

Introduction

This summary includes ongoing activities to prepare for and respond to the Zika Virus in South Carolina. This document includes detailed information about actions implemented since January 2016. Below includes a brief overview of each major function.

Cases | As of December 30, 2016, South Carolina has had 57 travel-associated cases of Zika virus. Of those, 56 were in travelers who were infected abroad and diagnosed after they returned home. One case involved a S.C. resident who had sexual contact with someone who acquired the Zika infection while traveling abroad.

Grant Funding | DHEC staff have coordinated planning for and written applications for all Centers for Disease Control and Prevention (CDC) grant opportunities for Zika planning and response. To date, we have been awarded:

- **\$343,552** for one year through the **Public Health Preparedness & Response grant** to support planning, communication, education and reproductive health services.
- **\$1.29 million** through the **Epidemiology & Lab Capacity grant** to support Zika Pregnancy Registry, epidemiology, lab capacity, disease surveillance and vector control planning for mosquito-borne disease.
- **\$400,000** through a **National Center for Birth Defects and Developmental Disabilities grant** to support enhanced surveillance of microcephaly and other brain anomalies related to Zika virus.

An additional **\$483,230** in CDC funding was awarded to DHEC in December to support activities surrounding the U.S. Zika Pregnancy Registry and enhancing Birth Defect Surveillance in South Carolina.

Operations and Planning | DHEC convened a Zika Task Force in February that continues to lead efforts within the agency and coordinate with partners.

Communications and Outreach Efforts | Our communications professionals and medical experts have conducted interviews with the news media, issued news releases, shared social media and public service messages and formed strategic partnerships to share protection and prevention messages statewide.

Mosquito Control | DHEC has urged and continues to work with local governments to review, update or create local ordinances designed to help their mosquito control programs reduce or treat standing water that can provide breeding sites for mosquitoes.

Laboratory Testing | Conducts in-house testing, runs confirmatory tests of specimens tested in commercial labs—if indicated and provides daily updates for DHEC's website.

Disease Surveillance | Division of Acute Disease and Epidemiology (DADE) staff and Regional Epi staff are on-call 24/7 to respond to all calls from providers and labs for clients who may be indicated for screening.

Pregnant Women/Infants | DHEC has coordinated internal plans to participate in the registry and effectively serve the population.

Blood Safety | DHEC staff and medical consultants monitor CDC, Red Cross and Food and Drug Administration guidance for blood donation centers.

Operations and planning

- February 2016 – DHEC’s Zika Task Force created – weekly/biweekly meetings continued for planning and coordination.
- February 2016 - Zika Virus Playbook created to serve as an internal reference guide – continues to be updated as information evolves and standard operating procedures are created. Last revised on August 5, 2016.
- Feb 2016 – DHEC Preparedness staff participated in Zika coordination meeting with FEMA Region IV states.
- March and May 2016 - Internal Tabletop Exercises conducted on Zika virus mitigation, communication and lab surge capacity.
- April 2016 - DHEC Staff attended Zika Action Plan Summit at CDC in Atlanta (hosted by White House and National Governor’s Association).
- April 2016 – Established key partnerships across the state in healthcare, blood centers, healthcare providers, emergency preparedness and mosquito control
- April 19 – DHEC hosted Zika Forum for state and local leaders to promote measures to stop spread of Zika and be prepared for when the virus appears in our state
- April 29 – First case of travel-related Zika confirmed. Press release issued.
- May 2016 - Designated a staff person to work with leadership to coordinate Zika planning and response across the agency.
- May 24 – DHEC held legislative briefing to update SC lawmakers on the potential risk Zika poses and what steps are being taken to protect the public
- July 2016 - Public Health Preparedness staff assisted with communication and planning in counties without established mosquito control programs. Provided necessary direction and guidance for mutual aid agreements and or contracts to be set up as needed.
- CDC Conference Calls and webinars – DHEC staff has attended all offerings for technical assistance and guidance from CDC. Staff continue to seek 1:1 CDC consultation on clinical and other questions as needed.
- August 2016 – Staff continue to update internal procedures as guidance evolves. Additional Internal Tabletop Exercise conducted on August 18, 2016.
- August 24, 2016 – CDC Site visit conducted with DHEC staff to review planning and response.
- September 1, 2016 – DHEC held a briefing for staff of the S.C. Congressional delegation to update our federal lawmakers on the potential risk Zika virus poses to the state and what steps are being taken to protect the public.

Communications/Community Education

DHEC educates health care providers, the public and news media through personal contact, interviews and updated information on the agency’s website, blog and social media (Twitter and Facebook are used heavily).

