

LOUDOUN COUNTY



Zika Virus Disease Response Plan

June 2017 Revision

TABLE OF CONTENTS

Record of Changes	1
Executive Summary	2
Purpose	3
Scope & Applicability	3
Situation Overview	4
Roles and Responsibilities.....	9
<i>Intent</i>	12
<i>Phase 0: Preparedness</i>	13
<i>Phase 1: Mosquito Season</i>	15
<i>Phase 2 (Local): Confirmed Local Transmission in Region Outside Loudoun or Increased Local Concern</i>	17
<i>Phase 3 (Local): Widespread Local Transmission in Region or Potential Local Transmission in Loudoun</i>	18
Authorities	20
References	20
Plan Maintenance	20

Executive Summary

On March 8, 2016, the Centers for Disease Control & Prevention published guidelines for the development of state and local risk-based Zika action plans. In April 2016 the Virginia Zika Task Force, led by the Virginia Department of Health, drafted a Zika Virus Disease Response Annex that will leverage the powers of state, local, and federal governments and the private and non-profit sectors to meet public health needs in response to the dynamic and evolving threat of Zika in Virginia. The purpose of this plan is to operationalize the Virginia Virus Disease Response Annex for actions to be taken in Loudoun County.

Zika virus is spread primarily through the bite of an infected *Aedes* species mosquito, which includes both the Asian tiger, the most common nuisance mosquito in Virginia, and Yellow Fever mosquitoes. Zika can also be transmitted sexually and from mother to fetus. Approximately 80% of infected people show no symptoms, with the most common symptoms of Zika being fever, rash, joint pain, and conjunctivitis. Symptoms typically start between two and seven days after being bitten by an infected mosquito and last between several days to a week. Zika has also been linked to microcephaly, a birth defect where a baby's head is smaller than expected when compared to babies of the same sex and age. Testing for Zika may be necessary to rule out differential diagnoses that include dengue and chikungunya. There is, at present, no known cure or vaccine for Zika. Treatment consists mainly of supportive care to relieve symptoms.

An important step in *Aedes* control operations is removing the containers in which these mosquitoes breed. Additional steps routine use of mosquito repellents, maintaining intact window and door screens, and the potential use of chemicals or biological agents to kill or prevent the development of mosquito immature stages (larvicides) or mature stages (adulticides).

Multiple Town, County and State agencies are involved in creating an effective local Zika response program, and include such efforts as communication, surveillance, laboratory testing, mosquito control and targeted outreach to pregnant women. Specific components of each effort will depend on the following risk-based phases:

- Preparedness;
- Mosquito season;
- Confirmed local transmission in a region outside Loudoun or increased local concern; and
- Widespread local transmission in region or local transmission in Loudoun.

This plan will be revised at least annually and as needed to address any changes in guidance from the CDC or Virginia as well as from lessons learned in Loudoun County.

Purpose

On February 26, 2016 Governor Terry McAuliffe announced the creation of the Virginia Zika Task Force to coordinate the Commonwealth's efforts to prepare for and respond to locally transmitted cases of Zika in Virginia. This coordinated effort will require sustainable strategies for communication and sharing information; surveillance and investigation; laboratory testing; vector control; outreach to pregnant women; and safety of the blood supply. The success of the Commonwealth of Virginia in responding to Zika requires that these capabilities be flexible, robust, and sustainable over the long term.

In April 2016 the Virginia Zika Task Force, led by the Virginia Department of Health (VDH), drafted a Zika Virus Disease Response Annex that will leverage the powers of state, local, and federal governments and the private and non-profit sectors to meet public health needs in response to the dynamic and evolving threat of Zika in Virginia.

In May 2017, the Centers for Disease Control and Prevention (CDC) released a Zika Interim Response Plan, available online at <https://www.cdc.gov/zika/public-health-partners/cdc-zika-interim-response-plan.html>.

The purpose of this plan is to operationalize the Virginia Zika Virus Disease Response Annex for actions to be taken in Loudoun County.

Scope & Applicability

This plan is consistent with and supports the Virginia Zika Virus Disease Response Annex and CDC guidance. This plan will be utilized in concert with the Loudoun County Emergency Operations Plan (EOP), as needed, to facilitate and enhance County-level coordination.

Public outreach and education, as well as surveillance and epidemiological investigation, will be among the most important strategies for preventing or mitigating the spread of Zika. Other activities may require large-scale efforts and may involve multiple Emergency Support Functions (ESFs). Activities that may be implemented during Zika response include but are not limited to:

- Coordination with state, regional and local entities and mosquito control organizations;
- Epidemiological surveillance, investigation, and laboratory testing;
- Mosquito surveillance and control;
- Analysis of Zika surveillance data to inform the development of objectives and strategies;
- Development and dissemination of guidance information for the medical community, responders, schools, special populations, public safety officials, and the general public;
- Designation of "Areas of Active Zika Transmission," if necessary; and
- Coordination of community clean-up events to reduce mosquito habitats or breeding sites.

