PREVENTING MALARIA IN UK ARMED FORCES PERSONNEL

Scope

1. This JSP 950 leaflet outlines the Surgeon General's policy on the prevention of malaria in UK Armed Forces personnel. This policy has been developed with reference to UK national guidance produced and published by the Public Health England (PHE) Advisory Committee on Malaria Prevention (ACMP)[1]. This guidance recognises that the malaria risk is different in military and civilian travellers.

2. This policy does not apply to dependants accompanying UK Armed Forces personnel on overseas posting or other civilian groups for whom the DMS provides care. They are to be advised in accordance with extant ACMP guidance.

3. This leaflet replaces and cancels JSP 950 Leaflet 3-3-1: Preventing Malaria in Military Populations dated Aug 16.

Aim

4. This leaflet defines the responsibilities of commanders, medical staff and entitled individuals with respect to protection against malaria and outlines arrangements that are specific to UK Armed Forces Personnel.

Other core references

5. This leaflet adds military specific direction to existing ACMP national guidelines.[1]

6. For joint operations, detailed mission tailored malaria prevention requirements will be described in the relevant Force Health Protection Instruction (FHPI), ratified by the Defence Public Health Unit (DPHU). For single Service (sS) operations, detailed mission tailored malaria prevention requirements will be outlined in the overarching sS medical directive and mounting instruction ratified by the sS Public Health (PH) consultant or Competent Medical Authority (CMA).[2] For overseas training exercises, courses or adventurous training, the relevant mounting or joining instructions are to describe the malaria prevention regime. If this is not explicit, advice should be sought from the relevant sS HQ or CMA.

7. For individual Service Personnel undertaking non-operational travel to a malarious area, a malaria health risk assessment is to be carried out using UK open source travel health advisory resources[3, 4] prior to providing anti-malarial advice and chemoprophylaxis. Expert PH advice should be sought from DPHU if required.[5]

8. All anti-malarial drugs have contraindications and a side effect profile which can be found in the British National Formulary (BNF) or online at the Electronic Medicines Compendium. It is incumbent upon the healthcare professional to undertake a health risk assessment and to warn patients of the possible side effects of any anti-malarial drug.

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[1] Chiodini PL, Patel D, Whitty CJM and Lalloo DG. Guidelines for malaria prevention in travellers from the United Kingdom, 2016. London: Public Health England; 15 December 2016 Accessed 18 Apr 2017.
[2] LAND Forces Standing Order 3215: Medical Planning for Land Forces Exercises, Training and Trials. http://defenceintranet.diif.r.mil.uk/libraries/1/Docs1/20140802.7/LFSO_3215.pdf Accessed 5 Aug 16.
[3] NaTHNac.
[4] Travax.
[5] SG-DMed-Med-DPHU-GpMailbox@mod.uk

General

9. Malaria remains a disease of global and historical importance. It is a life-threatening disease caused by parasites that are transmitted to people through the bites of infected mosquitoes. In 2015/16, there was an estimated 212 million cases of malaria with 429,000 deaths worldwide. 90% of cases and 92% of deaths occurred in sub-Saharan Africa.[6] Malaria is a disease of military significance, with the outbreak amongst UK troops in Sierra Leone in 2000 generating attack rates of 10% in certain groups.[7] The British Armed Forces have been largely successful in mitigating the threat from malaria. Between October 2014 and November 2015, 1530 individuals were deployed on Operation GRITROCK during the British military response to the outbreak of Ebola viral haemorrhagic fever in West Africa.[8] During this period there were only seven cases of malaria and UK Armed Forces have not experienced an operationally related death from malaria since 1992.[9]

10. The prevention of malaria is based upon four principles:

a. **A**wareness of risk.

b. **B**ite prevention.

c. **C**hemoprophylaxis.

d. **D**iagnose promptly and treat without delay.

In addition, the military Chain of Command has a key role to play through the integration of malaria preventive measures into force health protection (FHP) risk assessments and plans.

