

CDC Opioid Overdose (version 3)

Query purpose: To assist state, local, tribal, territorial, and federal public health practitioners in monitoring emergency department (ED) visits for suspected opioid overdoses.

How it was developed: CDC scientists first started developing the definition using lessons learned from jurisdictions funded by CDC's Enhanced State Opioid Overdose Surveillance and researching guidance documents from other sources including the National Center for Health Statistics, the Council of State and Territorial Epidemiologists, and Substance Abuse and Mental Health Services Administration. First, International Classification of Diseases, 10th Revision (ICD-10-CM) and 9th Revision Clinical Modification (ICD-9-CM), and Systematized Nomenclature of Medicine (SNOMED) diagnosis codes indicating an acute opioid poisoning were identified; this was followed by identifying and adding overdose terms that could be presented in the chief complaint free text. Finally, opioid drug terms indicating that an opioid was involved in the overdose were added.

How it works: The Chief Complaint Discharge Diagnosis field is used to query both the diagnosis codes and chief complaint free text with exclusions (as necessary) to develop the syndrome definition.

- Automatic inclusion (yes):
 - If a diagnosis code indicating an opioid poisoning is present, the ED visit is automatically included in the syndrome.
 - In addition, the ED visits is automatically included in the syndrome if it includes an F11 ICD-10-CM code for the opioid use "with intoxication" (e.g., F11.229) is present or mention of naloxone in the chief complaint text.
- Automatic inclusion (no):
 - If the ED visit does not include a diagnosis code for opioid poisoning, non-poisoning opioid use with intoxication, or mention of naloxone in chief complaint text, then the visit is not automatically included.
 - The visit is captured only if it includes two components:
 - 1) chief complaint text indicating an overdose or poisoning and
 - 2) chief complaint text indicating opioid involvement or an ICD-10-CM code for opioid use, abuse, and dependence without intoxication (e.g., F11.90).
 - The list of exclusions is applied to the chief complaint text only when a discharge diagnosis code is not present for opioid poisoning, an F11 ICD-10-CM code is not present for opioid use "with intoxication", or there is no mention of naloxone in the chief complaint text.

For consideration: CDC identified several non-poisoning ICD-10-CM codes for inclusion in the syndrome definition (e.g., F11 codes when "with intoxication" is indicated). Because the differentiation between poisoning and intoxication is unclear, CDC chose to consider the specific F-codes that include "with intoxication." However, other F11 codes that indicated opioid abuse without mention of intoxication may not indicate an overdose. CDC staff explored these codes and determined that the inclusion of those opioid-related F codes were only relevant when the chief complaint text included an overdose term. The team attempted to identify most drug names used for opioid; however, it is likely that some drug names and slang terms should be added to the next version of the definition.

What this definition cannot do:

- (1) Differentiate prescription from illicit opioid overdose

Revisions from v2 include:

- modifications of the ICD-10-CM F11.12/22/92 codes included to ensure all relevant codes are being captured and
- addition of ICD-10-CM codes T40.411A, T40.414A, T40.421A, T40.424A, T40.491A, and T40.494A.
 - New codes were added in October 2020 for poisoning fentanyl/fentanyl analogs, tramadol, and other synthetic narcotics.
 - The ICD-10-CM codes, T40.4X1A and T40.4X4A (“poisoning by other synthetic narcotics”), were not removed but are no longer used as of October 1, 2020.

