

# **Surveillance Guide for Reporting Arboviral Diseases**

**--Human Case Data Only--**



**DIVISION OF VECTOR-BORNE DISEASES**

*June 11, 2019*

*Version 1.1*

## Table of Contents

General Notes on Reporting .....	3
Case Report Data Elements .....	4
Epidemiologic Data Elements .....	7
Pregnancy/Congenital Infections Data Elements .....	8
Clinical Signs and Symptoms Data Elements .....	9
Laboratory Information and Diagnostic Testing Results .....	10
Appendix A: Reporting West Nile Virus infection in blood donors .....	11
Appendix B: Reporting Zika virus infection in blood donors .....	12
Appendix C: Arboviral Condition Codes .....	13

## General Notes on Reporting

- CDC requests that all nationally notifiable arboviral conditions (refer to [Appendix C](#)) be reported; however we are also interested in knowing about other arboviral diseases occurring in your jurisdiction. Appendix C provides some additional codes for arboviral diseases that are not nationally notifiable, as well as a condition code (10072) for others not listed.
  - CDC currently distributes domestic arboviral and chikungunya reports every two weeks during the arboviral transmission season. This same schedule is used for updating West Nile virus and chikungunya case counts on the CDC website and updating the CDC Disease Maps (formerly USGS maps). All cases that are reported and published to ArboNET by close of business Monday of the report week are included in the various updates.
  - Zika virus disease case counts are updated on the CDC website the first Thursday of each month. Zika disease cases reported and published to ArboNET by close of business on Tuesday of the posting week are included in the monthly update. The CDC Disease maps for Zika virus disease cases are also updated on the same monthly schedule.
- Antibody cross-reactivity and similarities in clinical presentation make distinguishing between related flaviviruses difficult, especially in areas where multiple flaviviruses are endemic. Further complicating disease reporting are the overlaps in case definitions for flaviviruses, which can result in the occasional case meeting the case definition criteria for more than one flavivirus disease. We use the specific example of Zika virus disease and dengue below, but the concepts apply to other endemic flavivirus diseases with cross-reactivity (e.g., West Nile virus disease and Saint Louis encephalitis).
- For cases meeting the case definition criteria for both Zika virus disease and dengue it may be difficult to distinguish between the two diseases for reporting purposes. For these cases, we request that you do not report the case twice as both a Zika virus disease case and a dengue case.
- Our preference is that you make a determination using the best available epidemiological and clinical evidence. In some cases, diagnostic testing on a convalescent specimen may provide additional insight. You can consult with CDC to determine if additional testing would be helpful and warranted.
  - If the available epidemiological and clinical information are not adequate to permit a best guess for reporting purposes, then report the case as Flavivirus disease, not otherwise specified (Flavivirus NOS) using condition code 50237. It is important to note that this is a disease condition code, not intended for asymptomatic infections.
  - These Flavivirus NOS cases (with condition code 50237) will not be counted as a Zika or dengue case, and will not be reported in NNDSS weekly or annual tables, or included in surveillance data posted on the CDC webpages or maps. For this reason, we request that you use the Flavi NOS condition code as infrequently as possible.
- The *MMWR* week is the week of the epidemiologic year assigned by the state health department for each reported case. *MMWR* week may be based on any of several dates (e.g., onset, diagnosis, laboratory result, when reported to public health, or data transmission date), and that assignment may vary by state or condition.
    - Because of the inconsistent use of the *MMWR* week variable, the Arboviral Diseases Branch uses 'Onset Date' to calculate the week and year for all reports generated with ArboNET data.
    - If 'Onset Date' is not provided, 'Specimen Collection Date' or 'Date of Donation' are used.
    - If none of the above dates are provided, the reported *MMWR* week and year are used.
    - NNDSS uses the *MMWR* week variable reported by the jurisdiction for their published summary tables, and the Arboviral Program uses 'Onset Date' as described above, for the this reason, the weekly counts may not match.

## Case Report Data Elements

**State ID:** State-assigned primary case identification number (unique ID). States use this field to link back to their own state investigations.

**County:** The patient's county of residence.

**Case Disease Imported Code:** This variable is intended to collect the most likely location of infection, **not the patient's recent travel history.**

- Indigenous: indicates that the infection was likely acquired in the patient's state of residence.
- Out of State: indicates that the infection was likely acquired outside of the patient's state of residence but within the United States.

