

Arboviral Human Case Notification Message Mapping Guide

VERSION: The version of this Message Mapping Guide is Final.

This Message Mapping Guide describes the content and message mapping specifications for the set of data elements used to communicate information to meet the requirements for Arboviral (ArboNet) human case notifications to CDC. The intended audience for this document are the state/local and CDC programs and other public health related organizations interested in using the HL7 V2.5 case notification message specification for transmitting their data elements.

ArboNET has grown to comprise 54 state and local health departments, including those of the 48 contiguous states and New York City. The participating jurisdictions must perform bird monitoring (either deaths or seroprevalence among wild birds and sentinel chicken flock seroconversions), mosquito surveillance, enhanced equine and nonhuman mammal surveillance, and enhanced passive or active human surveillance.^[34] Public health campaigns regarding the use of mosquito repellents, minimizing mosquito breeding around the house, and applying larvicide in areas that foster the breeding of mosquitoes are important interventions in prevention.

References

Version 2.0 of the National Notification Message Structure Specification is used to inform the mapping methodology for this guide. The ORU^R01 - Unsolicited Observation Message is the HL7 standard message used to pass the Nationally Notifiable Condition Report message. The National Notification message is used to convey a limited subset of investigation/surveillance information to meet national reporting requirements, where CDC is the only receiver. This document specifies the structure and methodology for the use of the Health Level 7 (HL7) Version 2.5 Unsolicited Result Message (ORU^R01) that supports the electronic interchange of any de-identified Nationally Notifiable Condition message from public health entities to the CDC.

Understanding the Organization of the Mapping Guide

| | |
|------------------------------------|---|
| Revisions | This tab is intended to provide revision control for updates made to the document. |
| Data Element Index | This tab provides the complete list of data elements of interest requested by the program. The last column cross-references to the tab where the data element is fully specified for messaging. |
| Key | Column descriptions for the tabs using the mapping methodology. |
| Subject-related | This tab provides the mapping methodology for the demographic variables requested by the program. |
| Generic Obs. | This tab provides the content for the generic investigation questions. The ones that are not used for ArboNET reporting are greyed out. |
| Arboviral Obs. | Every Arboviral condition is reported using some Generic Observations plus these ArboNET-specific data elements. |
| Event Codes | List of Arboviral condition/event codes and descriptions. These are the only events that use this Message Mapping Guide. |
| Assoc Lab Rpt | Not expecting any Associated Lab Report data with this message. |
| Assoc Vaccine Rpt | Not expecting any Associated Vaccine record data with this message. |

Variables as Observations

Other than the variables that map to the Patient Identifier segment (see Subject-related tab), all other variables are passed as a series of OBX-Observation/Result segments that are logically tied to the OBR-Observation Request "section header" segment that immediately precedes it. This content presents the real differences between the messages since all types of Notifications are handled in a standard manner up to this point.

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| Date | Version | Description |
|------------|-------------------|--|
| 3/12/2008 | DRAFT | Revised INV169 Condition Code field to describe that the Arbovirus will also be sent in this field. The virus is sent in the "local triplet", because an event code is not assigned at the time these messages are shipped to ArboNET. Passing the virus in the Condition Code field is known to duplicate the Arbovirus observation, but OBR-31 where the event code is passed is a mandatory field for Case Notification, and the message will error out if there is nothing in the field. |
| 10/29/2008 | Draft .8 | Notification Structure Tab, Added Data Element NOT114 Receiving Application. Made this generic - did not refer to CDS since the workflow is back out to the ArboNet system. Left the literal value to be used "TBD". |
| 10/29/2008 | Draft .8 | Notification Structure Tab, Added NOT115 identifier to Message Profile ID row (formerly was N/A). Second instance literal value was amended to: 'Arbo_Case_Map_v1.0^PHINMsgMapID^2.16.840.1.114222.4.10.4^ISO', as the former component 1 value was too long. |
| 11/10/2008 | Draft .8 | DEM113 on the Data Element Index was erroneously described as "birth sex". It was corrected to "current sex" as on the Subject-related tab. |
| 12/29/2008 | Final Version 1.0 | Generic Obs tab: Added this verbiage to the Implementation Notes for INV165 and INV166, which are generic reporting elements which are shaded and not used for ArboNet reporting: "MMWR Week and MMWR Year are not data elements of interest for Arboviral mapping guide. These data will be determined by the ArboNet system." |
| 12/29/2008 | Final Version 1.0 | Subject-related tab: DEM165 - Patient Address County. Under 'Implementation Notes' columns added: 'Use 5 character numeric code from PHVS_County_FIPS_6-4' |
| 12/29/2008 | Final Version 1.0 | Data Element Index: DEM165 - Patient Address County. Under 'Valid Values' column added: 'FIPS 5 character numeric county codes'. |
| 12/29/2008 | Final Version 1.0 | Notification Structure Tab, NOT114 Receiving Application: added the Literal Value 'CDC^2.16.840.1.114222.4.3.2.3^ISO' where the OID was formerly TBD. |
| 12/29/2008 | Final Version 1.0 | Generic and Notification Structure Tabs: Revised the Implementation Notes for INV169 Condition Code field. |
| 1/13/2009 | Final Version 1.0 | Removed the HL7 Repeats column from the Key and from the Mapping Methodology spreadsheets. This information was a duplicate of information contained in the Notification Message Specification/Profile. |
| 1/13/2009 | Final Version 1.0 | Added NOT116 National Reporting Jurisdiction to the Generic tab. It was already added as a required field on the Data Element Index, per DISSS/DPHSS instruction. |
| 1/13/2009 | Final Version 1.0 | Data Element Index: Second instance literal value was amended to: 'Arbo_Case_Map_v1.0^PHINMsgMapID^2.16.840.1.114222.4.10.4^ISO', from 'Gen_Case_Map_v1.0^PHINMsgMapID^2.16.840.1.114222.4.10.4^ISO', as shown on the Notification Structure tab. |
| 1/16/2009 | Final Version 1.0 | Changed the name of the guide from ArboNet to Arboviral Human Case Reporting as directed by DISSS. |
| 1/16/2009 | Final Version 1.0 | Removed the empty Associated Lab Report and Associated Vaccine Record tabs. Introduction states those tabs are not used for this message. |
| 1/22/2009 | Final Version 1.0 | Data Element Index and Arboviral Obs mapping tab: Removed the "Y" in the May Repeat column for ARB002 ClinicalSyndrome (Does not allow repeats). |
| 1/22/2009 | Final Version 1.0 | Data Element Index and Subject-Related mapping tab: DEM152 Race Category - CDC Priority is Required and May Repeat is now blank. ArboNet does not allow repeats for race category. |