Responsibilities

11. **Commanders or Duty Holders** are to ensure that:

a. A suitable FHP risk assessment[10] for the deployment/exercise has been undertaken by their medical staff.

b. Where compliance with malaria preventive measures cannot be fully achieved for operational reasons the residual risk is acknowledged and managed in accordance with JSP 892: Risk Management.

c. All personnel receive a pre-deployment health brief.

d. All personnel deploying to a malaria risk area have undergone a malaria health risk assessment before they deploy.

e. All vector control and bite avoidance control measures are enforced.

f. Personnel understand the risk posed to themselves and the operation by malaria, the purpose and importance of malaria preventive measures and are encouraged (but not mandated) to comply with malaria chemoprophylaxis regimes.

g. All personnel are in possession of a Malaria Warning Card (FMed 568) before they leave a malaria risk area and that it is retained by the individual for two years.

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[6] WHO Malaria Factsheet dated December 16. Accessed 18 Apr 17.
[7] Tuck JJ, Green AD, Roberts KI. A malaria outbreak following a British military deployment to Sierra Leone. J Infect. 2004.
[8] Quantick O, Howlett-Shipley R, Roughton R, Ross D. Malaria in British military personnel deployed to Sierra Leone: a case series.
[9] http://www.rafregt.org.uk/event/strachan-memorial-dedication/
[10] Joint Tactics Techniques and Procedures for Force Health Protection and Health Risk Management 4.10.1.

h. Service personnel proceeding on leave to malarious countries are encouraged to seek travel advice and appropriate anti-malarial chemoprophylaxis.

12. **PJHQ or sS HQs** are to issue an instruction that includes advice on malaria prevention for all deployments, exercises or other training to areas where malaria presents a risk to health. CMAs will endorse the instruction on behalf of the Commander or Duty Holder. PJHQ J4 Med or sS Med staffs are to carry out an area specific risk assessment and determine the appropriate anti-malaria drug regime. Where operational constraints result in residual risk, these are to be brought to the attention of the Commander or Duty Holder. Specialist advice is available, if required, and can be sought from the DPHU within HQ SG. This advice should be communicated to the medical CoC.

13. **The D Med Pol & Op Cap FHP Board**[11] is to:

a. Review the investigation of all suspected or confirmed cases of malaria in order to identify lessons and incorporate any changes required for FHP measures.

b. Direct the conduct of *ad hoc* surveys and audits to monitor compliance with, and impact of, malaria prevention regimes.

14. **Primary care providers** are to ensure that:

a. Priority for assessment and prescription of anti-malarials is given to those identified or held at readiness for deployment to a malarious area.

b. All personnel who present before entering a period of high readiness, when warned for deployment, or before visiting friends and relatives or holidaying in malarious countries have a face-to-face malaria health risk assessment performed by a Medical Officer, practice nurse or pharmacist.[12] Irrespective, all malaria health risk assessments and the subsequent prescription of antimalarial drugs are to be conducted following the DMICP Antimalarial Protocol.[13] All results must be recorded on the relevant templates in the DMICP Antimalarial Protocol and saved in the electronic health record. This will enable accurate central monitoring.

c. At other times, under the principle of 'making every contact count', when opportunity and resource allow, personnel undergo a face-to-face malaria chemoprophylaxis contraindications check.

d. Anti-malaria drugs are only supplied after a face-to-face malaria health risk assessment has been undertaken has been undertaken following the DMICP Antimalarial Protocol. This face-to-face assessment can take place in advance of, or at the time of, the subsequent prescription of anti-malarials. Assessments made in advance should be reviewed prior to the supply of anti-malarials. With the exception of mefloquine, anti-malarial drugs can be supplied by individual prescription, Patient Specific Direction (PSD) or Patient Group Direction (PGD). In maritime settings, when none of these are possible, supply may be achieved by face-to-face risk assessment by a suitably trained RN Medical Assistant or RFA Medical Technician following a RN-endorsed protocol and then supplied by PSD authorised by a Medical Officer.

e. Mefloquine is only prescribed by a doctor and after other alternatives have been identified as unsuitable.

