

EMS Definition for Suicidal Ideation

Developed for use in NC DETECT by the Carolina Center for Health Informatics in the Department of Emergency Medicine, University of North Carolina at Chapel Hill

Last Updated March 2026

Definition Purpose

The purpose of this definition is to identify North Carolina emergency medical services (EMS) encounters involving suicidal ideation in NC DETECT, North Carolina's statewide syndromic surveillance system. A primary goal of this definition is to improve sensitivity over definitions that use structured data (ICD-10-CM codes) alone to identify suicidal ideation. This definition includes searches of the Impression (eSituation.11/12), Injury Cause (eCause.01), Symptom (eSituation.09/10), Complaint (eSituation.04), and Patient Care Report Narrative (eNarrative.01).

Definition Description

Disposition Requirements

The first component of the definition as implemented in NC DETECT requires patient contact to be made (eDisposition.27 = '4227001'). Other jurisdictions may be interested in applying more or less stringent disposition requirements depending on a data review.

Suicidal Ideation Search Requirements

The suicidal ideation search requirements include a series of Boolean searches summarized as follows:

The encounter must have an ICD-10-CM code for suicidal ideation in the symptom or impression fields OR an ICD-10-CM code for suicide attempt in the impression or injury cause fields OR a free text chief complaint mentioning suicidal ideation, intentional overdose or hanging attempt, or a narrative term that mentions suicidal ideation or a suicidal action. The definition includes synonyms, misspellings, and negations. Note that we include suicide attempt searches in this definition as we consider all suicide attempts to have co-occurring suicidal ideation, even if suicidal ideation is not explicitly documented.

Validation Findings

Manual review indicated that this definition has a positive predictive value of ~ 93%. Most false positives are encounters with negation wording not included in this definition.

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Limitations

This definition assumes that no preprocessing has been performed on the free text data, so definition permutations of very similar searches with and without punctuation, misspellings, etc. have been included in the definition search terms. While this definition was developed based on the NEMIS 3.5 national standard free text search terms may not reflect all types of language used outside of NC. In addition, this definition does not include all possible searches that can be conducted to identify suicidal ideation in the EMS data. We have attempted to maintain the Boolean logic in the code below while removing specific references to NC DETECT data structures. The parentheses may need to be tweaked to work properly in other environments.

Code

The code below is separated into steps. Appropriate parentheses will be required in your system to deploy the Boolean logic correctly.

Standalone ICD-10-CM Search:

```
eSituation.11/12 LIKE 'T14.91%' OR eSituation.11/12 = 'R45.851' OR eCause.01  
LIKE 'T14.91%' OR eSituation.09/10= 'R45.851'
```

OR

-- free text section that searches complaints or narratives

```
OR(/*** Logic requiring exclusionary statements ***/
```

```
(-- complaint standalone free text
```

```
((eSituation.04 LIKE '%intentional%overdose%' AND eSituation.04 NOT LIKE  
'%unintentional%overdose%') OR (eSituation.04 LIKE '%intentional%OD%' AND  
eSituation.04 NOT LIKE '%unintentional%OD%') OR eSituation.04 LIKE '%hanging  
attempt%')
```

```
-- complaint mention of suicidal
```

```
OR (
```

```
((eSituation.04 like '%SI%' and (eSituation.04 NOT like '%SI[a-z]%' and eSituation.04  
NOT like '%denies SI%')) OR eSituation.04 like '%suicid%' OR eSituation.04 like  
'%Suicude%' OR eSituation.04 like '%suicuide%' OR eSituation.04 like '%Suidcide%'  
OR eSituation.04 like '%Suidic%' OR eSituation.04 like '%Suidie%' OR eSituation.04  
like '%Suiside%' OR eSituation.04 like '%Suscide%' OR eSituation.04 like  
'%sucicdal%' OR eSituation.04 like '%Sucicide%' OR eSituation.04 like '%Sucidal%'  
OR eSituation.04 like '%sucide%' OR eSituation.04 like '%SUCIDIAL%' OR
```

