

# Guidelines for malaria prevention in travellers from the UK

What's New about the latest edition – written by Jane Chiodini

## Some background information

Guidelines for practitioners advising travellers visiting malaria endemic areas have been available for some time and published in journals such as the BMJ. However in 2007, a completely new publication was written taking the form of an A5 sized book, which was very attractive both visually and practically and created a comprehensive and importantly, a far more user friendly guidance document for all healthcare professionals. Written by the Health Protection Agency (HPA) Advisory Committee for Malaria Prevention (ACMP), they were available both in hard copy and electronic format. On 22<sup>nd</sup> August 2013, a revision of these guidelines were published on the PHE website

(<http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/Malaria/Guidelines/mala10guidelinesPrevention/>)

Written again by ACMP, now part of Public Health England (PHE) the first impression is the difference in the look! Printed as an A4 document with no illustrations (apart from a few charts and maps), and only available electronically is perhaps partly due to a sign of the times. However, having got used to the shock, I've found it to be equally as user friendly, more cost effective to print out a paper copy if needed and the format on the page is possibly easier to read as well. As with the previous edition, the Executive summary on page 6 suggests that they may be of use to prospective travellers who wish to read about the options themselves. Links and news re the guidelines are also at [www.janechiodini.co.uk](http://www.janechiodini.co.uk)

## What this document below intends to achieve

I have compared the 2007 edition of the guidance with the 2013 version in the table below, to highlight what is different between the two editions in terms of changes applied to every day practice in 2013, including the relevant page number in the new Guidelines. This document is **NOT** intended to be used as your guidance for malaria prevention advice – please make sure you obtain and use the 2013 Malaria Guidelines as your reference tool. In some sections I have been explicit in the changes and simply stated them and in other sections I have suggested going to the new guidance for personal review and full details. **When referring to the 2013 UK Malaria Guidelines in this document, I will use MG** from now on for brevity.

## The correct citation is as follows:

Chiodini PL, Field VK, Hill DR, Whitty CJM and Lalloo DG. Guidelines for malaria prevention in travellers from the United Kingdom. London, Public Health England, July 2013.

Page no.	Chapter title, topic and comment on changes
<b>Chapter 1. GENERAL ISSUES</b>	
9	<b>1.1 How to give the advice</b> – information that HPE has an information leaflet in Bengali, Gujarati, Punjabi and Urdu in addition to English, which may be downloaded, photocopied and distributed free of charge
9	<b>1.2 Medical history of the traveller</b> - slight word change due to new GMC guidance of 2011 as follows ‘If you are not the patient's general practitioner and you accept a patient for treatment without a referral from the patient's practitioner, then you must: a. Explain to the patient the importance and benefits of keeping their general practitioner informed. b. Inform the patient's general practitioner unless the patient objects.’
10	<b>1.3. Template for risk assessment and summary of advice given</b> – few small additions e.g. date of travel, history of depression requiring treatment, (oral contraception removed in this edition).
<b>Chapter 2. AWARENESS OF RISK</b>	
14/15	<b>2.1 What is malaria?</b> – Table 1 includes the fifth species of <i>Plasmodium</i> commenting that it is very rarely imported at present, but capable of producing severe illness. Details of the ‘Malaria Life Cycle’ also include <i>P.knowlesi</i> and state that once inside the red cell, the malaria parasite grows and divides over 24 hours with this species. See MG for more details.
17	<b>2.3 The malarial illness – Once you get malaria it keeps coming back – True or false?</b> This has been moved from the bite prevention section in the previous MG and explains that ‘Hypnozoite-induced relapses occur in vivax and ovale malaria, but can be treated successfully and further relapses prevented. If the patient has received a full course of treatment with modern antimalarial drugs and has not been re-exposed to malaria, it is extremely unlikely that a history of recurrent febrile illness over a number of years is the result of chronic malaria’. There is a new map illustrating the spatial distribution of <i>P.falciparum</i> malaria endemicity in 2010 from the Malaria Atlas Project which is for illustration and it is stressed that this should <u>not</u> be used to advise individual travelers on chemoprophylaxis. The reference for this (2) takes the reader to the Malaria Atlas Project maps website address. An additional informative section is also added on <i>Plasmodium knowlesi</i> on this page carried over to page 18.
18	<b>2.5 Level of risk of exposure to malaria and what affects it</b> – additional information included. ‘Seasonal rainfall increases mosquito breeding’, has been added ‘and in some areas malaria is highly seasonal’. In rural versus urban location it now says

