



衛生防護中心 Centre for Health Protection

Scientific Committee on Vector-borne Diseases

Global Malaria Risk Summary August 2024

Purpose

This document serves as a general reference for healthcare professionals who may need to provide health information and advice to travellers from Hong Kong to areas with risk of malaria infection.

Local Situation and Background

2. In Hong Kong, malaria is a notifiable disease under the Prevention and Control of Disease Ordinance (Cap. 599) and notification information since 1946 is available. The annual number of cases was at a record high in 1946 with more than 2,000 cases recorded. In the past few decades, the number of cases has decreased markedly. Apart from a brief upsurge to more than 700 cases related to Vietnamese migrants in 1989, the annual number of cases remained below 400. Since the 1970s, there has been a shift from locally-acquired to imported infections, and the last local indigenous case was recorded in 1998.

3. In the past 10 years (2014 – 2023), the Centre for Health Protection (CHP) of the Department of Health recorded a total of 352 cases, with the annual number of cases ranging from 4 to 196. All except three local recrudescent cases were imported from endemic countries, mainly from Guinea, Nigeria and India. Details of classification and place of origin for imported cases can be found in **Annex 1**. There were four fatal cases involving three male and one female patients, giving a case fatality rate (CFR) of 1.1%. *Plasmodium falciparum* was the most commonly identified parasite (76%), followed by *P. vivax* (15%), *P. malariae* (2%) and *P. ovale* (2%). Another 3% of the cases had mixed



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infections of two or more parasites, while the species was unidentified in 2% of the cases. As of 27 July, 11 cases of malaria (all imported except for one local recrudescence) have been recorded in 2024.

4. An unusual upsurge in imported cases was observed in early July 2022 among individuals from Africa transiting in Hong Kong as a result of travel restrictions during the COVID-19 pandemic. Between July and August 2022, 176 cases were recorded, all were imported and the majority were Chinese railway workers arriving from Guinea. There were two fatal cases involving two male patients aged 52 and 53 (CFR 1.1%).

5. The Scientific Committee on Vector-borne Diseases (SCVBD) under the CHP compiled the first “Global Malaria Risk Summary” (hereafter referred to as “the Summary”) in 2007, which described the malaria risk of endemic countries and areas for reference by healthcare professionals. Since then, the Summary has been updated regularly, and was last updated in May 2022. This paper highlights the major changes in the global epidemiology and risk of malaria since May 2022.

Method and Explanatory Notes

6. Understanding the global epidemiology of malaria relies on accurate disease and laboratory surveillance information provided by relevant countries and areas. Apart from the World Health Organization (WHO), overseas health authorities including the Centers for Disease Control and Prevention (CDC) of the US, the Public Health Agency of Canada (PHAC), the UK Health Security Agency (UKHSA) and the National Travel Health Network and Centre (NaTHNaC) of the UK also provide epidemiological information on malaria periodically together with recommendations for their outbound travellers. The Summary is compiled based on the epidemiological information as well as malaria prevention measures recommended by the WHO and the above-mentioned health authorities.

7. While the information on malaria risk published by the health authorities most often concurs, there may be different levels of detail with

occasional discrepancies among various sources. The Summary aims to integrate the malaria risk and prevention recommendations from renowned health authorities where feasible to allow for a better assessment of the risks.

8. The majority of malaria infections can be prevented by avoiding mosquito bites and taking chemoprophylaxis as appropriate. The WHO continues to state that *P. falciparum* resistance to chloroquine is nearly universal in the latest version of its guideline, and will not be specifically mentioned in the Summary. The WHO, CDC, PHAC and UKHSA recommend chemoprophylaxis by atovaquone-proguanil, doxycycline or mefloquine for all countries and areas with reported chloroquine-resistant malaria. The CDC also recommends use of tafenoquine in adults without glucose-6-phosphate dehydrogenase (G6PD) deficiency for countries and areas with reported chloroquine-resistant malaria. In Hong Kong, medications such as atovaquone-proguanil, doxycycline and mefloquine are commonly used for malaria chemoprophylaxis. The choice of drug depends on the specific malaria species, the patterns of drug resistance in the destination, as well as the traveller's health and medical history. The local reference on malaria chemoprophylaxis for clinicians in Hong Kong is available from the Travel Health Service under the Port Health Division of the Department of Health, which can be accessed at https://www.travelhealth.gov.hk/english/vaccine_prophylaxis/malaria.html.

9. The WHO updated their position paper for malaria vaccines in May 2024, which included recommendations on the programmatic use of the RTS,S/AS01 and R21/Matrix-M vaccines for the reduction of malaria morbidity and mortality in children living in endemic areas, prioritizing areas of moderate and high malaria transmission. Both malaria vaccines are safe and efficacious, and have been prequalified by the WHO. Rollout of malaria vaccines in endemic areas is well underway, with 10 countries in Africa (Benin, Burkina Faso, Cameroon, Côte d'Ivoire, Ghana, Kenya, Liberia, Malawi, Sierra Leone and South Sudan) offering malaria vaccines as part of their childhood immunization programmes/ national malaria control plans by July 2024, and a total of 15 countries are expecting to introduce RTS,S and R21 malaria vaccines by the end of this year.¹ On the other hand, the WHO states that malaria vaccines are not recommended for use in adults (including health workers and pregnant persons), and not indicated for travellers, who should use chemoprophylaxis and vector control methods to prevent malaria when

travelling to endemic settings.²

10. As Hong Kong is not a malaria endemic area, the WHO's recommendation on the programmatic use of malaria vaccines is not applicable, and both RTS,S and R21 vaccines are not registered or available locally. Following the latest WHO recommendations, vaccination is not recommended for travellers going to malaria-endemic regions. Vector control methods and chemoprophylaxis continue to be the mainstay of malaria prevention for outbound travellers.

11. In order to better reflect the current epidemiology and recommendations, a set of risk and recommendation categories was developed and adopted in the Summary. A total of five risk categories and their respective recommendations on malaria prevention measures are defined and outlined in **Annex 2**. **Annex 3** shows the details of the respective risk and recommendation categories for each country or area; additional risk descriptions together with the geographical distribution of risk areas are provided to allow for better understanding and risk assessment. **Annex 4** shows details of countries that have had major updates in their risk description without changes in risk category or recommendation. **Annex 5** summarises the risk and recommendation profiles of the countries or areas in the six WHO regions.

Global Situation Update

12. According to the WHO's World Malaria Report 2023, the global malaria case incidence declined from 81.0 per 1,000 population at risk in 2000 to 56.8 in 2019. Following a small increase of 3% in 2020, incidence rates have remained stable over the past three years, with an incidence rate of 58.4 per 1,000 population at risk in 2022.¹

13. The malaria mortality rate halved between 2000 and 2019, from 28.8 per 100,000 population at risk to 14.1. In the past few years, the mortality rate has slightly decreased from 15.2 per 100,000 population at risk in 2020 to 14.3 in 2022.³

14. In 2022, the WHO African Region accounted for about 93.6% of

cases and 95.4% of deaths globally; 78.1% of deaths in the region were among children aged under five years, compared with 90.7% in 2000.³

15. The WHO noted several significant outbreaks in various regions in 2022. In the Eastern Mediterranean Region, there was a large increase in cases due to a malaria outbreak in Pakistan following catastrophic flooding that affected more than 30 million people. In addition, after five years of zero local transmission, Iran is facing an outbreak of indigenous malaria cases, where frequent border movement of people contributed to the introduction of cases and further re-establishment of local transmission. In the Region of the Americas, Costa Rica experienced an outbreak of *P. falciparum* on the Nicaraguan border associated with the movement of agricultural workers from endemic areas, which resulted in more than 80% of all cases being due to *P. falciparum* infection since 2021, whereas in previous years most cases were due to *P. vivax*. In the African Region, Uganda had several malaria outbreaks and a 32% increase in reported cases.³

Summary of countries and areas with changes in risk category and recommendation

16. Updates on the risk of malaria in individual countries and areas are detailed as follows:

Since May 2022, 17 countries and areas had their malaria risk categories and recommendations revised:

- African Region – Cabo Verde and Mayotte (France);
- Region of the Americas – Belize, Costa Rica, Dominican Republic, Haiti, Honduras and Nicaragua;
- Eastern Mediterranean Region – Egypt, Iraq and Oman;
- European Region – Azerbaijan, Tajikistan and Turkey;
- South-East Asia Region – Timor-Leste; and
- Western Pacific Region – Brunei Darussalam and Malaysia.

