NASSAU COUNTY DEPARTMENT OF HEALTH

ZIKA ACTION PLAN

APRIL 2016

In compliance with 10 NYCRR 40-2.24 and the Declaration of an Imminent Threat to Public Health for Zika Virus Disease by Howard A. Zucker, M.D., J.D., Commissioner of the New York State Department of Health, the Nassau County Department of Health will implement the following Zika Action Plan.

A. Planning Requirements for Human Disease Monitoring and Reporting of Zika virus:
Nassau County Department of Health has adopted and will implement a Zika Action Plan (ZAP) that will perform monitoring of human cases as well as educate the public and healthcare providers regarding Zika virus in various ways to reduce the risk of exposure.

A. 1. (a), (b), (c). Disease Monitoring, Organization of Data, Electronic Data:
Initial Screening: When a health care provider requests Zika testing, Zika surveillance staff or designee must obtain the information on the "'Telephone Contact" form. Enter initial information in the NYSDOH data base (CDMS) and print an authorization ticket. The health care provider is required to respond to all questions on the telephone contact form which includes potential sexual exposures of a pregnant female. Indicated laboratory testing will not be delayed if the resident meets the testing criteria. In the event the health care provider cannot provide the completed exposure questions on a pregnant female then the subsequent Information can be obtained on patient interview when positive Zika tests have been reported and the resident has been informed. The information will be entered in CDESS. (I.e. Investigation Procedures) Fax the ticket and the Wadsworth Infectious Disease Requisition to the HCP with directions to complete the laboratory requisition, write a prescription for Zika testing for serum and urine and give all three items to the patient to bring to the site for testing.

Line List & Run List: All residents for whom Zika testing is indicated will be documented on a line list and a run list. The following information will be documented on the line list: assigned reference number, initials, date of birth, town, male or female, pregnancy status, onset of symptoms, weeks pregnant, comments for abnormal findings on ultrasound if pregnant, date of test, laboratory results, travel country and dates, convalescent testing date, health care provider contact information phone and fax number and case determination. This line list will be updated each working day and secure file transferred to designated staff.
A corresponding run list will be maintained that will contain the following information: assigned reference number, name, and date of birth, female or male, pregnancy status, symptomatic, asymptomatic, initial laboratory results, and case status. This run list is to be maintained on an excel spread sheet for sorting purposes by assigned number or name. The run list will be updated each working day and secure file transferred to designated staff.

ECLRS / CDESS, Investigation Procedures: Each working day, Zika surveillance staff or designated staff will review Arbo-virus and Zika laboratory results. All laboratory results will be printed and attached to the Zika Surveillance form. Initial laboratory results will be faxed to the health care provider. The laboratory results will be transferred and mapped to the CDESS investigation. Enter all health data retrieved from initial screening on the CDESS investigation form.

*****When Zika laboratory results are positive, phone contact to the health care provider is required. The provider will be informed of the results and the potential need for further testing and a copy of the positive laboratory and result will be faxed. If the positive laboratory result is consistent with Zika Virus disease confirmation, Zika surveillance staff will contact the individual for investigation following notification of the positive laboratory result by the health care provider. The CDESS supplemental will be completed upon phone interview with the patient. All identified risk factors will be entered in CDESS (I.e. travel, sexual partner travel and symptomatic, blood transfusion etc.). A paper copy of all cases and investigations are to be filed in numerical order by assigned number and the assigned number is to correspond to the line list and the run list.

A.2.a),b) Planning Requirements for Providing Education about Zika virus:
Zika virus disease (Zika) is a disease caused by the Zika virus, which is spread to people primarily through the bite of an infected *Aedes* species mosquito. The most common symptoms of Zika are fever, rash, joint pain, and conjunctivitis (red eyes). The illness is usually mild with symptoms lasting for several days to a week after being bitten by an infected mosquito. People usually don't get sick enough to go to the hospital, and they very rarely die of Zika. For this reason, many people might not realize they have been infected. However, Zika virus infection during pregnancy can cause a serious birth defect called microcephaly, as well as other severe fetal brain defects. Zika virus was first discovered in 1947. In 1952, the first human cases of Zika were detected and since then, outbreaks of Zika have been reported in tropical Africa, Southeast Asia, and the Pacific Islands. Zika outbreaks have probably occurred in many locations. Before 2007, at least 14 cases of Zika had been documented, although other cases were likely to have occurred and were not reported. Because the symptoms of Zika are similar to those of many other diseases, many cases may not have been recognized.

