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TITLE: Emergency Medical Services Nonfatal Opioid Overdose Case Definition

USING THIS GUIDANCE

This guidance will assist public health practitioners in state, tribal, local, and territorial (STLT) jurisdictions to utilize emergency medical services (EMS) data to identify probable nonfatal opioid overdose (NFOO).

EMS DATA COLLECTION

The proposed data elements for this standardized definition for probable NFOO come from a core set of elements that most states submit to a national data repository, the National Emergency Medical Services Information System (NEMSIS). The National Highway Traffic Safety Administration (NHTSA) developed the NEMSIS to provide a national standard for the documentation of patient care reports in the prehospital setting. EMS incidents are documented as patient care reports (PCRs) using software compliant with documentation and data exchange standards. In 2019, NEMSIS received 34,203,087 EMS activations submitted by 10,062 EMS agencies in 47 states and territories.

The flow of EMS data from an EMS incident to inclusion in the national database is illustrated in Figure 1. EMS personnel generate a PCR for each patient at an EMS incident, which incorporates information from the 911 dispatch, medical devices utilized in patient care, and any information logged by EMS personnel. When the incident is complete, the PCR is submitted to the EMS agency, transferred to the state data repository, and finally transmitted to NEMSIS. The time this process takes varies by state, with NEMSIS receiving about 40% of records within 24 hours of the EMS incident.

Definitions for the elements in this guidance come from NEMSIS v3.5.0 [1]. Differences between v3.4 and v3.5.0 that may affect this guidance are discussed in Appendix 1.

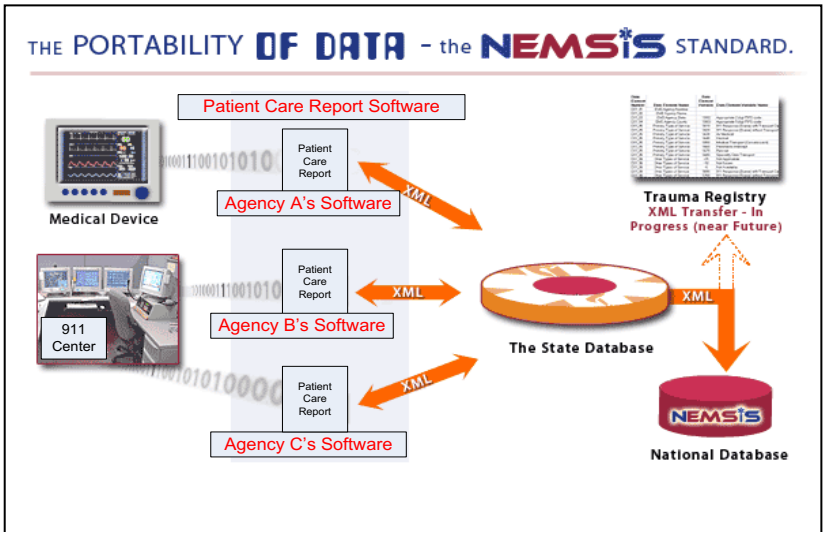

Figure 1. Progression of data from EMS incident to national database (adapted from NEMSIS TAC resources)

ELEMENTS FOR PROPOSED CASE DEFINITION

This guidance divides the elements utilized to define a probable NFOO into two types: primary and secondary.

Primary Elements. The primary elements are the minimum elements required to identify a probable NFOO.

- *Provider's Primary Impression*
- *Provider's Secondary Impression*
- *Primary Symptom*
- *Other Associated Symptoms*
- *Medication Administered*
- *Response to Medication Administered*

EMS personnel record most of these elements by selecting an option from a drop-down menu. The data selections made by EMS personnel in the field may differ from data obtained on the backend by public health professionals because text descriptions of conditions and symptoms included in drop-down menu selections are often mapped on the backend to diagnosis or medication codes not seen by EMS personnel. Specifically, data selections for *Provider's Primary Impression* and *Provider's Secondary Impression* and selections for *Primary Symptom* and *Other Associated Symptoms* are often mapped on the backend to codes from the International Classification of Diseases, Tenth Revision Clinical Modification (ICD-10-CM). These would include "T-codes" which indicate injury, poisoning, and certain other consequences of external causes, and/or "F-codes" which indicate mental and behavioral disorders. For example, a paramedic may select "Narcotic use" as a *Primary Symptom*, which might map on the backend to "T40.6: poisoning by, adverse effect of, and underdosing of other and unspecified narcotics". Staff in public health departments conducting overdose surveillance typically have access only to the backend coded values, not the initial drop-down menu categories selected by EMS personnel in the field.

