23-ID-09

Committee: Infectious Disease

Title: Update to Public Health Reporting and National Notification of Varicella

☒ Check this box if this position statement is an update to an existing standardized surveillance case definition and include the most recent position statement number here: 09-ID-68.

Synopsis:
This position statement updates the standardized surveillance case definition for varicella (previous position statement 09-ID-68). Updates include:

- Revisions to the Statement of the Problem, Background, and Justification sections to include updated evidence to support proposed changes to the case definition criteria.
- Addition of information about the presentation of varicella in vaccinated persons to the clinical criteria for case ascertainment and for case classification.
- Re-insertion of language to indicate that varicella clinical criteria apply in the absence of a more likely alternative diagnosis. This language had been included in some prior position statements.
- Addition of epidemiologic linkage to a person with herpes zoster as a criterion for case classification.
- Increase of the specificity of the confirmed case classification by including only cases with confirmatory laboratory results or cases with generalized rash with vesicles (previously referred to as maculopapulovesicular rash) in persons who have an epidemiologic link to a laboratory-confirmed varicella case, a person with herpes zoster, or a varicella cluster/outbreak containing at least one laboratory-confirmed case.
- Definition of varicella cases with a generalized rash without vesicles as probable cases when paired with an epidemiologic linkage or with a positive varicella-zoster virus (VZV) IgM test.
- Definition of varicella cases with a provider diagnosis of varicella or chickenpox but no rash description as probable cases if paired with epidemiologic linkage, confirmatory laboratory test, or positive VZV IgM test.

I. Statement of the Problem

The current varicella position statement was published in 2009,[1] but no substantial changes to the case definition have been made since 1999[2]. Since 1995, when the United States (U.S.) varicella vaccination program began, varicella incidence has declined such that what was once a ubiquitous childhood disease has become an uncommon occurrence. Classically, varicella presents with a generalized maculopapulovesicular rash (hereinafter referred to as “generalized rash with vesicles”) whose characteristic is that lesions in all stages of development (macules, papules, vesicles, and crusts) are present at the same time. This can still occur in both vaccinated and unvaccinated persons. However, the epidemiology and clinical presentation have changed since routine childhood vaccination against varicella was introduced.[3,4] About half of reported cases in recent years have occurred in vaccinated persons who usually have a mild presentation.[3,4] Additionally, varicella rashes in vaccinated persons tend to involve predominantly maculopapular lesions with few or no vesicles, making clinical diagnosis challenging. The 2009 case definition (09-ID-68)[1] does not capture the changes in varicella epidemiology and clinical presentations seen now that the childhood vaccination program has resulted in high population coverage. Improved specificity of the varicella case definition is needed to better understand the current burden of disease. Updated information on clinical presentation and laboratory testing methods now available for varicella should be incorporated to address current challenges of varicella surveillance. As of 2020, case-based varicella surveillance is conducted by 39 states and the District of Columbia (D.C.), and outbreak surveillance is conducted by all jurisdictions.[3] Therefore, providing clear, updated criteria for case ascertainment and case classification for varicella is critical.

II. Background and Justification

Varicella (chickenpox) is an acute infectious disease caused by primary infection with varicella-zoster virus (VZV). After the primary infection, VZV remains latent and can later reactivate to cause herpes zoster (HZ, shingles).

