# Fort Wayne – Allen County
# Arboviral Surveillance and Control Plan


Reviewed by: David Fiess, MPA, REHS
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## GLOSSARY

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|---|---|
| CDC | Centers for Disease Control and Prevention |
| CIDNAC | Communicable Infectious Disease Network of Allen County |
| EPA | Environmental Protection Agency |
| FWACDOH | Fort Wayne – Allen County Department of Health |
| ISDH | Indiana State Department of Health |
| IDC | Infectious Disease Center |
| VCESD | Vector Control and Environmental Services Division |
| WNv | West Nile virus |

## FORWARD

The goal of the Fort Wayne – Allen County Arboviral Surveillance and Control Plan is to minimize the risk of arboviral diseases, including West Nile virus (WNv), to residents of Allen County. The plan outlines a series of primary and secondary preventive interventions designed to minimize the risk of transmission of the virus to human populations and to facilitate the rapid diagnosis and containment of the disease once it is identified in our community. The most effective primary intervention is public participation in the removal of mosquito breeding sites, such as tires, containers, un-maintained swimming pools, and other stagnant water bodies. Secondary interventions include larviciding (reduces the number of mosquito larvae before they turn into adults), healthcare provider education regarding the diagnosis of WNv or other arboviral diseases, community education about reducing the risk of acquiring an arboviral disease, and adulticiding (reduces the number of possible disease-carrying adult mosquitoes).

This plan has been developed based on a variety of scientific methods including: best practices in communities where WNv has been established; guidelines from the Centers for Disease Control and Prevention (CDC); and, recommendations from Indiana State Department of Health (ISDH) experts. However, the decision to move to aggressive secondary prevention methods, such as adulticiding, still requires a clinical judgment. The plan outlines the criteria pertinent to this decision-making process and the representatives identified to interpret the data.

## BACKGROUND

Encephalitis is an inflammatory viral disease involving parts of the brain, spinal cord or meninges. One environmental source of this disease is the mosquito, which serves as the vector for arboviruses that cause diseases such as St. Louis Encephalitis, LaCrosse Encephalitis, and WNv. Encephalitis has a case fatality rate that varies from 5% to 30%, depending on the specific virus. Some types of encephalitis, such as LaCrosse, may have long-term neurologic consequences even in milder cases. Also, arboviral encephalitis often causes large numbers of undiagnosed cases near the environmental source. Therefore, a definitive diagnosis needs to be established as quickly as possible, as effective environmental treatment of the source of encephalitis can decrease the probability of other members of the community from becoming infected.[i]

In 1999, a new arboviral disease, never observed in the Western Hemisphere, was identified in New York City. The infectious agent was identified as WNv and was associated with 44 cases and 4 fatalities. Within a 75-mile radius of New York City (including part of the states of New York, New Jersey and Connecticut) a total of 66 cases and 7 fatalities occurred

In June 2002, the first dead bird positive for WNv was identified in Allen County. By the end of the summer the ISDH had confirmed 36 positive dead birds in Allen County. The first positive mosquito pool (group of 50 or more adult mosquitoes) was found in July. There were 28 total pools positive for WNv. The first human case of WNv occurred in August. Seventy-one humans were positive for the virus by the end of 2002. There were 3 deaths related to WNv.

In the spring of 2002, the Fort Wayne – Allen County Department of Health (FWACDOH) with assistance from the Communicable Infectious Disease Network of Allen County (CIDNAC) and the ISDH established a protocol to address the environmental and medical issues associated with the presence of WNv and/or St. Louis Encephalitis in our community. This protocol was based

on information obtained through sources at the ISDH, CDC, Indiana Poison Control Center, Medline literature search and from the New York City Comprehensive Mosquito Surveillance and Control Plan.

In 2006, two humans were infected with LaCrosse Encephalitis, with one succumbing to the disease and the other developing serious neurologic consequences. While this is also an arboviral disease, the mosquito that transmits the LaCrosse virus is a daytime biter and predominantly affects children.

Due to the increase in LaCrosse cases and the severity of outcomes in Allen County, our prevention message to the public will change from wearing repellant during the time of dusk to dawn to wearing repellant all of the time when outside, no matter the hour. We have also included information about LaCrosse in our informational materials.

The Fort Wayne – Allen County Arboviral Surveillance and Control Plan has been revised to follow current medical and environmental information.

## PUBLIC EDUCATION AND COMMUNITY RELATIONS

### Objective

Increase public awareness of arboviral diseases as a public health threat, including educating the community about proper mosquito prevention and control techniques

### Background

Prior to and during mosquito season, the FWACDOH typically engages in a public education campaign to raise awareness in the community about the spread of arboviral diseases – specifically WNv. The campaign generally includes the distribution of materials in both written and electronic form, presentations to community organizations, and regular news releases advising residents on the elimination of standing water to reduce the opportunity for mosquitoes to breed and the suggested use of insect repellents as a means to limit exposure.

The FWACDOH maintains a Web site which provides background information and regular updates on surveillance and laboratory analysis. It also includes links to other mosquito information websites, as well as state and federal agencies. When needed, the FWACDOH will also establish a hotline to keep the community informed about mosquito control activity, receive and respond to reports of dead birds, and allow the public to get answers to their questions regarding arboviral diseases. During business hours, a staff member can field questions and gather addresses where dead birds are found.

If the application of pesticides to control adult mosquitoes becomes necessary, notifications and personal precaution announcements are made through the media and on the Web site. Broadcast facsimile and e-mail alerts are sent to city and county officials, police agencies, parks departments and other government

offices (see Appendix A). This same information is also faxed to area hospitals and infectious disease specialists.

Citizens can also call the hotline and leave a message, including their name, address, phone number, and email address, requesting to be placed on a notification list. FWACDOH has developed a new and improved email notification system for the public regarding when spraying will take place. Residents can sign up to be on a notification list at any time. Twenty-four (24) hours prior to spraying activities planned for an area, an email containing the intended areas to be sprayed and a map will be sent out to those on the notification list. Also, as resources permit, the residents on the notification list for which VCESD has current phone numbers who reside in the area to be sprayed will be called and informed of the pending spraying activities.

Beginning in 2007, a shift in strategy was initiated as a result of concern about the threat of Lacrosse encephalitis, a potentially fatal illness which is spread by day-time biting mosquitoes. Rather than focus exclusively on WNv, the department will tailor its messages to incorporate all arboviral diseases.
In all public information sent out, FWACDOH will underscore the following points:

- Mosquitoes carry diseases that can be serious and life-threatening
- People are advised to wear a mosquito repellent whenever engaging in outdoor activity.
- Residents should eliminate all sources of standing water that can support mosquito breeding. These places include empty flower pots, tires, clogged gutters and tree holes.