**Imported State:** If the state of origin is known, choose the appropriate option from the list.

- International: indicates that the infection was likely acquired in another country.

**Imported Country:** Enter the country of origin here if known. If not known, enter "Unknown".

**Binational Reporting Criteria:** This field is to be used if 'Imported From' has a value of 'Acquired out of Country' and the case was imported from Mexico or Canada.

**Arbovirus:** Virus being reported. Choose the appropriate value from the list.

**DENV Serotype:** Only used for cases reported with 'Arbovirus' as 'Dengue'. Choose the appropriate option from the list (DENV-1; DENV-2; DENV-3; DENV-4; Unknown; No Answer).

**Condition Code:** All conditions reported to the Nationally Notifiable Disease Surveillance System (NNDSS), which includes ArboNET, have associated condition codes. Condition codes are used to help simplify storage and retrieval of information about cases of nationally notifiable diseases. All CDC reports, including arboviral reports, are generated using reported condition codes, so it is important that these are accurately recorded. For a list of condition codes, please refer to [Appendix C](#).

- Some arboviruses have multiple condition codes, based on either clinical presentation (e.g., neurologic vs non-neurologic) or other factors (e.g., congenital vs non-congenital, infection vs disease).
  - Example 1: If you are reporting a West Nile virus disease case with neurological presentation, the condition code should be 10056 and the primary clinical syndrome should be one of the following:
    - Acute flaccid paralysis
    - Encephalitis – including meningoencephalitis
    - Guillain-Barre' syndrome
    - Meningitis
    - Other neuroinvasive presentation
  - Example 2: If you are reporting a dengue disease case, the condition code and primary clinical syndrome should align as follows:
    - Condition code: 10680 - Clinical syndrome: Dengue
    - Condition code: 11704 - Clinical syndrome: Dengue-like illness
    - Condition code: 11705 - Clinical syndrome: Dengue, severe

**Onset Date:** This should reflect the date the patient developed symptoms of the current acute arboviral illness. If the case is an asymptomatic infection, leave this field blank or enter the date of specimen collection/blood donation in this field. The Arboviral Diseases Branch uses 'Onset Date' to calculate the week and year for all reports generated with ArboNET data. If 'Onset Date' is not provided, 'Specimen Collection Date' or 'Date of Donation' are used.

**Clinical Syndrome:** Select the clinical syndrome which best describes the patient's current clinical illness according to the below guidelines. This variable is considered to be the "Primary Clinical Syndrome".