Country/Area	Change in Recommendation	Change in Risk Category
African Region		
Cabo Verde (Cape Verde)	WHO certified Cabo Verde as malaria-free in 2024, and CDC, PHAC and UKHSA also reported no malaria risk.	2 → 1
Mayotte (France)	WHO lowered the risk category from risk of <i>P. falciparum</i> malaria to very limited risk of malaria transmission, and noted by the PHAC to have little to no transmission in all areas.	4A → 2
Region of the Americas		
Belize	WHO certified Belize as malaria-free in 2023, and CDC, PHAC and UKHSA also reported no malaria risk.	2 → 1
Costa Rica	Experienced an outbreak of <i>P. falciparum</i> on the Nicaraguan border associated with the movement of agricultural workers from endemic areas.	2 → 4B
Dominican Republic	Although no evidence of <i>P. falciparum</i> resistance to any antimalarial drug has been reported, WHO does not recommend chloroquine as chemoprophylaxis.	3B → 4B
Haiti	Although no evidence of <i>P. falciparum</i> resistance to any antimalarial drug has been reported, WHO does not recommend chloroquine as chemoprophylaxis.	3A → 4A
Honduras	Although no evidence of <i>P. falciparum</i> resistance to any antimalarial drug has been reported, WHO does not recommend chloroquine as chemoprophylaxis in areas with high risk of <i>P. falciparum</i> transmission.	3B → 4B
Nicaragua	Although no evidence of <i>P. falciparum</i> resistance to any antimalarial drug has been reported, WHO does not recommend chloroquine as chemoprophylaxis in areas with high risk of <i>P. falciparum</i> transmission.	3B → 4B
Eastern Mediterranean Region		
Egypt	No preventive measures recommended by WHO, and CDC, PHAC and UKHSA also reported no malaria risk.	2 → 1

Iraq	No preventive measures recommended by WHO, and CDC and PHAC also reported no malaria risk.	2 → 1
Oman	No preventive measures recommended by WHO, and CDC and PHAC also reported no malaria risk.	2 → 1
European Region		
Azerbaijan	WHO certified Azerbaijan as malaria-free in 2023, and CDC, PHAC and UKHSA also reported no malaria risk.	2 → 1
Tajikistan	WHO certified Tajikistan as malaria-free in 2023, and CDC, PHAC and UKHSA also reported no malaria risk.	2 → 1
Turkey	No preventive measures recommended by WHO, and CDC and PHAC also reported no malaria risk.	2 → 1
South-East Asia Region		
Timor-Leste (East Timor)	After an outbreak of three cases in 2020, no indigenous cases have been reported for two consecutive years in 2021 and 2022.	4A → 2
Western Pacific Region		
Brunei Darussalam	Although WHO certified Brunei Darussalam as malaria-free in 1987, there have been reports of human <i>P. knowlesi</i> infection in forested areas and the PHAC recommends that travelers spending extended periods in rural or forested areas may consider chemoprophylaxis.	2 → 3B
Malaysia	No indigenous cases of human <i>Plasmodium</i> species have been reported since 2018, but there have been reports of human <i>P. knowlesi</i> infection and chemoprophylaxis is recommended in rural, forested areas.	4B → 3B

Other updates for countries and areas without change in risk category and recommendation

17. A total of 10 countries and areas distributed in five WHO Regions have updates in the risk description regarding geographical distribution and predominant species. Nonetheless, there is no change in their risk categories

and recommendations. Details can be found in **Annex 4**.

Limitations

18. The information presented in the Summary is mainly sourced from the aforementioned health authorities as well as reports and websites listed below, which is in turn dependent on various assessment and/or surveillance mechanisms in individual countries/ areas concerned.

A. World Health Organization (WHO)

(i) WHO (2024). Vaccination requirements and recommendations for international travellers; and malaria situation per country – 2022 edition (updated 19 November 2022). Available at: <https://www.who.int/publications/m/item/vaccination-requirements-and-recommendations-for-international-travellers-and-malaria-situation-per-country-2022-edition>, accessed 30 July 2024.

(ii) WHO (2024). Countries and territories certified malaria-free by WHO (updated 12 January 2024). Available at: <https://www.who.int/teams/global-malaria-programme/elimination/countries-and-territories-certified-malaria-free-by-who>, accessed 30 July 2024.

B. United States

Centers for Disease Control and Prevention (CDC). CDC Yellow Book 2024 – Yellow Fever Vaccine & Malaria Prevention Information, by Country (updated 1 May 2023). Available at: <https://wwwnc.cdc.gov/travel/yellowbook/2024/preparing/yellow-fever-vaccine-malaria-prevention-by-country>, accessed 30 July 2024.

C. Canada

Public Health Agency of Canada (PHAC). Canadian recommendations for the prevention and treatment of malaria. Appendix 1: Malaria transmission and recommended preventive

measures by geographical area (updated 2 April 2024). Available at: <https://www.canada.ca/en/public-health/services/catmat/appendix-1-malaria-risk-recommended-chemoprophylaxis-geographic-area.html>, accessed 30 July 2024.

D. United Kingdom

- (i) UK Health Security Agency (UKHSA). Malaria prevention guidelines for travellers from the UK (updated on 16 January 2024). Available at: <https://www.gov.uk/government/publications/malaria-prevention-guidelines-for-travellers-from-the-uk>, accessed 30 July 2024.
- (ii) National Travel Health Network and Centre (NaTHNaC). TravelHealthPro – Country Information [commissioned by the UKHSA]. Available at: <https://travelhealthpro.org.uk/countries>, accessed 30 July 2024.

19. The global situation is evolving with continuous changes of the risk situation of countries and areas from time to time. Moreover, under-reporting and/ or delayed reporting of the disease in various countries and areas may affect the timeliness of malaria risk assessment. In this connection, healthcare professionals are reminded to refer to the latest information from relevant health authorities for the most updated situation as and when necessary.

