**Council of State and Territorial Epidemiologists**
Position Statement Cover Page: Standardized Surveillance for Diseases or Conditions

**Submission Date**: [Submission Date BY MARCH 30, 2023]

**Committee**: Injury, Substance Use and Mental Health

**Proposed Title**: Standardized surveillance for Cannabinoid Hyperemesis Syndrome

☐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: _____.

**Synopsis**:

- This position statement creates a standardized surveillance definition for Cannabinoid Hyperemesis Syndrome (CHS).
- A standardized surveillance definition for CHS is needed because…
- Case ascertainment criteria include [x criteria, y criteria, z criteria]
- Case classification criteria include [x criteria, y criteria, z criteria]
- Case classifications include [confirmed, probable, suspect] cases

# Council of State and Territorial Epidemiologists

Position Statement Template: Standardized Surveillance for Diseases or Conditions

## I. Statement of the Problem

Cannabinoid Hyperemesis Syndrome (CHS) is an emerging disease among cannabis consumers. It is clinically described as chronic, cyclical vomiting attributed to prolonged cannabis use. Occurrence of CHS has increased in recent years, correlating with widespread cannabis legalization. Monitoring the prevalence of CHS in hospital and emergency department records is difficult as no single ICD-10-CM code describing this diagnosis exists. Little is known about the etiology of CHS but progression of the disease can reportedly lead to death. A standardized definition with an accompanying ICD-10-CM code is needed for epidemiologists to identify and document trends of CHS over time.

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## II. Background and Justification

Cannabinoid Hyperemesis Syndrome (CHS) manifests as cyclical nausea, vomiting and stomach pain that occurs in individuals with a history of chronic cannabis consumption. CHS was first described in 2004 in a South Australian case series. It detailed a mysterious, cyclical vomiting illness occurring in nine patients, with a history of chronic cannabis use, that could not otherwise be explained. Since this case series was published, there have been additional published case reports and case series detailing the same cyclical symptoms attributed to a history of chronic cannabis use. Individuals experiencing CHS often seek medical care as symptoms can be severe and debilitating. Diagnosis of CHS is often made by exclusion, ruling out other physical and microbiological causes. Reported medical outcomes can vary widely, from contributing to death to full resolution of symptoms. Treatment of symptoms is best managed with complete cessation of cannabis use. Relapse is highly likely with resumption of cannabis use.

With cannabis legalization occurring across the United States, increased access to cannabis has led to an increase of CHS prevalence. As of March 2023, 21? states and U.S. territories have liberalized cannabis laws in place, allowing the legal use of cannabis for medical purposes and/or among adults. Burden is likely underestimated due to the emerging nature of the disease and underdiagnosis due to a lack of clinical awareness. However, additional cases described in the literature and through anecdotal sources, such as social media communities, paint a picture of high prevalence of CHS. The epidemiologic surveillance of CHS is currently non-existent due to the lack of a standardized surveillance definition. There is a strong desire by state epidemiologists to quantify the burden of what is the first disease known to be caused by cannabis consumption. A standardized case definition, along with suggested reporting criteria, will enable state epidemiologists to begin monitoring CHS trends in incidence, morbidity, mortality and geography. A standardized definition will also allow for cross-jurisdictional comparisons that may help inform and guide public health and cannabis policy recommendations.

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

CSTE recommends the following actions:

1. Implement a standardized surveillance case definition for Cannabinoid Hyperemesis Syndrome (CHS).

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

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

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

2. Note: this action does NOT propose to add CHS to the Nationally Notifiable Condition List. If requested by CDC, jurisdictions (e.g., states and territories) conducting surveillance according to these methods may voluntarily submit case information to CDC.

3. *Other actions identified by author(s).* The authors highly recommend that CHS be assigned a unique ICD-10-CM code in order to more accurately ascertain cases.

