



衛生防護中心
Centre for Health Protection

Scientific Committee on Vector-borne Diseases

Consensus Statement on Prevention and Control of Japanese Encephalitis

The Scientific Committee on Vector-borne Diseases (SCVBD) met on 17 October 2017 to discuss the local epidemiology of Japanese encephalitis (JE) from 2008 and to examine the current prevention and control measures, including JE vaccination and mosquito control. A number of factors were reviewed, including disease incidence and epidemiology, high-risk groups, as well as the potential complications, cost-effectiveness, acceptance of the JE vaccine by the public, and availability of other preventive measures.

2. In Hong Kong, the Centre for Health Protection (CHP) of the Department of Health recorded a total of 13 local JE cases since 2008, with the annual number ranging from zero to five. One case was below 15 years old while the other 12 were adults.

SCVBD particularly noted that:

- (a) In 2015, the World Health Organization (WHO) recommended that JE vaccination should be integrated into the immunisation programme where JE is recognised as a public health priority. For the most affected age group in endemic areas, namely children



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under 15 years old, an incidence target of less than 0.5 per 100 000 was proposed.

- (b) In JE endemic countries and areas, such as Japan, Mainland China, the Republic of Korea, Taiwan and Thailand, JE vaccination programme had been introduced as a measure to prevent and control JE and had effectively reduced the incidence of JE.
- (c) In Hong Kong, the territory-wide incidence for local JE cases was 0.017 per 100 000 population, which was lower than both the WHO target incidence of 0.5 per 100 000 and the JE incidence in Mainland China, Taiwan and Thailand after the introduction of a JE vaccination programme. SCVBD considered the territory-wide incidence rate of local JE cases in Hong Kong to be low.
- (d) Pigs and *Ardeid* birds act as amplifying hosts for JE, and whilst areas within 2 km of pig farms in Hong Kong are considered high-risk for local JE cases, the exact role of *Ardeid* birds in the aetiology of human JE cases is yet to be determined. The incidence of local JE cases for the population living within 2 km of pig farms in Hong Kong (0.13 per 100 000 population) was 20 times higher than the incidence for population living outside 2 km from pig farms in Hong Kong (0.0062 per 100 000 population). The incidence rate of 0.13 per 100 000 population in high-risk areas was comparable to the JE incidence of Mainland China (0.12 per 100 000 population) and Taiwan (0.118 per 100 000 population) after the institution of their respective vaccine programmes, and was also lower than the WHO target incidence of 0.5 per 100 000.
- (e) Currently, an inactivated Vero cell derived JE vaccine (JE-VC) and a live recombinant JE vaccine (JE-CV) are registered in Hong Kong. Both vaccines were found to have acceptable safety profiles by WHO.
- (f) Whilst there was limited data on the potential adverse events after immunisation (AEFI) for JE-CV, a post-marketing surveillance study for JE-VC indicated that the rate of serious adverse events, hypersensitivity, and central nervous system adverse events were 1.8, 4.4 and 1.1 per 100 000 doses distributed, respectively. SCVBD considered that although serious side effects are uncommon with modern JE vaccines, the number of serious side effects is directly proportional to the number of people vaccinated.
- (g) If JE vaccination was incorporated into the Hong Kong childhood

immunization programme (HKCIP) and two doses of JE-VC were administered, then using the number of 60 900 live births in Hong Kong in 2016 as an example, at least two cases of serious adverse events, five cases of hypersensitivity and one case of central nervous system adverse events would be expected. This should be compared with an average of 0.1 paediatric JE cases per year recorded since 2008.

- (h) If JE vaccination was offered in the form of 2 doses of JE-VC to population living within 2 km of the pig farms in Hong Kong (about 633 000) in a one-off campaign, at least 20 cases of serious adverse events, 50 cases of hypersensitivity and ten cases of central nervous system adverse events would be expected. SCVBD considered that the number of serious side effects due to the JE vaccine far outweighs the protective benefits of the vaccine in preventing JE in areas where JE occurs infrequently.
- (i) In Hong Kong, mosquito control is important for prevention of JE. A combination of measures, such as adulticiding and larviciding at potential breeding places, using a JE vector surveillance programme for proactive response, and heightening of public awareness via annual anti-mosquito campaigns, which includes advice on personal protection, are in place. In particular, it was recently planned to extend the use of mosquito trapping devices to housing estates, parks, and pig farms in order to reduce number of adult mosquitoes and contact between mosquitoes and their hosts.
- (j) CHP will continue to keep abreast of relevant scientific literature on JE and review the recommendations in due course.

SCVBD concluded that:

- (a) In Hong Kong, residing within 2 km of pig farms is a highly significant risk factor for JE.
- (b) The risks of incorporating JE vaccination in HKCIP to prevent JE outweigh its benefits.
- (c) The risks of using JE vaccine in the Hong Kong population (including the population living within 2 km of pig farms) to prevent JE outweigh its benefits.

SCVBD recommended that:

- (a) Measures for JE control should target areas around pig farms.
- (b) Efforts for mosquito control for prevention of JE should continue with special attention to areas where pig farms, Ardeid birds and vector mosquitoes are known to be present.
- (c) The current recommendation for travellers to endemic areas of JE should be maintained, i.e. JE vaccination is recommended for travellers who plan to stay one month or longer in endemic areas during the JE transmission season, and for short-term (less than one month) travellers if they plan to have significant extensive outdoor or night-time exposure in rural areas during the transmission season.

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