



Arbovirus Surveillance and Response Plan

Prepared by the West Nile Virus Technical Advisory Committee

Updated July, 2017

- ❖ Health Services Agency
 - Environmental Health Services
 - Public Health – Disease Control
- ❖ Agricultural Commissioner
 - Mosquito and Vector Control (MVCD)

I. Statement of Purpose

The West Nile Technical Advisory Committee (TAC) was formed ad hoc in 2002 to prepare the County for the expected arrival of mosquito-borne West Nile virus and to provide recommendations for preparing for outbreaks of this and other arboviruses (arthropod-borne viruses). As of 2016, this now includes Zika virus, dengue and chikungunya, which are covered in a separate response plan. The TAC consists of the Santa Cruz County Agricultural Commissioner's Mosquito and Vector Control (MVC) division and Santa Cruz County Health Services (HSA) personnel, coordinating with the State of California, local municipalities, the local medical and veterinary community and wildlife managers. The following pages describe the TAC's plan for detecting and interrupting West Nile and other arbovirus transmission in local human, mosquito and wildlife populations.

II. Agencies Involved

- Santa Cruz County Agricultural Commissioner
 - Mosquito and Vector Control (MVC)
- Santa Cruz County Health Services Agency (HSA):
 - Environmental Health Services (EHS)
 - Public Health – Disease Control (PHDC)
- Santa Cruz County Office of Emergency Services (OES)
- California Conference of Directors of Environmental Health (CCDEH)
- Mosquito and Vector Control Association of California (MVCAC)
- California Department of Public Health (CDPH):
 - Vector-borne Disease Section
 - Viral and Rickettsial Disease Laboratory
 - Infectious Disease Branch
- U.S. Public Health Service Centers for Disease Control (CDC)
- University of California, Davis (UCD):
 - Davis Arbovirus Research and Training (DART)
 - Center for Vector-borne Disease Research (CVEC)
- California Animal Health and Food Safety Laboratory (CAHFSL)

III. Current Local Status

Response to a mosquito-borne virus would be initiated at the local government level. The County Health Officer may take any preventive measure that may be necessary to protect and preserve the public health from any public health hazard during a local emergency. Preventive measure means abatement, correction, removal, or any other protective step that may be taken against any public health hazard that is caused by a disease outbreak that affects the public health (H&S Code sections 101040, 101475). The County Board of Supervisors or the Health Officer may proclaim a local emergency (GC8630). Once a local emergency has been declared, the Health Officer has the right to obtain all necessary information about the disease outbreak to abate the emergency and protect the public health. Health officials may provide this information to responding state or local agencies, or to medical and other professional personnel treating victims of the local emergency.

MVC is operational and funded for mosquito and mosquito-borne disease surveillance and suppression and vector control services countywide.

The following plan attempts to address the best-recommended methods of preparedness, education and response that the local resources can provide.

IV. Response Plan Components

CONDUCTED BY ALL TAC AGENCIES AND ORGANIZATIONS (Countywide):

- A. Coordinate activities and share limited resources with other local, state and federal public health agencies
- B. MVC, HSA, public health providers and veterinarians will monitor for arboviral infections among humans, domestic animals and wildlife.
- C.** Staff will receive inquiries from the public and media on West Nile virus and distribute or provide educational information as necessary.

The following components include all of the above with the specific additions

CONDUCTED BY MVC (Countywide):

- A. Staff will continue to provide routine services to prevent the emergence of mosquitoes through reduction and control of larval breeding sources.
- B. Staff will monitor local mosquito populations for potential to transmit arbovirus infection to vertebrate hosts.

Details:

CONDUCTED BY ALL TAC AGENCIES & ORGANIZATIONS

A. Summary of the Activities and Responsibilities of Cooperating Agencies

- 1) MVC will monitor mosquito populations and collect mosquito pools, blood samples from sentinel chicken flocks, and submit wild bird fluids for virus detection.
- 2) EHS will coordinate with MVC on abatement of mosquito breeding properties.
- 3) The MVC will conduct preventive mosquito control using Integrated Pest Management methods including the application of least-toxic larvicides under normal conditions, with adulticides if conditions warrant.
- 4) The STATE, through its cooperative agreement and pesticide applicator certification programs, will assure proper usage of pesticides in vector control. Therefore, use of non-signatory entities is not recommended except in local epidemic, then overseen by MVC.
- 5) The STATE will coordinate laboratory testing of mosquito pools, sentinel chickens, wild birds and domestic animals.
- 6) The STATE will distribute statewide information on virus presence and mosquito density to county health agencies and mosquito abatement districts. (VectorSurv and Arbobulletins)
- 7) The University of California and MVC will monitor pesticide resistance levels and determine the efficacy of available larvicides and adulticides for local mosquito populations.
- 8) If large-scale mosquito-borne disease outbreaks are imminent and emergency control is needed, the STATE will assist MVC and HSA in obtaining necessary local, state and federal resources.

