Collaboration in Public Health: A New Global Imperative

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At the new National Center for Zoonotic, Vector-Borne, and Enteric Diseases at the Centers for Disease Control and Prevention (CDC), we are starting to focus on the concept of infectious disease ecology. Our goal is to maximize public health and safety nationally and internationally through the prevention and control of disease, disability, and death caused by zoonotic, vector-borne, foodborne, waterborne, mycotic, and related infections. To accomplish this goal, we need to change our thinking and invite the partnership of groups such as the Association of American Veterinary Medical Colleges and the Association of Schools of Public Health.

We need to understand the new factors of emergence that are creating the conditions for a perfect microbial storm. We know that approximately 75% of new emerging human diseases are zoonotic, and new zoonoses are going to be the "new normal" for infectious diseases. Foodborne and waterborne diseases are part of the new normal and are expected to increase in the future as well. So why is CDC interested in this? Why should all of you—health professionals, academics, and students—be interested? Because most significant global epidemics are zoonotic and require an ecological perspective to understand them and to prepare for the next problem.

Think of the movement of people and products, globalization trends, and moving vectors. One billion people will soon cross international borders every year. Thirty-seven thousand animals cross into the U.S. every day from other countries. Already, 40% of all trade and agriculture occurs between developed and developing countries, and 20% of all U.S. imports are food products. I think it was just two years ago that we started to import more agriculture goods into the U.S. than we exported. It is now a global food supply.

Another major consideration is human population growth. We're pushing people together in urbanization areas where 60% of the world's population, by 2030, may actually be living in sites and mega-cities, creating new environments. Also, what is going to happen to the environment when we add food animals to these mega-cities? We also need to look at climate and weather changes and what to do about them. Climate changes can modify agriculture production, influence the migration of animals, and change ecosystems. For example, we know that leptospirosis, Rift Valley Fever, and hantavirus are three zoonoses that are impacted by the weather pattern of El Nino and Southern Oscillation, especially with flooding conditions and conditions of producing more food for rodents that are the hosts for hanta infections. Zoonotic waterborne illnesses are also on the rise, and we think they will be a critical issue in the next decade.

We live in the global world and there are global implications of local problems

and the need for critical linkages and partnerships. I think we have learned a lesson from the severe acute respiratory syndrome outbreak and how to use a systems approach to undertake our mission. We learned how countries can get together and how scientists, researchers, and public health practitioners can work together.

Our mission is changing from a focus on individual diseases and disciplines to looking at health across the lifetime. Multidisciplinary approaches and a whole new group of core competencies are needed to be successful. The greatest asset for us in the 21st century is collaboration through strategic planning and effective teaming.

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