- Acute flaccid paralysis (AFP): AFP is a clinical syndrome characterized by rapid-onset extremity, facial, and/or respiratory weakness with 'flaccid' or decreased muscle tone in the affected areas. AFP may result from diverse conditions affecting the lower motor neurons such as anterior ('polio') myelitis, neuromuscular junction disorders, or acute neuropathies (such as Guillain-Barré syndrome [GBS]). If the case is identified as having GBS, the clinical syndrome should be reported as GBS instead of AFP.
- Asymptomatic: Infected person without any symptoms.
- Congenital infection: Infants who were infected in utero should be reported using this clinical syndrome. Complications in the infant should be recorded under 'Newborn Complications'.
- Dengue: Dengue virus infection in a case that meets the criteria for dengue but does not meet the criteria for severe dengue.
- Dengue-like illness: Dengue virus infection and fever as reported by the patient or healthcare provider in a case that does not meet the criteria for dengue.
- Encephalitis – including meningoencephalitis: Encephalitis is infection or inflammation of the brain tissue. Clinically, it may present with fever, altered mental status, new-onset seizures, and/or focal neurologic deficits (e.g. cranial nerve palsies, aphasia, sensory deficits, abnormal reflexes, or abnormal movements). Diagnostically, it may be associated with a cerebrospinal fluid (CSF) pleocytosis and/or abnormal brain lesions on magnetic resonance imaging (MRI). Sometimes it may co-exist with infection or inflammation of the meninges (i.e., meningitis) resulting in a meningoencephalitis. Of note, many patients can become confused or have altered mental status due to their fever or other underlying medical conditions or medicines (e.g., liver or kidney disease, use of tacrolimus). Because of this, some consideration should be taken when classifying a patient with altered mental status as having encephalitis to ensure there is some sign of infection or inflammation of the brain.
- Febrile illness: Febrile illness without neurologic involvement. This may include isolated headache without other neurologic symptoms.
- Guillain-Barré syndrome (GBS): GBS is clinical syndrome characterized by an acute immune-mediated attack on multiple peripheral nerves and/or nerve roots (i.e., an acute immune-mediated polyradiculoneuropathy). Clinically, it may present with an acute, bilateral, progressive, flaccid weakness of the extremities and/or cranial nerve muscles, and is usually accompanied by reduced or absent reflexes. GBS is one of many causes of acute flaccid paralysis (AFP). If the case is identified as having GBS, the clinical syndrome should be reported as GBS instead of AFP.
- Hepatitis/Jaundice: Inflammation of the liver resulting in elevated liver function enzymes and/or elevated bilirubin. The elevated bilirubin can lead to yellowish discoloration (jaundice) of whites of eyes, skin, and mucous membranes.
- Meningitis: Meningitis is infection or inflammation of the tissues that cover the brain (i.e., the meninges). Clinically, this may present with fever, headache, photophobia or light sensitivity, and/or new nuchal rigidity (the inability to flex one's neck forward). Unless there is a concurrent encephalitis (i.e., meningoencephalitis), pure meningitis should not present with prominent altered mental status or focal neurologic deficits. Diagnostically, it may be associated with a cerebrospinal fluid (CSF) pleocytosis, but brain imaging on CT or MRI may be normal. If meningitis co-exists with an encephalitis (i.e., meningoencephalitis), it should be reported as encephalitis instead.
- Multi-system organ failure: Failure or insufficiency of two or more systems or organs in the body, such as heart, lung, liver, and/or kidney.
- Other neuroinvasive presentation: Other neurologic/neuroinvasive presentations not covered under the categories of AFP, GBS, encephalitis/meningoencephalitis, or meningitis. Other neuroinvasive presentation is a clinical syndrome that should only be selected for other neurologic/neuroinvasive presentations that are not covered under the other categories. Some examples of clinical presentations

that could fit in the category of other neuroinvasive presentation include blurred vision or unilateral facial paralysis, which might indicate optic neuritis or Bell's palsy, respectively. Other acute neurologic signs without a specific diagnosis that do not clearly fit one of the above categories would also qualify. Please contact the treating physician or CDC if there is any trouble determining which neuroinvasive category is most appropriate.

- Other clinical: For other non-neurologic/non-neuroinvasive presentations that are not consistent with other categories.
- Severe dengue: Dengue virus infection in a case that meets the criteria for dengue and has any one or more of the following: severe plasma leakage, severe bleeding from the gastrointestinal tract or vagina as defined by requirement for medical intervention, and/or severe organ involvement (elevated liver transaminases, impaired level of consciousness and/or diagnosis of encephalitis, encephalopathy, or meningitis, or heart or other organ involvement, including myocarditis, cholecystitis, and pancreatitis).
- Unknown: Insufficient information to assign a clinical syndrome to a case. You can change this at a later date if more information is obtained.

**Clinical Syndrome 2:** Select a secondary clinical syndrome when appropriate, using the same definitions as above.

**Case Status:** Choose the appropriate option from the list (Confirmed, Probable, Suspect, or Not a Case). For information on defining the case status for the record reference the appropriate national surveillance case definition at this site: <https://wwwn.cdc.gov/nndss/case-definitions.aspx>.

**Age:** Age at time of illness onset or specimen collection (for asymptomatic cases).

**Age Type:** If you enter an age, you must choose an age type (e.g., Days, Months, Weeks, Years).

**Sex:** Choose the appropriate option from the list (Male, Female, or Unknown).

**Race:** Select **all** appropriate values (American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, White, Other, or Unknown).

**Ethnicity:** Select the appropriate value: Hispanic or Latino, Not Hispanic or Latino, or Unknown.

**Country of Birth:** Enter country of birth here if known.

**Country of Usual Residence:** If the country of usual residence is known, choose the appropriate option from the list.

**Hospitalized:** Choose the appropriate option from the list (Yes, No, or Unknown).

**Fatality:** Choose the appropriate option from the list (Yes, No, or Unknown).

**Date of Death** If you have not entered 'Yes' in 'Fatality', this field will not appear for data entry. You must enter a date that is after the onset date entered.