‘malaria incidence is generally higher in rural than in urban areas, especially in Africa where the intensity of transmission is on average about 8 times higher in villages than towns, but as Africa becomes increasingly urbanised, the risk of contracting malaria in African or other cities of malaria-endemic areas must not be discounted’.

- 19**      **2.6 Distribution of drug resistant malaria** – the species of malaria are named and additional up to date information added – see MG for more detail.

### **Chapter 3. BITE PREVENTION**

- 20**      **3.1 When do female Anopheles mosquitoes bite** – additional information re the vectors: ‘in Africa biting peaks just after midnight and in many parts of South America and South East Asia, the greatest risk from being bitten by malaria vectors is in the evening, before the population retires indoors’.

- 20**      **3.2 Measures to prevent mosquito bites** – in information about DEET a few new factors are included (**sections in italics below**):  
ACMP recommends DEET-based insect repellents *as concentrations over 20% give a longer duration of protection than currently available formulations of other agents*; DEET (N,N-diethyl-m-toluamide) has been in use as an insect repellent for more than 50 years and *is reportedly used worldwide by approximately 200 million people each year*; *A variety of studies has concluded that there is a low risk of adverse effects when DEET is applied according to product directions; the user should ensure that repellents are not ingested or inhaled and do not come into contact with their eyes or mouth. Repellents should be used only on exposed areas of skin.* Re clothing and DEET, *It is useful as a clothing repellent but its duration on clothing is shortened due to its volatility.*

- 21**      Re Icaridin: *If a traveller elects to use icaridin for mosquito bite prevention, ACMP advises use of at least a 20% preparation.*

- 22**      Re bednets: *Most of the nets now available are long-lasting impregnated nets. In these products the pyrethroid is incorporated into the material of the net itself or bound to it with a resin.*

Re room protection: *Addition of use a proprietary heated liquid reservoir device containing insecticide or an electrically heated device to vapourise a “mat” (tablet) containing a synthetic pyrethroid in the room. A new mat is needed each night.*

### **Chapter 4. CHEMOPROPHYLAXIS**

- 23**      Change in advice regarding obtaining malaria chemoprophylaxis online to ‘ACMP advises those purchasing antimalarial drugs over the internet to ensure that they are dealing with a bona fide supplier or web site’.

**4.1 Principles** – Information re Primaquine ‘Primaquine is not licensed in the UK and practitioners considering the use of