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[11] The Board provides strategic direction and guidance on the provision of FHP for UK Armed Forces on operations in order to ensure that key risks are identified and managed and that consistent and accurate medical advice is available across the Chain of Command.
[12] Between Sep 16 and Mar 17, half of all confirmed cases of malaria in Service Personnel were in those visiting friends and relatives in malarious countries who did not seek travel advice or chemoprophylaxis before visiting.
[13] Accessed via on screen via tabs Enterprise Protocols>Approved DMICP Protocols>Antimalarial Protocol v5

f. Mefloquine is not prescribed to divers (see Annex A), aircrew[14] or controllers.

g. In all cases, the authority and supply details for anti-malarial drugs are recorded on the electronic health record including when a drug is supplied using a PSD or PGD.

h. Personnel supplied with anti-malarial drugs are supplied with copies of all manufacturer provided patient documentation[15] relevant to that drug.

i. All suspected side effects to anti-malaria drugs are to be recorded on DMICP using the Anti-malarial Side Effects Template and reported to the Medicines and Healthcare products Regulatory Agency, using the 'yellow card' system.

j. Personnel taking atovaquone who experience a bout of vomiting within an hour of dosing are advised to repeat the dose.

k. Antimalarial DMICP Antimalarial Protocol key read codes used for central monitoring are recorded. These are:

(1) PCS15089AN5 – Anti-malarial drug specific face to face assessment completed – entered on any of the drug specific templates.

(2) PCS15089AN1 – Anti-malarial face to face assessment completed – entered on the 'Malaria Contraindications' template.

(3) PCS15089MA1 – Malarial Health Questionnaire completed – entered on the 'Antimalarial Questionnaire' template.

(4) PCS15089AN4 – Anti-malarial drug specific questionnaire complete – entered on any of the drug specific templates.

(5) PCS15089ME6 ' Mefloquine anti-malarial given – alternative offered but declined' – entered on the Mefloquine template.

15. **Individuals** are to:

a. Comply with all vector control and bite avoidance measures.

b. Note that anti-malaria drugs should be taken as supplied by a healthcare provider, including for the appropriate period before and after travel in a malaria endemic area.

c. Seek medical advice as soon as possible should they experience adverse drug effects, but not stop their anti-malaria drugs without first obtaining such advice.

d. Be made aware that diarrhoea and vomiting during deployment may reduce the absorption of some chemoprophylactic agents with possible reduction in protection against malaria and be advised if they suffer from vomiting and diarrhoea to seek medical advice.

Awareness of malaria risk

16. All personnel are to receive a pre-deployment brief in accordance with JSP 950 leaflet 3-2-2: Operational Deployment Health Briefings. This brief is to include the malaria protective measures to be adopted before deployment on operations or exercises and the message is to be reinforced whilst deployed. Immediately before leaving the risk zone, all personnel

[14] See AP1269A Leaflet 5-19 paragraph 38.
[15] Such as Patient Information Leaflets and warning cards.

are to be briefed on the need to continue chemoprophylaxis after return, and on the importance of reporting any illness.

17. The key areas to be covered during force protection briefings are:

a. The seriousness of malaria - it can and does kill people.

b. Malaria can be acquired from just one mosquito bite.

c. The four principles (A, B, C, D) of malaria prevention.

d. The role of the Chain of Command.

e. A description of the anti-malaria drugs including information about dosing and side effects at an appropriate level for the audience, tailored to the specific operation or exercise.

f. Personnel recruited from malaria risk areas are still at risk of catching malaria.

g. Basic malaria epidemiology, presenting symptoms and initial actions.

h. Special occupational and medical considerations.

18. The Force Health Briefing is to explain that individuals who do not comply with malaria prevention measures put not only their own health at risk but also the combat strength of the force. Personnel cannot be compelled to take any drug. The management of individuals refusing to comply with malaria preventive measures is an administrative, rather than a medical or disciplinary issue, and the individual should be risk managed in accordance with sS administrative procedures.

Bite avoidance

19. Bite avoidance measures reduce the risk of all diseases spread by biting insects. Clothes and bed nets provide better protection if treated with insecticide. Further details may be found in JSP 950 Leaflet 3-3-3 Pest Management Policy in the Armed Forces.

a. **Bed nets**. Wherever practicable, and whether they are indoors or out of doors, personnel in malaria endemic areas are to sleep under mosquito nets. Insecticide treated bed nets are particularly effective. However, bed nets are only effective if used properly:

(1) The bed net is to be checked regularly for holes and replaced if any holes are discovered. Holes should be repaired before next use if replacement is not possible.

(2) Before retiring at night, the bed net is to be tucked carefully under the camp bed, mattress, sleeping mat or sleeping bag.

(3) The inside of the net is to be checked for trapped insects before retiring. Knockdown insecticide should be applied.