Table 1. Chief complaint and discharge diagnosis search terms for suspected opioid overdose (version 3)

Variable	Automatic inclusion?	Specific terms
<i>Inclusions</i>		
Discharge Diagnosis – ICD-9-CM poisoning	Yes	965.00, 965.01, 965.02, 965.09, E850.0, E850.1, E850.2 (also included codes with no period, e.g., “96500”)
Discharge Diagnosis – ICD-10-CM poisoning	Yes	T40.1X1A, T40.1X4A, T40.0X1A, T40.0X4A, T40.2X1A, T40.2X4A, T40.3X1A, T40.3X4A, T40.4X1A, T40.4X4A, T40.411A, T40.414A, T40.421A, T40.424A, T40.491A, T40.494A, T40.601A, T40.604A, T40.691A, T40.694A (also included codes with no period, e.g., “T401X1A”)
Discharge Diagnosis – ICD-10-CM opioid abuse/dependence/use with intoxication	Yes	F11.12, F11.120, F11.121, F11.122, F11.129, F11.22, F11.220, F11.221, F11.222, F11.229, F11.92, F11.920, F11.921, F11.922, F11.929 (also included codes with no period, e.g., “F1112”)
Discharge Diagnosis – SNOMED	Yes	295174006, 295175007, 295176008, 295165009, 242253008, 297199006, 295213004
Chief complaint – narcan or naloxone	Yes	Naloxone (narcan, evzio)
Chief complaint – overdose term	No, include only if other opioid-related terms are also present	Poisoning (poison) Overdose (overdose, overdoes, averdose, averdoes, over does, overose) Nodding off Snort Ingestion (ingest, inject) Intoxication (intoxic) Unresponsive (unresponsiv) Loss of consciousness (syncope, syncope) Shortness of breath (SOB), short of breath Altered mental status (AMS)
Chief complaint – opioid term	No, include only if other overdose-related terms are also present	opiod, opiod, opoid, opiate, opate, opium, opium, opum, heroin, herion, heroine, HOD, speed ball, speedball, dope, methadone, suboxone, oxycod, oxy, oxyi, percoc, vicod, fent, hydrocod, morphin, codeine, codiene, codene, oxymor, dilaud, hydromor, tramad, suboxin, buprenorphine, and other common opioid brand and generic names

Discharge Diagnosis – ICD-10-CM opioid abuse/dependence/use	No, include only if other overdose-related terms are also present	F11.10, F11.90, F11.20 (also included codes with no period, e.g., “F1190”)
Exclusions		
Chief complaint	Exclude	See list below in ESSENCE code (many exclusions were required for “oxy” and “fent”)

Table 2. ESSENCE query for suspected opioid overdose (version 3)

