THE ASSISTANT SECRETARY OF DEFENSE

1200 DEFENSE PENTAGON
WASHINGTON, DC 20301-1200

HEALTH AFFAIRS

15 April 2013

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY (MANPOWER AND RESERVE AFFAIRS)
ASSISTANT SECRETARY OF THE NAVY (MANPOWER AND RESERVE AFFAIRS)
ASSISTANT SECRETARY OF THE AIR FORCE (MANPOWER AND RESERVE AFFAIRS)
JOINT STAFF SURGEON (J-4/HSS)
VICE COMMANDANT OF THE COAST GUARD

SUBJECT: Guidance on Medications for Prophylaxis of Malaria

References: (a) Memorandum, Assistant Secretary of Defense for Health Affairs, "Anti-Malarial Medications," October 17, 2002.
(b) Memorandum, Assistant Secretary of Defense for Health Affairs, "Policy Memorandum on the Use of Mefloquine (Lariam®) in Malaria Prophylaxis," September 4, 2009 (HA Policy 09-017).
(c) Department of Defense (DoDI) 4150.07, "DoD Pest Management Program," May 29, 2008.
(d) DoDI 6490.03, "Deployment Health," August 11, 2006.
(e) DoD Directive 6200.04, "Force Health Protection (FHP)," October 9, 2004.
(f) Army Regulation 40-562 / BUMEDINST 6230.15A / AFJI 48-110 / CG COMDTINST M6230.4F, "Medical Services Immunizations and Chemoprophylaxis," September 29, 2006.
(g) Centers for Disease Control and Prevention, Health Information for International Travel ("Yellow Book"), current edition.
(h) DoDI 6420.01, "National Center for Medical Intelligence," March 20, 2009.
(i) DIA-16-1109-163, "NCMI Methodology for Assessing the Potential Operational Impact of Malaria on Deployed U.S. Forces," September 26, 2011.

1. Purpose

This document provides guidance and best practices for the chemoprophylaxis (use of medication to prevent malaria) of Service members serving in malaria endemic regions and augments reference (a-b). This document supersedes previous guidance relating to the selection of medications for malaria chemoprophylaxis by raising atovaquone-proguanil, to first line consideration along with doxycycline.

2. Background

Malaria is caused by *Plasmodium* parasites and is transmitted by mosquitoes. Malaria prevention, which is critical to health and mission accomplishment, is achieved through personal protective measures, vector control, and chemoprophylaxis. Proper mosquito avoidance and the

use of personal protection measures are discussed in references (c-d), which remain in effect. Chemoprophylaxis should be viewed as the last component of a comprehensive malaria prevention program, and should be used currently with permethrin-treated bed nets, permethrin-treated uniforms, and personal clothing; insect repellants applied to skin; and proper wear of the uniform (sleeves down, pant legs tucked into boots).

Malaria chemoprophylaxis is administered as a force health protection measure under command authority as outlined in references (d-f). Ensuring compliance with prophylaxis is a command responsibility.

Both atovaquone-proguanil and doxycycline are considered first line chemoprophylaxis medications in chloroquine-resistant malaria risk areas per reference (g). Atovaquone-proguanil is a newer antimalarial medication and has an excellent safety record with over 10 years of extensive use. There tend to be fewer drug interactions with atovaquone-proguanil than there are with doxycycline. Atovaquone-proguanil peak blood levels are not adversely affected by foods in the way doxycycline can be, and it has a slightly longer half-life in the blood stream. It also does not have the sun sensitivity side effect sometimes seen with doxycycline. Another advantage for atovaquone-proguanil, when used as a post-exposure chemoprophylaxis medication, is that it only needs to be administered for 7 days vice 28 days for doxycycline or mefloquine. One disadvantage is that it is significantly more expensive than doxycycline.

3. Risk assessment
   a. Geographic Combatant Commands (COCOMs) shall be contacted prior to deployment or travel to their area of responsibility for specific force health protection measures, including the requirements and any options for antimalarials to be used.

   b. The risk assessment for malaria is based on the potential attack rate per month as determined from a realistic maximum attack rate and level of disease endemicity.

   c. Malaria potential attack rates are available through the National Center for Medical Intelligence (NCMI), accessible at https://www.intelink.gov/ncmi/index.php.

4. Malaria chemoprophylaxis: Malaria chemoprophylaxis may be required by the COCOMs or other authority for deployments where *P. falciparum*, *vivax*, *ovale*, and *malariae* strains may be encountered. *P. falciparum* is the most widespread, serious, and most commonly fatal type of malaria, and merits special attention.

   a. No chemoprophylaxis required. In general, military operations in areas where NCMI reports potential attack rates (without the use of antimalarials) are 0.1 percent per month or less do not require chemoprophylaxis. This is especially true if there is little or no *P. falciparum* transmission or if the duration or nature of travel suggests a low likelihood of infection such as no dusk-dawn exposures anticipated and other force health protection measures are in place such as the use of treated bed nets, treated clothing, personal insect repellent, etc.

b. Chemoprophylaxis required. Travel to areas where NCMI reports potential attack rates without the use of antimalarials) in the categories of less than 1 percent, 1 percent to 10 percent, or 11 percent to 50 percent requires chemoprophylaxis. Chloroquine is the drug of choice for areas with no chloroquine-resistant malaria. In areas with chloroquine-resistant malaria, either atovaquone-proguanil or doxycycline are acceptable as first-line prophylactic medications. Mefloquine should be reserved for individuals with intolerance or contraindications to both first-line medications. Before using mefloquine for prophylaxis, care should be taken to identify any contraindications on an individual basis and ensure the U.S. Food and Drug Administration (FDA)-required patient information handouts are available for distribution.

c. Short-term travel. Atovaquone-proguanil only requires 7 days of post-exposure prophylaxis vice the 28 days for other medications. Therefore, atovaquone-proguanil should be considered for use during short-term travel (e.g. 2-3 weeks) or for individuals who travel frequently, where the prolonged post-exposure prophylaxis treatment courses for doxycycline, chloroquine, and mefloquine result in longer durations of treatment for minimal exposures.

d. Although included as an acceptable alternative by the U.S. Centers for Disease Control and Prevention, primaquine is not FDA approved for primary prophylaxis. Because this constitutes off-label use, it can only be prescribed by a licensed medical provider on an individual basis rather than as a force health protection practice for a deploying group. Presumptive anti-relapse therapy (PART, or terminal prophylaxis) is an FDA-approved indication for primaquine. While not addressed in this memorandum, PART should be provided when clinically and epidemiologically indicated.

e. Monitoring compliance with administration of chemoprophylaxis is the responsibility of unit commanders. Directly observed therapy is strongly recommended.

Thank you for your support. If you have any questions on the policy the point of contact is Colonel (Col) José Rodríguez-Vázquez. Col. Rodríguez-Vázquez may be reached at (703) 681-8399, or Jose.Rodriguez-Vazquez@tma.osd.mil.

Jonathan Woodson, M.D.

cc:
Surgeon General of the Army
Surgeon General of the Navy
Surgeon General of the Air Force
Director, Marine Corps Staff
Director, Safety & Work-Life, U.S. Coast Guard
Deputy Assistant Secretary of Defense for Clinical and Program Policy
Joint Staff Surgeon
Commander, Joint Task Force-National Capital Region/Medical