- 9) HSA and MVC will accept calls and provide information to the public. HSA will also investigate and oversee testing of human cases and conduct related disease control activities. They have developed a public health nurse investigation protocol and informational web pages at www.santacruzhealth.org.
- 10) The County will respond in epidemic situations by activating the Health Services Agency's Department Operating Center or the Operational Area Emergency Operations Center at the appropriate level.

B. The MVC, HSA, public health providers and veterinarians will monitor for arboviral infections among humans, domestic animals and wildlife.

- 1) Early each season, the CDPH-VBDS will notify all county health officers and appropriate public and private laboratory directors by letter, and the general medical community through the California Morbidity Report, on procedures to follow in reporting and submitting specimens to the State Department of Public Health of suspect human cases of arbovirus infections. Specimens are tested by local laboratories with an IgM or IgG immunofluorescent assay (IFA) and/or an IgM enzyme immunoassay (EIA). Specimens with inconclusive results are forwarded to the California Department of Public Health Viral and Rickettsial Disease Laboratory (VRDL) for further testing or confirmation.
- 2) The State veterinarian will notify all veterinarians of procedures for reporting and submission of specimens from suspect equine cases of encephalitis.
- 3) Detection of arbovirus in equines or other domestic animals, mosquito pools, sentinel chicken flocks or wild birds will be reported to the county health officer so that physicians and hospitals can be alert for patients presenting symptoms compatible with arbovirus infection. Blood samples from acute and convalescent phases of the disease and autopsy samples in case of death will be forwarded to the CDPH for testing.
- 4) Oral swab samples from wild birds, particularly corvids are collected onto RNase cards and tested by the UC Davis Center for Vector-borne Diseases (CVEC) for West Nile virus by the singleplex RT-PCR Taqman assay and confirmed with a second primer set.
- 5) Dried blood spot specimens from sentinel chickens are submitted to the California Department of Public Health Vector-Borne Disease Laboratory and tested for the presence of antibodies to West Nile, western equine encephalomyelitis (WEEV), and St. Louis encephalitis (SLEV) viruses by EIA and IFA. Positive samples are confirmed by western-blot or PRNT.
- 6) Mosquito pools are submitted to DART and screened for WEEV, SLEV, and WNV viral RNA using a Taqman multiplex RT-PCR. CVEC will cease confirmation testing on PCR-positive pools of *Cx. tarsalis* and *Cx. quinquefasciatus* but will continue to confirm multiplex PCR-positive results for other mosquito species using singleplex RT-PCR.
- 7) The MVC and EHS will maintain a close liaison with the county health officer for notification of suspected and confirmed human cases within their jurisdictions so that epidemiological investigations, mosquito surveillance and control efforts can be coordinated.
- 8) All confirmed human cases of arbovirus infection will be investigated by the HSA, following the public health nursing protocol, and to determine possible areas where disease was contracted. MVC and EHS shall be notified when this determination has been made so that mosquito surveillance and control activities can be efficiently focused.
- 9) Surveillance for virus in mosquito populations will be conducted in the area adjacent to confirmed human cases. If this evaluation indicates adult mosquito populations must be reduced to mitigate the potential for virus transmission, adulticiding may be carried out if practical, following authorization by the Board of Supervisors for area-wide treatments.

C. The TAC agencies and others will distribute educational materials to the public.

- 1) The TAC will disseminate information to local schools, civic groups, libraries and other public and private entities regarding arbovirus surveillance and mosquito control programs. Information is also available on the HSA, MVC and CDPH web sites.
- 2) The TAC will provide information about the local and statewide mosquito-borne disease surveillance and control programs to the press when warranted. See the **HSA** Risk Communication Plan – West Nile virus.
- 3) Informational and educational materials will be provided to the TAC by the STATE to assist in the preparation and coordination of local news articles.
- 4) The MVC includes information about vector-borne disease in its educational talks to schools and community groups and at community events.