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| 1/22/2009 | Final Version 1.0 | Data Element Index and Generic mapping tab: For NOT109 Reporting state, clarified that CDC is expecting the numeric FIPS state code. |
| 1/22/2009 | Final Version 1.0 | Subject Related Tab: Removed the Implementation Notes on DEM162 Patient Address State and DEM163 Patient Address Zip Code. |
| 1/22/2009 | Final Version 1.0 | Generic Obs mapping: INV173 StateID – CDC Priority column changed from “Optional” to “Required” to make it consistent with the Data Element Index. |
| 1/22/2009 | Final Version 1.0 | Generic Obs mapping: Added this Implementation Note for NOT109. "ArboNet: Business Process - message will fail if NOT109 is not populated with the numeric FIPS code." |
| 1/22/2009 | Final Version 1.0 | Generic Obs mapping: The Label for INV168 Record ID is now "Local Record ID" to make it consistent with the Notification structure section. |
| 6/12/2009 | Final Version 1.0 | Generic Obs mapping: NOT116 - National Reporting Jurisdiction: the Value Set Name changed from "Reporting Area (TB)" to National Reporting Jurisdiction. |
| 6/12/2009 | Final Version 1.0 | Data Element Index and Generic mapping tab: NOT116 - National Reporting Jurisdiction: the Value Set Code changed from " PHVS_ReportingArea_TB)" to PHVS_NationalReportingJurisdiction |
| 10/13/2009 | Final Version 1.0 | Generic Obs. Tab INV163 - CaseStatus added Implementation Note: Valid Values - Confirmed, Not a Case, Probable, and Suspect. "Note: 'Unk - Unknown' is not a valid value for the Arboviral System." |

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| PHIN Variable ID | Label/Short Name | Description | Data Type | CDC Priority | May Repeat | Valid Values | Value Set Name | Value Set Code | TAB REFERENCE |
|----------------------------------|-----------------------|--|-----------|--------------|------------|---|-----------------------------|------------------------------------|------------------------|
| NOTIFICATION STRUCTURE VARIABLES | | | | | | | | | |
| NOT108 | Notification ID | The unique identifier for the notification record. | Text | R | | | | | Notification Structure |
| NOT114 | Receiving Application | CDC's PHIN Common Data Store (CDS) is the Receiving Application for this message. | OID | R | | PHINCDS^2.16.840.1.114222.4.3.2.10^ISO | | | Notification Structure |
| NOT115 | Message Profile ID | First instance is the reference to the structural specification used to validate the message. Second instance is the reference to the PHIN Message Mapping Guide from which the content is derived. | Text | R | Y/2 | First instance literal value: 'NND_ORU_v2.0^PHINProfileID^2.16.840.1.114222.4.10.3^ISO' Second instance literal value: 'Arbo_Case_Map_v1.0^PHINMsgMapID^2.16.840.1.114222.4.10.4^ISO'. | | | Notification Structure |
| DEM197 | Local patient ID | The local ID of the patient/entity. | Text | R | | | | | Notification Structure |
| DEM100 | Patient name type | Name is not requested by the program, but the Patient Name field is required to be populated for the HL7 message to be valid. Have adopted the HL7 convention for processing a field where the name has been removed for de-identification purposes. | Coded | R | Y/2 | Literal value: ~^~^~^~^S | Name Type (HL7) | PHVS_NameType_HL7_2x | Notification Structure |
| INV168 | Local record ID | Sending system-assigned local ID of the case investigation with which the subject is associated. | Text | R | | | | | Notification Structure |
| NOT099 | Subject Type | Type of subject for the notification. "Person", "Place/location", or "Non-Person Living Subject" are the appropriate subject types for Notifications to CDC. | Coded | R | | Literal Value: 'PERSUBJ^Person Subject^CDCPHINVS' | Notification Section Header | PHVS_NotificationSectionHeader_CDC | Notification Structure |
| NOT101 | Notification Type | Type of notification. Notification types are "Individual Case", "Environmental", "Summary", and "Laboratory Report". | Coded | R | | Literal Value: 'NOTF^Individual Case Notification^CDCPHINVS' | Notification Section Header | PHVS_NotificationSectionHeader_CDC | Notification Structure |

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|--|----------------------|---|-----------|--------------|------------|--|--------------------------------|---------------------------------|------------------------|
| NOT103 | Date First Submitted | Date/time the notification was first sent to CDC. This value does not change after the original notification. | Date/time | R | | | | | Notification Structure |
| NOT106 | Date of Report | Date/time this version of the notification was sent. It will be the same value as NOT103 for the original notification. For updates, this is the update/send date/time. | Date/time | R | | | | | Notification Structure |
| INV169 | Condition Code | Condition or event that constitutes the reason the notification is being sent. | Coded | R | | Chikungunya Colorado Tick Fever Cache Valley Dengue Eastern Equine Encephalitis Flavivirus Non Specified Japanese Encephalitis LaCrosse Calif Serogroup Non-LaCrosse California Serogroup Powassen St Louis Encephalitis Venezuelan Equine Encephalitis Western Equine Encephalitis West Nile Virus Yellow Fever Other Arbovirus | Virus Type (Arboviral Disease) | PHVS_VirusType_ArboviralDisease | Notification Structure |
| SUBJECT-RELATED/DEMOGRAPHIC DATA ELEMENTS | | | | | | | | | |
| DEM115 | Birth Date | Date of birth in YYYYMMDD format | Date | P | | | | | Subject-related |
| DEM113 | Patient's sex | Patient's current sex. | Coded | P | | Male Female Unknown | Sex (MFU) | PHVS_Sex_MFU | Subject-related |