** 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. Note: notification is addressed in a Nationally Notifiable Conditions Recommendation Statement and is the process of a local, state, or territorial public health authority submitting a report (case information) of a condition on the* Nationally Notifiable Conditions List *to CDC.*

## IV. Goals of Surveillance

The goals of surveillance of CHS are;
Goal 1: Monitor the prevalence of CHS in the U.S.
Goal 2: Accurately describe and measure the progression and outcomes of the disease (i.e. recurrences, deaths).
Goal 3: Conduct cross-jurisdictional analyses (i.e. jurisdictions that have legalized cannabis compared to jurisdictions that have not legalized) to inform public health and cannabis policy.
Goal 4: Use data to educate clinicians and cannabis consumers about CHS and prevention.

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## V. Recommended Data Sources and Methods for Surveillance

Surveillance for CHS should use the following recommended sources of data and/or methodologies and the extent of coverage listed in Table V. The main sources of data for case ascertainment are administrative datasets and clinician reporting. Administrative data sources include emergency department and hospital discharge data, and death certificate data. Clinical information may be collected via clinician reporting and/or medical record retrieval.

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**Table V. Recommended Sources of Data, Surveillance Methods, and Extent of Coverage for Ascertainment of Cases of CHS.** [Check all that apply.]

| Source of Data/Methodology for Case Ascertainment | Coverage | |
|---|---|---|
| | Population-Wide | Sentinel Sites |
| Clinician reporting | ✔ | |
| Laboratory reporting | | |
| Reporting by other entities via administrative datasets, specify: [emergency departments, hospital discharge records] | ✔ | |
| Death certificates (coroners, vital records) | ✔ | |
| Data from electronic medical records | | |
| Telephone or online survey | | |
| School-based survey | | |
| Other, specify: | | |
| 2023 Template | | |

## VI. Criteria for Case Ascertainment

**A. Narrative: A description of suggested criteria for case ascertainment of a specific condition.**

Cases of CHS may be identified by public health staff through administrative datasets or via individual case reports from clinicians. The primary method of CHS case ascertainment utilizes administrative datasets (from hospital discharges, emergency department discharges, and death certificate/vital record data) at a population-wide level to identify potential CHS cases via associated ICD-10-CM codes indicating cannabis use and a pattern of cyclic-vomiting that cannot be explained by another more-likely diagnosis. ICD-10-CM diagnostic codes must include a concurrent vomiting code with a cannabis code, including; R11.1 and/or G43.A for vomiting and any F12 code for cannabis. Case ascertainment on death certificate data should include…xxxxxxxxx.
The secondary method utilizes individual case reporting made by clinicians. In jurisdictions where authority is granted, Personal Identifying Health (PHI) information collected from the clinician may be used to collect additional data from an electronic medical record that indicates a diagnosis of CHS and/or chronic cannabis use in combination with a pattern of cyclic vomiting that cannot be explained by another diagnosis.

A1. Clinical Criteria for Reporting

- Clinical Criteria for Reporting: diagnosis of CHS (cyclic vomiting that cannot be explained by another diagnosis and chronic cannabis use)
  - Rome IV diagnostic criteria:
    - 1) symptoms present for 3 months prior, with symptoms onset at least six months prior.
    - 2) Stereotypical episodes of vomiting with acute onset enduring less than 1 week.
    - 3) Patients must have had at least 3 such episodes in the prior year, and 2 episodes in the past 6 months, occurring at least 1 week apart.
    - 4) Between episodes, vomiting must be absent, but other milder symptoms can be present between cycles.
    - 5) Symptoms must be in the setting of prolonged (more than 1 year) and excessive cannabis use.
    - 6) Relief of vomiting episodes by sustained cessation of cannabis use.

A2. Laboratory Criteria for Reporting

- Not applicable

A3. Epidemiologic Linkage Criteria for Reporting

- Chronic heavy cannabis use history
- Medical history indicates a pattern of cyclical vomiting that cannot be better explained by an alternative diagnosis.