PROVIDED BY MVC:

A. Routine services to prevent the emergence of mosquitoes

- 1) Within the County, MVC maintains database and maps sources of mosquito breeding, along with a history of the density and species typically present. These sources are checked regularly and treated as needed.
- 2) Typical man-made sources for arbovirus vectors include catch basins, utility vaults, sewage treatment plants, impounds, ditches and drain lines. Stormwater structures installed for clean water goals, and urban wetland projects can vastly increase mosquito breeding sites. MVC reviews and comments on these development plans. Attention to source prevention Countywide would need to be intensified as public health risk of mosquitoes increases.
- 3) Yard breeding sources are equal to the above as the most important producers of mosquitoes of public health significance. They are largely controlled by informing residents and seeking their cooperation to drain receptacles of standing water and stock mosquito-eating fish in ornamental ponds, fountains and neglected swimming pools and spas. Septic systems with compromised lids or unscreened vents are a major problem in rural areas. Service request response and mosquitofish are provided Countywide to reduce vector production, dispersal and arbovirus risk.

B. Monitoring local mosquito populations for arboviral prevalence

- 1) Early seasonal environmental precursors to be used to monitor potential for virus activity:
 - a) **Abnormal spring rainfall patterns and pre-existing sources**
 - i. Mosquito sources created by spring rainfall will be monitored by MVC for vector mosquito production.
 - ii. Important sources that produce populations of *Culex* and *Aedes* species will be monitored and treated on a regular basis. These include underground conduits to dispose of sewage and storm wastewater, effluent from industrial sources and wastewater treatment facilities, recreational and ornamental water structures in parks, yards, creeks, drains, and fresh or saltwater marshes.
 - b) **Abnormal temperature variations**

- i. Average spring and summer temperatures in Santa Cruz County appear to be sufficient to trigger transmission of West Nile virus¹. Transmission of Western Equine Encephalitis (WEE) and St. Louis Encephalitis (SLE) is triggered when average temperatures [daily average = (maximum + minimum)/2] exceed 80° F for 10 consecutive days.
- 2) Biological surveillance indicators used to monitor the potential for outbreaks of encephalitis in vertebrates:

a) Density of adult mosquitoes

Encephalitis Virus Surveillance Traps (EVS) are placed throughout the service area to determine the average presence of mosquitoes within an area. These traps attract adult mosquitoes by chemical (CO₂) stimuli.

- i. Surveillance will be focused primarily on the adult populations of *Culex tarsalis* and *Culex pipiens* complex for the detection of arbovirus activity.
- ii. Encephalitis Virus Surveillance Traps (EVS) will be placed for 24 hr periods every week.
- iii. Mosquitoes collected will be identified to species and counted.
- iv. If collections in any individual trap exceed about 10 vector mosquitoes per trap night, supplementary control efforts will be undertaken to reduce those populations.
- v. Supplementary control includes:
 1. Inspection of all known sources within 1 mile of trap until source found or counts diminish
 2. A detailed search of the area for additional undetected larval sources
 3. Application of larvicides, where appropriate, to any source containing larvae in numbers that exceed a public health threshold for that site

b) Detection of virus through sentinel chicken flocks

Sentinel flocks indicate the presence of virus in biting adult mosquitoes by demonstrating a positive antibody seroconversion.

- i. Sentinel flocks of chickens will be set out in spring in MVC service area to provide additional information on mosquito-borne virus transmission.
- ii. Blood samples will be taken from the flocks every 2 weeks from late spring through early fall.
- iii. Specimens will be sent to the STATE for testing. Samples that contain antibodies to arboviruses will be reported to MVC as soon as results are available, and to all other control agencies through weekly STATE reports.
- iv. When chickens show antibody conversions:
 1. Adult mosquitoes will be collected for virus isolation to determine the extent and prevalence of the virus in mosquito populations, particularly in areas adjacent to population centers.
 2. Supplementary control efforts will be undertaken including:
 - a. Inspection of all known sources within 1 mile of trap until source found or counts diminish
 - b. A detailed search of the area for additional undetected larval sources

¹ Dohm D.J., O'Guinn ML, Turell MJ. Effect of environmental temperature on the ability of *Culex pipiens* (Diptera: Culicidae) to transmit West Nile virus. *J. Med Entomol* 2002 Jan;39(1):221-5.

- c. Application of larvicides, where appropriate, to any source containing larvae in numbers that exceed a public health threshold for that site

c) Detection of virus in wild birds

Detection of virus in dead birds appears to be the most sensitive means for uncovering the presence of West Nile virus. Virus can be identified in wild birds by isolation of infectious particles or detection of specific RNA by Reverse Transcription-Polymerase Chain Reaction (RT-PCR).

- i. Surveillance for wild bird carcasses will be initiated when local adult mosquito activity begins in the spring. Oral swab samples utilizing RNase cards of dead birds in good condition (without obvious decomposition, scavenged or infested with maggots) will be submitted to UC Davis Center for Vector-borne Diseases (CVEC) for testing..
- ii. The TAC and STATE will solicit the submission of dead birds from local humane societies, wildlife rescue organizations and the public.
- iii. Birds positive for West Nile virus will be reported to the TAC as soon as results are available, and to all other control agencies through weekly STATE reports.
- iv. When West Nile virus is detected in 1 or more wild birds or tree squirrels, supplementary surveillance and control efforts will be undertaken by MVC as follows:
 1. Adult mosquitoes will be collected for virus isolation to determine the extent and prevalence of the virus in mosquito populations, particularly in areas adjacent to population centers (see (d) below for description of mosquito pool testing).
 2. Supplementary mosquito control will be applied including:
 - d. Inspection of all known larval development sources within 1 mile of trap until source found or counts diminish
 - e. A detailed search of the area for additional undetected larval sources.
 - f. Application of larvicides, where appropriate, to any source containing larvae in numbers that exceed a public health threshold for that site.

d) Virus isolations from mosquito pools

Within its service area, MVC will collect and test mosquitoes for the presence of virus when sentinel flocks or other susceptible hosts are confirmed positive for arboviruses by the STATE.

- i. Using EVS and gravid mosquito traps, MVC will collect pools of 12 - 50 female mosquitoes of vector species and submit them to the UCD for virus testing.
- ii. Isolations of arboviruses from mosquito pools will be reported to MVC and the TAC as soon as results are available.
- iii. If virus is detected in mosquito pools, supplementary control efforts will be undertaken including:
 1. Inspection of all known sources within 1 mile of trap until source found or counts diminish
 2. A detailed search of the area for additional undetected larval sources.
 3. Application of larvicides, where appropriate, to any source containing larvae in numbers that exceed a public health threshold for that site.

V. MVC Support

A. Epidemiology

The STATE will provide epidemiological assistance as appropriate to the HSA as part of its ongoing disease surveillance and control program.

B. Laboratory

The arbovirus surveillance program depends upon the STATE, CAHFSL and UCD to test for arboviruses in mosquito pools and specimens from sentinel chicken flocks, dead birds and tree squirrels. In addition, the STATE coordinates the testing of suspected human or horse cases submitted by local state authorities with selected local laboratories.

C. Mosquito Control

1) Surveillance

- a) Adequate resources are available at the MVCD to carry out surveillance activities within its jurisdiction. This includes trained staff, equipment for collecting adult mosquitoes (portable traps, aspirators), shipping containers and a retail source of dry ice.

2) Control

- a) The MVCD may utilize the appropriate provision of the Health and Safety Code and the Government Code to provide funding for routine and emergency mosquito control within its jurisdiction. Sections covering standby charges and restricted reserves for public health emergencies can be found in Chapter 8, Part 2, Division 2 of Title 3 of the Government Code commencing with §25850 or Division 3, Chapter 1, of the Health and Safety Code commencing with §2000.
- b) In the event of virus recoveries or human cases in urbanized areas where the MVCD resources and/or public resistance limit the widespread application of adulticiding materials, an expanded and intensified larviciding program may be necessary to interrupt the transmission cycle and reduce the adult populations of vector species.
- c) The STATE maintains current information, provided by the MVCAC Chemical Control Committee on the inventory of mosquito control equipment and pesticides being used by local control agencies. In epidemic-level situations, adult mosquito control equipment and assistance may be available from the California Department of Food and Agriculture.
- d) The STATE will provide, on request, information and perform evaluations on adult control operations being conducted by the MVCD.