Annex 1: Statistics on Malaria Cases Recorded in Hong Kong from 2014 – 2023

Annex 2: Key to the Global Malaria Risk Summary

Annex 3: Global Malaria Risk Summary (as of August 2024)

Annex 4: Countries/ Areas with Major Updates in Risk Description without Change in Risk Categories and Recommendations (as of August 2024)

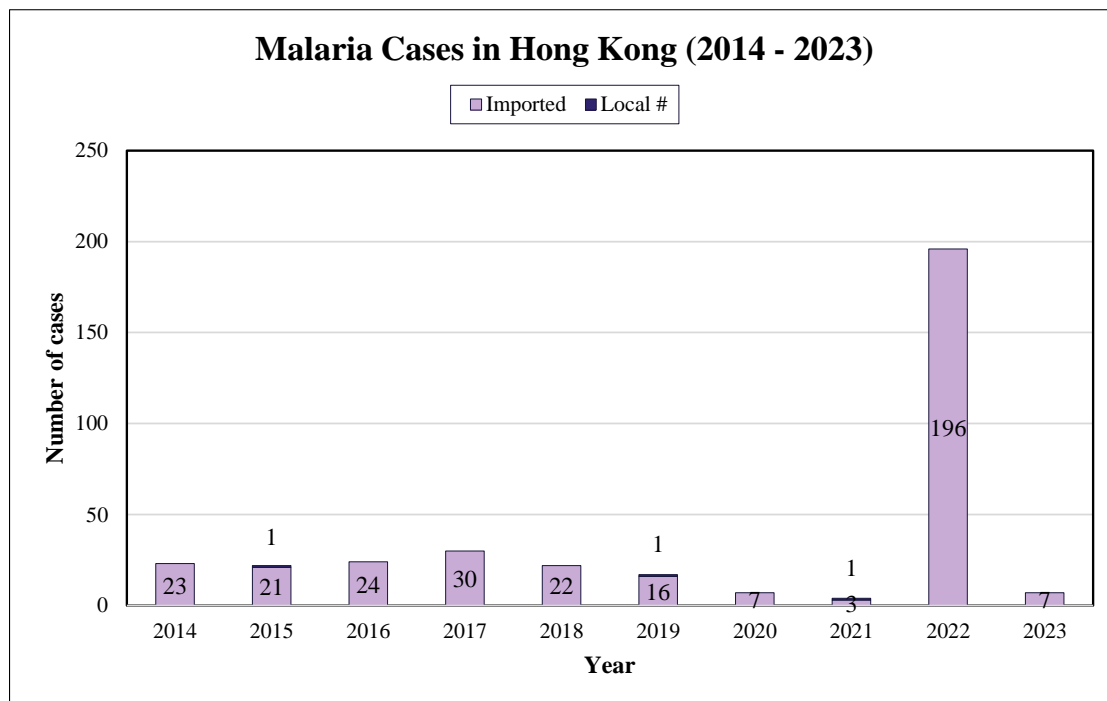
Annex 5: Risk Profile Summary

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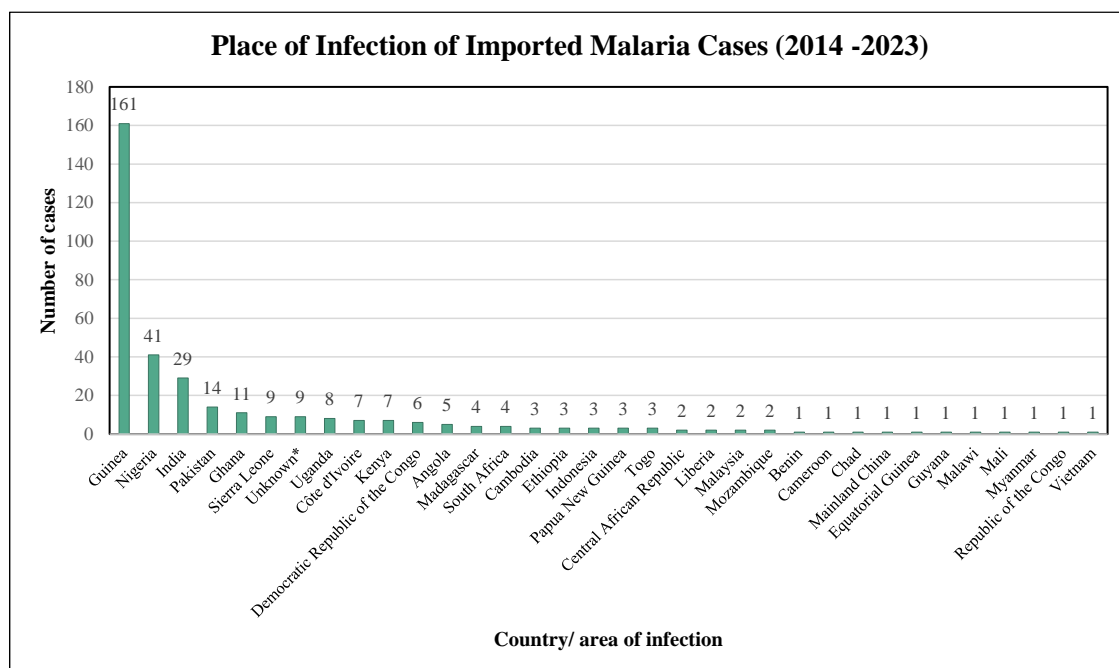
Statistics on Malaria Cases Recorded in Hong Kong from 2014 – 2023

Figure 1: Number and Classification of Malaria Cases recorded by the CHP



All three were classified as local (recrudescence) cases

Figure 2: Place of Infection of Imported Malaria Cases recorded by the CHP



*Individuals had a travel history to more than one country/area during the incubation period

Key to the Global Malaria Risk Summary

Risk Category	Risk Description	Recommendation Category	Recommendation Description
1	No malaria risk (as reported by WHO, CDC, PHAC and UKHSA)	I	General insect bite prevention measures during travel
2	Malaria risk reported to be very limited	II	Malaria prevention may be required <ul style="list-style-type: none"> ➤ Advise to undertake mosquito bite prevention ➤ Obtain update on latest epidemiology
3	Risk of chloroquine-sensitive malaria only <i>3A: Risk of malaria exists in the whole administrative area</i> <i>3B: Risk of malaria exists in certain areas</i>	III	Malaria prevention recommended <ul style="list-style-type: none"> ➤ Advise to undertake mosquito bite prevention ➤ When travelling to at-risk areas, consider chemoprophylaxis using chloroquine
4	Chloroquine-resistant malaria have been reported <i>4A: Risk of malaria exists in the whole administrative area</i> <i>4B: Risk of malaria exists in certain areas</i>	IV	Malaria prevention recommended <ul style="list-style-type: none"> ➤ Advise to undertake mosquito bite prevention ➤ When travelling to areas at risk of chloroquine-resistant malaria, consider chemoprophylaxis using atovaquone/proguanil, doxycycline, or mefloquine ➤ When travelling to areas at risk of chloroquine-sensitive malaria, consider chemoprophylaxis using chloroquine
5	Malaria resistant to both chloroquine and mefloquine have been reported <i>5A: Risk of malaria exists in the whole administrative area</i> <i>5B: Risk of malaria exists in certain areas</i>	V	Malaria prevention recommended <ul style="list-style-type: none"> ➤ Advise to undertake mosquito bite prevention ➤ When travelling to areas at risk of mefloquine-resistant malaria, consider chemoprophylaxis using atovaquone/proguanil or doxycycline, BUT NOT mefloquine ➤ When travelling to areas at risk of chloroquine-resistant malaria, consider chemoprophylaxis using atovaquone/proguanil, doxycycline, or mefloquine

Annex 3

Global Malaria Risk Summary (as of August 2024)

Country/Area	Risk Category	Risk Description	Recommendation Category
African Region			
Algeria	1	WHO certified Algeria as malaria-free in 2019. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Angola	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV
Benin	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV
Botswana	4B	Malaria risk predominantly due to <i>P. falciparum</i> exists from November to June. <i>Geographical distribution:</i> - At risk: Central District (Bobirwa, Boteti, Mahalapaye, Serowe Palapye, Tutume subdistricts), Chobe District (including Chobe National Park), Ghanzi District, Ngamiland District (including Okavango Delta area), North-East District (including Francistown) and Kweneng East District. - Very low risk: Kgalagadi North District, Kgatleng District, Kweneng District and Southern District. - No risk: city of Gaborone.	IV
Burkina Faso	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV
Burundi	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV
Cabo Verde (Cape Verde)	1	WHO certified Cabo Verde as malaria-free in 2024. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Cameroon	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV

Country/Area	Risk Category	Risk Description	Recommendation Category
Central African Republic	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV
Chad	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas, except in the Sahara Desert.	IV
Comoros	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV
Congo	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV
Côte d'Ivoire (Ivory Coast)	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV
Democratic Republic of the Congo	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV
Equatorial Guinea	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV
Eritrea	4B	Malaria risk due to <i>P. falciparum</i> and <i>P. vivax</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas at elevations below 2,200m. - No risk: city of Asmara.	IV
Eswatini (Swaziland)	4B	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: northern and eastern areas bordering Mozambique and South Africa, including all of the Lubombo District (mainly Big Bend, Mhlume, Simunye and Tshaneni) and the eastern half of Hhohho, Manzini and Shiselweni districts, with highest risk from November to May. - Very low risk: rest of the country.	IV

Country/Area	Risk Category	Risk Description	Recommendation Category
Ethiopia	4B	Malaria risk due to <i>P. falciparum</i> (60–70%), <i>P. vivax</i> (30–40%) and rarely <i>P. malariae</i> and <i>P. ovale</i> exists throughout the year. <i>P. vivax</i> resistance to chloroquine has been reported. <i>Geographical distribution:</i> - At risk: all areas at elevations below 2,500m. - No risk: city of Addis Ababa.	IV
Gabon	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV
Gambia	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV
Ghana	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV
Guinea	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV
Guinea-Bissau	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV
Kenya	4B	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas at elevations below 2,500m. - Low risk: city of Nairobi, and the highlands (above 2,500m) of Central, Eastern, Nyanza, Rift Valley and Western provinces.	IV
Lesotho	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Liberia	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV

Country/Area	Risk Category	Risk Description	Recommendation Category
Madagascar	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas. - High risk: coastal areas. - Very low risk: city of Antananarivo.	IV
Malawi	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV
Mali	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas, except in the Sahara Desert.	IV
Mauritania	4B	Malaria risk predominantly due to <i>P. falciparum</i> exists. <i>Geographical distribution:</i> - At risk: most of the country; Adrar and Inchiri during the rainy season from July to October. - No risk: northern provinces of Dakhlet-Nouadhibou and Tiris-Zemour, and in the Sahara Desert.	IV
Mauritius	1	WHO certified Mauritius as malaria-free in 1973. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Mayotte (France)	2	Low malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. There is significant reduction in the malaria burden with the island transitioning into the elimination phase, with only sporadic cases registered in 2021. <i>Geographical distribution:</i> - Very low risk: all areas.	II
Mozambique	4A	Malaria risk predominantly due to <i>P. falciparum</i> , exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV

Country/Area	Risk Category	Risk Description	Recommendation Category
Namibia	4B	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: regions of Ohangwena, Omaheke, Omusati, Oshana, Oshikoto and Otjozondjupa from November to June; year-round along the Kunene river in Kunene Region (including Etosha National Park), the Zambesi river in Zambesi Region and the Okavango river in Kavango regions (West and East). - Very low risk: the rest of the country. - No risk: city of Windhoek. 	IV
Niger	4A	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: all areas, except in the Sahara Desert. 	IV
Nigeria	4A	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: all areas. 	IV
Rwanda	4A	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: all areas. 	IV
Sao Tome and Principe	4A	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: all areas. 	IV
Senegal	4A	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: all areas. - Low risk: central western regions from January to June. 	IV
Seychelles	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Sierra Leone	4A	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: all areas. 	IV

Country/Area	Risk Category	Risk Description	Recommendation Category
South Africa	4B	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: along the border with Mozambique and Zimbabwe, specifically low altitude areas of Mpumalanga Province (Ehlanzeni District, Kruger National Park), Limpopo Province (Mopani, Vhembe, Greater Sekhukhune, Capricorn and Waterberg district municipalities) and north-eastern KwaZulu-Natal Province (uMkhanyakude, King Cetshwayo and Zululand district municipalities), with highest risk from September to May. - Very low risk: North West Province (adjacent to Molopo river) and Northern Cape Province (adjacent to Orange river).	IV
South Sudan	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas, except in the Sahara Desert.	IV
Tanzania (United Republic of)	4B	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas at elevations below 1,800m, including the city of Zanzibar.	IV
Togo	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV
Uganda	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV
Zambia	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV
Zimbabwe	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists. <i>Geographical distribution:</i> - At risk: all areas at elevations below 1,200m from November to June, and Zambezi Valley (including Victoria Falls) throughout the year. - Very low risk: cities of Bulawayo and Harare.	IV
Region of the Americas			
Anguilla (UK)	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Antigua and Barbuda	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I

Country/Area	Risk Category	Risk Description	Recommendation Category
Argentina	1	WHO certified Argentina as malaria-free in 2019. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Bahamas	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Barbados	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Belize	1	WHO certified Belize as malaria-free in 2023. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Bermuda (UK)	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Bolivia (Plurinational State of)	4B	Malaria risk due almost exclusively to <i>P. vivax</i> exists throughout the year. Transmission of <i>P. falciparum</i> occurs in the northern departments. <i>Geographical distribution:</i> - At risk: all areas at elevations below 2,500m. - High risk: northern departments of Beni and Pando, especially in the localities of Riberalta, Guayaramerín and Sena. - No risk: city of La Paz.	IV
Brazil	4B	Malaria risk due to <i>P. vivax</i> (84.3%), <i>P. falciparum</i> and mixed infections (15.7%) exists throughout the year. <i>Geographical distribution:</i> - At risk: most forested areas at elevations below 900m within the eight states of the Amazon region (Acre, Amapá, Amazonas, Maranhão, Mato Grosso (northern part), Pará (except Belém City), Rondônia, Roraima); periphery of large cities such as Boa Vista, Macapá, Marabá, Rio Branco and Santarém. - Very low risk: states outside the administrative region of Amazonas. - No risk: cities of Brasília, Rio de Janeiro and São Paulo, and Iguassu Falls. - Transmission intensity varies from one municipality to another, and is higher in jungle-mining areas, agricultural settlements, indigenous areas and some peripheral urban areas of Cruzeiro do Sul, Manaus and Pôrto Velho. - Residual risk of <i>P. vivax</i> transmission in the Atlantic forest areas of the states of São Paulo, Minas Gerais, Rio de Janeiro and Espírito Santo.	IV
British Virgin Islands	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Canada	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Cayman Islands (UK)	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Chile	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I