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|---|---------------------------------|--|-----------|--------------|------------|---|---------------------|------------------------------|-----------------|
| DEM152 | Race Category | Field containing one or more codes that broadly refer to the patient's race(s). ArboNet specific note: Race Category does not repeat for this interface. | Coded | R | | American Indian or Alaska Native; Asian; Black or African American; Native Hawaiian or Other Pacific Islander; White; Other Race | Race Category | PHVS_RaceCategory_CD DC | Subject-related |
| DEM165 | Patient Address County | County of residence of the subject. | Coded | R | | FIPS 5 character numeric county codes | County | PHVS_County_FIPS_6-4 | Subject-related |
| DEM162 | Patient Address State | State of residence of the subject. | Coded | O | | FIPS state codes | State | PHVS_State_FIPS_5-2 | Subject-related |
| DEM163 | Patient Address Zip Code | ZIP Code of residence of the subject. | Text | O | | | | | Subject-related |
| DEM155 | Ethnic Group Code | Ethnic origin or ethnicity is based on the individual's self-identity of the patient as Hispanic or Latino. | Coded | P | | Hispanic Non-hispanic | Ethnicity Group | PHVS_EthnicityGroup_CD DC | Subject-related |
| GENERIC NOTIFICATION DATA ELEMENTS | | | | | | | | | |
| NOT109 | Reporting State | State reporting the notification. | Coded | R | | FIPS State codes (numeric) | State | PHVS_State_FIPS_5-2 | Generic Obs. |
| NOT116 | National Reporting Jurisdiction | National jurisdiction reporting the notification to CDC. This will be the same value as NOT109 Reporting State for all reporting jurisdictions except New York City. | Coded | R | | 2-Digit FIPS Codes for 50 States plus 11 District of Columbia 60 American Samoa 64 Federated States of Micronesia 66 Guam 68 Marshall Islands 69 N. Mariana Islands 70 Republic of Palau 72 Puerto Rico 78 US Virgin Islands 975772 New York City | Reporting Area (TB) | PHVS_ReportingArea_TB | Generic Obs. |

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|------------------|------------------|--|-----------|--------------|------------|--|--------------------------------|--------------------------------------|--|
| INV169 | Condition Code | This field should be populated using the standardized vocabulary from PHIN VADS PHVS_VirusType_ArboviralDisease Value Set Code. The data in INV169 will match the data populated for ARB001. | Coded | R | | <See Event Codes tab> | Virus Type (Arboviral Disease) | PHVS_VirusType_ArboviralDisease | Generic Obs and Notification Structure tab |
| INV168 | Local Record ID | Sending system-assigned local ID of the case investigation with which the subject is associated. | Text | R | | | | | Generic Obs. |
| INV173 | StateID | States use this field to link NEDSS investigations back to their own state investigations. | Text | R | | | | | Generic Obs. |
| INV128 | Hospitalized | Was patient hospitalized because of this event? | Coded | R | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Generic Obs. |
| INV137 | OnsetDate | Date of the beginning of the illness. Reported date of the onset of symptoms of the condition being reported to the public health system | Date | P | | | | | Generic Obs. |
| INV145 | Fatality | Did the patient die from this illness or complications of this illness? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Generic Obs. |
| INV146 | DateOfDeath | The date and time the subject's death occurred. | Date | P | | | | | Generic Obs. |
| INV152 | ImportedFrom | Indication of where the disease/condition was likely acquired. | Coded | P | | Not Imported (Indigenous) Acquired Out of Country Acquired Out of State Unknown | Disease Acquired Jurisdiction | PHVS_DiseaseAcquiredJurisdiction_NND | Generic Obs. |
| INV153 | CountryOf Origin | If the disease or condition was imported, indicates the country in which the disease was likely acquired. | Text | P | | ISO Country Codes | Country | PHVS_Country_3166-1 | Generic Obs. |
| INV163 | CaseStatus | Status of the case/event as suspect, probable, confirmed, or "not a case" per CSTE/CDC surveillance case definitions. | Coded | R | | Valid Values: Confirmed Not a Case Probable Suspect | Case Classification Status | PHVS_CaseClassStatus_NND | Generic Obs. |

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|---|------------------|--|-----------|--------------|------------|---|--------------------------------|---------------------------------|----------------|
| INV178 | Pregnant | Indicates whether the patient was pregnant at the time of the event. | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Generic Obs. |
| INV2001 | Age | Patient age at time of case investigation | Numeric | P | | | | | Generic Obs. |
| INV2002 | AgeUnit | Patient age units at time of case investigation | Coded | P | | Days Months Weeks Years | Age Unit | PHVS_AgeUnit_UCUM | Generic Obs. |
| ARBOVIRUS-SPECIFIC DATA ELEMENTS | | | | | | | | | |
| ARB001 | Arbovirus | Type of arbovirus the case was infected with. | Coded | R | | CHIK Chikungunya CTF Colorado Tick Fever CV Cache Valley DEN Dengue EEE Eastern Equine Encephalitis Flavivirus Non Specified JE Japanese Encephalitis LAC LaCrosse Non-LAC Calif Serogroup Non-LaCrosse California Serogroup POW Powassen SLE St Louis Encephalitis VEE Venezuelan Equine Encephalitis WEE Western Equine Encephalitis WNV West Nile Virus YF Yellow Fever Other Arbovirus | Virus Type (Arboviral Disease) | PHVS_VirusType_ArboviralDisease | Arboviral Obs. |

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|------------------|------------------|---|-----------|--------------|------------|---|-------------------------------|---------------------------------|----------------|
| ARB002 | ClinicalSyndrome | Clinical Syndrome is the type of clinical presentation the case had. | Coded | P | | Valid Values: -Meningitis -Encephalitis - Including Meningoencephalitis -Hepatitis/Jaundice -Multi-System Organ Failure -Dengue Hemorrhagic Fever/Dengue Shock Syndrome -Dengue With Hemorrhage -Uncomplicated Fever -Asymptomatic -Other Clinical -Unknown | Clinical Syndrome (Arbovirus) | PHVS_ClinicalSyndrome_Arbovirus | Arboviral Obs. |
| ARB003 | LabAcquired | Person fell ill with arboviral illness that was likely acquired due to work with infectious agents in a laboratory setting. | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB004 | NonLabAcquired | Non-Lab Occupationally Acquired. Indicates possible infection in an occupational setting that is not a laboratory. | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB005 | BloodDonor | Person who fell ill with arboviral illness and reported that they had donated blood sometime within the last 30 days prior to onset. | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB006 | BloodTransfusion | Person who fell ill with arboviral illness and reported that they had received a blood transfusion sometime within the last 30 days prior to onset. | Coded | R | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB007 | OrganDonor | Person who fell ill with arboviral illness and reported that they had donated an organ sometime within the last 30 days prior to onset. | Coded | R | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |

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|------------------|---------------------------------|---|-----------|--------------|------------|---|------------------------|---------------------------|----------------|
| ARB008 | OrganTransplant | Person who fell ill with arboviral illness and reported that they had received an organ transplant sometime within the last 30 days prior to onset. | Coded | R | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB009 | BreastFedInfant | Person who fell ill with arboviral illness and reported that they were breast feeding or breast fed prior to the illness onset. | Coded | R | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB010 | InfectedInUtero | Infant that was born to a mother who had a WNV illness/infection during their pregnancy. | Coded | R | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB011 | Published | Published indicator | Boolean | P | | Yes No | Yes No Indicator (HL7) | PHVS_YesNo_HL7_2x | Arboviral Obs. |
| ARB012 | AFP | Did the patient suffer Acute Flaccid Paralysis? | Coded | R | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB013 | IdentifiedByBloodDonorScreening | Donors who have been identified as having a WNV infection through routine blood donation screening by the blood collection agency. May or may not be symptomatic. | Coded | R | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB014 | DateOfDonation | Date of blood donation | Date | P | | | | | Arboviral Obs. |
| ARB015 | LabTestingBy | Information on whether the specimen was tested in public health labs or exclusively in commercial laboratories. | Coded | P | | Public Health (state or CDC) only Public Health and Commercial Commercial Only Unknown | Public Private Lab | PHVS_PublicPrivateLab_NND | Arboviral Obs. |
| ARB016 | RiskFactorDiabetes | Before your infection, did a health care provider ever tell you that you had diabetes? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB017 | RiskFactorHypertension | Before your infection, did a health care provider ever tell you that you had high blood pressure (hypertension)? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |

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|------------------|--------------------------------|--|-----------|--------------|------------|---------------------------------|----------------------|--------------------------|----------------|
| ARB018 | RiskFactorHeart Attack | Before your infection, did a health care provider ever tell you that you had heart attack (myocardial infarction)? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB019 | RiskFactorCoronaryArtery | Before your infection, did a health care provider ever tell you that you had angina or coronary artery disease? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB020 | RiskFactorCHF | Before your infection, did a health care provider ever tell you that you had congestive heart failure (CHF)? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB021 | RiskFactorStroke | Before your infection, did a health care provider ever tell you that you had a stroke (CVA)? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB022 | RiskFactorCOPD | Before your infection, did a health care provider ever tell you that you had chronic obstructive pulmonary disease (COPD)? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB023 | RiskFactorLiverDisease | Before your infection, did a health care provider ever tell you that you had chronic liver disease? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB024 | RiskFactorKidneyDisease | Before your infection, did a health care provider ever tell you that you had kidney/renal disease or failure? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB025 | RiskFactorAlcoholism | History of alcoholism? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB026 | RiskFactorBoneMarrowTrans | History of bone marrow transplant | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB027 | RiskFactorSolidOrganTransplant | History of solid organ transplant? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB028 | RiskFactorOrgansTransplanted | What organ was transplanted? (may be multiple organs) | Coded | P | Y | <list of transplantable organs> | Transplant Organ | PHVS_TransplantOrgan_CDC | Arboviral Obs. |

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|------------------|--------------------------------|---|-----------|--------------|------------|-----------------------------|----------------------------|------------------------------------|----------------|
| ARB029 | RiskFactorOrganTransplantYear | What year was the transplant? (may be multiple years for multiple transplants) | Date | P | Y | | | | Arboviral Obs. |
| ARB030 | RiskFactorCancer | History of cancer? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB031 | RiskFactorCancerType | If the patient reported cancer, what type(s)? (may be one or more cancer types) | Coded | P | Y | <list of cancer types> | Cancer Type | PHVS_CancerType_CD C | Arboviral Obs. |
| ARB032 | RiskFactorCancerYear | What year was cancer diagnosed? (may be multiple years) | Date | P | Y | | | | Arboviral Obs. |
| ARB033 | RiskFactorCancerTreatment | Are you currently being treated for cancer? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB034 | RiskFactorImmuneSuppressed | At the time you were diagnosed with West Nile virus infection, were you immune suppressed? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB035 | RiskFactorImmuneCondition | If the patient reported being immune suppressed, what is the immune condition? | Coded | P | | <list of immune conditions> | Immunosuppressed Condition | PHVS_ImmunosuppressedCondition_CDC | Arboviral Obs. |
| ARB036 | RiskFactorChemotherapy | At the time you were diagnosed with West Nile virus infection, were you undergoing chemotherapy? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB037 | RiskFactorOtherCancer | At the time you were diagnosed with West Nile virus infection, were you undergoing other treatments for cancer? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB038 | RiskFactorHemodialysis | At the time you were diagnosed with West Nile virus infection, were you undergoing hemodialysis? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB039 | RiskFactorOtherKidneyTreatment | At the time you were diagnosed with West Nile virus infection, were you undergoing other treatments for kidney disease? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB040 | RiskFactorSteroids | At the time you were diagnosed with West Nile virus infection, were you receiving oral or injected steroids? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |

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|------------------|-------------------------------|---|-----------|--------------|------------|----------------------|------------------------|-----------------------|----------------|
| ARB041 | RiskFactorInsulin | At the time you were diagnosed with West Nile virus infection, were you receiving insulin or other medications to treat diabetes? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB042 | RiskFactorHypertensionMeds | At the time you were diagnosed with West Nile virus infection, were you receiving medications to treat high blood pressure? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB043 | RiskFactorCoronaryArteryMeds | At the time you were diagnosed with West Nile virus infection, were you receiving medications to treat coronary artery disease? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB044 | RiskFactorCongestiveHeartMeds | At the time you were diagnosed with West Nile virus infection, were you receiving medications to treat congestive heart failure? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB045 | RiskFactorImmuneSuppressMedS | At the time you were diagnosed with West Nile virus infection, were you receiving medications that suppress the immune system? | Coded | P | | Yes No Unknown | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Arboviral Obs. |
| ARB046 | RiskFactorPatient | Is the patient the source of the medical information? | Coded | P | | Yes No | Yes No Indicator (HL7) | PHVS_YesNo_HL7_2x | Arboviral Obs. |
| ARB047 | RiskFactorProvider | Is the provider the source of the medical information? | Coded | P | | Yes No | Yes No Indicator (HL7) | PHVS_YesNo_HL7_2x | Arboviral Obs. |
| ARB048 | RiskFactorFamily | Is the patient's family the source of the medical information? | Coded | P | | Yes No | Yes No Indicator (HL7) | PHVS_YesNo_HL7_2x | Arboviral Obs. |
| ARB049 | RiskFactorMedicalRecord | Is the medical record the source of the medical information? | Coded | P | | Yes No | Yes No Indicator (HL7) | PHVS_YesNo_HL7_2x | Arboviral Obs. |

