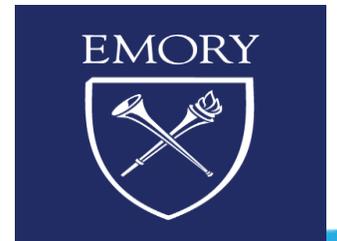


Mosquito-Borne Disease

Zanthia Wiley, MD, FHM, FIDSA

Associate Professor of Medicine

Emory Division of Infectious Diseases



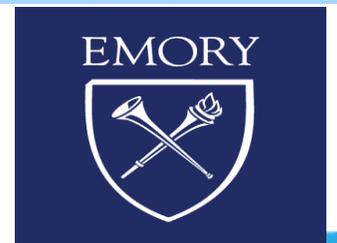
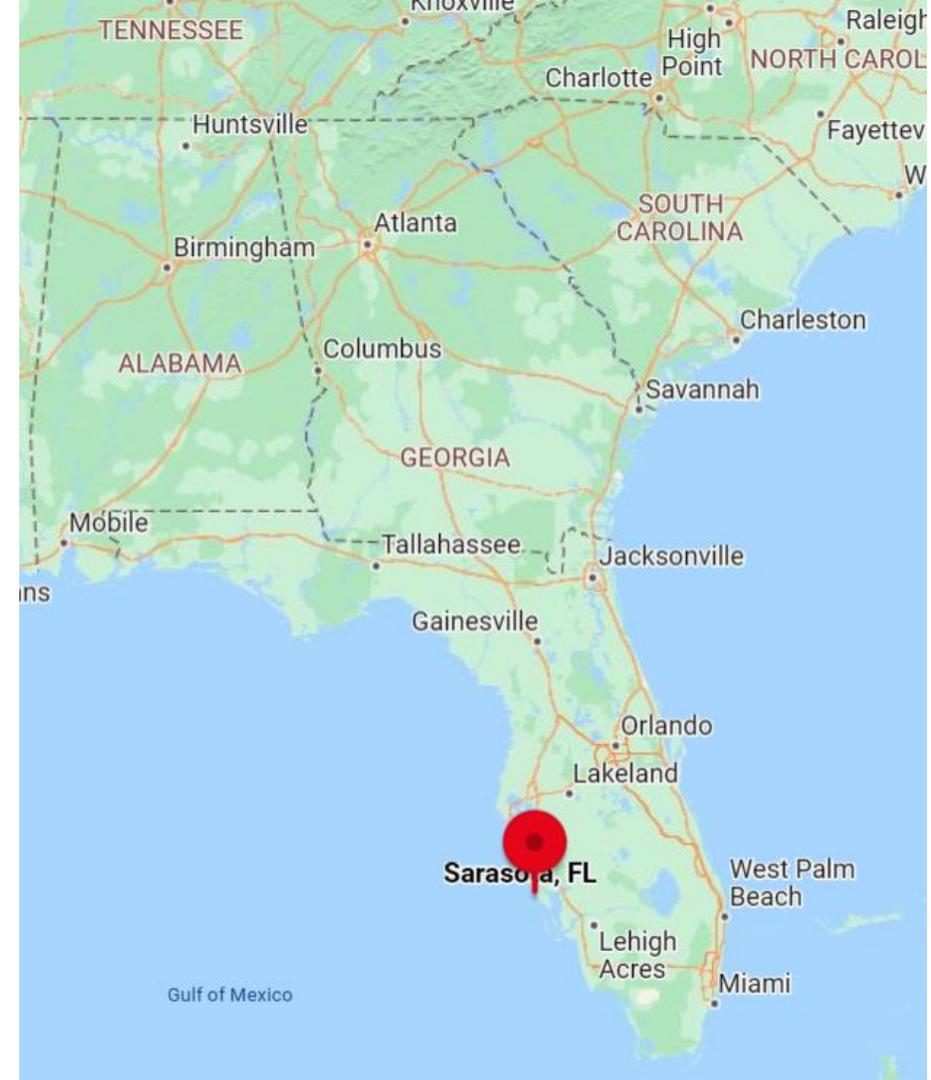
Case

A 45 yo healthy woman residing in Florida presents to a hospital in late May 2023 with 3 days of severe headache, fevers to 102, chills, and body aches.