There are numerous ICD-10-CM codes which may indicate a probable NFOO. This may be attributed to the customization of data selections available to EMS personnel on the frontend, and variation in the way these customized data selections map to backend diagnosis codes. For example, an EMS agency may wish to include "opioid overdose symptoms" as a choice for *Primary Symptom* or *Other Associated Symptoms.* This selection may map on the backend as "F11: Opioid related disorders", or "F11.1: Opioid abuse", or "F11.15: Opioid abuse with opioid-induced psychotic disorder". A list of all ICD-10-CM codes which may indicate a probable NFOO are available in Table 1, along with a detailed description of each primary element, their definition (per NEMSIS v3.5.0), and other values which may indicate a probable NFOO.

Patient Care Report Narrative. The *Patient Care Report Narrative* may be used to validate probable NFOO identified using the primary elements, or to detect a probable NFOO that may have been missed when using only the primary elements. Although most states require submission of the *Patient Care Report Narrative* to the state data repository, confidentiality and privacy laws may inhibit the ability of state and local jurisdictions to access this element, as the *Patient Care Report Narrative* may contain unredacted protected health information. Thus, availability of this element may vary by state.

STANDARDIZED CASE DEFINITION FOR NONFATAL OPIOID OVERDOSE

This definition proposes three ways the primary elements may be used to identify probable NFOO. Cases are considered eligible for consideration if the *Type of Service Requested (*eResponse.05) indicates an emergency response (e.g., primary response area, intercept, or mutual aid). Cases should be excluded from consideration if a) *Type of Service Requested* (eResponse.05) is a non-emergency response (e.g., hospital-to-hospital transfer, public assistance, standby, mobile integrated health care encounter, etc.), OR b) *Initial Patient Acuity* (eSituation.13*)* is "Dead Without Resuscitation Efforts (Black)". The proposed case definition is summarized in Box 1 and explained in further detail below.

	Box 1: Proposed Standard Definition for Nonfatal Opioid Overdose
Primary Elements (REQUIRED)	**Eligibility:** Cases are <u>*eligible*</u> if *Type of Service Requested* indicates an emergency response. Cases should be <u>*excluded*</u> if *Type of Service Requested* is a non-emergency response or *Initial Patient Acuity* is "Dead Without Resuscitation Efforts (Black)". A nonfatal opioid overdose is defined as any eligible 911 response where: 1. The *Provider's Primary Impression* OR *Provider's Secondary Impression* are opioid overdose related OR 2. The *Primary Symptom* OR *Other Associated Symptoms* are opioid overdose related

	OR 3. *Medication Administered* is naloxone or Narcan AND *Response to Medication Administered* is improved
Patient Care Report Narrative (OPTIONAL)	The *Patient Care Report Narrative* may be queried for opioid- AND overdose-related keywords in order to validate previously identified incidents or identify incidents not previously included.

Data from the 2019 NEMSIS dataset was utilized to illustrate how probable NFOO are identified using the three components which make up the proposed case definition. Figure 1 illustrates the contribution of each of these three components to probable NFOO case identification and highlights the importance of including all three components for comprehensive surveillance of probable NFOO. Overall, the proposed definition identified a total of 199,619 probable NFOO. The majority of the cases (66.4%) reported naloxone administration with improvement (S3), half (49.8%) had an opioid overdose related T or F code recorded in the *Provider's Primary Impression* or *Provider's Secondary Impression* (S1), and few had an opioid overdose related T or F code for the *Primary Symptom* or *Other Associated Symptoms* (S2) (11.6%).

1: *Provider's Primary Impression OR Providers Secondary Impression* are opioid overdose related. This is the area where EMS personnel would indicate their "differential diagnosis", which should identify the patient as the victim of an opioid overdose. A probable NFOO can be identified by T and F codes which indicate an opioid overdose related incident. These codes can be found in Table 1.