25	primaquine as a prophylactic agent should consult an expert centre. Primaquine is an oxidant drug and can lead to significant haemolysis in G6PD-deficient individuals’.
27	<p><b>4.2.1 Chloroquine – Methods of administration:</b> the dosage of chloroquine base is stated as 155mg and therefore the adult dose of chloroquine is 310mg (2 tablets). There is a very good explanation re the dose steps for chloroquine syrup not being the same as chloroquine tablets resulting in a child possibly being prescribed a different dose of chloroquine, depending on whether they take tablets or syrup. See the FAQ no. 9 on page 84 of the MG.</p>
27	<p><b>4.2.4 Mefloquine – Interactions:</b> addition of ‘Mefloquine is metabolised in the liver by CYP3A4. Caution if administered with drugs inhibiting this enzyme (eg ketoconazole, HIV protease inhibitors) or inducing it (eg some HIV non-nucleoside reverse transcriptase inhibitors)’.</p>
29 30	<p><b>4.2.4 Mefloquine – Cautions:</b> In pregnancy, additional information has been added but refers to the reader to the section in Chapter 6 for the details (see page 62); Addition of ‘In those who have suffered traumatic brain injury, the decision whether or not to advise mefloquine chemoprophylaxis should be made on an individual basis after a detailed risk assessment’; In addition there is a slight re-wording of the information under ‘Can mefloquine be taken by those who plan to undertake underwater diving?’.</p>
30	<p><b>4.2.5 Doxycycline – Interactions:</b> REMOVAL of the information re temporary reduction of contraceptive effect of oestrogens when using doxycycline and replaced by ‘Doxycycline is a non enzyme-inducing antibiotic. The Faculty of Sexual and Reproductive</p>
31	<p>Healthcare and the BNF advise that for combined oral contraceptives and for progestogen only oral contraceptives additional precautions are not required when using non enzyme-inducing antibiotics. However, if the traveller suffers vomiting or diarrhoea, the usual additional precautions should be observed’. See the MG for the reference.</p>
31/32	<p><b>4.2.5 Doxycycline – Contraindications:</b> Changes to potential use of doxycycline in the first trimester of pregnancy. The wording from the Guidelines follows: ‘<b>Pregnancy:</b> The UK National Teratology Information Service states that doxycycline is best avoided for antimalarial prophylaxis during pregnancy. However, if required before 15 weeks' gestation it should not be withheld if other options are unsuitable, see <a href="http://www.toxbase.org">www.toxbase.org</a>. The course of doxycycline, including the 4 weeks after travel, must be completed before 15 weeks' gestation’. Additional information is included for breast feeding.</p> <p><b>Breast feeding:</b> The British National Formulary states that tetracyclines should not be given to women who are breast feeding. A Centers for Disease Control Expert Meeting on Malaria Chemoprophylaxis stated that doxycycline is excreted at low concentrations in breast milk and that the American Academy of Pediatrics assessed tetracycline as compatible with breast feeding. <b>ACMP's view is</b> that doxycycline should not be used in breast feeding unless other options are unsuitable and its use is</p>

felt to be essential.

**4.2.6 Atovaquone plus proguanil combination preparation (Malarone®) – Interactions:** addition in section on antiretrovirals of ‘Avoid concomitant use with Efavirenz and boosted protease inhibitors’.

33

**4.2.6 Atovaquone plus proguanil combination preparation (Malarone®) – Contraindications:** Additional information added for pregnancy with changes indicated below in italics. The MG state ‘Pregnancy: The BNF states “Manufacturer advises avoid unless essential.” ACMP advises against the use of atovaquone/proguanil for antimalarial chemoprophylaxis in pregnancy. *However, if there are no other options, its use may be considered in the second and third trimesters after careful risk assessment. If it is used in pregnancy, a folate supplement should also be given.*

33/34

**4.2.6 Atovaquone plus proguanil combination preparation (Malarone®) – Cautions:** for renal impairment, addition of ‘avoid for malaria prophylaxis if eGFR less than 30 mL/minute/1.73 m<sup>2</sup>’.

**4.2.6 Atovaquone plus proguanil combination preparation (Malarone®) – Methods of administration:** Table 6: Table of paediatric dose of atovaquone/proguanil indicates that ACMP advises that children can be given atovaquone/proguanil from 5kg in weight. See page 38 of Guidelines, but a child weighing 5-8 kg would be given ½ paediatric tablet and children weighing >8 to 10 kg would be given ¾ paediatric tablet. For more details see page 68 of MG in the section 7.1 on Children.

34 & 38

**4.4 COUNTRY RECOMMENDATIONS:** This section represents one of the significant changes in the MG. Previously the recommendations were made in tables for the different regions of the world. In this publication ACMP recommendation for 2013 has been detailed country by country and includes 117 different countries in a table from pages 38 – 48. Risk of malaria and recommendations for chemoprophylaxis have been revised for some countries and/or geographical areas, and some geographical areas of risk have been re-defined. Attention to the specific country needs to be made, and I have NOT included the differences in this document. Healthcare professionals need to refer to this table and also look on the databases for individual countries where the changes will be made in line with the Guidelines.

