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CEPI | New vaccines for a safer world

Coalition for Epidemic Preparedness Innovations

Newsletter 1 November 2017

Address from our CEO



In this week's Lancet, a report by The Lancet Countdown on Health and Climate Change, which brought together 24 institutions and inter-governmental organizations including the WHO and World Meteorological Organization, sounded an alarm about the potential public health impact of climate change and global warming, including the risk of mass migration and disruption of essential health and social services. The report noted a dramatic increase (46%) in the number of weather-related disasters globally since the year 2000.

The devastating impact of this year's hurricane season on populations living in the Caribbean, culminating in Hurricane Maria's blows to Dominica (where it caused that island's worst natural disaster on record) and to Puerto Rico, leading to a major humanitarian crisis and leaving many without power for more than a month, can serve as a case in point. The displacement of populations, damage to infrastructure, and disruption of medical care systems create perfect conditions for epidemics to develop and spin out of control.

In a similar vein, public health officials have noted that the transmission of disease that gave rise to the ongoing plague epidemic in Madagascar began in August, some two months earlier than in "endemic" years, and some have speculated that this might be attributable to environmental causes. While it would be overly simplistic to cite climate change as a proximate cause of any particular epidemic or infectious disease outbreak, it seems entirely plausible that environmental disequilibrium would give rise to conditions in which such events might occur with greater frequency, particularly when coupled with other factors, such as human incursion into previously remote ecosystems.

Environmental factors explain much of the ecology of vector-borne disease and enviroclimatic triggers have been identified for non-vector-borne diseases ranging from flu to Ebola (1, 2). A report in this week's *Scientific Reports* documents a striking correlation between deforestation and the timing of Ebola outbreaks in the Congo basin, with outbreaks in human populations following forest loss by two years (3). Our understanding of such factors has increased dramatically over the last decade as remote sensing and other environmental monitoring capabilities have improved. We can be sure that these capabilities will continue to improve and, as with the genetic and host-species relationship factors I discussed in my last message, contribute to greater accuracy in the estimation of epidemic risk.

Richard Hatchett, CEPI CEO

(1) Lowen AC, Steel J. Roles of humidity and temperature in shaping influenza seasonality. *J Virol* 2014;88:7692

(2) Pinzon JE, et al. Trigger events: enviroclimatic coupling of Ebola hemorrhagic fever outbreaks. *Am J Trop Med Hyg* 2004;71:664.

(3) Olivero J, et al. Recent loss of closed forests is associated with Ebola virus disease outbreaks. *Scientific Reports* 2017;7:14291

Responses to CEPI's second call for proposals

On 1st September, CEPI launched its Second Call for Proposals (CfP) on Vaccine platform technologies to promote the development of real time response capabilities to novel emerging threats, and immunize at-risk populations against emerging infectious diseases, potentially resulting in great public health impact by rapidly limiting or ending outbreaks. In response to this CfP, CEPI received over 35 applications by the deadline of 17 October, with a broad diversity displayed in the vaccine platform technologies being proposed, including both novel concepts and established technologies. All eligible submissions are now being evaluated, and shortlisted applicants will be notified in December to submit detailed proposals in early 2018.

Similar to our previous call, applicants and their partners are from North America, South America, Europe, Africa, Asia and Australia, representing academic institutions, biotechs, large pharmaceutical companies and Product Development Partnerships.

Chikungunya Workshop

The Department of Biotechnology, India (DBT) and Coalition for Epidemic Preparedness Innovations (CEPI) are organising a workshop "Chikungunya vaccines- challenges, opportunities and possibilities" on 5th and 6th February 2018 in Delhi, India. This workshop will bring together international delegates for two days of intense dialogue on ideas, data, challenges and opportunities related to Chikungunya vaccine development. Invited speakers will lead a programme with oral presentations, lively panel discussions and stimulating poster sessions. More information on the workshop, including a preliminary programme can be found [here](#).



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