**Publish:** The 'Publish' variable (named 'Publish Flag' in Arboviral v1.3 MMG) is used to indicate whether or not a case should be included in CDC reports.

- 'Yes' indicates that CDC should include the case in reports generated with ArboNET data, including the arboviral activity updates, CDC Disease Maps, CDC website case counts, and the NNDSS weekly and annual tables.
- 'No' indicates that CDC should not include the case in reports. You might chose not to publish a case because of pending confirmatory testing, additional data collection needed, or other reasons related to the case investigation. *Please remember to update the 'Publish' field to 'Yes' when you are ready for the case to be included in CDC reports.*

## Epidemiologic Data Elements

**Laboratory Acquired** 'Yes' indicates that the patient was possibly infected while working in a laboratory setting.

**Identified by Blood Donor Screening** 'Yes' indicates that the patient's donated blood tested positive for viral RNA. For more information about reporting positive blood donors, please refer to Appendices [A](#) and [B](#).

**Blood Donor** 'Yes' indicates that the patient donated a blood product within 30 days of illness onset. **This is meant to capture if a case donated blood before or after illness onset, because a case may be viremic before and after illness onset resulting in potentially infectious blood products**

**Date of Donation:** You should only enter a value if either 'Blood Donor' or 'Identified by Blood Donor Screening' are marked as 'Yes'.

**Blood Transfusion:** 'Yes' indicates that the patient received a blood product ≤30 days of illness onset. Marking this field as 'Yes' does not necessarily mean that the blood product received was determined to be the source of infection following investigation of the case.

**Organ Donor:** 'Yes' indicates that the patient donated an organ within 30 days of illness onset.

**Organ Transplant Recipient:** 'Yes' indicates that the patient received an organ or tissue transplant ≤30 days of onset. Marking this field as 'Yes' does not necessarily mean that the blood product received was determined to be the source of infection following investigation of the case.

**Breast Fed Infant:** 'Yes' indicates that the patient was a breast fed infant at the time of illness onset. If the patient was a breast-feeding woman at the time of illness onset, this field should **NOT** be marked as 'Yes'. Marking this field as 'Yes' does not necessarily mean that breast milk was determined to be the source of infection following investigation of the case.

**Transmission Mode Other:** Choose an appropriate option from the list when applicable

- Sexual transmission: indicates that the patient was likely infected through sexual contact with an infected person.
- Perinatal transmission: indicates that the infant was infected around the time of delivery.
- Transplacental transmission: indicates that the infant was infected during pregnancy

## Pregnancy/Congenital Infections Data Elements

**Pregnant:** 'Yes' indicates that the patient was pregnant at the time of illness onset or at the time of specimen collection in the case of asymptomatic women.

**Last Menstrual Period Before Delivery:** Date of first day of last menstrual period before delivery for pregnant women

**Pregnancy Complications:** This variable would only be used on the mother's report (not the infant's report). Choose the appropriate options (can choose multiple values). Values include: microcephaly, intracranial calcification, fetal growth abnormality, and fetus with central nervous system malformation.

**Pregnancy Outcomes:** This variable would only be used on the mother's report (not the infant's report). Choose the appropriate option. Values include: live birth, premature birth, fetal death, therapeutic abortion, still birth, perinatal death, still pregnant.

**Mother-Infant Case ID:** This variable would be used on a mother's or infant's report to link the two cases together. The mother's StateID should be entered for the infant's notification and the infant's StateID should be entered for the mother's notification.

**Newborn Complications:** This variable would only be used on a congenital infection report (not the mother's report). Choose the appropriate options (can choose multiple values). Values include: microcephaly, intracranial calcification, congenital anomaly of central nervous system, ocular defects, limb defects, intrauterine growth retardation, none.



## Clinical Signs and Symptoms Data Elements

None of the clinical signs and symptoms data are required. For all, mark as 'Yes', 'No', or 'Unknown' as appropriate.

**Fever:** any measured or subjective fever as recorded by the patient or provider.

**Chills or Rigors:** a subjective fever was recorded by the patient or provider.

**Rash**

**Headache**

**Fatigue or Malaise**

**Conjunctivitis**

**Nausea or Vomiting**

**Diarrhea**

**Myalgia**

**Arthralgia**

**Arthritis**

**Paresis or Paralysis**

**Stiff Neck:** a specific type of stiff neck (nuchal rigidity) when a person cannot flex their neck downwards to their chest. This is characteristic of meningitis.

