

IRAC FY2021 Annual Report
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Introduction

The Interagency Risk Assessment Consortium (IRAC) is a collaborative network of federal agencies with responsibilities and interests in the conduct and use of food safety risk assessments. It was established in response to Presidential Executive Order 13100, in 1998, to enhance cross-agency coordination of food-safety risk assessment activities and to provide support for the then emerging field of quantitative microbiological risk assessment and application in guiding federal food-safety policies. In 2011, in response to a recommendation from the President's Food Safety Working Group, the IRAC was re-chartered¹ to further enhance coordination and information-sharing among federal agencies.

The Consortium aims to improve risk assessment research, enhance the development and use of risk assessment tools, and serve as a forum for communication about risk assessment and related research issues. IRAC accomplishes many of its goals through the work of its Policy Council and Technical Committee, both of which include representatives from 23 Federal agencies and offices that constitute the consortium's current membership.

Over the past two decades, IRAC has explored a range of issues related to the conduct and use of federal food safety (microbial and chemical) risk assessments. Research topics addressed by IRAC include data quality, peer review, food safety and nutrition, susceptible sub-populations, nanotechnology, microbiomes, genomics, dietary exposure and more recently, rigor and reproducibility in risk assessment. IRAC also has continued to explore evolving approaches to assessing food safety risks and application of risk assessment in decision-making. In addition, IRAC member agencies make their risk assessment tools more easily available on the Consortium's host website: Foodrisk.org

¹ 2011 IRAC Charter available at: <http://foodrisk.org/irac/charter>

IRAC Signatory Agencies:

- **Department of Agriculture (USDA)**
 - ❖ Agricultural Marketing Service (AMS)
 - ❖ Agricultural Research Service (ARS)
 - ❖ Animal and Plant Health Inspection Service (APHIS)
 - ❖ Economic Research Service (ERS)
 - ❖ Food and Nutrition Service (FNS)
 - ❖ Food Safety and Inspection Service (FSIS)
 - ❖ National Agricultural Statistics Service (NASS)
 - ❖ National Institute of Food and Agriculture (NIFA)
 - ❖ Office of the Chief Scientist (OCS)
 - ❖ Office of Pest Management Policy (OPP)
 - ❖ Office of Risk Assessment and Cost Benefit Analysis (ORACBA)
- **Department of Commerce (DOC)**
 - ❖ National Oceanic and Atmospheric Administration (NOAA)
- **Department of Defense (DOD)**
 - ❖ Defense Health Agency (DHA)
- **Department of Energy (DOE)**
 - ❖ Los Alamos National Laboratory (LANL)
- **Department of Health and Human Services (DHHS)**
 - ❖ Centers for Disease Control and Prevention (CDC)
 - National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
 - National Institute for Occupational Safety and Health (NIOSH)
 - ❖ Food and Drug Administration (FDA)
 - Center for Biologics Evaluation and Research (CBER)
 - Center for Food Safety and Applied Nutrition (CFSAN)
 - Center for Veterinary Medicine (CVM)
 - National Center for Toxicological Research (NCTR)
 - ❖ National Institutes of Health (NIH)
 - National Institute of Allergy and Infectious Diseases (NIAID)
- **Environmental Protection Agency (EPA)**
 - ❖ Office of Pesticide Programs (OPP)
 - ❖ Office of Water (OW)
- **National Oceanic & Atmospheric Administration (NOAA)**
 - ❖ National Marine Fisheries Service (NMFS)
- **U.S. Agency for International Development (USAID)**

IRAC FY2021 Objectives

IRAC successfully advanced the three overarching objectives identified in the FY21 Annual Plan:

- *Enhanced Governance and Operation of the IRAC*
- *Strengthen Outreach and Engagement of New and Existing Federal Agencies*
- *Facilitate Information Exchange and Sharing Tools, Data, and Models*

Selected achievements toward these objectives are detailed below.

Enhanced Governance and Operation of the IRAC. In FY 2021, the IRAC Policy Council held 2 meetings (December 2020 and June 2021) to discuss accomplishments and establish an annual plan for the following year. The IRAC created and broadly shared the FY20 end of the year report and an annual plan for FY21 by posting it on the IRAC website and sharing it with signatory Agencies. The IRAC also established a workgroup to explore ways to enhance IRAC member engagement.

Strengthen Outreach and Engagement of Federal Partners. In FY21, to facilitate outreach and engagement with federal partners, IRAC held four Technical Committee meetings (December 2020 and March, June, and August 2021). At the Technical Committee meetings, presentations were given by member agency representatives as outlined below (under quarterly meetings). The meeting minutes, updates, and presentations were posted on the IRAC website. IRAC also completed updates to the website to reflect a focus on risk information & tool sharing. During FY21, the IRAC developed a workgroup to explore ways to enhance IRAC member engagement, identify IRAC member agency needs, and recruit new agencies. In FY21, IRAC also reached out to USDA's Foreign Agricultural Service (FAS) to discuss IRAC activities and gauge FAS interest in becoming an IRAC member agency.

