



衛生防護中心
Centre for Health Protection

Scientific Committee on Vector-borne Diseases

Global Malaria Risk Summary October 2012

Introduction

Malaria is a notifiable disease in Hong Kong. Since 1998, annual malaria notifications ranged from 23 to 55 cases and the vast majority of these cases were imported from outside Hong Kong. The last local indigenous malaria case was reported in 1998, yet there was no definite source of infection identified.

2. Based on an initial discussion on malaria epidemiology, the Scientific Committee on Vector-borne Diseases (the Committee) developed the “Guidelines on Malaria Chemoprophylaxis for Travellers from Hong Kong” for reference by healthcare professionals.

3. In support of the Guidelines, the Committee also compiled the malaria risk of various countries or administrative areas for healthcare professionals' reference in October 2010. The Committee recommended this “Global Malaria Risk Summary” (the Risk Summary) be updated and reviewed on an annual basis at the Committee meetings. This paper highlights the major changes in the global malaria epidemiology in the past one year.

Objectives

4. This document serves to provide general reference for healthcare professionals in their management of potential travellers to areas with malaria risk. It is to be used together with the “Guidelines on Malaria Chemoprophylaxis for Travellers from Hong Kong”, published by the Committee which is available in the website of the Centre for Health Protection.



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Methods and Explanatory Notes

5. Understanding the global distribution of areas with malaria risk relies on accurate disease and laboratory surveillance information supplied by various countries and administrative areas. Apart from the World Health Organization (WHO), the health authorities in the United States (US), the United Kingdom (UK), and Canada also compile malaria epidemiology information together with recommendation for outbound travellers.

6. This Risk Summary is compiled based on the epidemiology information as well as malaria prevention strategies recommended by these health authorities. While information on malaria risk published by these overseas health authorities most often concurs, there may be different levels of details and occasional discrepancies among different sources. To allow for a better assessment of the risks, the details of such discrepancies are described in the Risk Summary. Nonetheless, as general principles, even in countries with malaria risk, the risk of malaria infection is generally lower in areas with altitudes greater than 2 000 m or in well-developed city areas.

7. As regards the recommendation, it is notable that mosquito-bite prevention is highlighted in all authorities. There are also minor differences in the recommended chemoprophylactic agents to be used in areas with emerging chloroquine-resistant malaria. While both WHO and UK recommend using chloroquine and proguanil for chemoprophylaxis in travellers visiting areas with emerging chloroquine resistance and atovaquone-proguanil, doxycycline or mefloquine in areas with high risk of drug resistance. US and Canada categorize the prophylaxis regime into two categories - chloroquine-sensitive or chloroquine-resistant areas only and recommend using either atovaquone-proguanil, doxycycline, or mefloquine in chloroquine-resistant areas.¹

8. In order to better reflect the current epidemiology and recommendations, we have developed a set of risk and recommendation categories. A total of five main categories of risk levels with the respective recommended malaria prevention approaches are defined as shown in **Annex 1**. **Annex 2** shows the Risk Summary with the respective risk and recommendation categories for each country or administrative area. Additional accounts of the specific risk descriptions together with the discrepancy of risk information among different sources are given to allow for a better understanding and risk assessment of the situation. **Annex 3** summarizes the risk and recommendation profiles of the countries in the six WHO regions.

¹ In 2012 updates, Nepal, Sri Lanka and Tajikistan are under countries with emerging chloroquine resistance according to WHO. WHO recommended chloroquine + proguanil chemoprophylaxis for these three countries while CDC recommended atovaquone/proguanil, doxycycline, or mefloquine for these countries.

Updates from October 2011 to October 2012

9. Over the past year, WHO and Centers for Disease Control and Prevention (CDC) of US provided updated malaria situation and recommendations on malaria prevention for travellers. From time to time, WHO, US, UK and Canada issued updated reports on malaria outbreaks. **Annex 2** of this document has been updated accordingly with the changes detailed below.

Major Outbreak Reports

10. Over the past year, no major change in malaria burden has been reported. UK and US announced notices of malaria outbreak in Greece and clinical updates in 2012. It was reported that as of 12 September 2012, there were nine locally acquired cases of malaria in 2012, according to Clinical Updates of UK on 4 October 2012. Eight of the cases occurred in the regions of Laconia and Attica. There was a case reported in a new area in Greece, the municipality of Abdera in Xanthi region.

Update in the Global Malaria Risk Summary for Countries with Change in Risk Category and Recommendation

11. This year, three countries namely Cape Verde, Armenia and Turkmenistan have their malaria risk categories and recommendations revised.

12. The malaria risk of Cape Verde has changed from “Risk of chloroquine-resistant malaria exists in certain areas (risk category 4B)” to “Malaria risk reported to be very limited (risk category 2)”. According to WHO, the risk description of Cape Verde was “limited malaria risk due predominantly to *P. falciparum* exists from August to November inclusive in Santiago island and in Boa Viata Island (18 locally acquired cases reported in 2010)”. The recommendation is mosquito prevention only. According to CDC, it was documented that the “Limited cases in Sao Tiago Island with Chloroquine resistance documented”. CDC changed its recommendation in 2011 into mosquito avoidance only. The UK National Travel Health Network and Centre (NaTHNaC) stated that “Chemoprophylaxis is not recommended for Cape Verde; however, travellers should be aware of the small risk of malaria on Sao Tiago.” Although Canada recommended chemoprophylaxis in its document in 2009, the document was not updated recently. Furthermore, in its notes, Canadian authority recommended that travel health practitioners keep abreast of potential changes by regular monitoring of the WHO and US CDC information. As such, the malaria risk and recommendation are changed to 2 and II respectively – Malaria risk reported to be very limited and malaria prevention may be required.

13. The malaria risk of Armenia has changed from “Risk of fully chloroquine-sensitive malaria exists in certain areas (risk category: 3B)” to “No malaria risk (risk category: 1)”. For Armenia, WHO has revised its malaria risk description to “no malaria risk” since 2012 and US CDC has changed its malaria risk to “no malaria transmission” in Armenia since 2009. UK NaTHNaC stated that there is no risk of malaria in this country, as an update to the document “Guidelines for Malaria Prevention in Travellers from the United Kingdom”. According to the information, there has been no indigenous case reported since 2006. Although Canada recommended chemoprophylaxis in its document in 2009, the document was not updated recently. As such, the malaria risk is regarded as risk category 1 instead of 3B.

14. The malaria risk of Turkmenistan has changed from “Risk of fully chloroquine-sensitive malaria exists in certain areas (risk category: 3B)” to “No malaria risk (risk category: 1)”. There has been no malaria risk as reported by WHO (since 2011), CDC (since 2010) and UK NaTHNaC. There has been no indigenous case reported since 2006. Although Canada recommended chemoprophylaxis in its document in 2009, the document was not updated recently. As such the malaria risk should be regarded as risk category 1 instead of 3B.

Other Updates in the Global Malaria Risk Summary for Countries without Change in Risk Category and Recommendation

15. A total of 17 countries/administrative areas distributed in the six WHO regions have updates in the risk descriptions about the geographical and seasonal distribution, predominant species and resistance pattern of malaria. Nonetheless, there is no change in their risk categories and recommendations. The following summarizes the changes with respect to each of the WHO Regions.

- (a) African Region: Two of the 47 countries/areas in the region have their risk descriptions updated. They are Algeria and Botswana.
 - For Algeria, “five local cases of *P. falciparum* transmission reported in 2010 in areas under the influence of trans-Saharan migration” are added in accordance with WHO.
 - For Botswana, “Bobirwa” is added as in the at-risk area according to WHO.
- (b) Region of the Americas: The prevailing species of malaria parasites and the areas at risk for contracting malaria in 3 out of the 46 countries/areas in the Americas have been updated. They are Jamaica, Nigargua and Paraguay.