**Ataxia:** a clinical sign defined as a lack of coordinated voluntary muscle movements. Ataxia may affect the extremities, trunk, eyes, or speech. When affecting gait, ataxia may cause imbalance, unsteadiness, or falls; however, not all gait abnormalities are caused by ataxia. Terms such as dysmetria, incoordination, or clumsiness describing movements may suggest ataxia.

**Altered Mental Status**

**Parkinsonism or Cogwheel Rigidity:** a clinical hypokinetic movement disorder characterized by bradykinesia, postural instability, rigidity, and/or tremor due to multiple different diseases.

**Seizures**

**Retro-orbital Pain**

**Leukopenia:** white blood cell count  $<5,000/\text{mm}^3$

**Oral ulcers**

**Other Symptoms:** This is a free text field where other symptoms can be listed. There is a 255 character limit.

## Additional Signs and Symptoms for Dengue cases

**Abdominal Pain or Tenderness**

**Liver Enlargement:** enlargement  $>2$  centimeters

**Severe Organ Involvement:** any of the following: 1) Elevated liver transaminases: aspartate aminotransferase (AST) or alanine aminotransferase (ALT)  $\geq 1,000$  per liter (U/L); 2) Impaired level of consciousness and/or diagnosis of encephalitis, encephalopathy, or meningitis; or 3) Heart or other organ involvement including myocarditis, cholecystitis, and pancreatitis.

**Persisting Vomiting:** vomiting  $\geq 3$  times over 24 hours.

**Increasing Hematocrit with Decreased Platelet Count:** an increase in hematocrit concurrent with a rapid decrease in platelet count.

**Tourniquet Test Positive:** positive tourniquet test (capillary fragility test).

**Extravascular Fluid Accumulation:** pleural or pericardial effusion, ascites.

**Severe Plasma Leakage:** plasma leakage evidenced by hypovolemic shock and/or extravascular fluid accumulation (e.g., pleural or pericardial effusion, ascites) with respiratory distress. A high hematocrit value for patient age and sex offers further evidence of plasma leakage.

**Mucosal Bleeding:** bleeding at any site (e.g., hematemesis, melena)

**Severe Bleeding:** bleeding from the gastrointestinal tract (e.g., hematemesis, melena) or vagina (menorrhagia) and requiring medical intervention including intravenous fluid resuscitation or blood transfusion.

## Laboratory Information and Diagnostic Testing Results

This section includes repeating group laboratory variables. Multiple test results can be reported for a single case report. **Laboratory information and diagnostic testing results should pertain only to the arboviral condition that is being reported.** For example, if a West Nile case is being reported, all lab results should be related to West Nile testing, not for other arboviruses (e.g., St. Louis encephalitis) that may have been part of the differential diagnosis.

**Test Type:** Choose the appropriate option from the list (Serum IgM, Serum PRNT, Serum PCR or NAT, CSF IgM, CSF PRNT, CSF PCR, Immunohistochemical staining, Other specimen PCR, Arboviral antigen).

**Test Result:** Choose the appropriate option from the list (Positive, Negative, Equivocal, Not Done).

**Specimen Type:** Choose the appropriate option from the list (acute phase serum, amniotic fluid, blood, body fluid, cerebrospinal fluid, convalescent phase serum, cord blood, fetal cytologic material, fetal tissue, saliva, seminal fluid, serum, placenta, tissue, brain tissue, urine).

**Specimen Collection Date:** Date of collection of the specimen being reported.

**Performing Lab Type:** Choose the appropriate option from the list (CDC, State Public Health, Commercial).

**Serum Paired Antibody Result:** '4-Fold Rise' indicates that there was a four-fold or greater change in virus-specific quantitative antibody titers between acute- and convalescent-phase serum specimens. 'Negative' indicates that there was not a four-fold or greater change in virus-specific quantitative antibody titers between acute- and convalescent-phase serum specimens.