(4) Personnel are to try to ensure that no part of their body is in contact with the net during the night, as insects will bite through the mesh.

b. **Mosquito Screens**. In fixed locations, every attempt is to be made to provide mosquito-screened accommodation and as far as operationally practicable, personnel should avoid being outside such accommodation at peak biting times.

c. **Clothing**. Personnel are to be reminded that minimising the amount of exposed skin will offer some protection against biting insects. Long sleeves and long trousers/skirts are to be worn in in areas of malaria risk, particularly at peak biting times. Socks and boots/shoes

(not sandals) are to be worn. Greater protection is achieved if clothing is treated with insecticide.

d. **Treatment of Bed Nets and Clothing**. All bed nets and clothing not pre-impregnated with permethrin are to be treated with Permapel®[16] (a commercial preparation of a pyrethroid insecticide (permethrin) that is effective against mosquitoes and other arthropods) prior to deployment. This includes clothing and bed nets that have been used on previous deployments. The efficacy of pre-impregnated clothing lasts up to 40 washes but this can vary through water temperature, machine/hand washing, type of detergent etc. Where operational or exercise conditions allow, re-impregnation with Permapel® is to take place as frequently as practicable after laundering to maintain maximum repellent properties. Guidance is contained in JSP 371 and the Combat Duties Handbook. Bed nets should be re-treated every 6 months.

e. **Topical Insect Repellent**. The topical application of choice in the UK military is N,N-diethyl-m-toluamide (DEET). The repellent issued by the UK Armed Forces (Ultrathon®)[17] is a slow-release, polymer-based cream formulation which contains DEET. DEET can damage plastics (eg spectacle frames, computer keys) and leather (eg watch straps), and care is needed with these items. Personnel should be aware of the following:

(1) ACMP recommends DEET-based insect repellents at concentrations over 20% which give a longer duration of protection. The Service-approved DEET preparation is effective for up to 6-12 hours in normal climates, depending on whether 30% or 50% DEET is used. It does need to be re-applied more frequently in hot or humid conditions, particularly following sweating and/or immersion in water (eg showering).

(2) DEET is to be applied to all areas of exposed skin, including the face, neck, ears, scalp, wrists, hands and ankles. The aim is to use just enough DEET to lightly cover the skin. Whenever sunscreen is reapplied it is to be followed by a reapplication of DEET.

(3) Contact of DEET with the eyes, mouth and genitals should be avoided since this may cause local irritation. Palms and fingers should be wiped thoroughly after applying DEET to minimise the accidental transfer of repellent to eyes, mouth or genitals.

f. **Vector Control.** The reduction of the vector population at all stages of its life cycle, where operationally possible, remains an essential part of malaria prevention. Only approved insecticides and larvicides are to be used. They are only to be issued and used by appropriately trained and authorised personnel. The use of knock down sprays is advised in those circumstances where a room contains multiple visible mosquitos on retiring to bed.

Chemoprophylaxis

20. Chemoprophylaxis refers to the use of drugs to help prevent malaria. It is essential that personnel understand that chemoprophylaxis is the last line of defence against malaria and not the first course of action. Just as bite prevention measures are not 100% effective, neither is chemoprophylaxis. Together they provide an enhanced level of protection and mitigate, but do not completely eliminate, the risk.

21. The recommended drug regimes are determined by the sensitivity of malaria parasites to those drugs in different parts of the world and may be considered in five broad regimes (see Annex B) based on PHE guidance[18]:

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[16] NSN H1/6840-99-638-4327.
[17] NSN H1/6840-01-284-3982.
[18] Table 3 Prophylactic regimens against malaria in adults in Chiodini PL, Patel D, Whitty CJM and Lalloo DG. Guidelines for malaria prevention in travellers from the United Kingdom, 2016. London: Public Health England; December 2016.

a. For areas without drug resistance the recommendation is that travellers should be offered chloroquine on its own. If chloroquine is not suitable then proguanil is the preferred alternative.

b. For areas of little chloroquine resistance, it is recommended that travellers are offered both chloroquine and proguanil. If chloroquine and proguanil are not suitable and the patient can tolerate proguanil then the patient should normally be offered atovaquone/proguanil.

