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Congenital Cytomegalovirus (cCMV) Infection and Disease  
2024 Case Definition  
Congenital Cytomegalovirus (cCMV) Infection and Disease  
2024 Case Definition  
NOTE:  
A surveillance case definition is a set of uniform criteria used to define a disease for public health surveillance. Surveillance case definitions enable public health officials to classify and count cases consistently across reporting jurisdictions. Surveillance case definitions are not intended to be used by healthcare providers for making a clinical diagnosis or determining how to meet an individual patient’s health needs.  
CSTE Position Statement(s)  
23-ID-02  
Subtype(s)  
Congenital cytomegalovirus disease  
Congenital cytomegalovirus infection  
Background  
In the United States (U.S.), approximately 1 in 200 babies is born with congenital CMV (cCMV) infection; one out of 5 of these babies will present with clinical signs of cCMV disease in the neonatal period and/or have long-term health conditions.  
1  
cCMV infection is responsible for an estimated 5-10% of cases of prelingual hearing loss among children less than 2 years of age, and an estimated 15-20% of moderate to profound bilateral sensorineural hearing loss (SNHL) among all U.S. children.  
2,3  
A substantial proportion of cCMV-related SNHL cases occur in children with cCMV infection who do not have apparent clinical signs at birth, including those who pass the newborn hearing screen.  
1  
Clinical Criteria  
Cases should be assessed according to absence or presence of clinical evidence as defined below and the clinical data should be included in the case investigation.  
In the absence of a more likely alternative etiology:  
An infant with at least one of the following clinical signs during the neonatal period:  
Hepatomegaly  
Splenomegaly  
Petechial rash or purpura ("blueberry muffin rash"),  
OR  
A child aged 6 years or younger with one or more of the following permanent conditions:  
Microcephaly (defined as head circumference measurement >2 standard deviations below the mean (or <3rd percentile) for the same age and sex, notation in the medical record, or diagnostic code of microcephaly (e.g., ICD-10 code Q02),  
Brain imaging abnormalities consistent with cCMV, such as intracranial calcifications, periventricular calcifications, leukomalacia, polymicrogyria, lissencephaly, pachygyria, schizencephaly, or ventriculomegaly  
Sensorineural hearing loss  
Seizures  
Cerebral palsy  
Chorioretinitis  
Vision impairment, resulting from conditions consistent with cCMV, such as retinitis, retinal scarring, optic neuritis, optic atrophy, or brain damage resulting in cortical vision impairment.  
Laboratory Criteria  
Confirmatory Laboratory Evidence  
†  
:  
Absence of a negative test (CMV DNA by Nucleic Acid Amplification Test (NAAT) or culture) on a urine specimen collected within 21 days of life,  
AND  
Detection of CMV DNA by NAAT from urine, whole blood (including dried blood spot [DBS]), or cerebrospinal fluid (CSF) collected from an infant within 21 days of life,  
OR  
Detection of CMV DNA by NAAT from amniotic fluid specimen,  
OR  
Isolation of CMV in viral culture from urine, whole blood, or CSF collected from an infant within 21 days of life,  
OR  
Isolation of CMV in viral culture from amniotic fluid specimen,  
OR  
Demonstration of CMV antigen in an autopsy specimen by immunohistochemistry (IHC),  
OR  
Detection of CMV antigen by antigenemia test in whole blood collected from an infant within 21 days of life.  
Presumptive Laboratory Evidence:  
Absence of a negative test (CMV DNA by NAAT or culture) on a urine specimen collected within 21 days of life,  
AND  
Detection of CMV DNA by NAAT from saliva collected from an infant within 42 days of life§,  
OR  
Isolation of CMV in viral culture from saliva collected from an infant within 42 days of life§,  
OR  
Detection of CMV DNA by NAAT from urine, whole blood, or CSF collected from an infant within 22–42 days of life¶,  
OR  
Isolation of CMV in viral culture from urine, whole blood, or CSF collected from an infant within 22–42 days of life¶.  
Note: The categorical labels used here to stratify laboratory evidence are intended to support the standardization of case classifications for public health surveillance. The categorical labels should not be used to interpret the utility or validity of any laboratory test methodology.  
† Only valid in the absence of a subsequent negative test on a urine specimen that was completed for confirmatory purposes.  
§ If CMV is detected in saliva, repeat testing should be performed using urine.  
¶ Only valid in the absence of a prior negative test on a urine specimen collected within 21 days of life.  
Criteria to Distinguish a New Case from an Existing Case  
A case should be enumerated as a new case if not previously reported.  
Note: If a case was previously reported as cCMV infection but later meets criteria for cCMV disease the case would not be counted as a new case but a re-classification.  
Subtype(s) Case Definition  
Expand All  
Congenital cytomegalovirus disease  
Case Classification  
Probable  
Meets clinical criteria  
AND  
presumptive laboratory evidence.  
Confirmed  
Meets clinical criteria  
AND  
confirmatory laboratory evidence.  
Congenital cytomegalovirus infection  
Case Classification  
Confirmed  
Meets confirmatory laboratory evidence.  
References  
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NNDSS receives and shares case data from state, local, and territorial health departments to help public health monitor, control, and prevent serious diseases.  
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