衞生防護中心
Centre for Health Protection

Scientific Committee on Vector-borne Diseases

Epidemiology, Prevention and Control of Chikungunya Fever

Purpose

In view of the recent upsurge of Chikungunya Fever (CF) cases worldwide, this paper aims to review the global and local situation of CF and the prevention and control measures of CF in Hong Kong.

Background

2. Chikungunya fever (CF) is a mosquito-borne viral disease caused by the chikungunya virus (CHIKV), which was first identified in Tanzania in 1952. The name “chikungunya” derives from the Kimakonde language of southern Tanzania, meaning "to become contorted", which describes the stooped posture of patients afflicted by its hallmark symptom of severe joint pain.[1]

3. CHIKV is divided into three major genetically distinct lineages: the West African genotype, the East/Central/South African (ECSA) genotype, and the Asian genotype.[2] Within the ECSA genotype, the Indian Ocean lineage (ECSA-IOL) emerges as a distinct sublineage.[3] Similarly, a new American sublineage has emerged within the Asian lineage.[4]

4. CHIKV is mainly transmitted to humans through the bites of infective female Aedes mosquitoes. When a mosquito bites a patient with CF, it may become infected and, after an extrinsic incubation period of about two to nine days, transmit the virus to other individuals through subsequent bites. CHIKV can cause large epidemics with high attack rates, particularly when introduced into immunologically naïve human

populations. In Hong Kong, the primary vector of CF, *Aedes aegypti*, is not found, but *Aedes albopictus*, which can also spread the disease, is a mosquito commonly found in the locality.[5]

5. In symptomatic patients, disease onset is usually three to eight days (ranging from two to 12 days) after the bite of an infected mosquito. The symptoms of CF are similar to those of dengue fever and Zika virus infection. More than half of patients with CHIKV infection will experience symptoms that typically include acute onset of fever and severe joint pain.[6] The joint pain is usually symmetric and affects multiple joints especially small joints of the limbs, such as those in the wrists, hands, ankles, and feet. Larger joints like knees, elbows, shoulders, and hips can also be affected, though less commonly. Other common symptoms include muscle pain, headache, nausea, fatigue, rash, and conjunctivitis.

6. Symptoms are usually self-limiting and last for several days to about one week. Most patients recover on their own and severe complications (including cardiovascular, neurological and multi-organ involvement) and fatalities are rare. Higher risk for severe disease is generally associated with infants (in particular neonates), the elderly, and those with comorbidities.[7] In some cases, joint pain may persist for several months or even years, resulting in significant disability. Available evidence suggests that people who have been infected once are likely to be immune to future infections.[1]

7. There is no specific antiviral drug treatment for CF. Treatment is directed primarily at relieving the symptoms, including using anti-pyretics, analgesics and replacement of fluids. The best preventive measure is to avoid mosquito bites and prevent mosquito proliferation.

Global situation

8. According to the World Health Organization (WHO), autochthonous CHIKV transmission has been recorded in 119 countries and territories across Asia, Africa, Europe and the Americas[8], exposing about 5.5 billion people to the risk of infection.[9] (Figure 1)