c. For areas where malarial parasites are known to be resistant to chloroquine it is recommended that travellers are offered atovaquone/proguanil. If atovaquone/proguanil is not suitable they are to be reviewed in order to determine which alternative drug is most appropriate. The second choice drug will be normally be doxycycline but may be modified in accordance with the disease profile of the country to be visited. If doxycycline is unsuitable then the individual must be reviewed by a doctor prior to the prescription of mefloquine. The first, second and third choice drugs will be detailed in the Force Health Protection Instruction for the specific operation or exercise.

d. For areas where malarial parasites are known to be resistant to mefloquine, it is recommended that travellers are offered either atovaquone/proguanil or doxycycline. Due to its short half-life, doxycycline should normally only be offered when atovaquone/ proguanil is unsuitable.

e. For those travelling at less than seven days' notice, it is recommended that travellers are offered either atovaquone/proguanil or doxycycline. Due to its short half-life, doxycycline should normally only be offered when atovaquone/proguanil is unsuitable.

22. Where a patient cannot tolerate a particular anti-malarial, there is no specific regime for transitioning to an alternative agent[19]. To reach a steady state where the serum level might be expected to stay above the concentration needed to inhibit parasites differs for each drug and varies with individual factors – weight, age, sex, BMI etc. In the period between ceasing one agent and commencing the alternative, a specific focus on bite prevention must be maintained while the alternative agent becomes effective .

23. All anti-malarial drugs have a side effect profile. The full spectrum of side effects for all anti-malarial drugs can be found in the BNF or online at the Electronic Medicines Compendium. Describing the full range of side effects is outside the scope of this policy. Those that are known to be very common (more than 1 in 10 cases) or common (more than 1 in 100) are listed at Annex C. In addition, atovaquone/proguanil and mefloquine may cause other neuro-psychiatric adverse effects, the rates of which are either uncommon (more than 1 in 1,000), rare (more than 1 in 10,000) or unknown.

Diagnose promptly and treat without delay

24. All at-risk personnel are to be issued with a Malaria Warning Card (F Med 568) before leaving a malaria endemic area. This card warns the individual that the diagnosis of malaria is to be considered if any illness develops. The card is to be shown to medical staff when seeking treatment for febrile illness for up to 2 years after possible exposure to malaria.

25. Medical staffs are to be alert for symptoms in those personnel returning from malaria endemic areas and are to consider the diagnosis of malaria in **all** febrile patients with a history of recent travel to malaria endemic areas. Early referral for diagnosis and treatment is essential to prevent serious illness and death.

26. When appropriate, Force Health Protection Instructions are to provide direction on access to diagnosis including the use of Malaria Rapid Diagnostic Tests[20] and arrangements for

[19] Personal correspondence to DCA CDC via SG-DMed-MedD-DCACDC@mod.uk
[20] NSN 6550-99-244-9080 - BinaxNOW ICT Malaria P.f/P.v Test.

confirmatory blood film. The management of suspected cases of malaria is to be in accordance with the guidance provided in JSP 950 Volume 11: Clinical Guidelines for Operations.

27. Medical Officers are to report all suspected and confirmed cases of malaria in accordance with current statutory requirements[21] to the Proper Officer of the relevant local authority. In addition, Medical Officers or other clinical staff should report suspected and confirmed cases of malaria using the FMed 85 iaw JSP 950 Leaflet 7-2-2 and the MOD Modified PHE malaria report form at Annex D. Once completed, both forms are to be sent to SO2 Health Protection, HQ SG who will be responsible for onward transmission of the latter to the Malaria Reference Laboratory. SO2 Health Protection is to maintain a database of suspected/confirmed cases of malaria. This database is to be reviewed at each routine FHP Board.

Special considerations

28. **Aircrew.** The policy for malaria chemoprophylaxis in RN, Army and RAF Aircrew and Controllers is contained within AP1269A Leaflet 5-19 paragraph 38. The terms Aircrew and Controllers are defined within MAA02: Military Aviation Authority Master Glossary. As both these documents are reviewed periodically, medical staff should view the electronic resources before making clinical decisions.

29. **Divers**. Specific direction concerning malaria protection for divers is at Annex A.

30. **Immunocompromised individuals**. Individuals suffering from medical conditions that might render them immunocompromised or otherwise alter their susceptibility to malaria will require occupational health assessment of their fitness to deploy to malarial risk areas. Those who have no spleen, or whose splenic function is severely impaired, are at particular risk of severe malaria and should not deploy to malaria endemic areas.

