

Mosquito-borne Diseases

Emory University Resources:

- Session Resources
 - Post session resources (podcast of webinar, presentation slides, responses to unanswered questions, etc.) can be found on our website
 - <https://med.emory.edu/departments/medicine/divisions/infectious-diseases/serious-communicable-diseases-program/covid-19-resources/access-past-echo-recordings.html>
- Region 4 Situation Report
 - <https://med.emory.edu/departments/medicine/divisions/infectious-diseases/serious-communicable-diseases-program/covid-19-resources/region-4-situation-reports1.html>
- Register for upcoming sessions on our website
 - <https://med.emory.edu/departments/medicine/divisions/infectious-diseases/serious-communicable-diseases-program/covid-19-resources/echo-upcoming-session.html>
- HHS Region IV Emory University SCDP
 - <https://med.emory.edu/departments/medicine/divisions/infectious-diseases/serious-communicable-diseases-program/covid-19-resources/index.html>
- Region IV Concept of Operations (CONOPS) - Regional Partners and Contacts
 - <https://netec.org/about-netec/partners-regional-contacts/#regional-contacts>
- Emory Serious Communicable Diseases Unit
 - <https://med.emory.edu/departments/medicine/divisions/infectious-diseases/serious-communicable-diseases-program/ebola-resources/index.html>
- NETEC
 - <https://netec.org/>
- NETEC – National Special Pathogens System of Care (NSPS)
 - <https://netec.org/nsps/>

External Resources:

Disclaimer - Our program provides additional resources that may be of use to our session attendees. This list is not inclusive, nor does our program endorse specific organizations.

- Healthmap.org (Location based alerts)
- Outbreaknewstoday.com
- Center for Infectious Disease Research and Policy (CIDRAP), University of Minnesota (UNM)
- The University of Nebraska Medical Center (UNMC) - Global Center for Health Security: The Transmission
- Global Biodefense.com

- CDC – Division of High-Consequence Pathogens and Pathology
- CDC: West Nile
 - <https://www.cdc.gov/westnile/index.html>
- CDC: Malaria
 - [Malaria is a Serious Disease \(cdc.gov\)](#)
- Georgia Department of Public Health – Travel Clinical Assistant (TCA)
 - <https://dph.georgia.gov/TravelClinicalAssistant>
- ProMED – International Society for Infectious Diseases

Please continue to check your local and state public health websites for additional resources and guidance.

Responses to Unanswered Questions:

- What is the latest research on what mosquitoes are attracted to? Is it blood type? If so what type? What else attracts them?
 - This is a question with no clear answer. What scientists have found is that mosquitoes bite some people more than others. Those mosquito magnets can have multiple attributes and not a single one stands out.
 - For some mosquitoes, kids up to 18 years of age have been found to be attractive when their body surface is larger (not to confound with body mass).
 - Pregnant women tend to be more attractive to mosquitoes, particularly in the later trimester, because of higher frequency of breaths and CO₂ exhalation.
 - Also, bacteria in our feet emit compounds that are attractive to mosquitoes (not to be confused with “smell”).
- What mosquito-borne diseases are circulating in Atlanta (specifically, Dekalb County)?
 - Currently, West Nile Virus (WNV) is the main one. I believe one or a few mosquito pools were detected in the County. Compared to other years, the number of cases is low.
 - The transmission season is nearing its end, so emphasize that people should continue wearing repellent when they go out, particularly in the afternoon and evening (when the mosquitoes that transmit WNV are active).
- Just curious if the death rate for vector borne diseases, like Malaria and West Nile, also increases in the U.S.?
 - Not necessarily. There is no data to support this.
- Are incoming travelers from areas where Malaria is present provided information at the airport to alert them of the need for mosquito repellent as they return, especially if they did not take prophylaxis while traveling?
 - For guidance, visit a travel clinic before travelling - especially if you reside in the U.S.

- Did the decrease in travel, due to the COVID pandemic, impact mosquito-borne transmission data?
 - During the pandemic, the reduction in mobility and international travel did not impact transmission within Africa; however, there may have been an effect on transmission in the U.S.
 - People are now travelling more.

- What would be the important take away to share with our Healthcare Coalition without causing panic or alarm?
 - Malaria and West Nile are not transmissible from person to person.
 - Malaria and West Nile have been around for a long time. Countries that are endemic have developed successful control programs, so we have a model to follow.

Session Reminders:

- Diagnosing Malaria
 - Blood smears are a great way to diagnose - often the most widely available mechanism
 - Rapid diagnostic tests – lateral flow assays

- Diagnosing West Nile
 - Antibody tests are the best methods to use
 - Typically diagnosed by serology, detecting IGM to West Nile Virus in blood or cerebral spinal fluid

- Masking for Zoonotic Diseases
 - Does not protect people from Mosquito-borne illnesses, but are protective measures for COVID, Influenza, and RSV

- Surveillance for West Nile
 - Human Surveillance
 - CDC collects information about human cases – information can be found on their website
 - An MMWR comes out each year that focuses on West Nile and other vector-borne diseases that cause neuroinvasive illness
 - Mosquito Surveillance
 - CDC and the federal government collect information where they can – stronger surveillance takes place in areas with history of West Nile
 - Traps are used to collect West Nile vectors

- There is no reason to test these mosquitos due to costliness, unless there is evidence of locally acquired plasmodium in the human area
 - Maps are updated with information, as needed
- Recommended Mosquito Repellent/Suggestions to Minimize Exposure
 - DEET - CDC recommends 10-30% DEET
 - Nonchemical based
 - oil of lemon eucalyptus
 - In areas with Dengue – DEET cream 30%
 - Wear long pants and pull socks up over pants to prevent tick exposure
- Malaria Vaccines for Travelers to Endemic Areas
 - No awareness of one that exists specifically for U.S. travelers
 - A vaccine was approved with highest efficacy in preventing mortality, not infection; however, the priority for this vaccine is in endemic areas because of the importance of preventing childhood mortality
 - This is not a traveler's tool
- Malaria in the U.S.
 - Approximately 2000 cases per year
 - Not common to see U.S. acquired Malaria
 - Risk of Malaria is very low