2: The *Primary Symptom* OR *Other Associated Symptoms* are opioid overdose related. Similar to the *Provider's Primary Impression* and the *Provider's Secondary Impression*, the *Primary Symptom* and *Other Associated Symptoms* also identify probable NFOO through opioid overdose related T and F codes (Table 1). This step would include any incidents which contained opioid overdose related T or F codes based on symptoms but were not identified as a probable NFOO using either the *Provider's Primary Impression* or the *Provider's Secondary Impression.*

For example, an opioid overdose would be excluded in Step 1 if EMS personnel selected "R41.82: Change in mental status NOS" as the *Provider's Primary Impression* and "R40.20: Unconsciousness NOS" as the *Provider's Secondary Impression*. This case may still be identified if EMS personnel selected a *Primary Symptom* that translated on the backend to "F11: Opioid related disorders". In the example above, approximately 8,400 cases (4.2%) of the probable NFOO were identified using only the *Primary Symptom* or *Other Associated Symptoms.*

Thus, opioid overdose related ICD-10-CM codes from *Primary Symptom* and *Other Associated Symptoms* may be used to capture few cases not previously identified in Step 1.

3: *Medication Administered* is naloxone or Narcan **AND *Response to Medication Administered* is improved.** Cases may also be identified by searching for any cases which reported the administration of Narcan or naloxone with an improved response. In contrast to the other primary elements, *Medication Administered* may allow EMS personnel to enter the medication as a free-text response, which may result in a variety of eligible responses (e.g., Naloxone Hydrochloride 1 MG/ML Injectable Solution (Narcan), Naloxone Injectable Solution [Narcan], Naloxone Prefilled Syringe, Naloxone 0.5mg, Naloxone 2 mg, Naloxone/Pentazocine, EVZIO, etc.). Thus, possible values of *Medication Administered* may need to be evaluated to capture all responses that indicate a naloxone administration.

Although naloxone administrations have often been used as a proxy variable for identifying probable NFOO using EMS data[2,3], researchers have criticized the lack of specificity, reporting that only counting naloxone administrations might overestimate the true count of probable NFOO. For example, counting all naloxone administrations might include instances when naloxone was administered to rule out NFOO as a cause of respiratory depression[4]. However, counting naloxone administrations where the *Response to Medication Administered* was improved should decrease the likelihood of including any non-NFOO incidents.

Taken together these three steps should identify the majority of probable NFOO attended by EMS personnel. While there remain several shortcomings which may limit the use of EMS data to determine the true count of probable NFOO (see limitations), use of the *Patient Care Report Narrative* may make it possible to identify additional eligible incidents and potentially "rule-out" others.

(*Optional*): Enhancing case identification using opioid- AND overdose-related keywords within the *Patient Care Report Narrative*. In contrast to most of the primary elements, the *Patient Care Report Narrative* is an unstructured free-text response written by EMS personnel. Rather than focusing on standardized values that indicate a probable NFOO, the *Patient Care Report Narrative* can be queried for opioid- and overdose-related keywords that may indicate a probable NFOO. This may be advantageous for incidents where the primary elements were missing or left blank, such as incidents where the patient was not transported to the hospital, refused treatment, or was administered naloxone prior to EMS personnel arrival at the scene.

Information provided in the *Patient Care Report Narrative* could also be used to determine whether there are cases that are identified which as "false positives". For example, an individual with an altered mental status due to alcohol intoxication may be administered naloxone with an "improved" response, albeit due to the reaction resulting from the discomfort of an intranasal naloxone administration. Further information in the *Patient Care Report Narrative* may be useful for identifying this case as a "false positive" and excluding it as a probable NFOO.

Opioid- and overdose-related keywords within the *Patient Care Report Narrative* which may indicate a probable NFOO are listed in Table 1.