Varicella is generally a mild disease, but severe complications can occur in any age group. Immunocompromised persons are at higher risk of complications. Fatalities are rare, but can occur, including in previously healthy persons. Following introduction of the 1-dose varicella vaccination program in 1995 and addition of a second dose in 2007[5], varicella morbidity and mortality decreased dramatically in the U.S.[3,6] By 2019, overall incidence declined by >97% and hospitalizations and deaths declined by 94% and 97%, respectively, among persons aged <50 years.[3,6] After 25 years of varicella vaccination in the U.S., classic varicella, with hundreds of vesicular skin lesions, scabs, and complications, has become an uncommon occurrence.[4] However, varicella can occur in vaccinated persons (termed breakthrough varicella). As of 2019, these cases represented approximately half of all varicella cases reported through the national surveillance system.[3] Breakthrough varicella is usually modified, with fewer skin lesions (<50) that are mostly maculopapular, and has a milder presentation.[4] However, the potential for severe manifestations from varicella still exists among both vaccinated and unvaccinated persons.[4] Diagnosis of breakthrough varicella is important because these cases are infectious. Between 2016-2019, the index case in ~20% of reported varicella outbreaks occurred in a person who was vaccinated .[7] Persons with active herpes zoster lesions can spread VZV and cause varicella in susceptible persons; however, localized herpes zoster is much less infectious than varicella or disseminated herpes zoster.

The sharp decline in cases of varicella due to the U.S. varicella vaccination program has led to healthcare providers being less familiar with varicella clinical presentation. Clinical diagnosis is especially challenging in cases with mild rashes, few lesions, or no vesicles. It can be difficult to distinguish varicella from other rash illnesses or disseminated herpes zoster. Consequently, laboratory confirmation of varicella is becoming increasingly necessary to understand the true burden of disease and is now routinely recommended. Vesicular swabs and scabs from crusted lesions are the preferred specimens, and PCR assays are the preferred diagnostic method.[8] In the absence of vesicles or scabs, scrapings of maculopapular lesions can be collected for testing.[8-9] Use of serologic testing to confirm varicella is not recommended although results of VZV IgG antibody testing of serum collected at or before the time of rash illness onset could be helpful in distinguishing varicella from disseminated herpes zoster. IgM tests have poor specificity, and IgM antibodies are transiently produced during primary infection, reinfection, or reactivation from latency.[8] An IgM positive result in the presence of varicella-like symptoms can indicate a likely acute VZV infection; however, a positive IgM result in the absence of clinical disease is not considered indicative of active varicella. Rashes within 42 days after vaccination have been reported in 4%–6% of 1-dose, and 1% of 2-dose vaccine recipients; only genotyping can confirm whether the rash was due to vaccine-strain.

Continued surveillance for varicella is needed to understand changes in disease epidemiology, detect and control outbreaks, and monitor the effectiveness of current immunization policy for controlling the disease.

The purpose of this position statement is to:

- Update the case classification to account for changes in the epidemiology and clinical presentation of varicella in the era of high varicella vaccine population coverage.
- Increase specificity of criteria for the confirmed case classification.
- Provide guidance for classification of varicella cases with a generalized rash without vesicles and cases with a provider diagnosis of varicella or chickenpox but no rash description.
- Emphasize the availability and importance of molecular laboratory tests for confirmation of varicella, given the potential for clinical misdiagnosis.
- Acknowledge the limitations of IgM testing and clarify its role in case ascertainment and case classification.
- Add herpes zoster as a possible epidemiologic source of exposure and provide guidance on distinguishing herpes zoster from varicella. Additional information can be found in the Section VI Narrative.

III. Statement of the Desired Action(s) to be Taken

CSTE recommends the following actions:

1. Implement a standardized surveillance case definition for **varicella**.

   A. Utilize standard sources (e.g., reporting*) for case ascertainment for **varicella**. Surveillance for **varicella** should use the recommended sources of data to the extent of coverage presented in Section V.

   B. Utilize standardized criteria for case ascertainment for **varicella** presented in Section VI and Table VI in Technical Supplement.

   C. Utilize standardized criteria for case classification for **varicella** presented in Section VII and Table VII in Technical Supplement.

2. Utilize standardized criteria for case ascertainment and classification (based on Sections VI and VII and Technical Supplement) for **varicella** and **update** varicella on the *Nationally Notifiable Condition List* using the following notification** timeframe:
   - ☐ Immediately notifiable, extremely urgent (within 4 hours)
   - ☐ Immediately notifiable, urgent (within 24 hours)
   - ☒ Routinely notifiable
   - ☐ No longer notifiable

3. CSTE recommends that all States and Territories enact laws (statute or rule/regulation as appropriate) to make this disease or condition reportable in their jurisdiction. Jurisdictions (e.g., States and Territories) conducting surveillance (according to these methods) should submit case notifications to CDC.