Situation Overview

Description of the Disease

Zika virus is spread primarily through the bite of an infected *Aedes* species mosquito. Zika can also be transmitted sexually and from mother to fetus. Approximately 80% of infected people show no symptoms, with the most common symptoms of Zika being fever, rash, joint pain, and conjunctivitis. Symptoms typically start between two and seven days after being bitten by an infected mosquito and last between several days to a week.

There is a link between Zika and serious health conditions, such as microcephaly, fetal brain , eye and hearing, abnormalities, other consequences of central nervous system damage in infants exposed in utero, and Guillan-Barré syndrome. Microcephaly is a birth defect where a baby's head is smaller than expected when compared to babies of the same sex and age; more information on congenital birth defects associated with Zika virus is available from the CDC at <https://www.cdc.gov/zika/hc-providers/infants-children/zika-syndrome-birth-defects.html>.

Testing for Zika may be necessary to rule out differential diagnoses that include dengue and chikungunya.

There is, at present, no known cure or vaccine for Zika. Treatment consists mainly of supportive care to relieve symptoms. Vaccines and commercial tests for Zika are under development.

Transmission

Zika virus is transmitted from an infected person to an uninfected person primarily through the bites of infected mosquitoes, specifically the *Aedes aegypti* (Yellow Fever) mosquito and the *Aedes albopictus* (Asian tiger) mosquito. Zika is also transmitted from person to person through sexual contact, blood transfusion or from mother to fetus.

The *Aedes albopictus* (Asian tiger) mosquito is the most common mosquito in Virginia, and is capable of transmitting Zika to humans. Zika is most commonly transmitted by the *Aedes aegypti* (Yellow Fever mosquito), which is also present, though less common, in Virginia. Mosquito season in Virginia typically lasts from May 1 – October 31.

Zika virus typically remains in the blood of an infected person for one week. To reduce the risk of infecting others, individuals infected with Zika should avoid mosquito bites by remaining indoors or by wearing protective, permethrin-treated clothing and mosquito repellent for the first week after the onset of symptoms. Individuals infected with Zika should, if possible, use air conditioning or window and door screens to keep mosquitos outside. In addition, everyone, including non-infected individuals, should eliminate all standing water from containers around their property, including bird baths, flower pots, used tires, cans and buckets to reduce mosquito breeding and habitat sites.

Cases of sexual transmission of Zika have been confirmed by the CDC. Zika is believed to survive in semen for several weeks, perhaps longer. There is still more to be learned regarding sexual transmission of Zika. Sexual partners can protect each other by using condoms correctly and consistently during sexual intercourse. In addition, since a person may be infected without

showing symptoms, men who reside in or have traveled to an area of active Zika virus spread who have a pregnant partner should abstain from sexual activity or correctly and consistently use condoms for the duration of the pregnancy.

At this time, there is no evidence that Zika can be transmitted from animals to humans and there is no evidence that animals can be infected with Zika if bitten by an infected mosquito.

Whereas mosquito-based surveillance is the preferred method for monitoring or predicting West Nile virus outbreaks, it is not the preferred method for monitoring or predicting Zika, dengue or chikungunya outbreaks. For these arboviruses, it is more efficient to detect infections in people and focus surveillance and control efforts around the identified patients. Timely identification and response to mosquito-borne disease outbreaks requires constant communication between healthcare providers, local and state public health departments, and mosquito control specialists.

Ideally, effective vector-based Zika prevention involves initiating control measures such as source reduction (container habitat elimination) and larvicide treatments before the beginning of the mosquito season, and adult mosquito reduction measures such as adulticide treatments following detection of human arbovirus activity. However, in jurisdictions that do not have established or sufficient mosquito surveillance and control capabilities, such as Loudoun County, containment efforts may be initiated whenever suspected, probable or confirmed imported infections are detected. Where locally acquired outbreaks are detected, a more concerted combination of containment and large-scale vector control may be needed to minimize vector-human contact.

An important step in *Ae. aegypti* and *Ae. albopictus* control operations is identifying the types and abundance of containers producing mosquitoes and their productivity. Different containers require specific control measures that depend on the nature of the container and how it is used. There are five general types of containers producing *Ae. aegypti* and *Ae. albopictus*:

- Phytotelmata (treeholes, leaf axils, etc.);
- Non-essential or disposable containers (food and drink containers, tires, broken appliances, etc.);
- Useful containers (water-storage vessels, potted plants and trivets, animal drinking pans, paint trays, toys, pails, tarps, septic tanks, etc.);
- Cavities in structures (fence poles, bricks, uneven floors and roofs, roof gutters, air-conditioner trays, etc.); and
- Outdoor underground structures (storm drains, water meters, public wells, septic tanks, etc.).