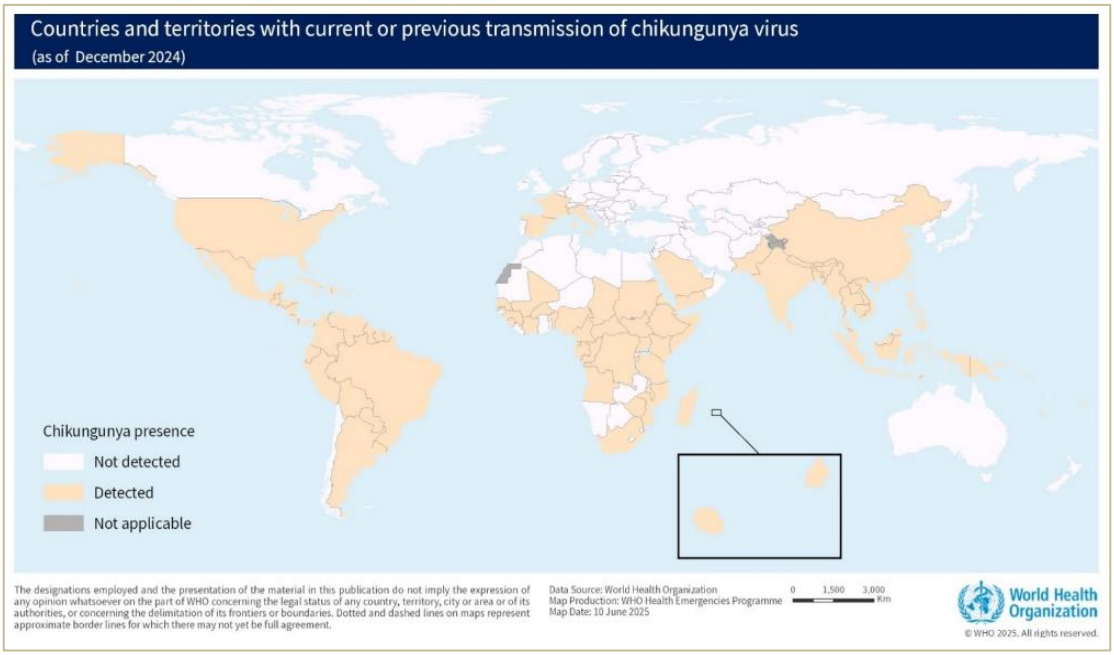


Figure 1. Global map of countries with current or previous transmission of CHIKV (as of December 2024).

9. Prior to 2004, CHIKV activity was characterized by sporadic outbreaks.[10] A major epidemiological shift occurred during 2004–2006 when the ECSA-IOL sublineage emerged, causing massive outbreaks across Indian Ocean islands (e.g. La Réunion and Mauritius with about 250,000 cases).[11] Some studies indicate that *Aedes albopictus* are better at transmitting the ECSA-IOL sublineage with E1-A226V mutation, as demonstrated in the La Réunion outbreak in 2005-2006.[12] Another pivotal event was the introduction of the Asian genotype into the Americas in 2013, which led to rapid spread of CHIKV to 45 countries and territories across North, Central, and South America[13] and over 1.8 million infections by 2015 due to immunologically naïve populations.[8]

10. CHIKV has been circulating in the Asia-Pacific region since the 1960s. In countries with established Aedes mosquito vectors, recurrent local transmissions have rendered CF endemic throughout much of Asia.[8] The Aedes mosquitoes that transmit CHIKV have been spreading outside tropical and subtropical regions due to climate change, population growth and increased travel and urbanisation, increasing the risk of outbreaks.

11. In 2024, about 620,000 CF cases and 213 deaths were reported globally.[14] Major outbreaks were reported in multiple countries including

Bangladesh, India, Indonesia, Sri Lanka, Timor-Leste, Maldives, and the Philippines.[8] India accounted for the highest disease burden, reporting approximately 240,000 suspected and 18,000 confirmed cases.[15] Concurrent circulation of CHIKV with dengue and Zika viruses has also been occasionally observed, as demonstrated in the 2024 Bangladesh outbreak.[16] The widespread presence of Aedes mosquitoes across the region poses an ongoing transmission risk throughout the continent.

12. As of early June 2025, approximately 220,000 cases and 80 CHIKV-related deaths have been reported in 14 countries/regions worldwide this year.[17] The Americas have reported the highest number of CF cases globally. Brazil reported over 140,000 cases, and Argentina reported more than 2,500 cases.[18] Asia has recorded over 33,000 cases, primarily in India, Sri Lanka, and Pakistan.[17] A major epidemic has re-emerged in La Réunion in 2025 with one third of its population infected.[9] As of 23 July 2025, two countries in Europe have reported local cases of CF this year: France (38 cases) and Italy (one case).