- She spent a lot of time outdoors gardening, at the beach, and at cookouts during the week prior to presentation.
- She took a home COVID-19 test which was negative.

Past Medical History: None

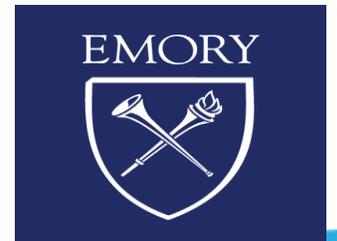
Medications: Multivitamin



Case

Social History: Single, no children, long-term partner with recent unprotected intercourse. No travel outside of Florida during the past year. Prior travel (> 1 year ago to Ghana, Brazil, Canada, Japan, Thailand). College graduate. IT specialist. Has a vaccinated cat and dog (that live inside the house). No other known animal exposures. Very active outdoors - boating, gardening, swimming, hiking.

Vaccination History: Received all childhood vaccinations; UTD on COVID vaccinations/boosters. Other: meningococcal, Hep A, Yellow Fever, Polio from travel clinic.



(not actual case)

Case – Physical Exam

Vital Signs: Temp - 39, P - 100, BP – 120/60, 99% on ambient air

General: ill-appearing

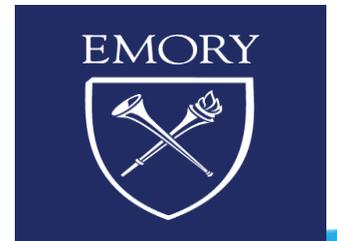
HEENT: pale conjunctivae

Cardiovascular: tachycardic and regular

Abdomen: soft, nontender, no organomegaly

Extremity: no rash; + erythematous papules on her right calf

Neuro: non-focal; no nuchal rigidity



(not actual case)

Case – Diagnostic Studies

5 \ 8 / 145 Manual Diff - pending
/ 24\ Auto Diff - normal
 MCV – 85

AST 45, ALT 48

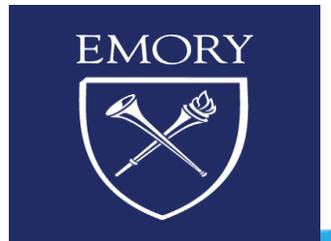
Total Bilirubin – 0.6

Albumin 3.4, Total protein 6.5

134 | 96 | 30 / 90

3.4 | 25 | 1.2 \

Serum lactate - normal



Case – Diagnostic Studies

PA/Lateral Chest X-ray – normal

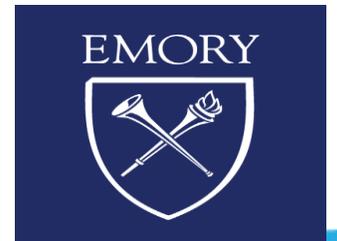
Rapid HIV test – negative (RPR, 3-site GC testing pending)

UA and Urine Pregnancy test – negative

Lumbar puncture – normal cell counts, protein, glucose, and CSF meningitis/encephalitis testing negative