In May 2015, the Pan American Health Organization (PAHO) issued an alert regarding the first confirmed Zika virus infection in Brazil. On February 1, 2016, the World Health Organization (WHO) declared Zika virus a Public Health Emergency of International Concern (PHEIC). Local transmission has been reported in many other countries and territories. Zika virus will likely continue to spread to new areas. As there is no treatment for Zika virus disease, education, surveillance, remediation and prevention of infection are the primary goals of Nassau County's Zika Action Plan.

Individuals under investigation / Cases: Each individual for whom Zika testing is indicated will be educated on Zika Virus disease. Education will include signs and symptoms, modes of

transmission and prevention in accordance with the CDC guidance. Each individual under surveillance will be directed to the CDC website for update information. (http://www.cdc.gov/zika/about/index.html). Those individuals who are pregnant will be counseled in accordance with the CDC guideline. Education will include guidance for pregnant women with male sex partners who have lived in or traveled to an area with Zika virus. Highlighted will be the proper and consistent use condoms or abstinence from sex during the pregnancy. http://www.cdc.gov/zika/pregnancy/protect-yourself.html. If a pregnant woman is concerned that her male partner may have or had Zika virus infection, she should talk to her healthcare provider. http://www.cdc.gov/zika/transmission/sexual-transmission.html.

Public Education: Nassau County Department of Health Web site will provide information on Zika virus via the link to the CDC. (http://www.cdc.gov/zika/about/index.html) Other modes available for use are: media, press releases or press conferences, town halls, scheduled seminars, public service announcements, countywide mailings to residents. Educational packets which include information regarding Zika Virus disease, recommendations for prevention, travel alerts and personal protection, and proper use of condoms will be distributed to Woman Infant and Children (WIC) for pregnant females and the Peri-natal network as a target group. Education packets will be distributed at health fairs and all community events.

Healthcare Providers: Nassau County Department of Health maintains an email contact list for Hospitals, Medical Societies, Infection Prevention Practitioners and Urgent Care Centers. New York State Health Advisories, CDC Health Advisories and Nassau County Health Advisories are transmitted electronically to the agencies for distribution. Nassau County will disseminate Health Advisories/Alerts and materials through email to appropriate agencies when appropriate. Electronic copies of educational packets will be available for transmission to health care providers upon request.

A.2.c) Educational Efforts:

Educational efforts will include an initial press release issued at the beginning of mosquito season (mid-May) and will include the following: a brief description of Nassau County's mosquito control program, guidance on reducing mosquito habitats, eliminating standing water, trash cleanup and how to contact Nassau County for additional guidance and resources. Public Education will also include methods of personal protection from mosquito bites and a link to the CDC Zika web page. Subsequent press releases will be issued throughout the mosquito season. County agencies and elected officials will also distribute educational pamphlets and flyers to the public.

B.1 a) Enhanced Human Disease Monitoring and Control

Local Transmission Surveillance or Positive Zika Pool:

Upon notification of a positive Zika virus pool, NCDOH will consider a Code Red (reverse 911) notification to residents in proximity to the positive pool(s). Zika virus disease information and

prevention information will be included in the message. Highlighted in the Code Red (reverse 911) notification will be prevention information for the pregnant female and the general public. Included in the message will be when to notify your Health Care Provider for testing and what actions should be taken if you develop symptoms consistent with Zika Virus Disease. Prevention message to protect others will be addressed. NCDOH contact information number will be announced. NCDOH will consider public notification by press release / conference. A Health Advisory / Alert will be electronically transmitted to medical societies, hospitals, Infection Preventionists and urgent care centers. A call center will be considered with educational information on Zika Virus disease, transmission, prevention and guidance for pregnant females and the general public will be available for use in the call center.

Syndromic Surveillance will be conducted for a Zika Positive Pool: In the event that Zika infected mosquitos are identified in a pool(s) in Nassau County, Zika Surveillance staff will query Syndromic Surveillance for Rash and Fever in the associated zip code each working day. Data will be sorted by symptoms and zip code. If there evidence of an increase of fever and rash in the corresponding zip code, Zika Surveillance staff will contact the identified Emergency Department(s) or Infection Preventionist to report the discharge or admission diagnosis of the individuals. If discharged and Zika Virus is suspected, individuals will be interviewed and recommended to seek medical care / testing pending NYSDOH approval. If admitted, and Zika Virus is suspected, the hospital will be requested to submit a blood sample and urine sample to Wadsworth Laboratory for testing, in compliance with NYSDOH and CDC handling and shipment guidelines.