Table 1. Latest situation of chikungunya fever in neighbouring and overseas countries and areas (as of 31 July 2025)*

Countries/Areas	**Cumulative reported number of cases of 2024**	**Cumulative reported number of cases of 2025**
Australia	70	94
Argentina^	1,388	2,846
Bolivia^	505	4,721
Brazil^	425,773	198,510
France	N/A	38
Guangdong Province, China	N/A	4,824†
- Foshan City	N/A	6,549
India@	258,110	32,617
Indonesia	571	N/A
Italy	N/A	1
Japan	10	11
La Réunion	138#	54,452
Paraguay^	3,134	49
Singapore	15	16
Sri Lanka	N/A	151
Taiwan Region	20	16
The United States of America	196	46

PAHO – Pan American Health Organization (World Health Organization Americas Region)
ECDC – European Centre for Disease Prevention and Control
*Chikungunya reporting systems vary by country/area
^ Figures include confirmed, suspected, probable and rule-out cases
@ Figures include confirmed and suspected cases
# Data from 23 August 2024 to 5 January 2025
† Latest figures published on 27 July 2025

Situation in China

13. CF is not endemic in China. Five CF outbreaks were previously documented in China between 2010 and 2019. The first recorded outbreak occurred in 2010 in Dongguan, Guangdong Province, involving 282 cases. Two subsequent clusters were reported in Zhejiang Province in 2017 and 2019, affecting 4 and 3 individuals respectively. Two additional outbreaks occurred in 2019: one in Yunnan Province affecting 170 individuals, and another in Shunde, Guangdong Province, involving four individuals. No fatal cases were recorded. All outbreaks were import-related, with four leading to secondary local transmission.[19] No major outbreaks were recorded until the recent one in Foshan City (佛山市), Guangdong Province.

14. In China, the ECSA-IOL genotype predominates in circulation, followed by the Asian genotype. The West African genotype has thus far only been detected in mosquitoes within Zhejiang Province.[20]

Latest situation in Guangdong Province

15. On 15 July 2025, the Guangdong Provincial Disease Control and Prevention Administration reported an imported-related outbreak of CF in Shunde District (順德區) of Foshan City. Epidemiological investigation with active case finding identified 478 confirmed cases, all of which presented with mild symptoms. In the subsequent weeks, there has been a significant increase in the number of cases in Shunde District and also other neighbouring districts in Foshan City.[21]

16. As of 30 July 2025, a total of 6,549 confirmed cases were recorded in Foshan City with 5,660 cases in Shunde District (順德區), 494 cases in Chancheng District (禪城區), 362 cases in Nanhai District (南海區), 23 cases in Sanshui District (三水區) and 10 cases in Gaoming District (高明區).

17. Most recently, other cities in Guangdong Province also reported cases. As of 26 July, there were 22 cases in Guangzhou (廣州), 18 cases in Zhongshan (中山), three cases each in Dongguan, Zhuhai (珠海), and Heyuan

(河源), two cases each in Jiangmen (江門), Yangjiang (陽江), and Zhaoqing (肇慶), and one case each in Qingyuan (清遠), Shenzhen (深圳), and Zhanjiang (湛江). All cases were mild, with no severe cases or deaths.[22]

Latest situation in Macao SAR

18. The Health Bureau of Macao SAR reported six imported CF cases since mid-July 2025. The cases were imported from Shunde District (three) and Nanhai District (南海區) (one) of Foshan City, the Philippines (one) and Sri Lanka (one).[22-27] Details of the cases and respective travel history are summarised in Table 2 below.

