

▶ GUEST COMMENTARY

Are We There Yet? In-Flight Food Safety and Cabin Crew Hygiene Practices

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Amid the rapid expansion of global air traffic, aviation food safety is a critical issue (Huizer, Swaan, Leitmeyer, & Timen, 2015). More than 1 billion in-flight meals are served annually (Jones, 2006) and the aviation catering market is expected to be worth \$18 billion by 2021 (“Global \$18 billion in-flight catering services market,” 2017). Food served on planes is prepared in industrial kitchens close to airports and then transported to planes where it is stored, reheated, and served. The process is complex, with many opportunities for food contamination. Although food preparation on the ground is subject to considerable regulation at both the national and international level, similar rules do not apply to food served in-flight. Airline caterers might need to comply with local food safety regulations, those of the country of the aircraft registration, those of the destination country, and international food safety guidelines (Solar, 2019). While there are greater challenges to ensuring in-flight food safety, we argue that the same food safety principles used in establishments “on-ground” should be applied to in-flight food services. This guest commentary considers one key factor of in-flight food hygiene: the availability of hand washing facilities for cabin crew.

Food safety regulations are public health measures designed to prevent the spread of disease. Foodborne illness is a widespread and costly—yet preventable—public health problem (Centers for Disease Control and Prevention, 2018) that can arise in-flight because of the complexity of the food service environment and the confined conditions (Hatakka, 2000). Sheward (2008) sees cabin crews as the missing link in the food handler chain. Yet the nature of the onboard workspace and absence of legislative enforcement

hamper adequate crew hygiene and food safety behaviors.

Maintenance of a consistently high food safety standard is ever more important, particularly on ultra-long-haul flights (i.e., flight operations that regularly exceed 16 hr of planned flight time [Flight Safety Foundation, 2005]), where increased handling of food over an extended period of time brings ever more opportunity for food safety lapses. Poor food safety management and foodborne illness in-flight can become a flight safety issue by incapacitating pilots or cabin crew, rendering them unfit to fly (McMullan et al., 2007; Mitchell & Evans, 2004). Additional pressures come from the fact that passengers and crew disperse rapidly after flights and any illnesses they suffer would be difficult to track (Aiello & Larson, 2002).

Hand washing has long been considered a basic public health measure (Foddai, Grant, & Dean, 2016). During a flight, cabin crew frequently handle food while simultaneously completing multiple tasks. While contaminated hands play a key role in foodborne illness incidents (Curtis & Cairncross, 2003), access to clean toilets and hand hygiene serve as primary barriers to reduce the risk of transmission of pathogens that cause foodborne disease (Aiello & Larson, 2002). Most national legislation requires compliance with food safety protocols and dictates that hand washing facilities should always be provided to food handlers in proximity to their workspace.

Staff toilets and hand washing facilities are mandated in on-ground food establishments (Food and Drug Administration, 2018; Food Standards Agency, 2018). Although aircraft kitchens usually have sinks, they are mostly inadequate due to limited space and the common use of spring-loaded faucets, which require

one hand to keep the water on (Hedberg et al., 1992). These factors have been shown to negatively impact hand washing practices of cabin crew (Pragle, Harding, & Mack, 2007).

Although airlines have responded to the limited number of hand washing facilities by providing hand sanitizers as part of galley equipment, evidence from a systematic review questions the efficacy of hand sanitizers as a substitute for hand washing in food handling settings (Foddai et al., 2016). Kampf and coauthors (2010) reported limited efficacy of hand sanitizer gels and advised that hand sanitizers should be used only after hand washing and never as a substitute. Further barriers to adequate cabin crew hand hygiene in-flight include time pressure, insufficient food handler training, and usage constraints of disposable gloves. The use of gloves typically required for food handlers on-ground, for example, is a voluntary measure in-flight and depends on airline protocols (Flight Safety Foundation, 2003).

The International Health Regulations (World Health Organization, 2006) require the maintenance of sanitary conditions on conveyances and the World Health Organization Guide to Hygiene and Sanitation in Aviation (2009) notes that inadequate water supply for hand washing “may lead to an inability to prepare or serve food in a sanitary manner, thereby impacting on the provision of safe food to passengers.” The International Health Regulations are legally binding but unenforceable; the World Food Safety Guidelines for Airline Catering and the International Air Transport Association Cabin Operations Safety Best Practices Guide also rely on voluntary compliance. In practice, there is no enforceable legal requirement for modern aircraft design to provide galley

sinks for adequate hand washing. Even more remarkable, there is no legal requirement for aircraft to have installed toilets.

The context of aviation food has changed. New dynamics in air travel such as extended flight times and increasing passenger loads provide more opportunities for foodborne diseases to occur. A new regulatory approach to in-flight food safety needs to align as closely as possible to on-ground standards and be supported by effective compliance monitoring and enforcement. Structural improvements might be necessary to enable adherence to personal hygiene protocols. As a focal point of hand hygiene pressures, designated staff sinks can be an effective way to improve safe food handling on board. If hand

sanitizer gels are provided as an alternative, their acceptance by cabin crew and their effectiveness in the cabin workspace should be determined. Such research could contribute evidence to inform policy as the aviation industry continues to increase the number and length of flights worldwide. Cabin crew need a more informed understanding of what food safety actually means.

Meeting the challenges of providing safe food amid increasing air travel requires an understanding of the complexities associated with the cabin workspace, the uncertainties relating to training and education of cabin crew, and the policy responses across relevant aviation and public health sectors. Food safety is a critical component of gen-

eral aviation safety. Devising more effective ways to adhere to food safety standards in-flight can result in significant public health benefits. Shifting policy is a slow proposition but the need for safe food handling on board will only increase. 🐞

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Did You Know?

NEHA's latest policy statement addresses the adoption and implementation of the current Food and Drug Administration's *Food Code*. NEHA believes that complete adoption of the current *Food Code* in retail food establishments can likely reduce the incidence of foodborne illnesses and promote the most up-to-date knowledge of food safety. Other recent policy statements from NEHA cover topics such as cottage foods, clean energy, ear piercing guns and microblading, comprehensive mosquito control, and cannabis-infused food products. All current policy statements can be found at www.neha.org/publications/position-papers.

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