Nasal COVID PCR – negative

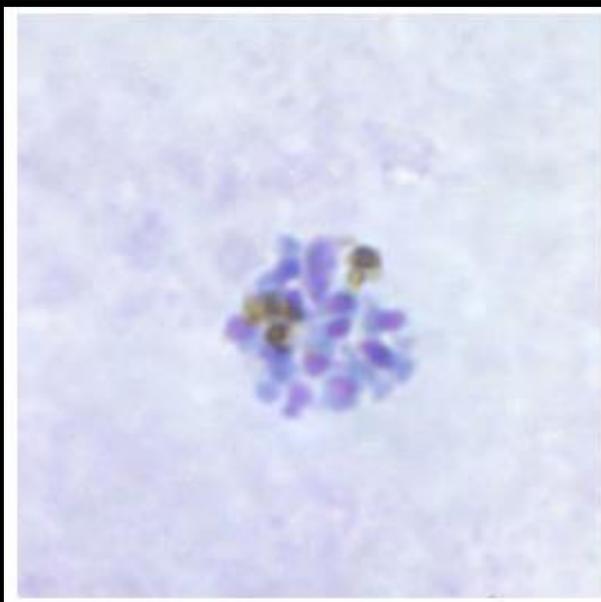
Blood cultures – pending



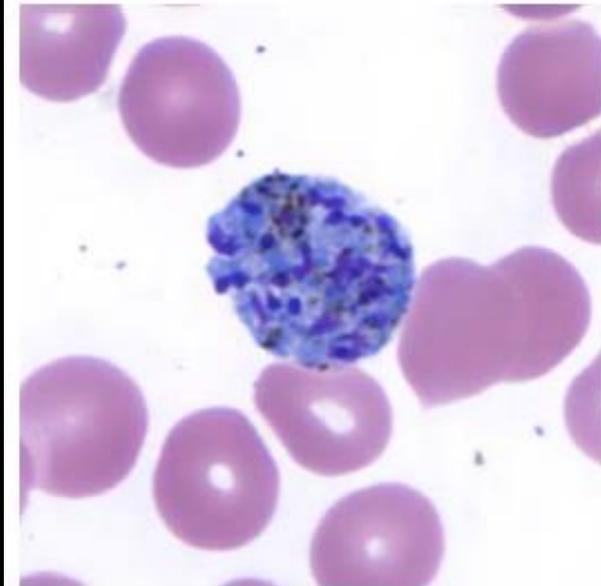
(not actual case)

Case – Manual Diff

An astute lab tech performing the manual diff notes the following.....

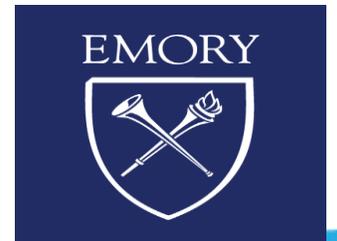


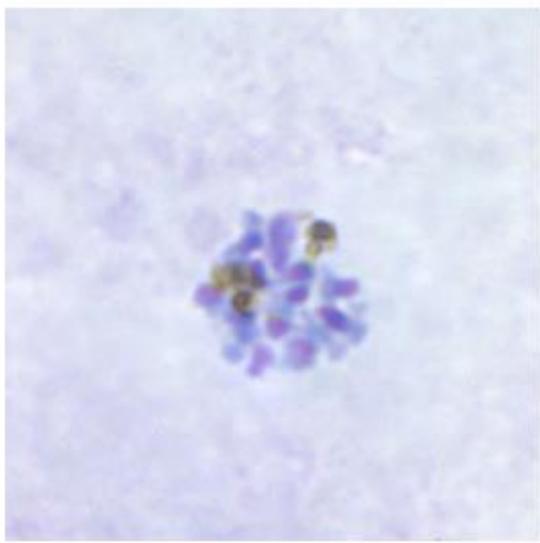
Schizont in a thick blood smear.



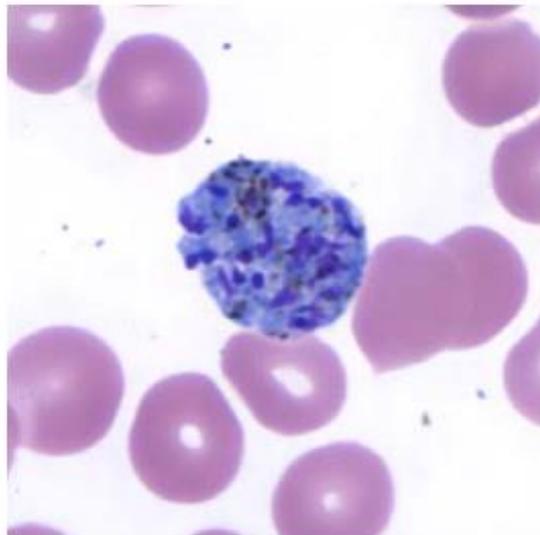
Immature schizont in a thin blood smear.