4. Expectations for Message Mapping Guide (MMG) development for a newly notifiable condition: the National Notifiable Diseases Surveillance System (NNDSS) can receive HL7-based messages for case notifications; the specifications for these messages are presented in MMGs. When CSTE recommends a new condition be made nationally notifiable, CDC must obtain Office of Management and Budget Paperwork Reduction Act (OMB PRA) approval prior to accepting case notifications for the new condition. Under anticipated timelines, notification using the Generic V2 MMG would support transmission of the basic demographic and epidemiologic information common to all cases and could begin with the new MMWR year following the CSTE annual conference. Input from CDC programs and CSTE would prioritize development of a disease-specific MMG for the new condition among other conditions waiting for MMG development.

5. CDC should publish data on varicella as appropriate (see Section IX). CSTE recommends the following case statuses be included in the CDC Print Criteria:
   - ☒Confirmed
   - ☒Probable
   - ☐Suspect
   - ☐Unknown

6. CSTE recommends that all jurisdictions (e.g., States, Localities, or Territories) with legal authority should conduct public health surveillance and use the case classifications included in the accompanying standardized surveillance position statement.

** Reporting: process of a healthcare provider, laboratory, or other entity submitting a report (case information) of a condition under public health surveillance to local, state, or territorial public health.*

*** Notification: process of a local or state public health authority submitting a report (case information) of a condition on the* Nationally Notifiable Conditions List *to CDC.*

IV. Goals of Surveillance

To provide information on the temporal, geographic, and demographic occurrence of varicella to facilitate its prevention and control.

Surveillance of varicella in the United States is necessary to:

1) monitor the impact of vaccination on the burden of disease,
2) characterize and understand changes in the epidemiology of the disease,
3) detect and respond to outbreaks, and
4) assess for waning of immunity.

V. Recommended Data Sources and Methods for Surveillance

Surveillance for varicella should use the following recommended sources of data and/or methodologies and the extent of coverage listed in Table V.

Surveillance for varicella relies on reporting of varicella cases to public health jurisdictions by providers, hospitals, laboratories, schools, and other institutions or facilities. Death certificates, hospital discharge or outpatient records, and data from electronic medical records may be used as supplementary data sources for case finding.

Table V. Recommended Sources of Data, Surveillance Methods, and Extent of Coverage for Ascertainment of Cases of Varicella.

Source of Data/Methodology for Case Ascertainment	Coverage	
	Population-Wide	Sentinel Sites
Clinician reporting	X	
Laboratory reporting	X	
Reporting by other entities, specify: • Hospitals • Schools • Daycares • Correctional and detention facilities • Homeless service sites • Migrant shelters	X	
Death certificates	X	
Hospital discharge or outpatient records	X	
Data from electronic medical records	X	
Telephone or online survey		
School-based survey		
Other, specify: N/A		

VI. Criteria for Case Ascertainment

Case ascertainment is the process through which public health identifies potential cases of a disease or condition using data reported or provided to public health by healthcare, laboratories, and other reporting entities. This public health reporting is triggered by the case ascertainment criteria (a single criterion or a combination of criteria) included in this position statement, and each initial report sent to public health should include common data elements and disease-specific data elements. Case ascertainment criteria are not intended to be used for clinical diagnosis purposes.

A. Narrative: A description of suggested criteria for case ascertainment of a specific condition and recommended reporting procedures.

Recommended reporting procedures for varicella:

- All cases of varicella should be reported.
- Reporting should be ongoing and routine.
- Frequency of reporting should follow the state health department's routine schedule.

Laboratory confirmation of varicella is now routinely recommended given the changes in the epidemiology of varicella.

