Malaria and Chikungunya

Mosquito-Borne Diseases in International Travel

Dr. Wasin Matsee, MD, MCTM, Dip. Board Travel Med, CTH®

Travel Medicine Research Unit, Department of Clinical Tropical Medicine

Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand

Thai Travel Clinic, Hospital for Tropical Diseases, Bangkok, Thailand

Conflict of Interest

- Grants / Research support: Sanofi Pasteur
- Speakers' bureau or advisory board memberships: Sanofi Pasteur, Takeda, GSK, MSD, BioNet Asia

LEARNING OBJECTIVES

- At the conclusion of this presentation, learners will be able to:
  - Epidemiology of malaria and chikungunya in international travelers
  - Preventive measures for malaria and chikungunya in travelers

Journal of Travel Medicine
International Society of Travel Medicine
Established 1991
Promoting healthy travel worldwide

Journal of Travel Medicine, 2020, 1–3
doi: 10.1093/jtm/taaa015
Editorial

Editorial

Travellers give wings to novel coronavirus (2019-nCoV)

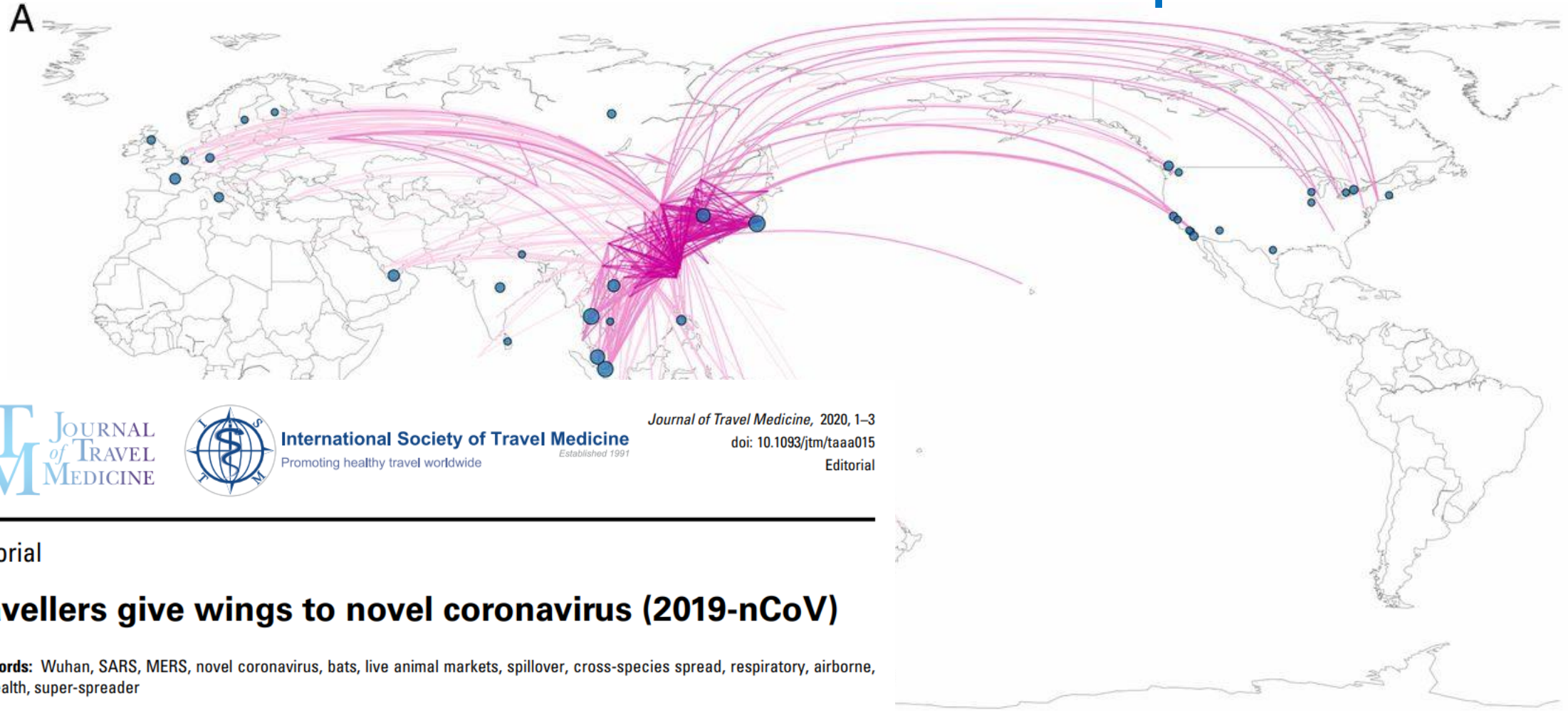
Key words: Wuhan, SARS, MERS, novel coronavirus, bats, live animal markets, spillover, cross-species spread, respiratory, airborne, one health, super-spreader

"**Travelers play an important role for international spreading**"

- Human to human esp. respiratory virus

Wilson ME, Chen LH. J Travel Med. 2020 Mar 13;27(2):taaa015.

COVID-19 and travel: International Spread



Journal of Travel Medicine
International Society of Travel Medicine
Established 1991
Promoting healthy travel worldwide

Journal of Travel Medicine, 2020, 1–3
doi: 10.1093/jtm/taaa015
Editorial

Editorial

Travellers give wings to novel coronavirus (2019-nCoV)

Key words: Wuhan, SARS, MERS, novel coronavirus, bats, live animal markets, spillover, cross-species spread, respiratory, airborne, one health, super-spreader

Wells CR, et al. PNAS 2020;117:13:7504-7509

Table 2. **Diagnosis According to Syndrome Group and Travel Region among Ill Travelers Returning from the Developing World.***

Diagnosis	All Regions (N=17,353)	Caribbean (N=1115)	Central America (N=1326)	South America (N=1675)	Sub-Saharan Africa (N=4524)	South Central Asia (N=2403)	Southeast Asia (N=2793)	Other or Multiple Regions (N=3517)†
				number of cases per 1000 patients				
Systemic febrile illness‡	226	166	153	143	371	171	248	145
Acute diarrhea‡	222	196	234	219	167	327	210	238
Dermatologic disorder‡	170	261	225	264	127	130	212	125
Chronic diarrhea‡	113	132	173	130	57	129	97	149
Nondiarrheal gastrointestinal disorder‡	82	87	75	82	70	74	58	121
Respiratory disorder‡	77	45	49	50	77	89	97	86
Nonspecific symptoms or signs‡	70	53	51	59	75	85	63	77
Genitourinary disorder‡	35	29	11	27	51	25	29	40
Asymptomatic parasitic infection‡	30	15	26	33	29	44	30	24
Underlying chronic disease‡	19	14	23	18	20	14	13	27
Injury‡	14	23	11	14	7	15	14	21
Neurologic disorder‡	15	23	24	16	10	15	10	16
Adverse drug or vaccine reaction‡	12	4	5	5	26	12	8	8
Psychological disorder‡	12	8	20	15	8	12	10	18
Tissue parasite‡	10	5	5	11	22	4	3	7
Cardiovascular disorder	8	12	7	5	8	7	5	10
Obstetrical or gynecologic disorder	3	3	2	2	4	3	3	3
Ophthalmologic disorder	2	2	2	2	2	1	1	2
Dental problem	1	1	1	1	1	0	2	1
Death	1	1	0	0	1	3	0	1
Loss to follow-up‡	8	9	12	9	8	5	4	13

* Diagnoses included in each syndrome category are listed in the Supplementary Appendix. Numbers may not total 1000 because patients may have had more than one diagnosis.
† This category includes travel to West Asia, Northeast Asia, eastern Europe, Oceania, North Africa, or Antarctica (1868 travelers) or to multiple developing regions, for which ascertainment of exposure was impossible (1649 travelers).
‡ P<0.01 for the comparison among regions.

Diagnosis According to Syndrome Group and Travel Region among Ill Travelers Returning from the Developing World

Freedman DO, et al. *N Engl J Med.* 2006;354:119-130.

Ill-returned Travelers

- Fever is one of the most common reported symptom among ill-returned travelers
- May lead hospitalization and life-threatening illness
- 28% of 24,920 ill travelers presented with fever at travel clinic on their return home[1]

[1]Wilson ME, et al. Clin Infect Dis.2007;44:1560-8.

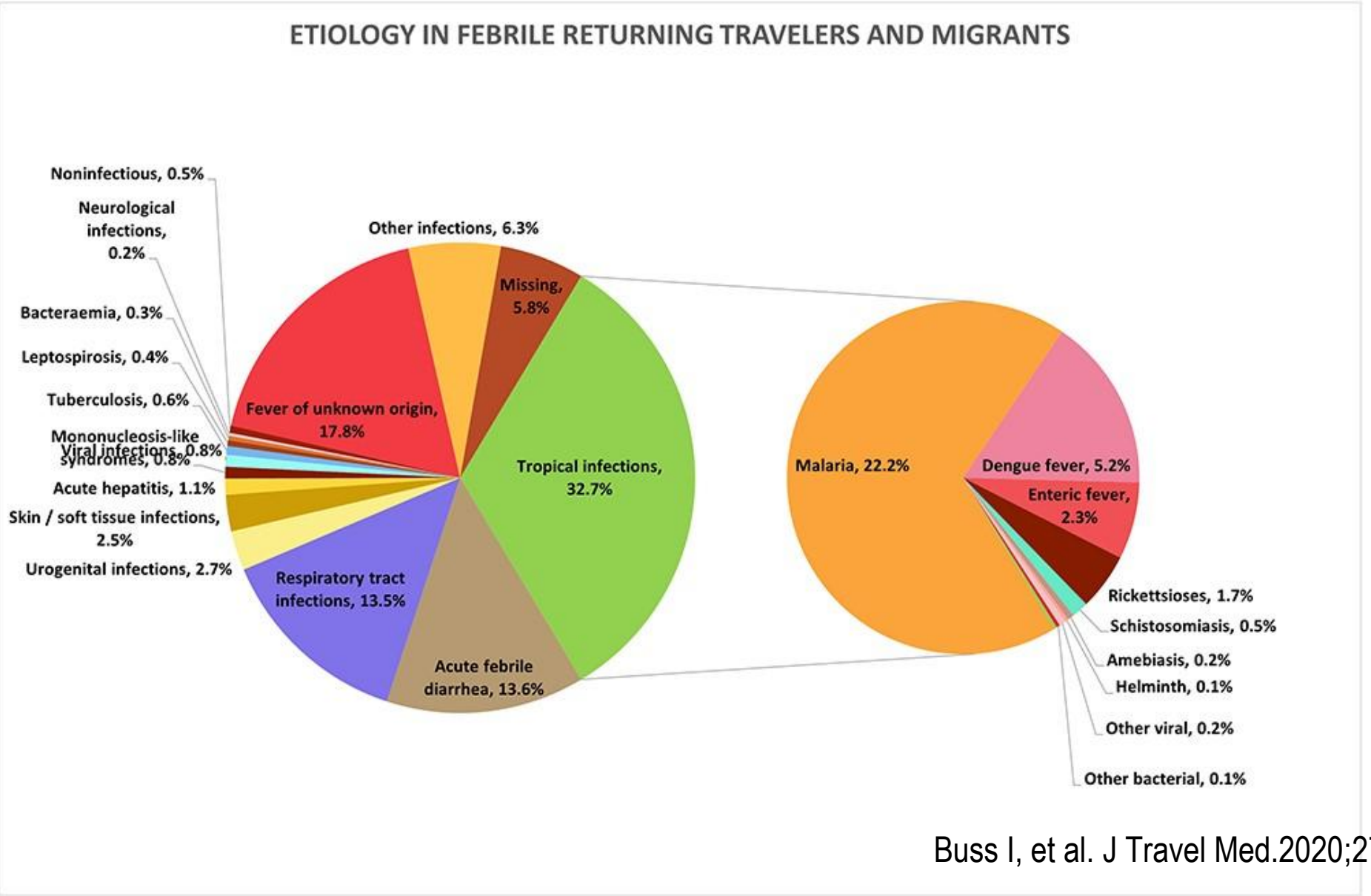
Journal of Travel Medicine
International Society of Travel Medicine
Promoting healthy travel worldwide
Established 1991
Journal of Travel Medicine, 2020, 1–12
doi: 10.1093/jtm/taaa207
Advance Access Publication Date: 4 November 2020
Original Article

Original Article

Aetiology of fever in returning travellers and migrants: a systematic review and meta-analysis

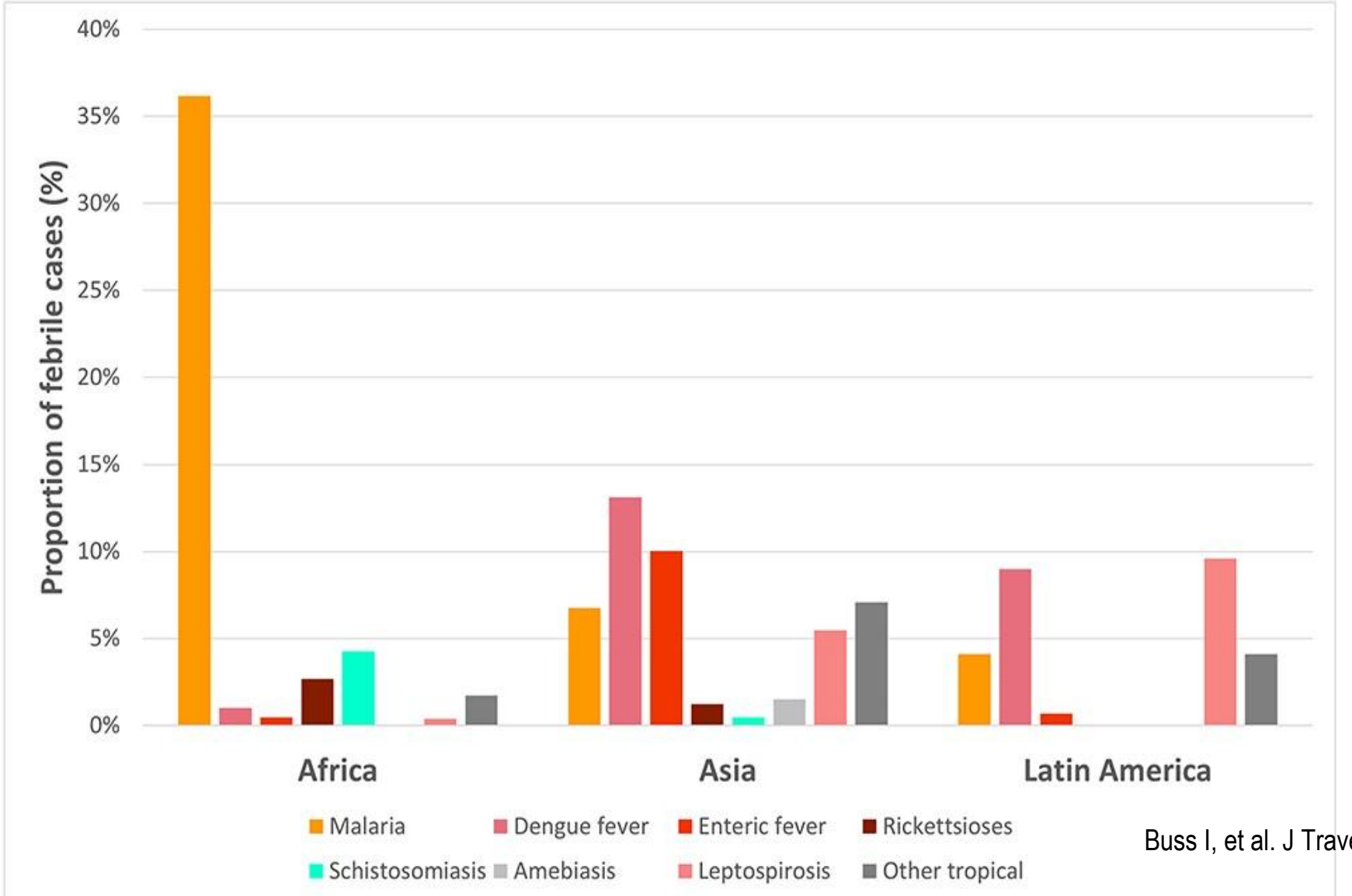
Imogen Buss MBChB, MScGH, EADTMH[1], Blaise Genton MD, PhD[1,2,*] and Valérie D'Acremont MD, PhD[1,2]

[1]Centre for Primary Care and Public Health (Unisanté), University of Lausanne, Lausanne, Switzerland and [2]Swiss Tropical and Public Health Institute, University of Basel, Basel, Switzerland



Buss I, et al. J Travel Med.2020;27(8):taaa207.