Arboviral Human Case Notification Message Mapping Guide

| Column | Description |
|--|--|
| Program Variables Section | |
| PHIN Variable ID | PHIN element UID drawn from the coding system PH_PHINQuestions_CDC |
| Label | Short name for the data element, which is passed in the message. |
| Description | Description of the data element as in PHIN Questions. |
| Data Type | Data type for the variable response expected by the program area. Data Types are Coded, Numeric, Date, and Text. |
| CDC Priority | Indicator whether the program specifies the field as: R - Required - mandatory for sending the message/will error message out P - Preferred - Highest level of optional data - CDC requests that it be sent O - Optional - if the data is available, CDC requests that it be passed |
| May Repeat | Indicator whether the response to the data element may repeat. "Y" in the field indicates that it may repeat. If the program does not indicate the response can repeat, the field is not populated or contains "N". Repeats require special processing. |
| Value Set Name | Name of the pre-coordinated value set from which the response is drawn. The value sets and coding systems are accessible via the Public Health Information Network Vocabulary Access and Distribution Services at http://www.cdc.gov/PhinVSBrowser/StrutsController.do . |
| Value Set Code | Code for the pre-coordinated value set from which the response is drawn. The value sets and coding systems are accessible via the Public Health Information Network Vocabulary Access and Distribution Services at http://www.cdc.gov/PhinVSBrowser/StrutsController.do . |
| Message Mapping Methodology Section | |
| Message Context | Specific HL7 segment and field mapping for the element. |
| HL7 Data Type | HL7 data type used by PHIN to express the variable. Datatypes expected are CWE, SN, DT, ST, TX, XPN, XTN, or XAD, depending on the type of data being passed. |
| HL7 Optionality | Indicates if the field is required, optional, or conditional in a segment. The only values that appear in the Message Mapping are: <ul style="list-style-type: none"> • R – Required. Must always be populated • O – Optional. May optionally be populated. |
| Implementation Notes | Related implementation comments. |

Arboviral Human Case Notification Message Mapping Guide

| Subject-Related/Demographic Variables | | | | | | | | Mapping Methodology | | | |
|---------------------------------------|--------------------------|---|-----------|--------------|------------|-----------------|-------------------------|---|---------------|-----------------|--|
| PHIN Variable ID | Label/Short Name | Description | Data Type | CDC Priority | May Repeat | Value Set Name | Value Set Code | Message Context | HL7 Data Type | HL7 Optionality | Implementation Notes |
| DEM115 | Birth Date | Date of birth in YYYYMMDD format | Date | P | | | | PID-7 Date/Time of Birth (does not pass Variable ID or label) | TS | O | |
| DEM113 | Patient's sex | Patient's current sex. | Coded | P | | Sex (MFU) | PHVS_Sex_MFU | PID-8 Administrative Sex (does not pass Variable ID or label) | IS | O | |
| DEM152 | Race Category | Field containing one or more codes that broadly refer to the patient's race(s). ArboNet specific note: Race Category does not repeat for this interface. | Coded | R | | Race Category | PHVS_RaceCategory_CDC | PID-10 Race (does not pass Variable ID or label) | CE | O | To send an "Unknown" because the application allows Unknown to be selected (that is, not as a default value); PID-10 would appear as UNK^Unknown^NULLFL |
| DEM165 | Patient Address County | County of residence of the subject. | Coded | P | | County | PHVS_County_FIPS_6-4 | PID-11.9 Patient Address - County | IS | O | Use 5 character numeric code from PHVS_County_FIPS_6-4 |
| DEM162 | Patient Address State | State of residence of the subject. | Coded | O | | State | PHVS_State_FIPS_5-2 | PID-11.4 Patient Address - State | ST | O | |
| DEM163 | Patient Address Zip Code | ZIP Code of residence of the subject. | Text | O | | | | PID-11.5 Patient Address - Postal Code | ST | O | |
| DEM155 | Ethnic Group Code | Ethnic origin or ethnicity is based on the individual's self-identity of the patient as Hispanic or Latino; choose one value from the list. | Coded | P | | Ethnicity Group | PHVS_EthnicityGroup_CDC | PID-22 Ethnic Group (does not pass Variable ID or label) | CE | O | To send an "Unknown" because the application allows Unknown to be selected (that is, not as a default value); PID-22 would appear as UNK^Unknown^NULLFL |

Arboviral Human Case Notification Message Mapping Guide

The generic surveillance elements that are not used for ArboNet reporting are shaded.

| Generic Surveillance Variables | | | | | | | | Mapping Methodology | | | |
|--------------------------------|---------------------------------|---|-----------|--------------|------------|--------------------------------|----------------------------------|---|---------------|-----------------|---|
| PHIN Variable ID | Label/Short Name | Description | Data Type | CDC Priority | May Repeat | Value Set Name | Value Set Code | Message Context | HL7 Data Type | HL7 Optionality | Implementation Notes |
| NOT109 | State | State reporting the notification. | Coded | R | | State | PHVS_State_FIPS_5-2 | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | ArboNet: Business Process - message will fail if NOT109 is not populated with the numeric FIPS code. |
| NOT116 | National Reporting Jurisdiction | National jurisdiction reporting the notification to CDC. This will be the same value as NOT109 Reporting State for all reporting jurisdictions except New York City. | Coded | R | | Reporting Area (TB) | PHVS_ReportingArea_TB | Passed as an observation/OBX segment using this variable ID and label. | CWE | O | |
| INV169 | Condition Code | Condition or event that constitutes the reason the notification is being sent. Must be populated in the "alternate code" component with the Arbovirus code, since the messages incoming to CDC from the state do not have an Arboviral condition code assigned. | Coded | R | | Virus Type (Arboviral Disease) | PHVS_VirusType_ArboviralDisease | OBR-31 Reason for Study - <i>note that for HL7 this is an optional field but for Case Notification, this is a mandatory field. This row also appears on the Notification Structure tab.</i> | CE | R | This field should be populated using the standardized vocabulary from PHIN VADS PHVS_VirusType_Arboviral Disease Value Set Code. The data in INV169 will match the data populated for ARB001. |
| INV168 | Local Record ID | Sending system-assigned local ID of the case investigation with which the subject is associated. | Text | R | | | | (note that this is a Notification structural element) | EI | R | |
| INV173 | StateID | States use this field to link NEDSS investigations back to their own state investigations. | Text | R | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | ST | O | |
| INV107 | Jurisdiction Code | Identifier for the physical site from which the notification is being submitted. | Coded | | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| INV109 | Case Investigation Status Code | Status of the investigation. For example, <i>open</i> or <i>closed</i> . | Coded | | | Case Investigation Status | PHVS_CaseInvestigationStatus_NND | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |

Arboviral Human Case Notification Message Mapping Guide

| Generic Surveillance Variables | | | | | | | | Mapping Methodology | | | |
|--------------------------------|-----------------------------------|---|-----------|--------------|------------|-----------------------|-------------------------------|--|---------------|-----------------|----------------------|
| PHIN Variable ID | Label/Short Name | Description | Data Type | CDC Priority | May Repeat | Value Set Name | Value Set Code | Message Context | HL7 Data Type | HL7 Optionality | Implementation Notes |
| INV2006 | Case Close Date | Date the case investigation status was marked as Closed. | Date | | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | TS | O | |
| INV110 | Investigation Date Assigned | Date the investigator was assigned to this investigation. | Date | | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | TS | O | |
| INV111 | Date of Report | Date the event or illness was first reported by the reporting source | Date | | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | TS | O | |
| INV112 | Reporting Source Type Code | Type of facility or provider associated with the source of information sent to Public Health. | Coded | | | Reporting Source Type | PHVS_ReportingSource_Type_NND | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| INV118 | Reporting Source Zip Code | Zip Code of the reporting source for this case. | Text | | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | ST | O | |
| INV120 | Earliest Date Reported to County | Earliest date reported to county public health system | Date | | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | TS | O | |
| INV121 | Earliest Date Reported to State | Earliest date reported to state public health system | Date | | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | TS | O | |
| INV128 | Hospitalized | Was patient hospitalized because of this event? | Coded | O | | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| INV132 | Admission Date | Subject's admission date to the hospital for the condition covered by the investigation. | Date | | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | TS | O | |
| INV133 | Discharge Date | Subject's discharge date from the hospital for the condition covered by the investigation. | Date | | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | TS | O | |
| INV134 | Duration of hospital stay in days | Subject's duration of stay at the hospital for the condition covered by the investigation. | Numeric | | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | SN | O | |

Arboviral Human Case Notification Message Mapping Guide

| Generic Surveillance Variables | | | | | | | | Mapping Methodology | | | |
|--------------------------------|--------------------------|---|-----------|--------------|------------|-------------------------------|--------------------------------------|---|---------------|-----------------|----------------------|
| PHIN Variable ID | Label/Short Name | Description | Data Type | CDC Priority | May Repeat | Value Set Name | Value Set Code | Message Context | HL7 Data Type | HL7 Optionality | Implementation Notes |
| INV136 | Diagnosis Date | Date of diagnosis of condition being reported to public health system | Date | | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | TS | O | |
| INV137 | OnsetDate | Date of the beginning of the illness. Reported date of the onset of symptoms of the condition being reported to the public health system. | Date | O | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | TS | O | |
| INV138 | Illness End Date | Time at which the disease or condition ends. | Date | | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | TS | O | |
| INV139 | Illness Duration | Length of time this person had this disease or condition. | Numeric | | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | SN | O | |
| INV140 | Illness Duration Units | Unit of time used to describe the length of the illness or condition. | Coded | | | Age Unit | PHVS_AgeUnit_UCUM | uses the INV139 observation - maps to OBX-6-Units (does not use INV140 ID or label) | CE | O | |
| INV145 | Fatality | Did the patient die from this illness or complications of this illness? | Coded | O | | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| INV146 | DateOfDeath | The date and time the subject's death occurred. | Date | O | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | TS | O | |
| INV147 | Investigation Start Date | The date the case investigation was initiated. | Date | | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | TS | O | |
| INV150 | Case outbreak indicator | Denotes whether the reported case was associated with an identified outbreak. | Coded | | | Yes No Unknown (YNU) | Yes No Unknown (YNU) | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| INV151 | Case Outbreak Name | A state-assigned name for an identified outbreak. | Coded | | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| INV152 | ImportedFrom | Indication of where the disease/condition was likely acquired. | Coded | O | | Disease Acquired Jurisdiction | PHVS_DiseaseAcquiredJurisdiction_NND | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |

Arboviral Human Case Notification Message Mapping Guide

| Generic Surveillance Variables | | | | | | | | Mapping Methodology | | | |
|--------------------------------|---------------------|--|-----------|--------------|------------|--------------------------|---------------------------------|--|---------------|-----------------|----------------------|
| PHIN Variable ID | Label/Short Name | Description | Data Type | CDC Priority | May Repeat | Value Set Name | Value Set Code | Message Context | HL7 Data Type | HL7 Optionality | Implementation Notes |
| INV153 | CountryOfOrigin | If the disease or condition was imported, indicates the country in which the disease was likely acquired. | Coded | O | | Country | PHVS_Country_3166-1 | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| INV154 | Imported State | If the disease or condition was imported, indicates the state in which the disease was likely acquired. | Coded | | | State | PHVS_State_FIPS_5-2 | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| INV155 | Imported City | If the disease or condition was imported, indicates the city in which the disease was likely acquired. | Coded | | | City | PHVS_City_USGS_GNIS | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| INV156 | Imported County | If the disease or condition was imported, contains the county of origin of the disease or condition. | Coded | | | County | PHVS_County_FIPS_6-4 | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| INV157 | Transmission Mode | Code for the mechanism by which disease or condition was acquired by the subject of the investigation. | Coded | | | Case Transmission Mode | PHVS_CaseTransmissionMode_NND | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| INV161 | Confirmation Method | Code for the mechanism by which the case was classified, providing information about how the case classification status was derived. More than one confirmation method may be indicated. | Coded | | | Case Confirmation Method | PHVS_CaseConfirmationMethod_NND | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| INV162 | Confirmation Date | If an investigation is confirmed as a case, the confirmation date is entered. | Date | | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | TS | O | |

Arboviral Human Case Notification Message Mapping Guide

| Generic Surveillance Variables | | | | | | | | Mapping Methodology | | | |
|--------------------------------|-----------------------------|--|-----------|--------------|------------|----------------------------|---------------------------|--|---------------|-----------------|---|
| PHIN Variable ID | Label/Short Name | Description | Data Type | CDC Priority | May Repeat | Value Set Name | Value Set Code | Message Context | HL7 Data Type | HL7 Optionality | Implementation Notes |
| INV163 | CaseStatus | Status of the case/event as suspect, probable, confirmed, or "not a case" per CSTE/CDC/ surveillance case definitions. | Coded | R | | Case Classification Status | PHVS_CaseClass Status_NND | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | Valid Values: Confirmed Not a Case Probable Suspect Note: 'Unk - Unknown' is not a valid value for the Arboviral System. |
| INV165 | MMWR Week | MMWR Week for which case information is to be counted for MMWR publication. | Numeric | | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | SN | O | MMWR Week and MMWR Year are not data elements of interest for Arboviral mapping guide. These data will be determined by the ArboNet system. |
| INV166 | MMWR Year | MMWR Year (YYYY) for which case information is to be counted for MMWR publication. | Date | | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | TS | O | MMWR Week and MMWR Year are not data elements of interest for Arboviral mapping guide. These data will be determined by the ArboNet system. |
| INV176 | Date of First Report to CDC | Date the case was first reported to the CDC. | Date | | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | TS | O | |
| INV177 | Date First Reported PHD | Earliest date the case was reported to a public health department. | Date | | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | TS | O | |
| INV178 | Pregnant | Indicates whether the patient was pregnant at the time of the event. | Coded | O | | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| INV2001 | Age | Patient age at time of case investigation | Numeric | O | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | SN | O | |

