2015 Changes to the National Notifiable Disease Surveillance System (NNDSS)
Background

* The list of nationally notifiable infectious diseases is revised periodically.
  * Diseases may be added as a new pathogen emerges or deleted as incidence declines.
* The Council of State and Territorial Epidemiologists (CSTE), with input from CDC, makes recommendations annually for additions and deletions to the list of nationally notifiable diseases.
* Reporting of diseases is mandated at the state level and lists vary slightly by state.
  * CDC has some case definitions available to non-nationally notifiable diseases. For other diseases there is not a national case definition.
The CDC’s case definitions for Nationally Notifiable Infectious Conditions can be found at: www.cdc.gov/nndss or from the ‘Case Definitions’ link in MDSS.

A link to the case definition for each condition is available on the CDInfo website (www.michigan.gov/cdinfo), just click on ‘Communicable Diseases (A-Z)’ then navigate to the condition of interest.

Where can these revisions be found?
Revisions to case definitions and laboratory criteria for:

* Congenital Syphilis
* Invasive *Haemophilus influenzae* Disease
* Meningococcal Disease
* Dengue

* New definitions should be used for reporting new 2015 cases beginning in January 2015

*Note: on the following slides, updates from the previous case definition are highlighted in red.*
2015 Changes:

- Laboratory criteria for congenital syphilis is updated to reflect changes in available tests as well as new tests being used.
- Provides parameters for what is considered abnormal cerebrospinal fluid values in congenital syphilis.
- Case definition link:
Laboratory Criteria

* Demonstration of *Treponema pallidum* by:
  * Darkfield microscopy of lesions, body fluids, or neonatal nasal discharge, or
  * Polymerase chain reaction (PCR) or other equivalent direct molecular methods of lesions, neonatal nasal discharge, placenta, umbilical cord, or autopsy material, or
  * Immunohistochemistry (IHC), or special stains (e.g., silver staining) of specimens from lesions, placenta, umbilical cord, or autopsy material.
Probable Case Classification

* A condition affecting an infant whose mother had untreated or inadequately treated* syphilis at delivery, regardless of signs in the infant, or an infant or child who has a reactive non-treponemal test for syphilis (Venereal Disease Research Laboratory [VDRL], rapid plasma reagin [RPR], or equivalent serologic methods) AND any one of the following:

* Any evidence of congenital syphilis on physical examination (see Clinical description)
* Any evidence of congenital syphilis on radiographs of long bones
* A reactive CSF VDRL test
* In a nontraumatic lumbar puncture, an elevated CSF leukocyte (white blood cell, WBC) count or protein (without other cause):

Suggested parameters for abnormal CSF WBC and protein values:

* During the first 30 days of life, a CSF WBC count of >15 WBC/mm3 or a CSF protein >120 mg/dL.
* After the first 30 days of life, a CSF WBC count of >5 WBC/mm3 or a CSF protein >40 mg/dL, regardless of CSF serology.

The treating clinician should be consulted to interpret the CSF values for the specific patient.
Invasive *Haemophilus influenzae* Disease

2015 Changes:

- Adds polymerase chain reaction (PCR) as an acceptable laboratory test
- Classifies PCR-positive *Haemophilus influenzae* cases as confirmed
Case Definition:

Laboratory Criteria

* Detection of *Haemophilus influenzae* type b antigen in cerebrospinal fluid [CSF]
* Detection of *Haemophilus influenzae*-specific nucleic acid in a specimen obtained from a normally sterile body site (e.g., blood or CSF), using a validated polymerase chain reaction (PCR) assay; or
* Isolation of *Haemophilus influenzae* from a normally sterile body site (e.g., cerebrospinal fluid [CSF], blood, joint fluid, pleural fluid, pericardial fluid)
Confirmed Case Definition

* Isolation of *Haemophilus influenzae* from a normally sterile body site (e.g., cerebrospinal fluid [CSF], blood, joint fluid, pleural fluid, pericardial fluid) OR

* Detection of *Haemophilus influenzae*-specific nucleic acid in a specimen obtained from a normally sterile body site (e.g., cerebrospinal fluid [CSF], blood, joint fluid, pleural fluid, pericardial fluid), using a validated polymerase chain reaction (PCR) assay
Meningococcal Disease

2015 Changes:

- Classifies PCR-positive meningococcal cases as “confirmed’
- Modifies case ascertainment criteria to include medical examiner reporting of *N. meningitidis* to public health agencies
- Case definition link:
Confirmed Case Classification

* Detection of *N. meningitidis*-specific nucleic acid in a specimen obtained from a normally sterile body site (e.g., blood or CSF), using a validated polymerase chain reaction (PCR) assay; or

