Behavior based food safety training helps processors create a culture of food safety

By Dan Fone, Business Development Director for NSF International’s Global Food Safety division

Food handlers throughout the supply chain — from workers in field to the supermarket deli — play an integral and vital role in the safety of the products they handle. Most food processing facilities have an entire staff devoted to ensuring their food handlers are trained on the latest and greatest food handling practices and procedures. After all, the policies and procedures that require so much time, money and effort to perfect, are only as good as the training and behavior of the employees following them.

The industry has long recognized that proper food safety training is a critical component to ensuring a safer global food supply. And yet, issues surrounding food handler personal hygiene and cross contamination continue to top the list of food safety risk factors in processing plants. Current and widely accepted food safety training models are designed to work from a very basic assumption: that we are able to devise comprehensive and prescriptive rules for all food safety practices that will be followed at all times, regardless of the situation. However, we all know from real life experience that this isn’t always the case.

We have heard industry leaders say that in order to reduce or even eliminate food safety risks from our supply chain, we must create a culture of food safety. How do we achieve such a tall order? Our research tells us that cultures are shaped by people’s beliefs and behaviors. With this in mind, NSF International, in partnership with Cognisco, a specialist in assessing and developing workforce competence, combined leading research on human behavior and psychology with their expertise in food safety to design an intelligent behavior-based food safety assessment model that helps companies build a culture of food safety.

Addressing the rogue factor: human behavior

Through using the right certified equipment and designing sound quality manufacturing systems, many food processing facilities are able to significantly reduce food safety risks and develop sanitary environments suitable for food processing. However, one rogue element will always remain. Humans, regardless of the sanitary environment in which they are working, still contribute the greatest risk to food processing environments. The prescribed solution to mitigating this risk is to ensure these individuals are given the time, tools and training necessary to facilitate proper food handling practices. However, our assessment of nearly 10,000 trained food handlers to date revealed that 41 percent of these workers still demonstrate a dangerous gap between their knowledge of food safety handling practices and their actual application of these principles in the workplace. How can we close the gap?

People are dynamic. We don’t simply do what we are told, and we can’t be programmed like a computer to perfectly perform at all times. Our research and experience to date, and that of the food companies we work with, confirms our belief that sustainable safe practices within the food sector are best achieved when we go with the grain of human behavior. Only by effecting change in food handler behaviors will we be successful in embedding food safety within organizational culture to bring about change and improvement.

The behavior-based food safety training model

In conjunction with workplace psychologists, NSF International designed a range of assessments and interventions that are designed to achieve sustainable safe behaviors at the lowest possible cost.

Phase 1: Human influence on critical control points
The first phase of this model focuses on identifying the critical control points in the manufacturing process and where these points are influenced by people. It is important to focus on those controls that are influenced by human behavior, rather than those that are controlled mechanically.

**Phase 2: Safe food handling fundamentals**

An assessment is then made to determine if the processing facility has the fundamental elements in place to facilitate proper food safety handling practices and behaviors. This includes determining if there are food safety training programs in place and if food handlers are given time and access to proper tools to follow safe handling practices.

**Phase 3: Understanding current behaviors and the reasons for them**

This phase is where we start to understand what factors are shaping food handler behaviors (e.g. cultural, attitudinal, lack of knowledge). Food handlers are surveyed to evaluate their understanding of safe food handling practices and how confident they are in their knowledge. By utilizing an online assessment tool, we are able to identify: 1) those food handlers that understand what they have been trained in, 2) those that do not understand certain areas (and what areas those are), and most importantly, 3) those that misunderstand their training but have confidence in their knowledge. The latter group are those food handlers that follow incorrect food handling practices with complete confidence and influence those around them to do the same. Food handlers that fall into this category are more pervasive that previous thought. Our research on nearly 10,000 trained food handlers revealed that 1/3 fall into this category, posing a great risk to food safety manufacturing systems throughout the supply chain.

**Phase 4: Interventions to bring about change**

This phase is where we start to implement strategies that create a culture of food safety in the workplace. Nearly three years of research, which included understanding key theories on human behavior (e.g. Social Cognitive Theory, Reason’s Barriers, etc.) led us to the understanding that people will follow correct behaviors if they 1) understand implications of getting it wrong and 2) are confident in their knowledge. Human behavior is also influenced by a number of so-called ‘behavior enablers’:

- Fear of being caught – I do the right thing because I am worried about being caught
- Conscience – I do the right thing because I am aware of the consequences of what could go wrong
- Herd Factor – I do the right thing because everyone else does
- Incentives – I do the right thing for reward (or conversely I do the right thing to avoid punishment)
- Leadership – I do the right thing because I see my boss doing it that way

With the data we collected on food handlers in phase 3, we can pinpoint bad food safety behaviors and then develop systems to reinforce the right food safety behaviors consistently and in the long term. Instead of applying a blanket food safety training program that may or may not work for all employees, we are able to intelligently apply strategic behavior-based programs in the specific areas where they are needed. This allows processors to get the most value out of their food safety training resources, while also making the greatest impact on food handler behavior.

**Phase 5: Monitoring**

An online assessment tool provides clear ‘before’ and ‘after’ evaluations to help us understand how well the programs are working and where we need to make adjustments to ensure their effectiveness.

For additional information on NSF’s behavior-based food training training model, contact Dan Fone at 734-214-6241 or dfone@nsf.org.

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**About Dan Fone, Business Development Director for NSF International’s Global Food Safety division**

Dan Fone is a food safety expert with more than 25 years of experience in the food industry, including extensive knowledge of safety management systems in the US and Europe. As Business Development Director for NSF International’s global food safety division, Fone focuses on assisting global companies improve their food safety systems.
Fone has extensive experience on the local government, retail and global food systems level in the US and EU. He helped design Hazard Analysis and Critical Control Point (HACCP) systems for food facilities worldwide. His work experience also includes Environmental Health Officer, Lead Assessor for a UK-based certification body and Hygiene and Safety Manager for Safeway Stores.