**Action Plan**

The FWACDOH will promote mosquito-borne disease prevention through a number of activities coordinated with other community groups and government agencies. The communication/education plan will be discussed each year and

specific goals and strategies will be initiated based on lessons learned the previous year and any new information relevant to the current threat.

Key communication, education and outreach activities will include:

**Annually**

- Convene the Arboviral Communication and Education Team to discuss, develop or implement goals and strategies for the upcoming mosquito season. The team will consist of the Health Officer, Department Administrator, Vector Control Director, Communications Director and IDC Director.
- Review and update all written and visual materials (posters, flyers, door hangers and brochures, etc.) concerning mosquito control and personal protection.
- Review and update all contact lists with current phone, fax, pager numbers and email addresses.
- Assess the effectiveness of communication and education of targeted communities.

**Ongoing**

- Inform the public about the FWACDOH's comprehensive mosquito prevention strategies and activities (including surveillance, larviciding, and education).
- Increase public awareness about the nature of mosquito-borne diseases and the signs and symptoms of human encephalitis (headache, fever, muscle pain, disorientation).
- Conduct health care provider education to increase knowledge about the proper detection, prevention and clinical management of mosquito-borne diseases and other types of encephalitis and meningitis. The importance of promptly reporting suspected encephalitis and meningitis cases should be continuously stressed through regular contact with emergency department staff and infectious disease physicians.

- Advise the public on eliminating mosquito-breeding sites (tires, buckets and other water-collecting objects).
- Educate the public about the proper personal protective measures to avoid mosquito bites (tight-fitting screen doors, wearing protective clothing and the appropriate use of mosquito repellent).
- Promote the use of mosquito-eating fish in ornamental ponds, fountains and bird baths.
- Encourage the reporting of dead birds and sick domestic animals during the mosquito season, while making it clear that FWACDOH does not pick up all dead birds that are reported. Information about the species being prioritized for testing, how to properly dispose of birds not being tested, and the role birds play in the transmission cycle of arboviral disease will be disseminated. Residents will be advised to have sick domestic animals evaluated by their treating veterinarian.
- Encourage local reporting of areas where mosquitoes may be breeding (larval habitats).
- Educate homeowners about mosquito prevention during environmental surveys in areas where positive mosquitoes and human infection has been identified.
- Regularly update the department's Web site with timely information on mosquito control activities and personal protective measures.
- Present information on mosquito control and surveillance and personal protection to interested civic groups, elected officials, schools and other community organizations.

**As Needed**

- Create and disseminate new written materials (posters, flyers, door hangers, brochures, etc.) concerning mosquito control and personal protection, as new information warrants. Materials can be distributed to neighborhood associations, area parks and other targeted groups.
- Create public service announcements for radio and TV.

- Issue news releases regarding all activities (see Appendix A).
- Partner with area schools to promote the use of mosquito repellent at outdoor school-sponsored events.
- Partner with area parks to post flyers and other literature at entrances to parks and other designated places.
- Distribute written materials on personal protective measures to area grocery stores/convenience stores.
- If the application of pesticides to control adult mosquitoes becomes necessary, the public will be warned in a timely manner to reduce direct exposure to pesticides. Adulticiding information will be made available in the form of news releases, fact sheets, FAQ lists, spray schedules and maps at least 24 hours in advance. This information will also be faxed and emailed to city and county agencies, elected officials, parks departments and hospitals, and posted to the department's Web site (see Appendix A).
- Establish a hotline to provide information and answer questions. A staff member can assist callers during business hours.
- Citizens can also call the hotline and leave a message, including their name, address, phone number, and email address, requesting to be placed on a notification list. FWACDOH has developed a new and improved email notification system for the public regarding when spraying will take place. Residents can sign up to be on a notification list at any time. Twenty-four (24) hours prior to spraying activities planned for an area, an email containing the intended areas to be sprayed and a map will be sent out to those on the notification list. Also, as resources permit, the residents on the notification list for which VCESD has current phone numbers who reside in the area to be sprayed will be called and informed of the pending spraying activities.

## HUMAN SURVEILLANCE AND PROVIDER EDUCATION

### Objective

Quickly identify Allen County residents infected with arboviral diseases, especially WNv.

### Background

The rapid diagnosis of patients with an arboviral disease, especially WNv, allows healthcare providers to educate those infected regarding the probable clinical course of the disease and also to identify those high-risk patients who might require closer monitoring for potential severe adverse consequences of the infection. Furthermore, rapid identification of an arboviral case expedites the identification of potential mosquito breeding sites within a designated area surrounding the patient's residence or other potential high-risk areas frequented by two or more cases.

### Action Plan

See Appendix C for the CDC case definition of neuroinvasive and non-neuroinvasive domestic arboviral diseases.

Facilitate rapid identification of patients with symptoms of viral encephalitis or meningitis who present to emergency rooms, urgent care centers and outpatient healthcare providers.

- Medical education will be provided to healthcare providers in emergency rooms and urgent care and outpatient centers at the onset of the arboviral season and periodically throughout the season.
- Arboviral serum samples will be collected in local healthcare laboratories and analyzed at local reference laboratories. Positive results will be provided to the FWACDOH and forwarded to the ISDH.

- At the request of the ISDH, some patients may be requested to have a convalescent WNv titer drawn and submitted to the ISDH laboratory (see Appendix D).
- For patients diagnosed with LaCrosse encephalitis, both initial and convalescent titers will be drawn on all patients.
- All positive results will be entered into a database.
- For patients with unknown etiology for encephalitis/meningitis, if arboviral panel has not been ordered, an IDC nurse will contact the physician and request an arboviral panel.

Record clinical signs and symptoms associated with acute arboviral infections in Allen County residents.

- A case investigation will be performed for every patient diagnosed with an acute arboviral infection in Allen County (see Appendix E and F).
- The case investigation form will be forwarded to ISDH.
- The IDC Director or a public health nurse will notify the Arboviral Surveillance Team of any humans positive with an arboviral disease (see Appendix G).
- The Vital Records Director will notify the Arboviral Surveillance Team of any death due to encephalitis or meningitis (see Appendix G).

Rapidly identify and quarantine potentially infected blood products.

- The survey instrument that will be administered to all Allen County residents with WNv contains specific questions regarding recent blood transfusions and organ transplant (see Appendix E).
- The American Red Cross and CDC will be immediately notified by the public health nurse conducting the arborviral case investigation of any positive response to the survey question regarding transfusion. The American Red Cross will quarantine all blood products related to the

initial blood donor. Further case investigation of potential-transfusion related infections will be at the direction of the CDC.