Arboviral Human Case Notification Message Mapping Guide

| Generic Surveillance Variables | | | | | | | | Mapping Methodology | | | |
|--------------------------------|------------------|---|-----------|--------------|------------|----------------|-------------------|---|---------------|-----------------|----------------------|
| PHIN Variable ID | Label/Short Name | Description | Data Type | CDC Priority | May Repeat | Value Set Name | Value Set Code | Message Context | HL7 Data Type | HL7 Optionality | Implementation Notes |
| INV2002 | AgeUnit | Patient age units at time of case investigation | Coded | O | | Age Unit | PHVS_AgeUnit_UCUM | uses the INV2001 observation - maps to OBX-6-Units (does not use INV2002 ID or label) | CE | O | |

Arboviral Human Case Notification Message Mapping Guide

| Program-Specific Surveillance Variables | | | | | | | | Mapping Methodology | | | |
|---|------------------|---|-----------|--------------|------------|--------------------------------|---------------------------------|--|---------------|-----------------|----------------------|
| PHIN Variable ID | Label/Short Name | Description | Data Type | CDC Priority | May Repeat | Value Set Name | Value Set Code | Message Context | HL7 Data Type | HL7 Optionality | Implementation Notes |
| ARB001 | Arbovirus | Type of arbovirus the case was infected with. | Coded | R | | Virus Type (Arboviral Disease) | PHVS_VirusType_ArboviralDisease | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| ARB002 | ClinicalSyndrome | Clinical Syndrome is the type of clinical presentation the case had. | Coded | P | | Clinical Syndrome (Arbovirus) | PHVS_ClinicalSyndrome_Arbovirus | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| ARB003 | LabAcquired | Person fell ill with arboviral illness that was likely acquired due to work with infectious agents in a laboratory setting. | Coded | P | | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| ARB004 | NonLabAcquired | Non-Lab Occupationally Acquired. Indicates possible infection in an occupational setting that is not a laboratory. | Coded | P | | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| ARB005 | BloodDonor | Person who fell ill with arboviral illness and reported that they had donated blood sometime within the last 30 days prior to onset. | Coded | P | | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| ARB006 | BloodTransfusion | Person who fell ill with arboviral illness and reported that they had received a blood transfusion sometime within the last 30 days prior to onset. | Coded | R | | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| ARB007 | OrganDonor | Person who fell ill with arboviral illness and reported that they had donated an organ sometime within the last 30 days prior to onset. | Coded | R | | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| ARB008 | OrganTransplant | Person who fell ill with arboviral illness and reported that they had received an organ transplant sometime within the last 30 days prior to onset. | Coded | R | | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| ARB009 | BreastFedInfant | Person who fell ill with arboviral illness and reported that they were breast feeding or breast fed prior to the illness onset. | Coded | R | | Yes No Unknown (YNU) | PHVS_YesNoUnknown_CDC | Observation/OBX Segment with this variable ID and label | CWE | O | |

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| Program-Specific Surveillance Variables | | | | | | | | Mapping Methodology | | | |
|---|---------------------------------|---|-----------|--------------|------------|------------------------|---------------------------|--|---------------|-----------------|----------------------|
| PHIN Variable ID | Label/Short Name | Description | Data Type | CDC Priority | May Repeat | Value Set Name | Value Set Code | Message Context | HL7 Data Type | HL7 Optionality | Implementation Notes |
| ARB010 | InfectedInUtero | Infant that was born to a mother who had a WNV illness/infection during their pregnancy. | Coded | R | | Yes No Unknown (YNU) | PHVS_YesNoUnkwn_CDC | Observation/OBX Segment with this variable ID and label | CWE | O | |
| ARB011 | Published | Published indicator | Boolean | P | | Yes No Indicator (HL7) | PHVS_YesNo_HL7_2x | Observation/OBX Segment with this variable ID and label | CWE | O | |
| ARB012 | AFP | Did the patient suffer Acute Flaccid Paralysis? | Coded | R | | Yes No Unknown (YNU) | PHVS_YesNoUnkwn_CDC | Observation/OBX Segment with this variable ID and label | CWE | O | |
| ARB013 | IdentifiedByBloodDonorScreening | Donors who have been identified as having a WNV infection through routine blood donation screening by the blood collection agency. May or may not be symptomatic. | Coded | R | | Yes No Unknown (YNU) | PHVS_YesNoUnkwn_CDC | Observation (OBX segment) under an OBR-4 value of 'NOTF' | CWE | O | |
| ARB014 | DateOfDonation | Date of blood donation | Date | P | | | | Observation (OBX segment) under an OBR-4 value of 'NOTF' | TS | O | |
| ARB015 | LabTestingBy | Information on whether the specimen was tested in public health labs or exclusively in commercial laboratories. | Coded | P | | Public Private Lab | PHVS_PublicPrivateLab_NND | Observation/OBX Segment with this variable ID and label | CWE | O | |

Arboviral Events

| # | CONDITION CODE | CONDITION NAME |
|----|----------------|---|
| 1 | 10049 | West Nile virus non-neuroinvasive disease |
| 2 | 10051 | St. Louis encephalitis virus neuroinvasive disease |
| 3 | 10052 | Western equine encephalitis virus neuroinvasive disease |
| 4 | 10053 | Eastern equine encephalitis virus neuroinvasive disease |
| 5 | 10054 | California serogroup virus neuroinvasive disease |
| 6 | 10055 | Venezuelan equine encephalitis virus neuroinvasive disease |
| 7 | 10056 | West Nile virus neuroinvasive disease |
| 8 | 10057 | Powassan virus neuroinvasive disease |
| 9 | 10058 | Cache Valley virus neuroinvasive disease |
| 10 | 10059 | Japanese encephalitis virus neuroinvasive disease |
| 11 | 10061 | California serogroup virus non-neuroinvasive disease |
| 12 | 10062 | Eastern equine encephalitis virus non-neuroinvasive disease |
| 13 | 10063 | Powassan non-neuroinvasive disease |
| 14 | 10064 | St. Louis encephalitis virus non-neuroinvasive disease |
| 15 | 10065 | Western equine encephalitis non-neuroinvasive disease |
| 16 | 10066 | Cache Valley virus non-neuroinvasive disease |
| 17 | 10067 | Venezuelan equine encephalitis non-neuroinvasive disease |
| 18 | 10068 | Japanese encephalitis virus non-neuroinvasive disease |
| 19 | 10660 | Yellow fever |
| 20 | 10680 | Dengue Fever |
| 21 | 10685 | Dengue hemorrhagic fever |