- For Jamaica, “no local cases reported in 2010-2011” is added according to WHO.
 - For Nicaragua, the prevalence of malaria risk due to *P. vivax* is amended from 85% to 82%. The area at risk are updated as “Low malaria risk exists throughout the year in a number of municipalities, mainly in Region autonoma del atlantico Norte, with sporadic transmission also reported in Boaca, Chinandega, Jinoteca, Leon and Matagalpa. Cases are reported from other municipalities in the central and western departments but the risk in these areas is considered to be very low or negligible.” according to WHO.
 - For Paraguay, “Canendiyú” is no longer listed as at-risk area by WHO. However, it is still an at-risk area according to CDC.
- (c) Eastern Mediterranean Region: Three of the 22 countries/areas in the region have their risk descriptions updated. They are Oman, Saudi Arabia and South Sudan. South Sudan is listed as a new country in accordance with WHO.
- For Oman, “Local cases were also reported in 2011” is added in the risk description based on WHO’s information.
 - For Saudi Arabia, the risk description is updated from “Malaria risk exists mainly from September to January inclusive in foci along the southern border with Yemen” to “Limited malaria risk due predominantly to *P. falciparum* exists mainly from September to January inclusive in foci along the southern border with Yemen.” according to WHO.
 - South Sudan is listed as a new country in accordance with WHO. Its risk description is “Malaria risk predominantly due to *P. falciparum* exists throughout the year in the whole country. *P. falciparum* resistance to chloroquine and sulfadoxine-pyrimethamine reported.” Its risk category is 4A and the recommendation is IV.
- (d) European Region: Four of the 53 countries/areas in the region have their risk descriptions updated. They are Azerbaijan, Georgia, Greece and Turkey.
- For Azerbaijan, “Four locally acquired cases were reported in 2011” is added in the risk description according to WHO. Furthermore, WHO lowers the recommended prevention in risk areas to mosquito prevention only. However, as CDC still

recommends prophylaxis, our recommendation remains the same as III.

- For Georgia, in accordance with WHO, “No cases reported in 2010 and one locally acquired case reported in 2011” is added to the risk description.
 - For Greece, according to US CDC outbreak notice on 4 October 2012, the at-risk area was revised from “ongoing evidence of transmission in Lakonia district” to “Cases of malaria have been reported from Attica and Laconia. Cases have occurred in the cities of Marathon, Markopoulo, and Evrotas. No cases have been reported in Athens.” According to UK NaTHNaC clinical updates on 4 October, nine locally acquired cases of malaria have been reported in Greece since 2012 as of 12 September. Eight of the cases have occurred in the regions of Laconia and Attica. The most recently reported case occurred in a new area, the municipality of Abdera in Xanthi region. WHO and UK NaTHNaC recommend mosquito prevention only while US CDC recommends travellers going to the agricultural areas of Evrotas to take prophylaxis. Our recommendation remains as III.
 - For Turkey, according to the WHO, “Limited malaria risk exists from May to October inclusive in the following provinces: Diyarbakir, Mardin and Sanliurfa. A few sporadic cases were reported in 2010 and 2011” replaces the description “from May to October mainly in the south-eastern part of the country. There is no malaria risk in the main tourist areas in the west and southwest of the country”. CDC does not change its at-risk area, the at-risk area remains as “southeastern part of the country and no risk on the Incerlik U.S. Air Force base and on typical cruise itineraries”. The risk category of WHO is II while CDC still recommends prophylaxis, thus the risk category remains unchanged as 3B. The at risk period is shortened to “May to October”.
- (e) South-east Asia Region: 4 of the 11 countries in the region have their risk description updated. They are Bangladesh, Bhutan, Burma (Myanmar) and Indonesia.
- For Bangladesh, US CDC has updated the at-risk area as “all areas, except in the city of Dhaka”. WHO changes its risk description from “throughout the year in the whole country excluding Dhaka city, with highest risk in Chittagong Division, the districts of Mymensingh, Netrakona and Sherpur in Dhaka Division, and Kurigram district in Rajshahi Division.” to “throughout the year but transmission occurs only in rural areas, in 13 of 64 districts.

The risk is high in Chittagong Hill Tract districts (Bandarban, Rangamati and Khagrachari), Chittagong district and Cox Bazaar district. Low risk exists in the districts of Hobigonj, Kurigram, Moulvibazar, Mymensingh, Netrakona, Sherpur, Sunamgonj and Sylhet. Most parts of the country, including Dhaka City, have no risk of malaria.” The CDC’s affected area is “All areas, except in the city of Dhaka”. It is adopted in our risk description.

- For Bhutan, “Dagana and Pemagatshel” is added as the at-risk area. Furthermore, “No transmission occurs in the four following districts: Bumthang, Gasa, Paro and Thimphu. Seasonal transmission during the rainy summer months occurs in focal areas in the rest of country” is added, based on WHO’s update.
 - For Myanmar (Burma), there is emerging artemisinin resistance suspected in south-eastern Myanmar, according to WHO. The CDC has updated the risk area as “Present at altitudes <1,000m. None in the cities of Mandalay and Rangoon (Yangon).” The risk category remains in 5B.
 - For Indonesia, WHO changes the risk description from “Throughout the year in all areas of the five eastern provinces of Papua, West Papua, Maluku, North Maluku and East Nusa Tenggara. In other parts of the country, there is malaria risk in some districts except in Jakarta Municipality, big cities, and within the areas of the tourist resorts.” to “Throughout the year in most areas of the five eastern provinces of Papua, West Papua, Maluku, North Maluku and East Nusa Tenggara. In other parts of the country, there is malaria risk in some districts except in Jakarta Municipality, in cities and urban areas, and within the areas of the tourist resorts.” Our risk description is updated accordingly.
- (f) Western Pacific Region: Only one (Cambodia) of the 34 countries/areas in the region has updated the at-risk areas and antimalarial resistance/tolerance pattern.
- For Cambodia, US CDC and WHO have added “The temple complex at Angkor Wat” to the area with negligible risk. Furthermore, WHO has updated its malaria resistance pattern as “*P. falciparum* resistance to chloroquine and sulfadoxine-pyrimethamine has been reported throughout the country. *P. falciparum* resistance to artesunate, mefloquine, lumefantrine and piperazine has been reported in western Cambodia. *P. vivax* resistance to chloroquine has been reported in eastern Cambodia.” Our risk description is updated accordingly.

Travel Health Service

16. The Port Health Office of the Department of Health has two Travel Health Centres to offer individual travel health assessment for travellers, and give health advice, travel health information, travel-related vaccinations and other preventive medications. People planning to visit malaria-endemic countries may contact the travel health enquiry phone lines for travel health advice and, if necessary, book appointment in the Travel Health Centres for pre-travel health risk assessment and advice, including anti-mosquito measures and anti-malarial chemoprophylaxis to be taken. Health promotion activities on travel health including talks, seminars and exhibitions are arranged periodically to increase the awareness of malaria risk in endemic countries for outbound travellers. More information on Travel Health Service is available at: <http://www.travelhealth.gov.hk/>.

Limitation and Disclaimers

17. The information presented in this paper is quoted from the following reports:

- (a) WHO. International travel and health 2012 Edition, Country list: yellow fever vaccination requirements and recommendations; and malaria situation.
- (b) (i) Centers for Disease Control and Prevention. Health Information for International Travel 2012 – The Yellow Book. Atlanta: US Department of Health and Human Services, Public Health Service.
(ii) Updates to the Online Edition of CDC Health Information for International Travel 2012 (The Yellow Book)
- (c) (i) Guidelines for malaria prevention in travellers from the United Kingdom. London, Health Protection Agency, January 2007.
(ii) National Travel Health Network and Centre (NaTHNaC) Website [commissioned by the Health Protection Agency].
- (d) Public Health Agency of Canada. Canadian Recommendations for the Prevention and Treatment of Malaria Among International Travellers, July 2009.

18. While great efforts have been made to ensure that the epidemiology information in this Risk Summary is maintained as up-to-date as possible, disease situation may change rapidly over time. Moreover, under-reporting and delayed reporting of disease in various countries or administrative areas included in the Risk Summary may affect the timeliness of malaria risk assessment. Healthcare professionals are advised to review the latest outbreak situations when necessary.

Feedbacks and Enquiries

19. This Risk Summary will be updated in the third quarter of 2013. Any feedbacks and enquiries are welcome to be sent to the Centre for Health Protection.