## LARVAL MOSQUITO CONTROL

### Objective

Reduce the abundance of adult mosquitoes through the use of Integrated Mosquito Management practices

### Background

The life cycle of a mosquito begins in the water. Some mosquitoes prefer to lay their eggs in slow-moving or stagnant water rich in organic material. These breeding sites consist of discarded tires, poorly maintained bird baths, clogged rain gutters, unused swimming and plastic wading pools, pots and pans with standing water, and puddles lasting for a week or more. The mosquito population can be greatly reduced by eliminating potential water sources (source reduction) for breeding and treating permanent water sites with biological or chemical agents (see Appendix H) to prevent mosquito development (larviciding). Businesses and the public should regularly inspect their property to determine if conditions are present for mosquito breeding and eliminate the conditions.

Catch basins provide a perfect breeding source for mosquitoes. There is a basin off of the storm drain that catches debris and silt. If there is no rain during the summer, water will sit in the basin. Some female mosquitoes will lay their eggs on the water, due to the available organic material. The Vector Control and Environmental Services Division (VCESD), along with other municipal agencies, will treat the catch basins with approved larvicides.

### Action Plan

- The general public will be informed about residential practices to reduce breeding sites (tires, containers, gutters, etc.) via the department website (www.allencountyhealth.com) and educational forums.

- Seasonal technicians inspect over 1,000 known natural and artificial breeding sites, collect larval samples for identification, and treat the water with larvicides based on the environmental conditions surrounding the sites.
- The VCESD will respond to public complaints of mosquitoes through inspection of the complainant's property, collect larval samples if available, and treat the water accordingly. These sites will be added to the breeding site list.
- The VCESD will educate and assist municipal departments in identifying and treating catch basins with appropriate larvicides.
- Technicians will access areas where dead bird clusters occur and identify new breeding sites, collect samples, and treat the water. Known breeding sites will also be inspected and treated as needed.
- Technicians will access areas where positive adult mosquitoes are found and identify new breeding sites, collect samples, and treat the water. Known breeding sites will also be inspected and treated as needed.
- Technicians will access areas where there are positive human cases and identify new breeding sites, collect samples, and treat the water. Known breeding sites will also be inspected and treated as needed.
- The VCESD will provide mosquito larvae-eating fish (*Gambusia affinis*) to homeowners or neighborhood associations with ornamental water gardens and/or storm water retention ponds that do not drain into the Indiana waterways (rivers, lakes, creeks, ditches, etc.)

## HOST AND MOSQUITO SURVEILLANCE

### Objective

Monitor non-human populations as a means of detection of arboviral activity in Allen County in order to predict the spread of diseases before the onset of human illness

### Background

According to the Cornell University Center for the Environment, “birds are far more likely to become infected than people or other mammals.”[ii] The types of birds most likely to serve as hosts to the WNv include crows, blue jays, robins, cardinals and raptors (owls, falcons, hawks, and eagles).

Mammals are not as sensitive to WNv as birds. The FWACDOH will ask veterinarians and other animal specialists to monitor for unusual illness and death among mammals and exotic birds.

The number of mosquitoes capable of transmitting WNv and the prevalence of the virus in the mosquito population are both measures of the risk of transmission of the virus to humans in the same area. Nationally, several species of mosquitoes are known to carry WNv. Furthermore, infected mosquitoes are usually found several weeks before human transmission.

The VCESD will survey the adult mosquito population for WNv with gravid traps. *Culex* species are drawn to gravid traps.

Viral testing of mosquitoes provides the best warning of an impending human outbreak. The viral testing for WNv in mosquito samples obtained locally is completed at the VCESD office by staff. Excess Culex species will be sent to the ISDH Entomology Laboratory to test for WNv, St. Louis Encephalitis, and Eastern Equine Encephalitis. The testing methodology is both sensitive and specific.

## Action Plan

- The public will be asked to report dead birds to the VCESD. Citizens will be asked the date the bird was found, address where bird was located, and bird species.
- The public will be asked to properly dispose of the birds (see Appendix I).
- The locations of dead birds will be plotted on a map using the Geographical Information System.
- Adult mosquito traps will be placed in several locations around Fort Wayne and Allen County; including parks, areas where concentrations of dead birds have fallen, and in response to public complaints. Samples will be collected and separated according to species.
- Vector species will be tested at the VCESD office by Division staff.
- The VCESD Director or designee will notify the Arboviral Surveillance Team of mosquitoes testing positive for an arboviral disease (see Appendix G).
- Maps will be created using the Geographical Information System to identify the areas with positive mosquitoes.
- Area veterinarians and other animal specialists will be contacted asking their help in identifying encephalitis and other mosquito-borne diseases in vertebrates and reporting suspected infections to the VCESD.

## ADULT MOSQUITO CONTROL

### Objective

Reduce the abundance of adult vector mosquitoes in targeted areas through the judicious use of Environmental Protection Agency (EPA)-registered pesticides

### Background

The FWACDOH will utilize its surveillance data to assess the risk of an outbreak of human disease and the need to apply pesticides in a limited and targeted area to control adult vector mosquitoes by considering habitat; time of year; weather conditions; the level of documented virus; the distribution, density, age, infection rate, and flight path of the vector population; and the density and proximity of human populations. The response of the FWACDOH will depend upon, but not be limited to: the intensity and persistence of virus activity, proximity of virus activity to human populations, time of year, mosquito population density and flight paths, and weather conditions. Because these conditions can vary greatly and cannot be predicted, a consultation process will be used to determine which, if any, responses are appropriate, on a case-by-case basis. The responses initiated by the FWACDOH can be grouped into three broad categories or levels of risk.

Adulticiding, when necessary, will occur in the evening. WNv is prevalent in the *Culex* species, which are evening biters and have a flight path of ½ to 1 mile from the breeding site. WNv has been identified in *Aedes* and *Ochlerotatus* species, but in limited numbers. These species are daytime biters and have flight paths up to 15 miles. If positive *Aedes* and/or *Ochlerotatus* species are found, additional surveillance measures will be instituted and aggressive larviciding will occur in the targeted areas.

The following people will make the decision to adulticide: Health Commissioner, president of the Executive Board of Health or a designee, Department Administrator, and the VCESD Director. The VCESD Director will notify the Arboviral Surveillance Team of the dates, times, and locations of where adulticiding will occur (see Appendix G).

**Action Plan**

Level 1 – No Arboviral Detection

- Surveillance and control programs continue as outlined in the Arboviral Surveillance and Control Plan.

Level 2 – Sporadic Evidence of Arboviral Activity

- One to three positive mosquito traps per week will result in a move to Level 2 responses.
    - Increased larviciding will occur in positive areas.
    - Public education will increase in positive areas.
    - Seek assistance of identified community partners (see Appendix J) to aggressively survey areas of high viral activity in neighborhoods to locate and eliminate probable breeding sources and educate homeowners about mosquito prevention.
    - Ground application of an EPA-registered adulticide (see Appendix H) to immediate areas of concern (1/2 mile radius around positive trap).
    - The public will be notified of adulticide schedules in advance, which will allow sufficient time to take any necessary precautions to reduce pesticide exposure.
        - A press release will be sent to the media with the times and locations where the trucks will be spraying (see Appendix A).

