Beyond Handwashing:
Advancing New Industry Approaches to Control Food Contamination

Industry thought leaders believe it is vital for industry to strengthen its commitment to food safety with open minds and new approaches. At the core of this undertaking, employees — working within a food safety culture — must understand how their behavior affects food safety and engage in practices to decrease foodborne illness risks.

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Introduction

For decades, food industry stakeholders have continuously stressed the importance of employee health and personal hygiene practices on food safety, and rightly so. Year-in and year-out, poor health and personal hygiene practices among food workers are cited as one of the leading risk factors in foodborne disease outbreaks nationwide.

Today, countless scientific papers describe in expansive detail how food workers can transmit a broad spectrum of infective microorganisms (e.g., bacteria, parasites, and viruses) to the food they process, prepare and serve. Generally, these reports channel into an informative discussion on public health interventions that restaurants, foodservice operations, retailers, and other industry actors should utilize to control risk factors and protect consumer health.

In its "Retail Food Protection: Employee Health and Personal Hygiene Handbook," the Food and Drug Administration (FDA) identifies three public health interventions:

1. Restricting or excluding ill food employees from working with food
2. Using proper handwashing procedures
3. Eliminating bare hand contact with ready-to-eat (RTE) foods[1].

Coming Clean on Employee Handwashing

Proper handwashing receives a significant amount of attention throughout the collective food industry, and deservedly so. From basic microbiology, we know that a host of bacteria live in and on the human body, especially around the face and on hands.

The hands of food workers, according to the United Nation's World Health Organization, a leading international public health agency, are the most important vehicle for the transfer of organisms from feces, noses, skin, clothing and other sites to food.

The "FDA Food Code," a guidance document that proposes practical, manageable and enforceable provisions to mitigate risk factors associated with foodborne illness, provides an overview on the "who, what, when, where and how" of rigorous and deliberate handwashing[2]. In short, effective handwashing involves the scrubbing, rinsing and complete drying of hands to minimize the likelihood of cross-contamination. When performed correctly, handwashing diminishes the spread of fecal-oral pathogens from the hands of workers to food and can reduce the transmission of pathogens from environmental sources.

Despite the widespread emphasis on handwashing across the food industry, published studies indicate that proper hand washing does not occur as regularly or as thoroughly as needed. Depending upon the type of food facility, 33% to 73% of operations were found to be out of compliance with proper hand washing procedures[3]. Nearly 90% of outbreaks occur when the unclean hands of food workers come in contact with food[4].

The Weight of Foodborne Illness

From healthcare costs to lost wages, the negative effects of foodborne illness are felt throughout society. The Centers for Disease Control and Prevention estimates that 1 in 6 Americans (approximately 17% of people nationwide) get sick, 128,000 individuals are hospitalized, and 3,000 people die each year due to foodborne diseases. Data indicates that adults over the age of 65, children under the age of five, and individuals with compromised immune systems are at particular risk for foodborne illness[4].

A U.S. Department of Agriculture Economic Research Services report placed the impact caused by foodborne pathogens at over $15 billion yearly[5]. This figure was arrived at from a detailed identification of specific disease outcomes for foodborne infections caused by 15 major pathogens which are responsible for 95% of cases when the illness can be identified[5].

