ISGP Institute on Science for Global Policy

# Solving Food Safety Problems Without Antiquated Regulation and Inspection**

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**Summary**

The United States system of ensuring food safety (FS) is more than 100 years old and, until very recently, was the primary system designed to ensure FS. The system assumes that primarily federal regulators have the necessary knowledge to instruct food manufacturers on producing safe food, with both federal and state governments enforcing their respective regulations. While there have been notable successes in the last century — such as mandatory pasteurization for milk and other products, low acid canned food rules, and basic sanitation requirements — much of this progress was achieved in the first half of the 20th century. In the last 30 years, the incidence of foodborne disease has changed very little.

Achieving a safer food supply requires a redefinition of the role of the public sector that takes advantage of new technologies. Traditionally, consumers have been forced to rely on government regulation and inspection because private manufacturers were rarely held accountable for problems. Even when contaminated foods were traced back to negligent manufacturers, outside of large national outbreaks, there was little chance that news about it would be widespread. Today, there are systems in place, based on new technology, that are becoming increasingly better at tracking FS problems to individual production plants. With this technology, we can provide producers with incentives to prevent FS problems from occurring in the first place, taking advantage of their comparative advantages. This represents a tremendous improvement over reliance on regulation and inspection and suggests that more progress can be made by improving these traceback systems.

## Current realities

The food industry is growing both in the number of firms (more than one million manufacturing and retail) and in the wide variety of technologies used to produce foods. These two developments make it extremely difficult for government agencies to: (i) have sufficient knowledge of the wide variety and continually changing mix of foods, packaging and processes in individual plants to produce effective regulations and (ii) access sufficient resources to inspect firms often enough to ensure compliance. Because of this growth in complexity in food manufacturing, the Food and Drug Administration (FDA) in particular finds it increasingly difficult to have the necessary knowledge to meaningfully regulate food processing and packaging. On average, the FDA inspects firms about once every five years and samples only about 1% to 2% of all imported food products. In addition, the FDA often must react to political realities; rather than focus on protecting consumers, many regulations are formulated at the behest of one part of the industry to put another part of the industry at a competitive disadvantage.

With the advent of better traceback mechanisms and DNA fingerprinting that links pathogens from infected production plants to pathogens in food, the food industry has become more proactive in preventing FS problems as they are becoming more accountable for disease outbreaks. In the past, when companies were the source of a foodborne disease outbreak, they faced only a slight chance of being identified as the origin of that outbreak. Now, the probability of being identified as responsible for a disease outbreak is greater than 50%. In addition, the growth of the Internet has ensured that essentially every outbreak is publicly reported nationally (many by private information suppliers). These developments have caused private FS contracts to surface at every level, usually with the resultant increase in inspections. Final product manufacturers inspect ingredient suppliers, and, in turn, are inspected by supermarkets. All kinds of food manufacturers are inspected by insurance agents. In some cases, firms report weekly inspections. This has nothing to do with regulation, but rather with firms acting to prevent lawsuits, loss of sales, and recall costs.

**Social and/or economic opportunities and challenges**

Rather than being governed primarily by regulation, food manufacturers are increasingly governed by millions of contracts that are negotiated between food manufacturers and those they sell to (or insure them), both domestically and internationally. These contracts cover specific conditions of food production and distribution and are written specifically for the type of product and package produced. When new information (e.g., root causes of outbreaks) is made available to the market, these private contracts change much more quickly and accurately than government regulations. Private inspections take place on a more frequent basis than even a combination of federal and state regulators could achieve with a realistic amount of public resources. In addition, thousands of new private FS firms are now providing food manufacturers with both expert advice and third-party inspections. This new system will not eliminate all foodborne disease — pathogens are ubiquitous; new foods, equipment, and technologies are evolving — but constant and continuous monitoring can reduce illness.

The next major improvements in FS are likely to come from new technologies or the broader acceptance of older technologies. Of the older technologies, irradiation has been proven safe but still faces an uphill battle for consumer acceptance given the public's poor understanding of the science behind it. Newer technologies, such as nanotechnology and the genetic modification of foods, hold promise for improvement, but are also subject to misunderstanding about the actual associated risks. Progress in these areas is hindered when people continue to treat new technologies as different simply because they are new, and thus think that they require precautions far greater than those given to existing technologies.

The biggest problem, however, is the misconception that the federal government is the sole source of assurance of safe food. Within the last few years, Congress has passed legislation much like the system of regulation and inspection developed for FS at the turn of the 20th century. Instead of developing and complementing systems that hold firms accountable for problems *ex post* (i.e., after the fact), government remains fixated with a more *ex ante* (i.e., before an event) approach: "command and control." These systems are "comfortable" for incumbent industries that routinely lobby for more regulation and larger budgets for the agencies. As a result, new regulations pile on top of old ones. The government has no ability to enforce them, yet regulations give consumers the illusion of control. The system is also increasingly reflected in the international arena where the same problems (lack of knowledge and inspectional capacity) persist. While there have been encouraging movements toward risk-based systems, these systems are being used to support more federal regulations rather than feeding information to the private sector to make the private contracts discussed above more effective.

The primary challenge is to rethink the role of the FDA, an organization that is more than 100 years old and has never had to rethink its basic mission.

**Policy issues**

- Federal resources (both U.S. and other national governments) should be reallocated for developing better traceback technologies, including the development and use of such technologies as radio frequency identification tags (RFIDs) and bar codes that travel throughout the production process. Governments should focus fewer resources on plant-by-plant inspections, but more on enlarging government DNA fingerprinting libraries, both domestically and internationally, as well as developing better fingerprinting tools such as pulsed field gel electrophoresis (PFGE). These libraries should be open to the public.

- In general, FS agencies should end most command and control regulations unless there is strong evidence of effective solutions that pass a strict benefit-cost test. Instead, the FS

agencies should work to understand the private sector system of contracts and inspection and identify any holes in the system. In addition, more resources should be devoted to the production and public distribution of information on FS, such as the identification of root causes of outbreaks. This should include the location in the system of the problems among producers, retailers, and consumers, and producing risk assessments and benefit-cost analyses assessing problems and potential solutions for FS problems. The latter part of this recommendation supports the Actionable Next Step on information sharing that has emerged from prior ISGP conferences. However, it should be expanded to include the private sector.

- The federal government should ensure that all new FS technologies are evaluated in a risk/benefit framework. High priority (i.e., speedy development) should be given to those technologies that hold the most promise for enhancing FS. Faster federal government approval processes for new technologies should be developed using risk/benefit methodologies. New technologies should be treated on the same risk basis as existing technologies. Overcoming the obstacles to risk/benefit approval of new technologies will require the focused use of risk communication techniques that have developed over the last several decades.

- The primary obstacle to a new focus on market accountability is federal policy makers' lack of knowledge of the current actual system that governs FS. In addition, strong opposition is likely to come from incumbent industry members who benefit from the system as well as from those who prefer government command and control for political reasons. Overcoming these obstacles will require research into the private system of contracts and inspections as they are developing. It will also require education in the academic community and for policy makers by both government and academic researchers. This implies that greater government oversight and more standards — as stated in the Actionable Next Steps on food safety and security — are not likely to be productive.

**References**

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