

# Planning for the Future in Food Safety

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Good morning. I am Caroline Smith DeWaal, Director of Food Safety for the Center for Science in the Public Interest. Before I begin, let me tell you a little about CSPI. We are the people who told you the surprising facts about the fat in movie theater popcorn, Chinese food, Mexican food and deli sandwiches. CSPI just celebrated its twenty-fifth anniversary. We have a budget of \$13 million, and a staff of 50 people including scientists, nutritionists and lawyers with expertise in nutrition, food labeling and food safety. We have approximately 750,000 members who subscribe to our Nutrition Action Healthletter.

## What Consumers Want

Before I begin to discuss my ideas and priorities for food safety, I would like to set the stage — to talk about where we are and why we are here.

Sometimes it takes a monumental event to move the wheels of government. Sometimes it takes more than years of protest by consumer groups and report upon report by the National Academy of Sciences. Sometimes it takes a major outbreak — more than 500 people ill and four children dead. But eventually the wheels of government do move.

On a December morning shortly before Christmas in 1992, Roni Rudolf took her six-year-old daughter Lauren to San Diego Children's Hospital. Lauren had bloody diarrhea.

During the days that followed, Lauren's condition worsened and on December 28, Lauren died. She was the first fatality in the now infamous Jack-in-the-Box outbreak. Although most of us think of that outbreak as occurring in January 1993 in Washington state, the sad truth is that the outbreak started first in California in late December. Lauren's death came 22 days before the outbreak in Washington state was even announced. With better detection and communication, the Washington state outbreak might have been pre-

vented. Clearly, this tragedy highlights the numerous weaknesses with our systems of assuring food safety and the protection of public health.

This outbreak started the wheels of government, ever so slowly, and the change that is coming to the food safety inspection system is finally taking shape. The United States Department of Agriculture is about to deliver the single biggest advance in meat and poultry safety in 40 years any minute in Washington. And the government is not the only one changing. Industry, producers, retailers and, yes, even consumer advocates are finding the need to think "outside the box."

This is a time of great change for food safety across all the agencies, and the scientific community will no doubt be asked for more information than ever to help facilitate this change. In addition, the scientific community will have to explain their findings in ways so that everyone can understand them. This is because the Jack-in-the-Box outbreak has so galvanized public opinion on the issue of food safety that it has put the administrative and policy making process itself under a microscope.

Consumer confidence in meat and poultry products has never recovered from the Jack-in-the-Box outbreak in January 1993. In a recent poll conducted by the Associated Press, 52% of consumers identified bacterial contamination as "the most serious health hazard" in food. Fat garnered 28% and pesticides garnered 16%.<sup>1</sup> In another survey, 90% of supermarket shoppers polled were concerned about meat and poultry inspection.<sup>2</sup> Sixty eight percent of the general public believes that rules governing food safety are not tough enough.<sup>3</sup>

American consumers legitimately expect that if they properly handle and cook their food or if they order it from a restaurant, it will be safe to serve to their families. Under normal conditions of preparation, food that has been inspected and stamped wholesome by the government should not contain enough bacteria or other contaminants to make consumers or their family members seriously ill — or even kill them. Food should not maim people or result in injury that seriously impairs their quality of life.<sup>4</sup> While consumers clearly have a role to play in assuring the safety of the food they purchase and prepare, it is no longer acceptable for processors to rely on consumers to make dangerous products safe.

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Since 1993, nearly 100 outbreaks from *E. coli* 0157:H7 in 37 states have been identified by Safe Tables Our Priority, the group formed by families who have lost family members or friends from contaminated meat. These continuing outbreaks are just the tip of the iceberg. CDC reported that there were more than 43 thousand cases of Salmonellosis reported in 1994 and cases of Shigellosis and Hepatitis A, both of which can be foodborne, totaled more than 50 thousand combined.<sup>5</sup> Most experts believe that somewhere between seven and 33 million foodborne illnesses occur each year, only a small fraction of which are reported to CDC.

Food safety problems can be broken into three major categories: microbial hazards, chemical hazards and natural toxins. Until recently, most of the regulatory emphasis on food safety has been on chemical contaminants. Both government and industry representatives told us that it was impossible to control microbial hazards on meat and poultry products. We have since learned that each of these problems can be controlled with a combination of HACCP and testing regimes.

