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## Mobile Food Trucks: California EHS-Net Study on Risk Factors and Inspection Challenges

**Editor's Note:** NEHA strives to provide up-to-date and relevant information on environmental health and to build partnerships in the profession. In pursuit of these goals, we feature a column from the Environmental Health Services Branch (EHSB) of the Centers for Disease Control and Prevention (CDC) in every issue of the *Journal*.

In this column, EHSB and guest authors from across CDC will highlight a variety of concerns, opportunities, challenges, and successes that we all share in environmental public health. EHSB's objective is to strengthen the role of state, local, tribal, and national environmental health programs and professionals to anticipate, identify, and respond to adverse environmental exposures and the consequences of these exposures for human health.

The conclusions in this article are those of the author(s) and do not necessarily represent the views of CDC.

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Across the nation mobile food facilities or mobile food trucks are showing up everywhere: on street corners, at school campuses, in front of businesses, and at special events. Traditionally, food trucks serve basic menus of hamburgers, sandwiches, and tacos typically at construction or agricultural sites. Since 2008, spurred by the economic downturn, mobile "food eateries" have embarked upon more complex and gourmet menus, and people are turning out in droves to eat food prepared in these trucks. It is estimated that approximately three million mobile food vendors and more than five million food carts are operating in the U.S. (Opsahl, 2012).

As part of the Centers for Disease Control and Prevention's (CDC's) Environmental Health Specialists Network (EHS-Net) cooperative agreement, the California EHS-Net program conducted a study to identify risk factors associated with mobile food trucks and the challenges associated with inspecting these types of food operations. The study consisted of a brief survey, which examined food and water safety, sanitation knowledge, and food handling practices of mobile food truck operators and food workers while food vehicles were in actual operation. The study also included a self-reported survey of California environmental health jurisdictions on

basic program management for inspections and resources related to mobile food trucks.

Similar to fixed retail food facilities, mobile food trucks in California are regulated under the provisions of the California Retail Food Code and are inspected and permitted by the local environmental health agencies, which inspect and permit the trucks annually. Unlike fixed food facilities, however, these mobile facilities are difficult to locate during actual operation due to the transient nature of the business. As a result, the annual public health inspection is usually scheduled and does not occur when the food truck is in operation. Therefore, the food trucks are empty of food and water, and since no food preparation is occurring the evaluation of food and water safety risk factors is not possible.

In this study 95 mobile food trucks were assessed while in operation in Contra Costa, Kern, Napa, Sacramento, San Mateo, and Tulare counties. The observational component of the survey evaluated the food worker handling practices most closely associated with critical risk factors that contribute to foodborne illness: improper temperatures, poor personal hygiene, and unsanitary food handling practices (Gould, Rosenblum, Nicholas, Phan, & Jones, 2013). Table 1 describes the critical risk factors identified during the mobile food truck assessment. Of the 95 mobile food trucks assessed, 90 (94.73%) exhibited at least one critical risk factor, demonstrating that mobile food trucks exhibit attributes that are comparable to fixed food facilities and would benefit from similar inspection practices.

Many jurisdictions require the mobile food truck to provide their daily route, with the

TABLE 1

**Critical Food Safety Risk Factors Observed**

Risk Factors Observed	n (%) of Mobile Food Trucks (N = 95)
Improper hand washing or no hand washing	84 (88.42)
Refrigeration units not operating	23 (24.21)
Refrigeration ambient temperatures >45°F	42 (44.21)
Internal food temperature >41°F	34 (35.78)
Cross contamination with ready-to-eat foods	57 (60.00)
Inadequate or no sanitation solution (for sanitizing surfaces)	65 (68.42)

expectation that an inspection could be conducted while the trucks are in full operation. Even with a designated route on file, however, these “restaurants on wheels” are difficult and time consuming to locate, creating a considerable resource drain to an already taxed workforce (Dyjack, Case, Marlow, Soret, & Montgomery, 2007; National Environmental Health Association, 2013). To meet inspection goals, many local environmental health agencies resort to “scheduled” inspections at the health department office or at the mobile food truck commissary when the truck is not operating. Most of the 57 California environmental health agencies surveyed indicated they conduct only one “scheduled” inspection per year, citing inadequate resources to locate mobile food trucks while in operation as one of the greatest challenges in managing their inspection program.

During a food facility inspection, observing food handling and personal hygiene practices by food workers to identify potential food safety risk factors is a strong focus. Restaurants are routinely inspected during hours

of operation when food preparation is actually occurring. These routine inspections are usually unannounced, providing the inspector the opportunity to observe “real time” food worker practices. Mobile food trucks use the same types of complex food preparation processes that are used in traditional food facilities (i.e., restaurants). Due to the elusive nature of the mobile food truck, however, these popular eateries often are given a basic, low-risk structural inspection instead of a higher, more complex food preparation risk-based inspection.

Mobile food trucks will continue to be a major player in the food industry. These results provide support that in order to improve food safety and better protect public health, mobile food truck inspection programs could be improved by conducting risk-based field inspections similar to those used for traditional restaurants: impromptu, unannounced inspections with the ability to observe actual food handling. Without the ability to inspect mobile food trucks during actual operation, food safety risk fac-

tors that may occur could potentially lead to foodborne illness or death. The results of this study provide evidence that using innovative approaches to effectively conduct risk-based inspections can provide the same level of food safety protection as for other retail establishments and restaurants while protecting public health at these popular eateries. 🚚

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