Table 1. Details of the imported cases in Macau in 2025 (as of 30 July 2025)

Case	Reporting date	Sex	Age	Travel history	Onset date
1	18/7/2025	M	61	Visited relatives in Shunde District, Foshan City from 8 to 17 July	17/7/2025
2	22/7/2025	F	33	Visitor from Nanhai District, Foshan City	21/7/2025
3	25/7/2025	M	48	Foreign employee visiting relatives in the Philippines from 6 to 19 July	24/7/2025
4	25/7/2025	M	38	Travelled to Shunde District, Foshan City with friends from 19 to 20 July	24/7/2025
5	28/7/2025	F	70	Visited relatives in Shunde District, Foshan City from 14 to 18 July	25/7/2025
6	29/7/2025	M	66	Business trip to Sri Lanka from 7 to 18 July	21/7/2025

Local situation

19. In Hong Kong, CF has been listed as a notifiable infectious disease since March 2009. Medical practitioners are required to report suspected or confirmed cases of CF to the Centre for Health Protection (CHP) of the Department of Health (DH). In the past ten years (from 2015 to 2024), the CHP recorded a total of 23 confirmed cases, ranging from zero to 11 cases per year. All of them were imported infections. (Figure 2)

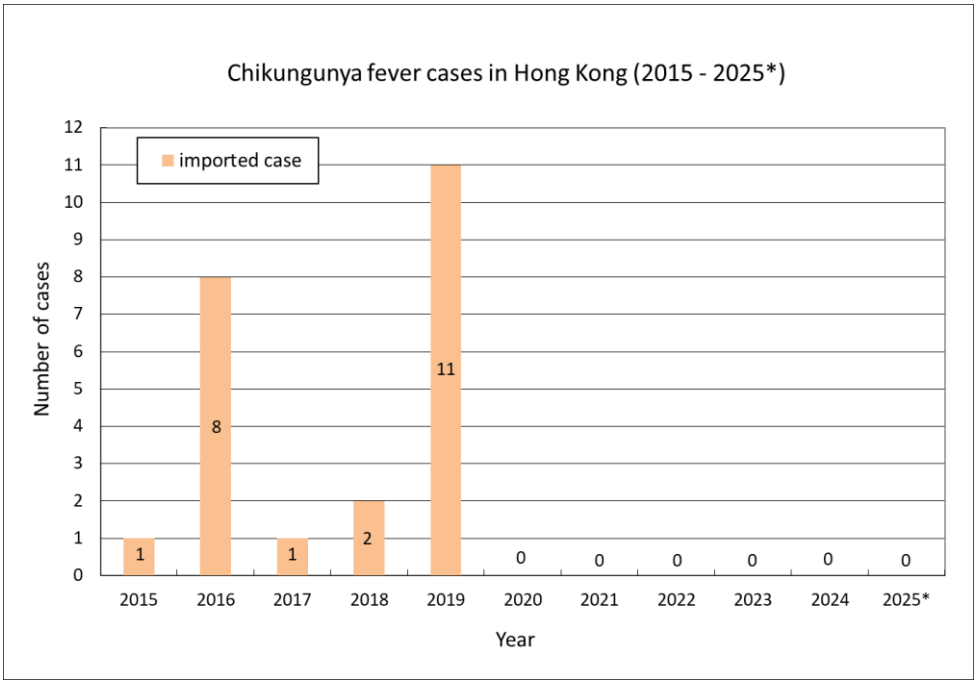
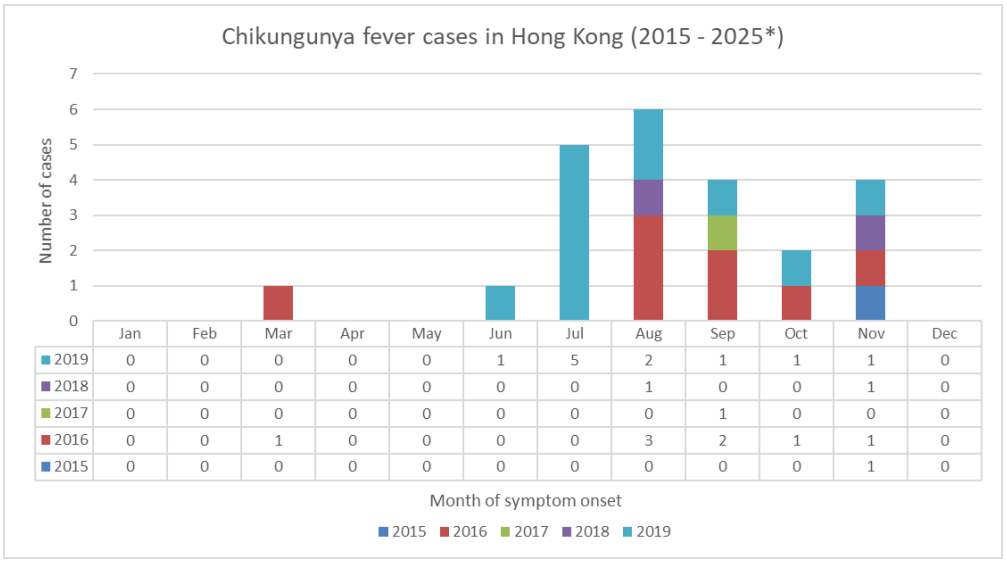