A4. Vital Records Criteria:

- Term Cannabinoid Hyperemesis Syndrome (CHS) listed on death certificate
- Cyclic vomiting in combination with cannabis use terminology (e.g. cannabis use disorder)

A5. [Optional] Healthcare Record Criteria for Reporting: When case-finding is based on secondary analysis of clinical or administrative data, include healthcare records that could trigger an initial report to public health. E.g.,

- A person whose healthcare record contains a diagnosis of CHS and/or chronic cannabis use in combination with a pattern of cyclic vomiting that cannot be explained by another diagnosis.

A6. [Optional] Other Criteria for Reporting: Include any other criteria that could trigger an initial report to public health.

- Reports of CHS and/or chronic cannabis use in combination with a pattern of cyclic vomiting that cannot be explained by another diagnosis to the regional poison center.

**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.

[List Disease-Specific Data Elements]

- Is this a new or reoccurring problem?
- Duration of symptoms (number of weeks/months/years)
- Cannabis use history
    - Frequency of use (daily/weekly/monthly)
    - Duration of use (number of weeks/months/years)
    - Mode of use (smoking, edibles, concentrates, etc)
    - Cannabis products consumed (record each and ask the following questions for each product)
        - % THC
        - % CBD
        - % other cannabinoids
    - Reason(s) for use (recommended by physician/ self-medicating/ recreational use)
-

**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 [CHS].**
[Narrative]In the absence of a more likely diagnosis, a person must have at least one of the following signs or symptoms:

- CHS definition reviewed and approved by the Retail Marijuana Public Health Advisory Committee and in-use by CDPHE:
- A term currently used by some medical professionals to describe cyclic vomiting occurring in long-time marijuana users.

**A1. Clinical Criteria**

- [Clinical Criteria]Rome IV diagnostic criteria is as follows:
  1) Symptoms present for 3 months prior, with symptoms onset at least six months prior.
  2) Stereotypical episodes of vomiting with acute onset enduring less than 1 week.
  3) Patients must have had at least 3 such episodes in the prior year, and 2 episodes in the past 6 months, occurring at least 1 week apart.
  4) Between episodes, vomiting must be absent, but other milder symptoms can be present between cycles.
  5) Symptoms must be in the setting of prolonged (more than 1 year) and excessive cannabis use.
  6) Relief of vomiting episodes by sustained cessation of cannabis use.

**A2. Laboratory Criteria* - Not required?**

*Confirmatory Laboratory Evidence:*

- [Confirmatory Laboratory Criteria]

*Presumptive Laboratory Evidence:*

- [Presumptive Laboratory Evidence]

*Supportive Laboratory Evidence:*
- [Supportive Laboratory Evidence]b
- Confirmatory negative results of other likely causes?

** 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.*

**A3. Epidemiologic Linkage Criteria**
- [Epidemiologic Linkage]
- History of cannabis use

**A4. *[Optional]* Vital Records Criteria**
- [Vital Records Criteria]
- A person whose death certificate lists CHS or vomiting and cannabis use as an underlying cause of death or significant condition contributing to death.

**A5. Case Classifications**

*Confirmed:*
- [Confirmed Case Classification]
- Meets clinical criteria AND diagnosed by physician OR CHS listed on death certificate]

*Probable:*
- [Probable Case Classification]
-

*Suspect:*
- [Suspect Case Classification]
- Identified via administrative dataset AND has co-occurring ICD-10 codes

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

**VIII. Period of Surveillance**
Period of Surveillance is expected to be ongoing.
**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.

[Additional Data Sharing/Release Guidance]

## X. Revision History

| Position Statement ID | Section of Document | Revision Description |
|---|---|---|
| TBD | [Section] | [Revision] |
| TBD | [Section] | [Revision] |
| TBD | [Section] | [Revision] |
| [Previous PS ID] | [Section] | [Revision] |
| [Previous PS ID] | [Section] | [Revision] |
| [Previous PS ID] | [Section] | [Revision] |
| [Previous PS ID] | [Section] | [Revision] |

## XI. References

[References]

## XII. Coordination

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# Council of State and Territorial Epidemiologists
## Nationally Notifiable Conditions (NNC) Recommendation Statement