Table 1: NEMSIS v3.5.0 Definitions and Values for Primary Elements and the Patient Care Report Narrative which may be used to identify a nonfatal opioid overdose[a]

Element[b]	Element Description	Values of Interest[c,d,e]
Primary Elements		
Provider's Primary Impression eSituation.11	The EMS personnel's impression of the patient's primary problem or most significant condition which led to the management given to the patient (treatments, medications, or procedures)	**T-Codes** • Poisoning by opium (T40.0) • Poisoning by heroin (T40.1) • Poisoning by other opioids (T40.2) • Poisoning by methadone (T40.3) • Poisoning by other synthetic narcotics (T40.4) • Poisoning by Fentanyl (T40.411)[f] • Poisoning by Tramadol (T40.421)[f] • Poisoning by other opioids (e.g., Buprenorphine, Dextromoramide) (T40.491)[f] • Poisoning by unspecified narcotics (T40.60, T40.603, T40.604, T40.604, T40.605, T40.604 • Poisoning by other narcotics (T40.691, T40.694) **F-Codes** • Opioid related disorders (F11) • Opioid abuse (F11.1, F11.10, F11.12, F11.120, F11.129, F11.15) • Opioid dependence (F11.2, F11.20) • Opioid use (F11.9, F11.90, F11.92, F11.920)
Provider's Secondary Impression eSituation.12	The EMS personnel's impression of the patient's secondary problem or most significant condition which led to the management given to the patient (treatments, medications, or procedures)	
Primary Symptom eSituation.09	The primary sign and symptom present in the patient or observed by EMS personnel	
Other Associated Symptoms eSituation.10	Other symptoms identified by the patient or observed by EMS personnel	
Medication Administered eMedications.03	The medication administered to the patient (by EMS personnel)	• Naloxone[g] • Naloxone Hydrochloride • Narcan
Response to Medication Administered eMedications.07	The patient's response to the medication	• "Improved"
Secondary Elements[†‡]		
Patient Care Report Narrative[†] eNarrative.01	The narrative of the patient care report (PCR)	**Opioid-related keywords:** e.g., 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 **Overdose-related keywords:** e.g., pinpoint, unresponsive, apneic, 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)

[a]Element definitions based on the NEMSIS Data Dictionary for NEMSIS v3.5.0 (NEMSIS, 2019).
[b]Code assigned to elements in the NEMSIS v3.5.0
[c]Values listed for Primary and Secondary Impression are codes from the 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10-CM), followed by the EMS description, based on the NEMSIS [d]Suggested List for Primary and Secondary Impression Values, which provide both an EMS Description and an ICD-10-CM Description. Available at : https://stash.utahdcc.org/stash/projects/NEP/repos/nemsis_public/browse/SuggestedLists/eSituation.11%20and%20eSituation.12%20-%20Provider%20Impression.xlsx
[e]Suggested List for Primary Symptom and Other Associated Symptoms, which provide both an EMS Description and an ICD-10-CM Description. Available at: https://stash.utahdcc.org/stash/projects/NEP/repos/nemsis_public/browse/SuggestedLists/eSituation.09%20and%20eSituation.10%20-%20Symptoms.xlsx

[‡]Values listed for Medication Administered are based on NEMSIS Suggested List for Medications. Available at:
https://stash.utahdcc.org/stash/projects/NEP/repos/nemsis_public/browse/SuggestedLists/eMedications.03,%20dConfiguration.04,%20and%20dConfiguration.09%20-%20Medications.xlsx

[†]State required element, may not be provided to NEMSIS

[‡]Patient Care Report Narrative are "free text", with no standardized drop-down selections, which necessitates the search for pertinent keywords.

f Denotes ICD-10-CM T codes were introduced on October 1st 2020 that identify injuries due to poisoning by fentanyl, tramadol, or other synthetic narcotics. These codes may start to be included by NEMSIS v3.5.0.

[g]These three entries for naloxone are the most common, however there may be additional choices that contain "naloxone" or "Narcan" that could also be included (e.g., Naloxone Hydrochloride 1 MG/ML Injectable Solution (Narcan), Naloxone Injectable Solution [Narcan], Naloxone Prefilled Syringe, Naloxone 0.5mg, Naloxone 2 mg, Naloxone/Pentazocine, EVZIO).