Arboviral Human Case Notification Message Mapping Guide

These variables are not negotiable. Default values are provided for HL7 structural elements that are required but not part of the surveillance data requested. This tab does not cover every field required to create a valid message; see National Notification Structural Specification (profile).

| Notification/Message Structural Variables | | | | | | | | Mapping Methodology | | | |
|---|-----------------------|---|-----------|--------------|------------|----------------|----------------|---|---------------|-----------------|---|
| PHIN Variable ID | Label/Short Name | Description | Data Type | CDC Priority | May Repeat | Value Set Name | Value Set Code | Message Context | HL7 Data Type | HL7 Optionality | Implementation Notes |
| NOT108 | Notification ID | The unique identifier for the notification record. | Text | R | | | | MSH-10-Message Control ID. No UID or label is passed in the message. | ST | R | If notification ID is not unique, a timestamp may be appended. HL7 recommended size increased to 50. |
| NOT114 | Receiving Application | CDC Receiving Application for this message. | OID | R | | | | MSH-5 Receiving Application. PHIN required/HL7 optional. | HD | R | Literal Value: 'CDC^2.16.840.1.114222.4.3.2.3^ISO' |
| NOT115 | Message Profile ID | First instance is the reference to the structural specification used to validate the message. Second instance is the reference to the PHIN Message Mapping Guide from which the content is derived. | Text | R | Y/2 | | | MSH-21-Message Profile ID. PHIN required/HL7 optional. | EI | R | First instance literal value: 'NND_ORU_v2.0^PHINProfileID^2.16.840.1.114222.4.10.3^ISO' Second instance literal value: 'Arbo_Case_Map_v1.0^PHINMSGMapID^2.16.840.1.114222.4.10.4^ISO'. |
| DEM197 | Local patient ID | The local ID of the patient/entity. | Text | R | | | | PID-3 Patient Identifier List where PID-3.1 ID Number is the local patient ID; PID-3.4 Assigning Authority format <localID&OID&ISO> Does not pass Variable ID or label. | CX | R | Only the sending system's internally assigned patient id used for these de-identified messages |

Arboviral Human Case Notification Message Mapping Guide

| Notification/Message Structural Variables | | | | | | | | Mapping Methodology | | | |
|---|-------------------|--|-----------|--------------|------------|-----------------------------|------------------------------------|---|---------------|-----------------|--|
| PHIN Variable ID | Label/Short Name | Description | Data Type | CDC Priority | May Repeat | Value Set Name | Value Set Code | Message Context | HL7 Data Type | HL7 Optionality | Implementation Notes |
| DEM100 | Patient name type | Name is not requested by the program, but the Patient Name field is required to be populated for the HL7 message to be valid. Have adopted the HL7 convention for processing a field where the name has been removed for de-identification purposes. | Coded | R | Y/2 | Name Type (HL7) | PHVS_NameType_HL7_2x | PID-5 Patient Name field SECOND INSTANCE - where PID-5.7 Patient Name Type - is S for Pseudonym_HL7 reserves the first instance of the name for Legal Name. | XPN | R | Literal value: ~^*****S |
| INV168 | Local record ID | Sending system-assigned local ID of the case investigation with which the subject is associated. | Text | R | | | | OBR-3-Filler Order Number where OBR-3.1 is the internally assigned case/investigation ID, OBR-3.3 is the OID for sending application as assigning authority, and OBR-3.4 is the literal value 'ISO'. The UID and label are not passed in the message. | EI | R | <same value in each OBR instance> |
| NOT099 | Subject Type | Type of subject for the notification. "Person", "Place/location", or "Non-Person Living Subject" are the appropriate subject types for Notifications to CDC. | Coded | R | | Notification Section Header | PHVS_NotificationSectionHeader_CDC | OBR 1 : Maps to the HL7 attribute OBR-4-Universal Service ID. No UID or label is passed in the message. | CE | R | Literal Value: 'PERSUBJ^Person Subject^CDCPHINVS' |
| NOT101 | Notification Type | Type of notification. Notification types are "Individual Case", "Environmental", "Summary", and "Laboratory Report". | Coded | R | | Notification Section Header | PHVS_NotificationSectionHeader_CDC | OBR 2 : Maps to the HL7 attribute OBR-4-Universal Service ID. No UID or label is passed in the message. | CE | R | Literal Value: 'NOTF^Individual Case Notification^CDCPHINVS' |

Arboviral Human Case Notification Message Mapping Guide

| Notification/Message Structural Variables | | | | | | | | Mapping Methodology | | | |
|---|----------------------|---|-----------|--------------|------------|--------------------------------|---------------------------------|---|---------------|-----------------|--|
| PHIN Variable ID | Label/Short Name | Description | Data Type | CDC Priority | May Repeat | Value Set Name | Value Set Code | Message Context | HL7 Data Type | HL7 Optionality | Implementation Notes |
| NOT103 | Date First Submitted | Date the notification was first sent to CDC. This value does not change after the original notification. | Date/time | R | | | | Maps to the HL7 attribute OBR-7-Observation Date/time. No UID or label is passed in the message. | TS | R | <same value in each OBR instance> |
| NOT106 | Date of Report | Date/time this version of the notification was sent. It will be the same value as NOT103 for the original notification. For updates, this is the update/send date/time. | Date/time | R | | | | Maps to the HL7 attribute OBR-22-Result Report/Status Chg Date/time. No UID or label is passed in the message. | TS | R | <same value in each OBR instance> |
| INV169 | Condition Code | Condition or event that constitutes the reason the notification is being sent. | Coded | R | | Virus Type (Arboviral Disease) | PHVS_VirusType_ArboviralDisease | OBR-31 Reason for Study - <i>For HL7 this is an optional field but for the Case Notification profile, this is a mandatory field</i> | CE | R | This field should be populated using the standardized vocabulary from PHIN VADS PHVS_VirusType_ArboviralDisease Value Set Code. The data in INV169 will match the data populated for ARB001. |