

THE SANITARIAN'S FILE

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Food Defense for the Small Retail Operation

For those of you who work in the food manufacturing business, you have my permission to skip this article. Most of you already have food defense quite in hand, or you are well on the way to having a fully functional defense plan. So for this column, I'm directing my comments to the retail side of our industry, particularly the small retail foodservice providers, including bakeries, bars, bed-and-breakfast operations, cafeterias, camps, child and adult daycare providers, church kitchens, commissaries, community fundraisers, convenience stores, fairs, food banks, grocery stores, meal services for home-bound persons, mobile food carts, restaurants, and vending machine operators.

Although there are numerous well-written food defense guidelines, for all intents and purposes, they target the larger operation. Even those from the U.S. Food and Drug Administration Center for Food Safety and Applied Nutrition's (FDA CFSAN) "Retail Food Stores and Food Service Establishments" guidelines are not entirely sensitive to the vast majority of mom-and-pop or smaller institutional operations. They even make mention of this in the opening paragraphs. Taken in its entirety, the requirements outlined for a comprehensive, secure retail food establishment is somewhat daunting, confusing and sometimes quite illusive if applied to a smaller operation of limited financial and facility resources. So for those of you who fit into this category, please bear with me while I try to demystify and (I hope!) simplify this topic.

By way of introduction, long before the first real monstrous act of deliberate



food contamination in 1984, where members of a religious cult in Oregon contaminated salad bars with *Salmonella typhimurium* in order to disrupt a local election and causing 751 cases of salmonellosis resulting in 45 hospitalizations, I started my career working with institutions, mostly prisons and psychiatric facilities. Awareness of possible acts of sabotage was already part of the institutional culture. Before we could begin working at these facilities, newly hired professional and support personnel, including myself, had to learn about defense and incorporate it into our craft. It was expected that any activity conducted within a secure environment was done with defense-minded constraints. It did not take long for this new concept to become second nature. I applied what I had learned to my report recommendations and added a defense component to other institutional environmental health-related programs for which I was responsible. To this day, I continue to do so. In short, food defense should become seamlessly integrated into every foodservice operation.

Early on, the sanitarian's guideline for food service defense came largely from the Public Health Service's 1967 and 1976 Food Service Sanitation Manuals (the precursors to today's Food Code). It dawned on my professional colleagues that the prevention of cross-contamination and enforcement of personal hygiene practices were already part of the correctional and medical staffs' post orders and the kitchens' defense compliance mandate. Except for some idiomatic and occupation-specific language, food safety and food defense were, and continue to be, synonymous.

In the April/May 2005 issue of *Food Safety Magazine*, I wrote about "Street HACCP," which is an abbreviated HACCP program ideal for small foodservice operations. I will try to present the basic concepts of food defense in much the same way: brief, concise and functional—and it is hoped, cost-effective.

Assessing Risk for Defense

First, here is the bad news. Unlike accidental foodborne illness, a breach in food defense or an act of terrorism in a small food service operation can result in at least two types of economic effects: Direct economic losses attributable to the costs of responding to the act; and, indirect multiplier effects from compensation paid to affected customers and the losses suffered by affiliated industries, such as suppliers, transporters and distributors.

However, here's a bit of good news. Believe it or not, in the world of small foodservice operations, most policies for food safety (even if they are unwritten) and the practices of rudimentary defense systems are already in place. All facilities that are routinely inspected by the regulatory community meet the most critical defense components such as preventing cross contamination, maintaining proper temperatures and using time/temperature relationships to prevent foodborne illnesses, and, ensuring that foods come from approved sources. With a little attention to detail and a few enhancements, every small operation can significantly reduce its risk of intentional food-related misadventures such as tampering or other malicious, criminal or terrorist actions.

While it's fairly easy to identify broken seals, bag closures and the like, it's far more difficult to judge past temperature abuse or the opportunity for deliberate contamination with foods that do not have defense packaging. Therefore, let us explore simple ways to enhance the food defense practices already in place.