38 to 48

**Clinical Updates have been published by both NaTHNaC (22/08/13) and TRAVAX (23/08/13) about the new Malaria Guidelines and included in the information, they state:**

“Both NaTHNaC and Health Protection Scotland (HPS) have representation on the Advisory Committee for Malaria Prevention in UK travellers (ACMP). HPS, through the Scottish Malaria Advisory Group, produces country recommendations and accompanying maps which are updated on an ongoing basis; in some instances, there may be **differences between the ACMP (and NaTHNaC) and HPS guidance.**

*Health professionals are encouraged to be consistent in their choice of resource, and are assured that if they follow either standard their travellers will be receiving expert advice based on evidence-based recommendations”.*

**49** **4.5 Popular destinations:** this table (page 49) remains, with changes in the ACMP recommended regimen changed for Angkor Wat to ‘Awareness’ (awareness of small risk of malaria; avoid mosquito bites and seek medical attention for any suspicious symptoms (up to about a year later), but tablets not considered necessary.) and a change for Goa to chloroquine plus proguanil.

**50** **Figure 3 India showing the states with the appropriate chemoprophylaxis recommended.** This map of India has had some changes to the key for ‘Risk variable, take tablets: Chloroquine plus proguanil recommended’ for the states of Maharashtra and Panaji (which includes Goa) – see page 50.

**54/55** **4.6 Emergency Standby Treatment** – for those advising on this, please ensure you read the section in full in the MG. Regarding advice on recommencing anti malarial chemoprophylaxis, the MG state; The traveller should complete the standby treatment course and recommence their antimalarial chemoprophylaxis 1 week after taking the first treatment dose, except in the case of mefloquine prophylaxis, which should be resumed **at least twelve hours after** the last treatment dose if quinine was used for standby treatment. Antipyretics should be used to treat fever. A second full treatment dose of the antimalarial should be taken if vomiting occurs within 30 minutes of taking it (half-dose if vomiting occurs after 30–60 minutes)’. Comment - the instruction for recommencing mefloquine was ‘one week’ in the previous MG.

Addition of: Dihydroartemisinin-piperaquine has only recently been licensed in the EU and there are limited data on its use in travellers, so it cannot currently be recommended for this indication.

Addition of: ACMP also advises those purchasing antimalarial drugs over the internet to ensure that they are dealing with a bona fide supplier or web site

**57/58** **Emergency Standby Medication Travellers Information Leaflet – free for download use.** This is comprehensive and easy to understand text for a leaflet the healthcare professional could use within their own practice when advising travellers on this topic. You can simply copy the paste the text highlighted in blue from the Guidelines PDF on pages 57/58. You would then need to removed the highlight from the text in your document. I have made a copy of this leaflet in PDF and placed it in Tool no. 13 found at <http://www.janechiodini.co.uk/tools/>

## **Chapter 5. DIAGNOSIS**

**59**            **5.1 Blood tests and how to request them in the UK** - additional new information regarding locations for sending blood films as follows: ‘Laboratories in England, Wales and Northern Ireland making a diagnosis of malaria should send blood films and a portion of the blood sample on which the diagnosis was made to the HPA Malaria Reference Laboratory (MRL) for confirmation (The MRL webpages are available at ( <http://www.malaria-reference.co.uk>). Laboratories in Scotland should refer to the Scottish Parasite Diagnostic Laboratory <http://www.spdl.scot.nhs.uk/index.asp>

**59/60**            **5.2 Rapid Diagnostic Tests (RDTs)** - inclusion of the following information: ‘Performance of RDTs may be impaired if they are stored at temperatures outside the recommended range. Therefore, care must be taken to transport and store them correctly and thus prevent deterioration in their performance in the field.

The WHO has an extensive product testing programme for RDTs. Prospective purchasers should consult the WHO web site for information to inform their decision’.

**60**            **5.3 Blood film and/or RDT negative malaria** - inclusion of the information: ‘RDTs are not a substitute for microscopy in UK practice, but have a useful role alongside blood films as additional tests’.

