

YELLOW FEVER

INTRODUCTION

Yellow fever is an acute infectious disease. Recognised in two different forms i.e. urban and jungle. Urban Yellow Fever occurs in cities and is spread from mosquito to human. In the jungle form, Yellow Fever is spread from mosquitoes to monkeys and also to humans (zoonosis). Although reported cases of human disease is the principal indicator of disease risk, they may be absent (because of a high level of immunity in population) or not detected as a result of poor surveillance.

Major public health threat in countries with risk of Yellow Fever transmission.

Travellers to countries with risk of Yellow Fever transmission of Africa, Central and South America are at risk. The presence of the suitable vector, *Aedes mosquito* in Asia may contribute to its potential occurrence. Malaysia is vulnerable and receptive to Yellow Fever transmission.

Causative agent: Arbovirus of the Genus *Flavivirus* and family *Flaviviridae*.

Mode of Transmission: through the bite of infective *Aedes aegypti* mosquitoes.

Incubation Period: 3 - 6 days (or longer) after the bite of an infected mosquito.

COUNTRIES WITH RISK OF YELLOW FEVER TRANSMISSION

SOUTH & CENTRAL AMERICA (13 COUNTRIES)

Argentina	French	Suriname
Brazil	Guyana	Trinidad & Tobago
Bolivia	Panama	Venezuela
Colombia	Paraguay	
Equador	Peru	

AFRICA (29 COUNTRIES)

Angola	Guinea Equat
Benin	Ivory Coast
Burkina Faso	Kenya
Burundi	Liberia
Cameroon	Mali
Central Africa Republic	Mauritania
Chad	Niger
Congo	Nigeria
Democratic Republic Of Congo	Rwanda
Ethiopia	Senegal
Gabon	Sierra Leone
Gambia	Sudan
Ghana	Togo
Guinea	Uganda
Guinea Bissau	

Note: The list of countries with risk of yellow fever transmission will be updated by Ministry of Health Malaysia regularly based on WHO list.

SIGN & SYMPTOMS

Some are asymptomatic but most lead to an acute illness characterized by two phases. Initially there is fever, muscular pain, headache, chills, anorexia, nausea and/or vomiting, often with bradycardia.

About 15% of patients progress to a second phase after a few days, with resurgence of fever, development of jaundice, abdominal pain, vomiting and haemorrhagic manifestations.

Death may occur 10 - 14 days after the onset of illness.

COMPLICATION

Haemorrhagic manifestation including epistaxis, gingival bleeding, hematemesis (coffee ground or black), melena, and liver and renal failure. **Up to 50% are fatal.**

TREATMENT

Symptomatic treatment. Advise rest, drink plenty of fluids and take regular painkillers (e.g. Paracetamol or Ibuprofen) to relieve symptoms of fever or aching.

Specific treatment – None

PREVENTION & PRECAUTIONS

Yellow Fever Vaccination Requirement

- A Yellow Fever vaccination certificate is required from all visitors or delegates (Malaysians and Foreigners) coming from or going to/through countries with risk of Yellow Fever transmission (As stated in International Health Regulations 2005 and Prevention and Control of Infectious Disease Act 1988).
- Yellow fever vaccination is also required for travellers having transited more than 12 hours through the airport of a country with risk of yellow fever transmission;
- Travellers or delegates without a valid Yellow Fever vaccination certificate shall be quarantined upon arrival in Malaysia for a period not exceeding 6 days.

- The period of validity of an international certificate of vaccination against Yellow Fever is 10 years, beginning 10 days after the date of vaccination.
- If a person is revaccinated before the end of this period, the validity is extended for a further 10 years from the date of vaccination.
- If the revaccination is recorded on a new certificate, travellers or delegates are advised to retain the old certificate for 10 days until the new certificate becomes valid.

Reminder to Malaysian Who Wants to Go to the Countries with Risk of Yellow Fever Transmission

- Malaysians are advised to take the vaccination at least 10 days before the date of departure to countries with risk of Yellow Fever transmission for protection against infection.
- To carry the international certificate of vaccination during travel for health check.
- To get the vaccination against Yellow Fever disease at the Approved Yellow Fever vaccinating Centres in Malaysia.
- To report to Entry Point Health Office on arrival in Malaysia for health check.