31. **Pregnancy**. Pregnancy is not an absolute contraindication for travel to malaria risk areas. However, pregnant women are more susceptible to malaria; the disease is generally more severe in pregnancy and may result in an adverse outcome to the pregnancy. Pregnant Servicewomen are **not to** deploy to malaria risk areas.

32. **Aircraft stopovers**. When the final destination of an aircraft, or planned stopovers en route, are known to be within a malaria endemic area, all passengers and crew are to be in possession of a personal supply of anti-malaria medication. It is the responsibility of the deploying unit to issue all personnel with the appropriate anti-malaria drugs.

33. **Diverted aircraft**. In the event that an aircraft is diverted to a malaria endemic area, a senior member of the crew is to seek advice from the Medical Officer at the home base of the aircraft. Passengers are not to be allowed to disperse until suitable arrangements have been made to ensure that they receive appropriate anti-malaria drugs and advice.

34. **Diverted ships**. In the event that a vessel is diverted to a malaria endemic area, advice is to be sought from NCHQ. This includes those vessels intending to undertake refuelling-only stops or those anchored within 2km offshore of a malaria endemic area.

Annexes:

A. Malaria Chemoprophylaxis and Divers.
B. Anti-malaria drug decision trees.
C. Side effects of anti-malarial drugs
D. MOD version of Public Health England Malaria Report Form.

[21] Public Health Control of Disease Act 1984 and the Health Protection (Notification) Regulations 2010

MALARIAL CHEMOPROPHYLAXIS AND DIVERS

1. In geographic regions where malaria presents a risk to health, general measures of protection against malaria such as awareness and education, bite avoidance and vector control should be identified and implemented prior to diving operations, as detailed in the main body of this JSP leaflet.

2. The use of chemoprophylaxis in divers may impact on their fitness to dive and this should be considered in conjunction with the area-specific risk assessment to determine the most appropriate anti-malarial drug regimen.