Chemical hazards include pesticide residues on plants, hormones in meat and heavy metals in fish. Although record keeping can play a role in preventing these hazards, almost any control scheme will have to include residue testing. Natural toxins also require a testing regime, coupled in some cases with process controls. Microbial hazards require an extensive process control system that is verified using laboratory sampling.

### **Appropriate Roles for Industry, Government and Consumers**

Doing cost/benefit analysis is very popular in Washington these days, so let's run through a quick one on meat and poultry safety, just to see how the numbers stack up. USDA has conservatively reported that there are seven million cases of foodborne illness in the U.S. each year and up to seven thousand deaths. Of these, nearly five million cases of illness and four thousand deaths may be associated with meat and poultry products contaminated with harmful bacteria. Virtually all observers believe these figures may be low. At least one investigator has estimated that the total number of cases of foodborne illness may reach 33 million a year with up to nine thousand deaths.

The Department of Agriculture estimates that the annual cost of foodborne illness in this country ranges from \$5 billion to \$6 billion, with \$4 billion attributable to meat and poultry products alone. These costs are being borne by consumers and the health care system, and they make the number of taxpayer dollars invested in the food safety inspection programs seem small by comparison. The Food and Drug Administration (FDA), which spends more than \$200 million regulating foods, has a food inspection program which is marked by lack of resources and infrequent inspections. Although last December, FDA finalized a rule mandating HACCP systems for one segment of the food it regulates, seafood processors, the agency lacks the inspection resources

to adequately enforce the program. And the current meat and poultry inspection system, which costs more than \$500 million taxpayer dollars each year, does not address many of the pathogens that make people sick.

Yet, even minor investments in improving the safety of food products can result in significant savings to consumers. For example, costs associated with the USDA's proposed mandatory HACCP proposal were estimated to be less than \$250 million per year, with expected saving for consumers of \$1 to \$3.7 billion.

But, let's face it, despite this Washington trend, public health — not cost — is the real issue here. I believe that most people in the food industry want to produce the safest possible product, even if it costs them money and time to do it. After all, reduced consumer confidence in meat and poultry products has had a tremendous cost. As I have been told over and over again by members of the meat and poultry industry, poisoning your customers is not the formula for repeat business.

The question is how to do it. Is there technology available that will make raw animal protein products safer? Will HACCP work to assure safer products?

Food safety systems that use HACCP rely on the industry to identify and monitor processing controls for food processing plants. However, to ensure the system is operating to protect consumers, the system must be designed to balance industry's role with appropriate regulatory oversight, including inspection, verification and enforcement. In the absence of adequate government oversight, HACCP will simply revert to an industry honor system, which will undermine public confidence in this promising new food safety system.

HACCP programs must be designed so that they encourage companies to incorporate the best proven technologies for food safety, once the technologies have been subject to adequate review and approval by government agencies. Technologies should be evaluated to assure they are effective; they will not reduce hygiene standards or promote carelessness; they will not adversely impact the environment and worker safety; and they will not cause nutrient loss or toxic byproducts in the food.

The science relied on by the agencies in making these public health decisions should conform to the highest standards of scientific excellence. Government-generated science is considered inherently more trustworthy than science generated by and for the industry. However, it is not realistic to expect the government to conduct most of the science needed to engineer the changes in food safety that are needed. The industry can fund scientific research faster than the government will, and so we need to ensure that the scientific integrity of the research is unassailable. Many consumer representatives harbor concerns that scientific excellence has not been the norm, and that the desire to support a specific outcome has driven science in the meat and poultry area.

We also need research to help farmers determine whether there are methods of animal husbandry that reduce

the presence of harmful pathogens. Mechanisms to track the movement of food, from farm to table, are critically important to help identify gaps in the food safety assurance system, including farm-based practices. In addition, the government should continue to monitor animal drug use on the farm and to research whether there are connections between the use of animal drugs and the emergence of new strains of pathogens.