**60**            **5.4 Resources for treatment advice** – the weblink for the ACMP treatment guidelines is given: available at <http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/Malaria/Guidelines/mala20guidelinesTreatment>

**60/61**            **5.5 Notification** – changes to the information about notification as follows: Malaria is a statutorily notifiable disease in England and Wales and the clinician caring for the patient must complete a notification form. In Scotland malaria is not on the list of notifiable diseases but *Plasmodium* is on the list of notifiable organisms. UK Laboratories outwith Scotland are also required to notify organisms they have diagnosed. The legislation for notifiable organisms places duties on directors of diagnostic laboratories to report organisms named in the list.

## **Chapter 6. SPECIAL GROUPS (MEDICAL CONDITIONS)**

**61**            This section addresses 12 different medical conditions and it would be useful to read the detail in full in the MG which also gives the references. The following information provides merely a highlight of the changes made.

### **62**            **6.2 Pregnancy**

- The first line ‘**Pregnant women are advised to avoid travel to malarious areas**’ is bolded in this edition and in my opinion can be a useful part of the document to show to and share with such a traveller.

- Addition that DEET has a good safety record in pregnancy (which is referenced)
- **Mefloquine:** caution in first trimester, but can be used in all trimesters for travellers to high risk areas. It seems unlikely that mefloquine is associated with adverse fetal outcomes. There is no strong association between mefloquine in treatment doses and stillbirths or miscarriages in the second and third trimesters. Given the potential severity of falciparum malaria in a pregnant woman, its use is also justified in the first trimester in areas of high risk of acquiring falciparum malaria such as sub-Saharan Africa (see chapter 9).
- **Doxycycline:** contraindicated in pregnancy. However, under special circumstances, if required before 15 weeks' gestation it should not be withheld if other options are unsuitable. The course of doxycycline, including the 4 weeks after travel, must be completed before 15 weeks' gestation
- **Atovaquone/proguanil:** lack of evidence on safety in pregnancy. Animal studies showed no evidence for teratogenicity of the combination. The individual components have shown no effects on parturition or pre- and post-natal development (Malarone SPC). ACMP advises against the use of atovaquone/proguanil for antimalarial chemoprophylaxis in pregnancy. However, if there are no other appropriate options, its use may be considered in the second and third trimesters after careful risk assessment
- Addition of: women who have taken atovaquone/proguanil inadvertently just prior to or during the first trimester should be advised that this does not constitute an indication to terminate the pregnancy

### 62 **Chemoprophylaxis prior to conception**

If a female traveller is planning to conceive during a visit to a destination with a high risk of contracting chloroquine-resistant falciparum malaria, expert advice should be sought. Use of mefloquine may be considered after careful risk assessment.

### 63 **6.3 Breastfeeding**

**Doxycycline** – additional information as follows: The British National Formulary states that tetracyclines should not be given to women who are breast feeding. A Centers for Disease Control Expert Meeting on Malaria Chemoprophylaxis stated that doxycycline is excreted at low concentrations in breast milk and that the American Academy of Pediatrics assessed tetracycline as compatible with breast feeding. ACMP's view is that doxycycline should not be used in breast feeding unless there is no alternative agent and its use is felt to be essential

The MG refer to tables 4, 5 and 6 (pages 36-38) which provide paediatric doses.

**64 6.4 Anticoagulants** – the addition for advice for travellers needing malaria chemoprophylaxis who are taking warfarin, that travellers should start taking their malaria tablets *2-3 weeks prior to their departure* – and the MG continue with the information as before regarding management of the testing of the INR