To begin putting a rational spin on food defense for the smaller operator, the FDA provided a good resource. Several years ago, the FDA developed a generally accepted framework for risk assessments that was endorsed by the Codex Alimentarius Commission and the U.S. National Academy of Sciences, among others. The framework divides risk assessment into four components: (1) hazard identification; (2) hazard characterization (or dose-response assessment); (3) exposure assessment; and (4) risk characterization—all basic to a HACCP program.

“Incorporate food defense awareness into the food safety training program.”

The actual definition of risk assessment is: “A report that shows assets, vulnerabilities, likelihood of damage, estimates of the costs of recovery, summaries of possible defensive measures and their costs and estimated probable savings from better protection.” The FDA model allows us approach risk assessment—within the confines of this definition—in much of the same way we would complete a menu review and a formal facilities plan review, but with a defense twist. Keep in mind that some of the biological and chemical agents of concern are more inclusive than the usual cast of foodborne misadventure characters, and that opportunities are a bit more global than food preparation considerations. In short, our risk assessment goal is to prevent deliberate contamination. But while we cannot prevent all terrorism scenarios, we certainly can minimize them.

The Conference on Food Protection's Plan Review Blue Book poses several questions for new and newly remodeled food service facilities. These questions are basic to any operation: Will the menu offer food that requires extensive preparation? What are the hours of operation and service? How often will food and supplies be delivered? What is the maximum number of employees working on one shift? And, has everyone been trained in food safety, defense and HACCP principles? From the answers we can not only evaluate the adequacy of the kitchen equipment, the flow of food through the facility, the sizes and type of cold-holding equipment and dry goods storage, the adequacy of personal hygiene facilities, and the potential for human error, we can also look for potential breaches in defense; both from a facility and personnel perspective.

Like a HACCP program, we can focus our attention sequentially on each segment of the food delivery and production system that is within our control and minimize the risk of tampering

or other malicious, criminal, or terrorist action at each segment. To be successful, implementing enhanced preventive measures requires the commitment of both management and staff.

Accordingly, it is prudent that both management and staff participate in the development and review the food defense measures within their facility. So, now you have the logic to develop a food defense program using the food safety tools already in place. I have taken the liberty of highlighting, what I consider the most important FDA recommendations. There are five components to each foodservice operation: Management, staff, public, facilities and operations, each of which can be easily integrated into existing policy.

Management

- Prepare for the possibility of tampering or other malicious, criminal, or terrorist events and assign responsibility for defense to knowledgeable staff.
- Have a crisis management strategy to prepare for and respond to tampering and other malicious, criminal, or terrorist actions, both threats and actual events, including identifying, segregating and securing affected products.
- Plan for emergency evacuation, including preventing defense plan breaches during evacuation.
- Familiarize yourself with the emergency response system in the community and provide 24-hour contact information to the local authorities.
- Post all emergency phone numbers in a conspicuous area.
- Train yourself and staff about relevant defense issues and have a strategy for communicating with the public in the event of an emergency.

Staff

- Provide an appropriate level of supervision to all staff, including cleaning and maintenance staff, contract

- workers, and especially, new staff.
- Conduct routine defense checks of the premises, including utilities and critical computer data systems.
- Investigate suspicious activity and threats or information about signs of tampering or other malicious, criminal, or terrorist actions and alert appropriate law enforcement and public health authorities.
- Examine the background of all staff, including seasonal, temporary, contract and volunteer personnel, and consider their access to sensitive areas of the facility and the degree to which they will be supervised.
- Provide some recognizable form of identification for each employee.
- Change combinations, rekeying locks and/or collecting the retired key card when staff who are in possession of these are no longer associated with the establishment.
- Restrict the type of personal items allowed in non-public areas of the establishment and prevent staff from bringing personal items such as lunch containers and purses into nonpublic food preparation or storage areas.
- Regularly inspect staff personal storage areas.
- Incorporate food defense awareness training into the food safety training program for employees; provide for periodic retraining and encourage staff support in food defense planning and the food defense awareness program.
- Watch for unusual or suspicious behavior by staff, including personnel who, without an identifiable purpose, stay unusually late after the end of their shift or arrive unusually early; access files/information/areas of the facility outside of the areas of their responsibility; remove documents from the facility; or ask questions on sensitive subjects or bring cameras to work.