The DHEC Care Line (1-800-868-0404) receives calls from the public for general information related to Zika. If callers have specific needs related to counseling or testing, calls are routed to Disease Control consultants.

Email inquiries can be sent to Zika@dhec.sc.gov.

We are actively building strategic partnerships with organizations/entities that share information with the public. DHEC uses CDC materials, some of which are adapted to fit the state's needs, and at times produces its own products, such as the [Protect Your Home](#) flyer.

To date, information has been shared through the following networks:

- **The S.C. Association of School Administrators**
- **The S.C. Department of Parks, Recreation and Tourism**
- **S.C. Recreation and Parks Association**
- **Columbia Housing Authority**
- **Mullins Housing Authority**
- **Beaufort Housing Authority**
- **Lake City Housing Authority**
- **North Charleston Housing Authority**
- **Florence Housing Authority**
- **The S.C. Association of Housing Authority Executive Directors**
- **PEBA**
- **Boy Scouts: Coastal Carolina and Indian Waters councils**
- **Girl Scouts of Eastern South Carolina**
- **The South Carolina Baptist Congress of Christian Education**
- **The Department of Employment and Workforce's Migrant and Seasonal Farmworkers program**
- **Columbia Fireflies Minor League Baseball team**
- **PASOS**
- **Boys and Girls Clubs of the Midlands**
- **Housing Authority of Fort Mill**
- **Union Housing Authority**
- **Housing Authority of Myrtle Beach**
- **SC Migrant Health Program**

Zika Virus Information Webpages— Starting in February, DHEC posted general Zika virus information at www.scdhec.gov/zika. Updates are ongoing. The page:

- Informs the general public of the most effective means for preventing mosquito bites, symptoms of the virus, and risks related to exposure, transmission, pregnant women and travelers.
- Advises readers of the latest status of the Zika virus and case counts in South Carolina.
- Houses the video and PowerPoint presentations from the April 19 South Carolina Zika Forum as well as a toolkit that includes information for local governments and public outreach tools.
- Provides guidance for health care providers on reporting, testing and specimen collection.

General Mosquito Information Webpage – Beginning in February, DHEC updated its existing www.scdhec.gov/mosquitoes web pages about mosquitoes and mosquito-borne diseases to make it easier for users to find the information they need. These pages include information about mosquitoes as

an insect, the types of diseases they can carry, how to prevent bites, how to reduce populations, who to call for local mosquito control, as well as state data on arbovirus activity.

The Florida Health Department allowed DHEC to use a video PSA on tipping and tossing. The [video is available for viewing on our Zika page](#).

Other communications efforts include:

- Feb. 24, 2016 - Issued a [news release](#) “DHEC encourages local communities to help prevent mosquito-borne illnesses.”
- March 17, 2016 – Posted a blog titled [“The Mosquitoes Are Coming. Be prepared.”](#)
- April 19, 2016 – DHEC hosted the SC Zika Forum for state and local leaders and other stakeholders to promote measures to stop the spread of Zika and be prepared for when the virus appears in our state.
- April 29, 2016 – [News release](#) on confirmed first case of travel-related Zika.
- May 12, 2016 – Assisted Municipal Association of SC staff in writing a Zika article for its newsletter.
- May 17, 2016 – Posted a blog item titled [“Rid your homes, yards of places where mosquitoes breed.”](#)
- June 16, 2016 – Blog post: [“Spare old tires second lives as mosquito havens, nuisances and hazards.”](#)
- June 22, 2016 – Blog post: [“Travelers Should Follow Precautions.”](#)
- June 29, 2016 – Blog post: [“National Mosquito Awareness Week.”](#)
- July 15, 2016 – Dr. Linda Bell’s op-ed encouraging the public to avoid mosquito bites and eliminate breeding sites was published in the *Greenville News, Times and Democrat and Post and Courier*.
- August 2016 – Began running radio PSAs in South Carolina media markets urging the public to prevent mosquito bites and eliminate breeding grounds around their homes.
- September 1, 2016 – DHEC held a briefing for staff of the S.C. Congressional delegation to update our federal lawmakers on the potential risk Zika virus poses to the state and what steps are being taken to protect the public.

**As of December 30, 2016, DHEC’s Office of Communications has responded to 207 media inquiries on this topic – including conducting 53 interviews with national, state and local media to educate the public about the virus and tips to prevent mosquito bites, as well as the agency’s preparedness and response efforts.*

Mosquito Control

DHEC works in partnership with the CDC to monitor mosquito populations for diseases that can be spread to humans. The agency also provides information to help individuals and communities take action to reduce mosquito populations in their area and prevent bites. Mosquito control programs are managed at the local community level. In light of the 2015 flood, DHEC has been urging local governments to review, update or create local ordinances designed to help their mosquito control programs reduce or treat standing water that can provide breeding sites for mosquitoes.