### HACCP on the Horizon

Ideally, we should utilize methods of improving food safety from farm-to-table. However, we are a long way from having comprehensive food safety controls in place. Meanwhile, it is proper to focus most food safety controls at the point where dangerous bacteria enter the food supply — the slaughter or processing plants. Employing HACCP systems to improve food safety enjoys broad support in the academic community and the food industry, as well as among consumer groups. It is a very promising approach that employs hazard analysis, preventive controls, and monitoring to assure the safety of food products. HACCP systems have also been promoted as a method to standardize food safety in the international arena. Given its widespread support, it is not surprising that, since January 1994, both the Food and Drug Administration and the Food Safety and Inspection Service have identified HACCP as the method of choice for modernizing food safety systems.

Despite its acclaim and its use in limited segments of the food industry, the effectiveness of HACCP systems for raw animal products remains more theoretical than proven. For these products, there is wide variation in processing practices and a history of reliance on government inspectors to assure product safety standards are met. The impact of HACCP systems is far from certain. Even USDA's own HACCP pilot studies have raised troubling questions. When HACCP plans were pilot tested in three poultry slaughter plants, the incidence of some pathogens actually *increased* following implementation of the HACCP plans.

These pilot studies demonstrate what we already know. There is nothing magic about HACCP. In practice, this system will deserve consumer confidence only if it is subject to strict government oversight and contains internal accountability. Government oversight must include comprehensive inspections by federal regulators to ensure that the food processors are implementing the HACCP plans properly. Effective enforcement tools are needed so government agencies can take prompt action against processors that violate their HACCP plans and send contaminated food into the market. Internal accountability means that processors should be required to show that their HACCP plan correctly identifies the hazards of concern and lays out an appropriate management strategy to control those hazards. Microbial sampling for validation and verification of HACCP plans is essential to prove that the plans work to minimize food hazards.

### Assuring Accountability: The Role of Microbial Testing

With respect to the use of microbial testing for meat and poultry products, let me be clear: we are not calling for a test and hold system. We are not asking for lot acceptance testing. Those are the old concepts and there is a lot of confusion regarding our position on this.

We strongly support the requirement that microbial testing be used to validate and verify the HACCP system. In fact, we believe that without the benefit of microbial sampling, reliance on HACCP is based on faith rather than facts. Consumers are expected to believe that food delivered from a HACCP plant will be cleaner and safer than food that comes from a traditional plant. Only mandatory validation and verification through procedures that include laboratory sampling will give consumers confidence that HACCP is a proven technology for food safety.

Without microbial monitoring, HACCP would probably never deliver on its promise to produce safer raw animal products. Microbial sampling measures HACCP's effectiveness in reducing the amount of bacteria and other contaminants found in food products.<sup>6</sup> Sampling at key points during processing also ensures that the plant is operating as it should by tracking normal levels of bacterial contamination and providing an alert when some component is not operating normally. Sampling will also help the processors determine if there are sources of contamination that have not been identified as critical control points.

But don't take my word for it. Ask some of the companies, like IBP, Excel and others, that have operating HACCP systems in their plants. Most use microbial sampling systems in conjunction with their HACCP plans that are far more comprehensive than anything yet proposed by USDA.

This is an area where new research would be tremendously useful. The types of areas where consumers need answers range from the relationship between indicator organisms and pathogens to identification of infectious dose levels for pathogens to development of rapid pathogen testing technologies. On this last point, the development of new rapid microbial testing technologies will be a pivotal new development in the systems of assuring food safety. The capability to conduct real-time monitoring of product safety without incurring undue expense will be instrumental in moving HACCP testing from a verification activity to a real time monitoring activity.

The lack of microbial standards for meat and poultry products represents a critical gap in food safety protections. Bacteria, like the deadly *E. coli* 0157:H7 and *Salmonella*, cause the vast majority of foodborne illnesses and deaths. Without standards, there are no incentives for industry to minimize the harmful bacteria in their products. Research will likely document that some pathogens are unsafe only after they reach a certain level on meat and poultry products. Hopefully, HACCP systems will assure that processing and handling techniques are followed to reduce the introduction and growth of harmful pathogens and, as a result,

foodborne illness can be reduced significantly from current levels. The adoption of standards for the microbial quality of meat, used with microbial monitoring, will also help to reduce disputes because both the government and industry will have a real indication of the effectiveness of the HACCP program.

