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Conference Summary

International Conference on Emerging Infectious Diseases, 2010

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The seventh International Conference on Emerging Infectious Diseases (ICEID) was held in Atlanta, Georgia, USA, July 11–14, 2010. The conference goal was to bring together public health professionals to encourage exchange of scientific and public health information on global emerging infectious disease issues. The conference was organized by the Centers for Disease Control and Prevention (CDC), American Society for Microbiology, the Council of State and Territorial Epidemiologists, the Association of Public Health Laboratories, and the World Health Organization; additional support was provided by 40 other multidisciplinary public health partners.

The conference schedule was built around 20 plenary speakers, 31 panel sessions, 110 scientific oral presentations, and 445 posters from 6 continents. Topics included relevant infectious diseases issues from the past 2 years and updates on a variety of new findings and approaches, including social determinants of health, lessons learned from the recent pandemic (H1N1) 2009, zoonotic diseases, viral hepatitis, prevention challenges of respiratory diseases, travelers' health, new developments in vaccines, and vaccine-preventable diseases. Rima Khabbaz, Deputy Director for Infectious Diseases at CDC, and Center directors Kevin Fenton, Thomas Hearn, and Anne Schuchat conducted tours of outstanding posters that addressed emergence, prevention, and control of infectious diseases in the international and domestic arenas.

At the opening session, CDC Director, Thomas R. Frieden, spoke about the effect of different types of public health interventions in a health impact pyramid. The efforts that appear to have the maximum impact are those that address socioeconomic determinants of health, such as education and poverty. Much discussion was engendered by Frieden's observation that interventions focusing on lower levels of the pyramid tend to be more effective because they reach broader segments of society and require less individual effort, a concept covered in recently published articles (1).

Anthony Fauci, Director of the National Institute for Allergy and Infectious Diseases, spoke about the ongoing challenges of emerging infectious diseases, taking the audience on a chronological journey of emerging and reemerging infectious disease issues in a chronological journey covering a range of circumstances (2). Fauci brought participants across >2 millennia of infectious disease outbreaks, from the plague of Athens in 430 bce through pandemic (H1N1) 2009 and the brewing multidrug-resistant and extensively drug-resistant tuberculosis epidemic. He emphasized rapid global changes that affect humans, animals, and the environment, resulting in opportunities for infectious diseases to pose new threats, and the need for ongoing public health research and adequate preparedness to facilitate responses to these threats as they emerge.

Keiji Fukuda, Special Advisor to the Director-General on Pandemic Influenza, World Health Organization, addressed the lessons learned from pandemic (H1N1) 2009. Fukuda spoke about the need for preparedness activities to include groups beyond the health sector, such as transportation and private sector organizations, and the need for recognizing that the issues with which we must grapple in addressing infection control are better thought of as social issues and not just disease. One glaring issue in the pandemic (H1N1) 2009 experience is that despite political will and strong private-sector support, efforts have been inadequate for rapidly moving pandemic vaccine to low- and middle-income countries. One issue is the need to be able to manufacture adequate supplies of vaccine rapidly, but other equally important issues are inadequate procedures and preparations and, in some instances, capacities, to rapidly facilitate access to available vaccines. Early in the pandemic, 99 countries had asked for ample vaccine supplies, but as of the time of the ICEID Conference, only 61 countries had received them.

Fukuda emphasized that the revised International Health Regulations, adopted by the World Health Assembly after the 2004 reemergence of the avian influenza (H5N1) virus, were designed to enhance rapid and effective global detection and responses to urgent health issues while taking other global concerns such as minimizing disruption to travel, trade, and business into account. The new International Health Regulations frame a more active approach of quickly identifying and containing diseases rather than just trying to keep them from crossing borders. His personal experience in orchestrating aspects of the pandemic (H1N1) 2009 response had led him to observe that public health officials need to adjust their communication strategies because social networking sites and other grass-roots information forms, such as blogging, are realities; information no longer comes only top-down from experts through filters provided by major professional news media. Although these new media forums have the capacity to shape global perceptions and can be innovative, they also have the potential for dissemination of misinformation and confusion. Adjusting to these changes will be critical for effective public health.

Plenary sessions that followed examined a broad range of topics, including new areas for research and programmatic efforts, prevention strategies, opportunities, and barriers. The full agenda and list of speakers can be found at the conference website (www.iceid.org).

The One Health concept as a worldwide strategy has garnered much attention in recent years, encouraging the expansion of interdisciplinary collaborations and communications in all aspects of healthcare for humans and animals (3). The need for a One Health approach to emerging infectious diseases was highlighted by plenary topics emphasizing zoonotic aspects of influenza, vector-borne diseases, novel surveillance for animal and human diseases, social determinants of health, and global trade in animals and food.

Dynamic panel discussions of multidisciplinary approaches to zoonotic diseases examined issues such as water sanitation, antimicrobial drug resistance, occupational medicine, climate change, transplant medicine, complex ecologies and interactions of humans and animals, megacities, and pathogen discovery. Panel topics covered new insights on diagnostic developments, economics of disease control, urbanization, wildlife disease control, animal vaccines for food safety, and international collaborations.

Accepted abstracts on foodborne and waterborne infection outbreak response focused on effective public health policy, with an emphasis on wide-ranging problems caused by milk-borne infectious diseases. Other abstracts described new vaccines to control rabies and previously undocumented *Ehrlichia* species. International exchanges occurred through abstract presentations on local variations in virulence of highly pathogenic avian influenza, and occupational risks for anthrax, brucellosis, leptospirosis, and staphylococcal infection among animal caregivers. One Health policy implications were notable in abstracts discussing diseases affecting wildlife, agriculture, disease vectors, interactions between the built and natural environments and human behavior and health, the integration of public health and veterinary medicine, and zoonotic surveillance methods.

Multiple plenary sessions, workshops, and posters presented throughout the conference highlighted the global scope of pandemic (H1N1) 2009 and provided irrefutable evidence of worldwide influenza preparedness in action. Substantial resources have been devoted to improving global laboratory diagnostic and surveillance capacity for influenza since the reemergence of the highly pathogenic avian influenza A (H5N1) virus in 2004. Oral and poster presentations on influenza featured authors from >50 countries and included topics such as surveillance, new diagnostics, disease impact for general and high-risk populations, emergency response, transmission and community mitigation, vaccine distribution and effectiveness, antiviral drug effectiveness and resistance, and zoonotic aspects of influenza. Although results from pandemic (H1N1) 2009 investigations and responses were most commonly discussed, several presentations reminded attendees of the continuing threat of influenza (H5N1) and the substantial impact of seasonal influenza.

Another conference highlight was the recognition ceremony honoring ICEID Leaders. Inaugurated in 2008 with support from the Bill & Melinda Gates Foundation, the ICEID Leaders Program was designed to increase interest and involvement in ICEID among leaders from ministries of health and nongovernmental organizations in resource-limited countries to ICEID, with the aim of enhancing infectious disease prevention globally. The 2010 ICEID Leaders Program, supported by the Department of Defense Armed Forces Health Surveillance Center and CDC, recognized 21 outstanding Leaders from 19 countries in Asia, Africa, the Middle East, Central America, the Caribbean, and Eastern Europe.

We look forward to the 2012 ICEID for further updates on these issues. The conference will again provide research updates and opportunities for public health professionals to interact and address best approaches to detect and control emerging infectious diseases.

References

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