- Feb. 2016 - Additional mosquito traps purchased to be used by county and municipal vector control agencies. State Entomologist oversees arboviral surveillance in the state to monitor for the presence of mosquito-borne illnesses.
- State Entomologist, Environmental Health staff and key partners work with county leaders to develop and expand their capacity for mosquito abatement.
- State Entomologist notifies local mosquito control organizations of the need to perform mosquito abatement related to all positive test results for Zika virus. He provides technical assistance to ensure that proper techniques are used to adequately treat the area surrounding the source to prevent local mosquito transmission of the virus.
- April 22 - Conducted survey of stakeholders statewide, including members of Municipal Association of S.C., city and county administrators, public works directors, public information directors and mosquito control agencies to assess their vector control capabilities. Reached approx. 220 individuals.
- April 29 - Staff entomologist spoke to city managers and city administrators at Municipal Association forum in Columbia.
- DHEC State Entomologist provided scope of service and specs for State Procurement contract for mosquito control services that would be available for DHEC or any jurisdiction to use for contracting for mosquito control resources. (Contract in development with State Procurement office).
- June 2 - Staff entomologist spoke to SC Mosquito Control Association Summer Workshop
- June 10 – Staff entomologist and PH Preparedness Director participate in MUSC Zika Symposium
- June 23 – Staff entomologist spoke to County Emergency Management Directors – SC EMD
- June 30 – Staff entomologist spoke to Hospital Sentinel Laboratory Summit
- July 15 – Staff entomologist spoke to Municipal Association of SC meeting – Charleston
- July 18 – Staff entomologist and preparedness staff met with Anderson County leaders to discuss mosquito control related to Zika.
- September 6 – Staff entomologist spoke during Anderson Regional Zika forum to area officials and citizens.
- September 23 – Staff Entomologist spoke to lab technologists at Greenwood Genetic Center.
- August – October – DHEC staff is conducting visits with county leaders throughout the state to discuss readiness and response to Zika virus.

Laboratory Testing

- Feb. 2016 - DHEC Bureau of Labs began in-house testing (The IgM MAC ELISA went live on Feb 10, 2016. The RT-PCR assay for serum went live on Feb 19.
- July 8, 2016 - Completed validation of urine testing (the Triplex assay) that allows us to test both urine and serum. This is the only RT-PCR assay we run now at the BOL.
- Continues to communicate with CDC for confirmatory testing on all presumptive positive results.
- DHEC Lab runs confirmatory tests of specimens tested in commercial labs, if indicated.
- DHEC Lab provides daily updates for updating of DHEC website for public information:

As of December 30, 2016:

- **Travel-associated cases reported:** 57
Pregnant women: 0

Sexually transmitted: 1

- **Locally acquired vector-borne cases reported:** 0
- **Total cases:** 57

Other lab testing information:

Pending test results: 6

Disease Surveillance

- DHEC Acute Disease and Epidemiology staff has created operating procedures for Zika virus investigation and a fact sheet for providing counseling to clients. Information is updated as new CDC Guidance is issued.
- DHEC Division of Acute Disease and Epidemiology (DADE) staff and Regional Epi staff remain on-call 24/7 to respond to all calls from providers and labs for clients who may be indicated for screening.
- Regional Epi staff share test results with healthcare providers and/or clients and provides patient counseling if needed.
- DADE staff receive test results from commercial labs performing tests for Zika virus and coordinate with DHEC Lab as to whether confirmatory tests are needed.
- DADE and Regional Epi staff conduct disease investigation of cases and associated contacts. DADE staff provide notification of key DHEC staff in the event of a positive or presumptive positive lab result. DADE staff notify State Entomologist of occurrence of viremic individuals in S.C. so that mosquito abatement arrangements can be made in the local/county jurisdiction.
- To provide healthcare providers with updated Zika information and guidance, staff have participated in numerous presentations/webinar/conference calls and compiled and distributed Health Alerts. These activities are ongoing.