ADDITIONAL CONTEXT FOR PROBABLE NONFATAL OPIOID OVERDOSES

In addition to providing estimates of probable NFOO, EMS data may be utilized to contextualize NFOO incidents, providing knowledge that could be used to inform the initiation of community-based opioid-related interventions. For example, public health jurisdictions may wish to assess bystander/layperson naloxone administrations following community initiation of a naloxone distribution program (NDP). A subpopulation of bystander naloxone administrations may be found by evaluating incidents where *Medication Administered Prior to the Arrival of EMS* was 'yes', and assessing the *Incident ZIP Code* within that subpopulation may help jurisdictions assess the distribution of bystander naloxone within the community. Suggested variables for providing further context are summarized in Appendix 2, along with their definitions (per NEMSIS v3.5.0), values of interest, and their potential use for contextualizing an analysis of probable NFOO.

LIMITATIONS

EMS incidents involving a probable NFOO identified using the proposed case definition are subject to several limitations.

- *Cannot confirm NFOO.* It is important to remember that NFOO identified using EMS data are "suspected" or "probable", as they are based on key signs and symptoms but lack confirmation that would come from the analysis of biological specimens. This would also limit the ability to use EMS data to determine the type of opioid ingested. Although this information may be self-reported by the patient, the accuracy of any self-reported information would be difficult to determine without biological specimen analysis.

- *Underestimation or Overestimation of true NFOO.* Similar to emergency department syndromic data, probable NFOO identified from EMS data should not be used to estimate overall burden or to report case counts. For example, jurisdictions may be unable to account for multiple incidents involving the same individual, which would impact the accuracy of incidence rate calculations.

- *Polysubstance use.* This proposed case definition may also underestimate NFOO in instances where opioids were combined with other substances (polysubstance use). Consider an example in which the patient mixes opioids with alcohol. The obvious intoxication and inability to determine the presence of additional substances may lead EMS personnel to document the *Provider's Primary Impression* as "T50.904: Poisoning by unspecified drugs, medicaments and biological substances, undetermined". Further, administration of naloxone to the patient may elicit no response; while naloxone may reverse the respiratory depression due to the opioid(s), it would have no effect on the persisting central nervous system depression related to the alcohol consumption. This may lead EMS personnel to document the *Medication* as "Naloxone (Narcan)" and the *Response to Medication Administered* as "Unchanged" or "Worse". Thus, the potential inability to capture cases of polysubstance use using the primary elements may contribute to an underestimation in the true count of probable NFOO.

- *Decrease in EMS Responses to NFOO.* The increase in programs to distribute naloxone may decrease the perceived necessity of individuals to call 911 after an opioid overdose or cancel an initiated call. Several studies have shown that individuals who are trained to provide naloxone no longer feel the need to call 911 because they believe they can "handle the overdose themselves" [5–7]. Additionally, despite the proliferation of overdose Good Samaritan Laws which protect individuals from some drug-related criminal penalties when calling to report an opioid overdose, many individuals remain afraid to call 911 due to negative interactions with law enforcement[7]. There are also individuals who are transported to emergency departments without involvement of EMS personnel. Therefore, the inability to count probable NFOO where EMS is not summoned (or is cancelled) may contribute to an overall underestimation in the true count of probable NFOO.

- *Accuracy in Documentation of NFOO.* Data submission rules may allow incidents to be submitted without the information necessary for identifying a probable NFOO. For example, the associated validation rules for *Provider's Primary Impression* and *Primary Symptom* in the NEMSIS Data Dictionary V3.5.0 show that both are required to be submitted when the *Type of Service Requested* (eResponse.05) is "Emergency Response" (Primary Response Area), AND the *Patient Evaluation/Care* (eDisposition.28) is "Patient Evaluated and Care Provided". It is therefore possible that in instances where *Patient Evaluation/Care* is not "Patient Evaluated and Care Provided" (e.g., "Patient Evaluated and Refused Care" or "Patient Evaluated, No Care Required", or "Patient Refused Evaluation/Care") that information for the primary elements may not be documented, and thus result in underreporting of NFOO. While information necessary to identify these cases as a probable NFOO may be found in the *Patient Care Report Narrative,* not all

jurisdictions may have access to or the capacity to analyze the *Patient Care Report Narrative,* which may lead to an overall underestimation in the true count of NFOO.