Distinguishing varicella from other rash illnesses or from disseminated herpes zoster can be challenging. A classic herpes zoster rash occurs in a dermatomal distribution (localized in 1 or 2 dermatomes) and is unilateral (does not cross the mid-line). The clinical presentation of herpes zoster is usually distinctive enough to make an accurate clinical diagnosis. In some instances, primarily among immunocompromised persons, the herpes zoster rash can become disseminated. Disseminated herpes zoster rash usually begins with a dermatomal rash; however, sometimes it begins with no primary dermatomal involvement. Distinguishing varicella from disseminated herpes zoster might not be possible by physical examination or through molecular or serologic laboratory testing. A positive VZV PCR alone cannot distinguish between varicella and herpes zoster as both diseases are caused by VZV; additional clinical and epidemiologic information would be needed. A history of VZV exposure, a history that the rash began with a dermatomal distribution, and results of VZV IgG antibody testing at or before the time of rash onset might help guide the diagnosis. Persons with active herpes zoster lesions can spread VZV and cause varicella in susceptible persons; however, localized herpes zoster is much less infectious than varicella or disseminated herpes zoster.

Report any illness to public health authorities that meets any of the following criteria:

A1. Clinical Criteria for Reporting

- In the absence of a more likely alternative diagnosis*:
  - An acute illness with a generalized rash with vesicles, **OR**
  - An acute illness with a generalized rash without vesicles**

** Consider varicella when lesions in various stages of development are present at the same time.*
*** This clinical criterion must be paired with epidemiologic linkage criteria for reporting to trigger a report to public health.*

A2. Laboratory Criteria for Reporting[a]

- Positive polymerase chain reaction (PCR) for varicella-zoster virus (VZV) DNA,[b,c] **OR**
- Positive direct fluorescent antibody (DFA) for VZV DNA, **OR**
- Isolation of VZV, **OR**
- Significant rise (i.e., at least a 4-fold rise or seroconversion[c,d]) in paired acute and convalescent serum VZV immunoglobulin G (IgG) antibody.[c,e]

[a] A negative laboratory result in a person with generalized rash with vesicles does not rule out varicella as a diagnosis.
[b] PCR of scabs or vesicular fluid is the preferred method for laboratory confirmation of varicella. In the absence of vesicles or scabs, scrapings of maculopapular lesions can be collected for testing.
[c] Not explained by varicella vaccination during the previous 6-45 days.
[d] Seroconversion is defined as a negative serum VZV IgG followed by a positive serum VZV IgG.
[e] Paired IgG acute- and convalescent-phase antibody tests are not practical for immediate clinical management. In vaccinated persons, a 4-fold rise may not occur.

A3. Epidemiologic Linkage Criteria for Reporting

- Exposure to or contact with a varicella case, a person with herpes zoster, or a varicella cluster or outbreak within one incubation period before the rash onset**.

*** Epidemiologic linkage criteria for reporting must be paired with clinical criteria of an acute illness with a generalized rash without vesicles in the absence of a more likely alternative diagnosis to trigger a report to public health.*

A4. Vital Records Criteria for Reporting
- A person whose death certificate lists varicella or chickenpox as an underlying cause of death or significant condition contributing to death.

A5. Healthcare Record Criteria for Reporting
- A person whose healthcare record contains a diagnosis of varicella or chickenpox.

B. Disease-Specific Data Elements to be Included in the Initial Report
Disease-specific data elements should be included in addition to the common data elements that are to be reported for all initial individual case reports (see CSTE Position Statement 09-SI-01 "Common Core Data Elements for Case Reporting and Laboratory Result Reporting" https://cdn.ymaws.com/www.cste.org/resource/resmgr/PS/09-SI-01.pdf). Public health authorities do not expect that an initial report will contain all the information necessary for case investigation and case classification.