Knowledge of Zika continues to improve and may prompt Loudoun County to update or change strategies. In the meantime, methods for preventing the transmission of Zika should be shared with the public on an ongoing basis.

Control Methods

Environmental sanitation: This is the permanent elimination of containers producing *Ae. aegypti* and *Ae. albopictus* such as establishing reliable supplies of piped water, municipal refuse recycling programs (glass, metal, and plastic), used-tire recycling operations, replacing septic tanks with sewerage, etc.

Larvicides: This is the use of chemicals or biological agents to kill or prevent development of mosquito immature stages. There are a number of agents that can be used to control mosquito production in containers:

- Chemical larvicides (temephos).
- Biological larvicides. These include products containing *Bacillus thuringiensis* var. *israelensis* (B.t.i.), spinosad, and Insect Growth Regulators (IGR's) such as juvenile hormone analogs (methoprene, pyriproxyfen) and chitin synthesis inhibitors (Diflubenzuron, Novaluron), and include mosquito dunks that are available at most home and garden stores. Biological larvicides have little or no impact on non-target organisms and do not accumulate in the environment.
- Monomolecular films and oils. These products spread on the water surface forming a thin film that causes suffocation of immature mosquitoes by preventing gas exchange.

Biological Control: A variety of aquatic predators may be used, especially in large containers. These include carnivorous copepods and larvivorous fish (*Gambusia affinis*). However, biological control may not be practical especially since *Ae. aegypti* and *Ae. albopictus* often develop in small containers.

Chemical Control:

- Chemical control of adult mosquitoes includes space spraying, residual spraying, barrier spraying and using attractive toxic baits.
- Barrier spraying of residual insecticides on external walls of houses and vegetation has been effectively used to reduce exposure to exophilic mosquito species (Anderson et al. 1991, Perich et al. 1993, Cilek 2008), including *Ae. albopictus* (Trout et al., 2007).
- Residual insecticides are used on surfaces that adult mosquitoes frequently visit and land on, such as walls and ceilings, discarded containers, vegetation, curtains, covers for water-storage vessels, lethal ovitrap oviposition strips, etc. There is evidence that indoor residual spraying (IRS) is particularly effective for controlling *Ae. aegypti* (Chadee 1990) primarily due to its indoor resting behavior. However, there are concerns about continuous insecticide exposure for the residents and, currently, no residual insecticides are registered in the US for widespread spraying of indoor areas to control adult mosquitoes.
- Space spraying of insecticides is carried out by backpack, truck- or air-craft mounted equipment.
- Attractive toxic sugar baits have been shown to reduce adult populations of *Ae. albopictus* in Florida (Naranjo et al. 2013, Revay et al. 2014). Eugenol (a component of clove oil) and boric acid have been tested as toxicants in these studies. It is not clear whether these baits would work against *Ae. aegypti* in tropical urban areas because it has

been reported that females of this species do not commonly consume sugars (Costero et al. 1998).

- Using insecticide to control adult mosquitoes should always include insecticide resistance monitoring and management. Insecticide resistance has been demonstrated in almost every class of insecticide, including microbial pesticides and IGRs (Brogdon and McAllister 1998a). Insecticide resistance, which is an inheritable trait, usually leads to significant reduction in the susceptibility of insect populations which in turn renders insecticide treatments ineffective. Insecticide resistance may be monitored using bioassays in larvae and adult mosquitoes (WHO 2009, Brogdon and McAllister 1998b).

Physical control (non-insecticidal mosquito traps): Gravid female mosquitoes can be lured to traps and captured using sticky glue while attempting to lay eggs (CDC Autocidal Gravid Ovitrap, AGO trap; Barrera et al. 2014a, b; Mackay et al. 2013). The use of three AGO traps per home has shown sustained and effective reductions of *Ae. aegypti* populations (80%) in more than 85% of houses in neighborhoods in southern Puerto Rico.

Personal Protection: CDC recommends the use of products containing active ingredients which have been registered by the U.S. Environmental Protection Agency (EPA) for use as repellents applied to skin and clothing. EPA registration of repellent active ingredients indicates the materials have been reviewed and approved for efficacy and human safety when applied according to the instructions on the label. For more details go to Insect Repellent Use & Safety at www.cdc.gov/westnile/faq/repellent.html.