APPENDICES

Appendix 1: NEMSIS v3.5.0 Definitions for Data Elements that can provide context when assessing nonfatal opioid overdoses

Appendix 2. List of Opioid Overdose Related ICD-10-CM F codes and T codes

REFERENCES

1. National Emergency Medical Services Information System. *NEMSIS Data Dictionary Version 3.5.0.*; 2019. doi:10.1891/9781617050992.0074

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Appendix 1: NEMSIS v3.5.0 Definitions for Data Elements that can provide context when assessing nonfatal opioid overdoses[a]

Element[b]	Element Description	Potential Values of Interest[c,d,e]	Use/Context
Patient Evaluation/Care eDisposition.28	The patient disposition for an EMS event identifying whether a patient was evaluated, and care or services were provided	• "Patient Evaluated and Care Provided" • "Patient Evaluated and Refused Care" • "Patient Evaluated, No Care Required" • "Patient Refused Evaluation/Care"	• Describe prevalence of NFOO who were transported to the hospital, or who refused transport to the hospital
Unit Disposition eDisposition.27	The patient disposition for an EMS event identifying whether patient contact was made	• "Patient Contact Made" • "Cancelled on Scene" • "Cancelled Prior to Arrival at Scene" • "No patient contact" • "No patient found" • "Non-Patient Incident"	• Describe prevalence of NFOO that cancelled EMS or where EMS made no contact • Provide additional context/validation for NFOO involving bystander naloxone administration
Medication Administered Prior to the Arrival of EMS eMedications.02	Indicates that the medication administration which is documented was administered prior to this EMS units care.	• "Yes" • "No"	• Describe prevalence of NFOO involving bystander naloxone administration
Medication Administered Route eMedications.04	The route medication was administered to the patient	• "Intranasal" • "Intramuscular (IM)" • "Intravenous (IV)"	• Provide additional context/validation for NFOO involving bystander naloxone administration
Medication Dosage eMedications.05	The dose or amount of the medication administered to the patient	*Variety of Numbers*	• Provide additional context/validation for overall severity of NFOO • Additional context/validation for NFOO involving bystander naloxone administration
Medication Dosage Units eMedications.06	The unit of medication dosage administered to patient	• "mg"	• Provide additional context/validation for NFOO involving bystander naloxone administration
Role/Type of Person Administering Medication eMedications.10	The type (level) of EMS or Healthcare Professional Administering the Medication. For medications administered prior to the EMS arrival, this may be a non-EMS healthcare professional	• "Lay person" • "Law enforcement" • "Family member"	• Provide additional context/validation for NFOO involving bystander naloxone administration
Medical/Surgical History eHistory.08	The patient's pre-existing medical and surgery history of the patient	*Variety of Medical Codes*	• Describe pre-existing conditions common among patients sustaining NFOO
Destination/Transferred To, Name[†] eDisposition.01	The destination the patient was delivered or transferred to	*Variety of Hospital Codes*	• Describe healthcare resources utilized by NFOO
Emergency Department Diagnosis eOutcome.10	The practitioner's description of the condition or problem for which Emergency Department services were provided	• "Discharged to home of self-care" • "Left against medical advice" • "Admitted as an inpatient to this hospital"	• Provide validation for EMS differential diagnosis of NFOO

Element[b]	Element Description	Potential Values of Interest[c,d,e]	Use/Context
Patient's Home ZIP Code ePatient.09	The patient's ZIP code of residence	*Variety of ZIP codes*	• Enable geographic coding
Incident ZIP Code eScene.19	The ZIP code of the incident location	*Variety of ZIP codes*	• Enable geographic coding
Procedure eProcedures.03	The procedure performed on the patient	• "Oxygen therapy" • "Manual establishment of airway" • "Cardiopulmonary resuscitation"	• Provide additional context/validation for overall severity of NFOO