Annexes

Annex 1: Key to the Global Malaria Risk Summary

Annex 2: Global Malaria Risk Summary (As of 31 October, 2012)

Annex 3: Risk Profile Statistics

Centre for Health Protection
October 2012

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Key References

World Health Organization

1. World Health Organization. International travel and health 2012 Edition, Country list: yellow fever vaccination requirements and recommendations; and malaria situation [Cited 2012 October 15]. Available at http://www.who.int/ith/chapters/ith2012en_countrylist.pdf

United States

2. Centers for Disease Control and Prevention. Health Information for International Travel 2012 – The Yellow Book. Atlanta: US Department of Health and Human Services, Public Health Service. [Cited 2012 October 15]. Available at <http://wwwnc.cdc.gov/travel/yellowbook/2012/chapter-3-infectious-diseases-related-to-travel/yellow-fever-and-malaria-information-by-country.htm>

And its updates “Updates to the Online Edition of CDC Health Information for International Travel 2012 (The Yellow Book)”. Available at <http://wwwnc.cdc.gov/travel/page/2012-yellow-book-updates.htm>

United Kingdom

3. Chiodini P, Hill D, Lalloo D, Lea G, Walker E, Whitty C and Bannister B. Guidelines for malaria prevention in travellers from the United Kingdom. London, Health Protection Agency, January 2007 [cited 2012 October 15]. Available at <http://www.hpa.org.uk/Publications/InfectiousDiseases/TravelHealth/0701/MalariapreventionfortravellersfromtheUK/>

And its updates on internet on malaria travel risks - Country information available at http://www.nathnac.org/ds/map_world.aspx

Canada

4. Public Health Agency of Canada. Canadian Recommendations for the Prevention and Treatment of Malaria Among International Travellers, July 2009. Volume 35S1 [cited 2012 October 15]. Available at <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/09vol35/35s1/index-eng.php>

Reference Websites for Updated Epidemiology on Malaria

- (i) World Health Organization. News on Malaria
Available from: <http://www.who.int/topics/malaria/news/en/index.html>
- (ii) Centers for Disease Control and Prevention, US. Traveler's Health: Outbreak.
Available from: <http://wwwn.cdc.gov/travel/default.aspx>
- (iii) Health Protection Agency (HPA), UK. Malaria: News.
Available from:
http://www.hpa.org.uk/infections/topics_az/malaria/news.htm
- (iv) National Travel Health Network and Centre, UK. Health professionals: Clinical Updates
Available from: <http://nathnac.org/pro/index.htm>
- (v) Public Health Agency of Canada. Travel Health: Notice and International Reports.
Available from: http://www.phac-aspc.gc.ca/tmp-pmv/pub_e.html
- (vi) The Travel Health Service, Department of Health, Hong Kong.
Available from: <http://www.travelhealth.gov.hk/>
- (vii) Guidelines on Malaria Chemoprophylaxis for Travellers from Hong Kong. Scientific Committee on Vector-borne Diseases. Centre for Health Protection, Department of Health, Hong Kong.
Available from:
http://www.chp.gov.hk/files/pdf/Guidelines_on_Malaria_Chemoprophylaxis_for_Travellers_from_Hong_Kong.pdf

Annex 1: Key to Global Malaria Risk Summary

Risk Category	General Description of the Risk	Recommendation	Recommendation Description
1	No malaria risk (as reported by WHO, US CDC, UK HPA and Health Canada)	I	General precaution 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 3A: <i>Risk of malaria exists in the whole administrative area</i> 3B: <i>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 travel to at-risk areas, consider chemoprophylaxis using chloroquine.
4	Chloroquine-resistant malaria have been reported 4A: <i>Risk of malaria exists in the whole administrative area</i> 4B: <i>Risk of malaria exists in certain areas</i> 4C: <i>Emerging chloroquine-resistant malaria exists in certain areas</i>	IV	Malaria prevention recommended <ul style="list-style-type: none"> ➤ Advise to undertake mosquito bite prevention ➤ When travel to areas at risk of chloroquine-resistant malaria, consider chemoprophylaxis using either atovaquone/proguanil, doxycycline, or mefloquine; ➤ When travel to areas at risk of emerging chloroquine-resistant malaria, consider chemoprophylaxis using chloroquine + proguanil (recommended by WHO and HPA) or either atovaquone/proguanil, doxycycline, or mefloquine (recommended by CDC and/or Health Canada); ➤ When travel to areas at risk of chloroquine-sensitive malaria, consider chemoprophylaxis using chloroquine.

12	General Description of the Risk	Recommendation	Recommendation Description
5	<p>Malaria resistant to both chloroquine and mefloquine have been reported</p> <p>5A:<i>Risk of malaria exists in the whole administrative area</i></p> <p>5B: <i>Risk of malaria exists in certain areas</i></p>	V	<p>Malaria prevention recommended</p> <ul style="list-style-type: none"> ➤ Advise to undertake mosquito bite prevention ➤ When travel to areas at risk of mefloquine resistant malaria, consider chemoprophylaxis using atovaquone/proguanil or doxycycline, BUT NOT mefloquine ; ➤ When travel to areas at risk of chloroquine-resistant malaria, consider chemoprophylaxis using either atovaquone/proguanil, doxycycline, or mefloquine; ➤ When travel to areas at risk of emerging chloroquine-resistant malaria, consider chemoprophylaxis using chloroquine + proguanil (recommended by WHO and HPA) or either atovaquone/proguanil, doxycycline, or mefloquine (recommended by CDC and/or Health Canada); ➤ When travel to areas at risk of chloroquine-sensitive malaria, consider chemoprophylaxis using chloroquine.

Annex 2: Global Malaria Risk Summary (As of 31 October 2012)

Region	Country/Area	Risk category	Risk description	Recommendation
African	Algeria	2	<p>Malaria risk is limited.</p> <p>At-risk area: Small foci of local transmission of <i>P. vivax</i> have previously been reported in the 6 southern and south-eastern wilayas (Adrar, El Oued, Ghardaia, Illizi, Ouargla, Tamanrasset).</p> <p>Five local cases of <i>P. falciparum</i> transmission reported in 2010 in areas under the influence of trans-Saharan migration.</p>	II
African	Angola	4A	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported.</p> <p>At-risk area: -Chloroquine-resistant malaria: in all areas.</p>	IV
African	Benin	4A	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported.</p> <p>At-risk area: -Chloroquine-resistant malaria: in all areas.</p>	IV
African	Botswana	4B	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists. <i>P. falciparum</i> resistant to chloroquine reported.</p> <p>At-risk area: - Chloroquine-resistant malaria: in the northern parts of the country: Bobirwa, Boteti, Tutume districts/sub-districts, provinces of Central, Chobe, Ghanzi, Ngamiland, and including safaris to the Okavango Delta area, Northeast and Northwest from November to June.</p> <p>No risk in the city of Gaborone and Francistown</p>	IV
African	Burkina Faso	4A	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported.</p> <p>At-risk area: -Chloroquine-resistant malaria: in all areas.</p>	IV

Region	Country/Area	Risk category	Risk description	Recommendation
African	Burundi	4A	Malaria risk predominantly due to <i>P. falciparum</i> (86%) exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
African	Cameroon	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
African	Cape Verde	2	Limited malaria risk due predominantly to <i>P. falciparum</i> exists from August to November inclusive. <i>P. falciparum</i> resistant to chloroquine reported. At-risk area: In São Tiago Island, and Boa Vista Island (18 locally acquired cases reported in 2010) from August through November.	II
African	Central African Republic	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
African	Chad	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
African	Comoros	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
African	Congo	4A	Malaria risk predominantly due to <i>P. falciparum</i> (90%), while <i>P. ovale</i> is 5-10% and <i>P. vivax</i> rare, exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV

Region	Country/Area	Risk category	Risk description	Recommendation
African	Côte d'Ivoire (Ivory Coast)	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
African	Democratic Republic of the Congo (formerly Zaire)	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
African	Equatorial Guinea	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
African	Eritrea	4B	Malaria risk due to <i>P. falciparum</i> and <i>P. vivax</i> exist throughout the year. Resistance to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: - Chloroquine-resistant malaria: in all areas below 2 200m. No risk in Asmara.	IV
African	Ethiopia	4B	Malaria risk approximately 76% <i>P. falciparum</i> , 24% <i>P. vivax</i> , <i>P. malariae</i> and <i>P. ovale</i> rare, exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. <i>P. vivax</i> resistance to chloroquine reported. At-risk area: - Chloroquine-resistant malaria: In all areas below 2 500m. No risk in Addis Ababa.	IV
African	Gabon	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV

Region	Country/Area	Risk category	Risk description	Recommendation
African	Gambia	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
African	Ghana	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
African	Guinea	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
African	Guinea-Bissau	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
African	Kenya	4B	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: - Chloroquine-resistant malaria: In all areas below 2 500m. There is normally little risk in the city of Nairobi and in the highlands (above 2 500 m) of Central, Eastern, Nyanza, Rift Valley and Western provinces.	IV
African	Lesotho	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
African	Liberia	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV

Region	Country/Area	Risk category	Risk description	Recommendation
African	Madagascar	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine reported. At-risk area: -Chloroquine-resistant malaria: in all areas, with the highest risk in the coastal areas	IV
African	Malawi	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
African	Mali	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
African	Mauritania	4B	Malaria risk predominantly due to <i>P. falciparum</i> exists. <i>P. falciparum</i> resistant to chloroquine reported. At-risk area: - Chloroquine-resistant malaria: In Adrar and Inchiri during the rainy season from July through October. Throughout the year in all other areas in the country except in the northern areas of Dakhlet-Nouadhibou and Tiris-Zemour.	IV
African	Mauritius	3B	Malaria risk exclusively due to <i>P. vivax</i> may exist. No indigenous cases reported since 2004. At-risk area: In certain rural areas. No risk on Rodrigues Island.	III
African	Mayotte (French territorial collectivity)	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV

Region	Country/Area	Risk category	Risk description	Recommendation
African	Mozambique	4A	Malaria risk predominantly due to <i>P. falciparum</i> (98%), while <i>P. malariae</i> and <i>P. ovale</i> 2%, <i>P. vivax</i> rare, exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
African	Namibia	4B	Malaria risk predominantly due to <i>P. falciparum</i> exists. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: - Chloroquine-resistant malaria: in the regions of Ohangwena, Omaheke, Omusati, Oshana, Oshikoto and Otjozondjupa from November to June. Throughout the year along the Kunene river and in Caprivi and Kavango regions.	IV
African	Niger	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
African	Nigeria	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
African	Rwanda	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
African	São Tomé and Príncipe	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV

Region	Country/Area	Risk category	Risk description	Recommendation
African	Senegal	4A	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported.</p> <p>At-risk area: -Chloroquine-resistant malaria: in all areas. Less risk in the central western regions from January through June.</p>	IV
African	Seychelles	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
African	Sierra Leone	4A	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported.</p> <p>At-risk area: -Chloroquine-resistant malaria: in all areas.</p>	IV
African	South Africa	4B	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported.</p> <p>At-risk area: -Chloroquine-resistant malaria: In the low altitude areas of Mpumalanga Province (including the Kruger National Park), Northern Province (Limpopo) and north-eastern KwaZulu-Natal as far south as the Tugela River. Risk is highest from October to May.</p>	IV
African	Swaziland	4B	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine reported.</p> <p>At-risk area: - Chloroquine-resistant malaria: in the northern and eastern areas bordering Mozambique and South Africa, including all of the Lubombo district and the eastern half of Hhohho and Shiselweni districts (mainly Big Bend, Mhlume, Simunye and Tshaneni).</p>	IV
African	Tanzania	4B	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported.</p> <p>At-risk area: -Chloroquine-resistant malaria: In all areas below 1 800m.</p>	IV

Region	Country/Area	Risk category	Risk description	Recommendation
African	Togo	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
African	Uganda	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: In all areas including the main towns of Fort Portal, Jinja, Kampala, Mbale and Kigezi.	IV
African	Zambia	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas including Lusaka.	IV
African	Zimbabwe	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: In all areas.	IV
The Americas	Anguilla (U.K.)	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
The Americas	Antigua and Barbuda	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
The Americas	Argentina	3B	Malaria risk exclusively due to <i>P. vivax</i> is low. At-risk area: Confined to rural areas along the borders with Plurinational State of Bolivia (lowlands of Jujuy and Salta provinces) and with Paraguay (lowlands of Chaco, Corrientes and Misiones provinces).	III
The Americas	Bahamas	3B	At-risk area: Island of Great Exuma only. There is currently no known risk of malaria on the other islands of the Bahamas.	III
The Americas	Barbados	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I

Region	Country/Area	Risk category	Risk description	Recommendation
The Americas	Belize	3B	<p>Malaria risk predominantly due to <i>P. vivax</i> (100%) exists throughout the year.</p> <p>At-risk area: All districts but varies within regions. Risk is moderate in Toledo and Stan Creek Districts; and low in Cayo, Corozal and Orange Walk.</p> <p>No risk in Belize City.</p>	III
The Americas	Bermuda (U.K.)	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
The Americas	Bolivia	4B	<p>Malaria risk predominantly due to <i>P. vivax</i> (94%) exists in the whole country below 2 500m throughout the year. <i>Falciparum</i> malaria exists in Santa Cruz and in the northern departments of Beni and Pando, especially in the localities of Guayaramerín and Riberalta.</p> <p><i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported.</p> <p>At-risk area: - Chloroquine-resistant malaria: US/Canada: All areas below 2 500m, especially in the following departments: Beni, Chuquisaca, Cochabamba, La Paz, Pando, Santa Cruz, and Tarija except in the city of La Paz. WHO: Beni, Pando and Santa Cruz UK: Amazone basins areas</p> <p>- Emerging chloroquine-resistant malaria: UK: in all other areas below 2 500 m except city of La Paz.</p>	IV
The Americas	Brazil	4B	<p>Malaria risk due to <i>P. vivax</i> (84%) and <i>P. falciparum</i> (15%) exists throughout the year. Multidrug-resistant <i>P. falciparum</i> reported. <i>P. vivax</i> resistant to chloroquine reported.</p> <p>At-risk area: -Chloroquine-resistant malaria: in most forested areas below 900 m within the nine states of the “Legal Amazonia” region (Acre, Amapá, Amazonas, Maranhão (western part), Mato Grosso (northern part), Pará (except Belém City), Rondônia, Roraima and Tocantins). Transmission intensity varies from municipality to another, but is higher in jungle areas of mining, agricultural settlements less than 5 years old, and in some peripheral urban areas of Manaus, Pôrto Velho and Cruzeiro do Sul. Malaria also occurs on the periphery of large cities such as Boa Vista, Macapá, Marabá, Rio Branco and Santarém. Rare cases in Belem.</p>	IV

Region	Country/Area	Risk category	Risk description	Recommendation
			Malaria transmission risk is negligible or nonexistent in the states outside "Legal Amazonia". No transmission at Iguassu Falls.	
The Americas	Canada	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
The Americas	Cayman Islands (U.K.)	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
The Americas	Chile	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
The Americas	Colombia	4B	<p>Malaria risk due to <i>P. vivax</i> (72%) and <i>P. falciparum</i> (27%) is high throughout the year. Chloroquine-resistant <i>P. falciparum</i> exists in Amazonia, Pacífico and Urabá-Bajo Cauca. Resistance to sulfadoxine-pyrimethamine reported.</p> <p>At-risk area: - Chloroquine-resistant malaria: WHO: In rural/jungle areas below 1 600 m, especially in municipalities of the regions of Amazonia, Orinoquía, Pacífico and Urabá-Bajo Cauca. Transmission intensity varies by department, with the highest risk in Antioquia, Amazonas, Chocó, Córdoba, Guaviare, La Guajira, Nariño and Vichada. <i>P. falciparum</i> exists in Amazonia, Pacífico and Uraba-Bajo Cauca. US: In all rural areas below 1 700m</p> <p>No risk in Bogotá and Cartagena.</p>	IV
The Americas	Costa Rica	3B	<p>Malaria risk almost exclusively due to <i>P. vivax</i> exists throughout the year.</p> <p>At-risk area: In Limón, Alajuela, Guanacaste, Heredia and Puntarenas provinces. Highest risk exists in the cantons of Matina.</p> <p>Negligible or no risk of malaria transmission exists in the other cantons of the country. No risk in Limón city (Puerto Limón).</p>	III
The Americas	Cuba	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
The Americas	Dominica	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I