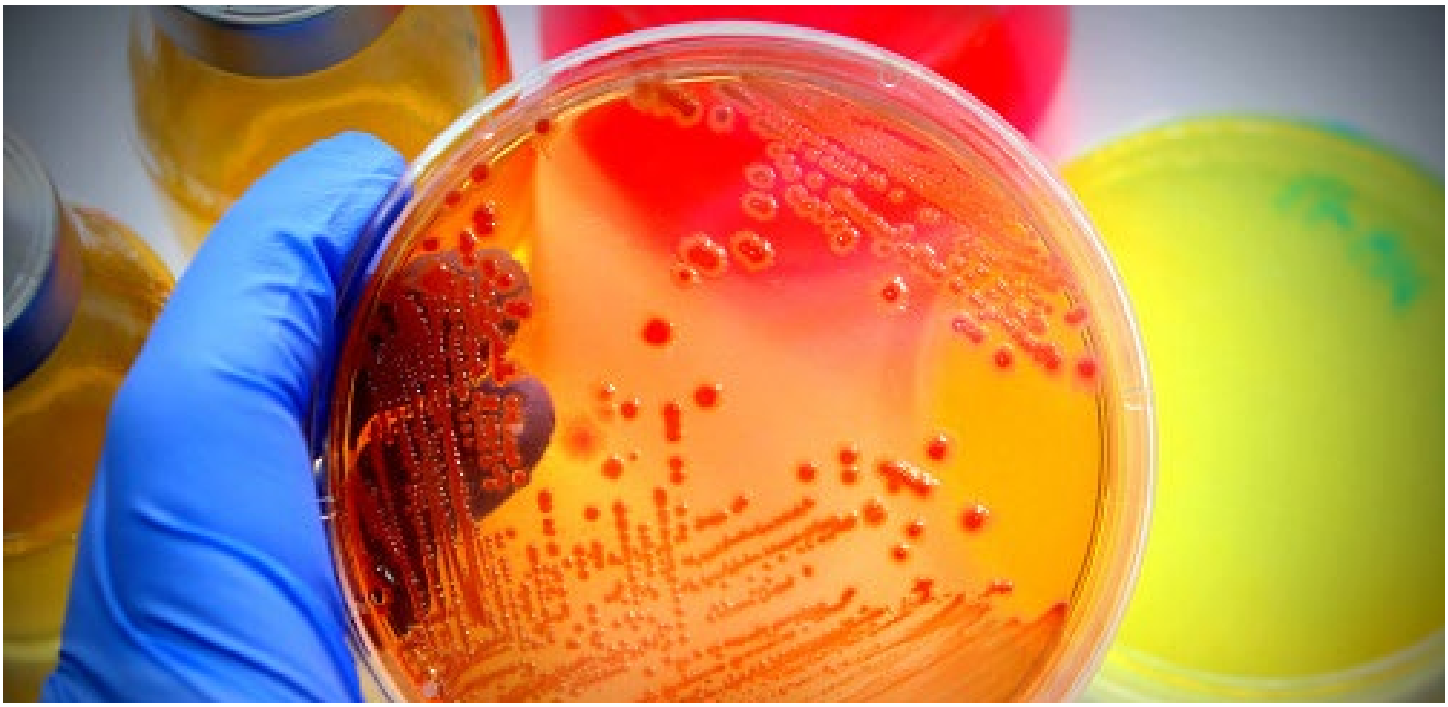
Federal food and public health agencies reference a small number of highly infective pathogens that can easily be transmitted by food workers and cause severe illness. Referred to as the “Big 6,” these pathogenic organisms include *E. coli*, Hepatitis A, nontyphoidal *Salmonella*, Norovirus, *Shigella*, and *Salmonella* typhi.

Relatively unknown outside the scientific orbit until the mid-1990s, norovirus is the leading cause of disease outbreaks from contaminated food and responsible for more than 20 million annual cases of gastroenteritis in the U.S. Over 50% of all attributed food-related illness outbreaks nationwide are caused by norovirus[6].

Norovirus, which is sometimes referred to as the Norwalk virus, is usually transmitted by eating food or drinking liquids that are contaminated with norovirus, touching contaminated surfaces or objects, and coming in direct contact with a person contaminated with norovirus.

Most outbreaks can occur in food service settings like restaurants, hospitals, and cafeterias, but are not always linked to food handling. Infected food workers are frequently the source of outbreaks, usually by touching ready-to-eat food, such as fresh fruit and vegetables, with their bare hands prior to serving them.