Figure 2. Number of CF cases in Hong Kong from 2015 to 2025*

**As of 30 July*

20. Among the 23 CF cases reported, 21 (91.3%) occurred between July and November with a peak in August, demonstrating distinct seasonality that coincides with the summer rainy season. (Figure 3) All cases had travel history to Southeast Asian countries during the incubation period. Details of their country of importation are listed in Table 3. Except a family cluster consisting of four cases with travel history to Thailand recorded in 2019, all cases were sporadic infections with no other epidemiologically linked cases.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2019	0	0	0	0	0	1	5	2	1	1	1	0
2018	0	0	0	0	0	0	0	1	0	0	1	0
2017	0	0	0	0	0	0	0	0	1	0	0	0
2016	0	0	1	0	0	0	0	3	2	1	1	0
2015	0	0	0	0	0	0	0	0	0	0	1	0

Figure 3. Number of CF cases recorded by CHP by month of symptom onset from 2015 to 2025*.

**As of 30 July*

Table 3. Country of importation of cases recorded in Hong Kong from 2015 to 2025*.

Country/ area of infection	Number of cases
India	8
Thailand	8
Myanmar	3
The Philippines	3
Undetermined	1 (travelled to multiple Asian countries during incubation period)
Total	**23**

**As of 30 July*

21. The 23 cases involved 11 males and 12 females aged between 8 and 69 years (median: 45 years). The majority of cases presented with fever (100%), joint pain (91%) and rash (57%). Other common symptoms included headache (43%) and myalgia (30%). Sixteen of the patients (70%) enjoyed good past health. The comorbidity of other cases include diabetes mellitus, lymphoma, hypertension, hypothyroidism and hepatitis B.

Risk assessment

22. Recently, the risk of imported CF cases in Hong Kong has increased significantly due to the outbreak in neighbouring areas and frequent travel between Guangdong, Macao and Hong Kong. During the dengue fever (DF) outbreak in Guangdong during September – November 2024 in which over 14,000 local DF cases were recorded in Guangdong, there were 73 DF cases imported from Guangdong to Hong Kong during this period. Hence if the CF outbreak in Guangdong continues, the possibility for Hong Kong to encounter imported CF cases is high. Moreover, due to the presence of the vector *Aedes albopictus*, any imported CF cases can potentially lead to local transmission if they are bitten by mosquitoes during the viraemic period.

23. The risk is also amplified by the situation of mosquito proliferation during summer months. According to the gravidtrap data from the Food and Environmental Hygiene Department (FEHD), the Monthly Gravidtrap Index (MGI) for *Aedes albopictus* was 1.2%, 8.6% and 9.5% in April, May and June

2025 respectively, indicating that the distribution of *Aedes albopictus* was fairly extensive. Area Gravidtrap Index (AGI) from all 64 survey areas were available for June 2025, with two areas exceeding 20% (Ma On Shan, Shau Kei Wan and Sai Wan Ho).

