

## THE DISTINGUISHED PROFESSORIAL KEYNOTE LECTURE

---

### Emerging diseases in the 21<sup>st</sup> century

#### Michael Cappello, MD

*Professor of Paediatrics, Microbial Pathogenesis, and Public Health*

*Yale University School of Medicine*

*New Haven, CT, USA*

Over the past 15 years, newly emerging and re-emerging infectious diseases, for example Severe Acute Respiratory Syndrome (SARS), Influenza, Middle East Respiratory Syndrome (MERS), Ebola virus disease (EVD) and Zika virus, have become serious global health threats. This lecture will review the epidemiology, pathogenesis and public health significance of 21<sup>st</sup> century epidemic diseases, including zoonotic, viral and vector borne conditions. For many of these, acquisition begins with the introduction of

animal pathogens into susceptible human populations, followed by person-to-person transmission that may be accelerated with access to regional or global means of transportation. Social factors that further contribute to epidemic transmission include poverty, weak government systems and armed conflict. When outbreaks occur in countries with severely limited healthcare infrastructures, the effects can be devastating, as was the case with the recent Ebola epidemic in Guinea, Sierra Leone and Liberia. The recent example of Zika virus in Latin America and the Caribbean serves as another example of the potential for infectious diseases to easily traverse traditional borders and natural barriers. Among the many lessons learned about disease surveillance and effective public health interventions, these outbreaks highlight the need for global collaboration and sharing of information, technology and human resources as a means of effective disease control.