Country/Area	Risk Category	Risk Description	Recommendation Category
Colombia	4B	<p>Malaria risk due to <i>P. falciparum</i> (50%) and <i>P. vivax</i> (50%) exists throughout the year.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: all areas at elevations below 1,700m. - High risk: some municipalities of the departments of Antioquia, Bolívar, Cauca, Chocó, Córdoba, La Guajira, Nariño and Risaralda. - Low risk: some municipalities of Amazonas, Caqueta, Guaviare, Guainía, Meta, Norte de Santander, Putumayo, Vaupés and Vichada, and along the Caribbean coast. - No risk: cities of Baranquilla, Bogotá, Cartagena and Medellin, and San Andrés and Providencia islands. 	IV
Costa Rica	4B	<p>Malaria risk due to <i>P. falciparum</i> (86%) and <i>P. vivax</i> (14%) exists.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: Alajuela Province near the border with Nicaragua and Limón Province. 	IV
Cuba	1	<p>WHO certified Cuba as malaria-free in 1973.</p> <p>There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.</p>	I
Dominica	1	<p>WHO certified Dominica as malaria-free in 1966.</p> <p>There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.</p>	I
Dominican Republic	4B	<p>Malaria risk due exclusively to <i>P. falciparum</i> exists throughout the year and is higher during the rainy season from May to October.</p> <p>There is no evidence of <i>P. falciparum</i> resistance to any antimalarial drug.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: provinces of Dajabón, Elias Pina, San Juan, La Altagracia, San Juan, Santo Domingo, San Cristóbal and the Distrito Nacional. - Very low risk: rest of the country, including resort areas. 	IV

Country/Area	Risk Category	Risk Description	Recommendation Category
Ecuador; Including the Galápagos Islands	4B	<p>Malaria risk due to <i>P. vivax</i> (67%) and <i>P. falciparum</i> (33%) exists throughout the year.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: all areas at elevations below 1,500m and Amazon basin. - Moderate risk: coastal provinces. - Low risk: Quito and in provinces that are part of the Inter-Andean or Sierra region. - No risk: cities of Guayaquil and Cuenca, and other cities and villages in the Andean highlands or on the Galápagos Islands. - Risk due to <i>P. vivax</i> is present in some provinces of the country, predominantly in the Amazon region, especially the provinces of Morona Santiago, Pastaza, Orellana and Sucumbíos. - Risk due to <i>P. falciparum</i> is present in some provinces of the country with predominance on the coast, especially the province of Esmeraldas as well as in the Amazon region, especially the provinces of Pastaza and Morano Santiago. 	IV
El Salvador	1	<p>WHO certified El Salvador as malaria-free in 2021.</p> <p>There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.</p>	I
French Guiana	4A	<p>Malaria risk due to <i>P. vivax</i> (85%) and <i>P. falciparum</i> (15%) exists throughout the year.</p> <p>Multidrug-resistant <i>P. falciparum</i> has been reported in areas influenced by Brazilian migration.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - High risk: nine municipalities of the territory bordering Brazil (Oiapoque river valley) and Suriname (Maroni river valley), and the communes of Kourou, Matoury, and Saint-Élie. - Very low risk: other thirteen municipalities, city of Cayenne and Devil's Island (Ile du Diable). 	IV
Grenada	1	<p>WHO certified Grenada as malaria-free in 1962.</p> <p>There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.</p>	I
Guadeloupe (France); Saint Barthelemy (France); Saint Martin (France)	1	<p>There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.</p>	I

Country/Area	Risk Category	Risk Description	Recommendation Category
Guatemala	3B	<p>Malaria risk due almost exclusively to <i>P. vivax</i> exists throughout the year.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: all areas at elevations below 1,500m. - High risk: departments of Escuintla (especially in the municipalities of Gomera, Masagua, Santa Lucia Cotzumalguapa and Tiquisate) and Alta Verapaz (in the municipalities of Telemán, Panzós and La Tinta). - Moderate risk: departments of Suchitepéquez, Retalhuleu and Izabal. - Low risk: the rest of the departments (Chiquimula, Zacapa, Baja Verapaz, San Marcos, Peten, Jutiapa, Jalapa, El Progreso, Santa Rosa, Guatemala, Chimaltenango, Huehuetenango and Quiche). - No risk: Guatemala City, Antigua, Lake Atitlán and areas at elevations above 1,500m. 	III
Guyana	4B	<p>High malaria risk due to <i>P. falciparum</i> (60%), <i>P. vivax</i> (40%) exists throughout the year.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - High risk: Regions 1, 7, 8 and parts of 9. - Very low risk: Regions 2, 3, 10 and parts of 6. - No risk: Regions 4 and 5. - Rare cases have occurred in the cities of Amsterdam and Georgetown. 	IV
Haiti	4A	<p>Malaria risk due exclusively to <i>P. falciparum</i> exists throughout the year. No <i>P. falciparum</i> resistance to chloroquine has been reported.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: all areas, especially in the southern departments including Grand'Anse, Nippes and Sud-Est. 	IV

Country/Area	Risk Category	Risk Description	Recommendation Category
Honduras	4B	<p>Malaria risk due to <i>P. vivax</i> (79%), <i>P. falciparum</i> (20%) and mixed infections (~0.8%) exists throughout the year.</p> <p>No <i>P. falciparum</i> resistance to chloroquine has been reported.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: throughout the country, including the island of Roatán and other Bay Islands. - Risk due to <i>P. vivax</i> is high in the departments of Colón and Gracias a Dios, and moderate in Atlántida, El Paraiso, Olancho and Yoro. - Risk due to <i>P. falciparum</i> is high in Colón and Gracias a Dios. - No risk: San Pedro Sula and Tegucigalpa. 	IV
Jamaica	1	<p>WHO certified Jamaica as malaria-free in 1966.</p> <p>There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.</p>	I
Martinique (France)	1	<p>There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.</p>	I
Mexico	3B	<p>Malaria risk due almost exclusively to <i>P. vivax</i> exists intermittently throughout the year.</p> <p>No <i>P. falciparum</i> resistance to chloroquine has been reported.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - Low risk: Chiapas State (Costa) - Very low risk: the states of Campeche, Chihuahua, Durango, Jalisco, Nayarit, Quintana Roo, San Luis Potosi, Sinaloa, Sonora and Tabasco. - No risk: the major resort areas on the coasts, including the city of Acapulco, or along the Mayan Rivera, including the cities of Cancún, Cozumel and Playa del Carmen. 	III
Montserrat (UK)	1	<p>There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.</p>	I
Netherlands Antilles (Bonaire, Curaçao, Saba, St. Eustasius, and St. Maarten)	1	<p>There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.</p>	I

Country/Area	Risk Category	Risk Description	Recommendation Category
Nicaragua	4B	<p>Malaria risk due to <i>P. vivax</i> (79.2%) and <i>P. falciparum</i> (20.8%) exists throughout the year.</p> <p>No <i>P. falciparum</i> resistance to chloroquine has been reported.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - Risk due to <i>P. falciparum</i> is high mainly in Región Autónoma del Atlántico Norte, specifically in the municipalities of Rosita, Siuna, Bonanza, Puerto Cabezas and Waspán. - Sporadic transmission also reported in Boaca, Chinandega, Esteli, Jinotega, León, Managua, Matagalpa, Nueva Segovia and Región Autónoma Atlántico Sur. - Low risk: the rest of the country. - No risk: Managua city. 	IV
Panama	4B	<p>Malaria risk predominantly due to <i>P. vivax</i> (97%) exists throughout the year.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: provinces of Bocas del Toro, Chiriquí, Colón, Darién, Ngäbe Buglé, Panamá and Veraguas, and indigenous provinces of Emberá and Kuna Yala. - Low risk: east of the Canal Zone. - Very low risk: province of Panamá Oeste, Panama City and in the Canal Zone. 	IV
Paraguay	1	<p>WHO certified Paraguay as malaria-free in 2018.</p> <p>There is no malaria risk as reported by WHO, CDC, PHAC and PHAC.</p>	I
Peru	4B	<p>Malaria risk due to <i>P. vivax</i> (80%) and <i>P. falciparum</i> (20%) exists throughout the year.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: rural areas in inter-Andean valleys at elevations below 2,500m. - 12 departments in the country reported indigenous cases with 90% of cases concentrated in the department of Loreto. - No risk: Lima Province (including the city of Lima), the cities of Arequipa, Ica, Moquegua, Nazca, Puno, Tacna, the coastal region south of Chiclayo, and the highland tourist areas (Cusco, Machu Picchu and Lake Titicaca). 	IV
Puerto Rico (US)	1	<p>There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.</p>	I
Saint Kitts and Nevis (Saint Christopher and Nevis) (UK)	1	<p>There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.</p>	I