- 64**      **6.6 Glucose 6-phosphate dehydrogenase deficiency (G6PD)** – Addition of ‘Atovaquone-proguanil, doxycycline, mefloquine or proguanil prophylaxis: There is no need to withhold any of these agents from those known to be G6PD-deficient’.
- 65**      **6.7 Sickle Cell disease and thalassaemia** – the addition that ‘Thalassemia may provide protection against severe malaria, but there is currently no evidence it prevents uncomplicated malaria’.
- 65**      **6.8.2 Risks for those with HIV/AIDS** - new information added as follows with new references:
- Information in this area is accumulating rapidly and the travel health adviser should check the manufacturer's SPC and the BNF on an individual agent basis and discuss the options for chemoprophylaxis with the traveller's own HIV physician who should make the decision on choice of agent.
  - Up-to-date information can also be obtained from the University of Liverpool site <http://www.hiv-druginteractions.org/> where it is possible to look up specific antiretroviral compounds against malaria prophylactic drugs in readily-accessible tables.
  - A study of imported malaria in France reported that severe malaria in HIV-1 infected patients was associated with decreased CD4 cell count.
  - Malaria during pregnancy increases the risk of mother-to-child transmission of HIV-1
- 66**      **6.9 Liver disease** – doxycycline has been included for consideration of use in severe and moderate liver disease and new weblinks for the Child-Pugh classification have been added as follows:
- **Severe liver disease:** A CDC expert meeting concluded that the dose of doxycycline does not have to be adjusted in patients with impaired hepatic function since it is excreted as an inactive chelated product via a process of back diffusion in the small bowel (48). Note to prescribers: The BNF states that tetracyclines should be avoided or used with caution in patients with hepatic impairment. The manufacturer of atovaquone-proguanil combination preparation states that although no pharmacokinetic studies have been conducted in severe hepatic impairment, no special precautions or dosage adjustment are anticipated (SPC).
  - **Moderate impairment:** doxycycline, proguanil, or atovaquone-proguanil combination preparation, or mefloquine may be used
  - **Mild impairment:** chloroquine, or proguanil, or chloroquine plus proguanil, or atovaquone-proguanil combination preparation, or mefloquine, or doxycycline may be used
- The choice of chemoprophylaxis should be made after discussion with the patient's specialist, who will be able to assess their degree of hepatic impairment.

The Child-Pugh classification is often used for grading liver function and can be found at [http://www.liverpoolmedics.co.uk/clinicalcalculator/childpugh.php?valid=\[ss11\]](http://www.liverpoolmedics.co.uk/clinicalcalculator/childpugh.php?valid=[ss11]) or <http://www.hepatitis.va.gov/provider/tools/child-pugh-calculator.asp>

## Chapter 7. SPECIAL CATEGORIES

- 68**      **7.1 Children** - Change in the advice of atovaquone-proguanil combination preparation as follows:  
Atovaquone-proguanil combination preparation: Paediatric tablets are licensed in the UK for malaria prophylaxis in children from 11 kg upwards. For children weighing less than 11 kg, ACMP recommends the following dosage regimen. Weight 5 to 8 kg half a paediatric tablet daily; weight >8 to 10 kg three quarters of a paediatric tablet daily. The paediatric tablets are a quarter of the strength of adult tablets and can be crushed if necessary for ease of administration.
- 69**      **7.2 Elderly travellers** – the addition of the following wording in italics: The elderly are at particular risk of *dying from malaria once acquired*
- 70**      **7.8 Last minute travellers** – the addition of the following: Some pharmacists are now prescribers and thus able to prescribe the prescription only antimalarials.
- 71**      **7.9 Visiting friends and relatives** – the information in this section is adapted from the HPA Travel and Migrant Health Report updated in 2011. The MG give the weblink to this report and also to the HPA Migrant Health Guide which was developed after the previous MG were published <http://www.hpa.org.uk/MigrantHealthGuide/>. In addition the Guidelines stress that ‘**Much greater effort is needed to convey health prevention advice to this key group**’.
- 72**      **7.10 Students and children at boarding school** – a new section which includes suggestions for specific written instruction/advice for the parents has been added as follows:
- Adherence to antimalarial chemoprophylaxis is reported as poor in children who return home to malarious areas. This may be due to a lack of understanding that children who reside in the UK are at increased risk of acquiring malaria when they return home to malarious areas, compared to those who live there permanently.
- Provision of specific written instruction / advice for the parents may be helpful and could include the following:
- children who reside in the UK lose natural immunity to malaria and **are at increased risk of acquiring malaria** compared to those who live permanently in malarious areas