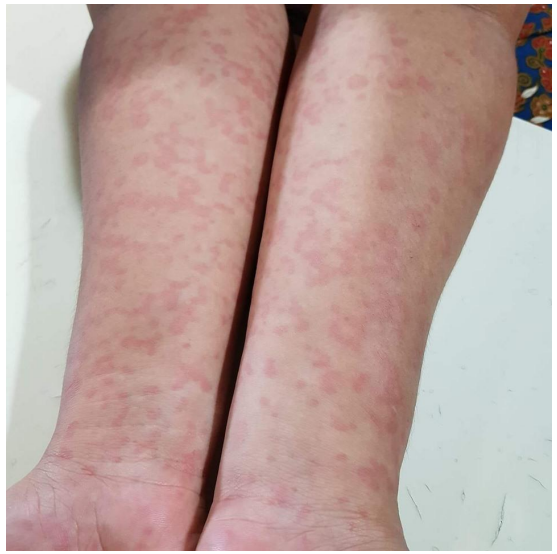
Prevalence of common tropical diseases categorized according to region visited



Buss I, et al. J Travel Med.2020;27(8):taaa207.

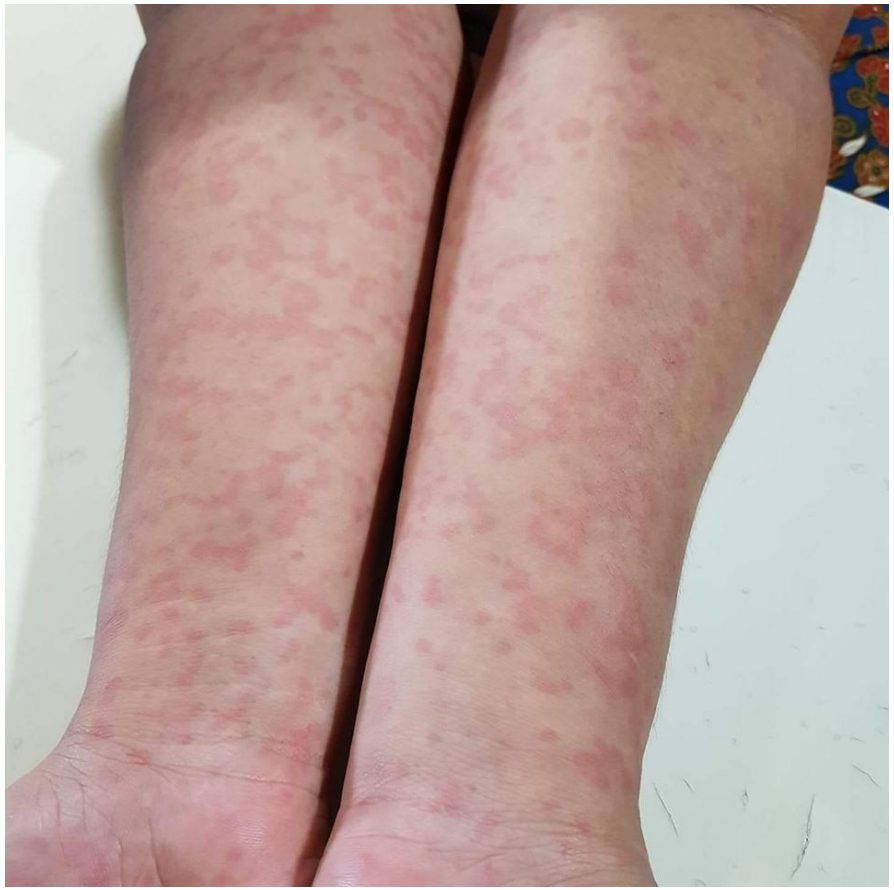
Fever in Returned Travellers: Challenges

- **Diseases**:
  - Common causes in different region is different
  - Most tropical diseases share similar presentation (challenges in diagnosis)
  - Emerging of new infection: Mpox, Oropouche, many more …
- **Clinician:**
  - Unfamiliar with the endemic diseases (required specialists)
  - Miss the history of exposure/travel history
  - Delayed diagnosis and treatment

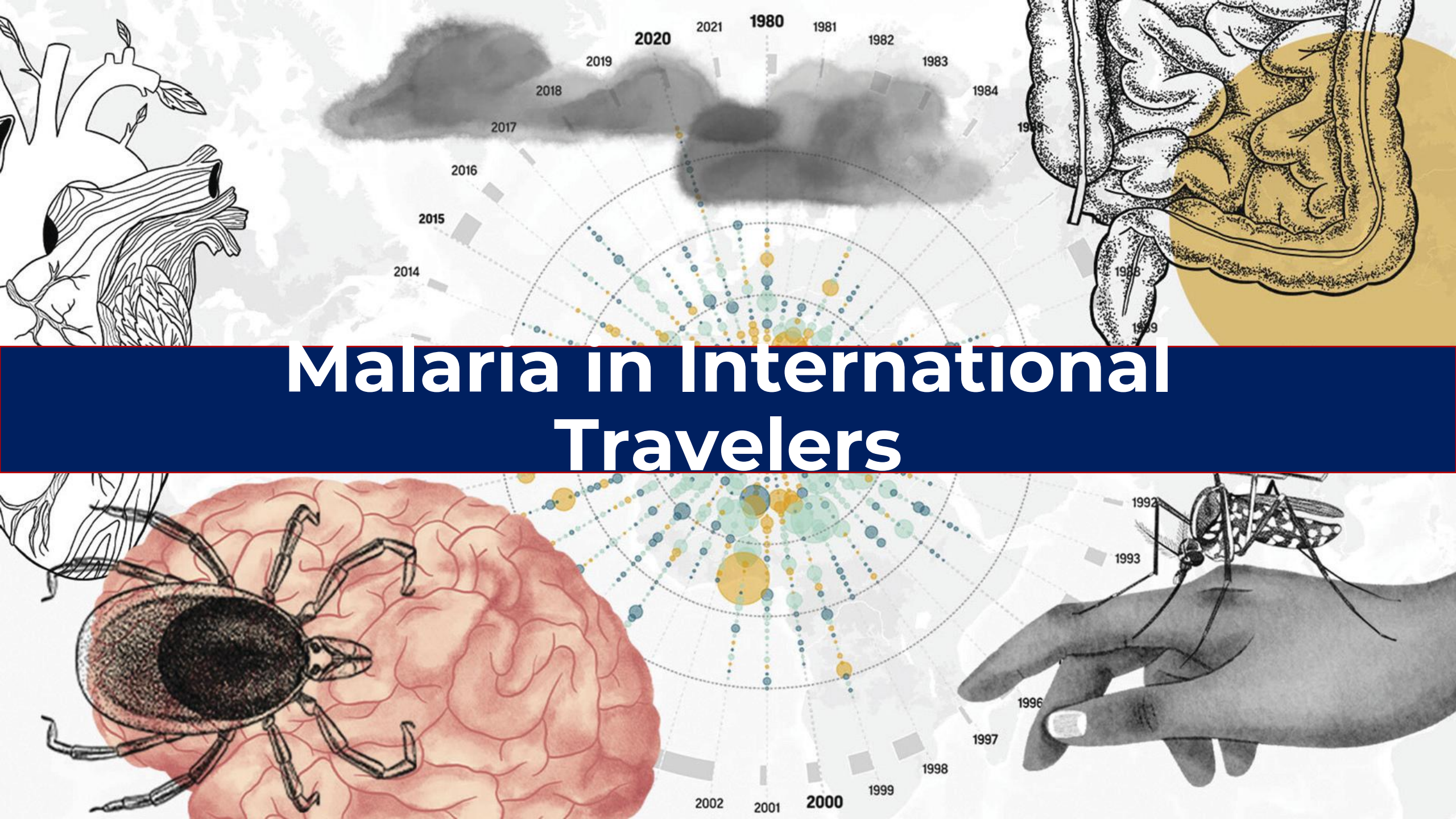


Fever in Returned Travellers: Challenges

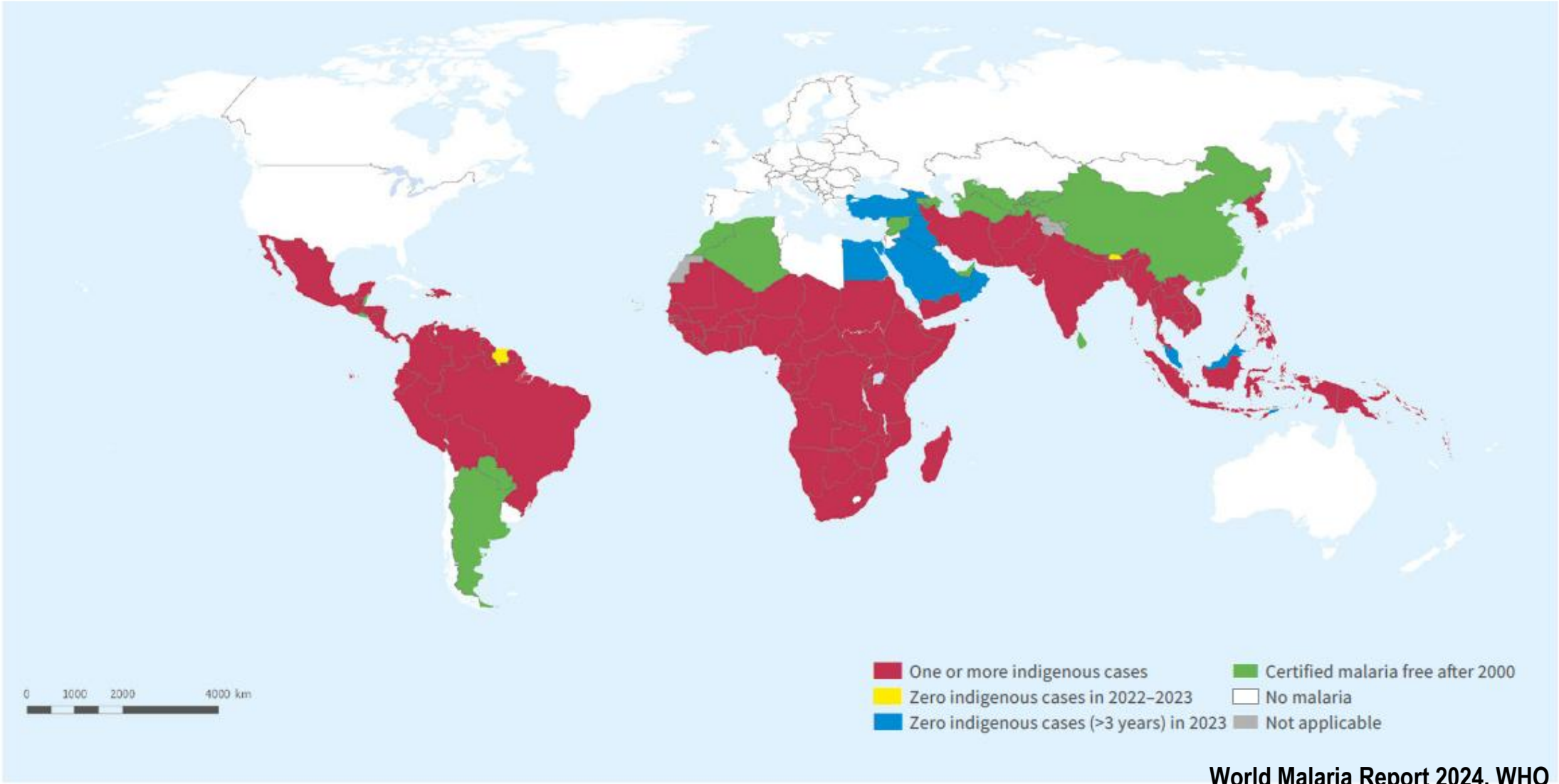
- **Patients (Travelers)**:
  - Unaware of risk esp. malaria
  - Delayed presentation



Malaria in International Travelers



Global Burden of Malaria



World Malaria Report 2024, WHO

Introduction

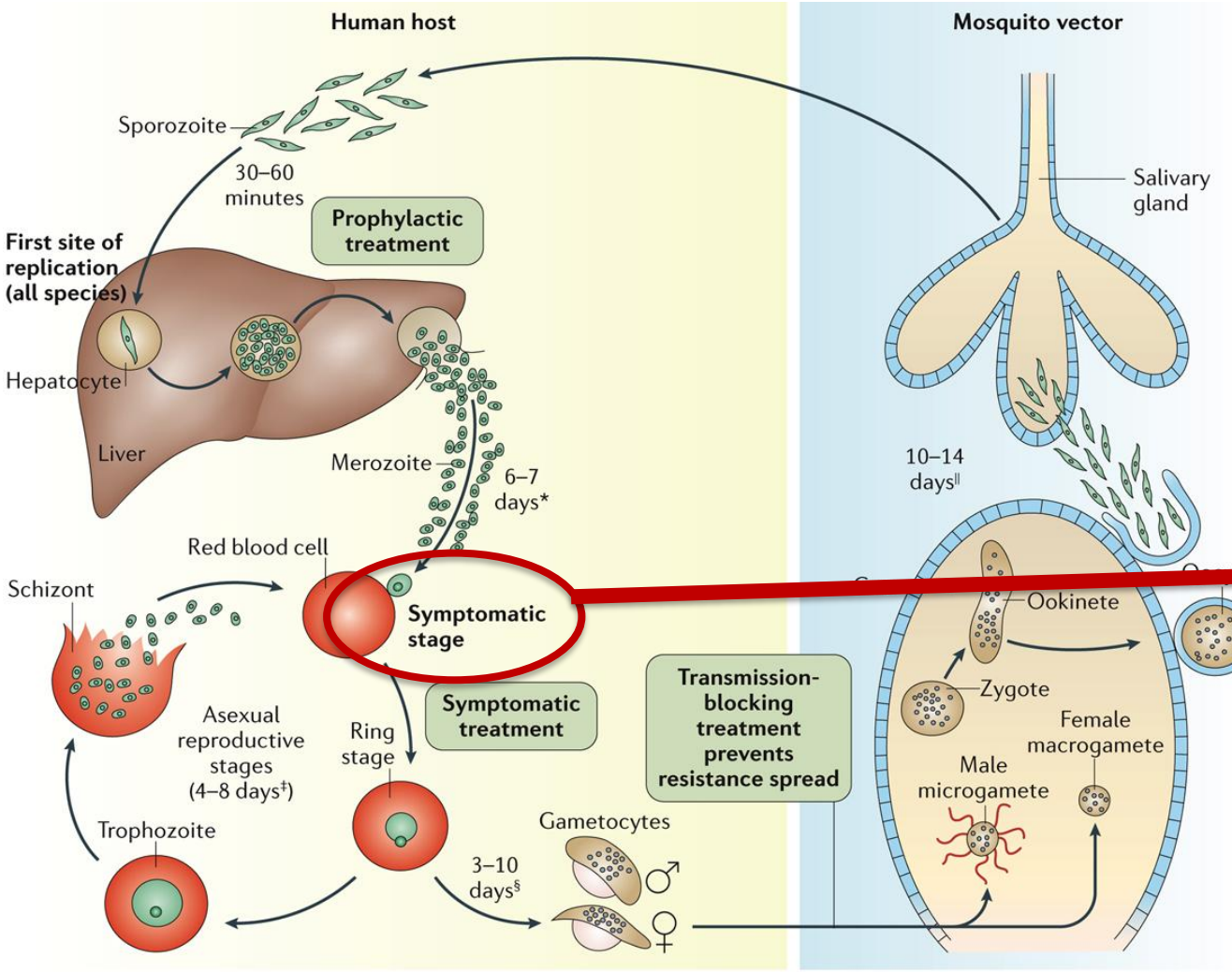
- Most serious, life-threatening infectious caused by protozoan pathogens - *Plasmodium* spp.
- 263 million malaria cases including **597,000 malaria deaths** worldwide in 2023
- > 95% deaths occurred in Africa **(>50% - Children age < 5yrs)**
- **> 30,000 travel-related malaria cases** are reported annually
- Common cause of fever in returning travelers (esp. Sub-Saharan Africa)
- Hongkong is non-endemic for malaria
- More than 20 cases imported annually

