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Malaria Surveillance United States, 2015

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Abstract

PROBLEM/CONDITION: Malaria in humans is caused by intraerythrocytic protozoa of the genus Plasmodium. These parasites are transmitted by the bite of an infective female Anopheles species mosquito. The majority of malaria infections in the United States occur among persons who have traveled to regions with ongoing malaria transmission. However, malaria is occasionally acquired by persons who have not traveled out of the country through exposure to infected blood products, congenital transmission, laboratory exposure, or local mosquitoborne transmission. Malaria surveillance in the United States is conducted to provide information on its occurrence (e.g., temporal, geographic, and demographic), guide prevention and treatment recommendations for travelers and patients, and facilitate transmission control measures if locally acquired cases are identified. PERIOD COVERED: This report summarizes confirmed malaria cases in persons with onset of illness in 2015 and summarizes trends in previous years. DESCRIPTION OF SYSTEM: Malaria cases diagnosed by blood film microscopy, polymerase chain reaction, or rapid diagnostic tests are reported to local and state health departments by health care providers or laboratory staff members. Case investigations are conducted by local and state health departments, and reports are transmitted to CDC through the National Malaria Surveillance System (NMSS), the National Notifiable Diseases Surveillance System (NNDSS), or direct CDC consultations. CDC reference laboratories provide diagnostic assistance and conduct antimalarial drug resistance marker testing on blood samples submitted by health care providers or local or state health departments. This report summarizes data from the integration of all NMSS and NNDSS cases, CDC reference laboratory reports, and CDC clinical consultations. RESULTS: CDC received reports of 1,517 confirmed malaria cases, including one congenital case, with an onset of symptoms in 2015 among persons who received their diagnoses in the United States. Although the number of malaria cases diagnosed in the United States has been increasing since the mid-1970s, the number of cases decreased by 208 from 2014 to 2015. Among the regions of acquisition (Africa, West Africa, Asia, Central America, the Caribbean, South America, Oceania, and the Middle East), the only region with significantly fewer imported cases in 2015 compared with 2014 was West Africa (781 versus 969). Plasmodium falciparum, P. vivax, P. ovale, and P. malariae were identified in 67.4%, 11.7%, 4.1%, and 3.1% of cases, respectively. Less than 1% of patients were infected by two species. The infecting species was unreported or undetermined in 12.9% of cases. CDC provided diagnostic assistance for 13.1% of patients with confirmed cases and tested 15.0% of P. falciparum specimens for antimalarial resistance markers. Of the U.S. resident patients who reported purpose of travel, 68.4% were visiting friends or relatives. A lower proportion of U.S. residents with malaria reported taking any chemoprophylaxis in 2015 (26.5%) compared with 2014 (32.5%), and adherence was poor in this group. Among the U.S residents for whom information on chemoprophylaxis use and travel region were known, 95.3% of patients with malaria did not adhere to or did not take a CDC-recommended chemoprophylaxis regimen. Among women with malaria, 32 were pregnant, and none had adhered to chemoprophylaxis. A total of 23 malaria cases occurred among U.S. military personnel in 2015. Three cases of malaria were imported from the approximately 3,000 military personnel deployed to an Ebola-affected country; two of these were not P. falciparum species, and one species was unspecified. Among all reported cases in 2015, 17.1% were classified as severe illnesses and 11 persons died, compared with an average of 6.1 deaths per year during 2000-2014. In 2015, CDC received 153 P.

Keywords: malaria, imported malaria, travel-associated malaria, Plasmodium falciparum, Plasmodium vivax, Plasm

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