**Cerebrospinal Fluid Pleocytosis:** 'Yes' (checked box) indicates a CSF white blood cell count  $\geq 5$ .

## Appendix A: Reporting West Nile Virus infection in blood donors

CDC encourages state and local health departments to report West Nile virus (WNV) infections in blood donors. These infections may be identified in two ways:

- 1) A WNV disease case-patient may notify public health authorities that he or she donated blood in the 30 days prior to the onset of illness.
- 2) A blood donor may be identified as a presumptively viremic donor (PVD) by nucleic acid-amplification test (NAAT) screening of his or her donation by a blood collection agency.

A PVD is a person with a blood donation that meets at least one of the following criteria:

- a) One reactive NAAT with a signal-to-cutoff (S/CO) ratio  $\geq 17$ .
- b) Two reactive NAATs.

Reporting of donors who do not meet these criteria should wait until follow-up testing is completed.

Consider the following examples. When reporting donors like these to ArboNET, please use the guidelines provided in the table:

- **Blood Donor A:** A WNV neuroinvasive disease case-patient who reports that he or she donated blood within 30 days of illness onset (*blood donor status was self-reported; symptomatic*)
- **Blood Donor B:** A PVD identified by blood donor screening who never develops WNV illness (*reported by blood collection agency; asymptomatic*)
- **Blood Donor C:** A PVD identified by blood donor screening who develops WNV non-neuroinvasive disease (*reported by blood collection agency; symptomatic*)

	Onset Date	Condition Code	Case Status	Blood Donor	ID'd by Blood Donor Screening	Donation Date	Clinical Syndrome
Blood Donor A	Date of illness onset	10056	Confirmed or Probable	Yes	No	Date of donation	Meningitis, encephalitis or uncomplicated fever
Blood Donor B	Date of donation	10049	Not a Case	Yes	Yes	Date of donation	Asymptomatic
Blood Donor C	Date of illness onset	10049	Confirmed	Yes	Yes	Date of donation	Meningitis, encephalitis or uncomplicated fever

### NOTES:

**Condition Code, Clinical Syndrome, and Case Status:** All WNV PVDs should be entered as 'Asymptomatic' and 'Not a Case' with 10049 entered in the 'Condition Code' field unless they meet the clinical case definition for neuroinvasive or non-neuroinvasive disease. If the patient is symptomatic, the 'Clinical Syndrome' field should reflect the nature of illness, the 'Case Status' field should be either 'Confirmed' or 'Probable' based on the criteria specified in the [case definition](#), and the 'Condition Code' field should contain 10049 if the patient has non-neuroinvasive disease and 10056 if the patient has neuroinvasive disease. If illness develops after the PVD is first reported, please update the patient's status.

**Publish:** WNV infections in blood donors are important surveillance events. CDC encourages reporting jurisdictions to make these reports available in the public domain. If you want to make a report available in the public domain, simply leave the 'Publish' field at the default setting ('True'). If you do not want a report to be in the public domain, set the 'Publish' field to 'False.'

## Appendix B: Reporting Zika virus infection in blood donors

CDC encourages state and local health departments to report ZIKV infections in blood donors. These infections may be identified to public health authorities in two ways:

- A ZIKV disease case-patient or their healthcare provider may notify public health authorities directly or notify the blood collection center/agency that he or she donated blood in the 14 days prior to the onset of illness (or identification of infection).
- A blood collection agency may notify public health authorities of a ZIKV-reactive donation through blood donation screening.

On July 6, 2018, [FDA issued revised guidance](#) recommending that blood centers in all states and U.S. territories screen donated whole blood and blood components with a blood screening ZIKV nucleic acid test licensed for use by FDA. Screening could be performed by pooling samples from multiple donations (i.e., minipool nucleic acid testing or MP NAT) with triggering to individual donation nucleic acid testing (ID NAT) when there is increased risk for local, mosquito-borne transmission of Zika virus.

Health departments should conduct epidemiologic investigations of PVDs. Donors should be reported to ArboNET if, in addition to the initial reactive ID NAT or MP NAT result, they meet one or more of the following laboratory criteria:

- Detection of Zika virus RNA in any specimen, including a reactive result by the same or alternate NAT assay on the same or a follow-up sample; OR
- Positive Zika virus IgM antibody test in serum or CSF with positive Zika virus neutralizing antibody titers in the same or a follow-up sample; OR
- Detection of Zika virus or viral antigen in any specimen

Note: Blood collection agencies should provide health departments with all screening and confirmatory test results to aid in the investigation.

