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

a discussion of atypical infections and brief mention of new results regarding the stability of dried whole blood samples for serologic examination and the use of insecticide-impregnated screens to control vector mosquitoes; the prospective clinical study of DHF under way in Bangkok, carried out as a multicenter collaborative study involving Thai, United States, and Japanese scientists, was described. Presentations on nosocomial and community-acquired resistant infections, acute respiratory infections, and tuberculosis underlined the growing problem of antimicrobial resistance.

Several themes emerged from country reports: the growing importance of dengue fever/DHF and Japanese encephalitis in many countries of the region; increasing problems with diarrheal diseases and other food or waterborne diseases, including cholera; antimicrobial resistance and the need for assistance in laboratory culturing and sensitivity testing; the need for regional surveillance to better define the current patterns of antimicrobial resistance and for the establishment of regional quality control and proficiency testing as one aspect of the regional response; frustration with existing surveillance systems and need for assistance in developing improved surveillance tools and easier information sharing; the need for improved laboratory support, especially the regional availability of high quality diagnostic reagents and development of regional reference facilities; and the desire for a regional approach to addressing emerging infectious diseases.

The meeting concluded with recognition of the need for both greater research in the areas of the epidemiology, diagnosis, treatment, and prevention of EHEC and other Shiga-toxin producing organisms; further studies on DHF, including pathogenesis, clinical intervention, viral genetic variability, and genomic analysis; vaccine development; and improved vector control and fundamental strengthening of public health practices to address emerging infectious diseases including improved laboratory capacity, better surveillance programs, easier and more open communications and information sharing, and assistance in outbreak responses. Participants highlighted the need for greater training opportunities for scientists of the region and for development of regional reference facilities and centers of excellence. The meeting did not cover human immunodeficiency virus and AIDS, although there was clear recognition of its importance within the region.

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International Conference on Emerging Zoonotic Infectious Diseases, Taipei, Taiwan

The International Conference on Emerging Zoonotic Infectious Diseases, cosponsored by the Taiwan Departments of Health and Defense and the Centers for Disease Control and Prevention, was held March 1-4, 1997 in Taipei, Taiwan. The conference brought together scientists from Australia, France, the United States, and Taiwan and highlighted local work on dengue, Japanese encephalitis, plague, and rodentborne hantaviral infections.

The opening session outlined current efforts in the United States and internationally to improve and coordinate surveillance, laboratory diagnosis, and research of emerging infectious diseases. An example of a disease (yellow fever) whose threat has not been realized was described and reassessed in the context of globalization and other factors favoring and mitigating against the virus' dissemination. Although the possibility of epidemic yellow fever in Asia is small, it is important to reduce the disease at its sources in Africa and South America to further minimize this possibility. Ongoing efforts to elucidate the pathogenesis of dengue hemorrhagic fever, a growing problem in Taiwan and a leading cause of childhood illness and death in Asia and the tropics were summarized. Recent studies in Thai children have defined early clinical immunologic markers that differentiate febrile patients who contract dengue hemorrhagic fever from those with self-limited dengue fever; these findings suggest potential approaches to early recognition and specific intervention.

A session on viral hemorrhagic fevers reviewed recent Ebola virus outbreaks and the