- An email containing the press release and spray map will be sent to those on the notification list. A call will be placed to those people who are in the spray area.
- Various government departments throughout the community will receive notification of the intent to adulticide in the targeted area (see Appendix B).
- Emergency room providers will also receive notification of the intent to adulticide in the targeted area (see Appendix A).
- The times and locations will be placed on the FWACDOH's website, www.allencountyhealth.com.

o If not already present, adult mosquito traps (if available) will be placed in areas where adulticiding has been conducted to monitor the effectiveness of the treatment.

- The samples from the traps placed into the recently sprayed areas will be tested the following day. If the samples are positive, adulticiding will occur again in the same areas after the twenty-four (24)–hour notification is provided. According to the CDC, repeat treatments may need to occur to reduce the population of *Culex* species in an area.[iii]
- Environmental surveillance of the area where there are repeat positive samples will increase to identify breeding site locations.
- If the same area has been sprayed twice within two weeks and the trap still has positive mosquitoes after the second spraying, the VCESD Director is to meet with the Health Commissioner, Department Administrator and President of the Executive Board before spraying a third time.

Level 3 – Epidemic Evidence of Arboviral Activity

- Four or more positive mosquito traps per week will result in a move to Level 3 responses.

- Increased larviciding will occur in positive areas.
- Public education will increase in positive areas.
- Seek assistance of identified community partners (see Appendix J) to aggressively survey areas of high viral activity in neighborhoods to locate and eliminate probable breeding sources and educate homeowners about mosquito prevention.
- Ground application of an EPA-registered adulticide (see Appendix H) to immediate areas of concern (1/2 mile radius around positive trap).
- The public will be notified of adulticide schedules in advance, which will allow sufficient time to take any necessary precautions to reduce pesticide exposure.
    - A press release will be sent to the media with the times and locations where the trucks will be spraying (see Appendix A).
    - An email containing the press release and spray map will be sent to those on the notification list. A call will be placed to those people who are in the spray area.
    - Various government departments throughout the community will receive notification of the intent to adulticide in the targeted area (see Appendix B).
    - Emergency room providers will also receive notification of the intent to adulticide in the targeted area (see Appendix A).
    - The times and locations will be placed on the FWACDOH's website, www.allencounty.health.com.
- If not already present, adult mosquito traps (if available) will be placed in areas where adulticiding has been conducted to monitor the effectiveness of the treatment.
    - The samples from the traps placed into the recently sprayed areas will be tested the following day. If the samples are positive, adulticiding will occur again in the same areas after the twenty-four (24)–hour notification is provided. According

to the CDC, repeat treatments may need to occur to reduce the population of *Culex* species in an area.[iv]

- Environmental surveillance of the area where there are repeat positive samples will increase to identify breeding site locations.
- If the same area has been sprayed twice within two weeks and the trap still has positive mosquitoes after the second spraying, the VCESD Director is to meet with the Health Commissioner, Department Administrator and President of the Executive Board before spraying a third time.

## MONITORING ADVERSE EVENTS FROM PESTICIDE EXPOSURE

### Objective

Assess the number of adverse events resulting from adult mosquito control activities

### Background

Since exposure to any pesticide has the potential to cause adverse reactions, particularly among those with pesticide sensitivity or respiratory conditions, the FWACDOH provides advance notification of spraying times and locations through the media and on the department website (www.allencountyhealth.com). Prior to the beginning of the mosquito season, information on the adulticide to be used by the VCESD is sent to all hospital emergency departments, which includes product information on the adulticide, Material Safety Data Sheets, and other information relevant to identifying possible exposures to the adulticide. This information is also on the department's website.

### Action Plan

- During each week adulticiding is performed, the Health Commissioner or Administrative Assistant will contact local emergency departments to inquire about patients presenting with physical complaints potentially related to adulticiding (see Appendix K).
- The information will be provided to the IDC Director and VCESD Director.
- An IDC Nurse will contact all patients identified in the emergency room survey for further investigation (see Appendix L).

## RESEARCH AND EVALUATION

### Objective

Understand the transmission and pathogenicity of mosquito-borne diseases and to assess the effectiveness of Fort Wayne-Allen County Department of Health surveillance, prevention and control methods

### Background

It is important for public health professionals to study the potential impact of a disease on a population and to create safe and effective methods for reducing the risk of disease transmission. The FWACDOH, in collaboration with the CDC and ISDH, has investigated the risk factors of WNv. Many questions remain though about how the virus circulates in nature.

### Action Plan

- The FWACDOH will continue to work closely with Federal, State, and Local partners to conduct research that will identify the most effective predictors of human illness from WNv and other arboviral diseases in Fort Wayne and Allen County, including the use of dead bird cluster models.
- The FWACDOH will continue to update the response to mosquito-borne disease outbreaks based on the ongoing analyses of bird, mosquito, mammalian and human surveillance data.
- The FWACDOH will evaluate the most cost-effective methods of surveillance and control, including removing unproductive breeding sites from the list of permanent breeding sites.
- The FWACDOH will evaluate the potential public health and environmental impact of the application of pesticides for adult mosquito control.

## APPROVAL

The Fort Wayne – Allen County Department of Health's Arboviral Surveillance and Control Plan for Fort Wayne and Allen County was approved by the Fort Wayne-Allen County Executive Board of Health on March 16, 2009.

Appendix A

***FOR IMMEDIATE RELEASE*** ***NAME OF CONTACT***
***August 21, 2006*** ***PHONE #***

**COUNTY Health Department Reports Positive Test for WNv**

CITY—The COUNTY Health Department reported that a (POOL OF MOSQUITOES/DEAD BIRD) collected on DATE tested positive for WNv. This is the first reported case of WNv activity in 2006 for COUNTY.

WNv is transmitted to humans by mosquitoes that have first bitten an infected bird. A person bitten by an infected mosquito may show symptoms three to 15 days after the bite. State health officials say that in previous years, most human cases of WNv were reported between mid-July and mid-September.

The virus usually results in a mild illness known as West Nile fever, which can cause fever, headache, body aches, swollen lymph glands, or a rash. However, a small number of individuals can develop a more severe form of the disease with encephalitis or meningitis and other neurological syndromes, including flaccid muscle paralysis.

The health department recommends that local residents take the following protective steps when outdoors:

- Avoid being outdoors during prime mosquito biting times of dusk to dawn;
- Apply insect repellent containing DEET, picaradin, or oil of lemon eucalyptus to clothes and exposed skin; and
- Wear long-sleeved shirts and pants while in areas where mosquitoes are biting.