Planning Assumptions

- Knowledge of Zika is improving over time. Guidance and recommendations from CDC and the Virginia Zika Task Force will change as more is learned about Zika.
- Zika virus infection in pregnant women is associated with an increased risk of birth defects and adverse pregnancy outcomes so pregnant women represent a highly vulnerable population with special needs.
- In areas of active mosquito spread of Zika, there is a risk of transmission through the blood supply.
- Washington, D.C. has been identified as a city at moderate risk for summertime Zika outbreaks by the National Center for Atmospheric Research.
- Zika may also be linked to Guillan-Barré syndrome (GBS), a serious health condition in which an individual's own immune system damages the nerve cells, causing muscle weakness and sometimes paralysis. Although most people fully recover from GBS, some people have permanent damage, and in one out of 20 cases people have died.
- Beginning in May 2015, Zika outbreaks occurred in Brazil. On February 1, 2016, the World Health Organization (WHO) declared Zika virus a public health emergency of international concern. Local transmission has been reported in many other countries and territories. It is likely that Zika virus will continue to spread to new areas.
- In 2016, presumed local transmission of Zika virus occurred in Texas and Florida.
- Loudoun may have to stand up a Unified Command structure to coordinate the County's response to Zika.
- Mosquito control programs in Virginia are a local responsibility and are locally funded. In northern Virginia, established programs exist in Alexandria, Fairfax and Prince

William Counties. All northern Virginia jurisdictions have the ability to address mosquito and standing water issues through their local nuisance ordinances. Mosquito control can be guided by surveillance for arboviral disease in humans, mosquito surveillance and arboviral testing of mosquitoes, or by mosquito surveillance only.

- With the exception of the Town of Leesburg, where a Memorandum of Understanding (MOU) exists between the Leesburg and Loudoun County governments, Loudoun County's Nuisance Ordinance 648 is not enforceable within incorporated town limits. In the event of a complaint or concern of standing water/mosquitoes within town limits, Loudoun County Health Department (LCHD) will perform a courtesy inspection if explicit consent is provided by the property owner/resident and will educate involved parties on steps they can take to eliminate mosquito breeding sites. If explicit consent cannot be obtained, LCHD will assist the town on any actions they take under town ordinances.
- The *Aedes albopictus* (Asian tiger) mosquito will not be vulnerable to broad area aerosol spraying. Therefore, surveillance and public outreach will be the most effective tools for preventing or mitigating the spread of Zika.
- The public may utilize private mosquito control companies to apply mosquito barrier applications around their property. Therefore, it will be important to integrate mosquito control companies, to the extent possible, into Loudoun's prevention and mitigation strategies.
- Prevention and mitigation strategies should be part of an integrated mosquito management approach, including public education and outreach, mosquito habitat control, and use of environmentally-friendly larvicide.
- The use of pesticides and other agents to control mosquito populations may cause concern about potential damage to the environment or harm to other species.
- Local governments have the primary responsibility to provide initial emergency response and emergency management services within their jurisdictions.
- Hospitals and providers in Loudoun can expect an influx of potential Zika cases to clinics and emergency departments due to high level of public anxiety.
- Pre-event planning is critical to ensure a prompt and effective response to any confirmed locally-transmitted Zika case to prevent or mitigate the spread of the disease.
- State government may provide and/or augment emergency response services that exceed the capabilities of local governments pursuant to the Commonwealth of Virginia EOP (COVEOP).
- In preparation for or in response to one or more confirmed cases of locally-transmitted Zika, the Governor of Virginia may order implementation of the COVEOP.
- In preparation for or in response to one or more confirmed cases of locally-transmitted Zika in Loudoun, the Loudoun County Board of Supervisors or County Administrator may order implementation of the Loudoun County EOP.
- The Governor will announce the first confirmed case of locally-transmitted Zika in Virginia. In addition, a Declaration of Emergency by the Governor will be considered if Zika presents a major threat to the public. It is likely that confirmed cases of Zika will be identified only by region.
- There will be enormous public interest and concern should one or more confirmed locally-transmitted cases of Zika appear or have the potential to appear in Loudoun.

- Regardless of the presence or absence of Zika in Loudoun, there will be increased public interest in mosquitoes and mosquito control this year.

Roles and Responsibilities

Loudoun County Board of Supervisors

- Provide overall policy guidance for Loudoun County’s Zika related actions, particularly with regard to mosquito control activities.
- Provide authorization to establish a contingency agreement for area mosquito risk reduction and a mechanism to authorize the use of these funds in the event of a need to initiate mosquito control activities.
- Confirm any local emergency declaration issued by the Director of Emergency Management.