Country/Area	Risk Category	Risk Description	Recommendation Category
Saint Lucia	1	WHO certified Saint Lucia as malaria-free in 1962. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Saint Vincent and the Grenadines	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Suriname	5B	Malaria risk due to <i>P. falciparum</i> , <i>P. vivax</i> and mixed infections exists throughout the year but continues to decrease in recent years. <i>P. falciparum</i> resistance to mefloquine has been reported. Some decline in quinine sensitivity has also been reported. <i>Geographical distribution:</i> - At risk: the interior of the country beyond the coastal savannah area, with the highest risk mainly along the eastern border primarily in Sipaliwini District and in the gold-mining areas. - No risk: Paramaribo City and the other seven coastal districts.	V
Trinidad and Tobago	1	WHO certified Trinidad and Tobago as malaria-free in 1965. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Turks and Caicos (UK)	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
US	1	WHO certified United States of America as malaria-free in 1970. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Uruguay	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Venezuela (Bolivarian Republic of)	4B	Malaria risk due to <i>P. vivax</i> (74.6%) and <i>P. falciparum</i> (25.4%) exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas at elevations below 1,700m, and areas south of and including the Orinoco river and Angel Falls. - High risk: some areas of Amazonas (Alto Orinoco, Atabapo, Atures, Autana and Manapiare), Bolívar (Angostura, Cedeño, El Callao, Gran Sabana, Heres, Piar, Rocio and Sifontes), Delta Amacuro and Sucre (Benítez, Bermúdez, Cajigal and Arismendi) states; the risk of <i>P. falciparum</i> malaria is mostly restricted to these areas. - Moderate risk: Zulia State. - Low risk: Anzoátegui and Monagas states. - No risk: Caracas city and Margarita Island.	IV

Country/Area	Risk Category	Risk Description	Recommendation Category
Eastern Mediterranean Region			
Afghanistan	4B	Malaria risk due to <i>P. falciparum</i> and <i>P. vivax</i> exists from April to December. <i>Geographical distribution:</i> - At risk: all areas at elevations below 2,500m.	IV
Bahrain	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Djibouti	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>Geographical distribution:</i> - At risk: all areas.	IV
Egypt	1	Very limited malaria risk due to <i>P. falciparum</i> and <i>P. vivax</i> may exist from June to October. No indigenous cases have been reported since 1998. <i>Geographical distribution:</i> - At risk: El Faiyûm Governorate.	I
Iran	4B	Malaria risk due to <i>P. vivax</i> (93%) and very limited risk due to <i>P. falciparum</i> (7%) exists from March to November. Recent outbreaks in Sistan-Baluchestan Province near the border with Pakistan. <i>Geographical distribution:</i> - At risk: rural areas of Fars Province, southern parts of Sistan and Baluchestan Province, tropical parts of Hormozgan and Kerman Provinces, along the Azerbaijan border in Ardabil and near the Turkmenistan border in North Khorasan.	IV
Iraq	1	No indigenous cases have been reported since 2009.	I
Jordan	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Kuwait	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Lebanon	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Libya	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Morocco	1	WHO certified Morocco as malaria-free in 2010. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Oman	1	There is sporadic transmission of malaria due to <i>P. falciparum</i> and <i>P. vivax</i> , subsequent to international importation. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I

Country/Area	Risk Category	Risk Description	Recommendation Category
Pakistan	4B	<p>Malaria risk due to <i>P. falciparum</i> and <i>P. vivax</i> exists throughout the year.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: all areas (including urban areas) at elevations below 2,500m, especially in rural areas from July to December. - Due to widespread flooding in 2022, there was a four-fold increase in the number of malaria cases reported after the floods, with Southern and Central Pakistan most affected, particularly Balochistan and Sindh provinces. 	IV
Qatar	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Saudi Arabia	4B	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year, mainly from September to January.</p> <p>In pre-elimination phase.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: Asir and Jizan emirates by the border with Yemen (except in the high-altitude areas of elevation above 2,000m of Asir Province). - No risk: cities of Jeddah, Mecca, Medina, Riyadh and Ta'if. 	IV
Somalia	4A	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: all areas. - High risk: central and southern parts of the country. - Low risk: northern parts of the country (seasonal risk). 	IV
Sudan	4A	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: all areas, including Khartoum, except in the Sahara Desert. - High risk: central and southern parts of the country. - Low risk: northern parts of the country (seasonal risk). - Very low risk: Red Sea coast. 	IV
Syrian Arab Republic (Syria)	2	<p>Very limited malaria risk exclusively due to <i>P. vivax</i> may exist from May to October.</p> <p>No indigenous cases have been reported since 2005, but the reporting system has been disrupted since 2010.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: in foci along the northern border, especially in the rural areas of El Hasaka Governorate. 	II

Country/Area	Risk Category	Risk Description	Recommendation Category
Tunisia	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
United Arab Emirates	1	WHO certified United Arab Emirates as malaria-free in 2007. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Yemen	4B	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year, mainly from September to February. <i>Geographical distribution:</i> - At risk: all areas at elevations below 2,000m. - Very limited risk: Socotra Island. - No risk: Sana'a city.	IV
European Region			
Albania	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Andorra	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Armenia	1	WHO certified Armenia as malaria-free in 2011. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Austria	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Azerbaijan	1	WHO certified Azerbaijan as malaria-free in 2023. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Belarus	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Belgium	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Bosnia and Herzegovina	1	WHO certified Bosnia and Herzegovina as malaria-free in 1973. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Bulgaria	1	WHO certified Bulgaria as malaria-free in 1965. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Croatia	1	WHO certified Croatia as malaria-free in 1973. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Cyprus	1	WHO certified Cyprus as malaria-free in 1967. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Czechia (Czech Republic)	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Denmark	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Estonia	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Finland	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
France	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I

Country/Area	Risk Category	Risk Description	Recommendation Category
Georgia	2	Limited malaria risk due exclusively to <i>P. vivax</i> may exist locally from June to October. No locally-acquired cases have been reported since 2010. <i>Geographical distribution:</i> - Very low risk: eastern part of the country bordering Azerbaijan and the rural southeast.	II
Germany	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Greece	2	Very limited malaria risk due exclusively to <i>P. vivax</i> may exist from May to November. <i>Geographical distribution:</i> - Very low risk: agricultural areas, associated with imported cases. - No risk: tourist areas.	II
Hungary	1	WHO certified Hungary as malaria-free in 1964. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Iceland	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Ireland	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Israel	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Italy	1	WHO certified Italy as malaria-free in 1970. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Kazakhstan	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Kyrgyzstan	1	WHO certified Kyrgyzstan as malaria-free in 2016. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Latvia	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Lithuania	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Luxembourg	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Malta	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Moldova (Republic of)	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Monaco	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Montenegro	1	WHO certified Montenegro as malaria-free in 1973. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Netherlands	1	WHO certified Netherlands as malaria-free in 1970. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
North Macedonia (Republic of)	1	WHO certified North Macedonia as malaria-free in 1973. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Norway	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Poland	1	WHO certified Poland as malaria-free in 1967. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I