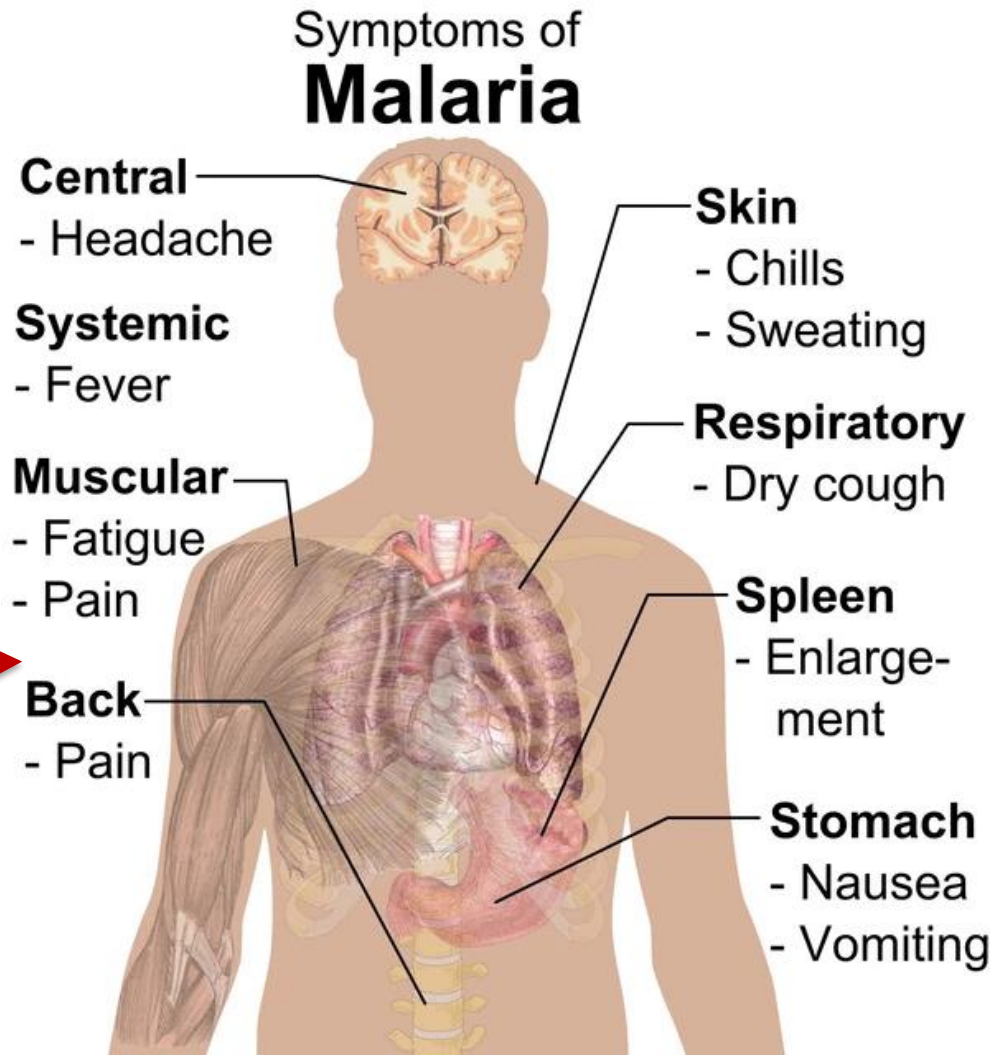
WHO, World Malaria Report 2023

Introduction

- 5 *Plasmodium* spp. can cause human malaria
  - ***P falciparum*** – predominantly in Africa
  - ***P. vivax*** – Asia and South Americas
  - *P. malariae*
  - *P. ovale*
  - the simian parasite ***P. knowlesi*** - the **island of Borneo** but has been reported in other **South-East Asian countries**

The *Plasmodium* spp. life cycle

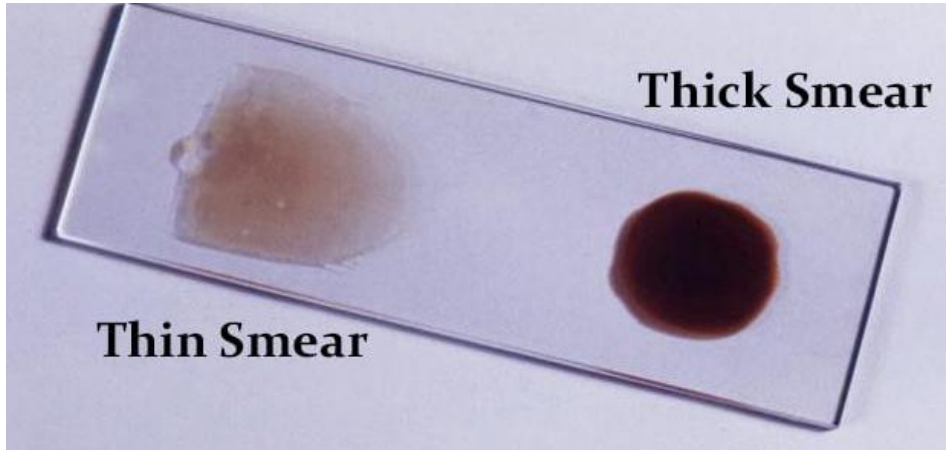


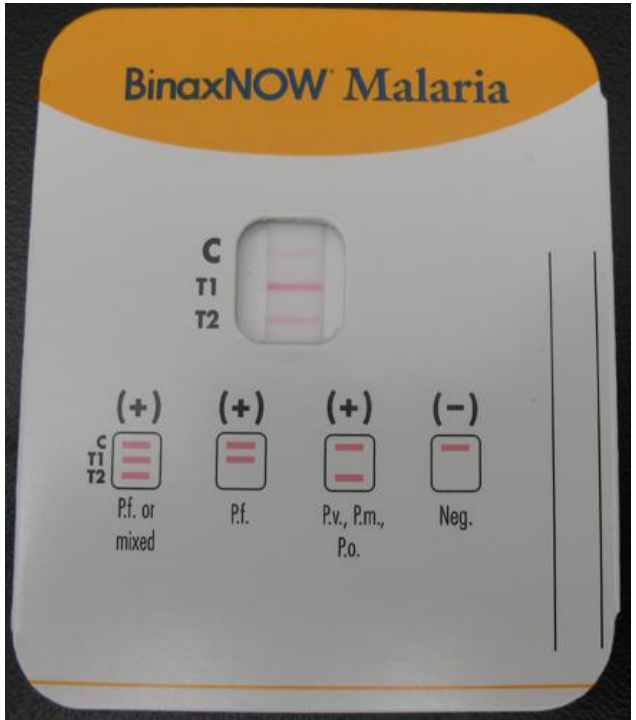


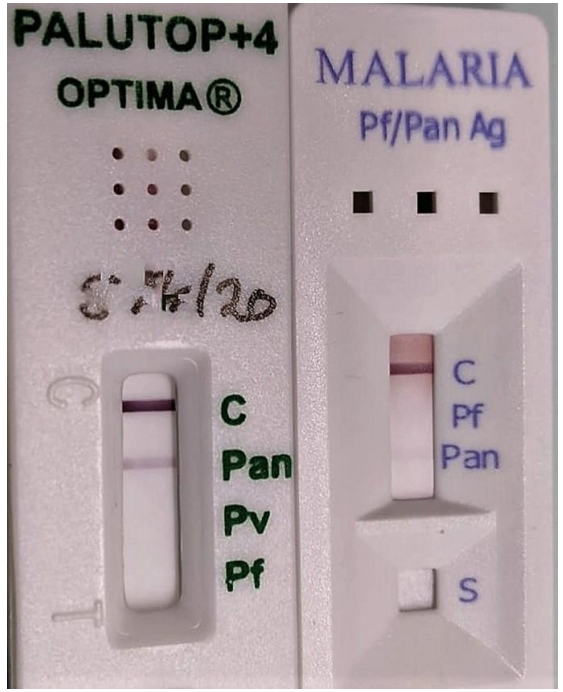
Nature Reviews | Disease Primers

Diagnostic test

- Microscopy (Thick/Thin film) – Gold standard
- Rapid antigen test
- Molecular method (PCR)







Common pitfall of travel-related malaria deaths

Delay diagnosis and delay treatment*

(Malaria is 100% treatable! Early diagnosis and prompt treatment is the key!)

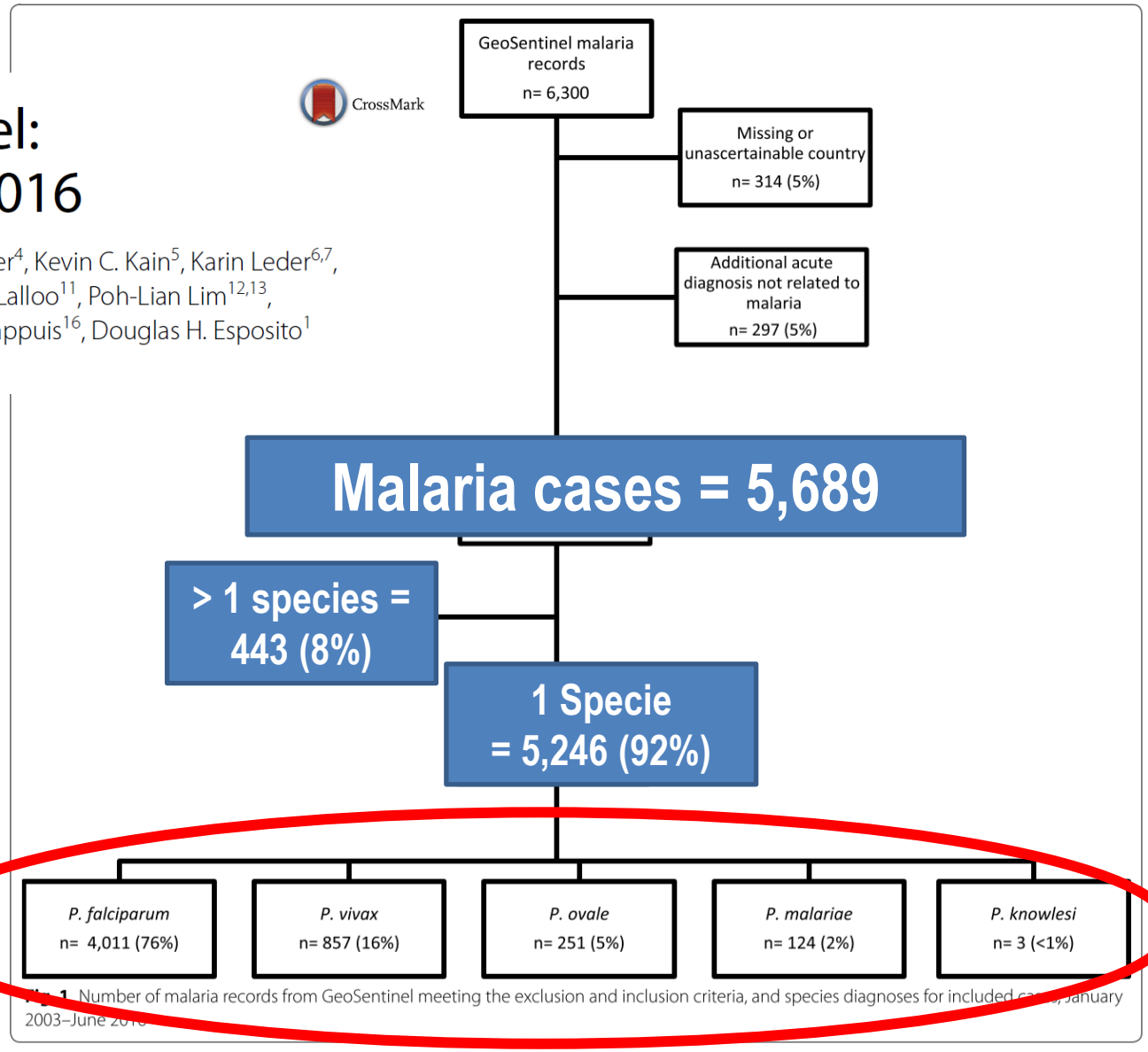
Common Cause of Fever in Returned Travelers

Sub-Saharan Africa	Southeast Asia	Caribbean and Central and South America
Malaria 42%	Dengue 18%	Diarrheal illness 15%
Respiratory illness 10%	Respiratory illness 17%	Respiratory illness 13%
Diarrheal illness 10%	Diarrheal illness 17%	Dengue 9%
Other system febrile illness 7%	**Malaria 7%**	**Malaria 8%**
No diagnosis 19%	Other systemic febrile illness 9%	Other systemic febrile illness 8%
	No diagnosis 22%	No diagnosis 26%

[1]Adapted from: Wilson ME, et al. Clin Infect Dis.2007;44:1560-8.