3. Drugs considered acceptable for use by divers for malaria chemoprophylaxis are as follows:

   a. **Atovaquone/proguanil.**

   b. **Chloroquine and Proguanil.**

   c. **Doxycycline.**

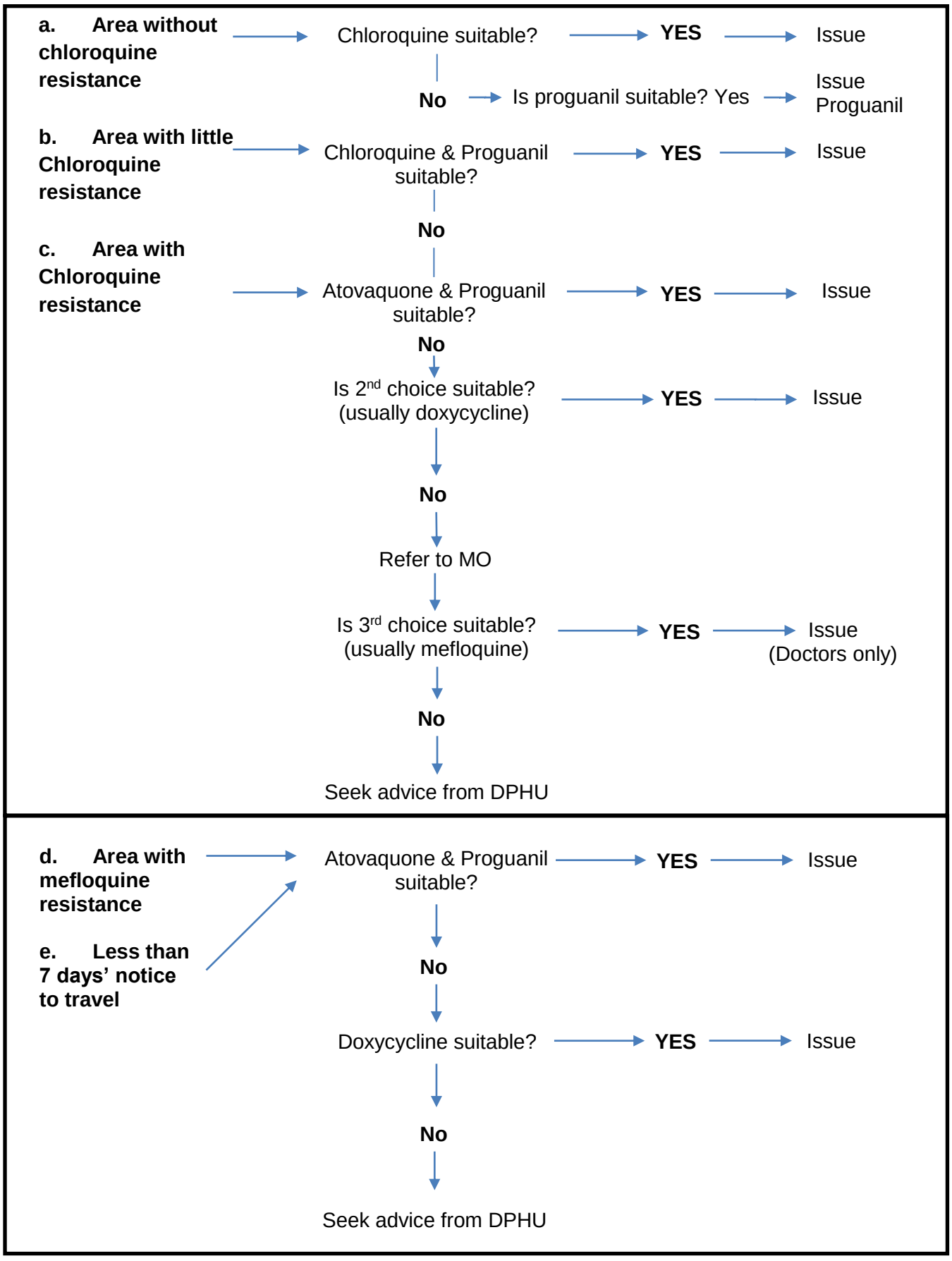
4. BRd 1750A[1] states that when starting new medications, a period of evaluation is required to identify any adverse drug effects prior to diving. This is determined by the pharmacokinetic and pharmacodynamic profiles of the drug, but in general a period of 2 weeks is considered optimal when starting any new medications. For atovaquone/proguanil the evaluation period should be of at least 5 days duration, although this can be reduced to 2 days in cases of urgent operational necessity and following discussion with the Chain of Command and the medical advisor.

5. Divers who suffer any adverse drug effects whilst taking anti-malarial drugs should be considered 'Temporarily Medically Unfit (TMU) for Diving' and seek medical care and advice as soon as possible. If an adverse drug effect occurs whilst in, or following departure from, the malaria endemic area, they are to cease diving but continue taking their anti-malarial drugs as prescribed until obtaining medical advice.

6. Use of the anti-malarial drug mefloquine is not compatible with diving whilst on duty (including adventurous training) because mefloquine may lower the seizure threshold and its side effects could potentially be confused with decompression or narcosis events. Due to a prolonged half-life, any diver who has used mefloquine for any medical indication is TMU for Diving for 12 weeks after their last dose. Therefore, any use of mefloquine by military divers must be closely regulated to avoid any unintended adverse impact on availability for military duties of a Service Person.

[1] BRd 1750A, Handbook of Naval Medical Standards, Chapter 12, Standards for Diving and Hyperbaric Exposure.

ANTI-MALARIA DRUG DECISION TREES



SIDE EFFECTS OF ANTI-MALARIAL DRUGS

Common and Very Common Adverse Effects of anti-malaria drugs:

	Very Common (more than 1 in 10)	Common (more than 1 in 100)
Atovaquone/Proguanil[1]	Abdominal pain Diarrhoea Headache Vomiting	Abnormal dreams Allergic reactions Anaemia Anorexia Cough Depression Dizziness Fever Insomnia Pruritis Rash
Chloroquine & Proguanil[2]	**Chloroquine** Gastro Intestinal Disturbances Headache Pruritis Rashes Skin Reactions **Proguanil** Constipation Diarrhoea Mild Gastric intolerance	
Doxycycline[3]	Anorexia Anxiety Dry mouth Flushing Fungal super-infection Tinnitus	
Mefloquine[4]	Abnormal dreams Insomnia	Abdominal pain Anxiety Depression Diarrhoea Dizziness Headache Nausea Pruritis Vertigo Visual impairment Vomiting