Norovirus is a hardy organism and highly resistant to everyday sanitation protocols. The Environmental Protection Agency (EPA), however, has approved heavy-duty disinfectants that can effectively kill norovirus on hard surfaces and glass. Ecolab, a leading foodservice partner, urges operations to review the labels of EPA-registered disinfectants to ensure their effectiveness against norovirus and work with sanitation authorities to determine their best in-house option.



Open Minds, New Approaches

In consumer surveys, respondents largely agree that restaurants and foodservice establishments are committed to protecting public health and ensuring food safety. A closer examination of the findings, however, reveals that consumers have pointed concerns on a number of food safety behaviors, namely personal hygiene practices, workplace sanitation, food handling and food preparation[7].

While public health interventions are integral in combating food contamination and foodborne disease, experts believe it is vital for the foodservice industry to strengthen its commitment to food safety with open minds and new approaches. At the heart of this undertaking, employees — working within the confines of a food safety culture — must understand how their behavior affects food safety and engage in practices to decrease foodborne illness risks.

Cultivating Organizational Culture

Volumes of scientific literature explore organizational barriers that prevent foodservice workers from performing safe food handling practices in accordance to accepted standards.

Food service workers, participating in an independent focus group, pinpointed several positive influences on handwashing, such as proactive public health departments and food inspectors, education and training, and personal beliefs and attitudes. At the same time, time-constraints, inadequate training, inconvenience, and insufficient resources were identified by the participants as major obstacles related to proper handwashing[8].

To overcome these organizational barriers, safety experts and practitioners are increasingly encouraging organizations to implement a food safety culture. A food safety culture is a behavioral-based system consisting of policies, practices and procedures that represent the way in which an organization recognizes and practices proper food safety[9].

No downloadable app is available on Google Play or iTunes for instituting a sustainable food safety culture. Because every organization is different, it is a methodical process marked by trial, error and persistence. The National Restaurant Association openly acknowledges this and encourages restaurants and foodservice establishments to incorporate the following principles into its culture:

- Involve every individual. The importance of food safety must be driven upward and downward, from management making its commitment apparent in its decisions, behaviors and how it motivates its employees.
- Create the conditions to cultivate the culture. Insert food safety practices into everyday operations and allocate appropriate resources to training and development to enhance it. Most importantly, keep it simple to understand and implement.
- Follow up relentlessly. Failure needs to be sought out, not ignored. Long-term effective solutions need to be developed and implemented working towards desired outcomes.

When supported by management, bolstered by practical and intuitive training, and bound by shared beliefs and attitudes, worker conformity related to safe handling practices can be greatly enhanced in a dynamic food safety culture.

Big Picture Learning for Food Workers

Employee training is an indispensable springboard for hurdling organizational barriers associated with safe food handling practices in restaurants and other food service establishments. The *FDA Oral Culture Project Report*, which was released in 2010, shares findings gathered from various studies and theories related to food worker behavior[10]. The report highlights a number of incisive findings, most notably:

- Food personnel view their business as low risk
- Behavior is motivated by values and interpretations of situations and events
- Food service workers are more likely to utilize safe food handling practices if they understand the “why” and importance of implementing them
- Real-life examples motivate food workers and managers to learn
- Food workers are more open to training from role models who demonstrate and model appropriate behavior in supportive ways

The report suggests that food service workers are largely oral learners, meaning they place greater emphasis on emotion and being able to personally relate to presented information. Employees process many ideas at once, but prefer to focus on the big picture, not little details. Moreover, workers are more likely to comprehend concepts in actual work conditions as opposed to classroom settings.

Based on these behavioral traits, the report submits that training programs, mechanisms and tools should be tailored to make greater use of sayings and pictures with fewer words and vivid examples. This allows service workers to gauge the impact of their behavior and better understand wh y following proper behaviors and practices are important to preventing foodborne illness.

Standing on Principles

Foodservice managers shoulder much of the responsibility for training workers on safe food handling practices and reinforcing positive behavior in the work environment. From overseeing multi-generational workforces to complying with a staggering array of regulations, managers must navigate a whirlwind of challenges to ensure employees are providing safe food to customers.