Loudoun County Administration

- Serve as Director of Emergency Management, including declaring a local emergency if needed to address Zika-related concerns in Loudoun County.
- Provide guidance on how best to implement Loudoun County Board of Supervisors policy guidance and direction.
- Assist LCHD, as necessary, in the procurement of supplies to assist with prevention, mitigation, and response activities.
- Assist LCHD with messaging through the Public Affairs and Communication Office.
- Approve minor revisions to the Zika Virus Disease Response Plan.

Local County Health Department

- Serve as local subject matter expert and lead for Zika-related actions in Loudoun County.
- Evaluate requests from provide providers for Zika testing through the State’s testing laboratory and submit Zika-related specimens to the State laboratory for testing, as needed,
- Provide guidance to healthcare providers on testing.
- Administer Loudoun County’s [Nuisance Ordinance](#), including addressing mosquito and standing water complaints using larvicide as appropriate.
- Manage contracts with a private mosquito control entity for targeted area larviciding and other risk reduction in response to identification of an area at higher risk of local Zika transmission and with approval to do so by the Board of Supervisors.
- Create and disseminate educational materials throughout Loudoun County.
- Conduct epidemiological investigations related to Zika when a case is identified, including monitoring contacts and taking measures to minimize the risk of disease spread.
- Manage and coordinate volunteer efforts.

- Share relevant information with VDH Central Office and/or Loudoun County partners, as appropriate.
- Serve as resource for local governments, local hospitals, providers, emergency responders, and the public with questions about Zika.

Loudoun County Department of Fire, Rescue and Emergency Management

- Share information to determine a common operating picture with LCHD.
- Issue mission assignments to Emergency Support Function (ESF) primary or support agencies for Zika response and mitigation, as needed.
- Assist LCHD with development of incident specific contingency plans.
- Gather information to build situational awareness.

Loudoun County Department of Parks, Recreation and Community Services (PRCS)

- Address concerns about mosquito breeding grounds on PRCS properties.
- Assist in dissemination of information to PRCS staff and to families of participants.

Loudoun County Division of Procurement

- Assist in development of a contingency agreement for mosquito control services.

Loudoun County Extension Services

- Provide information/messaging about pesticides and their use for mosquito control.

Loudoun County General Services

- Address concerns about mosquito breeding grounds on Loudoun County government property.

Loudoun County Public Schools (LCPS)

- Address concerns about mosquito breeding grounds on Loudoun County Public School property.
- Assist in dissemination of information to LCPS staff and to families of students.

Virginia Department of Health (VDH)

- Support protection of public health and safety and support the provision of assistance to governments, businesses, and individuals during a Zika outbreak or one or more confirmed locally-transmitted cases.
- Provide specific guidance on when a local situation may merit a local, focused mosquito control intervention to protect Loudoun County residents.
- Support epidemiological investigations of suspected travel-related and locally-transmitted cases of Zika.
- Communicate with local health districts, the state laboratory, and neighboring state health departments to ensure coordinated epidemiological operations.
- Establish Zika testing approval criteria and procedures.

- Provide specific guidelines for data management and communication of test approvals and results reporting.
- Track and report confirmed travel-related and locally-transmitted cases of Zika in Virginia.
- Provide guidance and updated information to local health departments, healthcare facilities, providers, and public health partners using established protocols and the Health Alert Network (HAN).
- Develop and implement quarantine plans, if needed.
- Lead the development of messaging to address the current status of Zika in the Commonwealth.
- Develop and, as necessary, implement contingency plans that address potential scenarios that pose the risk of further spread of Zika.
- Ensure that accurate situational awareness regarding Zika activity in the Commonwealth is maintained, while at the same time ensuring that any information shared complies with HIPAA and any other applicable rules and regulations.

Concept of Operations

Intent

Zika-related prevention, response, and mitigation actions addressed in this plan will occur in four risk-based phases corresponding to categories of risk identified by the CDC. These have been adapted to Loudoun County as follows:

- Preparedness;
- Mosquito season;
- Confirmed local transmission in a region outside Loudoun or increased local concern; and
- Widespread local transmission in region or local transmission in Loudoun.

Loudoun will continue to prepare for one or more cases of confirmed locally-transmitted Zika by coordinating countywide activities through the LCHD or, if necessary, Unified Command.

Prevention, response, and mitigation activities will occur throughout each phase in the following areas:

- Communication
- Surveillance
- Laboratory testing
- Mosquito control
- Pregnant women outreach

Activities in each phase will build on and may occur concurrently with activities in subsequent phases. In addition to activities included in the categories listed above, administrative activities, training, and exercises may occur throughout each phase as well.