Region	Country/Area	Risk category	Risk description	Recommendation
The Americas	Dominican Republic	3B	<p>Malaria risk exclusively due to <i>P. falciparum</i> exists throughout the year. No evidence of <i>P. falciparum</i> resistance to any antimalarial drug.</p> <p>At-risk area: In all areas (including resort areas), especially in western provinces of Dajabón, Elias Pina, San Juan and in La Altagracia province, as well as all rural areas of the Dominican Republic especially in areas bordering Haiti. No risk in the cities of Santo Domingo and Santiago.</p>	III
The Americas	Ecuador; Including the Galápagos Islands	4B	<p>Malaria risk due to <i>P. vivax</i> (87%) and <i>P. falciparum</i> (13%) exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported.</p> <p>At-risk area: -Chloroquine-resistant malaria: in all areas below 1 500 m, with moderate transmission risk in coastal provinces.</p> <p>No risk in the cities of Guayaquil, Quito, cities of inter-Andean region, the central highland tourist areas, and the Galápagos Islands.</p>	IV
The Americas	El Salvador	3B	<p>Malaria risk, almost exclusively due to <i>P. vivax</i>, is very low throughout the year.</p> <p>At-risk area: In rural areas of migratory influence from Guatemala in Santa Ana and Ahuachapán, and La Unión departments. Sporadic <i>vivax</i> malaria cases are reported from other parts of the country.</p>	III
The Americas	French Guiana	4A	<p>Malaria risk due to <i>P. falciparum</i> (45%) and <i>P. vivax</i> (55%) is high throughout the year. Multidrug-resistant <i>P. falciparum</i> reported in areas influenced by Brazilian migration.</p> <p>At-risk area: -Chloroquine-resistant malaria: in all areas. Risk is high in nine municipalities of the territory bordering Brazil (Oiapoque river valley) and Suriname (Maroni river valley). In the other 13 municipalities transmission risk is low or negligible.</p>	IV
The Americas	Grenada	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I

Region	Country/Area	Risk category	Risk description	Recommendation
The Americas	Guadeloupe, including St. Barthelemy and Saint Martin (France)	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
The Americas	Guatemala	3B	<p>Malaria risk predominantly due to <i>P. vivax</i> exists throughout the year.</p> <p>At-risk area: In areas below 1 500 m. There is moderate-risk in the departments of Escuintla and Izabal; and low risk in Alta Verapaz, Baja Verapaz, Chiquimula, Peten, Suchitepequez and Zacapa.</p> <p>No risk in Guatemala City, Antigua or Lake Atitlán.</p>	III
The Americas	Guyana	4B	<p>Malaria risk due to <i>P. falciparum</i> (45%) and <i>P. vivax</i> (44%), mixed infections 10% is high throughout the year.</p> <p><i>P. falciparum</i> resistant to chloroquine reported. Sporadic cases of malaria have been reported from the densely populated coastal belt.</p> <p>At-risk area: - Chloroquine-resistant malaria: in all parts of the interior below 900 m, including Georgetown. Highest risk occurs in Regions 1, 2, 4, 7, 8 and 9 and 10; and very low risk in Regions 3, 5 and 6.</p>	IV
The Americas	Haiti	3A	<p>Malaria risk exclusively due to <i>P. falciparum</i> exists throughout the year.</p> <p>At-risk area: The whole country.</p>	III
The Americas	Honduras	3B	<p>Malaria risk predominantly due to <i>P. vivax</i> (85%), <i>P. falciparum</i> (14%) and mixed infection (1%) exists throughout the year.</p> <p>At-risk area: In all areas at altitudes below 1 000 m (<3 281 ft) and in Roatán and other Bay Island. Risk exists in the outskirts of Tegucigalpa and San Pedro Sula. Malaria transmission risk due to <i>P. vivax</i> is high in the departments of Gracias a Dios and Islas de la Bahia, and moderate in Atlantida, Colon, Olancho, Valle and Yoro. <i>P. falciparum</i> transmission risk is high in, and Gracias a Dios; and a few cases are also reported in Atlantida, Colon, Islas de la Bahia, Olancho and Yoro.</p>	III

Region	Country/Area	Risk category	Risk description	Recommendation
The Americas	Jamaica	2	Malaria risk including <i>P. falciparum</i> is very limited. No local cases reported in 2010-2011 At-risk area: City of Kingston.	II
The Americas	Martinique (France)	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
The Americas	Mexico	3B	Malaria risk, almost exclusively due to <i>P. vivax</i> , exists by tourists throughout the year. At-risk area: In Chiapas, Oaxaca, Chihuahua, Sinaloa, Tabasco, Campeche, Durango, Guerrero, Michoacán, Jalisco, Nayarit, Quintana Roo, Sonora, Veracruz and Yucatan. There is moderate risk in some localities in the states of Chiapas and Oaxaca; very low-risk risk in the states of Chihuahua, Durango, Sinaloa, Nayarit, Quintana Roo and Tabasco. No malaria risk exists along the United States-Mexico border	III
The Americas	Montserrat (U.K.)	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
The Americas	Netherlands Antilles (Bonaire, Curaçao, Saba, St. Eustasius, and St. Martin)	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
The Americas	Nicaragua	3B	Malaria risk predominantly due to <i>P. vivax</i> (82%) exists throughout the year. At-risk area: Low malaria risk exists throughout the year in a number of municipalities, mainly in Region autonoma del atlantico Norte, with sporadic transmission also reported in Boaca, Chinandega, Jinotega, Leon, Matagalpa, Managua and Region Autonoma del Atlantico Sur. Cases are reported from other municipalities in the central and western departments but the risk in these areas is considered to be very low or negligible.	III

Region	Country/Area	Risk category	Risk description	Recommendation
The Americas	Panama	4B	<p>Malaria risk due to <i>P. vivax</i> (99%), <i>P. falciparum</i> (1%) exists. Chloroquine-resistant <i>P. falciparum</i> has been reported in Darién and San Blas provinces.</p> <p>At-risk area:</p> <ul style="list-style-type: none"> - Chloroquine-resistant malaria: in Darién, San Blas provinces and San Blas Islands. Also, in provinces east of the Panama Canal towards the border with Colombia (provinces of Panama east of the canal and Darien). Also in provinces of Veraguas, Chiriqui, C. Ngobe Buble, Cocle, and Kuyan Ayala. - Chloroquine sensitive malaria: in provinces along the Atlantic coast and the border with Costa Rica and Colombia: Bocas del Toro, Chiriqui, Colon, Darien, Kuna Yala, Ngobe Bugle, Panama and Veraguas. <p>No or negligible risk in Panama City, the Canal Zone</p>	IV
The Americas	Paraguay	3B	<p>Malaria risk almost exclusively due to <i>P. vivax</i> is moderate.</p> <p>At-risk area:</p> <p>In the departments of Alto Paraná, Caaguazú, and Canendiyú.</p> <p>No or negligible transmission risk in the other departments.</p>	III

Region	Country/Area	Risk category	Risk description	Recommendation
The Americas	Peru	4B	<p>Malaria risk due to <i>P. vivax</i> (89%) and <i>P. falciparum</i> (11%) exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. <i>P. vivax</i> resistant to chloroquine reported.</p> <p>At-risk area: - Chloroquine-resistant malaria: US/Canada: in all departments below 2 000 m including Puerto Maldonado and Iquitos. WHO: in all departments below 2 000 m. The 23 highest risk districts are concentrated in the departments of Ayacucho, Junín, Loreto, Madre de Dios, Piura, Tumbes and San Martín. Department of Loreto (Situated in the Amzaon. Ninety nine percent of <i>P. falciparum</i> cases are reported from this department which also harbours 18 of the highest risk districts in the country). UK: Amazon basin area.</p> <p>- Emerging chloroquine-resistant malaria: UK: in other rural areas east of the Andes and west of the Amazon Basin below 1 500m.</p> <p>No risk in Arequipa, Moquegua, Puno, and Tacna. Travelers who will visit only in Lima and its vicinity, coastal areas south of Lima, or the highland tourist areas (Cuzco, Machu Picchu, and Lake Titicaca) are not at risk and need no prophylaxis.</p>	IV
The Americas	Puerto Rico (U.S.)	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
The Americas	Saint Kitts (Saint Christopher) and Nevis (U.K.)	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
The Americas	Saint Lucia	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
The Americas	Saint Vincent and the Grenadines	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I