- antimalarial chemoprophylaxis is recommended for children in UK boarding schools in accordance with UK ACMP guidance
- where chemoprophylaxis is taken correctly, along with all other malaria prevention measures, the risk of a child acquiring malaria will be significantly reduced
- parents should support advice given to children in the UK and should encourage adherence to the recommended antimalarial chemoprophylaxis
- where possible, the course of tablets supplied in the UK should be completed and not substituted with different tablets at the destination
- where tablets provided in the UK must be replaced with different tablets at the destination (e.g. if they are lost or side effects occur) information on the replacement medication should be supplied to the nurse when the child returns to the UK. This is important especially if the child becomes unwell after return and requires treatment with other medication

74

**7.11.2 Chemoprophylaxis for long-term travellers** – the addition under adherence to chemoprophylaxis of: ‘Long term adherence decreases for both daily and weekly prophylactic regimens’. In the possible reasons for reduced compliance in long term travellers ‘conflicting advice’ included on the second line, should read as the 3<sup>rd</sup> bullet point as follows:

Possible reasons for reduced compliance in long-term travellers may include:

- fear of long-term side effects
- actual adverse events on one or more regimens
- conflicting advice
- complex regimen/daily tablets
- reduced confidence if intercurrent fever misdiagnosed as malaria
- perception from anecdotal evidence that chemoprophylaxis is unnecessary

78

**Table 11: Long term chemoprophylaxis for adults** - for each of the drugs mefloquine and doxycycline, the addition of the sentence: ‘Longer term use possible if justified by the risk of exposure to malaria’ and for atovaquone/proguanil, the addition of ‘Can be used confidently for travel up to one year. Longer term use possible if justified by the risk of exposure to malaria’.

## Chapter 8. FREQUENTLY ASKED QUESTIONS

80

An additional three FAQs have been added to this section. Questions 15 and 16 were in fact added online in 2008 and question 17 is a new addition. These FAQs are extremely helpful in answering queries and providing information in a quick and succinct

format. Some of the changes in the new Malaria Guidelines have been incorporated into the FAQs and I will not repeat the update here, and in some instances more in depth explanation is given. I highly recommend that you review this section in the MG – the topics are as follows:

**80 to 87**

- Q1. What malaria prevention should be advised for travellers going on cruises?
- Q2. What alternative antimalarial drugs can be used for India if chloroquine and proguanil are unsuitable for a traveller?
- Q3. Which antimalarial can I give to a traveller with a history of psoriasis?
- Q4. Which antimalarial can I give a traveller who is taking warfarin?
- Q5. How long can a traveller take different antimalarial drugs?
- Q6. Which antimalarial drugs are suitable for women during pregnancy?
- Q7. Which antimalarial drugs can be taken by women breastfeeding?
- Q8. Which antimalarial drugs can be given to babies and young children?
- Q9. What is the easiest way to calculate the correct dose of chloroquine for babies and young children?
- Q10. Many travellers I see are travelling through areas where different antimalarials are recommended as they progress through their journey. How do we advise these travellers?
- Q11. Which antimalarial drugs can I advise for a traveller who has epilepsy?
- Q12. What do I advise for the traveller with Glucose 6-phosphate dehydrogenase deficiency?
- Q13. What do I advise people working on oil rigs?
- Q14. What do I advise for the traveller on a stopover?
- Q15. Can doxycycline affect oral contraception?
- Q16. What advice can I give to travellers who discontinue chemoprophylaxis on or after return to the UK due to drug side-effects?
- Q17. What alternative antimalarial drugs can be used for Central America (and Dominican Republic/Haiti) if chloroquine is unsuitable for a traveller?

**87 to 97**

### **Chapter 9. INFORMATION RESOURCES**

Many resources updated and new references included – now 98 references as opposed to 82 in the previous Guidelines.