

### PROCEDURAL STEP 3

#### Conduct a Hazard Analysis

In developing a food safety management system, you should identify the food safety hazards that exist in the flow of food in your operation from receiving to service or sale. By identifying the food safety hazards present in your system, you should then be able to determine the possible control measures that may be implemented to achieve active managerial control of the foodborne illness risk factors leading to out-of-control hazards.

Control measures are any actions or activities that can be used to prevent, eliminate, or reduce an identified hazard. While the hazard analysis in the process approach to HACCP is probably less complicated than in traditional HACCP, this section is not intended to provide all the information you will need to conduct a hazard analysis of your products. In addition, FDA strongly recommends that you consult your health inspector or other food safety professional during this and all other phases of your food safety management system development. As described, the specific food safety hazards for each of the products within a particular food preparation process may be varied, but the recommended control measures for each of the products in each process will generally be the same. As you conduct the hazard analysis, you will most likely find that regardless of the specific food safety hazards present in the products in any particular food preparation process, the foods within each of the food preparation processes share common categories of hazards. This is why the control measures you apply to the products in each of the three food preparation processes will generally be the same. Because of this, you may use general categories to designate the types of food safety hazards present in your operation.

For example, in process 2 you may have baked chicken, fried fish, grilled hamburgers, and baked meatloaf that are all cooked and hot held before service. While each of these foods may have unique food safety hazards, they all share general categories of hazards and therefore the control measures that you may implement are basically the same. Vegetative bacteria are controlled through proper cooking, spore-forming or toxin-forming bacteria are controlled through proper hot holding, and fecal-oral route pathogens such as *Shigella*, *Salmonellae*, and viruses are controlled through good hygienic practices such as proper handwashing, no bare hand contact with ready-to-eat food, and implementation of employee health policies. In addition, pathogens resulting from cross-contamination may be controlled by proper sanitization and storage practices. Other hazard categories and control measures may exist in this example. The categories listed below are not all-inclusive and there may be overlap between them. You may use different terminology from what is outlined in this Manual. The category names that you use are unimportant as long as you know what hazards are present in your system. Examples of general hazard categories that you may use to fill in your tables are as follows:

#### BIOLOGICAL

1. Vegetative bacteria (such as *Salmonella*, *Campylobacter*, *E.coli*, and *Vibrio*)
2. Spore-forming or toxin-forming bacteria (such as *Bacillus cereus*, *Clostridium perfringens*, *Clostridium botulinum*, and *Staphylococcus aureus*)
3. Fecal-oral route pathogens (such as parasites, various bacteria, and viruses)
4. Viruses (such as Hepatitis A and Noroviruses)
5. Bacteria, parasites, or viruses from cross-contamination [applies to the transfer of disease-causing microorganisms to ready-to-eat food by hands, food-contact surfaces, sponges, cloth towels and utensils that are contaminated with disease-causing microorganisms. Also applies to the transfer of disease-causing microorganisms from raw animal foods with higher cook temperatures (i.e. chicken) to raw animal foods of less or cooking temperatures (i.e. pork)]

#### CHEMICAL

6. General chemical contamination (cleaning compounds, sanitizers, allergens, etc.)

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7. Scombroid toxin (histamine production in certain fish)
8. Ciguatera toxin (natural toxin in certain fish)

### PHYSICAL

9. General physical hazards such as bone or metal fragments, bandages, jewelry, etc.

Some questions to ask yourself as you evaluate the food safety hazards present in your products include:

- Are there any ingredients or menu items of special concern such as those associated with seafood?
- Is this a potentially hazardous food requiring specific temperature controls?
- How will it be served? Immediately? Held on a buffet?
- Does this food have a history of being associated with illnesses?
- Will this require a great deal of preparation, making preparation time, employee health, and bare hand contact with ready-to-eat food a special concern?
- How will employees exhibiting symptoms such as diarrhea or vomiting be handled?
- Are you serving food to a population that is known to be highly susceptible to foodborne illness (e.g., residents of health care facilities, persons in child or adult day care facilities, etc.)?

If you already have a working knowledge of the hazards associated with products in your establishment, you can fulfill the hazard analysis step by identifying the control measures in the *Food Code* that are associated with each operational step in your food preparation processes. You may consult the FDA *Food Code* to help you in understanding the public health rationale behind the control measures and critical limits. In the next procedural step, you should determine which of the control measures identified in your hazard analysis are essential to the food's safety, i.e. cooking. You may choose to implement control measures in your HACCP plans at CCPs or through your prerequisite programs.