

Running Head: FOOD TRUCKS

Food Truck Risk Factors and Public Health Intervention Violations in Suffolk County NY

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### Abstract

Mobile food trucks are self-contained vehicles, operating in conjunction with an approved commissary, from which a variety of foods that involve limited preparation are served; these vehicles may be in a stationary location or they may be used at a special event such as a feast or festival (Suffolk County, 2008). Inspection data of the most common risk factors and public health intervention violations cited over a 36-month time period from 2016 to 2018 were tallied. The four most common risk factors and public health intervention violations cited were temperature controlled for safety foods (TCS) not held at proper temperatures, inadequate hand washing, food not protected from contamination during storage, and lack of a certified food safety manager on site. The author discussed this data analysis with ten food truck operators and two neighboring health department jurisdictions in order to examine their perspectives on the frequency, type and trends of the most common risk factor and public health intervention violations associated with food trucks in Suffolk County. All of the food truck operators and both health departments agreed that these four risk factors and public health intervention violations were the violations that they would expect to be most commonly cited. Suffolk County can now use this data analysis to decrease the incidence of these violations, thereby decreasing the potential for foodborne illness. Recommendations included providing a food managers course specific to food trucks, creating a self-inspection checklist for operators, creating a short information handout for operators to remind them of the most common risk factors and public health intervention violations and conducting unannounced operational inspections in the field.

*Keywords:* food trucks, mobile food, risk factor violations, public health intervention violations, foodborne illness, Suffolk County

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### **Background**

Mobile food started in the 19<sup>th</sup> century as covered wagons selling lunch to journalists in Providence, Rhode Island. The number of mobile food operations began to grow after World War II as the population grew throughout the country particularly in areas with a limited number of restaurants. In 2008, the mobile food truck industry took off in Los Angeles when entrepreneurs started Kogi Korean BBQ. In its first year of sales, Kogi's Korean BBQ cleared \$2 million in sales. Following Kogi's success, food trucks around the country began imitating the innovative nature and food trucks took on a new popularity amongst Americans (Bowdish & Hendrix, 2018).

CDC estimates that one in six Americans get sick from contaminated foods or beverages each year, and 3,000 die (CDC, 2016). The U.S. Food and Drug Administration (FDA) has identified 5 major risk factors related to employee behaviors and preparation practices that contribute to foodborne illness. The 5 major risk factors are poor personal hygiene, improper food holding/time and temperature, contaminated equipment/protection from contamination, inadequate cooking, and food obtained from unsafe sources (FDA, 2017). The Food Code addresses controls for these risk factors and has established 5 key public health interventions. The 5 key public health interventions are demonstration of knowledge of food safety, employee health controls,

controlling hands as a vehicle of contamination, time and temperature parameters for controlling pathogens, and consumer advisory (FDA, 2017).

In 2008 Suffolk County issued one-year and two-year permits to sixteen food trucks serving complex foods. That number increased to one hundred and fifteen permits issued in 2018. As part of Suffolk County's continuing effort to improve its Food Protection program and the growth of the mobile food industry, the Bureau of Public Health Protection decided to study the incidence of risk factors and public health interventions potentially associated with the increase in the number of food trucks over the past decade. Due to competing public health priorities, common risk factors and public health intervention violations in mobile food operations have not been closely examined.

Suffolk County conducts pre-operational inspections on permitted food trucks that go through a plan review process. These trucks normally receive operational inspections if they vend at a temporary event or if a complaint is received. Some food trucks receive a short-term permit for temporary food service at special events where they may be inspected. Because Suffolk County has not analyzed violations in mobile food operations, the County Standards for Mobile Food Service Establishments (Suffolk County, 2008) may need to be updated in order to improve the inspection program.

### **Problem Statement**

Suffolk County does not currently track the frequency, types, and trends of the most common risk factors and public health intervention violations associated with food trucks.