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eSituation.04 like '%SUCIDIE%' OR eSituation.04 like '%Suicde%' OR eSituation.04 like '%SUICIAL%' OR eSituation.04 like '%Suicicde%' OR eSituation.04 like '%Suicice%' OR eSituation.04 like '%Suicie%' OR eSituation.04 like '%suicisal%' OR eSituation.04 like '%want to die%' OR eSituation.04 like '%wanted to die%'))

-- suicidal terms in narrative

OR (

(eNarrative.01 like '%kill h[ei][mr]self%' AND narrative NOT like '%denie[ds] wanting to kill h[ei][mr]self%') OR eNarrative.01 like '%end h[ei][rs] own life%'

OR (eNarrative.01 like '%suicid%' AND narrative NOT like '%possible suicide attempt%' AND narrative NOT like '%abnormal behavior or a suicide attempt%' AND narrative NOT like '%abnormal behavior, or a suicide attempt%' AND narrative NOT like '%abnormal behavior, or suicide attempt%' AND narrative NOT like '%psychiatric / abnormal behavior / suicide attempt%' AND narrative NOT like '%psychiatric/abnormal behavior/suicide attempt%' AND narrative NOT like '%psychiatric problem/abnormal behavior/suicide attempt%' AND narrative NOT like '%Psychiatric / Mental Health Conditions / Suicide Attempt / Abnormal Behavior%' AND narrative NOT like '%psychiatric/ suicide attempt%' AND narrative NOT like '%psychiatric/suicide attempt%') OR eNarrative.01 like '%Suicude%' OR eNarrative.01 like '%suicuide%' OR eNarrative.01 like '%Suidcide%' OR eNarrative.01 like '%Suidic%' OR eNarrative.01 like '%Suidie%' OR eNarrative.01 like '%Suiside%' OR eNarrative.01 like '%Suscide%' OR eNarrative.01 like '%sucicdal%' OR eNarrative.01 like '%Suicide%' OR eNarrative.01 like '%Sucidal%' OR eNarrative.01 like '%sucide%' OR eNarrative.01 like '%SUCIDIAL%' OR eNarrative.01 like '%SUCIDIE%' OR eNarrative.01 like '%Suicde%' OR eNarrative.01 like '%SUICIAL%' OR eNarrative.01 like '%Suicicde%' OR eNarrative.01 like '%Suicice%' OR eNarrative.01 like '%Suicie%' OR eNarrative.01 like '%suicisal%' OR eNarrative.01 like '%wanted to die%' OR (eNarrative.01 like '%wanting to die%' AND narrative NOT like '%not wanting to die%') OR eNarrative.01 like '%wished to die%' OR eNarrative.01 like '%wish I w[ae]%dead%' OR eNarrative.01 like '%does not want to live anymore%' OR eNarrative.01 like '%doesn"t want to live anymore%' OR eNarrative.01 like '%did not want to live anymore%' OR eNarrative.01 like '%intent%never waking up%' OR eNarrative.01 like '%don"t want to be here anymore%' OR eNarrative.01 like '%not to be here anymore%' OR eNarrative.01 like '%stated SI[^a-z]%' OR eNarrative.01 like '%having SI[^a-z]%' OR eNarrative.01 like '%positive SI[^a-z]%' OR eNarrative.01 like '%due to SI[^a-z]%' OR eNarrative.01 like '%SI with a plan%' OR eNarrative.01 like '%SI with plan%' OR eNarrative.01 like '%SI with no plan%' OR eNarrative.01 like '%SI without a plan%' OR eNarrative.01 like '%admitted to SI[^a-z]%' OR eNarrative.01 like '%complaining of SI[^a-z]%' OR eNarrative.01 like '%complaint of SI[^a-z]%' OR eNarrative.01 like '%admits to SI[^a-z]%' OR eNarrative.01 like '%expresse[ds] SI[^a-z]%' OR eNarrative.01 like '%endorse[ds] SI[^a-z]%' OR eNarrative.01 like '%feeling SI[^a-z]%'