Malaria after international travel: a GeoSentinel analysis, 2003–2016

Kristina M. Angelo[1*], Michael Libman[2], Eric Caumes[3], Davidson H. Hamer[4], Kevin C. Kain[5], Karin Leder[6,7], Martin P. Grobusch[8], Stefan H. Hagmann[9], Phyllis Kozarsky[1,10], David G. Lalloo[11], Poh-Lian Lim[12,13], Calvin Patimeteeporn[1], Philippe Gautret[14], Silvia Odolini[15], François Chappuis[16], Douglas H. Esposito[1] and for the GeoSentinel Network



Number of malaria records from GeoSentinel meeting the exclusion and inclusion criteria, and species diagnoses for included cases, January 2003–June 2016

Angelo KM., et al. Malar J 2017; 16: 293

Malaria after international travel: a GeoSentinel analysis, 2003–2016

Kristina M. Angelo[1*], Michael Libman[2], Eric Caumes[3], Davidson H. Hamer[4], Kevin C. Kain[5], Karin Leder[6,7], Martin P. Grobusch[8], Stefan H. Hagmann[9], Phyllis Kozarsky[1,10], David G. Lalloo[11], Poh-Lian Lim[12,13], Calvin Patimeteeporn[1], Philippe Gautret[14], Silvia Odolini[15], François Chappuis[16], Douglas H. Esposito[1] and for the GeoSentinel Network

- 53% were **VFRs**
- 60% of travelers with *P. falciparum*
- Median trip duration was **32 days** (IQR range 20-75 days)
- More than 40% of travelers with a trip duration ≤ 7 days had *P. vivax*
- Median days between return and presenting to a site **11 days** (IQR range 6-21 days)
- 62% were hospitalized (8% severe, 12 travelers died)

Contents lists available at ScienceDirect

Travel Medicine and Infectious Disease

journal homepage: www.elsevier.com/locate/tmaid

Epidemiologic trends and clinical outcomes of imported malaria in a tertiary care hospital, Bangkok, Thailand: A retrospective analysis (2013–2022)

Panita Looareesuwan [a,b], Rachata Charoenwisedsil [b], Punyisa Asawapaithulsert [b], Phimphan Pisutsan [b,c], Viravarn Luvira [c], Watcharapong Piyaphanee [b,c], Wasin Matsee [b,c,*]

Figure 1 Transnational and border malaria in a tertiary hospital, Bangkok, Thailand (2013-2022)

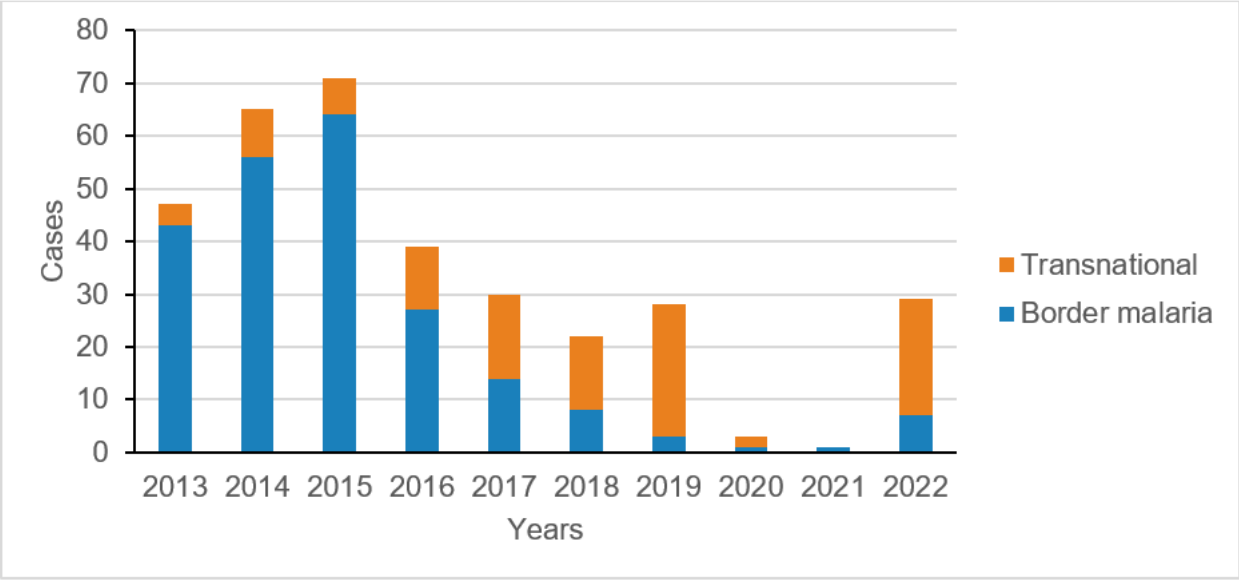


Table 2
Demographic, clinical and treatment outcomes of imported malaria according to severity of illness.

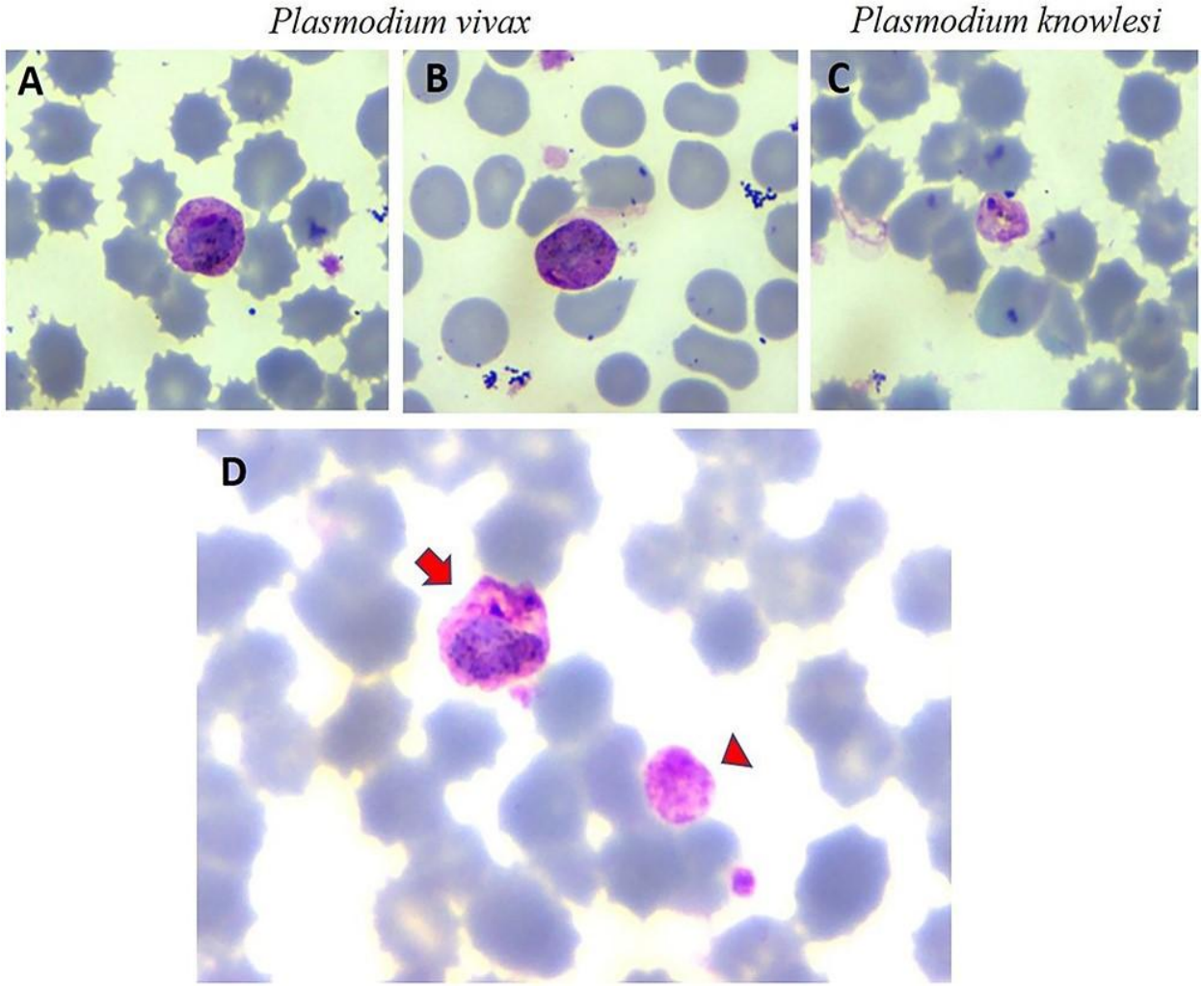
Characteristics	Uncomplicated malaria N = 294	Severe malaria[a] N = 41	Total
Sex, *n* = 335 (%)			
Female	37 (12.6)	12 (29.3)	49 (14.6)
Male	257 (87.4)	29 (70.7)	286 (85.4)
Median age, *n* =335 (IQR),	28 (21–36)	34 (25–47)	
Nationality, *n* =335 (%)			
Thai	57 (19.4)	10 (24.4)	67 (20)
Asian (non-Thai)[b]	187 (63.6)	22 (53.7)	209 (62.4)
African	39 (13.3)	5 (12.2)	44 (13.1)
European and others[c]	11 (3.7)	4 (9.8)	15 (4.5)
Occupation, *n* =307 (%)			
Unskilled labour	187 (69.5)	24 (63.2)	211 (68.7)
Professionals[d]	25 (9.3)	6 (15.8)	31 (10.1)
Merchant	27 (10.0)	3 (7.9)	30 (9.8)
Others	30 (11.2)	5 (13.2)	35 (11.4)
Purpose of travel, *n* = 322 (%)			
Visiting friends and relatives	201 (71.5)	26 (63.4)	227 (70.5)
Business/occupational	52 (18.5)	12 (29.3)	64 (19.9)
Tourism	25 (8.9)	3 (7.3)	28 (8.7)
Others[e]	3 (1.1)	0 (0.0)	3 (0.9)
Country/region of acquisition, *n* = 335 (%)			
Sub-Saharan Africa	76 (25.9)	19 (46.3)	95 (28.4)

Plasmodium knowlesi in HTD (2022)

Case	Chief compliant	Diagnosis	Status
1	60-year-old Thai male referred to HTD with severe *P. falciparum* malaria	*P.Knowlesi* (from Kanchanaburi)	ICU, Recovery
2	71-year-old male Thai with U/D HT,DLP referred to HTD with severe *P. falciparum* malaria	*P.Knowlesi* (from Ratchaburi)	ICU, Recovery
3	61-year-old male Thai U/D HT,DM referred to HTD with severe *P. falciparum* malaria	*P.Knowlesi* (from Satun)	ICU, Recovery

Practical consideration

- Severe *P. knowlesi* infection can resemble *P. falciparum*, making differentiation challenging using microscopy >> cases may underreported.
- Delayed diagnosis >> lead to severe malaria (lack of travel history)
- Severe *P. knowlesi* infection: Present with clinical severity despite low parasitemia



Journal of Travel Medicine, 2023, 1–3
https://doi.org/10.1093/jtm/taad120
Clinical Pearls

Clinical Pearls

Challenges of *Plasmodium vivax* and *Plasmodium knowlesi* co-infection

Rachata Charoenwisedsil, MD[1,2], Punyisa Asawapaithulsert, MD[1,2], Phimphan Pisutsan, MD[1,2], Kesinee Chotivanich, PhD[1,2] and Wasin Matsee, MD[1,2,*]

[1]Thai Travel Clinic, Hospital for Tropical Diseases, Faculty of Tropical Medicine, Mahidol University, Bangkok 10400, Thailand and [2]Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University, Bangkok 10400, Thailand

*To whom correspondence should be addressed. Travel Medicine Research Unit, Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand, 420/6 Ratchawithi Road, Bangkok 10400, Thailand. Email: wasin.mat@mahidol.edu

Submitted 17 August 2023; Revised 5 September 2023; Editorial Decision 6 September 2023; Accepted 6 September 2023

Plasmodium Knowlesi in HTD (2023)

Case	Chief compliant	Diagnosis	Status
1	39-year-old Burmese man referred to HTD with severe *P. vivax* malaria	*P. Vivax* + *P.Knowlesi* (from Myanmar)	ICU, Recovery
2	19-year-old Thai male referred to HTD with severe *P. vivax* malaria	*P. Vivax* + *P.Knowlesi* (from Keang KraChan, Pethchaburi)	ICU, Recovery

Practical consideration

- Severe *P. vivax* is uncommon >> potential mixed infection or co-infection
- Emerging in *P. knowlesi* in the area through traveler/migration
- Delayed diagnosis can lead to severe manifestation.
- **“Travel History” is important!! in all febrile cases!**

Prevention

- There is vaccine to use in Africa (not available for travelers)
- Malaria chemoprophylaxis
  - Atovaquone-proguanil (Malarone)
  - Doxycycline
  - Mefloquine

Malaria chemoprophylaxis

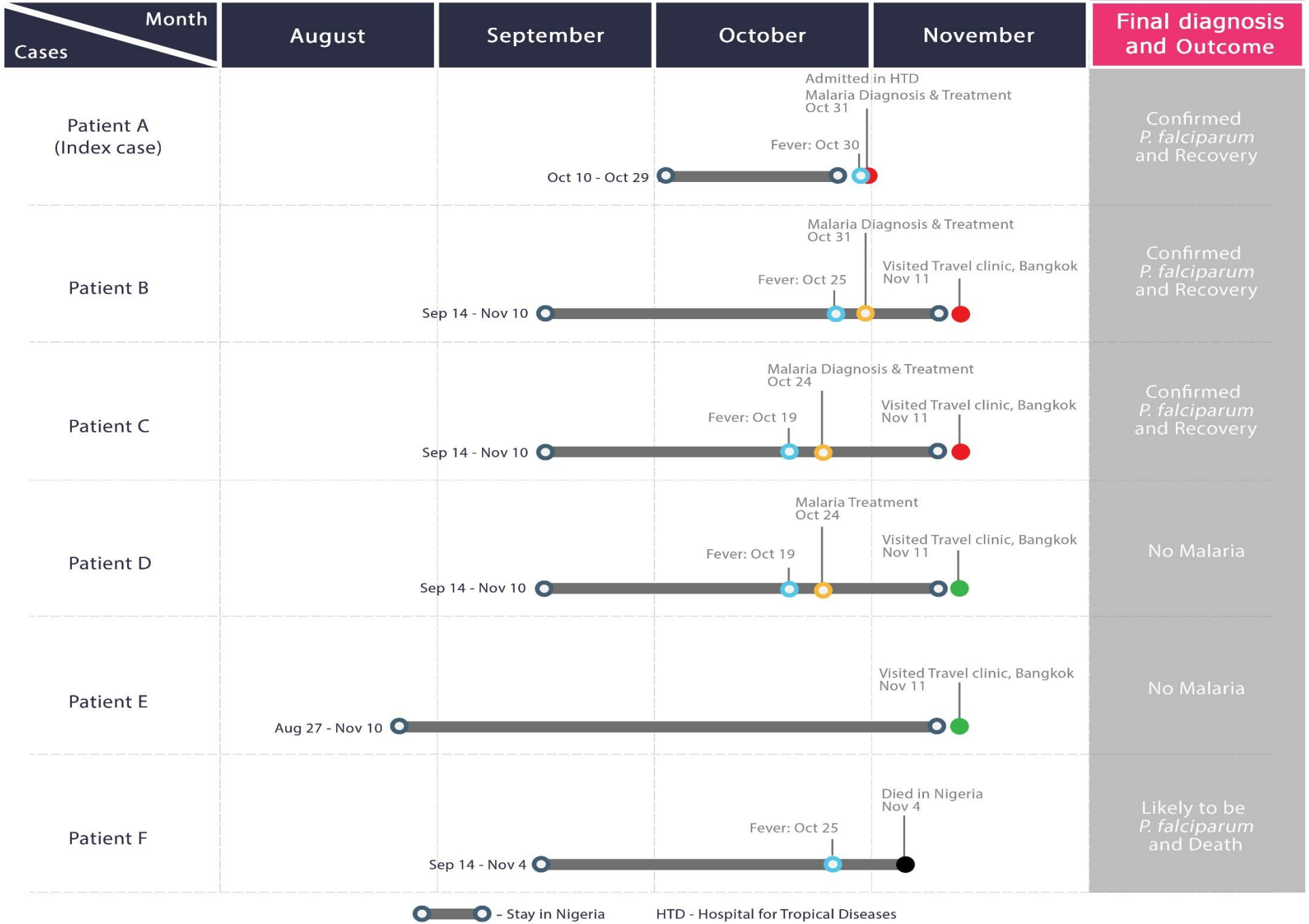
Malaria risk

Side effects

DO NOT FOCUS ONLY ON INDIVIDAUL CASE!