(not actual case)



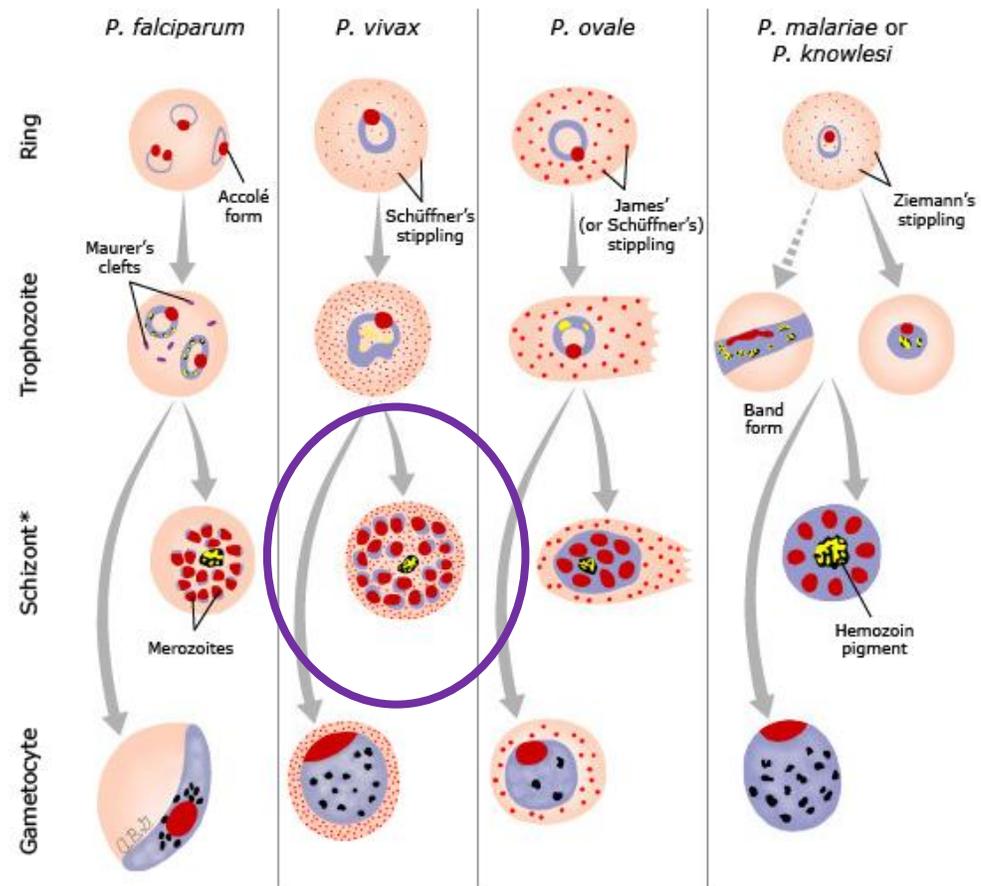


Schizont in a thick blood smear.



Immature schizont in a thin blood smear.

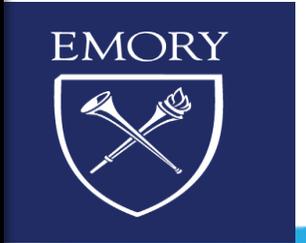
Red blood cell morphology in various forms of *Plasmodium* infections



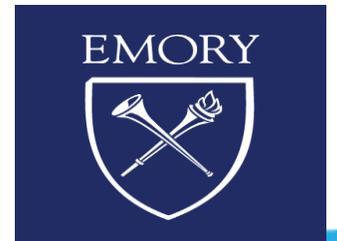
* Identification of a schizont with >12 merozoites in the peripheral circulation is an important diagnostic clue for *P. vivax*. In general, schizonts of *P. falciparum* are very rarely seen in blood films; they are generally absent from the peripheral circulation except in cases of severe infection with overwhelming parasitemia.

Graphic 80296 Version 8.0

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Final Diagnosis:
United States Acquired-
Plasmodium vivax Malaria



May 26, 2023

**DOH-SARASOTA ISSUES MOSQUITO-BORNE ILLNESS ADVISORY:
SINGLE CASE OF MALARIA IDENTIFIED AND TREATED**



Contact:

G. Steve Huard, Public Information Officer
Florida Department of Health - Sarasota County
Gerald.Huard@flhealth.gov
(941) 302-1058

Sarasota—The Florida Department of Health in Sarasota County and Manatee County (DOH-Sarasota and DOH-Manatee) is responding to one confirmed case of malaria among an individual who spent extensive time outdoors. The patient was promptly treated at a hospital and has recovered. DOH is working closely with local partners and county mosquito control. Aerial and ground mosquito spraying is being conducted in these areas to mitigate the risk of further transmission.