Loudoun's response to one or more cases of confirmed locally-transmitted Zika in the County may include, but may not be limited to:

- Tracking and reporting to appropriate partners the number confirmed cases of travel-related or locally-transmitted Zika;
- Sharing information and making appropriate notifications;
- Confirming the presence of Zika through laboratory testing;
- Conducting enhanced surveillance for Zika;
- Conducting or supporting public education and outreach events;
- Providing timely and accurate information to the public;
- Supporting localized or community property inspection or cleanup efforts, as appropriate
- Providing focused mosquito control activities, if appropriate; and,
- Enacting isolation and quarantine measures, if necessary.

Phase 0: Preparedness

Prior to the onset of mosquito season in May, most Zika-related activities will be preventive or in preparation for confirmed locally-transmitted cases.

Communication

Public Education and Outreach

LCHD will work with partners on a communication campaign for pregnant women, travelers, healthcare providers, and the general public to raise awareness of Zika virus. Public messaging will include information on the risk of sexual transmission and steps individuals can take to prevent it, as well as information on:

- General prevention;
- Pregnancy and Zika;
- Pre- and post- travel to Zika-affected areas;
- Up-to-date information on Zika-affected areas (international and, if applicable, within the continental United States);
- Mosquito bite prevention;
- Mosquito control;
- Pesticide use; and
- Other topics as they arise.

Loudoun's multimedia campaign may include, but is not limited to:

- Multiple key messages and message maps;
- Social media posts;
- Public service announcements (audio and audiovisual);
- Door hangers;
- Fliers and posters;
- Targeting hard to reach populations; and
- Letters to clinicians.

Loudoun will initiate public information campaigns encouraging yard and personal property clean-up to reduce or eliminate mosquito habitats, to include covering, draining, or treating large water containers, such as swimming pools; use of mosquito repellent; use of air conditioning, if available; use of window and door screens, if possible; wearing long, light-colored clothing; and other tips for preventing mosquito bites.

Surveillance

LCHD will continue to provide surveillance for Zika cases, both travel related and locally acquired cases, as well as cases arising from maternal-fetal transmission.

LCHD will reach out to clinicians and healthcare providers to provide guidance for management and testing of possible cases. Guidance will include specific guidelines for data management and communication of test approvals and results reporting.

Laboratory Testing

Coordinating Testing of At-Risk Individuals for Zika

LCHD will follow Zika testing approval criteria and procedures provided by VDH at www.vdh.virginia.gov/epidemiology/zika-virus-update/zika-virus-disease-testing-procedures-in-virginia/. Patients who meet the criteria for testing will submit a blood sample to their local public health department. LCHD, with assistance from VDH Central Office if needed, will assess each patient recommended for testing to determine if travel history, exposures, symptoms, and/or pregnancy status qualify for public health testing, deliver the sample or samples to the State laboratory (DCLS) for testing, follow-up with the providers, and conduct further investigation if a case is confirmed.

Health care providers may also utilize private testing laboratories. LCHD recommends that the providers use similar decision making processes and coordination with LCHD when private laboratories are considered.

Tracking and Reporting Zika Cases

LCHD will collect data on those approved for testing within the Health Department, coordinate transportation of specimens when applicable, and share reporting information with public health community partners. In addition, LCHD will collect data and follow up as appropriate on all positive samples reported to the district, to include submissions sent through LCHD and from outside laboratories and other jurisdictions.

Mosquito Control

If local transmission has been detected in a neighborhood the previous season, it would be advisable if local resources and personnel be made available to inspect the affected community and eliminate or minimize the presence of larval habitats before the mosquito season.

- Conduct public mosquito education campaigns focusing on reducing or eliminating larval habitats for *Ae. albopictus*.
- Conduct surveys to determine abundance, distribution, and type of containers; large accumulations of containers (e.g. tire piles), or large containers (e.g., flooded boats, neglected swimming pools, etc.) that could result in locally high mosquito abundance.
- Initiate a community-wide source reduction campaign – the goal of the campaign is to motivate the community to remove and dispose of any water holding containers.
- Cover, dump, modify or treat any large water-holding containers with long-lasting larvicides.

Pregnant Women Outreach

LCHD will conduct enhanced surveillance for suspected Zika virus infections, including for pregnant women through maternity clinics and other providers.

Materials and information will be made available to this high risk population, to include travel advisories, mosquito prevention tips, and information about preventing sexual transmission of Zika.

LCHD will collect case information on Zika cases involving pregnancy that can be used for future monitoring and follow-up of birth outcomes. This information can be used to report cases to the CDC's US Zika Pregnancy Registry.

Phase 1: Mosquito Season

This phase of prevention, response, and mitigation activities coincides with biting activity of *Aedes aegypti* (Yellow Fever mosquito) or *Aedes albopictus* (Asian tiger mosquito). Mosquito season in Virginia typically lasts from May 1 through October 31. Activities from Phase 0 will continue during this phase.

