

IRAC Work Group

Food Access, Nutrition, and Risk of Foodborne Illness

Background

Foodborne illness remains a major public health problem in the United States despite great strides in recent years. Continued improvement in the safety of domestic and imported foods will center on securing supply chains, and identifying and controlling points of contamination and proliferation by pathogens. Policy and regulatory approaches may also benefit from evaluating risk factors for food-borne infections among human sub-populations, particularly as sub-populations have changed during the post-1997 era of coordinated multi-agency food safety programs. Among the reported risk factors for susceptibility to food-borne infection are poverty, under-education, poor sanitation and hygiene, animal contact, climate-driven water contamination and malnutrition. Malnutrition itself can be divided into inadequate sustained access to a variety of healthy foods, balanced nutrition, and adequate micronutrients. Linked to poor nutrition are cardio-vascular, hormonal, metabolic, immunological, behavioral, and environmental compromises that may alter the risk of foodborne illness. These parameters join major demographic and socio-economic changes to paint a picture of the health of the American public that may be significantly different from that pertaining in 1997. A body of literature has documented the changing nature of the U.S. public, but the significance of these changes to risks of food-borne infection, disease, and sequelae have been limited to relatively few specifically vulnerable groups, and have not been broadly reviewed.

The IRAC, by its collaborative nature as a multidisciplinary group of federal scientists and economists, is a uniquely placed ideas body to explore the interrelated factors of socio-economics, public health, nutrition, co-morbidities, and increased risk of foodborne illness.

Proposal

Form a workgroup of interested IRAC members to:

1. Identify and share existing agency data and information that could inform potential interrelationships between food access and nutrition, nutrition and foodborne illness.
 2. Review scientific literature and evaluate existing federal data to further elucidate the potential interconnection between food access, nutritional status, and susceptibility to foodborne illness.
- [Note: A survey of the literature on nutritional status and reported foodborne illness will provide an overview of our current understanding. Data gaps and research needs will be identified from the survey. The relationship between physiological state, nutrition, and susceptibility to foodborne illness will be explored by reviewing relevant scientific literature.]

Expected Outcomes (Deliverables)

1. A white paper that describes: 1) changing features of the U.S. population as they relate to age-adjusted susceptibility to risks of food-borne infection, disease, and sequelae; and 2) the relationship between nutritional status and reported foodborne illness. This paper will explore the changing demographics of the U.S. population and its relevance for identifying especially susceptible sub-populations, the social and economic indicators as well as age, race, gender, ethnicity and geographic factors associated with increased rates of foodborne illness, and the interrelationship between nutritional status, poverty, access to food and foodborne illness. The mechanisms of foodborne infection will be identified and new research concerning these

mechanisms will be updated. The relative importance of various mechanisms will be compared for several notable foodborne illnesses.

2. A proposal for a symposium or workshop to present and discuss findings, possibly for the Society for Risk Analysis (Denver, December 2014).

Time Frame for Completion

White Paper: September 2014

Symposia: December 2014

Participating Agencies

USDA	Food Safety and Inspection Service	Janell Kause*, Chuanfa Guo
DHHS	National Institute of Health/National Institute Of Allergy and Infectious Diseases	Robert Hall*
USDA	Office of Risk Assessment and Cost-Benefit Analysis	Linda Abbott*
USDA	Economic Research Service	Sandra Hoffman
USDA	Office of the Secretary	Isabel Walls
USDA	Food and Nutrition Service	Brenda Halbrook, Margaret Venuto
USDA	Agricultural Research Service	Alanna Moshfegh

*Co-Chairs of Work Group