**CDC Opioid Definition v1**

Purpose: States currently funded by CDC’s Enhanced State Opioid Overdose Surveillance (ESOOS) program have been asked to monitor opioid overdose trends in their states. In collaboration with our ESOOS partners, CDC staff developed some lessons learned in querying opioid overdose ED visits in syndromic surveillance systems. Based on this preliminary work, CDC developed an opioid overdose syndrome definition that captured all of the lessons learned from ESOOS states.

How it was developed: CDC scientists first started developing the definition using lessons learned from ESOOS states and researching guidance documents from other sources including NCHS, CSTE, and SAMSHA. They then built the query using discharge diagnosis codes and SNOMED codes indicating an acute opioid poisoning were identified. Next, we used a set of “overdose terms” along with identified “drug terms” indicating that an opioid was involved in the overdose.

How it works: We use both the discharge diagnosis codes/SNOMED and chief complaint free text with exclusions (as necessary). If discharge diagnosis code/SNOMED indicating an opioid poisoning is present, the ED visit is automatically included in the syndrome. If there is no discharge diagnosis code/SNOMED present for opioid poisoning, the visit is only included if the chief complaint text has both an “overdose” and “drug” term. In addition, the list of exclusions are only applied to the chief complaint text when a discharge diagnosis code is not present.

Other things 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’s likely that some drug names and slang terms should be added to a revision definition.

What this definition can’t do:

1. Differentiate prescription from illicit opioid overdose
2. Tease apart fentanyl and fentanyl analogs from other opioids

**Table 1. Chief complaint and discharge diagnosis search terms for suspected opioid overdose**

|  |  |  |
| --- | --- | --- |
| **Variable** | **Automatic inclusion?** | **Specific terms** |
| *Inclusions* |  |  |
| Discharge Diagnosis – ICD-9-CM poisoning | Yes | 965.00, 965.01, 965.02, 965.09,E850.0, E850.1, E850.2 (also included terms 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, T40.601, T40.604, T40.691, T40.694 (also included terms 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 terms 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, must use in combination with opioid term | Poisoning (poison)  Overdose (overdose, overdoes, averdose, averdoes, over does, overose)  Nodding off  Snort  Ingestion (ingest, injest)  Intoxication (intoxic)  Unresponsive (unresponsiv)  Loss of consciousness (syncopy, syncope)  Shortness of breath (SOB), short of breath  Altered mental status (AMS) |
| Chief complaint – opioid term | No, must use in combination with overdose term | opioid, opiod, opoid, opiate, opate, opium, opium, opum, heroin, herion, heroine, HOD, speed ball, speedball, dope, methadone, suboxone, oxyco, 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, must use in combination with overdose term | F11.10, F11.90, F11.20 |
| *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**

|  |
| --- |
| (,^narcan^,or,^naloxo^,or,^[;/ ]T40.[012346][X09][14]A^,or,^[;/ ]T40[012346][X09][14]A^,or,^[;/ ]F11.12[0129]^,or,^[;/ ]F11.22[0129]^,or,^[;/ ]F11.92[0129]^,or,^[;/ ]F1112[0129]^,or,^[;/ ]F1122[0129]^,or,^[;/ ]F1192[0129]^,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,^suboxone^,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,^Demer[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 ^,),) |