The health department is also asking residents to take steps to rid their properties of potential mosquito breeding grounds by:

- Repairing failed septic systems;
- Drilling holes in the bottom of recycling containers that are left outdoors;
- Keeping grass cut short and shrubbery trimmed;
- Disposing of old tires, tin cans, plastic containers, ceramic pots or other unused containers that can hold water;
- Cleaning clogged roof gutters, particularly if leaves tend to plug up the drains; and
- Aerating ornamental pools, or stock them with predatory fish.

Health officials report that although individuals over age 50 are at greatest risk for serious illness and even death from WNv, people of all ages have been infected with the virus and have had severe disease.

For more information, visit the COUNTY'S Web site at www.URL.com

# Appendix B

## External Communications Chart

| Who? | Will Do? | Contact Who? |
|---|---|---|
| Communications Director | Notify the following regarding adulticiding | Allen County Commissioners<br>Fort Wayne Mayor's Office<br>Media<br>Fort Wayne Police Dept<br>Allen County Sheriff's Dept<br>911 Communications<br>FWAC Homeland Security<br>New Haven Mayor's Office<br>Fort Wayne Parks Dept<br>Allen County Parks Dept<br>School Districts |
| Vector Control Director | Notify the following before mosquito season begins; Adulticide information for hospitals; Breeding site locations for the others; Fish notice to hardware/home improvement stores | Hospitals<br>School Districts<br>Allen County Parks Dept<br>Fort Wayne Parks Dept<br>New Haven Parks Dept<br>Hardware/Home Improvement Stores |
| Administrative Assistant | Contact hospital emergency departments after adulticiding occurs to see if anyone from public complained of health effects of spray | Hospital Emergency Depts |
| IDC Nurse | Contact members of public who reported to hospital emergency departments | Members of public who reported to hospital emergency departments |

Appendix C

## CDC Case Definition of Neuroinvasive and Non-Neuroinvasive Domestic Arboviral Diseases

(includes diseases caused by California serogroup viruses; eastern and western equine encephalitis viruses; and Powassan, St. Louis encephalitis, and West Nile viruses)

### Clinical description

Arboviral infections may be asymptomatic or may result in febrile illnesses of variable severity sometimes associated with central nervous system (CNS) involvement. When the CNS is affected, clinical syndromes include aseptic meningitis, myelitis and encephalitis, which are clinically indistinguishable from similar syndromes caused by other viruses. Arboviral meningitis is usually characterized by fever, headache, stiff neck, and pleocytosis in cerebrospinal fluid. Arboviral myelitis is usually characterized by fever and acute bulbar or limb paresis or flaccid paralysis. Arboviral encephalitis is usually characterized by fever, headache, and altered mental status ranging from confusion to coma with or without additional signs of brain dysfunction. Less common neurological syndromes can include cranial and peripheral neuritis or other neuropathies, including Guillain-Barré syndrome.

Non-neuroinvasive syndromes caused by these usually neurotropic arboviruses can rarely include myocarditis, pancreatitis, or hepatitis. In addition, they may cause febrile illnesses (e.g., West Nile fever [WNF]) that are non-localized, self-limited illnesses with headache, myalgias, arthralgias, and sometimes accompanied by skin rash or lymphadenopathy. Laboratory-confirmed arboviral illnesses lacking documented fever can occur, and overlap among the various clinical syndromes is common.

### Clinical criteria for diagnosis

Cases of arboviral disease are classified either as neuroinvasive or non-neuroinvasive, according to the following criteria:

Neuroinvasive disease requires the presence of fever and at least one of the following, as documented by a physician and in the absence of a more likely clinical explanation:

- Acutely altered mental status (e.g., disorientation, obtundation, stupor, or coma), or
- Other acute signs of central or peripheral neurologic dysfunction (e.g., paresis or paralysis, nerve palsies, sensory deficits, abnormal reflexes, generalized convulsions, or abnormal movements), or
- Pleocytosis (increased white blood cell concentration in cerebrospinal fluid [CSF]) associated with illness clinically compatible with meningitis (e.g., headache or stiff neck).

Non-neuroinvasive disease requires, at minimum, the presence of documented fever, as measured by the patient or clinician, the absence of neuroinvasive disease (above), and the absence of a more likely clinical explanation for the illness. Involvement of non-neurological organs (e.g., heart, pancreas, liver) should be documented using standard clinical and laboratory criteria.

**Laboratory criteria for diagnosis**
Cases of arboviral disease are also classified either as confirmed or probable, according to the following laboratory criteria:

*Confirmed case*:

- Four-fold or greater change in virus-specific serum antibody titer, or
- Isolation of virus from or demonstration of specific viral antigen or genomic sequences in tissue, blood, CSF, or other body fluid, or
- Virus-specific immunoglobulin M (IgM) antibodies demonstrated in CSF by antibody-capture enzyme immunoassay (EIA), or
- Virus-specific IgM antibodies demonstrated in serum by antibody-capture EIA and confirmed by demonstration of virus-specific serum immunoglobulin G (IgG) antibodies in the same or a later specimen by another serologic assay (e.g., neutralization or hemagglutination inhibition).

*Probable case:*

- Stable (less than or equal to a two-fold change) but elevated titer of virus-specific serum antibodies, or
- Virus-specific serum IgM antibodies detected by antibody-capture EIA but with no available results of a confirmatory test for virus-specific serum IgG antibodies in the same or a later specimen.

**Case definition**
A case must meet one or more of the above clinical criteria and one or more of the above laboratory criteria.

# INDIANA STATE DEPARTMENT OF HEALTH LABORATORIES

Appendix D

## VIROLOGY/IMMUNOLOGY REQUEST FORM

(317) 233-8000

State Form 35212 (R3/5-03)

ISDH Lab No _____

Date Recv'd _____

**DATE OF ONSET MUST BE PROVIDED FOR TESTING**
**SPECIMENS/FORM WITHOUT NAME AND DATE OF COLLECTION WILL NOT BE ANALYZED**

Patient's Name _____
(Last) (First) (Middle)

Birthdate _____ Race _____ Sex _____ County _____ Occupation _____

Date of onset ___/___/___ Type of Specimen: _____

Collection Date: ❑ Specimen ___/___/___ Source of Specimen: _____
❑ Acute serum ___/___/___
❑ Convalescent serum ___/___/___