Region	Country/Area	Risk category	Risk description	Recommendation
The Americas	Suriname	5B	<p>Malaria risk due to <i>P. falciparum</i> (40%), <i>P. vivax</i> (58%), mixed infections (2%) has decreased in recent years and occurs throughout the year.</p> <p><i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine and mefloquine reported. Some decline in quinine sensitivity also reported.</p> <p>At-risk area: In all areas in the interior of the country beyond the coastal savannah area, with highest risk mainly along the eastern border and in gold mining areas. Risk is low or negligible in Paramaribo city and the other seven coastal districts (Nickerie, Coronie, Saramacca, Wanica, Paramaribo, Commewijne, and Marowijne) north of latitude 5°N.</p>	V
The Americas	Trinidad and Tobago	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
The Americas	Turks and Caicos Islands (U.K.)	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
The Americas	United States	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
The Americas	Uruguay	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
The Americas	Venezuela (Bolivarian Republic of)	4B	<p>Malaria risk due to <i>P. vivax</i> (75%) <i>P. falciparum</i> (25%) exists throughout the year. Risk of <i>P. falciparum</i> malaria is mostly restricted to municipalities in jungle areas of Amazonas and Bolívar.</p> <p><i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported.</p> <p>At-risk area: -Chloroquine-resistant malaria: US/Canada: In some rural areas of Apure, Amazonas, Anzoategui, Barinas, Bolívar, Sucre, Táchira, Monagas, Zulia, Delta Amacuro and in Angel Falls. WHO: There is moderate to high risk in some rural areas of Amazonas, Anzoategui, Bolívar and Delta Amacuro states. There is low risk in Apure, Monagas, Sucre and Zulia. <i>P. falciparum</i> malaria is mostly restricted to municipalities in jungle areas of Amazonas (Alto Orinoco, Atabapo, Atures, Autana, Manapiare,) and Bolívar (Cedeño, El Callao, Heres, Gran Sabana, Piar, Raul Leoni, Rocio, Sifontes and Sucre). UK: All areas south of and including the Orinoco river.</p>	IV

Region	Country/Area	Risk category	Risk description	Recommendation
			-Emerging chloroquine-resistant malaria: UK: in rural areas of Apure, Barinas, Sucre and Tachira states north of the Orinoco River. No risk in Caracas and Margarita Island.	
The Americas	Virgin Islands, British	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Eastern Mediterranean	Afghanistan	4B	Malaria risk due to <i>P. vivax</i> and <i>P. falciparum</i> exists. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: - Chloroquine-resistant malaria: in all areas at altitude below 2 000m from April to December.	IV
Eastern Mediterranean	Bahrain	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Eastern Mediterranean	Djibouti	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
Eastern Mediterranean	Egypt	3B	Malaria risk due to <i>P. falciparum</i> and <i>P. vivax</i> is very limited. No indigenous cases reported since 1998. At-risk area: In El Faiyûm governorate from June through October. No risk in tourist areas, including Nile River cruises.	III

Region	Country/Area	Risk category	Risk description	Recommendation
Eastern Mediterranean	Iran	4B	<p>Malaria risk due to <i>P. vivax</i> (12%) and <i>P. falciparum</i> (88%) exists. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported.</p> <p>At-risk area: - Chloroquine-resistant malaria: In Ardebil and East Azerbaijan provinces north of the Zagros mountains and in rural areas of the provinces of Hormozgan, Kerman (tropical part) and the southern part of Sistan–Baluchestan from March to November.</p> <p>- Emerging chloroquine-resistant malaria: UK: In Ardebil and East Azerbaijan provinces north of the Zagros mountains and in rural areas of the provinces of Hormozgan, Kerman (tropical part) and the southern part of Sistan–Baluchestan from March through November.</p>	IV
Eastern Mediterranean	Iraq	3B	<p>Limited malaria risk exclusively due to <i>P. vivax</i> exists.</p> <p>At-risk area: In Basrah province and in areas below 1 500m (in provinces of Duhok, Erbil, Ninawa, Sulaimaniya, and Ta'mim) from May through November. No indigenous cases reported since 2009.</p>	III
Eastern Mediterranean	Jordan	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Eastern Mediterranean	Kuwait	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Eastern Mediterranean	Lebanon	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Eastern Mediterranean	Libya (Libyan Arab Jamahiriya)	2	<p>Malaria risk is very low to none.</p> <p>At-risk area: Obtain latest epidemiology.</p>	II
Eastern Mediterranean	Morocco	2	<p>Malaria risk is very low</p> <p>At-risk area: - Chloroquine sensitive malaria: may exist in certain rural areas of Chefchaouen Province.</p> <p>No risk in the cities of Tangier, Rabat, Casablanca, Marrakech, and Fes.</p>	II

Region	Country/Area	Risk category	Risk description	Recommendation
Eastern Mediterranean	Oman	4B	<p><i>P. falciparum</i> resistant to chloroquine reported. Sporadic transmission of <i>P. falciparum</i> and <i>P. vivax</i> may occur subsequent to international importation of parasites.</p> <p>At-risk area:</p> <ul style="list-style-type: none"> - Chloroquine-resistant malaria: Canada: In remote areas of Musandam Province. - Emerging chloroquine-resistant malaria: UK: In remote areas of Musandam Province. - In 2010, local outbreaks of <i>P. falciparum</i> and <i>P. vivax</i> were reported in North Sharqiya region. Local cases were also reported in 2011 according to WHO. 	IV
Eastern Mediterranean	Pakistan	4B	<p>Malaria risk due to <i>P. falciparum</i> and <i>P. vivax</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported.</p> <p>At-risk area:</p> <ul style="list-style-type: none"> - Chloroquine-resistant malaria: In all areas (including all cities) below 2 500m 	IV
Eastern Mediterranean	Qatar	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Eastern Mediterranean	Saudi Arabia	4B	<p>Limited malaria risk predominantly due to <i>P. falciparum</i> exists from September to January inclusive. <i>P. falciparum</i> resistant to chloroquine reported.</p> <p>At-risk area:</p> <ul style="list-style-type: none"> - Chloroquine-resistant malaria: exists in foci along the southern border with Yemen, Al Bahah, Al Madinah, Asir (excluding the high altitude areas above 2 000 m), Jizan, Makkah, Najran, and Tabuk provinces. <p>No risk in urban areas of Jeddah, Mecca, Medina, and Ta'if.</p>	IV
Eastern Mediterranean	Somalia	4A	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported.</p> <p>At-risk area:</p> <ul style="list-style-type: none"> -Chloroquine-resistant malaria: in all areas. Risk is relatively low and seasonal in the north. It is higher in the central and southern part of the country. 	IV

Region	Country/Area	Risk category	Risk description	Recommendation
Eastern Mediterranean	South Sudan	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported.	IV
Eastern Mediterranean	Sudan	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas. Risk is low and seasonal in the north. It is higher in the central and southern part of the country. Malaria risk on the Red Sea coast is very limited.	IV
Eastern Mediterranean	Syria (Syrian Arab Republic)	3B	Malaria risk exclusively due to <i>P. vivax</i> is very limited. No indigenous cases reported since 2005. At-risk area: In foci along the northern border, especially in rural areas of El Hasaka Governorate, from May through October.	III
Eastern Mediterranean	Tunisia	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Eastern Mediterranean	United Arab Emirates	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Eastern Mediterranean	Yemen	4B	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year, but mainly from September through February. <i>P. falciparum</i> resistance to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: All areas below 2 000 m. Very limited risk on Socotra Island. No risk in Sana'a city.	IV
European	Albania	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Andorra	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Armenia	1	No malaria risk reported by WHO, US CDC, UK NaTHNaC.	I

Region	Country/Area	Risk category	Risk description	Recommendation
European	Austria	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Azerbaijan	3B	Malaria risk exclusively due to <i>P. vivax</i> exists. Four locally acquired cases were reported in 2011 according to WHO. At-risk area: In rural areas below 1 500m, mainly in the area between the Kura and the Arax rivers from May to October No risk in Baku.	III
European	Belarus	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Belgium	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Bosnia and Herzegovina	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Bulgaria	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Croatia	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Cyprus	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Czech Republic	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Denmark	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Estonia	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Finland	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	France	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Georgia	3B	Malaria risk exclusively due to <i>P. vivax</i> exists focally. At-risk area: In the eastern and south-eastern part of the country near Azerbaijan border and Kura River and in the districts of Lagodekhi, Sighnaghi, Dedophilistskaro, Sarajejo, Gardabani, and Marneuli in the Kakheti and Kveno Kartli regions from June to October. No cases reported in 2010 and one locally acquired case reported in 2011 according to WHO. No risk in Tbilisi.	III
European	Germany	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I