[1] Atovaquone & Proguanil Summary of Product Characteristics (http://www.medicines.org.uk/emc/medicine/756)
[2] BNF 71 Mar-Sep 16 ISBN 978 0 85711 272 9 p.544-545.
[3] BNF 71 Mar-Sep 16 ISBN 978 0 85711 272 9 p.506.
[4] Mefloquine Summary of Product Characteristics (http://www.medicines.org.uk/emc/medicine/1701)

MOD version of

PUBLIC HEALTH ENGLAND MALARIA REFERENCE LABORATORY (MRL) PATIENT REPORT/REFERRAL FORM

For MRL use only

In Confidence– please complete as fully as possible-this form may be used to refer specimens and/or to report cases

Family name: _____

All other names: _____

Home post code: _____ **NHS number:** _____

Address in UK: _____

_____

Svc No:	Rank:	Unit:	Service:

Date of birth: ___/ ___/ _____ Age: _____ Gender: M / F

Country of birth: _____ Country of usual residence: _____

	Ethnicity: (mark one)		Reason for travel: (mark one)		Malaria prophylaxis taken: (mark as relevant)
☐	White British	☐	Visiting family in country of origin	☐	NONE
☐	Other White background	☐	British armed forces	☐	Mefloquine (Lariam)
☐	Black African	☐	Holiday travel to malarious country	☐	Malarone
☐	Black Caribbean	☐	Other (please specify)	☐	Doxycycline
☐	Other Black background		_____	☐	Chloroquine (Nivaquine/Avloclor)
☐	Indian sub-continent			☐	Proguanil (Paludrine)
☐	South-East Asian		**Bite Avoidance Measures**	☐	Unknown
☐	Other Asian background		**(mark as relevant)**	☐	Other (please specify)
☐	Mixed Ethnicity	☐	Clothing peripel		_____
	Other (please specify)	☐	Mosquito net		
	_____	☐	Insect repellent		Prophylaxis taken regularly? Y / N
		☐	Knock down insecticides		Continued on return for _____weeks
		☐	Long sleeves & trousers		Total number of doses missed _____

Date of onset of illness: ___/ ___/ _____ Date of starting treatment: _____/ _____/ _____

Date of Deployment: _____/ ___/ _____ Referred to military Tropical medicine Consultant Y / N

Date of arrival in UK from malarious country ___/ ___/ _____

Duration of stay abroad : _____

Country(ies) where infection acquired: _____

For India, please specify areas visited

G.P. Name & Address	Name and contact details of person completing this form if not G.P.
Tel. No.	Date:

MRL patient report/referral form version 4 Feb 2014 - VS/DB-MOD version dated 1 May 15

Please complete other side →

Hospital where diagnosis made _____

Date of diagnosis ____/____/_____

Method of diagnosis:	☐ Blood film	☐ Antigen te	Please specify _____
	☐ Clinical	☐ Other	Please specify _____

Species of malaria parasite:

- ☐ P. falciparum
- ☐ P. vivax
- ☐ P. malariae
- ☐ P. ovale
- ☐ Species unknown
- ☐ No malaria parasites found

Was patient treated as:

- ☐ Outpatient
- ☐ Inpatient

Was patient:

Pregnant Y / N _____/ 40

Admitted to ITU/HDU Y / N

Duration of stay in hospital _____days

Outcome of illness:

- ☐ Recovery
- ☐ Death
- ☐ Unknown

Any other information relevant to this case (including treatment): _____

If sending specimens for referral please also give the following information:

Date of Sample ____/ ____/ _____

NHS/Hosp No. _____ Lab No. _____

Type of specimen:

- ☐ Blood
- ☐ Blood films
- ☐ Other (please specify)

Name and address for report:

Specimens should be sent direct to the Malaria Reference Laboratory

MALARIA IS A NOTIFIABLE DISEASE - PLEASE FILL IN A FMED 85 AND FORWARD TO THE DEFENCE PUBLIC HEALTH UNIT.

Please return this form to:
Defence Public Health Unit
HQ Surgeon General
Whittington Barracks
Lichfield
WS14 9PY

SG-DMed-Med-DPHU-GpMailbox@mod.uk

MRL USE ONLY

MRL patient report/referral form version 4 Feb 2014 - VS/DB-MOD version dated 1 May 15