### **Research Questions**

1. What is the frequency, types, and trends of the most common risk factors and public health intervention violations cited over the last 36 months on food trucks?
2. What are operator perceptions about the frequency, types, and trends of the most common risk factors and public health intervention violations identified in Suffolk County over the last 36 months?
3. What are the perceptions of the Nassau County Department of Health and New York City Department of Health & Mental Hygiene, two neighboring jurisdictions, about the frequency, types, and trends of the most common risk factors and public health intervention violations identified in Suffolk County over the last 36 months?

### **Methodology**

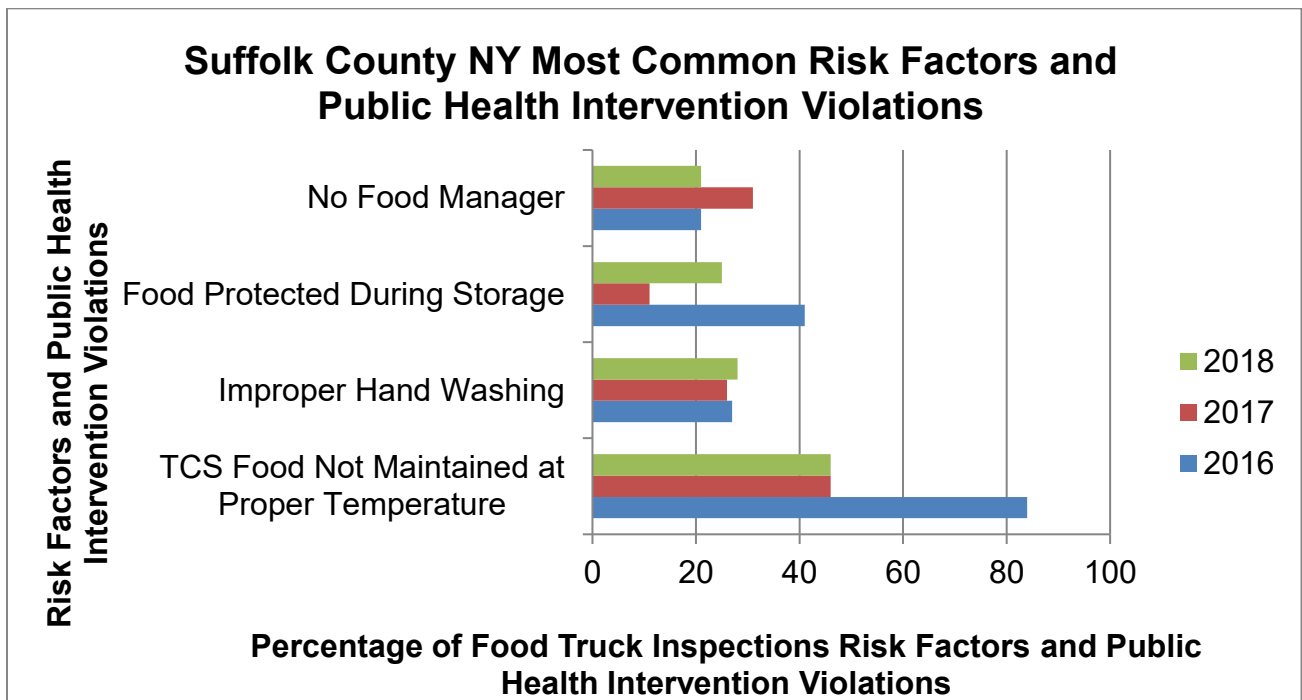
This study examined the risk factor and public health intervention violations cited on Suffolk County food truck inspection reports from the past 36 months. Inspection reports for food trucks are hand written and the data is not maintained electronically. The inspection reports for every food truck with complex foods inspected were pulled from the files and violations were tallied by hand for risk factor and public health intervention violations. The data from these inspections was entered into an Excel spreadsheet and descriptive statistics were generated.

Phone interviews were then conducted with ten food truck operators. The study was discussed with the food truck operators and their input was sought. Operators were asked how the Department can help them and what they can do to improve food safety. Phone interviews were also conducted with representatives from two neighboring health

departments. The study was discussed to elicit their perceptions of the most common risk factor and public health intervention violations identified in Suffolk County.