Against this setting, active managerial control provides industry managers with a progressive food safety management system to help control foodborne risk factors[11]. Through a host of principles, such as teaching workers how to recognize foodborne hazards and reinforcing the importance of proper handwashing, active managerial control champions a preventive, rather than a reactive, approach to food safety. The success of its control measures is quantified through continuous monitoring and internal verification activities.

Like Hazard Analysis Critical Control Point (HACCP), an internationally recognized food safety system to which it is frequently compared, active managerial control encourages workers to assume a committed role in the overall operation of their establishments and confront safety issues from a foundation of knowledge. According to a published study, restaurants and foodservice operations that utilize active managerial control often see sizable reductions in critical cross-contamination violations in announced local health inspections[12].

Prevention Through Partnership

The U.S. restaurant industry, with over one million locations nationwide, is one of the country's most competitive and closely scrutinized industries. Restaurants can spend several years building a recognized and respected brand, only to see one foodborne safety incident compromise its customers, employees and reputation.

A single foodborne outbreak could cost a restaurant millions of dollars in lost revenue, fines, lawsuits, legal fees, insurance premium increases, inspection costs and staff retraining, according to a recently released study that was performed at the Johns Hopkins Bloomberg School of Public Health[13].

The findings are based on computer simulations that suggest a foodborne illness outbreak can have major consequences regardless of the size of the restaurant and outbreak. According to the model and based on the specific illness agent, a quick service food restaurant could incur anywhere from $4,000 for a single outbreak in which five people get sick (when there is no loss in revenue and no lawsuits, legal fees, or fines are incurred) to $1.9 million for a single outbreak in which 250 people get sick (when restaurants lose revenue and incur lawsuits, legal fees, and fines).

Food safety is loaded with potential contamination risks from many human and environmental sources. Through the formation of strategic partnerships with acknowledged cleaning and sanitation experts, like Ecolab, foodservice operations can gain needed assistance to help prevent foodborne illness, promote workplace best practices, implement cleaning and sanitation solutions, and better ensure food safety.

Whether you need assistance in the kitchen, front of house, back of house, or bathroom, outside partners can help operations maintain a clean and safe experience for your customers and aid in the realization of a rigorous food safety program.

Top of Mind for Forward Thinkers

Poor employee health and personal hygiene practices have far reaching consequences on food safety. More than ever before, forward thinkers in the food industry recognize that innovative training and mindsets are essential in modifying the attitudes and behaviors of food workers to address this public health challenge.

Source Materials:

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13. Sarah M. Bartsch, Lindsey Asti, Sindiso Nyathi, Marie L. Spiker, Bruce Y. Lee. Estimated cost to a restaurant of a foodborne illness outbreak. Public Health Reports, 2018; 003335491775112 DOI: 10.1177/0033354917751129.

About Ecolab: Ecolab is the global leader in water, hygiene and energy technologies and services, delivering comprehensive solutions, data-driven insights and on-site service to promote safe food, maintain clean environments, optimize water and energy use, and improve operational efficiencies for customers in more than 170 countries.

About the National Restaurant Association: The National Restaurant Association is the largest foodservice trade association in the world — supporting over 500,000 restaurant businesses. In partnership with our state restaurant associations, we work every day to empower all restaurant owners and operators to achieve more than they thought possible.

About ServSafe: ServSafe® is the premier provider of educational resources, materials and programs to help attract and develop a strong industry workforce. The ServSafe® program provides food and alcohol safety training and certification to help protect businesses, employees and customers. ServSafe leads the way in providing current and comprehensive educational materials to the restaurant industry. Our complete suite of products (which includes ServSafe Manager, ServSafe Food Handler, ServSafe Alcohol and ServSafe Allergens) will help prepare foodservice employees for front-of-house and back-of-house situations.

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