- Do not focus only on individual cases but also consider potential disease clusters

Matsee W, et al. *Am J Trop Med Hyg*. 2018 Sep;99(3):623-626.



Matsee W, et al. *Am J Trop Med Hyg*. 2018 Sep;99(3):623-626.

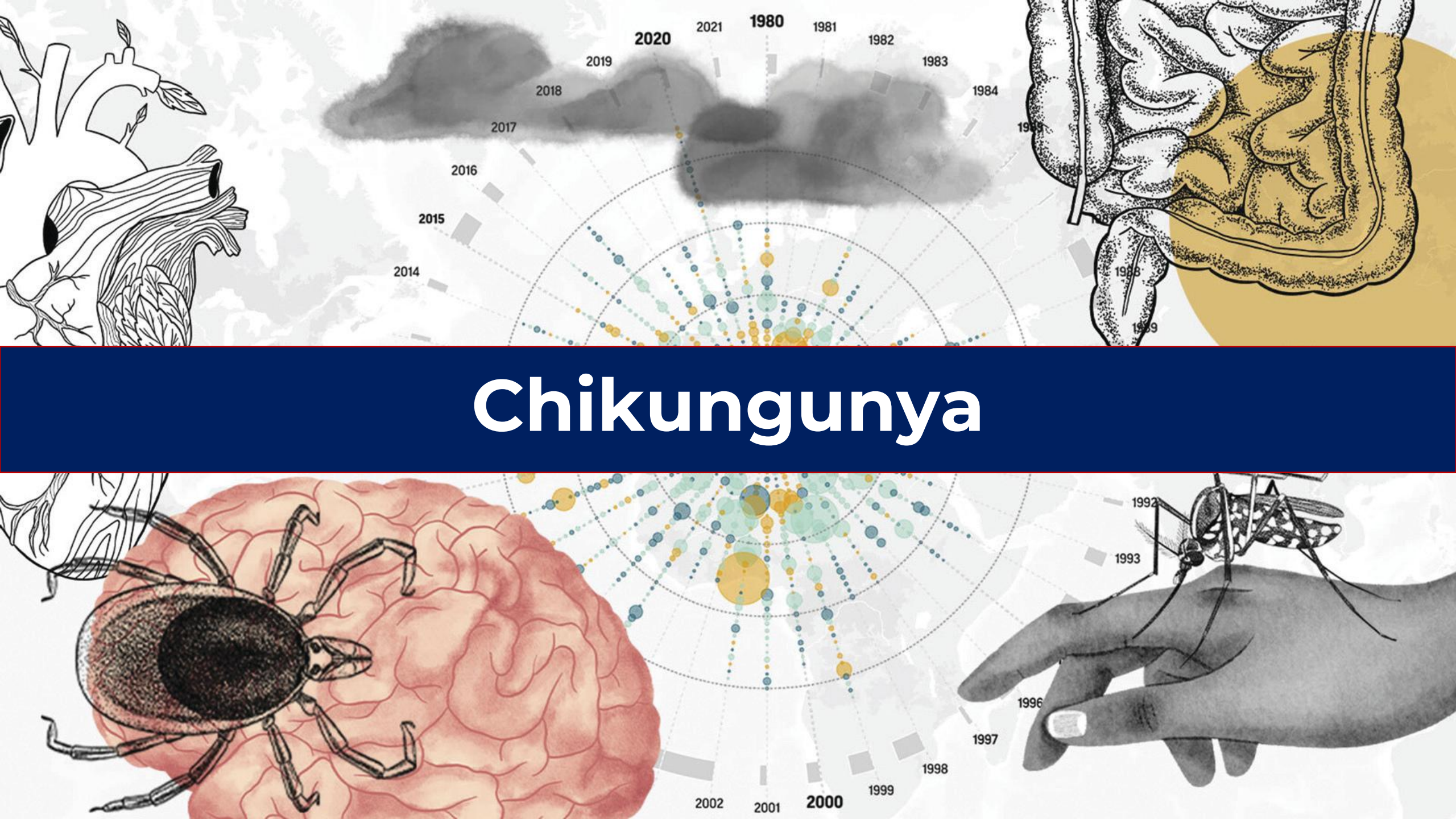
Case Series: Thai workers in Nigeria

	Age	Fever	Event in Nigeria	Seen in HTD	Diagnosis	outcome
A	M, 46y	30 Oct	None	31 Oct	P.f.	recover
					P.f.	
E	F, 45y	24 Oct	No fever, blood neg	11 NOV	All negative	recover
F	M, -	25 Oct	Fever, jaundice, admit 6 days	N/A	Suspected Pf malaria	Died on 4th Nov

4/6 Thai workers got malaria in this trip

Attack rate = 66.7%

Matsee W, et al. *Am J Trop Med Hyg*. 2018 Sep;99(3):623-626.



Chikungunya

Chikungunya

- Chikungunya virus is a single-stranded RNA virus that belongs to the family *Togaviridae*, genus *Alphavirus*
- After the 2004–2019 epidemic of chikungunya virus (CHIKV), the largest chikungunya epidemic ever recorded, this disease remains a global problem.
- Three major genotypes of CHIKV are now recognized — the **Asian**, the **West African** and the **Asian and East–Central South African (ECSA)** genotypes
- A new lineage, the **Indian Ocean Lineage (IOL)**, also emerged from the ECSA genotype during the 2004–2019 epidemic

Figure 1: Geographical distribution of CHIKV diseasecases as reported to WHO or Publicly shared by Ministries of Health from January to September 2025

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

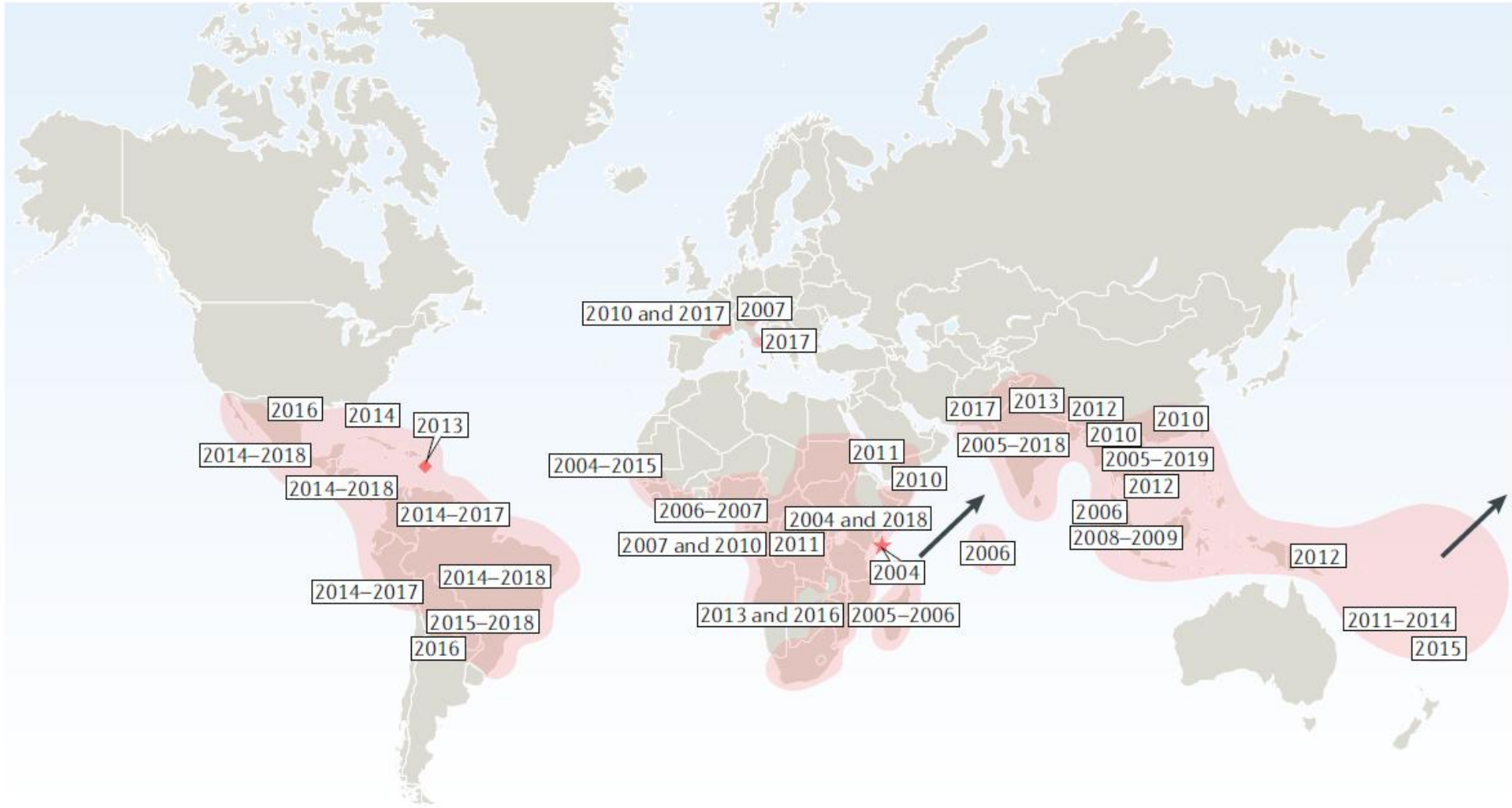
Data Source: World Health Organization, publicly shared data by Ministries of Health
Map Production: WHO Health Emergencies Programme
Map Date: 1 October 2025

0 1,500 3,000 Km

World Health Organization

WHO

Emergence and spread of the 2004–2019 ChIKV epidemic



Suhrbier A. Nat Rev Rheumatol. 2019 Oct;15(10):597-611.

Risk of Chikungunya in travelrs

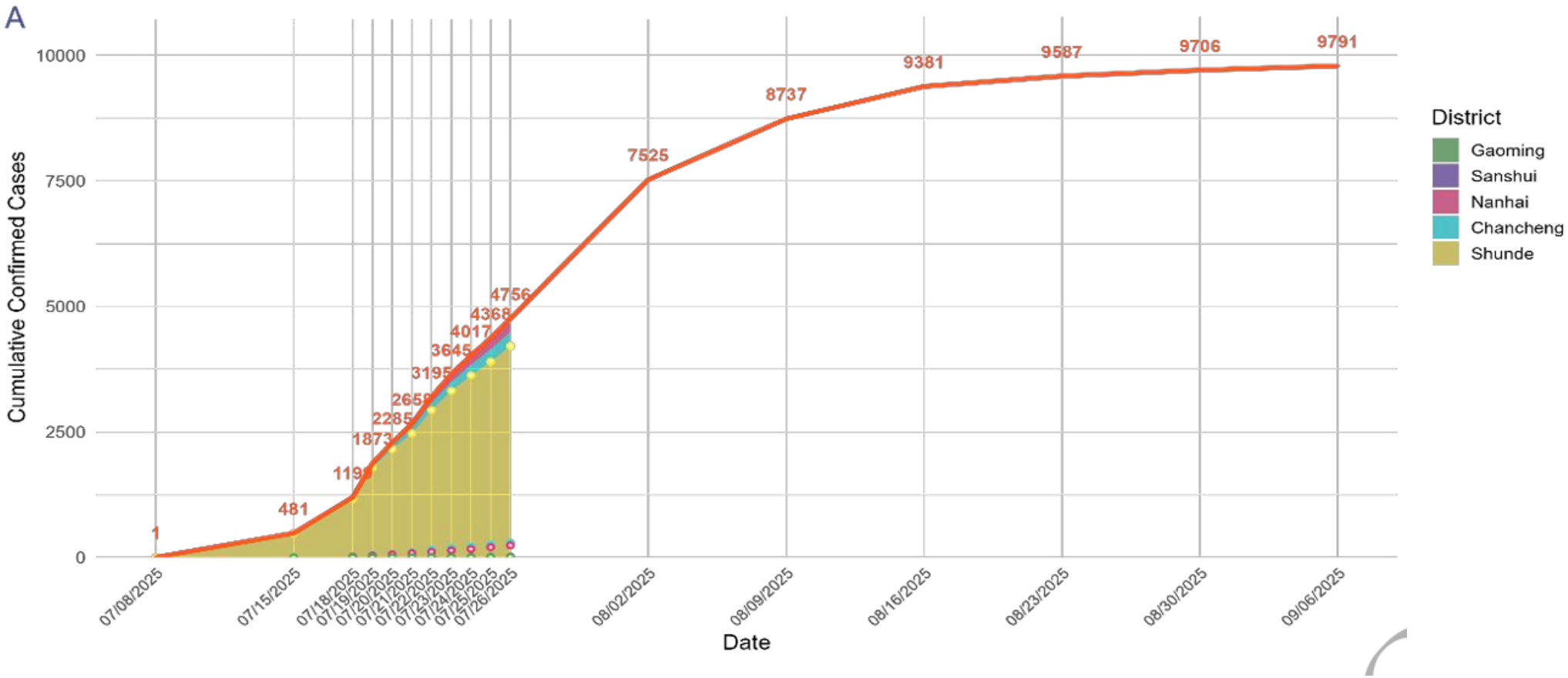
- Risk to travelers is greatest in areas experiencing ongoing chikungunya epidemics
- After the outbreaks in the Americas during 2014–2017, >4,000 chikungunya cases were reported among U.S. travelers
- 13 locally acquired cases were reported in the continental United States
- During 2018–2023, 612 U.S. traveler cases were reported, with noticeably fewer cases during 2020–2021 (COVID-19)

Chikungunya cluster in Guangdong Province 2025

- A detected case on 8 July 2025, has evolved to over 9,000 cases (as of September 6)
- With its climate conducive to **Aedes mosquitoes** and its **high levels of global travel** activities—creates a potential risk area for a chikungunya outbreak
- Whole-genome sequencing of 190 cases revealed that the viral strains exhibited high genomic homology and all belonged to the **Central African clade of the East-Central-South African (ECSA) genotype**
- All cases were mild, no fatal cases reported

Wang H, et al. *J Travel Med*. 2025 Sep 24:taaf101.