Prevention and control of CF

24. In response to the heightened risks of imported cases and local transmission of CF in Hong Kong, the Government has implemented various emergency preparedness measures to prevent the spread of CF in Hong Kong and safeguard public health.

Enhanced surveillance

25. The CHP will maintain close surveillance of local and global CF trends, particularly monitoring disease activity in neighbouring regions to dynamically adjust risk assessments and response measures.

26. Guangdong, Hong Kong and Macao have been carrying out joint prevention and control of communicable disease involving the three places in accordance with the well-established liaison and communication mechanism. Owing to the communicable disease notification mechanism established by the three places, the CHP has kept abreast of the latest situation of CF in Guangdong Province. The CHP will continue to work closely with the health authorities in Guangdong Province and Macao, and will take appropriate preventive and control measures according to risk assessment to prevent the spread of CF in Hong Kong and protect public health.

27. The CHP has issued letters to all doctors and hospitals in Hong Kong providing the latest epidemiological information and urging them to pay attention to the presence of relevant symptoms among those who return to Hong Kong after outbound travel. The Hospital Authority (HA) has reminded healthcare professionals to be vigilant in early identification of patients for timely diagnosis and management of patients. If CF cases are detected, they should be immediately referred to hospitals for treatment and reported to the DH in accordance with the established mechanism so that the DH can initiate

epidemiological investigations, and implement prevention and control measures.

Enhancing local testing capabilities

28. The Public Health Laboratory Services Branch of the CHP is equipped with sufficient testing capabilities. The CHP conducts tests on suspected CF cases for public and private hospitals and no positive cases have been detected so far this year. The CHP has, in collaboration with the HA, further enhanced the local testing capabilities to ensure that in the event of an outbreak, suspected cases could be tested as soon as possible with an aim of early detection and diagnosis.

Vector surveillance and control

29. In Hong Kong, FEHD is taking the lead on mosquito surveillance and control. The CHP will work closely with the FEHD to conduct on-site inspections, vector investigations and mosquito control, to lower the risk of local transmission.

30. The interdepartmental Pest Control Steering Committee (PCSC) held its 20th meeting on 23 July to review the latest situation of mosquito proliferation and the anti-mosquito work of departments, as well as discussing measures to prevent CF.

Case investigation and contact tracing

31. The CHP will carry out epidemiological investigations and field investigation in collaboration with the FEHD upon identification of any confirmed CF cases. Avoiding mosquito bites of the patient is an important measure to prevent local transmission. There may be further transmission in the community if local mosquitoes are infected by the CF virus. When there is a confirmed CF case in Hong Kong, the patient will be admitted to a hospital to receive treatment in a mosquito-free environment as a prudent measure.

32. Active case finding (via interviews, setup of hotline, blood

screening, etc.) will be initiated promptly aiming for early case detection to prevent further spread of the disease. Vector survey and control will be implemented by FEHD for locations visited by infected persons during the incubation and infectious periods to eliminate the sources of infection.

Port health measures and travel advice

33. The CHP's Port Health Division (PHD) has stepped up inspections at boundary control points (BCPs) to ensure vector control measures are in place. Inspections of environmental hygiene at BCPs and advice to venue management have been reinforced to prevent mosquito breeding. Regular temperature screening for inbound travellers is in place at all BCPs, and any travellers with fever will be assessed and referred to hospital for investigation as appropriate. Relevant stakeholders (e.g. airlines and the travel industry) are provided with latest information of the disease and related health advice, while travellers are reminded to adopt anti-mosquito measures during outbound trips. PHD has been in close contact with Shenzhen Customs to ensure prevention and control measures at BCPs in Shenzhen and Hong Kong are properly put in place.