**Position Statement Proposed Title:** [Proposed Title of Position Statement]

**Disease/Condition:** [Disease/Condition Name]

**Summary Checkboxes and Notes:**

☐1. This statement recommends the addition of a disease/condition to the *Nationally Notifiable Conditions (NNC) List.*
☐2. This statement updates a disease/condition already on the *NNC List*.
  ☐a. A change to the CDC notification timeframe is recommended.
  ☐b. New subtypes or additional disease/condition categories are added to the accompanying position statement.
  ☐c. A change in data sharing/release and print criteria was made.
☐3. This statement removes a disease/condition from the *NNC List*.

Please provide an approximate number of jurisdictions that already have this disease or condition explicitly reportable to the health department: _____

Does the federal government fund all or some jurisdictions to conduct disease-specific public health surveillance or take public health action on this disease or condition?
☐Yes – All jurisdictions ([insert mechanism, if known])
☐Yes – Some jurisdictions ([insert mechanism, if known])
☐No
☐Unsure

**NNC Recommended Actions to be Taken:**

By submitting this NNC recommendation, this statement recommends the following:

1. Utilize standardized criteria for case ascertainment and classification (based on Sections VI and VII and Technical Supplement of accompanying position statement) for [disease/condition] and [add] [disease/condition] [to/on/from] 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

2. 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.

3. 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.

*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.

4. Expectations for Message Mapping Guide (MMG) development for a newly notifiable condition: the National Notifiable Diseases Surveillance System (NNDSS) is transitioning to 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 MMGs.

5. CDC should publish data on [disease/condition] as appropriate (see Section IX of corresponding position statement).

**NNC Data Sharing/Release and Print Criteria**

CSTE recommends the following case statuses be included in the CDC Print Criteria:

- ☐Confirmed
- ☐Probable
- ☐Suspect
- ☐Unknown

*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.

# Council of State and Territorial Epidemiologists
Technical Supplement

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

| Criterion | [Disease/Condition or Subtype] | [Disease/Condition or Subtype] | [Disease/Condition or Subtype] |
|---|---|---|---|
| *Clinical Criteria for Reporting* | | | |
| | | | |
| | | | |
| *Laboratory Criteria for Reporting* | | | |
| | | | |
| | | | |
| *Epidemiologic Linkage Criteria for Reporting* | | | |
| | | | |
| | | | |
| *Vital Record Criteria for Reporting* | | | |
| | | | |
| | | | |
| *Healthcare Record Criteria for Reporting* | | | |
| | | | |
| | | | |
| *Other Criteria for Reporting* | | | |
| | | | |
| | | | |
| 2023 Template | | | |

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.
O = At least one of these "O" (ONE OR MORE) criteria in each category (categories=clinical, laboratory, epidemiologic linkage, vital records, etc.) in the same column—in conjunction with all "N" criteria in the same column—is required to report a case.
* A requisition or order for any of the "S" laboratory tests is sufficient to meet the reporting criteria.

**Table VII.A. Classification Table: Criteria for defining a case of [disease/condition].**

| Criterion | Confirmed | Probable | Suspect |
|---|---|---|---|
| *Clinical Evidence* | | | |
| | | | |
| | | | |
| *Laboratory Evidence* | | | |
| | | | |
| | | | |
| *Epidemiologic Linkage Evidence* | | | |
| | | | |
| | | | |
| *Vital Record Evidence* | | | |
| | | | |
| | | | |
| *Other Evidence* | | | |
| | | | |
| | | | |
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Notes:
S = This criterion alone is SUFFICIENT to classify a case.
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.

**Table VII.B. Classification Table: Criteria to distinguish a new case of [disease/condition] from reports or notifications which should not be enumerated as a new case for surveillance.**

| Criterion | Confirmed | Probable | Suspect |
|---|---|---|---|
| *Criteria to distinguish a new case* | | | |
| | | | |
| | | | |
| | | | |
| 2023 Template | | | |

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.

**[Optional Appendix/Appendices may be included]**

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