Specific Agent Suspected : _____

### LABORATORY EXAMINATIONS AVAILABLE

**SEROLOGY**

- ❑ Adenovirus
- ❑ Arbovirus (EEE, WEE, SLE, CE, and WNV)
- ❑ Coronavirus (SARS-CoV, Urbani strain)
- ❑ Coxiella (Q-Fever)
- ❑ Ehrlichia
- ❑ Hantavirus
- ❑ Histoplasma
- ❑ Influenza virus
- ❑ Legionella
- ❑ Mumps ❑ IgM ❑ IgG
- ❑ Mycoplasma pneumoniae
- ❑ Parainfluenza virus
- ❑ Respiratory Syncitial Virus (RSV)
- ❑ Rocky Mt. Spotted Fever
- ❑ Rubella ❑ IgM ❑ IgG
- ❑ Rubeola ❑ IgM ❑ IgG
- ❑ Typhus
- ❑ West Nile Virus
- ❑ Varicella (VZV) ❑ IgM ❑ IgG
- ❑ Other_____

| **CULTURE** | **Preferred Source** | | **Preferred Source** |
|---|---|---|---|
| ❑ Adenovirus | | ❑ Mumps | |
| ❑ Cytomegalovirus (CMV) | | ❑ Parainfluenza virus | Nasopharyngeal (NP) |
| ❑ Enterovirus (Coxsackievirus, Echovirus) | Stool | ❑ Respiratory Syncitial | |
| ❑ Herpes Simplex (HSV) | | ❑ Rubella | |
| ❑ Influenza virus | Nasopharyngeal (NP) | ❑ Varicella virus (VZV) | |
| ❑ Measles | | ❑ Other_____ | |

| **PCR** | **Preferred Source** | |
|---|---|---|
| ❑ Norovirus | Stool | ❑ Other_____ |
| ❑ Mycoplasma pneumoniae | Nasopharyngeal (NP) | |

### SYMPTOMS

**General**
- ❑ Fever ( °)
- ❑ HeadAche
- ❑ Sore Throat
- ❑ Cough
- ❑ Myalgia
- ❑ Anorexia
- ❑ Otitis
- ❑ Parotitis

**Respiratory**
- ❑ Common Cold
- ❑ Acute Resp. Dis.
- ❑ Bronchitis
- ❑ Pneumonitis
- ❑ Pharyngitis
- ❑ Upper Resp. Inf.

**CNS**
- ❑ Encephalitis
- ❑ Meningitis
- ❑ Neck Rigidity
- ❑ Seizures
- ❑ Paralysis
- ❑ Chorea

**Gastrointestinal**
- ❑ Nausea
- ❑ Vomiting
- ❑ Diarrhea
- ❑ Abdominal Pain
- ❑ Constipation
- ❑ Gastroenteritis

**Exanthema**
- ❑ Maculopapular
- ❑ Papular
- ❑ Hemorrhagic
- ❑ Vesicular
- ❑ Petechial
- ❑ Erythema Migrans
- ❑ Oral Lesion
- ❑ Genital Lesion

**Cardiovascular**
- ❑ Myocarditis
- ❑ Pericarditis
- ❑ Endocarditis
- ❑ Cardiomegaly

**Ocular**
- ❑ Conjunctivitis
- ❑ Chorioretinitis
- ❑ Blurred Vision

**Organomegaly**
- ❑ Splenomegaly
- ❑ Hepatomegaly
- ❑ Orchitis

**Miscellaneous**
- ❑ Jaundice
- ❑ Lymphadenopathy
- ❑ Pleurodynia
- ❑ Other_____

**State of Illness**
- ❑ Symptomatic
- ❑ Asymptomatic
- ❑ Chronic
- ❑ Localized
- ❑ Disseminated

**COMPLETE THE INFORMATION ON THE REVERSE SIDE OF THIS FORM**

Please Include Species Information and Dates of Contact/Exposure

☐ Contact With And / Or ☐ Exposure To

Insects _____ Birds _____

Animals _____ Human Cases _____

Other _____

Similar Infection: Family? No ( ) Yes ( ): Or Community? No ( ) Yes ( )

Recent travel? No ( ) Yes ( ) Location/Date: _____

| Treatment: | Drugs Used | ☐ None | Date Begun (Month/Day/Year) | Date Completed (Month/Day/Year) |
|---|---|---|---|---|
| | 1. | | | |
| | 2. | | | |
| | 3. | | | |

| Related Immunizations | Month/Year | Recent Vaccinations | Month/Year |
|---|---|---|---|
| 1. | | 1. | |
| 2. | | 2. | |
| 3. | | 3. | |

Submitting Lab _____

Address _____

Phone _____

Fax _____

Contact Person _____

Physician's Name _____

Address _____

Phone _____

Fax _____

**MAILING ADDRESS**

Indiana State Department of Health
Virology/Immunology
P.O. Box 7203
Indianapolis, Indiana 46707-7203

**SHIPPING ADDRESS (FOR COURIER/DROP-OFF)**

Indiana State Department of Health
Virology/Immunology
635 North Barnhill Drive, Room MS2023
Indianapolis, Indiana 46202

## SPECIAL INSTRUCTIONS

**SEROLOGY/VIRAL ANTIBODY**

Submit 3 ml serum collected at onset of illness followed by a convalescent serum drawn 2-3 weeks later (3-4 weeks for Legionnaires Disease). Alternatively, hold the acute for the convalescent serum and send together. Use sterile tubes with leakproof screw cap lids.

Serum specimens may be shipped without refrigeration in suitable mailing containers (e.g., ISDH type 9A)

**VIRUS CULTURE**

Collect specimen for virus culture as early as possible in the acute stage of illness. The usual specimens collected, depending on the virus suspected: NP swabs or throat swabs, stools or rectal swabs, cerebrospinal fluid, effusion fluid, vesicle fluids, lesion swabs or scrapings, biopsy tissue, and post mortem tissues. Use viral transport media for all swabs.

Refrigerate specimens for virus culture immediately after collection. Ship specimens within 24 hours, using ice packs in a heavily insulated box. Pack to prevent breakage or spillage and to conform to shipping regulations.

Freeze specimens for virus culture if they cannot be delivered within 24 hours. Ship frozen specimens on 10 lb. dry ice in a heavily insulated box. **Do not ship on Friday**, hold in freezer for Monday shipping.

**MOLECULAR/PCR**

Norovirus stool specimens must remain cold from collection to delivery and be delivered within 24 hours of collection. Use container 7A.

Mycoplasma pneumoniae nasopharyngeal (NP) swabs in M4-3 transport media must remain cold from collection to delivery and be delivered within 24 hours of collection.

Ship for overnight delivery. **Do not ship on Friday.** Insulated containers must be enclosed within a cardboard outer shipping container.