Communication

LCHD will initiate a countywide communications campaign, with primary messaging focusing on awareness, personal protection against mosquitoes, and residential mosquito habitat and breeding site reduction.

Public education and outreach activities during this phase will include:

- Continuing dissemination of messages and products via social media and Alert Loudoun; and
- Dissemination of materials to Loudoun County residents, business and local governments through a variety of means.

LCHD will work with healthcare providers to counsel individuals with travel-related or sexually transmitted Zika to take precautions to avoid exposure to local mosquito populations by such as actions as: removing potential mosquito habitats and breeding sites from their personal property; using mosquito repellent; using air conditioning, if available; using window and door screens, if possible; and wearing long, light-colored clothing.

Surveillance

LCHD will work with healthcare providers to establish a process for assessment and rapid testing of suspected locally-transmitted cases, to include establishing:

- Complete patient history and review of pertinent symptoms;
- Patient's lack of travel;
- No transfusion or tissue transplantation;
- No sexual exposure to a traveler; and
- Patient's likely geographic area of risk for exposure (home, work, public space, or other area).

Laboratory Testing

LCHD will collect data on all persons for whom testing indicates Zika virus infection, and identify exposure risks.

LCHD will work with pregnant women who are infected with Zika to enroll them into a long-term follow-up program through their healthcare providers.

LCHD will continue to offer appropriate laboratory testing, to individuals who meet current testing criteria, in coordination with their healthcare providers, based on the most recent CDC guidance and VDH protocols.

Mosquito Control

Mosquito control efforts during this phase include:

- Continue public education campaigns focusing on reducing or eliminating larval habitats for *Ae. Albopictus*;
- Develop and distribute mosquito education materials about *Ae. albopictus* and personal protection measures;
- Continue/maintain community source reduction efforts; and,
- Initiate preventive adult control to reduce adult populations targeting areas of high mosquito abundance.
- Investigate and respond to standing water/mosquito complaints from the public.

Pregnant Women Outreach

LCHD will continue to provide educational messaging regarding prevention of mosquito bites. LCHD will continue providing outreach to healthcare providers that care for pregnant women.

Phase 2 (Local): Confirmed Local Transmission in Region Outside Loudoun or Increased Local Concern

Prevention, response, and mitigation activities in this phase occur when one or more cases of locally-transmitted Zika virus disease in Virginia have been confirmed outside northern Virginia or there is a significant local increase in public concern. Activities from Phase 0 and Phase 1 will continue during this phase.

Communication

Loudoun will intensify public outreach and education activities to promote protection against mosquito bites. Methods of communication may include, but are not limited to:

- Fliers and posters;
- News releases/media statements/tele-briefings, as appropriate;
- Statements or addresses from community leaders; formalized news and social media monitoring to counter incorrect information; identification of new or specific message needs; and making adjustments to communications plans as needed; and
- Targeted messages for pregnant women.

LCHD will determine if a local call center should be stood up based on the number of calls being received.

Surveillance

Loudoun will consider working with local volunteers to conduct household and door-to-door surveillance to identify clinically compatible cases.

LCHD will enhance local surveillance for human cases, to include, for example, conducting local clinician outreach and syndromic surveillance in nearby hospitals.

Laboratory Testing

LCHD will continue to offer appropriate laboratory testing to at risk individuals based on the most recent VDH guidance.

Mosquito Control

- Initiate public mosquito containment education campaign to prevent or minimize contact between vectors and suspected or confirmed human cases, especially during the first week of illness when an infected person is viremic and can infect mosquitoes, thereby possibly triggering a local outbreak.
 - Educate the public to continually dispose of water holding containers to eliminate larval habitats; and

- Treat any water-holding containers that cannot be dumped, covered, discarded or otherwise modified with a long-lasting larvicide.
- Educate the public about reported cases of disease and urge them to:
 - Use insect repellents;
 - Use window and door screens to prevent mosquitoes from entering the house;
 - Use air conditioning; and
 - Continually dispose of water holding containers to eliminate larval habitats.

Pregnant Women Outreach

Loudoun will deploy targeted communication, surveillance, and monitoring programs for pregnant women if needed. Communications and outreach to healthcare providers will continue, with particular focus on maternal-child healthcare providers.

LCHD will continue to collect case information on Zika cases involving pregnancy that can be used for future monitoring and follow-up of birth outcomes through inclusion in CDC's US Zika Pregnancy Registry at <https://www.cdc.gov/zika/reporting/registry.html>.