Additional disease-specific data elements to include when available:
- Clinical factors
  - Number of lesions (by category: <50, 50–249, 250–500, >500) and actual number of lesions if <50
  - Fever
  - Complications (describe)
  - Hospitalization (include duration and reason for hospitalization, if known)
  - Pre-existing medical conditions (e.g., immunocompromising condition)
  - Medications
  - Previous varicella history
  - Died (include date of death)
- Epidemiologic factors
  - Transmission setting
  - Contact with a person with varicella or herpes zoster and whether those cases were laboratory-confirmed
  - Association with a cluster or outbreak and whether there was at least 1 case that was laboratory-confirmed
- Immunization History
  - Number of doses of varicella-containing vaccine received
  - Date(s) of dose(s) of varicella-containing vaccine received

VII. Case Definition for Case Classification

This case definition for case classification is intended solely for public health surveillance purposes and does not recommend criteria for clinical diagnosis purposes. Once a public health agency has ascertained data on potential cases of a disease or condition from reporting entities, the public health agency assigns case statuses based on the case classifications included within this position statement.

A. Narrative: A description of criteria to determine how public health should classify a case of varicella.

A1. Clinical Criteria
In the absence of a more likely alternative diagnosis:
- An acute illness with a generalized rash with vesicles (maculopapulovesicular rash), **OR**
- An acute illness with a generalized rash without vesicles (maculopapular rash).

A2. Laboratory Criteria*[a]
Confirmatory Laboratory Evidence:
- Positive polymerase chain reaction (PCR) for varicella-zoster virus (VZV) DNA,[b,c] **OR**
- Positive direct fluorescent antibody (DFA) for VZV DNA, **OR**
- Isolation of VZV, **OR**
- Significant rise (i.e., at least a 4-fold rise or seroconversion[c,d]) in paired acute and convalescent serum VZV immunoglobulin G (IgG) antibody.[c,e]

Presumptive Laboratory Evidence:

- N/A

Supportive Laboratory Evidence:

- Positive test for serum VZV immunoglobulin M (IgM) antibody.[c,f]

** 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.*

[a] A negative laboratory result in a person with a generalized rash with vesicles does not rule out varicella as a diagnosis.
[b] PCR of scabs or vesicular fluid is the preferred method for laboratory confirmation of varicella. In the absence of vesicles or scabs, scrapings of maculopapular lesions can be collected for testing.
[c] Not explained by varicella vaccination during the previous 6-45 days.
[d] Seroconversion is defined as a negative serum VZV IgG followed by a positive serum VZV IgG.
[e] In vaccinated persons, a 4-fold rise may not occur.
[f] IgM serology has limited value as a diagnostic method for VZV infection and is not recommended for laboratory confirmation of varicella. However, an IgM positive result in the presence of varicella-like symptoms can indicate a likely acute VZV infection. A positive IgM result in the absence of clinical disease is not considered indicative of active varicella.

A3. Epidemiologic Linkage Criteria

Confirmatory Epidemiologic Linkage Evidence:

- Exposure to or contact with a laboratory-confirmed varicella case, **OR**
- Can be linked to a varicella cluster or outbreak containing ≥1 laboratory-confirmed case, **OR**
- Exposure to or contact with a person with herpes zoster (regardless of laboratory confirmation).

Presumptive Epidemiologic Linkage Evidence:

- Exposure to or contact with a probable varicella case that had a generalized rash with vesicles.

A4. Healthcare Record Criteria.

- Provider diagnosis of varicella or chickenpox but no rash description.

A5. Case Classifications

Confirmed:

- Meets clinical evidence **AND** confirmatory laboratory evidence,
  OR
- Meets clinical evidence with a generalized rash with vesicles **AND** confirmatory epidemiologic linkage evidence.

Probable:

- Meets clinical evidence with a generalized rash with vesicles,
  OR
- Meets clinical evidence with a generalized rash without vesicles **AND:**
  - Confirmatory or presumptive epidemiologic linkage evidence, **OR**
  - Supportive laboratory evidence.

  OR
- Meets healthcare record criteria **AND**:
  - Confirmatory or presumptive epidemiologic linkage evidence, **OR**
  - Confirmatory or supportive laboratory evidence.

