

References

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Conference on Foodborne Pathogens: Implications and Control

More than 400 food protection and public health professionals from 18 countries, including microbiologists, epidemiologists, physicians, and health policy makers in industry, academia, and government, attended the Conference on Foodborne Pathogens: Implications and Control. The conference participants examined the response of the food industry and its related public health/food safety regulatory agencies to the emergence of new microbiologic threats and to the reemergence of known pathogens in previously unimplicated foods. The 3-day conference was held in Alexandria, Virginia, USA, March 24-26, 1997. It was organized by the International Life Sciences Institute North American (ILSI N.A.), the Centers for Disease Control and Prevention, the U.S. Department of Agriculture, and the U.S. Food and Drug Administration, in cooperation with the Food and Agriculture Organization and the Pan American Health Organization.

The specific goals of the conference were to identify factors that foster the emergence/reemergence and dissemination of foodborne microbial hazards, explore scientific and food safety strategies to identify and address these hazards, determine future research needs, and review the lessons learned and knowledge gained concerning the emergence and dissemination of food-related microbial threats to health.

The rapid emergence and dissemination of microbial foodborne pathogens and human diseases is affected by factors related to the pathogens themselves, their hosts, and the food production and consumption environment. The conference explored the role of the rapid mutation of foodborne pathogens such as *Escherichia* and *Salmonella*; the increasing numbers of susceptible persons; the effect of current livestock production practices, produce handling and food processing practices, and aquaculture; and changes in consumer lifestyles and food preferences.

Identifying and anticipating new foodborne microbial hazards require concerted efforts. The changing epidemiology of foodborne disease calls for improved surveillance including rapid subtyping methods, cluster identification, and collaborative epidemiologic investigation (including case-control studies). Also examined was the

need for better integrated, coordinated, and standardized animal disease surveillance and health monitoring programs. Several speakers stressed the importance of risk assessment (a component of overall risk analysis that combines science and policy) as a decision support tool and the need to effectively communicate risk to consumers. Because microbes do not respect national borders, they need to be addressed at a global level through strengthened infrastructure and standardized trade that will ensure the health of consumers.

The new problems of foodborne disease require new control and prevention strategies (as well as further research) to ensure that food in both domestic and international trade is safe. The development of the Hazard Analysis Critical Control Point (HACCP) process was presented as a first step toward an analytic process for identifying hazards and their points of control. Other research needs in the area of foodborne pathogen control were also examined. Topics included a need for multidisciplinary teams that can provide "just in time" research; for basic research to explain factors associated with food production and processing that contribute to new foodborne microbial threats; for prompt evaluation and implementation of innovative preservation methods (e.g., food irradiation) to meet consumer demand for fresh foods; for a centralized system accessible electronically, with information on pathogenic organisms in a standardized format; for the use of emerging molecular methods (e.g., DNA hybridization and polymerase chain reaction) to examine emerging viral and parasitic foodborne disease organisms; and for models to predict the probability of a particular microbial event (e.g., growth and death), which may be useful in the design of HACCP programs and in defining processes, formulations, and storage conditions to yield foods with acceptable shelf life and safety characteristics.

Lessons learned from outbreaks in the last 15 years contribute to developing strategies for the mobilization of resources to respond rapidly to emerging foodborne microbial hazards. Retrospective analyses of data from cases of *E. coli* O157 infections identified risk factors, variations in treatment, and estimates of the incidence of hemolytic uremic syndrome. Unusual foods have been associated with outbreaks of *Clostridium botulinum*, including potatoes baked in

aluminum foil, bean dip, cheese sauce, and mascarpone cheese; nontoxigenic clostridia could emerge as a new pathogen with the transfer of botulism toxin genes. The multistate outbreak of *Salmonella* serotype *enteritidis* underscored the value of molecular subtyping and public health action based on epidemiologic data in identifying outbreak cases when dispersed in a larger group of unrelated infections. Finally, epidemiologic data were presented from a multistate outbreak of *Cyclospora* infection associated with consumption of raspberries from Guatemala. These examples emphasized that the future of foodborne disease epidemiology will involve new technology and greater coordination among local, state, and federal public health and regulatory agencies.

Papers from this conference will be published in the Emerging Infectious Diseases journal.

International Conference on Emerging Infectious Diseases in the Pacific Rim, Bangkok, Thailand

Approximately 200 participants gathered in Bangkok, Thailand, March 6-8, 1997, to discuss issues related to emerging infectious diseases in the Pacific Rim. The meeting was organized under the auspices of the U.S.-Japan Cooperative Medical Science Program. Scientists from the United States, Japan, the host country, and 15 other nations of the region, as well as from the World Health Organization (WHO) attended. The meeting focused on research topics relevant to emerging diseases and discussed surveillance and disease prevention. Formal presentations focused on themes of special interest to the region: enterohemorrhagic *Escherichia coli* (EHEC), dengue and dengue hemorrhagic fever (DHF), and the growing problem of antimicrobial resistance. Summaries of the WHO global and regional plans to address emerging infectious diseases were presented along with summaries from participating countries of their national plans and problems relevant to these diseases.

The session on EHEC included presentations on the status of this important pathogen in the United States, Japan, Australia, and Thailand, as well as a summary of recent efforts to develop better strategies to detect, treat, and prevent EHEC illness. Presentations on dengue included