Unified Command Schedule

Loudoun County Director of Emergency Management will consider activating Zika Unified Command for Zika during this phase, if necessary.

Phase 3 (Local): Widespread Local Transmission in Region or Potential Local Transmission in Loudoun

Prevention, response, and mitigation activities in this phase occur when one or more cases of locally-transmitted Zika virus disease have been confirmed in multiple jurisdictions in northern Virginia or one case in Loudoun. Within each jurisdiction, there may be individual cases or case clusters in a single household, neighborhoods or communities. Activities from Phases 0, 1 and 2 will continue during this phase.

Communication

Loudoun will intensify public education and outreach activities in and around the affected jurisdictions. Social media posts and tweets, targeted media monitoring and specific messaging for pregnant women will increase in frequency.

Surveillance

LCHD will work with healthcare providers to counsel individuals with locally-transmitted Zika to take precautions to avoid exposure to local mosquito populations by: staying indoors when possible during the communicability window, regularly removing potential mosquito habitats and breeding sites from their personal property; using mosquito repellent; using air conditioning, if available; using window and door screens, if possible; and wearing long, light-colored clothing.

LCHD will intensify surveillance for human cases to include clinician outreach and syndromic surveillance in hospitals.

Mosquito Control

Virginia Zika Task Force/Unified Command will work with local governments, local public works, and private sector mosquito control organizations to consider conducting intensified larval and adult mosquito control in a 150-yard radius (or other boundary, as deemed appropriate) around areas deemed at increased risk for Zika virus transmission, such as the home of a patient with confirmed locally-transmitted Zika. Door-to-door inspections and mosquito control in these operational areas will be considered.

Mosquito control activities may include, but are not limited to residential mosquito habitat and breeding ground reduction, larvicide application, outdoor space spraying using backpack aerosol generators to apply spatial and/or residual adulticide, and indoor residual spraying, if needed. Mosquito control activities should be repeated as necessary to achieve adequate control. Community clean-up activities will continue as outlined in previous phases.

LCHD will consult with Virginia's Public Health Entomologist on recommendations for focused mosquito control activities in an area within Loudoun County. If recommended, LCHD will then consult with County Administration on whether the mosquito control activities under the County's contingency agreement will be authorized. LCHD will also consult with any neighboring jurisdictions that may be impacted, directly or indirectly, by recommended mosquito control activities. These consultations will be completed within 72 hours of an emergent situation that may meet this threshold to minimize the risk to the community if a response activity is warranted.

Outdoor space spraying, if authorized, will be conducted in a manner that is least harmful to the environment and does not result in buildup of immunity in local mosquito populations.

Control plans should be tailored to meet the needs of the jurisdiction(s) and will be part of an integrated mosquito management approach.

Outbreak areas will be divided into operational areas where control measures can be effectively applied.

Virginia Unified Command will support local governments and local public works in monitoring effectiveness of vector control efforts through mosquito trapping surveillance.

Pregnant Women Outreach

In addition to steps taken in Phases 0-2, LCHD will conduct retrospective enhanced surveillance in healthcare facilities to establish the earliest known date of local human infection to guide decisions on counseling/testing of asymptomatic pregnant women.

Authorities

- [Loudoun County Emergency Operations Plan](#) (EOP).
- [Reporting of Diseases](#) (§32.1-35; 32.1-36; 32.1-37, Code of Virginia), as amended.
- Investigation of Disease (§32.1-39, Code of Virginia), as amended.
- Emergency Orders and Regulations (§32.1-13; 32.1-42; 32.1-20, Code of Virginia), as amended.
- Disease Control Measures (§32.1-43; 32.1-47; 32.1-48, Code of Virginia), as amended.
- Isolated or Quarantined Persons (§32.1-44, Code of Virginia), as amended.
- Isolation or Quarantine of Persons with Communicable Disease of Public Health (§32.1-48.05 through 32.1-48.017, Code of Virginia), as amended.
- [Loudoun County Nuisance Ordinance 648](#).

References

- [CDC Guidelines for Development of State and Local Risk-Based Zika Action Plans](#), March 8, 2016
- [Zika CDC Interim Response Plan](#), May 2017
- Loudoun Zika Virus Disease Information: www.loudoun.gov/zika
- VDH Zika Virus Disease Information: www.vdh.virginia.gov/zika
- CDC Zika Virus Disease information: www.cdc.gov/zika/

Plan Maintenance

This plan will be reviewed on at least an annual basis. As an emerging infection, though, it is expected that CDC and Virginia guidance will change frequently, as will local information gleaned from experience in Loudoun County; consequently, it is likely that this plan will be updated more frequently than once a year. Any significant changes that impact Loudoun County response actions will be presented to the Board of Supervisors for approval.