# MOSQUITOBORNE ENCEPHALITIS CASE INVESTIGATION - Page 1 of 4

Indiana State Department of Health
State Form 51382 (R/4-04)

DIRECTIONS - PLEASE READ BEFORE YOU BEGIN:

1. Print firmly and neatly.
2. Only use pens with blue or black ink.
3. Fill in circles like this: ● Not like this: ⊗ ✓ Mark mistakes like this: ✓
4. Print capital letters only and numbers completely inside boxes. A 2 C 3
5. Please complete all items on form.
6. **Date format: MM/DD/YY**

## Section 1. Demographic Information

**Last Name**

**First Name** **MI** **Phone Number** - -

**Number & Street Address**

**City** **State** **ZIP Code** -

**County** **Date of Birth** / / **Age**

**Race:**
- ○ Asian
- ○ Black or African American
- ○ American Indian or Alaska Native
- ○ Native Hawaiian or Other Pacific Islander
- ○ White
- ○ Other/Multiracial
- ○ Unknown

**Ethnicity:**
- ○ Hispanic or Latino
- ○ Not Hispanic or Latino
- ○ Unknown

**Sex:**
- ○ Male
- ○ Female
- ○ Unknown

**Is Age in day/mo/yr?**
- ○ Days
- ○ Months
- ○ Years

**Occupation** **Phone of Employer/School/Day Care** - -

**Name of** ○ Employer ○ School ○ Day Care

**Address of Employer/School/Day Care**

**City** **State** **ZIP Code** -

## Section 2. Clinical Information

**Symptoms (check all that apply):**
- ○ Fever . *(degrees)*
- ○ Headache
- ○ Dizziness
- ○ Myalgia
- ○ Fatigue
- ○ Paralysis
- ○ Rash
- ○ Neck Stiffness
- ○ Stupor
- ○ Disorientation
- ○ Tremors
- ○ Muscle Weakness
- ○ Convulsions
- ○ Other, specify:

**Date of Onset** / /

**Duration of Symptoms in Days**

**Date First Positive Specimen Collected** / /

**Acute Flaccid Paralysis?**
- ○ Yes
- ○ No

**Method of Testing Used:**

○ Culture

Specimen

**Results:** ○ Positive ○ Negative

○ PCR

Specimen

**Results:** ○ Positive ○ Negative

○ CSF

○ Serology
See page 2.

# MOSQUITOBORNE ENCEPHALITIS CASE INVESTIGATION - Page 2 of 4

Indiana State Department of Health
State Form 51382 (R/4-04)

## Section 2. Clinical Information (continued)

**1. IgM Testing**

__/__/__
**Acute Specimen Taken**

**Acute Value**

__/__/__
**Convalescent Specimen Taken**

**Convalescent Value**

**Results:**
- ○ Significant Rise in IgM
- ○ No Significant Rise in IgM
- ○ Indeterminate
- ○ Pending
- ○ Not Done
- ○ Unknown

**2. IgG Testing**

__/__/__
**Acute Specimen Taken**

**Acute Value**

__/__/__
**Convalescent Specimen Taken**

**Convalescent Value**

**Results:**
- ○ Significant Rise in IgG
- ○ No Significant Rise in IgG
- ○ Indeterminate
- ○ Pending
- ○ Not Done
- ○ Unknown

**Physician/Hospital that Collected Specimen**

**Physician/Hospital Address**

**City** **State** **ZIP Code** -

__-__-__
**Physician/Hospital Phone**

**Was the patient hospitalized before or during infection?**

○ Yes ○ No

**If Yes, admission date:** __/__/__

**Discharge date:** __/__/__

**Hospital:**

**Did patient die?**

○ Yes ○ No

**Diagnosis:**
- ○ Encephalitis
- ○ Uncomplicated fever
- ○ Other clinical
- ○ Meningitis
- ○ Asymptomatic infection
- ○ Unknown

| | | | |
|---|---|---|---|
| **1. Did patient receive blood or blood product within previous 30 days?** | ○ Yes | ○ No | |
| **2. Did patient donate blood or blood product within previous 30 days?** | ○ Yes | ○ No | |
| **3. Is the patient a Presumptive Viremic donor?** | ○ Yes | ○ No | __/__/__ **If Yes, donation date** |
| **4. Was patient an organ recipient or donor within previous 30 days?** | ○ Yes | ○ No | |
| **5. Is patient pregnant?** | ○ Yes | ○ No | |
| **6. Was the patient breast-feeding at the time of the illness?** | ○ Yes | ○ No | |

# MOSQUITOBORNE ENCEPHALITIS CASE INVESTIGATION - Page 3 of 4

Indiana State Department of Health
State Form 51382 (R/4-04)

## Section 3. Risk Factors

**Patient's home setting:**

○ Urban ○ Suburban ○ Rural

**Is the patient's home located adjacent to (check all that apply):**

○ Wetlands ○ Woods ○ Marsh/Bog ○ Dumps
○ Streams ○ Ponds ○ Sewage/Septic Effluent ○ Other Area(s) of Standing Water

**Are any of the following water containers located outside of the home or area (check all that apply)?**

○ Birdbaths ○ Fountains ○ Used Tires
○ Garden Ponds ○ Pools

○ Other Containers, specify: _____

**Does home have working screens for windows and doors?**

○ Yes ○ No

During the two weeks prior to symptoms, did the patient:

**Engage in outdoor activities at home?**

○ Yes ○ No

_____
**If Yes, describe**

__ / __ / __
**Date**

**Engage in the following activities (check all that apply)?**

○ Camping ○ Hiking ○ Fishing ○ Picnicking

_____
**If so, where**

__ / __ / __
**Date**

**Travel to recreational areas within county of residence?**

○ Yes ○ No

_____
**If Yes, where**

__ / __ / __
**Date:**

**Travel outside of county of residence but within Indiana?**

○ Yes ○ No

_____
**If Yes, where**

__ / __ / __
**Date**

**Travel outside of Indiana?**

○ Yes ○ No

_____
**If Yes, where**

__ / __ / __
**Date**

# MOSQUITOBORNE ENCEPHALITIS CASE INVESTIGATION - Page 4 of 4

Indiana State Department of Health
State Form 51382 (R/4-04)

## Section 3. Risk Factors (Continued)

**Stay overnight away from home?**

○ Yes ○ No

**If Yes, where**

**Date**

During the two weeks prior to symptoms, did the patient:

**Sustain any known mosquito bites?**

○ Yes ○ No

**If Yes, date:**

## Section 4. Diagnosis

**Diagnosis:**

| | | | |
|---|---|---|---|
| Eastern Equine Encephalitis | ○ Suspect | ○ Probable | ○ Confirmed |
| St. Louis Encephalitis | ○ Suspect | ○ Probable | ○ Confirmed |
| La Crosse Encephalitis | ○ Suspect | ○ Probable | ○ Confirmed |
| West Nile Encephalitis | ○ Suspect | ○ Probable | ○ Confirmed |
| Other | ○ Suspect | ○ Probable | ○ Confirmed |