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OR eNarrative.01 like '%reports SI[^a-z]%'

OR eNarrative.01 like '%response for SI[^a-z]%'

OR eNarrative.01 like '%some SI[^a-z]%'

OR eNarrative.01 like '%want to no longer be alive%'

OR eNarrative.01 like '%trying to leave this world%'

OR eNarrative.01 like '%never wake up%'

OR eNarrative.01 like '%no longer wants to live%'

OR eNarrative.01 like '%no longer wants to be alive%'

OR eNarrative.01 like '%done with being on earth%'

OR eNarrative.01 like '%attempt to kill%sel[fv]%'

OR eNarrative.01 like '%attempted to kill%sel[fv]%'

OR eNarrative.01 like '%attempt to take%life%'

OR eNarrative.01 like '%do%it to kill%sel[fv]%'

OR eNarrative.01 like '%doing this so that she would die%'

OR eNarrative.01 like '%in an attempt to kill%self%'

OR eNarrative.01 like '%in an attempt%to end%life%'

OR eNarrative.01 like '%inten%to kill%sel[fv]%'

OR eNarrative.01 like '%inten%to end%life%'

OR eNarrative.01 like '%inten%of end%life%'

OR eNarrative.01 like '%[^a-z]SI attempt%'

OR eNarrative.01 like '%unalive h[ei][mr]self%'

OR eNarrative.01 like '%thoughts of ending h[ei][mr] life%'

OR eNarrative.01 like '%never waking up%'

OR eNarrative.01 like '%thoughts of stepping out into traffic%'

OR eNarrative.01 like '%thoughts of walking into traffic%'

-- hanging standalone

OR narrative like '%patient was found hanging%' OR narrative like '%found the patient hanging%' OR narrative like '%Self[-]asphyxiation%'

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-- self inflicted GSW standalone

OR narrative like '%self[-]inflicted GSW to%head%'

-- overdose standalone

OR (narrative like '%intentional overdose%' AND narrative NOT LIKE '%unintentional%overdose%') OR narrative like '%took to%much%on purpose%')

EXCLUSION STATEMENTS APPLIED TO FREE TEXT SEARCH

AND NOT (

eNarrative.01 like '%den[ei][ie][ds] an[dy] depression, suicid%'

OR eNarrative.01 like '%denies all suicidal%'

OR eNarrative.01 like '%den[ei][ie][ds] an[dy] desire to [hk][aiu][lr][lmt] h[ei][mr]self%'

OR eNarrative.01 like '%den[ei][ie][ds] an[dy] SI[^cg]%'

OR eNarrative.01 like '%den[ei][ie][ds] an[dy] suicid%'

OR eNarrative.01 like '%den[ei][ie][ds] an[dy] thoughts of [hk][aiu][lr][lmt]ing h[ei][rm]self%'

OR eNarrative.01 like '%den[ei][ie][ds] an[dy] thought of suicid%'

OR eNarrative.01 like '%den[ei][ie][ds] an[dy] thoughts of si[^a-z]%'

OR eNarrative.01 like '%den[ei][ie][ds] an[dy] thoughts of suicid%'

OR eNarrative.01 like '%Denie[ds] any thoughts of wanting to [hk][aiu][lr][lmt] or [hk][aiu][lr][lmt] h[ei][mr]self%'

OR eNarrative.01 like '%den[ei][ie][ds] an[dy] type of suicid%'

OR eNarrative.01 like '%den[ei][ie][ds] being suicid%'

OR eNarrative.01 like '%den[ei][ie][ds] being homicidal or suicid%'

OR eNarrative.01 like '%den[ei][ie][ds] feeling suicid%'

OR eNarrative.01 like '%den[ei][ie][ds] having a desire to kill h[ei][mr]self%'

OR eNarrative.01 like '%den[ei][ie][ds] having any suicid%'