B. Criteria to Distinguish a New Case of Varicella from Reports or Notifications which Should Not be Enumerated as a New Case for Surveillance

The following should be enumerated as a new case:

- Person with a new onset of symptoms that meets the criteria for a confirmed or probable case, **OR**
- Person was previously enumerated as a case followed by a documented period of recovery **AND** newly meets the criteria for a confirmed or probable case**, **OR**
- Person was previously reported but not enumerated as a confirmed or probable case, then subsequently available information meets the criteria for a confirmed or probable case.

*** Varicella generally confers life-long protection. There have been reports of second episodes of varicella, but in most cases the first episode was not laboratory-confirmed.*

VIII. Period of Surveillance

The surveillance should be on-going.

IX. Data Sharing/Release and Print Criteria

CSTE recommends the following case statuses* be included in the 'case' count released outside of the public health agency:

☒Confirmed
☒Probable
☐Suspect
☐Unknown

**Which case statuses are included in case counts constitute the "print criteria."*

Jurisdictions (e.g., States and Territories) conducting surveillance under this case definition can voluntarily submit de-identified case information to CDC, if requested and in a mutually agreed upon format.

Production of national data summaries and national data re-release for non-NNCs:

- Prior to release of national data summaries CDC should follow the CDC/ATSDR Policy on Releasing & Sharing Data, issued on April 16, 2003 and referenced in 11-SI-01 and custodians of such data should consult the CDC-CSTE Intergovernmental Data Release Guidelines Working Group report (www.cste2.org/webpdfs/drgwgreport.pdf) which contains data release guidelines and procedures for CDC programs re-releasing state, local, or territorial-provided data.
- CDC programs have a responsibility, in collaboration with states, localities, and territories, to ensure that CDC program-specific data re-release procedures meet the needs of those responsible for protecting data in the states and territories.

X. Revision History

Position Statement ID	Section of Document	Revision Description
23-ID-09	Section I. Statement of the Problem; Section II. Background and Justification	• Included updated evidence to support proposed changes to case definition criteria. • Revision to use "generalized rash with vesicles" in place of "maculopapulovesicular rash."
23-ID-09	Section VI. Case ascertainment; Table VI. Table of criteria to determine whether a case should	• Added information about presentation of varicella in vaccinated persons to the clinical criteria. • Re-inserted language to indicate that varicella clinical criteria apply in the absence of a more likely alternate diagnosis.

	be reported to public health authorities	• Added recommendation for laboratory confirmation of varicella cases and the preferred testing method. • Added a brief description of herpes zoster and challenges with distinguishing it from varicella based on clinical presentation or laboratory testing. • Added additional criteria for PCR, and IgG seroconversion (i.e., not explained by varicella vaccination during the previous 45 days).
23-ID-09	Section VII. Case Classification; Table VII.A. Classification Table	• Added information about presentation of varicella in vaccinated persons to the clinical criteria. • Increased specificity for confirmed cases by requiring laboratory confirmation or, for cases with generalized rash with vesicles, requiring a confirmatory epidemiologic linkage. • Revised probable case definition to include 1) varicella cases with a rash without vesicles if paired with any epidemiologic linkage or a positive VZV IgM test and 2) cases with a provider diagnosis of varicella or chickenpox but no rash description if paired with any epidemiologic-linkage, confirmatory laboratory test, or positive VZV IgM test. • Added contact with a person with herpes zoster as an epidemiologic-linkage criterion. • Added additional criteria for PCR, IgG seroconversion, and IgM testing (i.e., not explained by varicella vaccination during the previous 45 days).
09-ID-68	All sections	Standardized reporting definition for varicella to facilitate more timely, complete, and standardized local and national reporting of this condition.
06-ID-13	Statement of the Problem; Statement of the desired actions to be taken; CSTE recommendation; Public Health Impact	• Recommendation that ACIP consider a universal 2-dose varicella vaccination recommendation with catch-up provisions. • Recommendation that CDC support adequate funding for states to conduct surveillance.
02-ID-06	Statement of the Problem; Desired Actions to be Taken; Background and Justification	• Recommendation that varicella be included in the National Notifiable Diseases Surveillance System (NNDSS) starting in 2003. • Expansion to state-wide case-based reporting by 2005, but aggregate or sentinel surveillance is acceptable as an interim step
99-ID-09	Varicella Case Definition	• Revision of the clinical criteria from generalized papulovesicular rash to generalized maculopapulovesicular rash • Addition of PCR and DFA to laboratory criteria
98-ID-10	Position to be Adopted; Background/Justification; Goal for Surveillance; Proposed Method of Surveillance; Proposed Surveillance Definition; Data to be Collected; Information System to be Utilized and Transmit Information; Temporary/Permanent	Addition of goals for surveillance, proposed method for surveillance, surveillance definition or probable and confirmed cases, data to be collected, and information system to be utilized.
98-ID-09	Issue; Position to be Adopted; Background/Justification	Surveillance recommendations included that 1) states should monitor the impact of that vaccine on varicella incidence, 2) there should be national varicella surveillance to monitor vaccine impact on morbidity, 3) varicella should be nationally notifiable in the near future, and CDC and APHL should collaborate to develop the appropriate national laboratory capacity to support present and future surveillance and diagnostic needs. Outbreak control recommendations included that 1) states should respond to reported varicella outbreaks, 2) recommendations for