Facilitate Interagency Coordination and Information-Sharing. To continue enhanced interagency coordination and information sharing, IRAC exchanged information through quarterly meetings, agency presentations, and an interagency information sharing session on per- and polyfluoroalkyl substances (PFAS). In FY 21, a quantitative risk metric tool from USDA-FSIS was peer reviewed through IRAC using the interagency review process. This tool can be used to assess the comparative safety of products produced in countries wanting to export to the U.S. The tool was reviewed by 10 technical reviewers from multiple IRAC member agencies. In FY 21, IRAC also addressed the goal to share data sets, models, and related tools developed by federal agencies by posting the following information to the IRAC website:

- **Infant Cereal Risk-Risk Analysis (Risk Assessment and Model).** A framework to provide decision-makers with a multi-faceted evaluation of the impact of dietary shifts on risk of illness. The case study explored exposure to inorganic arsenic (iAs) and aflatoxins through consumption of infant cereals and the risk of developing lung, bladder and liver cancer over a lifetime. An accompanying tool is also provided to facilitate model use in the analysis. <https://fda-riskmodels.foodrisk.org/DRDADemoApp/>
- **US-Canada Norovirus (NoV) in Shellfish Analysis (Risk Assessment and Model).** In an effort to better assess the elements that contribute to potential risk of NoV infection and illness from consumption of bivalve molluscan shellfish, the US Department of

Health and Human Services/Food and Drug Administration (FDA), Health Canada (HC), the Canadian Food Inspection Agency (CFIA), and Environment and Climate Change Canada (ECCC) collaborated to conduct a quantitative risk assessment for NoV in bivalve molluscan shellfish, notably oysters. This study describes the model and scenarios developed and results obtained to assess the risk of NoV infection and illness from consumption of raw oysters harvested from a quasi-steady-state situation. An accompanying tool is also provided to facilitate model use in the analysis. <https://fda-riskmodels.foodrisk.org/NSRA/>

- **Reports by USAID Feed the Future Safety Innovation Lab (FSIL) on Food Safety:**
 - Report on Food Safety Investments in East Africa. Report published in September 2021 by the FSIL's project on Situational Analysis of Food Safety Control Systems in East Africa. This landscape review of food safety programs and projects in East Africa highlights investment needs for reducing the burden of foodborne disease across the region. <https://ag.purdue.edu/food-safety-innovation-lab/projects/resources/report-on-food-safety-investments-in-east-africa/>.
 - Report on the Food Safety System in Bangladesh: Current Status of Food Safety, Scientific Capability, and Industry Preparedness. This report was published in March 2021 as part of the FSIL's project on Assessing Food Safety Risks, Scientific Capability, and Food Industry Preparedness in Bangladesh. This landscape assessment analyzed the current status of food safety in Bangladesh and identified key gaps, challenges, and possible interventions. <https://ag.purdue.edu/food-safety-innovation-lab/projects/resources/food-safety-system-in-bangladesh-current-status-of-food-safety-scientific-capability-and-industry-preparedness/>.
 - Report on Food Safety in Cambodia: Current Programs and Opportunities. Report published in October 2020 by the FSIL's project on Bacterial Contamination in Fresh Vegetables: Focusing Interventions in Cambodia. This landscape review of food safety efforts in Cambodia describes the current status of food safety governance, surveillance, research, partnerships, and opportunities. <https://ag.purdue.edu/food-safety-innovation-lab/projects/resources/food-safety-in-cambodia-current-programs-and-opportunities/>.
 - Report on Food Safety Programs and Academic Evidence in Senegal. Report published in October 2020 as part of the FSIL's project on Identifying Cost-Effective Interventions to Reduce *E. coli* and Other Contamination in Senegalese Groundnut Production and Consumption. It provides an overview of ongoing projects to increase food safety in Senegal and reviews the existing academic research on improving the safety of rice, maize, millet, groundnuts, and fish produced and consumed in Senegal. <https://ag.purdue.edu/food-safety-innovation-lab/projects/resources/food-safety-programs-and-academic-evidence-in-senegal/>.

Quarterly Meetings

The IRAC Technical Committee met on December 3, 2020 and March 10, June 10, and August 11, 2021. Members gave agency updates, and invited guests gave presentations (described below).

The Policy Council met during a separate meeting on December 3, 2020 to discuss FY20 accomplishments, plans for FY 21, and potential workgroup proposals. The Policy Council met again on June 10, 2021 to evaluate mid-year accomplishments.

Presentations at FY21 IRAC Technical Committee Meetings

- Development and Evaluation of Salmonella Virulence and Plasmid Databases for Whole Genome Sequence Analyses. Steven Foley, FDA NCTR. August 11, 2021.
- Overview of JIFSAN and FoodRisk.org. Clare Narrod, University of Maryland (UMD)-Joint Institute for Food Safety and Applied Nutrition (JIFSAN). August 11, 2021.
- Developing a New Risk Metric to Support FSIS's Individual Sanitary Measure Equivalence Determinations. Janell R. Kause and Wayne D. Schlosser, USDA-FSIS. June 10, 2021.
- Data Collection and Modeling Methods for Application of Risk Assessment at the Processing Plant to Reduce Foodborne illness. Thomas Oscar, USDA-ARS. March 10, 2021.
- Risk-Ranking Model for Food Tracing: Overview and Demo: Speakers: Yuhuan Chen and Sofia Santillana Farakos, FDA-CFSAN. December 3, 2021.

Work Group Projects

IRAC workgroups are a means for IRAC member agencies to collaborate and share technical expertise regarding specific topics or issues. Members collaborate on scientific issues, review and synthesize data and information, and convene workshops featuring experts. Workgroup products can be used by member agencies to inform or make improvements in food safety risk analysis – from enhancing innovation in modeling to improving rigor to garnering enhanced review or input to filling key data gaps. Workgroup products are posted on the IRAC website on its “Events” page (<http://foodrisk.org/irac/quarterly-meeting-minutes/>), and often published as papers in scientific journals and/or presented at national scientific conferences to benefit the larger risk assessment community. During FY21, the IRAC developed a workgroup to explore ways to enhance IRAC member engagement, identify IRAC member agency needs, and recruit new agencies. The workgroup met several times and are still in the data gathering phase. The workgroup will continue efforts through FY22.