Unlike USDA, FDA has standards for chemical and microbial contamination in many foods but they are set to protect only the average consumer. The standards are generally inadequate to offer full protection to consumers who fall outside the average range, especially children and the elderly, who are most frequently the victims of foodborne illness. If pathogen levels can be identified that provide protection to these more sensitive groups, we can develop appropriate methods of communicating risk to these groups. These methods might include stricter standards for foods intended for schools or nursing homes, consumer warnings or using other methods. No one is asking that all food standards be set to protect the most vulnerable populations, only that appropriate information and protections are offered to all groups, not just the so-called “average” consumer.

### **HACCP is Not a Replacement for Government Inspection**

Although CSPI supports the adoption of mandatory HACCP programs for all food products and processors, we recognize that HACCP is not a panacea. HACCP systems do not replace the need for the current inspection system. Rather inspection is critical to ensure that HACCP systems work. Inspection by government agencies is imminently more trustworthy to consumers. It gives consumers a set of unbiased eyes who are charged with protecting public health. Inspection and HACCP go hand-in-hand.

Equally clear, however, is that the present inspection system for meat and poultry products needs an overhaul. Although we would strongly oppose any effort to revise existing federal laws to eliminate carcass-by-carcass and continuous inspection, the inspection program has serious gaps and need significant redesign to incorporate HACCP systems.

Nonetheless, inspection is and always will be an integral part of a mandatory HACCP program. I believe that the FDA experience with seafood HACCP will show that, without adequate inspection resources, HACCP programs may have only a limited impact on the presence of contaminated food in the marketplace. Continuing outbreaks of foodborne illness, coupled with frequent contaminated food reports and recalls, may undermine consumer confidence in the new seafood HACCP program. Without food safety cops on the beat, HACCP will revert to nothing more than an industry honor system.

### **The Food Safety System of the Future**

So, we have discussed where we are, but where are we going? After all, any change should result in a system that is

more protective of public health than the one we have today. What follows are my predictions of what is coming after HACCP is widely implemented.

In the food safety system of the future, the primary focus of regulatory attention will continue to be food processors, retailers and consumers. This is where the regulatory agencies can exercise the greatest control, and where this control can have the most direct impact.

HACCP should spur processors to develop new systems and new technology to improve food safety. But — a warning here — consumers don’t want a new set of chemicals in the food supply. “High-tech” food is still suspect. Consumers still show a strong preference for “natural” food products. New technologies may run up against consumer acceptance problems, and I predict the most successful ones will be the common sense devices that consumers can understand. For example, consumers will more readily accept steam treatment than radiation treatment to kill pathogens on meat.

We need better research supporting this new technology. Laboratory validation studies using the toughest strains, like *E. coli* 0157:H7, are essential. In-plant verification of the laboratory studies is also important.

On the farm, HACCP systems could be developed to monitor and control chemical inputs. In animal production, record keeping could be used to track animal drug use. This is especially important now that Congress has legalized extra-label drug use. HACCP also has application in the pesticide arena as well. Farmers should keep records of their pesticide applications and do regular sampling to their products for pesticide residues to assure that their pesticide use minimizes residues in the food.

States and the federal government must have much better oversight in several areas: foodborne illness surveillance, transportation and retail. As the Jack in the Box outbreak reminds us, the inadequacy of the present foodborne surveillance system can be deadly. And just recall the Schwann’s ice cream outbreak where an estimated 224,000 people became ill from *Salmonella* to see the damage that one poorly cleaned or maintained truck can cause. Finally, the retail sector is responsible for extensive food safety problems, while subject to minimal oversight. One CDC study over five years showed that 44% of all reported foodborne disease outbreaks resulted from restaurant-prepared food compared with 23% from home-prepared food.<sup>7</sup>

Finally, the biggest gap in the area of food production is the absence of effective traceback mechanisms that would allow us to trace food associated with an outbreak all the way back to the processors and even the original producers. Let me share with you the outrage I felt during USDA’s animal production food safety forum last May. In a meeting of the poultry industry, the egg producers suggested that they didn’t want to know if their products were associated with foodborne illness outbreaks. I guess they thought what they didn’t know couldn’t hurt them, but it can and will hurt their customers.

Which gets me to my last point. Consumer advocates have been around for a long time. We are easy to disregard. Nevertheless, when both the industry and the government ignore a problem like microbial pathogens in food for long enough, consumer advocates are the least of their problems. Instead, they come face-to-face with the mother or father whose child or elderly parent is dead because of your knowing indifference. We can't ignore these problems any longer. The families won't let us.

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