Case investigation should reveal an identifiable source or risk factor. In the event that Zika Surveillance is notified or investigated an individual with symptoms consistent with Zika and without identifiable risk factors, (I.e. travel to endemic country, sexual contact with travel to an endemic country, etc.) Zika Surveillance staff will review the positive mosquito pool list by zip code and town. Environmental Health will GIS the suspect's address to the positive pool list to determine the likelihood of potential exposure. Zika Surveillance will then notify NYSDOH for authorization for Zika testing to confirm case status and possible local transmission. Zika Surveillance Staff will contact the testing laboratory to request that the samples be submitted to Wadsworth Laboratory for testing in compliance with NYSDOH and CDC handling and shipment guidelines. If local transmission is confirmed NCDOH will issue public notification by press release / conference. Included in the message will be when to notify your Health Care Provider for testing and what actions should be taken if you develop symptoms consistent with Zika Virus Disease; prevention message to protect others will be addressed.
A Health Advisory / Alert will be electronically transmitted to medical societies, hospitals, Infection Preventionists and urgent care centers. If a locally acquired case is identified, the call center will be activated to address the public's concerns. Educational information on Zika Virus disease, transmission, prevention and guidance for the general public and pregnant females will be available for use in the call center.

If a case of local transmission is identified, the Zika Surveillance Officer will conduct an in-depth investigation as to local risk and source. Risk factors include: sexual transmission, outdoor group activities, identified mosquito bites and location where bite(s) occurred. Mosquito Control and NYSDOH will be notified and the action plan will be discussed. ZRRT will be activated. ZRRT activation will consist of a home visit conducted in conjunction with NYSDOH and NCDOH staff. Disease Control staff will interview the individuals utilizing the questions on page 2 of the ZRRT home visit form. ZRRT forms will be compiled in a file. Individuals that meet criteria for testing or who are symptomatic will be referred to their health care provider for testing and the health data will be placed in CDESS and an investigation will be initiated. Education packets on Zika virus disease, transmission, prevention and testing will be given to the interviewed individual.
The call center will be activated to address the public's concerns. Educational information on Zika Virus disease, transmission, prevention and guidance for pregnant females will be available for use in the call center.

Active Surveillance for a case of Zika locally acquired: If a case of local transmission is identified, the Zika Surveillance Officer will conduct active surveillance each work day. Zika surveillance staff will coordinate surveillance with Infection Preventionists for each hospital. Zika staff will contact the Infection Preventionist or the Emergency Department at each hospital to query if there were any patients who presented with symptoms consistent with Zika Virus Disease and to report the discharge or admission diagnosis of the individuals. If the patient was discharged and Zika is suspected, individuals will be interviewed and recommended to seek medical care and Zika testing. If admitted and Zika Virus is suspected, Zika surveillance staff will request the hospital obtain a blood sample and urine sample, and submit to Wadsworth Laboratory for testing in compliance with NYSDOH and CDC handling and shipment guidelines. NYSDOH will be notified regarding approvals for testing.

B.2. a),b) Enhanced Education: Local Transmission

A press release/conference will be conducted if local transmission is identified in Nassau County. In addition, a Health alert / Advisory will be issued and electronically transmitted to medical societies, hospitals, Infection Preventionists and Urgent Care Centers. Information on Zika Virus testing and reporting will be outlined in the alert and the press release / conference. Highlighted will be the pregnant female with prevention strategies; when to contact a health provider and criteria for testing and what preventative actions should be taken if an individual develops symptoms to prevent further transmission. Bureau of Communicable Disease Control contact information for reporting or medical consultation will be included. The call center will be activated to address the public's concerns. Educational information on Zika Virus disease, transmission, prevention and guidance for the general public and pregnant females will be available for use in the call center.

The Commissioner of Health will collaborate regarding on going media / press reporting with Nassau County Department of Health Public Information Officer, NYSDOH will be informed.

Emergency Preparedness and the Medical Reserve Corps will offer educational presentations to the public regarding Zika Virus disease and prevention. Educational packets will be available for distribution at emergency preparedness events.

Immunization staff will distribute educational packets to each health care provider practice assigned an AFIX and at all community affairs attended. Educational packets will be electronically transmitted in English and Spanish to WIC and the Peri-natal network for distribution.