Country/Area	Risk Category	Risk Description	Recommendation Category
Portugal	1	WHO certified Portugal as malaria-free in 1973. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Romania	1	WHO certified Romania as malaria-free in 1967. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Russia	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
San Marino	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Serbia	1	WHO certified Serbia as malaria-free in 1973. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Slovakia	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Slovenia	1	WHO certified Slovenia as malaria-free in 1973. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Spain	1	WHO certified Spain as malaria-free in 1964. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Sweden	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Switzerland	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Tajikistan	1	WHO certified Tajikistan as malaria-free in 2023. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Turkey	1	No locally-acquired cases have been reported since 2010.	I
Turkmenistan	1	WHO certified Turkmenistan as malaria-free in 2010. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Ukraine	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
UK (with Channel Islands and Isle of Man)	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Uzbekistan	1	WHO certified Uzbekistan as malaria-free in 2018. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
South-East Asian Region			
Bangladesh	4B	<p>Malaria risk due to <i>P. falciparum</i> (90%), <i>P. vivax</i> (10%) and rarely <i>P. malariae</i> exists throughout the year with a peak during the monsoon season from May to October.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - Transmission occurs in 13 of 64 districts in both rural and urban areas. - High risk: Chittagong Hill Tract districts (Bandarban, Rangamati and Khagrachari), Chattogram District and Cox's Bazaar District. - Low risk: districts of Hobigonj, Kurigram, Moulvibazar, Mymensingh, Netrakona, Sherpur, Sunamgonj and Sylhet. - No risk: most parts of the country, including Dhaka City. 	IV

Country/Area	Risk Category	Risk Description	Recommendation Category
Bhutan	4B	<p>Malaria risk due to <i>P. falciparum</i> (70%) and <i>P. vivax</i> (30%) exists.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: rural areas at elevations below 1,700m in the seven southern belt districts of the country (Chukha, Dagana, Pemagatshel, Samdrup Jongkhar, Samtse, Sarpang and Zhemgang). - Very low risk: rare seasonal cases during the rainy summer months occurs in focal areas in the rest of the country. - No risk: districts of Bumthang, Gasa, Paro and Thimphu. 	IV
Democratic People's Republic of Korea (North Korea)	2	<p>Limited malaria risk due exclusively to <i>P. vivax</i> exists.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: some southern areas of the country. 	II
India	4B	<p>Malaria risk due to <i>P. falciparum</i> and <i>P. vivax</i> exists throughout the year.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: all areas at elevations below 2,000m, including the cities of Bombay (Mumbai) and Delhi. - High risk: northeastern and central states which have large forest, hilly and tribal areas, including Odisha, Chhattisgarh, Jharkhand, Madhya Pradesh, Maharashtra and some north-eastern states such as Tripura, Meghalaya and Mizoram. - Low risk: central urban areas of Delhi, Agra, Mumbai, Nagpur, Nasik, Pune, Kolkata and Bangalore. - No risk: Lakshadweep islands and areas at elevations above 2,000m in parts of Himachal Pradesh, Jammu and Kashmir, and Sikkim. 	IV
Indonesia	4B	<p>Malaria risk exists throughout the year.</p> <p><i>P. vivax</i> resistance to chloroquine has been reported.</p> <p>Human <i>P. knowlesi</i> infection has been reported in the province of Kalimantan.</p> <p><i>Geographical distribution:</i></p> <ul style="list-style-type: none"> - At risk: most areas of the five eastern provinces of East Nusa Tenggara, Maluku, North Maluku, Papua and West Papua and in the rural areas of Kalimantan (Borneo), Nusa Tenggara Barat (including the island of Lombok), Sulawesi and Sumatra. - Low risk: rural areas of Java, including Pangandaran, Sukalumi and Ujung Kulong. - No risk: cities of Jakarta and Ubud, resort areas of Bali and Java, Gili Islands and the Thousand Islands (Pulau Seribu). 	IV

Country/Area	Risk Category	Risk Description	Recommendation Category
Maldives	1	WHO certified Maldives as malaria-free in 2015. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Myanmar (formerly Burma)	5B	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. vivax</i> resistance to chloroquine has been reported. Mefloquine resistance has been reported in Kayin State and the eastern part of Shan State. Emerging artemisinin resistance is suspected in south-eastern Myanmar. Human <i>P. knowlesi</i> infection has been reported. Geographical distribution: - At risk: all areas at elevations below 1,000m. - Mefloquine-resistant malaria occurs in areas at elevations below 1,000m in the states of Bago, Kachin, Kayah, Kayin, Shan and Tanintharyi. - High risk: remote rural, hilly and forested areas of the country as well as in some coastal areas in Rahkine State. - No risk: areas at elevations above 1,000m and urban areas.	V
Nepal	4B	Malaria risk predominantly due to <i>P. vivax</i> exists mainly from March to October with peaks during the rainy seasons from May to August, and occasional outbreaks of <i>P. falciparum</i> from July to October. <i>Geographical distribution:</i> - At risk: all areas at elevations below 2,000m, the far-western region of the country and inner Terai. - No risk: Kathmandu, Pokhara and typical Himalayan treks.	IV
Sri Lanka	1	WHO certified Sri Lanka as malaria-free in 2016. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I

Country/Area	Risk Category	Risk Description	Recommendation Category
Thailand	5B	<p>Malaria risk exists throughout the year.</p> <p><i>P. vivax</i> resistance to chloroquine has been reported.</p> <p><i>P. falciparum</i> resistance to mefloquine and quinine has been reported from areas near the borders with Cambodia and Myanmar. Artemisinin resistance has been reported near the border with Cambodia.</p> <p>Human <i>P. knowlesi</i> infection has been reported.</p> <p>Geographical distribution:</p> <ul style="list-style-type: none"> - At risk: rural, especially forested and hilly, areas of the country, mainly towards the international borders, including the southernmost provinces. - Mefloquine-resistant malaria occurs in provinces that border Myanmar, Cambodia (except Buri Ram Province), Malaysia (except Satun Province) and Laos (Ubon Ratchathani and Phitsanulok Provinces) and in Surat Thani Province. - No risk: cities (e.g. Bangkok, Chiang Mai and Pattaya), urban areas, Samui Island and the main tourist resorts of Phuket island. 	V
Timor-Leste (East Timor)	2	Very limited malaria risk due exclusively to <i>P. falciparum</i> may exist throughout the year.	II
Western Pacific Region			
American Samoa (US)	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Australia; Including Cocos (Keeling) Islands	1	WHO certified Australia as malaria-free in 1981. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Brunei Darussalam	3B	WHO certified Brunei Darussalam as malaria-free in 1987. However, human <i>P. knowlesi</i> infection has been reported in primarily forested or forest-fringe areas. Travellers spending extended periods in rural or forested areas may consider chemoprophylaxis.	III
Cambodia	5B	<p>Malaria risk due to <i>P. falciparum</i> and <i>P. vivax</i> exists throughout the year.</p> <p><i>P. falciparum</i> resistance to artesunate, mefloquine, lumefantrine and piperazine has been reported in western Cambodia, extending to the centre of the country.</p> <p><i>P. vivax</i> resistance to chloroquine has been reported in eastern Cambodia.</p> <p>Geographical distribution:</p> <ul style="list-style-type: none"> - At risk: all areas, especially forested rural areas. - Low risk: Phnom Penh, areas close to Tonle Sap (Siem Reap) and the temple complex at Angkor Wat. 	V
Cook Islands (New Zealand)	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Fiji	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I