<p>(, ^narcana^, or, ^naloxo^, or, ^[/]T40.[012346][X0129][14]A^, or, ^[/]T40[012346][X0129][14]A^, or, ^[/]F11.12^, or, ^[/]F11.22^, or, ^[/]F11.92^, or, ^[/]F1112^, or, ^[/]F1122^, or, ^[/]F1192^, or, ^[/]965.0[0129][:/]^, or, ^[/]9650[0129][:/]^, or, ^[/]E850.[012]^, or, ^[/]E850[012]^, or, ^295174006^, or, ^295175007^, or, ^295176008^, or, ^295165009^, or, ^242253008^, or, ^297199006^, or, ^295213004^,), or, (, (, ^poison^, or, ^verdo[se][se]^, or, ^over dose^, or, ^overose^, or, ^nodding^, or, ^nod ^, or, ^snort^, or, ^in[gj]est^, or, ^intoxic^, or, ^unresponsiv^, or, ^loss of consciousness^, or, ^syncop^, or, ^shortness of breath^, or, ^short of breath^, or, ^altered mental status^,), and, (, ^her[io][oi]n^, or, ^hod ^, or, ^speedball^, or, ^speed ball^, or, ^dope^, or, ^opioid^, or, ^op[io][oi]d^, or, ^opiate^, or, ^opate^, or, ^op[iu][ui]m^, or, ^opum^, or, ^methadone^, or, ^s uboxone^, or, ^oxyco^, or, ^oxyi^, or, ^oxy ^, or, ^percoc^, or, ^vicod^, or, ^fent^, or, ^hydrocod^, or, ^morphin^, or, ^cod[ei][ie]n^, or, ^codene^, or, ^oxymor^, or, ^dilaud^, or, ^hydromor^, or, ^tramad^, or, ^suboxin^, or, ^buprenorphine^, or, ^Abstral^, or, ^Actiq^, or, ^Avinza^, or, ^Butrans^, or, ^De mer[oa]l^, or, ^Dolophine^, or, ^Duragesic^, or, ^Fentora ^, or, ^Hysingla^, or, ^Methadose^, or, ^Morphabond^, or, ^Nucynta^, or, ^Onsolis^, or, ^Oramorph^, or, ^Oxaydo^, or, ^Roxanol ^, or, ^Sublimaze^, or, ^Xtampza^, or, ^Zohydro^, or, ^Anexsia ^, or, ^Co-Gesic^, or, ^Embeda ^, or, ^Exalgo^, or, ^Hycet^, or, ^Hycodan^, or, ^Hydromet^, or, ^Ibudone^, or, ^Kadian^, or, ^Liquicet^, or, ^Lorcet^, or, ^Lortab^, or, ^Maxidone^, or, ^MS Contin ^, or, ^Norco ^, or, ^Opana ^, or, ^Oxycet^, or, ^Palladone^, or, ^Percodan^, or, ^Reprexain^, or, ^Rezira^, or, ^Roxicet^, or, ^Targiniq^, or, ^TussiCaps^, or, ^Tussione ^, or, ^Tuzistra^, or, ^Vicoprofen^, or, ^Vituz^, or, ^Xartemis^, or, ^Xodol^, or, ^Zolvit^, or, ^Zutripro^, or, ^Zydone^, or, ^Ultram^, or, ^[/]F11.[129]0^, or, ^[/]F11[129]0^,), andnot, (, ^no loss of consciousness^, or, ^denie[sd] loss of consciousness^, or, ^negative loss of consciousness^, or, ^denies any loss of consciousness^, or, ^denies her[io][oi]n^, or, ^deny her[io][oi]n^, or, ^denied her[io][oi]n^, or, ^denying her[io][oi]n^, or, ^denies drug^, or, ^deny drug^, or, ^denied drug^, or, ^denying drug^, or, ^denies any drug^, or, ^with dra^, or, ^withdra^, or, ^detoxification^, or, ^detos^, or, ^detoz^, or, ^dtox^, or, ^oxy sat ^, or, ^oxy state ^, or, ^oxy high^, or, ^oxy low^, or, ^oxy mask ^, or, ^oxy given^, or, ^given oxy ^, or, ^oxy clean^, or, ^low oxy ^, or, ^high oxy ^, or, ^placed on oxy ^, or, ^pulse oxy ^, or, ^oxy deep cleaner^, or, ^not enough oxy ^, or, ^oxy level^, or, ^sedat ^, or, ^received fentanyl^, or, ^administered fentanyl^, or, ^given fentanyl^, or, ^fentanyl en route^, or, ^fentanyl enrt^, or, ^fent en route^, or, ^fentanyl given^, or, ^fentynl given^, or, ^gave fent^, or, ^gave fentanyl^, or, ^given fentanly^, or, ^mcg fentanyl^, or, ^mcg fent^, or, ^mcg of fent^, or, ^fentanyl 75^, or, ^fentanyl 50^, or, ^50 fentanyl^, or, ^fentanyl 100^, or, ^100 fentanyl^, or, ^fentanyl 150^, or, ^intranasal fent^, or, ^milligram fent^, or, ^milligram of fentanyl^, or, ^fenton ^, or, ^fent pta^, or, ^fentanyl pta^, or, ^fentynl 100 ^, or, ^fentynyl 100^, or, ^fentynal 50^, or, ^fentynl 50^, or, ^fent 50^, or, ^fent 100^, or, ^fent 150^, or, ^diffently^, or, ^received fent ^, or, ^recieved fent ^, or, ^ given 50 ^, or, ^ given 100 ^, or, ^ given 150 ^, or, ^ gave 50 ^, or, ^ gave 100 ^, or, ^ gave 150 ^, or, ^ doses of fent ^,),</p>

Point of contact:

Alana Vivolo-Kantor (goz4@cdc.gov)