Risk communication and publicity

34. Public health education forms an important component to raise awareness about individual and communal actions to avoid mosquito bites and prevent mosquito proliferation, thus preventing disease transmission. The DH, in collaboration with various Government bodies, provides information of CF and effective preventive measures against mosquito bites via a wide range of channels including Announcement of Public Interests (API) in radio and television, health talks, website information, videos, social media, pamphlets and posters.

35. The CHP has issued press releases to provide the latest update on the outbreak of CF in Guangdong, and urged the public to be vigilant against CF and take necessary preventive measures during travel. The CHP has also stepped up publicity by participating in media interviews (e.g. radio and TV) and enhancing public education on the prevention of CF through various online and offline channels.

36. The CHP has issued letters to schools and institutions (including residential care homes for the elderly and residential care homes for persons with disabilities) in Hong Kong to provide them with the latest epidemiological information and remind operators to adopt preventive measures to avoid mosquito bites. The CHP and the FEHD will continue to provide advice on anti-mosquito measure to institutions.

37. The CHP has held online seminars to raise public awareness of CF and address related inquiries from the public. The CHP has also set up mobile promotional booths at multiple locations across Hong Kong (including public markets, community health centres, and shopping malls) to educate the public on how to prevent mosquito-borne diseases. A thematic webpage of CF has been established to provide the public with timely updates and health guidance on the disease.

Supply of medicines

38. The Government is monitoring the local supply of medicines with antipyretics (e.g. paracetamol), and is maintaining close communication with the suppliers, local manufacturers and community pharmacy associations. The supply of relevant medicines in Hong Kong remains stable.

Vaccines

39. At present, there are no locally registered CF vaccines available in Hong Kong. Two chikungunya vaccines have received overseas regulatory approval or recommendation for at-risk populations in several countries. Their characteristics are summarised in Table 4. Neither vaccine is yet widely accessible nor in widespread use. The WHO and external expert advisors are actively reviewing clinical trial and post-marketing data against global chikungunya epidemiology to inform potential vaccination recommendations.[28,29]

Table 4. CF vaccines registered in overseas countries.

	IXCHIQ	**Vimkunya**
Type	Live-attenuated vaccine	Virus-like Particle (VLP) vaccine
Manufacturer	Valneva Austria GmbH	Bavarian Nordic
Licensing	Approved in the US (2023) [30] and EU (2024) [31]	Approved in the EU (2025) [34] and US (2025) [35]
Target groups	● Adults ≥18 years ● excluding those ≥60 years due to safety concerns	Individuals ≥12 years
Key evidence on effectiveness	Induces strong and long-lasting antibody responses after a single dose[32]	● Phase III trial: 98% of people aged 12-64 years produced neutralizing antibodies within 22 days[36] ● 87% of people aged 65 years and above produced neutralizing antibodies[37]
Safety	● No serious adverse events were reported in Phase III trials in adults ● Severe side effects were reported in the elderly[33]	No significant side effects were identified

Summary

40. In Hong Kong, CF has been listed as a notifiable infectious disease since March 2009. From 2015 to 2025 (as of 30 July), a total of 23 confirmed CF cases were recorded, ranging from zero to 11 cases per year. All of them were imported cases. The last case was recorded in November 2019. There have been no confirmed CF cases in Hong Kong since 2020.

41. Hong Kong, as an international travel hub and with frequent travel by citizens between Guangdong and Hong Kong, faces a persistently high risk of CF case importation and subsequent local transmission arising from imported cases.

42. Despite severe or fatal cases caused by CF are rare and the symptoms are relatively milder than those of DF, we strive to prevent CF from

becoming endemic in Hong Kong. The Government has adopted multi-pronged emergency preparedness, including stringent control measures at BCPs, vector investigation and mosquito control, enhanced surveillance and health education.

Centre for Health Protection
Department of Health
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