**Results**

Figure 1 shows results of the data analysis of 433 food truck inspections from 2016 through 2018. The data shows that the four most commonly cited risk factors and public health intervention violations in all three years were temperature controlled for safety foods (TCS) not held at adequate temperature (43%), inadequate hand washing (18.7%), food not protected from contamination during storage (17.8%), and no certified food safety manager on site (16.9%).



*Figure 1.* Suffolk County NY Most Common Risk Factors and Public Health Intervention Violations

The most common violations were discussed with ten food truck operators. All ten food truck operators felt that these four risk factors and public health intervention

violations were the top four that they would have expected to occur most frequently on their own food trucks and on competitor food trucks.

The food truck operators were then asked what the Health Department could do to help them decrease the incidence of these violations. Three food truck operators (30%) felt that Suffolk County should provide a food safety manager's course specific to food trucks. One (10%) food truck operator felt that all food workers should take a food safety manager's class. Two (20%) food truck operators felt that Suffolk County should provide a self-inspection checklist or an informational sheet to remind them of the most common violations and procedures. Two (20%) food truck operators felt that Suffolk County should increase sanitary code enforcement in order to improve compliance. One (10%) food truck operator felt that Suffolk County should conduct only pre-operational inspections, since it is difficult for operators to be inspected during busy events. One (10%) food truck operator felt that Suffolk County should conduct more unannounced operational field inspections.

Food truck operators were then asked what they thought they could do to decrease the number of risk factor/public health intervention violations cited. Four (40%) felt that food truck operators know the rules but are purposely not following them. Two (20%) felt that food truck operators should allow adequate time to set up their trucks and be prepared to correct any issues before starting food service. Three (30%) felt that many food truck operators are willfully non-compliant and care only about making money, so stricter enforcement would improve compliance. One (10%) felt that food truck operators should limit their menus to 5 items or less to prevent violations due to too much food preparation being conducted in limited space.

Neighboring health jurisdictions perceived that the top four risk factors and public health intervention violations discussed were the same within their jurisdictions as reported in Suffolk County. Both jurisdictions conduct inspections by appointment and conduct unannounced operational inspections in the field. Both jurisdictions agreed that conducting more unannounced operational inspections would result in greater compliance.

### **Conclusions**

Knowing the most commonly cited risk factors and public health intervention violations in food truck inspections may provide important information for Suffolk County to move forward with improving its food truck inspection program. This study provided suggestions from food truck operators and neighboring health department jurisdictions that may be incorporated into Suffolk County's current food truck inspection program.

The most commonly cited risk factor and public health intervention violations on food trucks coincide with what truck operators and neighboring health department jurisdictions perceive to be the most common violations. This data analysis may be helpful to food truck operators and health departments in reducing the incidence of risk factors and public health intervention violations.

It was found that the majority of food truck inspections are announced before they are conducted in the health jurisdictions contacted. Conducting announced inspections may not provide a full picture of how a food truck operates. Additionally, the practice of conducting inspections when trucks are not operating provides fewer opportunities to educate operators on how to reduce the number of violations that lead to foodborne illness. Conducting more unannounced operational inspections in the field may improve



the health departments' effectiveness in reducing the incidence of risk factor and public health intervention violations.

### **Recommendations**

1. Suffolk County should consider providing a food safety manager's course specific to food trucks. The course should include how to maintain TCS food at proper temperatures, proper hand washing technique, proper storage of food, and the importance of having a trained food manager on a food truck. The current food manager course teaches these topics but how to prevent these violations on trucks with limited space may be different from "brick and mortar" restaurants.
2. Suffolk County should consider creating a self-inspection checklist for operators to check their own trucks on a routine basis. Suffolk County has created a self-inspection application for all food establishments. This application could be modified for food trucks to use in their operations.
3. Suffolk County should consider creating an informational poster for food trucks to remind operators of the most common risk factor and public health intervention violations and how to prevent their occurrence. Posters will help food workers recognize violations, correct them, and prevent them from recurring.
4. Annual unannounced operational inspections of food trucks should be conducted in the field. Unannounced inspections will provide improved opportunities to educate truck operators on proper procedures to prevent the incidence of foodborne illness risk factors.

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