Chikungunya cluster in Guangdong Province 2025

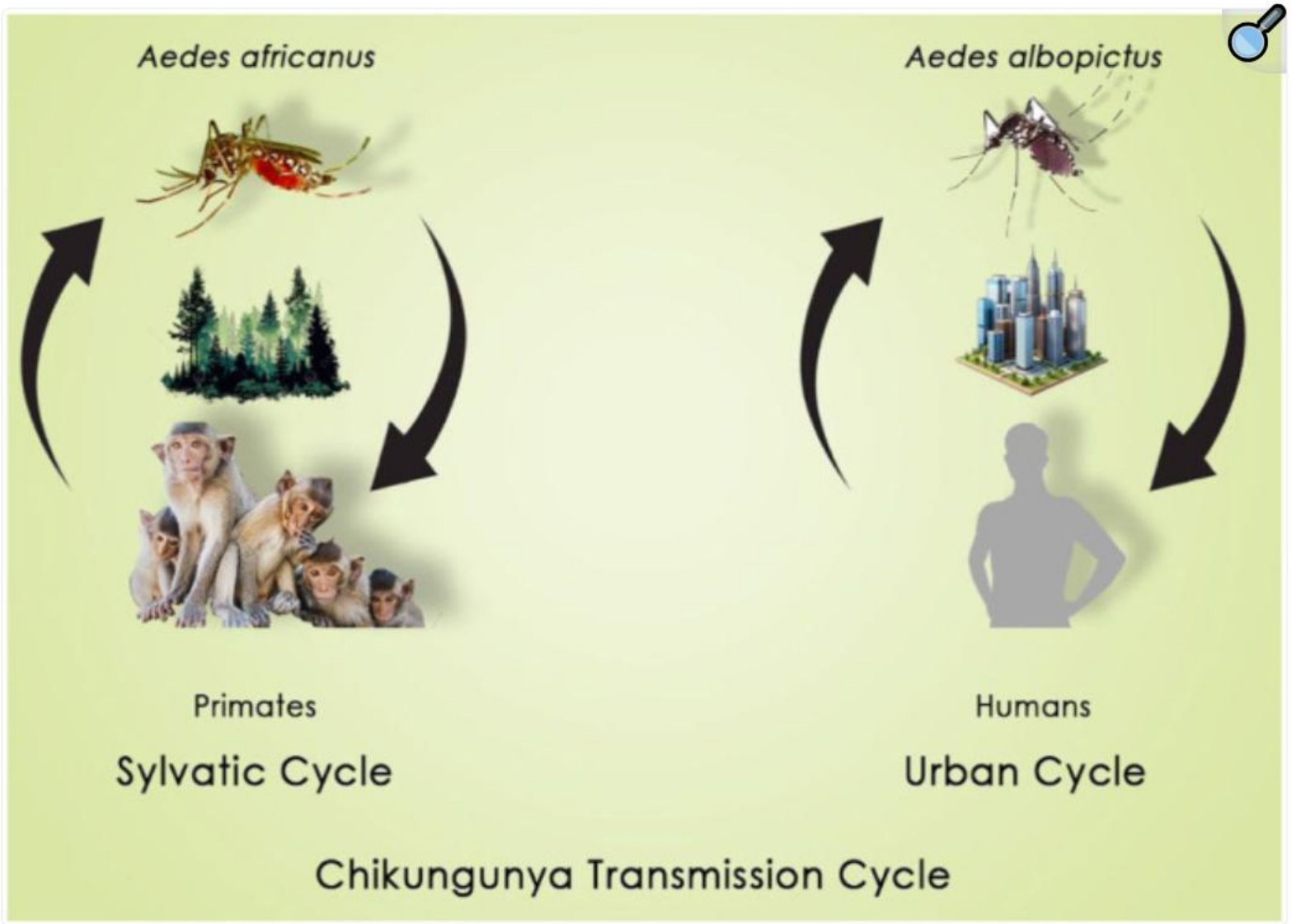


Wang H, et al. *J Travel Med*. 2025 Sep 24:taaf101.

Chikungunya cluster in Guangdong Province 2025

- Travel and trade intensify the risk of CHIKV importation, particularly given Guangdong's status as a major hub for international business, tourism, and labor migration
- The reemergence of chikungunya in southern China reflects broader patterns of arboviral expansion into new territories.
- The convergence of climate change, urbanization, and global mobility continues to push the ecological boundaries of CHIKV.

Wang H, et al. *J Travel Med*. 2025 Sep 24:taaf101.



Shandhi SS, et al. ***Ther Adv Infect Dis***. 2025 Aug 30;12:20499361251371110.

Clinical manifestation of Chikungunya infection by stage

Stage	Timeframe	Symptoms	Prevalence (%)	Additional notes
Acute	0–14 days	High fever, severe arthralgia, myalgia, rash, headache	88% arthralgia, 90% fever	Severe symptoms may require hospitalization
Subacute	15 days to 90 days (3 months)	Persistent arthralgia, worsening joint symptoms, fatigue	Persistent symptoms in ~30%–40% patients	Symptoms reduce in intensity but persist in some cases
Chronic	>90 days (3 months)	Chronic arthritis, fatigue, depression, neurological disorders, stiffness	Chronic symptoms in 44% patients	May lead to significant long-term disability and reduced quality of life

Shandhi SS, et al. ***Ther Adv Infect Dis***. 2025 Aug 30;12:20499361251371110.

Table 1 | **Typical symptoms of acute chikungunya**

Symptoms (duration)	Percentage of patients[a]	Refs
Arthralgia (weeks to months)	80–100	24,118,204–206
Arthritis (weeks to months)	62–100	24,204
Fever (usually lasts 1 week)	80–100	1,118,204
Myalgia (usually lasts ~7–10 days)	10–85	1,24,118,205,206
Headache	30–90	24,118,205,206
Rash (usually lasts ~1 week)	36–88	1,24,118,204,205,207
Fatigue	43–67	118,207
Diarrhoea	25	24,205
Oedema	22–39	24,206

[a]Percentages of patients with the indicated symptoms, with the ranges encompassing all referenced studies.

Table 2 | **Atypical symptoms of acute chikungunya**

Systems/organs affected	Percentage of hospitalized patients[10]	Manifestation examples	Refs
Neurological	40	Encephalitis Meningoencephalitis Guillain–Barre syndrome	38–41,43
Cardiovascular	27	Hypotension Myocarditis Arrhythmias	38–41
Skin	10	Hyperpigmentation Bullous dermatosis Erythema	38–41
Renal	26	Albuminuria Haematuria Nephritis	39,40,45
Respiratory	14–26	Dyspnoea Respiratory failure Pneumonia	38,39,41
Vascular	10	Haemorrhagic signs Bleeding gums Melena	39,41,205,208,209
Ocular	Less common than other atypical symptoms	Conjunctivitis Photophobia Retinitis	39,41,210,211
Liver	Less common than other atypical symptoms	Hepatitis Hepatomegaly Altered function	38,40,41

Atypical acute manifestations can accompany the typical acute symptoms (TABLE 1). Atypical manifestations are grouped by the systems/organs affected, with some examples of manifestations provided; these are neither complete nor ranked and the reader is directed to the accompanying references for a full description of manifestations.

Suhrbier A. Nat Rev Rheumatol. 2019 Oct;15(10):597-611.

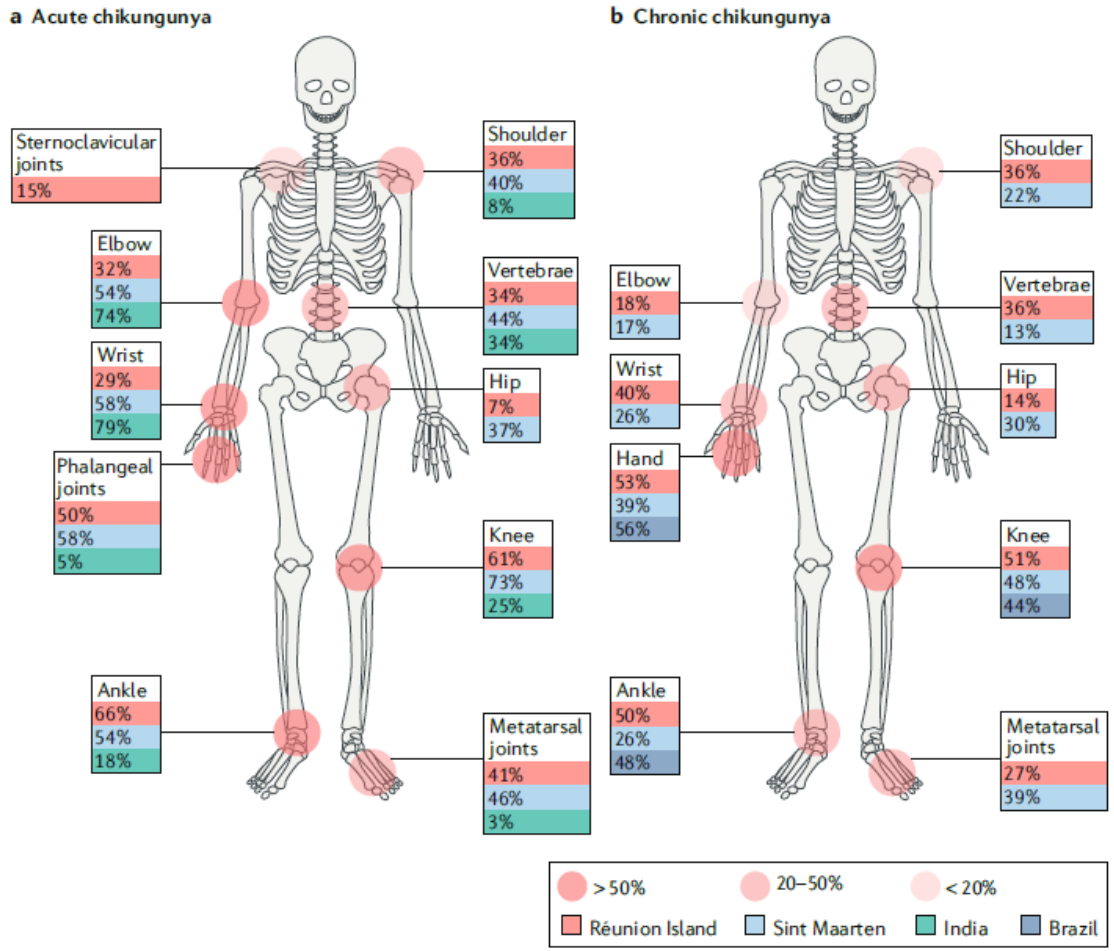


Fig. 2 | **Joints affected by chikungunya arthralgia. a** | Joints with arthralgia at or near the time of disease onset, indicating the range of percentages of patients reporting arthralgia in each indicated joint or group of joints in previous studies of patients with acute chikungunya on Réunion Island[199], on Sint Maarten in the Caribbean[200] or in India[201]. **b** | Joints with arthralgia in patients with chronic chikungunya, based on data from patients with chronic chikungunya on Réunion Island[202], on Sint Maarten in the Caribbean[200] or in Brazil[203]. Assessment methodologies were not standardized in these studies, and so it is difficult to attribute any differences across these studies to CHIKV genotypes or specific populations.

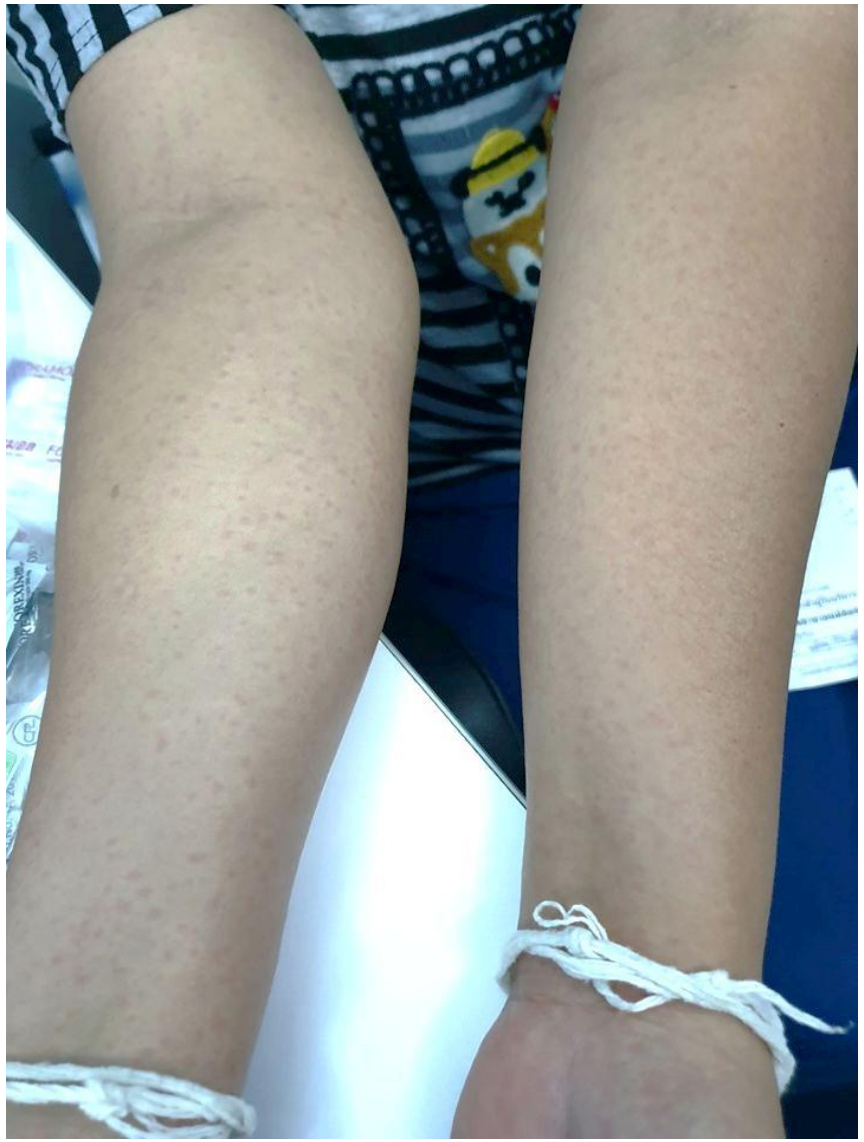
Suhrbier A. Nat Rev Rheumatol. 2019 Oct;15(10):597-611.