YELLOW FEVER VACCINE

Type of vaccine: Live attenuated vaccine

Number of doses: one priming dose of 0.5ml

Booster: 10 yearly

Contraindications:

Egg allergy, immunodeficiency from medication, disease or symptomatic HIV infection, hypersensitivity to a previous dose and pregnancy.

Adverse reactions: Rarely encephalitis or hepatic failure.

Before departure: International certificate of vaccination becomes valid 10 days after the date of vaccination.

Recommended for: All travelers to countries with risk of Yellow Fever transmission and wherever mandatory

Special precautions: Not for infants under 12 months of age.

TWENTY SEVEN (27) APPROVED YELLOW FEVER VACCINATING CENTRES IN MALAYSIA (Based on Ministry of Health List until 1st July 2013)

APPROVED YELLOW FEVER VACCINATING CENTRES IN MALAYSIA	
PULAU PINANG	1. Pejabat Kesihatan Pelabuhan Pulau Pinang 1 st Floor, Tuanku Syed Putra Building Jalan Downing, 10300 Pulau Pinang. Tel: 04-2611264, 04-2644918
PERAK	2. Pejabat Kesihatan Kinta Jalan Aman, 31000, Batu Gajah, Perak. Tel: 05-3652077
SELANGOR	3. Klinik Berkat No. 75-4A, Jalan Mamanda 1, Ampang Point 68000 Ampang, Selangor Darul Ehsan Tel: 03-42515450
WP KUALA LUMPUR & PUTRAJAYA	4. Virus Research Division 1 st Floor, Institute of Medical Research Jalan Pahang, 50588 Kuala Lumpur. Tel: 03-26986033
	5. Klinik Kesihatan Putrajaya No. 1, Jalan P9E, Presinct 9 62250, Putrajaya. Tel: 03-88883057
	6. Poliklinik Sri Permai No. 11, Jalan P9 B/1 Presint 9, 62259 Putrajaya Tel: 03-88880268

APPROVED YELLOW FEVER VACCINATING CENTRES IN MALAYSIA

	<p>7. The KL Clinic Mezzanine Floor, East Wing Rohas Perkasa, No. 9, Jalan P. Ramlee 50250 Kuala Lumpur 03-21660395 Faks 03-2181 3362</p>
	<p>8. Twin Towers Medical Centre KLCC Sdn. Bhd. KLCC, Lot LC 402-404, Level 4 Suria KLCC, KL City Centre 50088, Kuala Lumpur. Tel: 03-23823500, 03-23823577</p>
	<p>9. Klinik Kita Lot F-23, First Floor City Point Kompleks Daya Bumi Jalan Sultan Hishamuddin, 50050, Kuala Lumpur. Tel: 03-26989740, 03-26980740</p>
<p>WP KUALA LUMPUR & PUTRAJAYA</p>	<p>10. Hospital Angkatan Tentera Tuank Mizan (Bhg. Kesihatan Primer–untuk anggota tentera sahaja) No. 3, Jalan 4/27A, Section 2, Wangsa Maju, 53300 Kuala Lumpur Tel: 03-4145 4200</p>
	<p>11. Drs Young Newton dan Rakan-Rakan Level 1-01, Cape Square, Signature Office No. 11, Persiaran Cape Square Blok A, Capital Square 50100, Kuala Lumpur Tel: 03 26982967</p>
	<p>12. Prince Court Medical Centre Sdn. Bhd. 39, Jalan Kia Peng 50450, Kuala Lumpur Tel: 03- 21600000 ext 2984/3860</p>
	<p>13. Klinik Integral Occupational Health Services Sdn. Bhd. Lot 2-05, Level 2 Menara HLA No. 3 Jalan Kia Peng 50450, Kuala Lumpur Tel: 03-21712882, Faks: 03-21712992</p>
	<p>14. Gleneagles Intan Medical Centre Lot 286, Jalan Ampang 50450 Kuala Lumpur Tel: 03-41413135, Faks 03-42552980</p>

