

Issue

How Can FSIS Better Associate Food Safety Activities to Public Health Surveillance Data?

National Advisory Committee on
Meat and Poultry Inspection
November 5-6, 2003

Purpose

The 2003 FSIS Food Safety Vision paper states that a critical goal is for the Agency to better associate program outcomes to public health surveillance data. In order to achieve this goal, FSIS must be able to link foodborne illnesses with consumption of specific foods. Such data would provide the necessary metric for measuring success of regulatory policies.

FSIS is seeking advice from the National Advisory Committee on Meat and Poultry Inspection (NACMPI) on how to address difficulties public health agencies have encountered in attempts to characterize the burden of foodborne illness by food commodity. Specifically, FSIS is interested in the Committee's ideas on the use of existing FSIS microbiologic monitoring data (all Hazard Analysis and Critical Control Point (HACCP) verification activities, including *Salmonella* HACCP, ready-to-eat (RTE) testing for *Salmonella* and *Listeria*, and *E. coli* O157:H7 in raw ground beef) from product samples to better describe the risk to human health arising from the presence of pathogens on meat and poultry products. In addition, FSIS is interested in how data linking food products to foodborne illnesses might be used to suggest changes in regulatory policies.

Discussion

As a public health regulatory agency, FSIS is keenly interested in measuring the impact of its regulatory programs or policies, particularly changes to existing programs, on the incidence of foodborne illness in the United States. Following the implementation of the Pathogen Reduction (PR)/HACCP rule, the Foodborne Diseases Active Surveillance Network (FoodNet) has identified a reduction in the incidence of some foodborne infections in the participating States. The Centers for Disease Control and Prevention (CDC) has attributed some of this decline in foodborne infections to PR/HACCP system regulations implementation, though based only on temporality.

FSIS conducts ongoing microbiological regulatory monitoring, consisting of *Salmonella* testing for HACCP compliance in raw product, *Escherichia coli* O157:H7 testing in raw ground beef and some RTE products, and *Salmonella* and *Listeria monocytogenes* testing in all RTE products. However, the correlation of this data with human illness data is problematic because the regulatory sampling program was not designed to be random or

account for volume of production. Similarly, FoodNet data is not nationally representative, and there is no active national surveillance for these pathogens in humans.

Currently there is not a comprehensive system in U.S. food production to monitor microbial contamination of foods to the extent that human illness with a foodborne pathogen can be conclusively linked to a specific food. While there are many programs, interventions and control points in place to minimize microbial contamination of food, when humans do become ill from a foodborne pathogen, there are many barriers to specifying both the pathogen and the food vehicle.

Some of these barriers include:

- incomplete investigation of foodborne illness cases (especially sporadic illness);
- incomplete data availability for foodborne illness that is associated with meat and poultry products;
- lack of ongoing microbiological testing programs for all food commodities;
- lack of culture confirmation of illness;
- inability to find and test suspect foods;
- lack of specificity in food-pathogen pairs (i.e., most pathogens may be transmitted either by multiple foods or via non-foodborne routes);
- incomplete knowledge of the relative virulence of foodborne pathogens;
- unknown effect of current microbiological methods on isolating the pathogens of concern;
- inability to routinely compare food distribution data to human illness data; and
- methodologic problems in comparing regulatory monitoring data with human illness surveillance data.

Questions

1. How might data linking food products to foodborne illness cases be used to suggest changes in regulatory policy?
2. How do/can we get data that is linked to food?
3. What other types of data should be considered in development of regulatory policies (e.g., data FSIS currently collects in plants)?

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