

CDC Asthma CCDD v1
Definition Factsheet & Technical Brief

Points of contact:
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Definition Purpose: The purpose of this definition is to capture potential emergency department visits related to asthma.

New or Revised Definition: New Definition

Date Added to ESSENCE: (Date)

Definition Description: Designed to capture emergency department visits associated with asthma using chief complaint text and discharge diagnosis codes.

Use Case(s)

Case-finding: Tertiary

Trend monitoring: Primary

Early outbreak detection: Secondary

Emergent Condition Not Intended as Use Case

Justification: No query definition exists for asthma. CDC wants to use emergency department data to monitor trends.

Data Source During Development: Emergency Department Visits. Chief Complaint Query Validation dataset (CCQV) in ESSENCE.

Definition Fields and Structure:

The Chief Complaint Discharge Diagnosis (CCDD) parsed field is used to query both the discharge diagnosis codes and chief complaint free text, and exclusions are incorporated as necessary.

- Inclusion based on complaint free text terms related to severe asthma:
 - The visit is included if it contains:
 1. A chief complaint related to asthma – (“asthma” or “ asma” or “asthama” or “asthma” or “asthmia”) **OR**
 2. A chief complaint for bronchospasm – (“bronchospasm”) **OR**
 - The visit is included if it contains the following set of terms nested together:
 1. A chief complaint nested terms related to reactive airway disease – (“airway” or “disease” and “reactive”) **OR**
 2. Another chief complaint nested terms related to reactive airway disease – (“airway” and “disease”) **OR**
- Inclusion based on ICD-10 discharge diagnosis codes related to severe asthma:
 - The visit is included if it contains:
 1. A discharge diagnosis code related to asthma – (J45) **OR**
- Inclusion based on SNOMED discharge diagnosis codes related to severe asthma:
 - The visit is included if it contains:
 1. A discharge diagnosis code related to asthma – (281239006 or 195967001 or 708038006 or 708090002 or 304527002 or 312453004 or 390798007) **OR**
 2. A discharge diagnosis code related to asthmatic bronchitis – (405944004 or 442025000 or 195949008) **OR**
 3. A discharge diagnosis code for Wheezing – (56018004) **OR**
 4. A discharge diagnosis code for Acute exacerbation of chronic obstructive pulmonary disease with asthma – (1751000119100) **OR**
 5. A discharge diagnosis code for Asthma with irreversible airway bronchitis – (401000119107) **OR**

6. A discharge diagnosis code related to mild persistent asthma – (426979002 or 135181000119109 or 370218001 or 707445000) **OR**
 7. A discharge diagnosis code for Cough variant asthma – (409663006) **OR**
 8. A discharge diagnosis code for Asthma attack – (266364000) **OR**
 9. A discharge diagnosis code for Exercise-induced asthma – (31387002) **OR**
 10. A discharge diagnosis code related to allergic asthma – (389145006 or 708093000) **OR**
 11. A discharge diagnosis code related to moderate persistent asthma – (135171000119106 or 707446004 or 427295004 or 370219009 or 707980005) **OR**
 12. A discharge diagnosis code for Acute exacerbation of asthma co-occurrent with allergic rhinitis – (99031000119107) **OR**
 13. A discharge diagnosis code for Exacerbation of intermittent asthma – (425969006) **OR**
 14. A discharge diagnosis code for Asthma with status asthmaticus – (57546000) **OR**
 15. A discharge diagnosis code for Childhood asthma – (233678006) **OR**
 16. A discharge diagnosis code related to Severe persistent asthma – (707447008 or 426656000)
 17. A discharge diagnosis code for Hay fever with asthma – (233683003) **OR**
 18. A discharge diagnosis code for Acute exacerbation of intrinsic asthma – (708094006) **OR**
 19. A discharge diagnosis code for Asthma without status asthmaticus – (55570000) **OR**
 20. A discharge diagnosis code for Persistent asthma – (5281000124103) **OR**
 21. A discharge diagnosis code for Severe asthma – (370221004) **ANDNOT**
- All of the above must exclude:
 - Chief complaint free-text term for visits that are not asthma – (“not asthma”)

Limitations:

The use of chief complaint text and discharge diagnosis codes to identify visits of asthma may capture instances where patients present with symptoms or concerns related to asthma but may not be identifying visits where asthma is the main reason for the visit.