Region	Country/Area	Risk category	Risk description	Recommendation
European	Greece	3B	<p>Malaria risk exclusively due to <i>P. vivax</i> exists.</p> <p>At-risk area: According to US CDC, cases of malaria have been reported from Attica and Laconia. Cases have occurred in the cities of Marathon, Markopoulo, and Evrotas. No cases have been reported in Athens.</p> <p>According to UK NaTHNaC, nine locally acquired cases of malaria have been reported in Greece since 2012 as of 12 September 2012. Eight of the cases have occurred in the regions of Laconia and Attica. There was a reported case occurred in a new area, the municipality of Abdera in Xanthi region.</p>	III
European	Hungary	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Iceland	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Ireland	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Israel	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Italy	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Kazakhstan	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Kyrgyzstan	3B	<p>Malaria risk exclusively due to <i>P. vivax</i> exists.</p> <p>Risk exists in some southern and western parts of the country, mainly in areas bordering Tajikistan and Uzbekistan – Batken, Osh and Jalal-Abad regions from May through October. Risk also in the capital city Bishkek.</p> <p>The first case of autochthonous <i>P. falciparum</i> malaria was reported in 2004 in the southern part of the country, in an area bordering Uzbekistan.</p>	III
European	Latvia	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Lithuania	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Luxembourg	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Macedonia, The Former Yugoslav Republic of	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Malta	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Moldova	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I

Region	Country/Area	Risk category	Risk description	Recommendation
European	Monaco	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Montenegro	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Netherlands	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Norway	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Poland	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Portugal	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Romania	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Russia	2	Very limited malaria risk exclusively due to <i>P. vivax</i> . At-risk area: In areas under influence of intense migration from southern countries in the Commonwealth of Independent States.	II
European	San Marino	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Serbia	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Slovakia	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Slovenia	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Spain	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Sweden	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Switzerland	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Tajikistan	4B	Malaria risk predominantly due to <i>P. vivax</i> exists. Chloroquine and sulfadoxine-pyrimethamine resistant <i>P. falciparum</i> reported in the southern part of the country. At-risk area: - Chloroquine-resistant malaria: In all areas below 2 500 m particularly in southern border areas (Khatlon Region), and in some central (Dushanbe), western (Gorno-Badakhshan), and northern (Leninabad Region) areas from June through October.	IV

Region	Country/Area	Risk category	Risk description	Recommendation
European	Turkey	3B	Limited malaria risk exists from May to October due to <i>P. vivax</i> predominantly, <i>P. falciparum</i> sporadically exists. At-risk area: In the following provinces: Diyarbakir, Mardin and Sanliurfa. A few sporadic cases were reported in 2010 and 2011 according to WHO. In the south-eastern part of the country No risk on the Incerlik U.S. Air Force base and on typical cruise itineraries according to CDC.	III
European	Turkmenistan	1	No malaria risk reported by WHO, US CDC, UK NaTHNaC.	I
European	Ukraine	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	United Kingdom (with Channel Islands and Isle of Man)	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
European	Uzbekistan	3B	Malaria risk exclusively due to <i>P. vivax</i> exists with sporadic cases reported. At-risk area: From May to October, in some villages located in the southern and eastern parts of the country bordering Afghanistan, Kyrgyzstan and Tajikistan. Sporadic cases reported in Uzunskiy, Sariassiskiy, and Shurchinskiy districts (Surkhanda- Rinskaya Region).	III
South-East Asia	Bangladesh	4B	Malaria risk exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: - All areas, except in the city of Dhaka according to US CDC.	IV
South-East Asia	Bhutan	4B	Malaria risk (<i>P. falciparum</i> 60%, <i>P. vivax</i> 40%) exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: - Chloroquine-resistant malaria: In rural areas below 1 700 m of the southern districts of: Chhukha, Dagana, Chirang, Geyleg-phug, Pemagatshel, Samtse, Samdrup Jongkhar, Sarpang and Zhemgang. No transmission occurs in the four following districts: Bumthang, Gasa, Paro and Thimphu. Seasonal transmission during the rainy summer months occurs in focal areas in the rest of country according to WHO.	IV

Region	Country/Area	Risk category	Risk description	Recommendation
South-East Asia	Myanmar (formerly Burma)	5B	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. Mefloquine resistance reported in Kayin state and the eastern part of Shan state. Emerging artemisinin resistance suspected in south-eastern Myanmar according to WHO. <i>P. vivax</i> resistant to chloroquine reported. Human <i>P. knowlesi</i> infection reported.</p> <p>At-risk area: - Chloroquine and Mefloquine resistant malaria: States of Bago, Shan, Klayah, Kayin, and Tanintharyi. - Chloroquine-resistant malaria: Present at altitudes below 1 000 m. None in the cities of Yangon and Mandalay according to CDC.</p>	V
South-East Asia	East Timor (Timor-Leste)	4A	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported.</p> <p>At-risk area: -Chloroquine-resistant malaria: in all areas.</p>	IV
South-East Asia	India	4B	<p>Malaria risk with overall 40% to 50% of cases due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported.</p> <p>At-risk area: - Chloroquine-resistant malaria: US/Canada: In all areas below 2 000 m, including Delhi and Mumbai (Bombay). WHO: In the north-eastern states, in Andaman and Nicobar Islands, Chhattisgarh, Gujarat, Jharkhand, Karnataka (with exception of the city of Bangalore), Madhya Pradesh, Maharashtra (with the exception of the cities of Mumbai, Nagpur, Nasik and Pune), Orissa and West Bengal (with the exception of the city of Kolkata). UK: In Assam</p> <p>- Emerging Chloroquine-resistant malaria: WHO/UK: In all other areas below 2 000 m, including Delhi and Mumbai (Bombay). UK: In Goa</p> <p>There is no transmission in parts of the states of Himachal Pradesh, Jammu and Kashmir, and Sikkim.</p>	IV

Region	Country/Area	Risk category	Risk description	Recommendation
South-East Asia	Indonesia	4B	<p>Malaria risk exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. <i>P. vivax</i> resistant to chloroquine reported. Human <i>P. knowlesi</i> infection reported in the province of Kalimantan.</p> <p>At-risk area: - Chloroquine-resistant malaria: Most areas of the five eastern provinces of Papua, West Papua, Maluku, North Maluku and East Nusa Tenggara. In other parts of the country, there is malaria risk in some districts except in Jakarta Municipality, in cities and urban areas, and within the areas of the tourist resorts according to WHO.</p>	IV
South-East Asia	Korea, North	3B	<p>Malaria risk exclusively due to <i>P. vivax</i> is limited.</p> <p>At-risk area: In some southern area.</p>	III
South-East Asia	Maldives	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
South-East Asia	Nepal	4B	<p>Malaria risk predominantly due to <i>P. vivax</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported.</p> <p>At-risk area: - Chloroquine-resistant malaria: WHO/Canada: In rural areas below 1 200m-of the 20 Terai districts bordering with India with occasional outbreaks of <i>P. falciparum</i> from July to October. Seasonal transmission of <i>P. vivax</i> takes places in 45 districts of the inner Terai valleys of Udaypur, Sindhupalchowk, Makwanpur, Chitwan and Dang. US: in all areas below 1 200m UK: in all areas below 1 500m</p> <p>No risk in Kathmandu or on typical Himalayan treks.</p>	IV
South-East Asia	Sri Lanka	4C	<p>Malaria risk due to <i>P. vivax</i> (88%) and <i>P. falciparum</i> (12%) exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported.</p> <p>At-risk area: - Emerging chloroquine-resistant malaria: In all areas except no risk in the districts of Colombo, Galle, Gampaha, Kalutara, Matara and Nuwara Eliya.</p>	IV

Region	Country/Area	Risk category	Risk description	Recommendation
South-East Asia	Thailand	5B	<p>Malaria risk exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. Resistance to mefloquine and to quinine reported from areas near the borders with Cambodia and Myanmar. <i>P. vivax</i> resistant to chloroquine reported. Human <i>P. knowlesi</i> infection reported.</p> <p>At-risk area:</p> <ul style="list-style-type: none"> - Mefloquine resistant malaria: In areas near the border with Cambodia, Laos, and Myanmar (Burma). - Chloroquine-resistant malaria: In rural, especially forested and hilly, areas of the whole country, mainly towards the international border with Cambodia, Laos, and Myanmar (Burma), rural, forested areas in districts of Phang Nga and Phuket, including the southernmost provinces. <p>No risk in cities (e.g. Bangkok, Chiang Mai, Chiang Rai, Pattaya), Samui island and the main tourist resorts of Phuket island. However, there is a risk in some other areas and islands.</p>	V
Western Pacific	Australia; Including Cocos (Keeling) Islands.	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Western Pacific	Brunei Darussalam	2	<p>Malaria risk is very low to none. Human <i>P. knowlesi</i> infection reported</p> <p>At-risk area: Obtain latest epidemiology.</p>	II
Western Pacific	Cambodia	5B	<p>Malaria risk predominantly due to <i>P. falciparum</i> and <i>P. vivax</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine has been reported throughout the country. <i>P. falciparum</i> resistant to artesunate, mefloquine, lumefantrine and piperazine has been reported in western Cambodia. <i>P. vivax</i> resistant to chloroquine has been reported in eastern Cambodia according to WHO.</p> <p>At-risk area: Present throughout the country, except negligible risk in Phnom Penh and area close to Tonle Sap and the temple complex at Angkor Wat according to both CDC and WHO.</p>	V