OR eNarrative.01 like '%den[ei][ie][ds] having suicid%'

OR eNarrative.01 like '%denie[ds] having SI[^a-z]%'

OR eNarrative.01 like '%den[ei][ie][ds] hi/si%'

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OR eNarrative.01 like '%den[ei][ie][ds] homicidal/suicid%'

OR eNarrative.01 like '%den[ei][ie][ds] homicidal and suicidal%'

OR eNarrative.01 like '%den[ei][ie][ds] SI[^a-z]%'

OR eNarrative.01 like '%den[ei][ie][ds] suicid%'

OR eNarrative.01 like '%denied this being an attempt of self harm, suicidal%'

OR eNarrative.01 like '%den[ei][ie][ds] thoughts of SI%'

OR eNarrative.01 like '%den[ei][ie][ds] thoughts of [hk][aiu][lr][lmt]ing h[ei][mr]self%'

OR eNarrative.01 like '%den[ei][ie][ds] thoughts of suicide%'

OR eNarrative.01 like '%deny any suicidal%'

OR eNarrative.01 like '%denying suicid%'

OR eNarrative.01 like '%[ia]sn"t suicid%' -- captures isn't and wasn't

OR eNarrative.01 like '%never had thoughts of or made plans for suicid%'

OR eNarrative.01 like '%no complaints of suicid%'

OR eNarrative.01 like 'no homicidal/suicidal ideations%'

OR eNarrative.01 like '%no ideations of self[-]harm or suicid%'

OR eNarrative.01 like '%no report of suicidal%'

OR eNarrative.01 like '%no report of any suicidal%'

OR eNarrative.01 like '%no SI[^a-z]%'

OR eNarrative.01 like '%no signs of suicidal%'

OR eNarrative.01 like '%no suicidal%'

OR eNarrative.01 like '%no thoughts of SI%'

OR eNarrative.01 like '%no thoughts of [hk][aiu][lr][lmt]ing h[ei][mr]self%'

OR eNarrative.01 like '%no thoughts of homicidal ideations nor suicid%'

OR eNarrative.01 like '%no thoughts of suicid%'

OR eNarrative.01 like '%no threat to h[ei][mr]self%'

OR eNarrative.01 like '%not an intentional threat to self%'

OR eNarrative.01 like '%not appear to be reporting any suicid%'

OR eNarrative.01 like '%not appear to be suicid%'

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OR eNarrative.01 like '%not experiencing any SI[^a-z]%'
OR eNarrative.01 like '%not experiencing SI[^a-z]%'
OR eNarrative.01 like '%not express any suicid%'
OR eNarrative.01 like '%not had any suicid%'
OR eNarrative.01 like '%not have any suicid%'
OR eNarrative.01 like '%not have suicid%'
OR eNarrative.01 like '%not having suicidal%'
OR eNarrative.01 like '%not homicidal or suicid%'
OR eNarrative.01 like '%not making suicid%'
OR eNarrative.01 like '%not mention suicid%'
OR eNarrative.01 like '%not psychotic or suicidal%'
OR eNarrative.01 like '%not report any suicidal%'
OR eNarrative.01 like '%not report that he has any suicid%'
OR eNarrative.01 like '%not report that she has any suicid%'
OR eNarrative.01 like '%not report threatening suicid%'
OR eNarrative.01 like '%not SI[^a-z]%'
OR eNarrative.01 like '%not suicidal%'
OR eNarrative.01 like '%not thinking about [hk][aiu][lr][lmt]ing h[ei][mr]self%'
OR eNarrative.01 like '%not threatening suicide%'
OR eNarrative.01 like '%not voice suicidal%'
OR eNarrative.01 like '%not with suicid%'
OR eNarrative.01 like '%den[ei][ie][ds] an[d]y homicidal or suicid%'
OR eNarrative.01 like '%Suicidal ideations denied%'
OR eNarrative.01 like '%suicidal and homicidal ideations denied%'
))))

END
