

**Mosquito-borne Infections Posing Threat in Hong Kong: Dengue Fever, Malaria, Japanese Encephalitis and Zika Infection***Tsang OTY**Infectious Disease Centre, Princess Margaret Hospital, Hong Kong*

The World Health Organization has proclaimed vector-borne diseases to be the focus of the World Health Day on 7 April 2014, underlining its importance among other health issues. Located in the sub-tropical zone, Hong Kong is always a mosquito-friendly city and a warm bed for transmission of various types of mosquito-borne infections (MBI). With the close proximity to many tropical countries, where endemicity to a lot of mosquito-borne infections has been established and fueled by the massive flow of international travellers, Hong Kong is vulnerable to be hit by such infections. Of particular concern, dengue fever, malaria, Japanese encephalitis and most recently Zika virus infections are the big four that are pinned by the health authorities in Hong Kong.

Dengue virus has been one of the most prevalent MBI. It was estimated that about 390 millions infections occur per year globally. There has been four-fold increase in the number of countries reporting dengue epidemic since 1970. Half of the world population is at risk and the case fatality rate is around 1% to 5%. 75% of the world infections are contracted in Asia. Although Hong Kong is not endemic for dengue, local transmissions have been identified at times. With the major outbreaks occurring recently in our vicinity areas like Guangzhou and Taiwan, the risk of having dengue epidemic in Hong Kong is imminent as the favourable conditions for *Aedes* mosquito to flourish are present.

Zika virus outbreak in the American has caught the world attention recently because the speed, scope and route of its transmission are unprecedented. Moreover, the delivery of newborns with microcephaly from infected mothers and the neurologic complications of those infected have raised the alarm to healthcare system in many countries. This also prompted the World Health Organization to announce Zika to be the Public Health Emergency of International Concern. Although no confirmed cases are identified in Hong Kong thus far, one should be vigilant as the mosquito vector here can transmit the virus effectively and about 80% of the infected individuals are asymptomatic. Pregnant ladies and ladies planning to be pregnant should avoid going to endemic areas. All travellers to endemic areas should adopt mosquito preventive measures during and after their trips. Safe sex practice should also be implemented for those travellers as sexual transmission has well been documented.

The malaria incidence and mortality have significantly declined by almost half since the year 2000 globally. There are only about 20 to 40 cases of imported malaria per year in Hong Kong. Although the number is small, the consequence could be devastating. Therefore, prompt diagnosis and treatment are crucial. Sometimes travel history of those infected patients may be the only clue to the diagnosis. World Health Organization has advocated Artemisinin combination therapy for almost 10 years. However, the problem of resistance to Artemisinin has been emerging.

Japanese encephalitis is a rare disease in Hong Kong though it is quite challenging in many countries. With the shrinking swine industry in Hong Kong, the local transmission will be significantly diminished. The role of effective vaccine in reducing the incidence of Japanese encephalitis can not be disregarded.