Western Pacific	China	5B	<p>Malaria risk including <i>P. falciparum</i> exists. <i>P. falciparum</i> malaria occurs in Yunnan and to a lesser extent in Hainan. Limited risk of <i>P. vivax</i> malaria exists in southern and some central provinces.</p> <p>Chloroquine and sulfadoxine-pyrimethamine resistant <i>P. falciparum</i> reported in Hainan and Yunan province only.</p> <p>At-risk area:</p> <ul style="list-style-type: none"> - Mefloquine-resistant malaria: Along China-Burma border in the western part of Yunnan province - Chloroquine-resistant malaria: In Hainan and Yunnan province - Chloroquine-sensitive malaria: In rural areas below 1 500m, only during warm weather from July to November north of 33° North, from May to December between 33° North and 25° N and throughout the year below 25° North, of following provinces: Anhui, Henan, Hubei, Jiangsu, Hainan, Fujian, Guangdong, Guangxi, Guizhou, Sichuan, Tibet (in the Zangbo River valley only), Hunan, Jiangxi, and Shandong. Some major river cruises may go through malaria endemic areas in Anhui and Hubei provinces <p>There is no malaria risk in urban areas- Travelers to cities and popular tourist areas, including Yangtze River cruises, are not at risk and do not need to take chemo- prophylaxis.</p>	V
Western Pacific	Cook Islands (New Zealand)	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Western Pacific	Fiji	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Western Pacific	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	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Western Pacific	Guam (U.S.)	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Western Pacific	Japan	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I

Western Pacific	Kiribati (formerly Gilbert Islands), includes Tarawa, Tabuaeran (Fanning Island), and Banaba (Ocean Island)	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Western Pacific	Korea, South	3B	Malaria risk exclusively due to <i>P. vivax</i> is limited. At-risk area: Risk limited to the months of March-December in rural areas in the northern areas of Kyonggi Do and Gangwon do, Gyeonggi-do and Kangwon-do Provinces and Incheon City (towards the Demilitarized Zone DMZ).	III
Western Pacific	Laos (Lao People's Democratic Republic)	5B	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: - Mefloquine resistant malaria: in the provinces of Bokèo and Louang Namtha along the Laos- Burma border and along the Laos- Thailand border in the province of Saravane and Champassack. - Chloroquine-resistant malaria: All areas except Vientiane.	V
Western Pacific	Malaysia	4B	Malaria risk exists only in limited foci. <i>P. falciparum</i> 40%, <i>P. vivax</i> 50% <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. Human <i>P. knowlesi</i> infection reported. <i>P. vivax</i> resistant to chloroquine reported. At-risk area: - Chloroquine-resistant malaria: In the deep hinterland, inland forested areas of the Malaysia West [peninsular] and Sarawak, and all areas of Sabah except Kota Kinabalu. Risk present in rural areas of Malaysian Borneo (Sabah and Sarawak Provinces), and to a lesser extent in rural areas of peninsular Malaysia. Low risk in Cameron Highlands. Urban and coastal areas are free from malaria.	IV
Western Pacific	Marshall Islands	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I

Western Pacific	Micronesia, Federated States of; Includes: Yap Islands, Pohnpei, Chuuk, and Kosrae	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Western Pacific	Mongolia	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Western Pacific	Nauru	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Western Pacific	New Caledonia (France)	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Western Pacific	New Zealand	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Western Pacific	Niue (New Zealand)	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Western Pacific	Northern Mariana Islands (US) Includes Saipan, Tinian, and Rota Island	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Western Pacific	Palau	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Western Pacific	Papua New Guinea	4B	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. <i>P. vivax</i> resistant to chloroquine reported. At-risk area: - Chloroquine-resistant malaria: All areas below 1 800m.	IV
Western Pacific	Philippines	4B	Malaria risk exists throughout the year. <i>P. falciparum</i> 70%-80%, <i>P. vivax</i> 20%-30%. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. Human <i>P. knowlesi</i> infection reported in the province of Palawan. At-risk area: - Chloroquine-resistant malaria: in areas below 600 m, except in the 22 provinces of Aklan(including Borocay Island), Albay, Benguet, Bilaran, Bohol, Camiguin, Capiz, Catanduanes, Cavite, Cebu, Guimaras, Iloilo, Northern Leyte, Southern Leyte, Mindoro, Marinduque, Masbate, Eastern Samar, Northern Samar, Western Samar, Sequijor, Sorsogon, Surigao Del Norte and metropolitan Manila, urban areas, and the plains.	IV
Western Pacific	Pitcairn Islands (U.K.)	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I

Western Pacific	Samoa (formerly Western Samoa)	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Western Pacific	Samoa, American (U.S.)	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Western Pacific	Singapore	2	Malaria risk exclusively due to <i>P. vivax</i> is very limited. One case of human <i>P. knowlesi</i> infection reported. At-risk area: Local transmission of <i>P. vivax</i> was reported in Jurong Island, Sungei Kadut/Mandai Estate, and Sambawang between June and August 2009. No malaria risk reported by US CDC and Health Canada.	II
Western Pacific	Solomon Islands	4A	Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. <i>P. vivax</i> resistant to chloroquine reported <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. At-risk area: -Chloroquine-resistant malaria: in all areas.	IV
Western Pacific	Tokelau (New Zealand)	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Western Pacific	Tonga	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Western Pacific	Tuvalu	1	No malaria risk reported by WHO, US CDC, UK HPA and Health Canada.	I
Western Pacific	Vanuatu	4A	Malaria risk predominantly due to <i>P. falciparum</i> is low to moderate throughout the year. <i>P. falciparum</i> resistant to chloroquine and sulfadoxine-pyrimethamine reported. <i>P. vivax</i> resistant to chloroquine reported. At-risk area: -Chloroquine-resistant malaria: In all areas	IV

Western Pacific	Vietnam	5B	<p>Malaria risk predominantly due to <i>P. falciparum</i> exists throughout the year. High-risk areas are the highland areas below 1 500 m. south of 18° N, notably in the 4 central highlands provinces Dak Lak, Dak Nong, Gia Lai and Kon Tum, Binh Phuoc province, and the western parts of the coastal provinces, Quang Tri, Quang Nam, Ninh Thuan and Khanh Hoa.</p> <p>Resistance to chloroquine, sulfadoxine-pyrimethamine and mefloquine reported.</p> <p>At-risk area:</p> <ul style="list-style-type: none"> - Mefloquine resistant malaria: In the southern part of the country in the provinces of Tay Ninh, Song Be, Lam Dong, Ninh Thuan, Khanh Hoa, Dac Lac, Gia Lai, and Kon Tum. - Chloroquine-resistant malaria: In all areas. <p>No risk in urban centres, the Red River delta, the Mekong delta, and the coastal plain areas of central Viet Nam including Hanoi, Ho Chi Minh City (Saigon), Can Tho, Da Nang, Hue, Nha Trang, Qui Nhon, and Haiphong.</p>	V
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Annex 3: Risk Profile Statistics

Table 1: Risk categories versus countries/administrative areas in the six WHO regions

Region	1	2	3A	3B	4A	4B	4C	5B	Total
African	2	2		1	33	9			47
The Americas	23	1	1	11	1	8		1	46
Eastern Mediterranean	7	2		3	4	6			22
European	45	1		6		1			53
South-East Asia	1			1	1	5	1	2	11
Western Pacific	22	2		1	2	3		4	34
Total	98	7	1	25	40	33	1	7	213

Table 2: Recommendation categories versus countries/administrative areas in the six WHO regions

Region	I	II	III	IV	V	Total
African	2	2	1	42		47
The Americas	23	1	12	9	1	46
Eastern Mediterranean	7	2	3	10		22
European	45	1	6	1		53
South-East Asia	1		1	7	2	11
Western Pacific	22	2	1	5	4	34
Total	98	7	26	74	7	213