Country/Area	Risk Category	Risk Description	Recommendation Category
French Polynesia, includes the island groups of Society Islands (Tahiti, Moorea, and Bora-Bora); Marquesas Islands (Hiva Oa and Ua Huka); and Austral Islands (Tubuai and Rurutu)	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Guam (US)	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Japan	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Kiribati (formerly Gilbert Islands), includes Tarawa, Tabuaeran (Fanning Island), and Banaba (Ocean Island)	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Lao People's Democratic Republic	5B	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistance to mefloquine has been reported. Geographical distribution: - At risk: all areas, except the city of Vientiane. - Mefloquine-resistant malaria occurs along the Laos-Myanmar border in the provinces of Bokeo and Louang Namtha, along the Laos-Thailand border in the provinces of Champasack and Saravan, along the Laos-Cambodia border and along the Laos-Vietnam border.	V
Mainland China	1	WHO certified China as malaria-free in 2021. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Malaysia	3B	Malaria risk due to <i>P. falciparum</i> , <i>P. vivax</i> , <i>P. malariae</i> , and <i>P. ovale</i> exists only in limited foci throughout the year. Human <i>P. knowlesi</i> infection has been reported. No indigenous cases have been reported since 2017. Geographical distribution: - Very low risk: limited foci in the deep hinterland of the states of Sabah and Sarawak and the central areas of Peninsular Malaysia. - No risk: urban, suburban and coastal areas.	III
Marshall Islands	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I

Country/Area	Risk Category	Risk Description	Recommendation Category
Micronesia (Federated States of), includes: Yap Islands, Pohnpei, Chuuk, and Kosrae	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Mongolia	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Nauru	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
New Caledonia (France)	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
New Zealand	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Niue (New Zealand)	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Northern Mariana Islands (US) Includes Saipan, Tinian, and Rota Island	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Palau	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Papua New Guinea	4B	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. vivax</i> resistance to chloroquine has been reported. Geographical distribution: - At risk: all areas at elevations below 2,000m.	IV
Philippines	4B	Very limited malaria risk due to <i>P. falciparum</i> (85%) and <i>P. vivax</i> (15%) exists throughout the year. Human <i>P. knowlesi</i> infection has been reported on Palawan Island. Geographical distribution: - At risk: nine remaining endemic provinces (Palawan, Sultan Kudarat, Davao del norte, Maguindanao, Sulu, Mindoro occidental, Tawi-tawi, Cagayan Valley and Davao City). - Very low risk: metropolitan Manila and other urban areas.	IV
Pitcairn Islands (UK)	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Republic of Korea (South Korea)	2	Limited malaria risk due exclusively to <i>P. vivax</i> . <i>Geographical distribution:</i> - At risk: northern parts of Gangwon-do and Gyeonggi-do Provinces and Incheon City (towards the Demilitarized Zone) from March to December.	II
Samoa (formerly Western Samoa)	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Singapore	1	WHO certified Singapore as malaria-free in 1982. There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I

Country/Area	Risk Category	Risk Description	Recommendation Category
Solomon Islands	4A	Malaria risk predominantly due to <i>P. vivax</i> (70%) and <i>P. falciparum</i> (30%) exists throughout the year. <i>P. vivax</i> resistance to chloroquine has been reported. Geographical distribution: - At risk: all areas, except a few outlying eastern and southern islets.	IV
Tokelau (New Zealand)	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Tonga	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Tuvalu	1	There is no malaria risk as reported by WHO, CDC, PHAC and UKHSA.	I
Vanuatu	4A	Low to moderate malaria risk due predominantly to <i>P. vivax</i> exists throughout the year. Malaria risk due to <i>P. falciparum</i> is still present. <i>P. vivax</i> resistance to chloroquine has been reported. Geographical distribution: - At risk: all areas.	IV
Vietnam	5B	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistance to mefloquine has been reported. Geographical distribution: - At risk: all areas. - Mefloquine-resistant malaria occurs in the southern part of the country in the provinces of Dac Lac, Gia Lai, Khanh Hoa, Kon Tum, Lam Dong, Ninh Thuan, Song Be and Tay Ninh. - No risk: urban centres, the Red River delta, the Mekong delta and the coastal plain areas of central Vietnam.	V

Annex 4

Countries/ Areas with Major Updates in Risk Description without Change in Risk Categories and Recommendations (as of August 2024)

Country/Area	Major Updates in Risk Description
African Region	
Namibia	<i>Geographical distribution:</i> - Removal of the Caprivi Strip as risk area. (PHAC)
Region of the Americas	
Brazil	<i>Geographical distribution:</i> - Removal of Tocantins (western part) as risk area. (WHO)
French Guiana	<i>Malaria species frequency:</i> - <i>P. vivax</i> : changed from 55% to 85%. (WHO) - <i>P. falciparum</i> : changed from 45% to 15%. (WHO) <i>Geographical distribution:</i> - Addition of the communes of Kourou, Matoury and Saint-Élie as high-risk areas. (CDC, PHAC, UKHSA)
East Mediterranean Region	
Afghanistan	<i>Geographical distribution:</i> - Removal of central Kabul and Kandahar as low-risk areas. (PHAC)
Iran	<i>Geographical distribution:</i> - Noted to have recent outbreaks in Sistan-Baluchestan Province near the border with Pakistan. (CDC, PHAC)
Pakistan	<i>Geographical distribution:</i> - Due to widespread flooding in 2022, there was a four-fold increase in the number of malaria cases reported after the floods, with Southern and Central Pakistan most affected, particularly Balochistan and Sindh provinces. (WHO, UKHSA)
Sudan	<i>Geographical distribution:</i> - Due to reported increases in malaria cases in Khartoum and the impact of civil unrest on health services there, antimalarial chemoprophylaxis is now advised for all travellers to Sudan, including Khartoum, hence Khartoum was changed from being a very low-risk area to a risk area. (PHAC, UKHSA)
South-East Asian Region	
Nepal	<i>Geographical distribution:</i> - Addition of the far-western region of the country and inner Terai as risk areas. (WHO) - Addition of Pokhara as no-risk area. (PHAC)
Thailand	<i>Drug resistance:</i> - Artemisinin resistance previously reported near the border with Myanmar, but currently reported near the border with Cambodia. (WHO) <i>Geographical distribution:</i> - Addition of provinces that border Malaysia to areas with mefloquine-resistant malaria. (PHAC)
Western Pacific Region	
Cambodia	<i>Geographical distribution:</i> - Addition of areas close to Tonle Sap (Siem Reap) as very low-risk area.

Risk Profile Summary

Table 1: Risk categories of countries and areas in the six WHO Regions

Region	1	2	3A	3B	4A	4B	5A	5B	Total
African	5	1	0	0	33	9	0	0	48
The Americas	29	0	0	2	2	12	0	1	46
Eastern Mediterranean	12	1	0	0	3	5	0	0	21
European	51	2	0	0	0	0	0	0	53
South-East Asia	2	2	0	0	0	5	0	2	11
Western Pacific	24	1	0	2	2	2	0	3	34
Total	123	7	0	4	40	33	0	6	213

Table 2: Recommendation categories of countries and areas in the six WHO Regions

Region	I	II	III	IV	V	Total
African	5	1	0	42	0	48
The Americas	29	0	2	14	1	46
Eastern Mediterranean	12	1	0	8	0	21
European	51	2	0	0	0	53
South-East Asia	2	2	0	5	2	11
Western Pacific	24	1	2	4	3	34
Total	123	7	4	73	6	213

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