B.3.a) - Mosquito Surveillance:

Background: The Nassau County Departments of Health and Public Works have been administering and operating a mosquito surveillance and control program since 1996. This has resulted in the compilation of a significant amount of data including the identification of larval habitats, population and geographic distribution of adult mosquitos by species, identification of virus in the mosquito population, seasonal variation of species, effective source reduction strategies and adult reduction strategies. Nassau County plans and operates its surveillance and control program in consultation with other regional local health departments, academic institutions and NY State Department of Health officials. The Nassau County Department of Health conducts media interviews, issues press releases and educates the public on mosquito borne diseases, the county's mosquito control plan and what residents can do to protect themselves against mosquitos.

- Known breeding habitats including salt marshes, recharge basins, storm water basins, ponds, streams and other surface waters are surveyed for larval activity.
- Complaints of mosquito activity, stagnant water, abandoned swimming pools, etc., trigger targeted inspections for breeding habitats and larval activity.
- Adult mosquito surveillance is conducted at 42 sites strategically situated (in a variety of habitats) throughout the county.
- Trapping adult mosquitos is typically performed from mid-May through the end of September.
- Trapping is done using the CDC Light, Gravid and BG-Sentinel traps.
- Trapped mosquitos are identified and separated by species into pools at the NCDOH laboratory. Pools are logged into NCDOH and NYSDOH databases.
- Pools of mosquitos are packaged in labeled glass tubes and Styrofoam containers with dry ice. They are shipped to Wadsworth laboratory via overnight delivery with the appropriate documentation.
- Results of virus testing and incidence of human disease are used to determine appropriate actions for additional surveillance and control activity, including adulticiding.

B.3.b) – Aedes albopictus Surveillance:

Historic data indicates that more than 90% of the Aedes albopictus have been trapped in six locations.

- These prevalent locations will be monitored using BG traps beginning in June regardless of the activity indicated in light traps at these locations.
- BG traps will be deployed at any of the remaining 36 trap locations after Aedes albopictus have been detected in the light trap.
- Pools of twenty (20) or more Aedes albopictus will be shipped to Wadsworth laboratory for virus testing.

B.3.c) – Surveillance after Zika detection in a mosquito pool or a locally acquired human case:

- If Zika is detected in a mosquito pool, the frequency of trapping at that site will be increased to a minimum of weekly. Additional suitable locations for traps in that immediate area will be identified to perform additional trapping and assess the effectiveness of mosquito control performed in response to the positive Zika result.
- In the case of a locally acquired human case of Zika, the area within at least 200 yards of the case will be assessed for breeding habitats, larval activity and suitable locations for traps that may identify the presence of Aedes albopictus and that may assess the effectiveness of mosquito control performed in response to the positive Zika result.
- The total number of mosquito pools submitted to Wadsworth laboratory for virus testing will not exceed sixty (60) pools per week unless specifically authorized by the New York State Department of Health.

B.4.a) - Mosquito Control: Nassau County control methods incorporate habitat reduction and elimination, larviciding, and adulticiding. Some habitat reduction and larviciding is conducted preemptively based on historic data and site history. The use of larvicide and adulticide must comply with NYSDEC regulations, product labels and all applicable pesticide laws. The Department has the authority, pursuant to Section 12, Article F of the Nassau County Administrative Code, to enter upon lands without hindrance for the purpose of draining and treating land and eliminating breeding places of mosquitoes.

- Habitat reduction is performed through maintenance of ditches to improve shoreline drainage, reduce the size and number of puddles, improve tidal flow and facilitate habitat for killifish that feed on mosquito larvae.
- Storm water recharge basins are inspected to check for standing water, debris and overgrown vegetation. Basins are cleaned, vegetation is cut back and the basin floor is reconditioned to maximize drainage.
- Complaints of mosquito activity, standing water, abandoned properties, etc., trigger an investigation that will include source reduction and larviciding where necessary.
- Larviciding is conducted when County inspectors locate a breeding habitat. This may occur during routine surveys of historically active areas or based upon a complaint.

Larviciding is conducted by hand, backpack sprayer for larger areas or by helicopter for vast unpopulated areas.