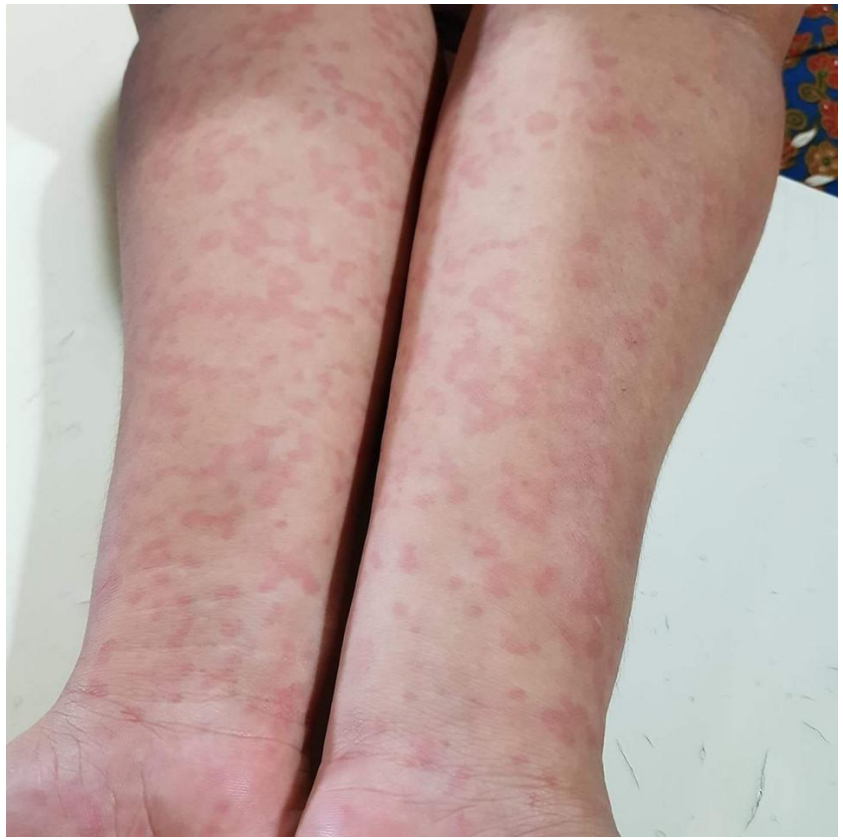
Clinical comparison between Chikungunya, Dengue, and Zika

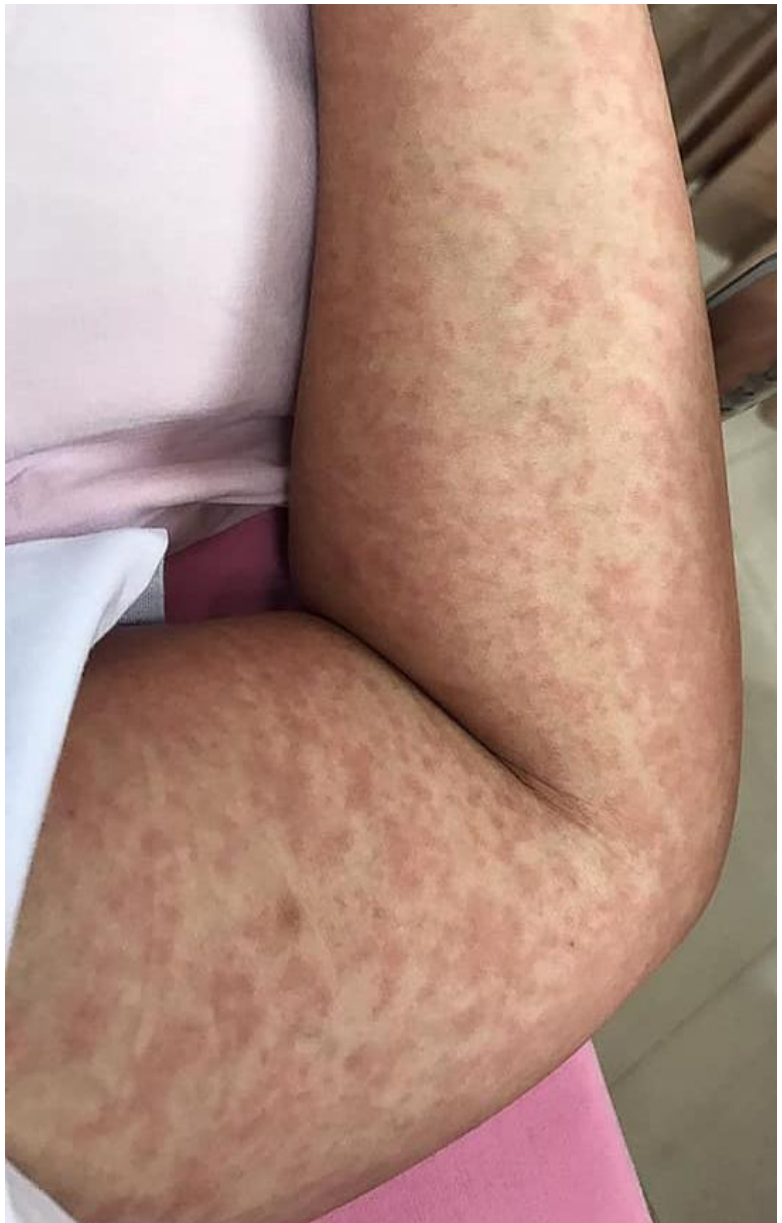
Feature	Chikungunya	Dengue	Zika
Fever	+++	+++	++
Arthralgia	+++	+	++
Headache	++	++	+
Skin rash	++	+	+++
Myalgia	+	++	+
Conjunctivitis	–	–	++
Shock	–	+	–
Hemorrhage	–	++	–

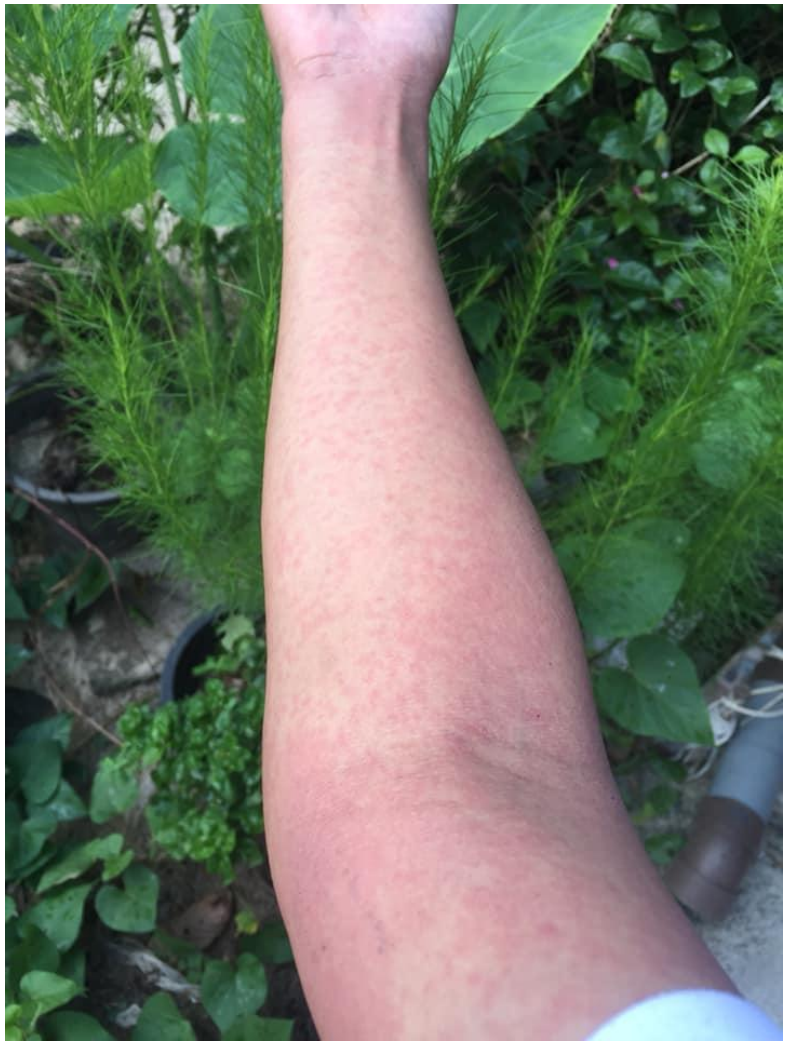
Adapted from CDC, zika virus what clinician need to know? Clinical outreach and communiable activity (COCA)