DHEC has issued the following Zika-related advisories through its [Health Alert Network](#):

- **August 1, 2016 – CDC Health Advisory - [CDC Guidance for Travel and Testing of Pregnant Women and Women of Reproductive Age for Zika Virus Infection Related to the Investigation for Local Mosquito-borne Zika Virus Transmission in Miami-Dade and Broward Counties, Florida](#)**
- **July 27, 2016 – DHEC Health Advisory – [Update: Interim Guidance for Health Care Providers Caring for Pregnant Women with Possible Zika Virus Exposure—United States, July 2016](#)**
- **June 21, 2016 - CDC Health Update - [CDC Recommendations for Subsequent Zika IgM Antibody Testing](#)**
- **May 18, 2016 - [CDC Guidance for Travel and Testing of Pregnant Women and Women of Reproductive Age for Zika Virus Infection Related to the Investigation for Local Mosquito-borne Zika Virus Transmission in Miami-Dade and Broward Counties, Florida](#)**
- **May 5, 2016 – DHEC Health Advisory – [ZIKA Test Approved for Commercial Labs](#)**
- **March 25, 2016 – DHEC Health Advisory – [Update: Interim Guidance for Health Care Providers Caring for Women with Possible Zika Virus Exposure – U.S., 2016](#)**
- **March 11, 2016 – CDC Health Update – [Revision to CDC's Zika Travel Notices: Minimal Likelihood for Mosquito-Borne Zika Virus Transmission at Elevations Above 2,000 Meters](#)**
- **Feb. 23, 2016 - CDC Health Advisory – [Update: Interim Guidelines for Prevention of Sexual Transmission of Zika Virus-United States, 2016](#)**

- **Feb. 19, 2016** - DHEC Health Advisory — [Interim Guidelines for Health Care Providers Caring for Infants and Children with Possible Zika Virus Infection - United States, 2016](#)
- **Feb. 6, 2016** - DHEC Health Advisory — [New and Updated CDC Guidance Regarding Zika Virus](#)
- **Jan. 28, 2016** - DHEC Health Advisory — [Interim Guidelines for the Evaluation and Testing of Infants with Possible Congenital Zika Virus Infection – United States, 2016](#)

Pregnant Women/Infants

- March 2016 - Began enhanced surveillance of microcephaly related to Zika virus to create baseline of information regarding potential outcomes of Zika virus disease in S.C. infants.
- Bi-weekly Birth Defects team meetings to discuss Zika situation and surveillance needs since February 2016.
- DHEC medical consultant presented information on Zika virus disease and potential outcomes to S.C. Birth Outcomes Initiative and continues to update this group monthly on any updated guidance received.
- Received funding from the CDC Epi and Lab Capacity (ELC) Cooperative Agreement to follow-up on S.C. pregnant women and infants enrolled in the U.S. Zika Pregnancy Registry (ZPR).
- Coordinate internal plans to participate in CDC Zika pregnancy registry for pregnant women and/or infants affected by Zika virus.
- Initiated weekly reporting to the U.S ZPR of individuals meeting enrollment criteria.
- DHEC staff have been planning work to support families of children with serious brain anomalies and the providers who will be participating in their care
- August 2016- Funding received from CDC to conduct surveillance of and support infants with Zika virus disease.
- Implementing funded contracts to support infants and families coping with brain anomalies associated with Zika virus disease.

Blood Safety

DHEC staff and medical consultants monitor CDC, Red Cross and Food and Drug Administration guidance for blood donation centers. Representatives of S.C. blood collection establishments have been invited to and participated in DHEC presentations to healthcare providers and hospitals.

- Contact has been made with private blood donation centers to assure they have current guidance, to open discussions and assess screening methods.
- DHEC maintains a current listing of blood donation centers that we communicate with annually to remind blood collection establishments about requirements to report positive tests of reportable conditions.
- Recently, DHEC consulted CDC for guidance on process of notification of blood centers in the event of localized transmission in South Carolina.

Grant Funding

DHEC staff has coordinated planning for and written applications for all CDC grant opportunities for Zika planning and response. The following grants were awarded and implementation of proposed grant activities have begun:

- **Public Health Preparedness & Response grant** – to support planning, communication, education and reproductive health services. Awarded for 1 year at \$343,552 on July 15.

- **Epidemiology & Lab Capacity grant** – section of the grant specific to Zika includes \$1.29 million to support Zika Pregnancy Registry, epidemiology, lab capacity, disease surveillance and vector control planning for mosquito-borne disease. Awarded on July 27.
- **Birth Defects grant** – supports enhanced surveillance of microcephaly and other brain anomalies related to Zika virus. Supports coordination of care and education related to pregnant women and infants affected by Zika and the healthcare systems to care for them. Awarded at \$400,000 on August 2.

An additional **\$483,230** in CDC funding was awarded to DHEC in December to support activities surrounding the U.S. Zika Pregnancy Registry and enhancing Birth Defect Surveillance in South Carolina.