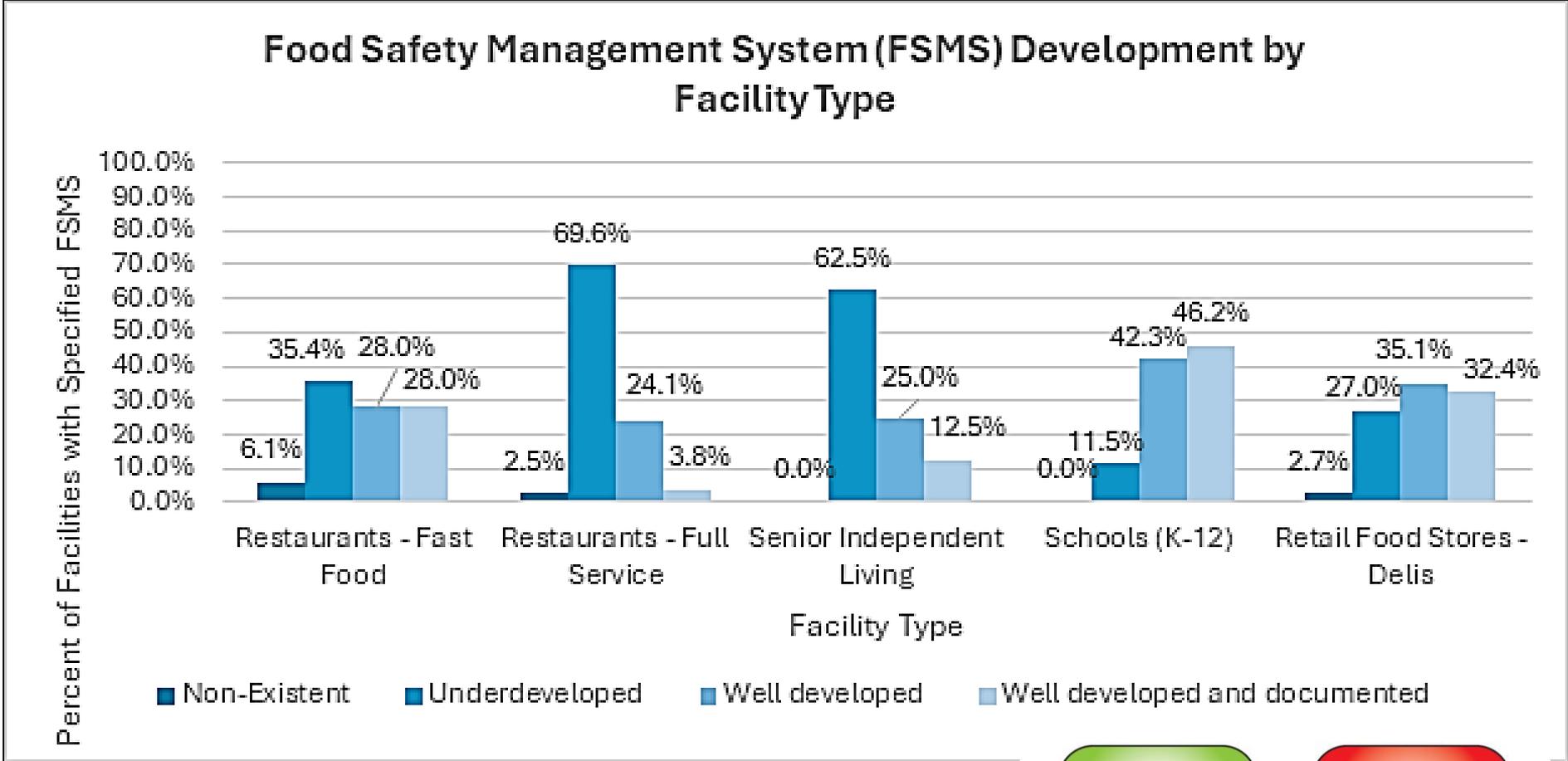
Figure 2. Food Safety Management System (FSMS) Development by Facility Type.

Intervention Strategies

Increase food safety education and outreach to operators.

Provide salient resources for operators to use in their establishments to support food safety.

Continue training for inspectors on capturing dynamic observations and practicing risk-based inspection techniques.

U.S. Department of Health and Human Services Public Health Service
Food and Drug Administration

Certificate of Achievement

Presented to

Northern Nevada Public Health

For outstanding commitment to retail food safety and the continous improvement of the retail food regulatory program as demonstrated by meeting

Standard #9 - Program Assessment

Of the FDA Voluntary National Retail Food Regulatory Program Standards

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FDA Retail Food Protection Branch Director

Achieved on: December 23, 2024

Conclusion

- Public health outcomes have improved and indicate preliminary success of intervention strategies.

- Food establishments still face pervasive food safety challenges.

- Next steps:
  - Implement additional intervention strategies.
  - Complete 2029 Risk Factor Study and develop a robust trend analysis.

Scan the QR code to access a full version of the NNPH 2024 Risk Factor Study Report!