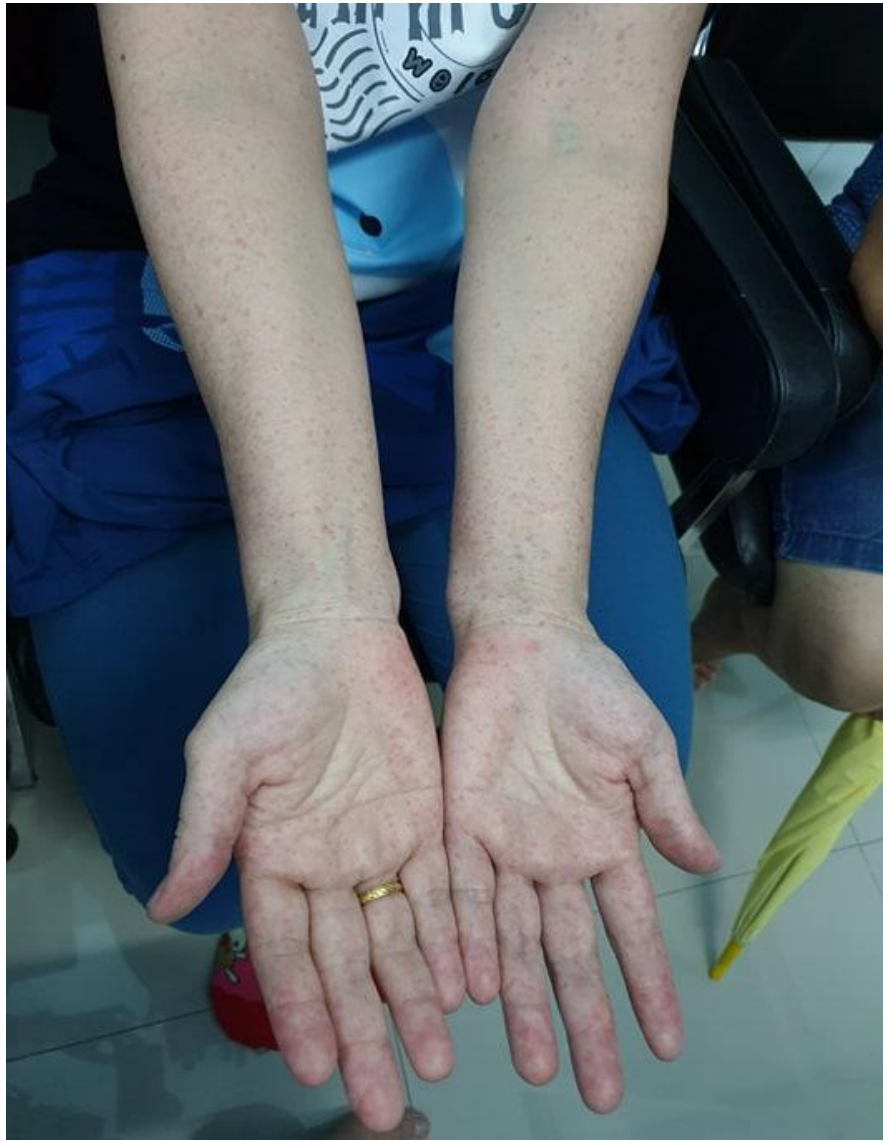
Chikungunya

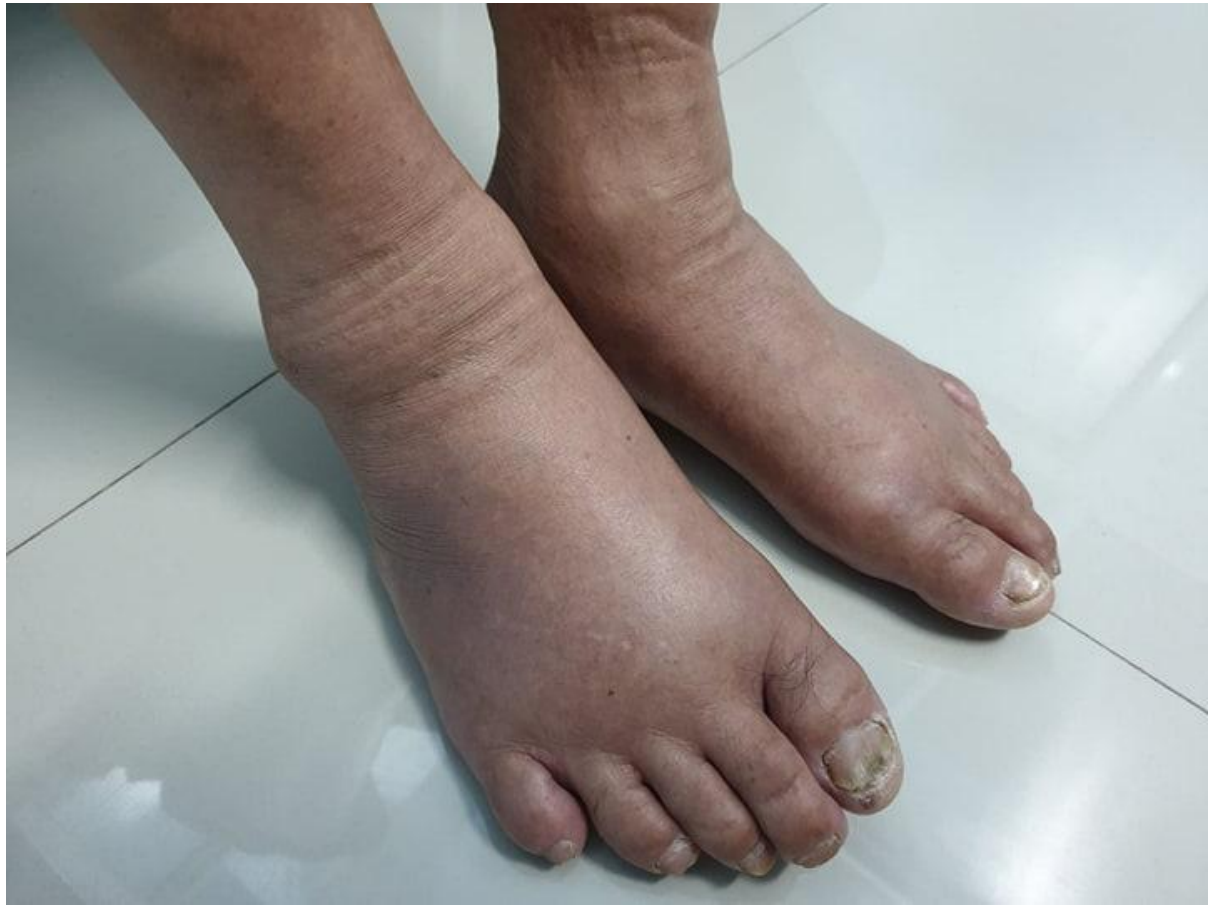


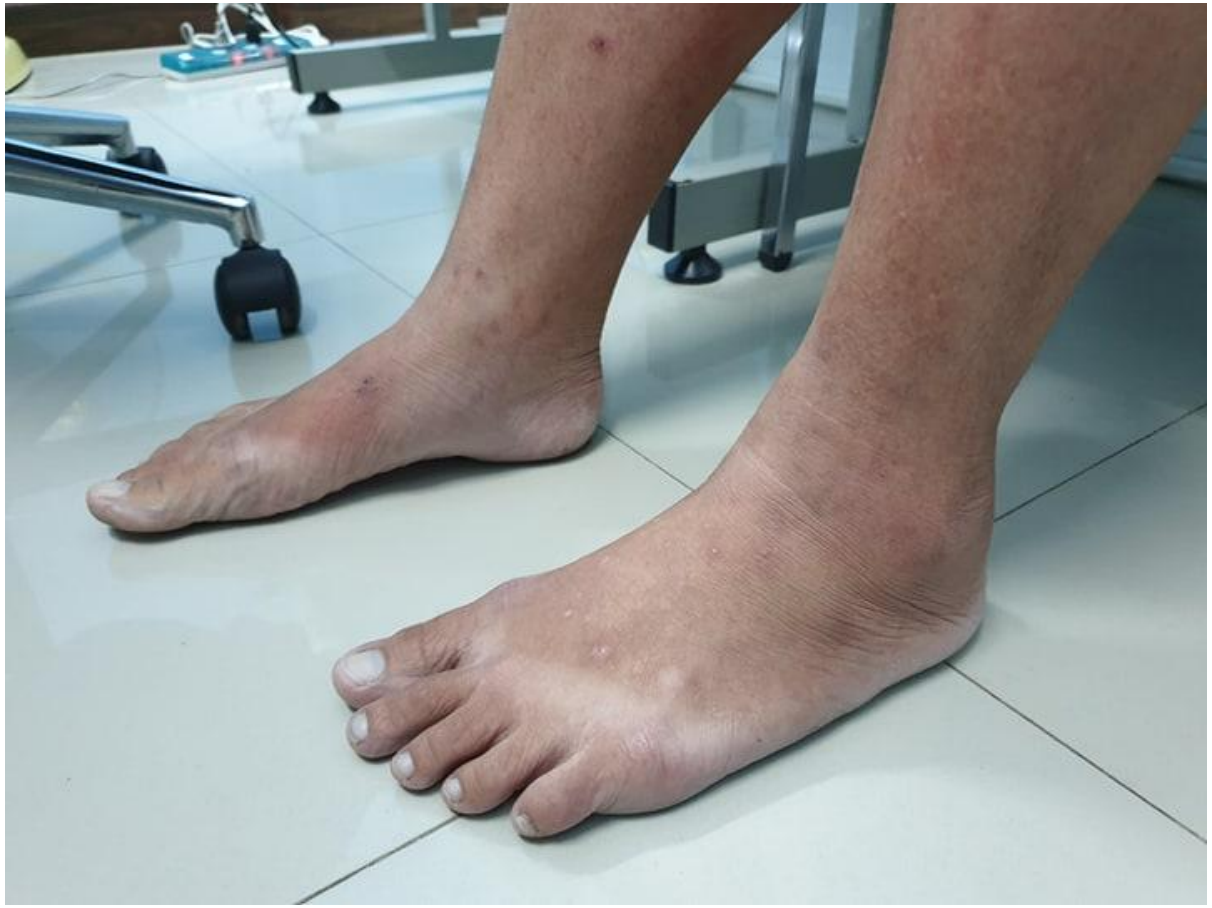




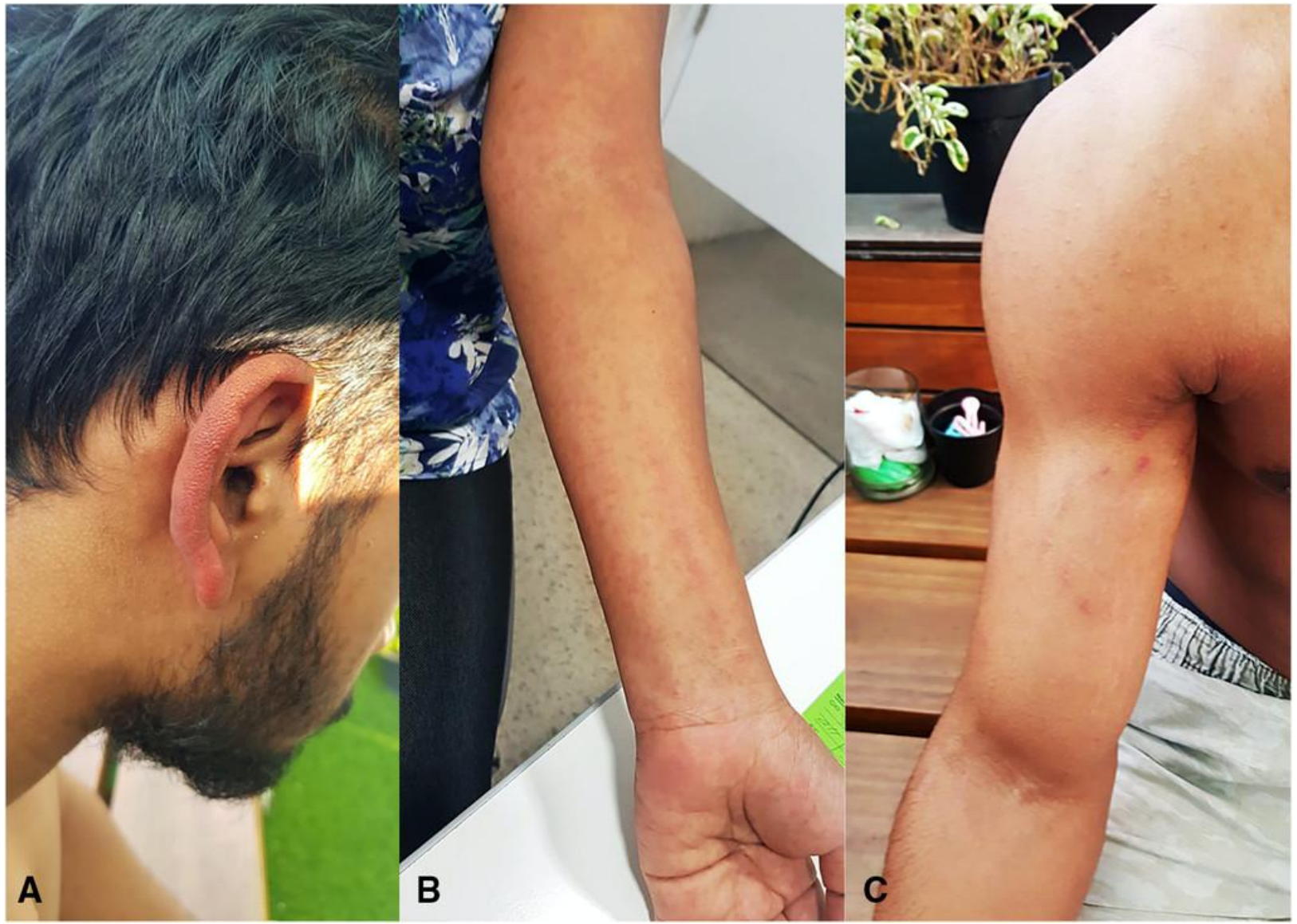






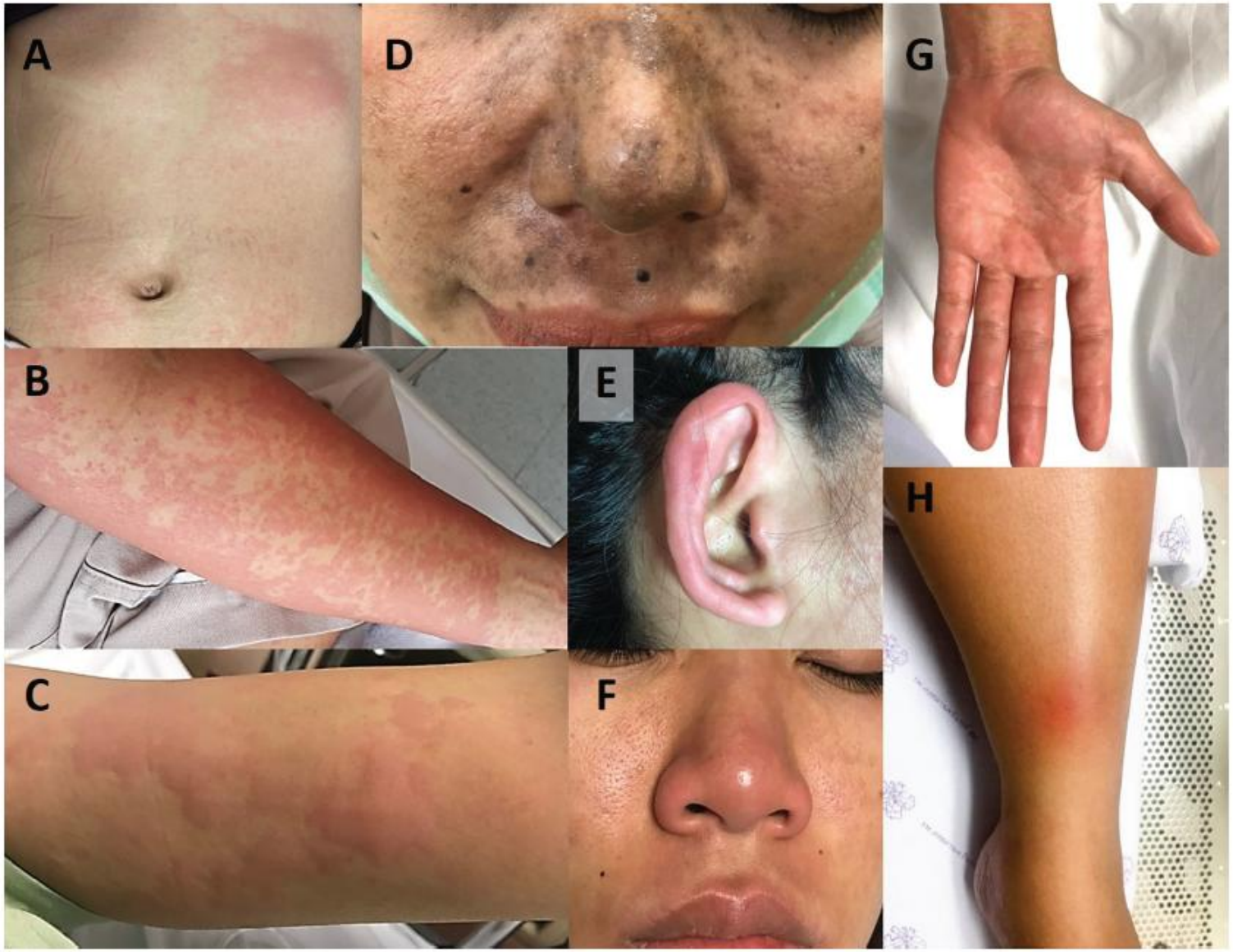


Arthritis in Chikungunya infection



Cutaneous manifestations during chikungunya fever

(A) Milians ear sign.
(B) Maculopapular rash.
(C) Scar phenomenon.



Other Cutaneous Involvement Associated with CHIKV

A) MP rash; B) Convalescence rash; C) Urticaria; D) CHIK sign; E) Millian's ear sign, F) Erythema of the nose; G) Erythema of the hand H) Panniculitis

Aiempanakit et. al., J Health Sci Med Res 2019

Severe chikungunya is relatively rare

Box 2 | Severe symptoms of acute chikungunya

Severe symptoms of acute chikungunya (listed below) are defined as manifestations that include dysfunctions of at least one organ or system that threatens life and requires hospitalization. The term "failure" reflects a spectrum that includes non-lethal manifestations with recovery.

- Cardiac failure[17,38,41,42]
- Multiple organ failure[17,38]
- Viral sepsis and/or septic shock[42]
- Renal failure[10,17,38,42,45]
- Liver failure[10,17,38,42]
- Respiratory failure[10,17,38,42]
- Encephalitis or meningoencephalitis[17,38,42,43]
- Bullous dermatosis[17,38]

Journal of Travel Medicine
International Society of Travel Medicine
Established 1991
Promoting healthy travel worldwide

Journal of Travel Medicine, 2019, 1–2
doi: 10.1093/jtm/taz033
Clinical Pearls

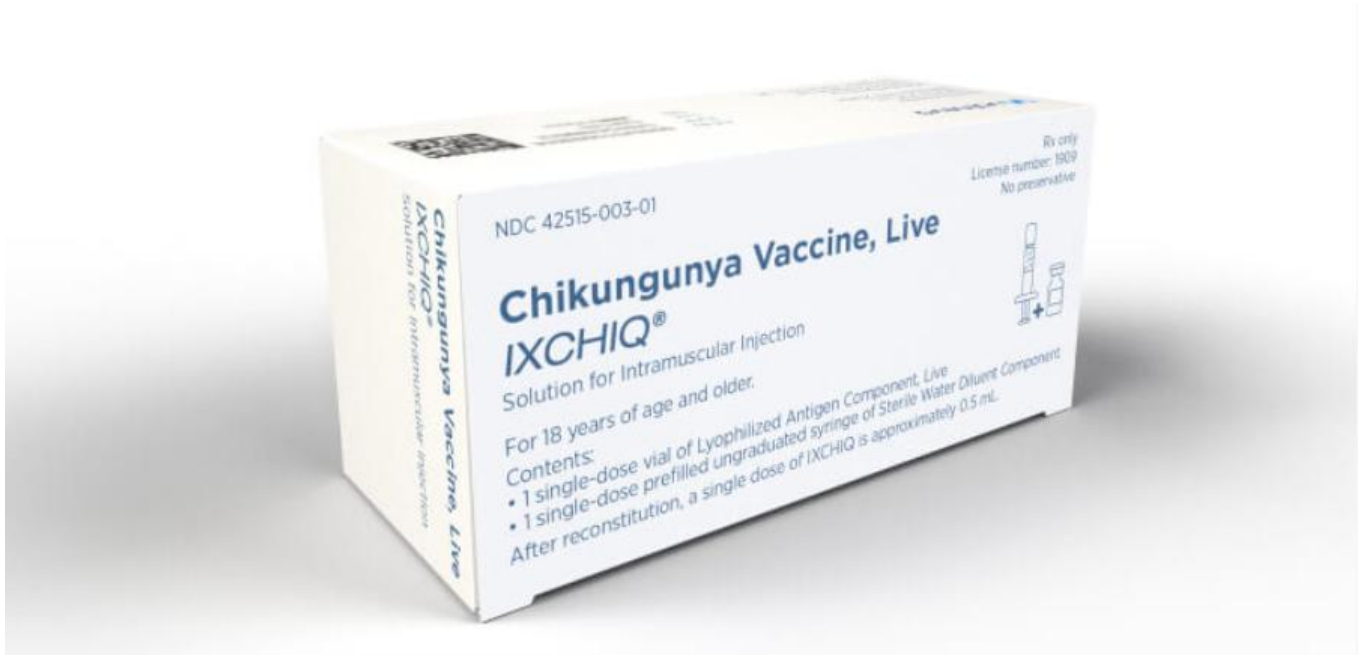
Clinical Pearls

Severe chikungunya requiring intensive care in two travellers returning to the UK

Claire Calderwood, MRCP[1], Sanjay Bhagani, FRCP[1], Ian Cropley, FRCP[1], and Padmasayee Papineni, MRCP[2]*

[1]Department of Infection, Royal Free London NHS Foundation Trust, London, UK and [2]Department of Infectious Diseases and Tropical Medicine, Ealing Hospital, London North West University Healthcare NHS Trust, London, UK

Chikungunya Vaccine



IXCHIQ (Valneva VLA 1553)

- live attenuated vaccine
- 61 aa deletion: NS3
- Excellent serologic response
- immunity is maintained for at least 2 years after vaccination
- **Prolonged (>30 days) chikungunya-like symptoms** in a surprising % of vaccines buried in Supplemental data

Chikungunya Vaccine

FDA and CDC Recommend Pause in Use of Ixchiq (Chikungunya Vaccine, Live) in Individuals 60 Years of Age and Older While Postmarketing Safety Reports are Investigated

May 9, 2025

Safety Communication

IXCHIQ (Valneva VLA 1553)

- **17 serious adverse events**
- **2 death** in 62, 89 years old (encephalitis)
- Some recipients had prolonged chikungunya-like adverse reactions that lasted for at least 30 days.

Chikungunya Vaccine

Vimkunya™
(Chikungunya Vaccine, Recombinant)
Injection

JOURNAL ARTICLE ACCEPTED MANUSCRIPT

A new non-live chikungunya vaccine for travellers

David O Freedman, MD

Journal of Travel Medicine, taaf039, https://doi.org/10.1093/jtm/taaf039
Published: 13 May 2025 **Article history**

VIMKUNYA

- Virus-like particle vaccine
- Based on 3 non-structural proteins
- Single dose
- **Day 22 seroresponse rate: 98%** (adolescents/younger adults) vs. **87%** (older adults)
- **6 months** seroresponse rate: **85%** (adolescents/younger adults) vs. **76%** (older adults)
- US FDA and EMA approved in February 2025
- Recommended for travellers >12 years of age

Take Home Message

- Fever is common in returned travelers
- Malaria is the common of cause of febrile travelers returning from Africa and can be further prevented through the appropriate use of chemoprophylaxis.
- The risk of mosquito-borne illnesses can be reduced by behavioral changes and use of insect repellent, screens, netting, and insecticide-impregnated clothing.
- Travel History and travel exposure is a key to diagnosis

THANK YOU
多謝你

Contact: wasin.mat@mahidol.ac.th