APPROVED YELLOW FEVER VACCINATING CENTRES IN MALAYSIA

	15. Kuala Lumpur Sports Centre Sdn. Bhd. 7th Floor, Wisma Perintis Jalan Dungun, Damansara Heights 50490 Kuala Lumpur Tel: 03-20961033 Fax: 03-20961500
JOHOR	16. Pejabat Kesihatan Johor Baru Jalan Abu Samad, 80100 Johor Bahru, Johor. Tel: 07-2224711, 07-2224818
PAHANG	17. Poliklinik Komuniti Beserah Jalan Beserah, 26100, Kuantan Negeri Pahang Darul Makmur Tel: 09-5445633
SARAWAK	18. Port Health Office Divisional Health Department Kucing Division, KM 6, Jln. Bako 93050, Kucing, Sarawak. Tel: 082-432563
SARAWAK	19. Health Office Divisional Health Department Sibu Division, 5 th Floor Wisma Persekutuan, Block 3 Persiaran Brooke, 96000 Sibu, Sarawak. Tel: 084-315494
	20. Columbia Asia Medical Centre Lot 1035-1039 Jalan Bulan Sabit, CDT 155 98009, Miri, Sarawak. Tel: 085-437755
	21. Klinik Cheu SB Lot 512, Pelita Commercial Centre 98000, Miri Sarawak Tel: 085-438068, Fax: 085-438070
	22. Bintulu Medical Centre Lot 6009, Block 31, Kemena Land District 97000 Bintulu, Sarawak. Tel: 086-330333 Faks 086-330777

APPROVED YELLOW FEVER VACCINATING CENTRES IN MALAYSIA	
	23. Colombia Asia 21st Century Healthcare Lot 3582, Block 26, Jalan Sri Ikhwan Kemena Land District Tanjung Kidurong 97000 Bintulu, Sarawak Tel: 086-251888 Faks 086-252888
	24. Normah Medical Specialist Centre Section 30 KTL D Jalan Tun Abdul Rahman, Petra Jaya 93050, Kuching, Sarawak Tel: 082-440055 Fax: 082-442600
SABAH	25. Klinik Kesihatan Luyang Off, Jalan Lintas, 88300 Luyang, Kota Kinabalu, Sabah Tel: 088-715000
	26. Klinik Kesihatan Sandakan KM 3.2 Jalan Utara 90500 Sandakan, Sabah Tel: 089-225800
	27. Klinik Kesihatan Apas Balung Batu 24, Jalan Apas 91008 Tawau, Sabah Tel: 089-951029

PRECAUTIONS

- Minimize exposure to bites by modifying activities to avoid exposure to vector bites. Aedes mosquitoes peak biting times are a few hours before dusk and after dawn. Avoid outdoor activity during these periods.
- Avoid mosquito bite by applying mosquito repellent to exposed skin. When using sunscreen or lotions, apply repellents last. Reapply whenever sweat or water has removed it. Active ingredient in a repellent repels but does not kill insects. Repellent that contains DEET (N, N-diethylmetatoluamide) is most reliable and long-lasting type (35% DEET provides protection for 12 hours). DEET formulations as high as 50% are recommended for both adults (including pregnant women) and children more than two (2) months of age. It is toxic when ingested and may cause skin irritation. Permethrin is highly effective both as an

insecticide and as a repellent. There is little potential for toxicity from Permethrin-treated clothing.

- Use long sleeved clothes and long pant. Avoid wearing dark colours (attract mosquitoes).
- Close windows or shutters at night when indoors. Use pyrethrum insecticide spray (aerosol insecticides), pyrethroid coils or insecticide impregnated tablets in evening before sleep.
- Avoid strong perfumes, hair sprays or after-shaves (attract mosquitoes)!
- Use air-conditioning or good mosquito net especially treated with Permethrin.

REFERENCES ORGANIZATION/ SUPPORT

International Travel & Health, WHO 2012

International Health Regulations, 2005, WHO

Control of Communicable Diseases Manual, 18th Edition by David L. Heymann, MD, Editor, 2004

<http://travelhealth.co.uk/>