Public

- Restrict entry to the non-public areas of the establishment and prevent access to food preparation, storage and dishwashing areas in the non-public areas of the establishment, including loading docks.

- Monitor public areas, including the serving or display of foods in self-service areas and entrances to public restrooms for unusual or suspicious activity.

Facility: Physical Defense

- If possible, protect non-public perimeter access with fencing or other deterrent.
- Secure all doors, including emergency exits when not in use and not being monitored, secure windows, roof openings/hatches, vent openings, ventilation systems, utility and storage rooms, loft areas and trailer bodies, and bulk storage tanks for liquids, solids and compressed gases.
- Use metal or metal-clad exterior doors to the extent possible and minimize the number of entrances to non-public areas.
- Establish a key tracking and defense system.
- If possible, monitor the defense of both the interior non-public areas and the perimeter of the premises, including the parking area, and provide enhanced lighting to these areas.
- Minimize to the extent practical, places in non-public areas that can be used to temporarily hide intentional contaminants.
- Keep customer, employee and visitor parking areas separated from entrances to non-public areas, where practical.

Facility: Storage of Poisonous and Toxic Chemicals

- Limit poisonous and toxic chemicals in the establishment to those that are required for the operation and maintenance of the facility and limit their access.
- Keep an inventory and track poisonous and toxic chemicals kept on the premises, and, investigate missing stock or other irregularities and alert local enforcement and public health agencies about unresolved problems.

Operations: Incoming Products

- Use only known and appropriately licensed/permitted (where applicable) sources for all incoming products.
- Inspect delivery vehicles to ensure

- that they are appropriately secured.
- Establish delivery schedules and not accept unexplained, unscheduled deliveries or drivers, and investigating delayed or missed shipments.
- Supervise all off-loading of incoming materials.
- Reconcile the product and amount received with the product and amount ordered and the product and amount listed on the invoice and shipping documents, and investigate shipping documents with suspicious alterations.
- Inspect incoming products and product returns for signs of tampering, contamination or damage or counterfeiting and reject suspect food.
- Alert appropriate law enforcement and public health authorities about evidence of tampering, counterfeiting, or other malicious, criminal, or terrorist action.

Operations: Storage

- Have a system for receiving, storing and handling distressed, damaged, and returned products, and products left at checkout counters, that minimizes their potential for being compromised.
- Keep track of incoming products, materials in use, salvage products, and returned products.
- Investigate missing or extra stock or other irregularities and reporting unresolved problems to appropriate law enforcement and public health authorities.
- Minimizing the reuse of containers, shipping packages, cartons, etc.

Operations: Foodservice and Retail Display

- Periodically check products displayed for retail sale for evidence of tampering or other malicious, criminal or terrorist action, such as checking for off-condition appearance, proper stock rotation, evidence of resealing, condition of tamper-evident packaging, and the presence of empty food packaging or other debris.
- Regularly monitor self-service areas for evidence of tampering or other malicious, criminal or terrorist action.

Operations: Defense of Water and Utilities

- Request a periodic review all mandated utility protection components from the local building and health departments.
- Limit access to controls for airflow, water, electricity and refrigeration.
- Secure non-municipal water wells, hydrants, storage and handling facilities.
- Ensure that all water systems and components are equipped with backflow prevention.
- Regularly testing non-municipal water sources for potability, as well as being alert to changes in the profile of the results.
- Identify alternate sources of potable water for use during emergency situations where normal water systems have been compromised (for example, bottled water, trucking from an approved source, treating on-site or maintaining on-site storage).

Validate Your Program

Finally, it is a good idea to review and verify, at least annually, the effectiveness of the defense management program and revise the program accordingly. It is also prudent to keep this information confidential. Just a reminder: No defense program can completely protect against terrorism. Likewise, no defense program is complete without validation. In order to ensure that your newly created or newly modified food defense program contains all the elements necessary to minimize risk, I strongly recommend that it is reviewed by a correctional professional such as a sheriff's deputy or correctional officer who work at a local jail or prison. Their job is defense, and they can provide ideas, constructive criticism and suggestions for enhancement, effectiveness and efficiency of your program. I've regularly worked with these professionals for several decades and I never met one who was unwilling to share their knowledge. ■

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