

Recent Reports Related to Food Safety Issued by The National Academies

Addressing Foodborne Threats to Health

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In December 2004, at a press conference called to announce his departure as Secretary of the Department of Health and Human Services (HHS), Tommy Thompson raised both concern and controversy when he remarked that he could not understand why the terrorists had not yet attacked our food supply “because it is so easy to do” (Branigin et al., 2004). Although to date the United States has been spared such a disaster, the many documented examples of unintentional outbreaks of foodborne disease—some of which have sickened hundreds of thousands of people, and killed hundreds—provide a grim basis for estimating the impact of deliberate food adulteration (Sobel, 2005). Due to the wide variety of potential chemical and biological agents that could be introduced at many vulnerable points along the food supply continuum, contaminating food is considered an especially simple, yet effective, means to threaten large populations.

Biological Threats and Terrorism

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In the wake of September 11 and recent anthrax events, our nation’s bioterrorism response capability has become an imminent priority for policymakers, researchers, public health officials, academia, and the private sector. Experts from each of these communities and the Forum on Emerging Infections convened for a three-day workshop discussion—the subject of this summary—to identify, clarify, and prioritize the next steps that need to be taken in order to prepare and strengthen bioterrorism response capabilities.

Microbial Threats to Health

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Microbes live in every conceivable ecological niche on the planet and have inhabited the earth for many hundreds of millions of years. Indeed, microbes may be the most abundant life form by mass, and they are highly adaptable to external forces. The vast majority of microbes are essential to human, animal, and plant life. Occasionally, however, a microbe is identified as a pathogen because it causes an acute infectious disease or triggers a pathway to chronic diseases, including some cancers. Certainly, humankind remains ignorant of the full scope of diseases caused by microbial threats, as only a small portion of all microbes have been identified by currently available technologies.

Ensuring Safe Food: From Production to Consumption

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Adequate, nutritious, safe food is essential to human survival, but food can also cause or convey risks to health and even life itself. Although estimates vary widely, there is agreement that foodborne illness is a serious problem. In the United States, as many as 81 million illnesses (Archer and Kvenberg, 1985) and up to 9,000 deaths (CAST, 1994) per year have been attributed to food-related hazards. Estimates of the annual cost of medical treatment and lost productivity vary widely, from \$6.6 billion to \$37.1 billion from seven major foodborne pathogens (Buzby and Roberts, 1997).

Scientific Criteria to Ensure Safe Food

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The balance of progress in the reduction of certain human foodborne illnesses following implementation of the Hazard Analysis and Critical Control Point (HACCP) system in various areas of the food industry is decidedly favorable. The technical, financial, and educational efforts made by industry to implement HACCP and by the regulatory agencies to audit such implementation are commendable, but further improvements are warranted. The committee believes that the emphasis of food safety regulatory agencies must continue to be on prevention, reduction, or elimination of foodborne hazards along the food continuum.

Managing Food Safety Practices: From Farm to Table

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U.S. policy makers are addressing the issue of food safety in a very serious way and unlike ever before in the history of this Nation. The science of food safety has advanced tremendously over these past 10-15 years. Several new coalitions have formed with the goal of educating Congress about food safety, and the 110th Congress is considering several food safety-related bills. As recent events attest, from melamine-tainted milk products from China to *E. coli* O157:H7-contaminated spinach from California, new and unforeseen food safety risks are continuing to emerge, impacting countries and consumers worldwide. Given recent recognition of the serious nature of the issue of food safety at the national level, not just in Congress but also in the U.S. Food and Drug Administration (FDA) and U.S. Department of Agriculture (USDA), both federal agencies charged with ensuring the safety of the food supply, and elsewhere, stakeholders are asking: What can the U.S. government do to facilitate efforts to improve food safety, either through policy or perhaps even legal mandate? In response to concerns among food producers, regulators, consumers, and other stakeholders, the Institute of Medicine's (IOM's) Food Forum met in Washington, DC, on September 9, 2008, to address this question. Specifically, the meeting explored ways to manage food safety practices from the supply chain to the marketplace; including ways to develop systematic, risk-based strategies for prevention of microbial contamination in foods, particularly produce, thermally processed foods, and meats. The workshop also served as a forum for experts on various disciplines to discuss approaches, technologies, and institutional strategies to manage food safety risks in a global market.

Foodborne Disease and Public Health: Summary of an Iranian-American Workshop

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This summary describes a U.S.–Iranian workshop called “Foodborne Disease and Public Health: An Iranian–U.S. Workshop,” which was held in Washington, DC, on November 13–15, 2007. As described in the Preface and in Chapter 1, the workshop was one in a series of cooperative efforts between the United States and Iran. The project of which this workshop was a part was sponsored by the U.S. Department of State with assistance from the Academy for Educational Development.