		varicella outbreak response should be developed and disseminated, 3) encouraged use of VFC vaccine for outbreak control and development a special supplemental varicella vaccine purchase fund to support outbreak control, and 4) initiation of the process of requiring daycare and school varicella immunization requirements by 1999.
97-ID-16	Issue; Position to be Adopted; Background/Justification	Recommendation that states and territories should investigate all varicella-related deaths and CDC provide assistance in creating a death investigation form.
1991-9	Issue; Position to be Adopted; Background/Justification	Addition of 4 recommended sources for varicella surveillance.
1990-16		CDC should convene a working group of representatives to define objectives for varicella surveillance and assist CDC in designing a model sentinel surveillance system for varicella
N/A	1990-6	Creation of a standard case definition for varicella.

XI. References

1. Council of State and Territorial Epidemiologists (CSTE). (2009). Public Health Reporting and National Notification for Varicella. 09- ID-68: https://www.cste.org/resource/resmgr/PS/09-ID-68.pdf. Accessed March 13, 2023.
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Technical Supplement

Table VI. Table of criteria to determine whether a case should be reported to public health authorities.

Criterion	Varicella		
Clinical Criteria for Reporting			
An acute illness with a generalized rash with vesicles		N	
An acute illness with a generalized rash without vesicles			N
Absence of a more likely alternative diagnosis*		N	N
Laboratory Criteria for Reporting[a]			
Positive polymerase chain reaction (PCR) for varicella-zoster virus (VZV) DNA[b,c]	S		
Positive direct fluorescent antibody (DFA) for VZV DNA	S		
Isolation of VZV	S		
Significant rise (i.e., at least a 4-fold rise or seroconversion[c,d]) in paired acute and convalescent serum VZV immunoglobulin G (IgG) antibody[c,e]	S		
Epidemiologic Linkage Criteria for Reporting			
Exposure to or contact with a varicella case, a person with herpes zoster, or a varicella cluster or outbreak within one incubation period before the rash onset			N
Vital Record Criteria for Reporting			
A person whose death certificate lists varicella or chickenpox as an underlying cause of death or significant condition contributing to death	S		
Healthcare Record Criteria for Reporting			
A person whose healthcare record contains a diagnosis of varicella or chickenpox	S		

Notes:
S = This criterion alone is SUFFICIENT to report a case.
N = All "N" criteria in the same column are NECESSARY to report a case.
** Consider varicella when lesions in various stages of development are present at the same time.*
[a] A negative laboratory result in a person with generalized rash with vesicles does not rule out varicella as a diagnosis.
[b] PCR of scabs or vesicular fluid is the preferred method for laboratory confirmation of varicella. In the absence of vesicles or scabs, scrapings of maculopapular lesions can be collected for testing.
[c] Not explained by varicella vaccination during the previous 6-45 days.
[d] Seroconversion is defined as a negative serum VZV IgG followed by a positive serum VZV IgG.
[e] Paired IgG acute- and convalescent-phase antibody tests are not practical for immediate clinical management. In vaccinated persons, a 4-fold rise may not occur.

