

ScienceTalk

# Putting Zika virus into perspective

## Care must be taken to avoid panic and waste of resources

### Professor Tikki Pang

The recent global concern over the Zika virus outbreak, following the declaration of a global public health emergency by the World Health Organisation (WHO), needs to be seen in the right context.

While the declaration seems to be a rational, prudent and logical response following recent experiences with outbreaks of Ebola and Mers-CoV, care needs to be taken to avoid panic and waste of resources as a result of over-reaction in affected countries.

### PREVALENCE

Zika infection is not widespread in South-east Asia and there have been only a handful of confirmed cases in the region. The disease also appears to be relatively mild.

It seems inevitable, however, that the Zika virus will spread to regions not yet heavily affected. This is as a result of human travel and higher temperatures caused by global warming, which may lead to an explosion in mosquito populations.

A big concern related to this spread is a lack of immunity among populations not previously exposed to the virus. So countries need to be prepared.

### RESEARCH

More research needs to be done to obtain knowledge to guide future strategies to contain Zika.

The primary concern is over brain malformation and neurological diseases – such as Guillain-Barre syndrome – seen with Zika infection in Brazil, for example, where there have reportedly been more than 4,000 cases of babies born with microcephaly.

Recent data from one aborted foetus showed small head size, brain injury and high levels of the virus.

Citing data from the cases of two infants in Brazil who died soon after birth – which indicated that the virus had passed from mother to child – Dr Tom Frieden, head of the US Centres for Disease Control and Prevention, has suggested that this is the strongest evidence to date of the effect of the Zika virus on babies.

But he has warned that “the suspected link was still not definite”.

Similarly, recent laboratory analyses identified links to Zika virus infections in three people who died in Brazil last year, according to the Brazilian health ministry.

However, the authorities could not confirm that Zika alone was responsible for their deaths.

There have also been recent concerns that the true number of microcephaly cases may have been overestimated.

So, much more research needs to be done to answer some key questions such as: What is the true number of microcephaly cases? Why did a virus which previously caused a mild disease suddenly cause such devastating complications, even possibly deaths?

Also, has there been a mutation in the virus leading to increased virulence? Why have these severe complications been seen mainly, or even only, in Brazil?

More epidemiological research is also needed for countries to be able to determine the true prevalence of the virus and disease manifestations within their borders.

This is no mean task, given the likelihood that most infected individuals will probably show no symptoms and those with a mild case may not seek medical attention.

### DETECTION AND CONTROL

More rapid and easy-to-use diagnostic tests are needed to quickly confirm suspected Zika infections.

Given the central role of the mosquito vector in Zika transmission, novel methods to control the Aedes mosquito are also needed to complement existing strategies, which have proven to be less than optimal in many settings.

The use of Wolbachia bacteria and genetically modified mosquitoes to help reduce the number of Aedes mosquitoes, for example,

looks promising but much more needs to be done to assess the effectiveness and safety of these methods under different conditions in affected countries.

In terms of immediate action, first priority should be given to enhanced surveillance and monitoring of the disease, and sharing of information between countries.

Countries should also seize the chance to strengthen their response systems in the context of im-

plementing the WHO's International Health Regulations (IHR).

The IHR is the global policy response, and legally binding international agreement to prevent, protect against, control and respond to the international spread of disease.

Mr Richard Horton, editor of leading medical journal *The Lancet*, has said that Zika is a chance for countries to bolster commitment to battle epidemics, strengthen government-doctor relationships, and im-

prove public conception, awareness and understanding of disease.

Depending on disease severity, initial actions and decisions to promote and pursue the development of preventive vaccines and treatments could be instituted.

Panic over infectious disease outbreaks has become a recurring and serious concern to governments and populations.

While prudence, caution and preparedness are worthy criteria for the formal declaration of public health emergencies, their actual implementation must be tempered by careful consideration of the best scientific evidence, local and regional contexts, the potential to cause undue anxiety among people, and efficient ways to use limited resources.

Guided by the WHO, through the Zika Strategic Response Framework and Joint Operations Plan, announced this week, a more holistic and considered approach will allow a measured, rational response that will reassure people, strengthen countries' capacities to deal with outbreaks, and enhance health solidarity between countries.

### About the author

Professor Tikki Pang (right), 64, has been a visiting professor at the Lee Kuan Yew School of Public Policy since 2012.

He does research on global health matters and teaches students in the Master of Public Policy and Master of Public Administration programmes.

He is a member of the World Health Organisation's (WHO) Steering Committee for Research Capacity Strengthening in Reproductive Health Research and its Technical Working Group on Health and the Environment. He was director of research policy and cooperation at the WHO from 1999 to 2012. He was also co-director of its Collaborating Centre for Dengue and Dengue Haemorrhagic Fever at the University of Malaya in Kuala Lumpur from 1982 to 1995, and a member of the WHO Technical Advisory Group on Dengue in 1986.



He is based in Singapore and Geneva, and holds Bachelor of Science (Honours) and PhD degrees from the Australian National University in Canberra in biochemistry and microbiology/immunology.

His research and academic interests include infectious diseases, global health governance and national health research systems. In these areas, he has published more than 250 scientific articles and 12 books, edited volumes and reports. These include several major WHO reports, including the World Report On Knowledge For Better Health (2004) and A History Of Research In WHO (2010).