VI. Response Levels of Arbovirus Surveillance and Control Activity Triggered By Environmental and Epidemiological Conditions

This response plan is based on conditions that exist at 3 response levels identified as normal season, emergency planning, and epidemic. Seven risk factors are analyzed to determine the appropriate response:

- 1) Environmental conditions (snowpack, rainfall, temperature, season)

- 2) Adult mosquito vector abundance
- 3) Virus infection rate in mosquito vectors
- 4) Sentinel chicken seroconversions
- 5) Fatal infections in birds
- 6) Infections in equids and ratites (e.g. emus and ostriches)
- 7) Infections in humans
- 8) Proximity of detected virus activity to urban or suburban regions

Each factor is scored on an ordinal scale from 1 (least severe) to 5 (most severe). The mean score calculated from these factors corresponds to a response level as follows: normal season (1.0 to 2.5), emergency planning (2.6 to 4.0), and epidemic (4.1 to 5.0). **Table 1 provides a worksheet to assist in determining the appropriate rating for each of the risk factors for mosquito borne viruses.**

A. LEVEL I – Normal Season: Risk Rating 1.0 to 2.5

1) Triggers:

- a. Normal or below average rainfall and snow pack; average seasonal temperatures.
- b. Mosquito abundance at or below five year average (key indicator = adults of vector species).
- c. No virus isolations from mosquitoes.
- d. Absence of antibody seroconversion in sentinel chicken flocks.
- e. No WNV infected dead birds or squirrels.
- f. No equine cases.
- g. No human cases.

2) Responses:

- a. Conduct routine public education (eliminate standing water around homes, use personal protective measures).
- b. Conduct routine mosquito and virus surveillance activities.
- c. Conduct routine control of mosquito larvae.
- d. Inventory pesticides and equipment.
- e. Monitor for pesticide resistance in vector species.
- f. Ensure adequate emergency funding.
- g. Release routine press notices.
- h. HSA will send routine notifications to physicians and hospitals.
- i. The TAC will establish and maintain routine communication with County Office of Emergency Services.

B. LEVEL II – Emergency planning: Risk rating 2.6 to 4.0

1) Triggers:

- a. Snowpack and rainfall and/or temperatures above average.
- b. Adult mosquito abundance greater than 5-year average (150% to 300%).
- c. One or more virus isolations from mosquitoes (Minimum Infection Rate MIR / 1000 is <5)
- d. One or more seroconversions in single flock or one or two seroconversions in multiple flocks in specific region **(Santa Cruz County).**
- e. One to five positive dead birds or tree squirrels in specific region **(Santa Cruz County).**
- f. One or two equine cases in region **(adjacent counties).**
- g. **One or more human case in region (adjacent counties).**
- h. Viral detection in small towns or suburban region.

2) Responses:

In addition to Level I responses, the following activities will be undertaken:

- a. Enhance public education (include messages on signs and symptoms of encephalitis, seeking medical care if needed, inform public of pesticide applications if appropriate).
- b. Enhance information to public health providers and other key organizations and agencies.
- c. Increase surveillance and control of mosquito larvae
- d. Increase number or frequency of traps set for adult mosquitoes.
- e. Increase number of mosquito pools tested for virus.
- f. Review and evaluate efficacy of labeled candidate adulticiding materials and contact formulators regarding availability
- g. Conduct localized chemical control of adult mosquitoes, if needed and approved by Board of Supervisors.
- h. Review and modify response plan as necessary.
- i. Ensure notification of key agencies of the presence of viral activity including HSA and the County Office of Emergency Services.
- j. Increase mosquito control staff if necessary and expedite training.
- k. Obtain support from other County departments, local municipalities and agencies to assist in surveillance, procurement and source reduction.

<p>C. LEVEL III – Epidemic Conditions: Risk rating 4.1 to 5.0</p>

1) Triggers:

- a. Snowpack, rainfall and water release rates from flood control dams and/or temperatures well above average.
- b. Adult vector populations extremely high (>300%).
- c. Virus isolation from multiple pools of mosquitoes (MIR / 1000 > 5.0).
- d. More than two seroconversions per flock in multiple flocks in region (adjacent counties).
- e. More than two equine cases in region (adjacent counties).
- f. One or more human cases in Santa Cruz County.
- g. Virus detection in local urban or suburban areas.

2) Responses:

In addition to Level II responses, the following activities will be undertaken:

- a. Conduct full scale media campaign.
- b. Alert physicians and veterinarians.
- c. Conduct active human case detection. HSA will use nursing protocol to identify and investigate cases.
- d. Continued enhanced larval surveillance and control of immature mosquitoes.
- e. Broaden geographic coverage of adult mosquito surveillance.
- f. Expand scope and area of adult mosquito control if appropriate and approved by Board of Supervisors.
- g. The MVCD will coordinate its response with the HSA and the County Office of Emergency Services.
- h. The STATE will explore all avenues available for emergency funding at the state and federal levels, and secure their release to local control agencies.
- i. County HSA and the MVCD will determine whether a declaration of a “State of Emergency” should be considered by the County Board of Supervisors or Local Health Officer in consultation with the County Emergency Services Administrator and the County Administrative Officer.
- j. In consultation with the County Health Officer, Emergency Services Administrator and the MVCD, the County Administrative Officer will determine whether the County will request the Governor to declare a “State of Emergency”.
- k. Educational and mosquito control campaigns will continue until mosquito abundance is substantially reduced and no additional human cases are detected.

Table 1.

WNV Surveillance Factor	Assessment Value	Benchmark	
1. Environmental Conditions. Rural transmission may favor El Niño conditions, whereas urban transmission may favor La Niña conditions. Temperature data link: http://www.ipm.ucdavis.edu/WEATHER/wxretrieve.html	1	Avg daily temperature during preceding month <56° F	
	2	Avg daily temperature during preceding month 57-65° F	
	3	Avg daily temperature during preceding month 66-74° F	
	4	Avg daily temperature during preceding month 75-83° F	
	5	Avg daily temperature during preceding month >83° F	
2. Adult <i>Culex tarsalis</i> and <i>Cx. pipiens complex</i> abundance Determined by trapping adults, identifying them to species, and comparing numbers to those previously documented for an area for current time period.	1	Vector abundance well below average (<50%)	
	2	Vector abundance below average (50-90%)	
	3	Vector abundance average (90-150%)	
	4	Vector abundance above average (150-300%)	
	5	Vector abundance well above average (>300%)	
3. Virus infection rate in <i>Culex tarsalis</i> and <i>Cx. pipiens complex</i> mosquitoes Tested in pools of 50. Test results expressed as minimum infection rate (MIR) per 1,000 female mosquitoes tested (or per 20 pools).	1	MIR / 1000 = 0	
	2	MIR / 1000 = 0-1.0	
	3	MIR / 1000 = 1.1-2.0	
	4	MIR / 1000 = 2.1-5.0	
	5	MIR / 1000 > 5.0	
4. Sentinel chicken seroconversion Number of chickens in a flock that develop antibodies to WNV. If more than one flock is present in a region, number of flocks with seropositive chickens is an additional consideration. Typically 10 chickens per flock.	1	No seroconversions	
	2	One seroconversion in single flock over broad region	
	3	One to two seroconversions in a single flock in specific region	
	4	More than two seroconversions in single flock or one to two seroconversions in multiple flocks in specific region	
	5	More than two seroconversions per flock in multiple flocks in specific region	
5. Dead bird infection Includes zoo collections.	1	No WNV positive dead birds	
	2	One WNV positive dead bird in broad region	
	3	One WNV positive dead bird in specific region	
	4	Two to five WNV positive dead birds in specific region	
	5	More than five WNV positive dead birds and multiple reports of dead birds in specific region	
6. Equine cases	1	No equine cases	
	3	One equine case in broad region	
	4	One or two equine cases in specific region	
	5	More than two equine cases in specific region	
7. Human cases	1	No human cases	
	3	One human case in broad region (adjacent counties)	
	4	One human case in specific region (Santa Cruz County)	
	5	More than one human case in specific region	
8. Proximity to urban or suburban regions (score only if virus activity detected) Risk of outbreak is highest in urban areas because of high likelihood of contact between humans and vectors.	1	Virus detected in remote area	
	2	Virus detected in rural areas	
	3	Virus detected in small towns	
	4	Virus detected in suburban areas	
	5	Virus detected in urban area	
Response Level / Average Rating: Normal Season (1.0 to 2.5) Emergency Planning (2.6 to 4.0) Epidemic (4.1 to 5.0)			
		TOTAL	
		AVERAGE	