For reporting blood donors to ArboNET, please see the following examples:

	Onset date	Condition Code	Case status	Blood donor	ID'd by blood donor screening	Donation date	Clinical Syndrome
Blood Donor A (asymptomatic, initial Zika NAAT reactive, Zika IgM positive, Zika neutralizing antibodies detected)	Date of donation	50221	Confirmed	Yes	Yes	Date of donation	Asymptomatic
Blood Donor B (symptomatic, initial Zika NAAT reactive, Zika IgM positive, Zika and dengue neutralizing antibodies detected)	Date of illness onset	50223	Confirmed	Yes	Yes	Date of donation	Febrile Illness (or other appropriate response)
Blood Donor C identified retrospectively to be a donor (symptomatic, Zika RT-PCR positive)	Date of illness onset	50223	Confirmed	Yes	No	Date of donation	Febrile Illness (or other appropriate response)

**Note: Condition Code, Clinical Syndrome, and Case Status:** All Zika PVDs should be entered as 'Asymptomatic' with 50221 entered in the 'Condition Code' field unless they meet the clinical case definition for Zika virus disease. If the patient is symptomatic, 50233 should be entered as the 'Condition Code' and the appropriate 'Clinical Syndrome' field should be selected. If illness develops after the PVD is first reported, please update the patient's 'Condition Code' and 'Clinical Syndrome' fields.

## Appendix C: Arboviral Condition Codes

Condition Code	Condition Name	Nationally Notifiable
10058	Cache Valley virus disease, neuroinvasive	No
10066	Cache Valley virus disease, non-neuroinvasive	No
11718	California encephalitis virus disease	Yes
10054	California serogroup virus diseases, neuroinvasive	Yes
10061	California serogroup virus diseases, non-neuroinvasive	Yes
10073	Chikungunya virus diseases	Yes
10093	Colorado tick fever virus disease	No
10680	Dengue	Yes
11705	Dengue, severe	Yes
11704	Dengue-like illness	Yes
10053	Eastern equine encephalitis virus disease, neuroinvasive	Yes
10062	Eastern equine encephalitis virus disease, non-neuroinvasive	Yes
50237	Flavivirus disease, not otherwise specified	No
10078	Jamestown Canyon virus disease, neuroinvasive	Yes
10079	Jamestown Canyon virus disease, non-neuroinvasive	Yes
10059	Japanese encephalitis virus disease, neuroinvasive	No
10068	Japanese encephalitis virus disease, non-neuroinvasive	No
11712	Keystone virus disease	Yes
10081	La Crosse virus disease, neuroinvasive	Yes
10082	La Crosse virus disease, non-neuroinvasive	Yes
10072	Other arboviral disease, not otherwise specified (Alkhurma virus, Barmah Forest virus, Bourbon virus, Heartland virus, Highlands J virus, Kyasanur Forest virus, Mayaro virus, Murray Valley encephalitis virus, O'nyong-nyong virus, Oropouche virus, Rift Valley Fever virus, Rocio virus, Ross River virus, Sindbis virus, Tahyna virus, Toscana virus, Usutu virus, Other Arbovirus)	No
10057	Powassan virus disease, neuroinvasive	Yes
10063	Powassan virus disease, non-neuroinvasive	Yes
11734	Snowshoe hare virus disease	Yes
10051	St. Louis encephalitis virus disease, neuroinvasive	Yes
10064	St. Louis encephalitis virus disease, non-neuroinvasive	Yes
10074	Tick-borne encephalitis viruses	No
11724	Trivittatus virus disease	Yes
10055	Venezuelan equine encephalitis virus neuroinvasive disease	No
10067	Venezuelan equine encephalitis virus non-neuroinvasive disease	No
10056	West Nile virus disease, neuroinvasive	Yes
10049	West Nile virus disease, non-neuroinvasive	Yes
10052	Western equine encephalitis virus disease, neuroinvasive	Yes
10065	Western equine encephalitis virus disease, non-neuroinvasive	Yes
10660	Yellow fever	Yes
50224	Zika virus disease, congenital	Yes
50223	Zika virus disease, non-congenital	Yes
50222	Zika virus infection, congenital	Yes
50221	Zika virus infection, non-congenital	Yes