- Adulticiding is performed according to the Nassau County Mosquito Control Decision Matrix. The matrix considers the totality of time of year (season), results of mosquito trapping (population and virus activity), prevalence of human disease, current weather conditions and forecasted weather. The county has been divided into 51 operational zones for adulticiding. One or more zone may be treated at night by truck sprayer. If multiple zones have to be treated that exceed the capacity of truck sprayers, aerial application of adulticide will be performed. The decision/authorization to adulticide is made by the County Executive based on recommendations from the Department of Health.
- Nassau County law requires a minimum of 48 hours' notice to the County Legislature and 24 hours' public notice prior to the application of adulticide.
- All larviciding and adulticiding is conducted in compliance with NYSDEC regulations.

B.4.b) – Individual Home Visits for Mosquito Control:

- Individual home visits are currently conducted based on a complaint of stagnant water, overgrown vegetation or other conditions conducive to mosquito breeding habitat.
- In the case of a locally acquired Zika case or mosquito pool positive for Zika virus, home visits will be conducted within a minimum of 200 yards of the potential source.
- Each home visit will be documented by the county inspector and will include information on access to the property, identification of breeding habitats, actions taken to eliminate breeding habitats, education of the resident of the property (County produced informational pamphlets will be distributed) and recommendations for additional action (County follow-up).

B.4.c) – Mosquito Control Days:

- The Nassau County Department of Health will issue press releases, provide media interviews and make public service announcements to encourage residents to check their property for standing water, clogged gutters, junk piles, yard waste, children's toys, etc. that could providing breeding environments for mosquitos. Residents will be advised to call the county to report areas of concern outside of their own property or to obtain additional information regarding mosquito control measures. These press releases will be issued after each heavy rainfall. The Department will continue to partner with local meteorologists about reminding viewers/listeners to dump standing water after rainfall.
- The County will partner with community and civic groups to actively clean up public areas which may harbor breeding habitats.
- The Nassau County Department of Health web site will provide educational information on mosquito control and mosquito borne diseases.

- Nassau County Department of Health has a vast network of community-based agencies and will partner with these agencies to promote mosquito controls days.
- Educational brochures on mosquito control will be distributed at all community events attended by Department staff.

B.4.d) – Zika Virus Positive Pool:

- Detection of a single Zika virus positive pool: Conduct larval surveillance and control and eliminate habitats at least 200 yards around the detection site. Enhance education (door to door) of residents to improve source reduction and minimize contact between vectors and residents. Conduct ground based adult mosquito control at least 200 yards around the detection site; backpack spraying where appropriate and permitted. Initiate enhanced surveillance at the detection site to determine the effectiveness of control efforts.
- Detection of multiple Zika virus positive pools: Conduct community education and outreach utilizing multimedia to minimize contact between vectors and residents and to achieve source reduction on private property. Identify the operational areas where adult control is required and determine the appropriate method of adulticide application. Initiate enhanced surveillance at the detection site to determine the effectiveness of control efforts. Repeat adult control measures based on the results of enhanced surveillance and maintain or expand surveillance as required.

B.4.e) – Zika Rapid Response Teams (ZRRTs): County Environmental Health ZRRTs will be activated when a locally acquired case or positive mosquito pool is detected. Home visits will be performed within a minimum of 200 yards of a locally acquired case or positive mosquito pool. The home visit will be conducted by a ZRRT and will include completion of a form which documents contact information; symptom, pregnancy and travel history; authorization to enter the property; results of mosquito breeding and control activity on the property. The residents of the home will also be educated regarding ZIKA disease and mosquito control to prevent exposure. The primary, secondary and tertiary ZRRTs will include a minimum of at least one educator, one epidemiologist and one mosquito control site inspector.

B.5.a),b)&c) – Zika Rapid Response Team (ZRRT) Staffing: The primary, secondary and tertiary teams for Environmental Health will be drawn from the following staff depending on availability. The size and number of teams will be scaled according to the response requirements.

a) Direction and Coordination of Surveillance and Control Activities – Director of Environmental Health; Director of the Bureau of Environmental Investigation; Public Health Engineer III.
b) Field Supervision of Surveillance and Control Activities – Director of the Bureau of Environmental Investigation; Chief, Office Zoonosis, Mosquito Control Supervisor.
c) Surveillance and Source Reduction Activities (non-chemical) - Chief, Office Zoonosis; Sanitarian I; Three (3) Seasonal Public Health Aides.

d) Surveillance, Larviciding and Adulticiding – Mosquito Control Supervisor; Ten (10) NC DPW Staff (DEC certified pesticide applicators).
e) Additional Sanitarians from the Division of Environmental Health will be utilized if the response needs to be scaled up.
f) Staff provided by NY State will be integrated into ZRRTs as necessary.