* Isolation of *N. meningitidis*
  * From a normally sterile body site (e.g., blood or CSF, or less commonly, synovial, pleural, or pericardial fluid); or
  * From purpuric lesions.
2015 Changes:

- Updates the clinical and laboratory presentation of dengue to account for new disease classifications which include dengue-like illness*, dengue, and severe dengue, that replace the previous disease classifications
- Modifies the sources of data for case ascertainment to include school-based surveys in dengue endemic areas
- Deletes the “Asymptomatic Blood or Tissue Donor” reporting category and limits reporting to symptomatic (lab-positive) dengue virus infections
- Case definition link:

*Note: dengue-like illness will be added to NNDSS pending approval*
Dengue – Case Definition

Laboratory Criteria

Confirmatory:

* Detection of DENV nucleic acid in serum, plasma, blood, CSF, other body fluid or tissue by validated reverse transcriptase-PCR, or
* Detection of DENV antigens in tissue by a validated immunofluorescence or immunohistochemistry assay, or
* Detection in serum or plasma of DENV NS1 antigen by a validated immunoassay; or
* Cell culture isolation of DENV from a serum, plasma, or CSF specimen; or
* Detection of IgM anti-DENV by validated immunoassay in a serum specimen or CSF in a person living in a dengue endemic or non-endemic area of the US without evidence of other flavivirus transmission (e.g., WNV, SLEV, or recent vaccination against a flavivirus (e.g., YFV, JEV)); or
* Detection of IgM anti-DENV in a serum specimen or CSF by validated immunoassay in a traveler returning from a dengue endemic area without ongoing transmission of another flavivirus (e.g., WNV, JEV, YFV), clinical evidence of co-infection with one of these flaviviruses, or recent vaccination against a flavivirus (e.g., YFV, JEV); or
* IgM anti-DENV seroconversion by validated immunoassay in acute (i.e., collected <5 days of illness onset) and convalescent (i.e., collected >5 days after illness onset) serum specimens; or
* IgG anti-DENV seroconversion or ≥4-fold rise in titer by a validated immunoassay in serum specimens collected >2 weeks apart, and confirmed by a neutralization test (e.g., plaque reduction neutralization test) with a >4-fold higher end point titer as compared to other flaviviruses tested.
Laboratory Criteria

Probable:

* Detection of IgM anti-DENV by validated immunoassay in a serum specimen or CSF in a person living in a dengue endemic or non-endemic area of the United States with evidence of other flavivirus transmission (e.g., WNV, SLEV), or recent vaccination against a flavivirus (e.g., YFV, JEV).

* Detection of IgM anti-DENV in a serum specimen or CSF by validated immunoassay in a traveler returning from a dengue endemic area with ongoing transmission of another flavivirus (e.g., WNV, JEV, YFV), clinical evidence of co-infection with one of these flaviviruses, or recent vaccination against a flavivirus (e.g., YFV, JEV).

Suspected:

* The absence of IgM anti-DENV by validated immunoassay in a serum or CSF specimen collected <5 days after illness onset and in which molecular diagnostic testing was not performed in a patient with an epidemiologic linkage.
Dengue – Case Definition

Case Classification

Suspected
* A clinically compatible case of dengue-like illness, dengue, or severe dengue with an epidemiologic linkage

Probable
* A clinically compatible case of dengue-like illness, dengue, or severe dengue with laboratory results indicative of probable infection

Confirmed
* A clinically compatible case of dengue-like illness, dengue, or severe dengue with confirmatory laboratory results
New National reportable conditions

* Campylobacteriosis
* Chikungunya virus neuroinvasive and non-neuroinvasive (pending approval)
* Hantavirus infection, non-hantavirus Pulmonary Syndrome (pending approval)
New Conditions Under National Surveillance

Campylobacteriosis

* Confirmed and probable cases are asked to be submitted to CDC starting January 2015

* **Note**: updates the existing standardized surveillance case definition, removing the “suspect” category and creating two classifications of probable cases: cases diagnosed through culture-independent methods and cases that are epi-linked to a confirmed and probable case


* **Campylobacteriosis is and has been reportable to State of Michigan in the past**
New Conditions Under National Surveillance

Chikungunya virus neuroinvasive and non-neuroinvasive disease

* To be added pending approval

* **Note:** the case definition for Arboviral neuroinvasive and non-neurinvasive diseases will be revised to include Chikungunya virus to the list of nationally notifiable Arboviral diseases in the US

* Case definition link:
New Conditions Under National Surveillance

Hantavirus infection, non-Hantavirus Pulmonary Syndrome

* To be added pending approval
* Surveillance is broadened to include both “Hantavirus Infection, Non-Hantavirus Pulmonary Syndrome and HPS so that all cases of laboratory-confirmed hantavirus infection would be nationally notifiable

* Case definition Link: