Unmet need in infectious disease research: social science
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by Francesco Fiondella, BioMedNet News

Despite nearly a decade’s consensus that numerous social factors contribute to the global spread of infectious diseases, the field still suffers from a dearth of important social-science information, according to a researcher speaking at a meeting of the US National Academies of Sciences (NAS) today.

"We need to look at population movements, organization, behaviors, and culture," said Jonathan Mayer, a geographer at the University of Washington. At the NAS Institute of Medicine’s forum on emerging infections, Mayer spoke on how the dynamics of vector-borne diseases are changing with increased globalization. Understanding these dynamics means we must unify vector and human ecology, he said.

In 1992, an IOM workshop in which Mayer participated identified numerous social factors, such as land use, civil unrest, and demographics, as contributing to microbial threats to health. Since then, little has been done to show how these factors influence emerging infectious diseases, he contends.

"Social and behavioral sciences are just starting to pay attention to this suite of issues," agreed Deborah Balk, a researcher at Columbia University’s Center for International Earth Science Information Network whose work focuses on how climate change affects public health in developing countries. (Balk was not present at the meeting.) "Much of the dialogue has been too narrowly focused on how a particular climate anomaly may affect a particular disease vector, without sufficient regard paid to climate variation and intervening factors like migration or land use adaptations," she told BioMedNet News.

Population movement was a recurring theme among many forum participants today. Between the mid-1970s and 1990s, considering migrant workers, refugees, and internally displaced populations, the volume of human movement in the world has increased fourfold, said speaker Martin Cetron of the US Centers for Disease Control and Prevention. Because it now takes less than 36 hours to circumnavigate the globe, Cetron added, the incubation periods of many diseases are now shorter than the time it takes to move from one place to another.

Therefore, he said, "disease is going to emerge in the clinics and communities of the points of destination, not during travel." However, he suggested, it may become necessary to reintroduce "vector spraying" on international flights.

Increasing population movements, coupled with the rapid increase in the urbanization of the developing world, will yield conditions ripe for outbreaks, warned Harvard professor of population and international health Mary Wilson. "These areas are typically poor, warm, and surrounded by large slums and shanty towns that lack infrastructure and resources," Wilson said.

See also:
Immunology, climate change and vector-borne diseases
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Jonathan A. Patz and William K. Reisen
Trends in Immunology, 2001, 22:4:171-172

Climate change and emerging infectious diseases
[Review]
Paul R. Epstein

Emerging infectious diseases: a global problem
[News]
Janet Fricker
Molecular Medicine Today, 2000, 6:9:334-335
Urbanization is also a factor that needs to be considered, she added. Outbreaks in cities of the developing world may be globalized more readily because, unlike their counterparts in the developed world, these cities tend to be linked both to rural areas (from poor people seeking work) and to the larger world community, via international airports, she said.

Migrational activity is much more continuous in developing urban areas, said Balk, and this may lead to people moving around with various disease "burdens." But while there are studies that show migration indeed has an impact on disease, it's much harder to show the more complex picture of how seasonal migration affects the sending and receiving communities, she said.

"People know that migration matters, it's just hard to quantify," she said.

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