**If Other, specify**

## Section 5. Comments/Follow-up

**Comments:**

**Investigator Name**

**Agency**

**Phone Number** **Date**

Appendix F

## Addendum to Mosquitoborne Encephalitis Case Investigation

### Additional Questions:

| | | | |
|---|---|---|---|
| Mechanical Ventilation: | Yes | No | |
| Disposition: | Home | Nursing Home | Rehab |

Appendix G

## Arboviral Surveillance Team

Health Commissioner

Department Administrator

VCESD Director

IDC Director

Communications Director

Informatics Director

Vital Records Director

Administrative Assistant

# Appendix H

## LARVICIDES

| Common Name & Manufacturer's Address | Chemical Name & Emergency Phone |
|---|---|
| **Agnique Monomolecular Film**<br>Cognis Corporation<br>4900 Este Ave<br>Cincinnati, OH 45233 | Ethoxylated Alcohol<br><br>(800) 424-9300 |
| **Altosid Briquettes (30- & 150-day)**<br>Wellmark International<br>1000 Tower Lane, Suite 245<br>Schaumburg, IL 60173 | Methoprene<br><br>(800) 424-7763 |
| **VectoLex CG**<br>Valent BioSciences Corporation<br>870 Technology Way, Suite 100<br>Libertyville, IL 60048 | *Bacillus sphaericus*<br><br>(877) 315-9819 |

## ADULTICIDE

| | |
|---|---|
| **Anvil 2+2 ULV**<br>Clarke Mosquito Control Products, Inc<br>159 N. Garden Ave<br>Roselle, IL 60172 | Sumithrin 2%<br>Piperonyl Butoxide 2%<br><br>(800) 535-5053 |
| **ULV Flushing Solvent**<br>Clarke Mosquito Control Products, Inc<br>159 N. Garden Ave<br>Roselle, IL 60172 | Petroleum Solvent<br><br>(800) 535-5053 |

Appendix I

## DEAD BIRD DISPOSAL GUIDELINES

The FWACDOH will not be picking up dead birds this summer, but the address of where the dead birds are located is still welcomed. The Department will map out where the birds are located. Anywhere there is a cluster of dead birds within a 1 square mile area an adult mosquito trap will be placed there to collect mosquitoes for testing. The following guidelines should be used when disposing of the dead bird.

**Proper Burial Guidelines**

1. Do not pick up the dead bird with bare hands. Although there is no evidence of contracting WNv from direct contact with the saliva or blood of a dead bird, it is best to be on the side of caution.
2. Pick up the dead bird with disposable gloves, a plastic bag or a shovel.
3. Bury the bird four feet deep and away from water sources.
4. Disinfect the item that was used to pick up the dead bird with a disinfectant solution twice the strength recommended on the bottle.
5. Thoroughly wash hands.

**DO NOT DISPOSE OF BIRDS IN GARBAGE UNLESS YOU ABSOLUTLEY CANNOT BURY THEM.**

**Proper Disposal Guidelines**

1. Do not pick up the dead bird with bare hands. Although there is no evidence of contracting WNv from direct contact with the saliva or blood of a dead bird, it is best to be on the side of caution.
2. Pick up the dead bird with disposable gloves, a plastic bag or a shovel.
3. Place the bird in a plastic bag.
4. Spray the bird with a disinfectant solution twice the strength recommended on the bottle.
5. Tie the first bag closed.
6. Place a second bag around the first bag and tie it closed.
7. Dispose of the bird in the garbage.
8. Thoroughly wash hands.

The Fort Wayne Animal Care and Control Department will have a wheelbarrow in front of their office near the fenced-in parking area. The office is located at 3020 Hillegas Road, at the corner of Butler Road and Hillegas Road. Bagged birds can be placed into the wheelbarrow.

**Proper Disposal Guidelines**

1. Do not pick up the dead bird with bare hands. Although there is no evidence of contracting WNv from direct contact with the saliva or blood of a dead bird, it is best to be on the side of caution.
2. Pick up the dead bird with disposable gloves, a plastic bag or a shovel.
3. Place the bird in a plastic bag.
4. Thoroughly wash hands.

Appendix J

**Community Partners**

| | |
|---|---|
| Allen County Parks and Recreation Department | 449-3180 |
| Fort Wayne Neighborhood Advocate | 427-1200 |
| Fort Wayne Parks and Recreation Department | 427-6400 |
| Grabill | 627-5227 |
| Huntertown | 637-2030 |
| Leo-Cedarville | 627-6321 |
| Monroeville | 623-6234 |
| New Haven | 749-1911 |
| Woodburn | 632-5318 |

Appendix K

# Emergency Room Log

For Surveillance of "Chief Complaints" Related to DOH Adulticiding

**Date of Adulticiding: _____**

| *Hospital/Date* | | | | | | | |
|---|---|---|---|---|---|---|---|
| Parkview | | | | | | | |
| Parkview North | | | | | | | |
| Lutheran | | | | | | | |
| Dupont | | | | | | | |
| St. Joe | | | | | | | |
| *Total* | | | | | | | |

Appendix L

# Adverse Reaction to Mosquito Spray

# Patient phone calls to Health Department

**Name:** ***Last:*****_____** ***First:*****_____**

**Sex:** ***Male*****_____** ***Female*****_____** ***Age*****_____** ***Phone No.*****_____**

**Street Address: _____Zip Code_____ Date of call:_____**

**<u>Symptoms</u>:** ***SOB*****: yes ____no_____** ***throat irritation*****: yes____ no____**
***rash*****: yes____ no____** ***cough*****: yes____ no____**
***other symptoms*****: _____ _____**
**_____ _____**

**Has caller contacted:** ***Private Provider*****: yes_____ no_____**
***Emergency Room*****: yes_____ no_____**
***Poison Control*****: yes_____ no_____**

**Recommended by PHN to contact private provider: yes____ no____**

**PHN that responded to call: _____**

**Date of return call: _____**

**Symptoms subsided: yes_____ no_____**
***If no, please list:***

**Further recommendations: yes_____ no_____**
**If yes, please list:**

# REFERENCES

[i] Information on Arboviral Encephalitides. http://www.cdc.gov/ncidod/dvbid/arbor/arbdet.htm
[ii] Environmental Risk Analysis Program of the Cornell University Center for the Environment http://www.cfe.cornell.edu/erap/WNV/
[iii] Centers for Disease Control and Prevention, "Epidemic/Epizootic West Nile Virus in the United States: Guidelines for Surveillance, Prevention, and Control", 2003, p. 31.
[iv] Centers for Disease Control and Prevention, "Epidemic/Epizootic West Nile Virus in the United States: Guidelines for Surveillance, Prevention, and Control", 2003, p. 31.