Abbreviations: EMS=Emergency Medical Services, NFOO=Nonfatal Opioid Overdose, NEMSIS=National Emergency Medical Services Information System,
[a]Element definitions based on the NEMSIS Data Dictionary for NEMSIS v3.5.0 (NEMSIS, 2019).
[b]Code assigned to elements in the NEMSIS v3.5.0
[c]Suggested List for Medical/Surgical History given by ICD-10-CM Description. Available at https://stash.utahdcc.org/stash/projects/NEP/repos/nemsis_public/browse/SuggestedLists/NEMSIS_V3_Suggested_List_eHistory.08.pdf
[d] NEMSIS suggested List for Procedures. Available at https://stash.utahdcc.org/stash/projects/NEP/repos/nemsis_public/browse/SuggestedLists/eProcedures.03%2C%20dConfiguration.03%2C%20dConfiguration.07%20- %20Procedures.xlsx
[e]Example values for procedure are based on SNOMED values
[†]State required element, may not be provided to NEMSIS

Appendix 2. List of Opioid Overdose Related ICD-10-CM F codes and T codes

Code	Code Description
F CODES	
F11	Opioid related disorders
F11.1	Opioid abuse
F11.10	Opioid abuse, uncomplicated
F11.12	Opioid abuse with intoxication
F11.120	Opioid abuse with intoxication, uncomplicated
F11.129	Opioid abuse with intoxication, unspecified
F11.15	Opioid abuse with opioid-induced psychotic disorder
F11.2	Opioid dependence
F11.20	Opioid dependence, uncomplicated
F11.9	Opioid use, unspecified
F11.90	Opioid use, unspecified, uncomplicated
F11.92	Opioid use, unspecified with intoxication
F11.920	Opioid use, unspecified with intoxication, uncomplicated
T CODES	
T40.1X4	Poisoning by heroin, undetermined
T40.1X1A	Poisoning by heroin, accidental (unintentional), initial encounter
T40.1	Poisoning by and adverse effect of heroin
T40.603A	Poisoning by unspecified narcotics, assault, initial encounter
T40.604A	Poisoning by unspecified narcotics, undetermined, initial encounter
T40.604	Poisoning by unspecified narcotics, undetermined
T40.2	Poisoning by, adverse effect of and underdosing of other opioids
T40.2X1	Poisoning by other opioids, accidental (unintentional)
T40.0X4A	Poisoning by opium, undetermined, initial encounter
T40.691	Poisoning by other narcotics NOS
T40.1X4A	Poisoning by heroin, undetermined, initial encounter
T40.4	Poisoning by, adverse effect of and underdosing of other synthetic narcotics
T40.605	Adverse effect of unspecified narcotics
T40.604S	Poisoning by unspecified narcotics, undetermined, sequela
T40.4X1A[b]	Poisoning by other synthetic narcotics, accidental (unintentional), initial encounter
T40.3	Poisoning by, adverse effect of and underdosing of methadone
T40.60	Poisoning by, adverse effect of and underdosing of unspecified narcotics
T40.694A	Poisoning by other narcotics, undetermined, initial encounter
T40.411A[c]	Poisoning by fentanyl or fentanyl analogs, accidental (unintentional), initial encounter
T40.412A[c]	Poisoning by fentanyl or fentanyl analogs, intentional self-harm, initial encounter
T40.413A[c]	Poisoning by fentanyl or fentanyl analogs, assault, initial encounter
T40.414A[c]	Poisoning by fentanyl or fentanyl analogs, undetermined, initial encounter
T40.421A[c]	Poisoning by tramadol, accidental (unintentional), initial encounter
T40.422A[c]	Poisoning by tramadol, intentional self-harm, initial encounter
T40.423A[c]	Poisoning by tramadol, assault, initial encounter
T40.424A[c]	Poisoning by tramadol, undetermined, initial encounter
T40.491A[c]	Poisoning by other synthetic narcotics, accidental (unintentional), initial encounter
T40.492A[c]	Poisoning by other synthetic narcotics, intentional self-harm, initial encounter
T40.493A[c]	Poisoning by other synthetic narcotics, assault, initial encounter
T40.494A[c]	Poisoning by other synthetic narcotics, undetermined, initial encounter

[a]All codes based on the definitions for the International Classification of Diseases version 10-CM.

[b]Denotes ICD-10-CM T code that is intended to be retired soon

[c]These ICD-10-CM T codes were introduced on October 1st 2020 that identify injuries due to poisoning by fentanyl, tramadol, or other synthetic narcotics. These codes may start to be included by NEMSIS v3.5.0.