This case has been identified as the *P. vivax* species of malaria, which is not as fatal as other species. Malaria is not transmitted from person to person. Only infected *Anopheles* mosquitoes can transmit malaria to humans.

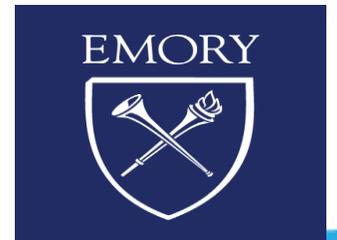
Effective treatment is readily available through hospitals and other health care providers. Individuals in this area with symptoms of fever, chills, sweats, nausea/vomiting, and headache should seek immediate medical attention.

To protect yourself from any mosquito born illness, take the following prevention steps:

- Use mosquito repellent that contains DEET (10-30 percent), picaridin, oil of lemon eucalyptus, para-menthane-diol, 2-undecanone or IR3535.
- Wear long sleeves and pants.
- Check and repair screens on doors and windows to prevent mosquitoes from entering your home.

To help reduce the population of mosquitos around your home, please drain and cover areas around your home. Mosquitoes reproduce in fresh water from rainstorms, sprinklers and other source. Drain pools of freshwater around your home and yard. Empty pet bowls, garbage cans, garbage can lids, bottles, tires, and anything where freshwater has accumulated.

Residents of [Sarasota County](#) and [Manatee County](#) should contact their local government for more information about specific mosquito control.



Malaria



Malaria

Malaria Home

Locally Acquired Cases of Malaria in Florida, Texas, and Maryland

CDC is collaborating with three state health departments on an investigation of seven locally acquired cases of *Plasmodium vivax* (*P. vivax*) malaria in Sarasota County, FL, one case of *P. vivax* in Cameron County, TX, and one case of *P. falciparum* malaria in a Maryland resident who lives in the National Capital Region. There is no evidence to suggest that the cases in the three states are related. All patients were promptly treated at area hospitals and are recovering.

Most malaria cases diagnosed in the United States are imported, usually by persons who travel to countries where malaria is endemic (regularly occurring). However, locally acquired mosquito-transmitted malaria cases can occur, as *Anopheles* mosquito vectors exist throughout the United States. In 2003 there were 8 cases of locally acquired *P. vivax* malaria identified in Palm Beach County, FL.

Florida, Texas, and Maryland have been engaging in additional surveillance activities and mitigation efforts to reduce the possibility of additional local transmission. CDC is coordinating with, and providing technical assistance to, state and local officials.

The risk of locally acquired malaria is very low in the United States. Malaria is primarily spread by mosquitoes. If you have traveled to an area where malaria occurs and develop fever, chills, headache, body aches, and fatigue, seek medical care urgently and tell your healthcare provider that you have traveled.

To prevent mosquito bites, use Environmental Protection Agency (EPA)-registered insect repellents, wear loose-fitted long-sleeved shirts and pants, and use screens on windows and doors.

In addition to routinely considering malaria in febrile patients with a history of travel to areas where malaria is transmitted, the diagnosis of malaria should also be considered in any person with fever of unknown origin regardless of travel history.

See the CDC malaria [website](#) for additional health information about malaria including prevention of mosquito bites and drugs for malaria prevention.

Read the Health Alert Network Health Advisory: [Locally Acquired Malaria Cases Identified in the United States](#).

Last Reviewed: August 22, 2023

Malaria is a Serious Disease

MALARIA IS A SERIOUS DISEASE



Malaria Basics

			
Malaria is a serious disease caused by a parasite that infects a certain type of mosquito.	Usually, people get malaria by being bitten by an infective mosquito. Malaria is not spread from person-to-person like a cold or the flu, and it cannot be sexually transmitted.	The U.S. reports about 2,000 cases of malaria each year. Most of these cases are in people traveling to or from areas where malaria transmission occurs.	Overall, the risk of malaria in the U.S. is very low.

Signs and Symptoms of Malaria

	Symptoms of malaria include fever and flu-like illness, such as chills, headache, muscle aches, and weakness. Nausea, vomiting, and diarrhea may also occur. If not treated quickly, the infection can become severe.
	If you are experiencing any of these symptoms, please see your healthcare provider immediately.

MALARIA IS A SERIOUS DISEASE



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