Detailed Definition Components

Table 1. *Inclusion and exclusion terms.*

Terms	Description
<i>Inclusion</i>	
International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM)	
J45	Asthma
SNOMED Concepts	
281239006	Exacerbation of asthma
195967001	Asthma (disorder)
708038006	Acute exacerbation of asthma (disorder)
405944004	Asthmatic bronchitis (disorder)
708090002	Acute severe exacerbation of asthma (disorder)
56018004	Wheezing (finding)
304527002	Acute asthma (disorder)
1751000119100	Acute exacerbation of chronic obstructive pulmonary disease with asthma (disorder)
401000119107	Asthma with irreversible airway obstruction (disorder)
426979002	Mild persistent asthma (disorder)
409663006	Cough variant asthma (disorder)
266364000	Asthma attack (disorder)
31387002	Exercise-induced asthma (disorder)
389145006	Allergic asthma (disorder)
442025000	Acute exacerbation of chronic asthmatic bronchitis (disorder)
708093000	Acute exacerbation of immunoglobulin E-mediated allergic asthma (disorder)
135171000119106	Acute exacerbation of moderate persistent asthma (disorder)
99031000119107	Acute exacerbation of asthma co-occurrent with allergic rhinitis (disorder)
135181000119109	Acute exacerbation of mild persistent asthma (disorder)
425969006	Exacerbation of intermittent asthma (disorder)
370218001	Mild asthma (disorder)
57546000	Asthma with status asthmaticus (disorder)
312453004	Asthma - currently active (finding)
707446004	Exacerbation of moderate persistent asthma (disorder)
427295004	Moderate persistent asthma (disorder)
370219009	Moderate asthma (disorder)
233678006	Childhood asthma (disorder)
195949008	Chronic asthmatic bronchitis (disorder)
707447008	Exacerbation of severe persistent asthma (disorder)
707445000	Exacerbation of mild persistent asthma (disorder)
233683003	Hay fever with asthma (disorder)
708094006	Acute exacerbation of intrinsic asthma (disorder)
55570000	Asthma without status asthmaticus (disorder)
426656000	Severe persistent asthma (disorder)
707980005	Acute severe exacerbation of moderate persistent asthma (disorder)
390798007	Asthma finding (finding)
5281000124103	Persistent asthma (disorder)
370221004	Severe asthma (disorder)
Chief Complaint – Nested Together with AND	
“airway”	“reactive”
“disease”	“reactive”

"airway"	"disease"
Chief Complaint	
"asthma"	
" asma"	
"asthama"	
"asthma"	
"asthmia"	
"bronchospasm"	
<i>Exclusion</i>	
Chief Complaint	
"not asthma"	

Syntax Plain Language Description: The definition uses discharge diagnosis codes and free-text chief complaint terms. The definition requires that an emergency department visit contains a reference to asthma by its discharge diagnosis code (in at least one of the following: ICD-10-CM, SNOMED diagnostic codes), or by asthma being listed in the chief complaint text. Therefore, the syndromic surveillance definition includes ICD-10-CM, and SNOMED diagnostic codes for asthma, along with direct mentions of asthma and potential misspellings in chief complaint text. To ensure that only visits for asthma were captured, we excluded records with chief complaint text that indicate it is not asthma.

Table 2. ESSENCE syntax in CCDD field

```
(,^asthma^,or,^[/
]asma^,or,asma^,or,^asthama^,or,^asthma^,or,^asthmia^,or,^bronchospasm^,or,(,(,^Airway^,or,^Disease^
e^),AND,^Reactive^),or,(,^Airway^,AND,^Disease^),),or,^J45^,or,^[/ ]281239006^,or,^[/
]195967001^,or,^[/ ]708038006^,or,^[/ ]405944004^,or,^[/ ]708090002^,or,^[/ ]56018004^,or,^[/
]304527002^,or,^[/ ]1751000119100^,or,^[/ ]401000119107^,or,^[/ ]426979002^,or,^[/
]409663006^,or,^[/ ]266364000^,or,^[/ ]31387002^,or,^[/ ]389145006^,or,^[/ ]442025000^,or,^[/
]708093000^,or,^[/ ]135171000119106^,or,^[/ ]99031000119107^,or,^[/ ]135181000119109^,or,^[/
]425969006^,or,^[/ ]370218001^,or,^[/ ]57546000^,or,^[/ ]312453004^,or,^[/ ]707446004^,or,^[/
]427295004^,or,^[/ ]370219009^,or,^[/ ]233678006^,or,^[/ ]195949008^,or,^[/ ]707447008^,or,^[/
]707445000^,or,^[/ ]233683003^,or,^[/ ]708094006^,or,^[/ ]55570000^,or,^[/ ]426656000^,or,^[/
]707980005^,or,^[/ ]390798007^,or,^[/ ]5281000124103^,or,^[/ ]370221004^),ANDNOT,^not asthma^
```

Use the following URL and click Configuration Options to see the query setup:

[https://essence2.syndromicsurveillance.org/nssp_essence/servlet/TemporalTimeSeriesViewer?datasource=va_hosp&startDate=4May2025&medicalGroupingSystem=essencesyndromes&userId=5024&ccddFreeText=\(,%5Easthma%5E,or,%5E%5B;%20%5Dasma%5E,or,asma%5E,or,%5Easthama%5E,or,%5Easthma%5E,or,%5Easthmia%5E,or,%5Ebronchospasm%5E,or,\(,\(,%5EAirway%5E,or,%5EDisease%5E\),AND,%5EReactive%5E\),or,\(,%5EAirway%5E,AND,%5EDisease%5E\),\),or,%5EJ45%5E,or,%5E%5B;%20%5D281239006%5E,or,%5E%5B;%20%5D195967001%5E,or,%5E%5B;%20%5D708038006%5E,or,%5E%5B;%20%5D405944004%5E,or,%5E%5B;%20%5D708090002%5E,or,%5E%5B;%20%5D56018004%5E,or,%5E%5B;%20%5D304527002%5E,or,%5E%5B;%20%5D1751000119100%5E,or,%5E%5B;%20%5D401000119107%5E,or,%5E%5B;%20%5D426979002%5E,or,%5E%5B;%20%5D409663006%5E,or,%5E%5B;%20%5D266364000%5E,or,%5E%5B;%20%5D31387002%5E,or,%5E%5B;%20%5D389145006%5E,or,%5E%5B;%20%5D442025000%5E,or,%5E%5B;%20%5D708093000%5E,or,%5E%5B;%20%5D135171000119106%5E,or,%5E%5B;%20%5D99031000119107%5E,or,%5E%5B;%20%5D135181000119109%5E,or,%5E%5B;%20%5D425969006%5E,or,%5E%5B;%20%5D370218001%5E,or,%5E%5B;%20%5D57546000%5E,or,%5E%5B;%20%5D312453004%5E,or,%5E%5B;%20%5D707446004%5E,or,%5E%5B;%20%5D427295004%5E,or,%5E%5B;%20%5D370219009%5E,or,%5E%5B;%20%5D233678006%5E,or,%5E%5B;%20%5D195949008%5E,or,%5E%5B;%20%5D707447008%5E,or,%5E%5B;%20%5D707445000%5E,or,%5E%5B;%20%5D233683003%5E,or,%5E%5B;%20%5D708094006%5E,or,%5E%5B;%20%5D55570000%5E,or,%5E%5B;%20%5D426656000%5E,or,%5E%5B;%20%5D707980005%5E,or,%5E%5B;%20%5D390798007%5E,or,%5E%5B;%20%5D5281000124103%5E,or,%5E%5B;%20%5D370221004%5E\),ANDNOT,%5Enot%20asthma%5E&endDate=9Aug2025&percentParam=noPercent&aqtTarget=TimeSeries&geographySystem=hospital&detector=nodetectordetect&timeResolution=weekly](https://essence2.syndromicsurveillance.org/nssp_essence/servlet/TemporalTimeSeriesViewer?datasource=va_hosp&startDate=4May2025&medicalGroupingSystem=essencesyndromes&userId=5024&ccddFreeText=(,%5Easthma%5E,or,%5E%5B;%20%5Dasma%5E,or,asma%5E,or,%5Easthama%5E,or,%5Easthma%5E,or,%5Easthmia%5E,or,%5Ebronchospasm%5E,or,(,(,%5EAirway%5E,or,%5EDisease%5E),AND,%5EReactive%5E),or,(,%5EAirway%5E,AND,%5EDisease%5E),),or,%5EJ45%5E,or,%5E%5B;%20%5D281239006%5E,or,%5E%5B;%20%5D195967001%5E,or,%5E%5B;%20%5D708038006%5E,or,%5E%5B;%20%5D405944004%5E,or,%5E%5B;%20%5D708090002%5E,or,%5E%5B;%20%5D56018004%5E,or,%5E%5B;%20%5D304527002%5E,or,%5E%5B;%20%5D1751000119100%5E,or,%5E%5B;%20%5D401000119107%5E,or,%5E%5B;%20%5D426979002%5E,or,%5E%5B;%20%5D409663006%5E,or,%5E%5B;%20%5D266364000%5E,or,%5E%5B;%20%5D31387002%5E,or,%5E%5B;%20%5D389145006%5E,or,%5E%5B;%20%5D442025000%5E,or,%5E%5B;%20%5D708093000%5E,or,%5E%5B;%20%5D135171000119106%5E,or,%5E%5B;%20%5D99031000119107%5E,or,%5E%5B;%20%5D135181000119109%5E,or,%5E%5B;%20%5D425969006%5E,or,%5E%5B;%20%5D370218001%5E,or,%5E%5B;%20%5D57546000%5E,or,%5E%5B;%20%5D312453004%5E,or,%5E%5B;%20%5D707446004%5E,or,%5E%5B;%20%5D427295004%5E,or,%5E%5B;%20%5D370219009%5E,or,%5E%5B;%20%5D233678006%5E,or,%5E%5B;%20%5D195949008%5E,or,%5E%5B;%20%5D707447008%5E,or,%5E%5B;%20%5D707445000%5E,or,%5E%5B;%20%5D233683003%5E,or,%5E%5B;%20%5D708094006%5E,or,%5E%5B;%20%5D55570000%5E,or,%5E%5B;%20%5D426656000%5E,or,%5E%5B;%20%5D707980005%5E,or,%5E%5B;%20%5D390798007%5E,or,%5E%5B;%20%5D5281000124103%5E,or,%5E%5B;%20%5D370221004%5E),ANDNOT,%5Enot%20asthma%5E&endDate=9Aug2025&percentParam=noPercent&aqtTarget=TimeSeries&geographySystem=hospital&detector=nodetectordetect&timeResolution=weekly)