

Intrepid epidemiology in action: A disease detective's journey between humanitarian emergencies, pandemic response and virus hunting

Abstract

The world that we live in today is acutely recognisable as affected by infectious diseases. Despite decades of work on predicting and preventing the next pandemic, the third major Beta coronavirus outbreak within 20 years was still able to lead to the second SARS pandemic of the 21st century. At the same time, old scourges are making reappearances both in poverty- and emergency-affected regions of the world as well as in our own backyards. This is an intolerable and unsustainable place to find ourselves in, as pandemics, health emergencies and weak health systems not only cost lives but additionally also pose some of the greatest risks to the global economy and security faced today. Drawing on her research and career at the intersection of academia and public health emergency response, Dr Charlotte Hammer will outline the basics of applied infectious disease epidemiology and highlight three key research themes, outbreaks in crises, epidemic and pandemic response mechanisms, and One Health. She will draw broad interdisciplinary lessons across the themes to guide our inevitable future interactions with and response to pathogens as a global society, reflecting on insights from her experiences working in humanitarian emergencies, pandemic response and academic research.

Bio

Dr Charlotte Hammer is the Everitt Butterfield Research Fellow in Emerging Infectious Diseases at Downing College. Unable to decide between her enjoyment of crime fiction with a subsequent, probably ill-advised, interest in police work and a more realistic passion for science, she became a disease detective and expert in public health emergency response. She specialises in the epidemiology of emerging and high consequence infectious diseases, covering aspects such as risk factor identification, development of novel surveillance and outbreak response systems, and health security. Her current primary research interests are outbreaks at the human-animal-environment interface using a One Health lens, and the epidemiology of infectious diseases in conflict zones and other complex and fragile settings. Dr Hammer completed a PhD in the Health Protection Research Unit for Emergency Preparedness and Response and field epidemiology training with the European Centre for Disease Control. She has been involved in the COVID-19 response in the European Union and Papua New Guinea and in the Ebola response in the Democratic Republic of the Congo. In addition to her academic work, she maintains a strong involvement in public health emergency response and epidemic intelligence through deployments with organisations such as the World Health Organization and the Global Outbreak Alert and Response Network as well as through capacity building for field epidemiology training programs across the world.
