

Deadly viruses that cross international borders

Reza Nassiri

Michigan State University, USA

The global medical community is witnessing incredible trends in globalization, increase in population, which provides grounds for emergence and reemergence of viral epidemics throughout the world. These epidemic can potentially overwhelm the healthcare delivery systems for provision of a comprehensive medical care delivery. In the past two decades, we have witnessed some of the deadly viral epidemics of the 21st century such as the Ebola virus epidemic in West Africa, the 2009 flu pandemic, dengue fever and Zika outbreak especially in Brazil. From such outbreaks occurring unpredictably around the world, global health experts acknowledge viruses now have evolved to rapidly cross international borders.

In 2014, an outbreak of Ebola occurred in West Africa, primarily in Liberia, Sierra Leon and Guinea. The virus took the lives of more than 11,000 people in three countries. Recovery from Ebola is dependent on early disease onset, adequate supportive care, and the patient's immune system.

Influenza outbreaks take place during the winter months. The virus has genetically evolved to continuously modify itself by what is known to be antigenic shift and drift.

In the case of antigenic shift, the virus evades immune system. Another medical concern is dengue virus which is an acute febrile illness. It is transmitted by mosquitos of the genus *Aedes*. This virus was discovered in 1943 by two Japanese scientists in Nakasaki. It is an old virus that has reemerged during the latter half of the 20th century. The infection primarily is caused by four serotypes; DEN-1, DEN-2, DEN3, and DEN-4. Another virus that has crossed international boundaries is Zika virus. Most recently, Venezuela is facing a resurgence in dengue, Zika, Chagas disease and malaria due to its ongoing political and humanitarian crises which have already further compromised it's already existing broken down health system and is seriously threatening its public health infrastructure. Although tremendous progress has been made in the past years to improve epidemiological surveillance and rapid detection of viruses that cross international borders, yet capacity-building for rapid detection and optimal care delivery are just examples of few obstacles and challenges that global health faces especially in resource-limited countries. To meet the global challenges in the context of deadly viral infections, interdisciplinary collaborations facilitate synergism with respect to an optimal healthcare delivery system.



Biography

Dr. Nassiri is a former Associate Dean of Global Health at the Michigan State University (MSU). He also served as MSU director of Institute of International Health. He is currently Professor of Pharmacology and Toxicology, Professor of Family and Community Medicine, and, lecturer in Global Health, Infectious Diseases and Tropical Medicine. He currently works on international public health issues relating to chronic diseases and has expertise in global health. He has made contributions in various fields of medical sciences including clinical investigation and health education. On the basis of his extensive experience and expertise in chronic infectious diseases including HIV/AIDS, TB as well as antimicrobial resistance and human gut microbiome, he developed clinical research programs in Brazil, South Africa, Haiti, Dominican Republic and Mexico. He had served as editorial board member for the journal of HIV and AIDS Review. He is currently on editorial board member for AIDS Patient Care and STDs. Prof. Nassiri has delivered seminar presentations on Tropical Medicine, HIV/AIDS, TB, Global Health and public health interventions in numerous national and international conferences

and workshops. He is internationally recognized for his work in the areas of building effective international partnerships particularly in global health, community health, clinical care capacity building, and technical assistance mechanism. He is the founder of Michigan State University Osteopathic and Primary Health Clinic in Merida, Yucatan, Mexico. He has developed academic and research partnership programs with Federal University of Para Institute of Tropical Medicine in Belem, Brazil.

His research interests are Clinical Pharmacology of HIV/AIDS & TB, human gut microbiome, antibiotic resistance, prevention and control of infectious diseases, neglected tropical diseases, community health, global health, socio-ethical determinants of health, and community-based public health interventions. In collaboration with his Brazilian colleagues, he conducts research in the eastern Brazilian Amazon population on incidence and prevalence of HIV, TB, Hepatitis C, HPV, and antimicrobial resistance.

profnassiri@hotmail.com