Table VII.A. Classification Table: Criteria for defining a case of varicella.

Criterion	Confirmed		Probable				
Clinical Evidence							
An acute illness with a generalized rash with vesicles (maculopapulovesicular rash)	O	N	N				
An acute illness with a generalized rash without vesicles (maculopapular rash)	O			N	N		
Absence of a more likely alternative diagnosis	N	N	N	N	N		
Laboratory Evidence[a]							
Positive polymerase chain reaction (PCR) for varicella-zoster virus (VZV) DNA[b,c]	O						O
Positive direct fluorescent antibody (DFA) for VZV DNA	O						O
Isolation of VZV	O						O
Significant rise (i.e., at least a 4-fold rise or seroconversion[c,d]) in paired acute and convalescent serum VZV immunoglobulin G (IgG) antibody[c,e]	O						O
Positive test for serum VZV immunoglobulin M (IgM) antibody[c,f]					N		O
Epidemiologic Linkage Evidence							
Exposure to or contact with a laboratory-confirmed varicella case		O		O		O	
Can be linked to a varicella cluster or outbreak containing ≥1 laboratory-confirmed case		O		O		O	
Exposure to or contact with a person with herpes zoster (regardless of laboratory confirmation)		O		O		O	
Exposure to or contact with a probable varicella case that had a generalized rash with vesicles				O		O	
Healthcare Record Evidence							
Provider diagnosis of varicella or chickenpox but no rash description						N	N

Notes:
N = All "N" criteria in the same column are NECESSARY to classify a case.
O = At least one of these "O" (ONE OR MORE) criteria in each category (categories=clinical evidence, laboratory evidence, and epidemiologic evidence) in the same column—in conjunction with all "N" criteria in the same column—is required to classify a case.
[a] *A negative laboratory result in a person with a generalized rash with vesicles does not rule out varicella as a diagnosis.*
[b] *PCR of scabs or vesicular fluid is the preferred method for laboratory confirmation of varicella. In the absence of vesicles or scabs, scrapings of maculopapular lesions can be collected for testing.*
[c] *Not explained by varicella vaccination during the previous 6-45 days.*
[d] *Seroconversion is defined as a negative serum VZV IgG followed by a positive serum VZV IgG.*
[e] *In vaccinated persons, a 4-fold rise may not occur.*
[f] *IgM serology has limited value as a diagnostic method for VZV infection and is not recommended for laboratory confirmation of varicella. However, an IgM positive result in the presence of varicella-like symptoms can indicate a likely acute VZV infection. A positive IgM result in the absence of clinical disease is not considered indicative of active varicella.*

Table VII.B. Classification Table: Criteria to distinguish a new case of Varicella from reports or notifications which should not be enumerated as a new case for surveillance.

Criterion	Confirmed		Probable	
Criteria to distinguish a new case				
Person with new onset of symptoms that meets the criteria for a confirmed case.	S	N		
Person with new onset of symptoms that meets the criteria for a probable case.			S	N
Person was previously enumerated as a case followed by a documented period of recovery AND newly meets the criteria for a confirmed or probable case		O		O
Person was previously reported but not enumerated as a confirmed or probable case, then subsequently available information meets the criteria for a confirmed or probable case		O		O

S = This criterion alone is SUFFICIENT to enumerate as a new case.
N = All "N" criteria in the same column are NECESSARY to enumerate as a new case.
O = At least one of these "O" (ONE OR MORE) criteria in the same column—in conjunction with all "N" criteria in the same column—is required to enumerate as a new case.