



## Rhode Island Enhanced State Opioid Overdose Surveillance (ESOOS) Case Definition for Emergency Medical Services (EMS)

### Background

Since January 1, 2014, the Rhode Island Department of Health's (RIDOH) Center for Emergency Medical Services (CEMS) has required its 88 licensed services to enter data electronically into the National EMS Information System (NEMSIS), a project of National Highway and Traffic in Utah. In October 2016, EMS agencies throughout the state began the upgrade from NEMSIS version 2.2.1 to version 3.4. A majority of services completed the transition by January 1, 2017. As of January 1, 2019, some services are still back-entering data. Rhode Island vendor, ImageTrend, manages approximately 75% of EMS services; and the remaining services use a third-party vendor.

### Case Definition

The Rhode Island ESOOS program defines an overdose-related EMS run according to criteria demonstrated in Tables 1 and 2. Criteria are separate for NEMSIS version 2.2.1 and version 3.4.

Per Rhode Island EMS protocol, naloxone, a medication that can rapidly reverse an opioid overdose, can be administered to a patient with altered mental status if drug use is suspected or unknown. Because naloxone, commercially known as Narcan®, is commonly and appropriately used to rule out the occurrence of a drug overdose in patients with altered mental status, severe respiratory depression, or apnea, administration of naloxone alone is not always an accurate indicator of overdose.

### Updated Opioid Overdose Case Definition

The case definition for opioid overdose was updated in February 2019.

Broadly defined, an EMS run is considered to be opioid overdose-related if it meets one of the following criteria:

1. Primary or secondary impression is overdose related AND naloxone is in the medication-given dropdown;
2. Primary or secondary impression is overdose related AND terms for both naloxone AND unresponsive are in narrative;
3. Naloxone is in the medication given dropdown AND medication response is improved; or
4. Terms for both naloxone and unresponsive are in the narrative AND medication response is undocumented; or
5. Naloxone was given prior to EMS AND who administered it is not a null value

For consistency with CDC reporting requirements, an EMS run is excluded if it is an interfacility transfer, the patient is determined to be biologically dead upon arrival, or the patient's age is 10 and younger.

### Interpretation of Case Definition Tables

An EMS run is considered an overdose according to the main criteria as indicated by checkboxes across each row. For example, in NEMSIS version 2.2.1 for all drug overdoses, if an EMS run has a checkmark under the primary/secondary impression category, a checkmark under the overdose term in the narrative or chief complaint category, and a checkmark under the Narcan® given category, it is considered a drug overdose-related EMS run.

## Exclusions (based on NEMESIS version 2.4 and 3.3.1)

- Excludes patients age 10 and younger
- Excludes the following types of service: Interfacility Transfer (Scheduled), Interfacility Transfer (Unscheduled), Medical Transport, Standby, Transport to Dialysis Facility, Bariatric Transport or Special Equip, Interfacility Transport (Emergent), Interfacility Transport (Routine), Medical Transport (other), Public Assistance/Other Not Listed, Service Call Lift/Move, Standby, Critical Care Interfacility Transfer, Transport to Doctor's Appointment
- Excludes the following patient dispositions: Canceled on Scene (No Patient Found), Standby Only - No Patient Contacts, Standby-Public Safety, Fire, or EMS Operational Support Provided, Transported, Treatment by Other Agency, Aborted, Mechanical, Canceled (Prior to Arrival At Scene), Canceled en route, Canceled on Scene (No Patient Contact), Cancelled - Prior to Dispatch, Cancelled, En-route, Cancelled, On-Scene - No Patient Contact, False Call/False Alarm, No Patient Found, No Treatment Required, Standby-No Services or Support Provided, Unable to Locate Patient/Scene, Agency Assist, Assist, Agency, Assist, Public, Public Assist, Dead at Scene, Patient Dead at Scene-No Resuscitation Attempted (DOA), Patient Dead at Scene-Resuscitation Attempted (With Transport), Patient Dead at Scene-Resuscitation Attempted (Without Transport)

## Contact

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**Table 1: NEMESIS Version 3.4**

<b>OPIOID OVERDOSE</b>			
EMS run is considered an opioid overdose if the following criteria are met:			
<b>Primary/Secondary Impression</b> <u>Primary Impression</u> (drop-down) is: <ul style="list-style-type: none"> <li>Opioid-related disorders (F11);</li> <li>Opioid abuse with intoxication, uncomplicated (F11.120);</li> <li>Poisoning by other opioids, accidental (unintentional) (T40.2X1);</li> <li>Poisoning by heroin, undetermined (T40.1X4);</li> </ul> OR <u>Secondary Impression</u> (multi-select) contains one of the following: <ul style="list-style-type: none"> <li>Opioid</li> <li>Heroin</li> </ul>	<b>Naloxone in Medication Given Dropdown</b>	<b>Medication Response</b>	<b>Naloxone AND unresponsive term in narrative*:</b> <ul style="list-style-type: none"> <li>One of the following naloxone terms: Narcan®, Naloxone</li> </ul> AND <ul style="list-style-type: none"> <li>One of the following unresponsive search terms: unresponsive, apneic, apenia, semi-cons, semi cons, uncons, agonal</li> </ul>
<b>MEETS CASE DEFINITION FOR OPIOID OVERDOSE</b>			
✓	✓		
✓			✓
	✓	= "Improved"	
		= no value entered	✓
<b>DOES NOT MEET CASE DEFINITION FOR OPIOID OVERDOSE</b>			
✓			
	✓	=No Change; or =Worse; or =""	

\* Excludes EMS runs where the narrative contains one of the following search terms: no Narcan, no naloxo, Narcan not, naloxone not, denies having to use Narcan

**DRUG OVERDOSE**

EMS run is considered a drug overdose if the following criteria are met:

Primary/Secondary Impression	Overdose Term in Narrative or Chief Complaint	Narcan® Given										
<p>Primary Impression (drop-down) is:</p> <ul style="list-style-type: none"> <li>• Stimulant related disorders (non-cocaine) (F15);</li> <li>• Opioid-related disorders (F11);</li> <li>• Opioid abuse with intoxication, uncomplicated (F11.120);</li> <li>• Hallucinogen related disorders (F16);</li> <li>• Cocaine-related disorders (F14);</li> <li>• Sedative, hypnotic or anxiolytic-related disorders (F13);</li> <li>• Inhalant-related disorders (F18)</li> <li>• Other psychoactive substance related disorders (F19);</li> <li>• Other psychoactive substance abuse, uncomplicated (F19.10)</li> <li>• Poisoning by other opioids, accidental (unintentional) (T40.2X1);</li> <li>• Poisoning by amphetamines, accidental (unintentional) (T43.291);</li> <li>• Poisoning by heroin, undetermined (T40.1X4);</li> <li>• Poisoning by other antidepressants, accidental (unintentional) (T43.291);</li> <li>• Poisoning by other drugs, medicaments, and biological substances, accidental (unintentional) (T50.991);</li> <li>• Poisoning by other narcotics, accidental (unintentional) (T40.691);</li> <li>• Poisoning by unspecified drugs, medicaments, and biological substances, undetermined (T50.904)</li> </ul> <p>OR Secondary Impression (multi-select) contains one of the following:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">• Opioid</td> <td style="width: 50%;">• Inhalant</td> </tr> <tr> <td>• Stimulant</td> <td>• Psychoactive</td> </tr> <tr> <td>• Hallucinogen</td> <td>• Heroin</td> </tr> <tr> <td>• Cocaine</td> <td>• Other drugs</td> </tr> <tr> <td>• Sedative</td> <td>• Unspecified drugs</td> </tr> </table>	• Opioid	• Inhalant	• Stimulant	• Psychoactive	• Hallucinogen	• Heroin	• Cocaine	• Other drugs	• Sedative	• Unspecified drugs	<p>Narrative OR Chief Complaint contains one of the following strings:</p> <ul style="list-style-type: none"> <li>• Overdose, opioid, opiod, opiate, opium, fentanyl, heroin, herion, speedball, speed ball, spheroin</li> </ul> <p>Or, one of the following abbreviations:</p> <ul style="list-style-type: none"> <li>• OD, O.D., O/D, OD/, ODED, hod</li> </ul>	<p>Narcan® listed as Medication Administered OR narrative/chief complaint contains one of the following strings:</p> <ul style="list-style-type: none"> <li>• Narcan®</li> <li>• Naloxone</li> </ul>
• Opioid	• Inhalant											
• Stimulant	• Psychoactive											
• Hallucinogen	• Heroin											
• Cocaine	• Other drugs											
• Sedative	• Unspecified drugs											
✓	✓	✓										
✓	✓											
✓		✓										
	✓	✓										
		<p style="text-align: center;">✓</p> <p><i>(ONLY if Medication Response indicates that patient "Improved" OR Medication Response does not indicate "Unchanged" or "Worse" and one of the following terms is found in the narrative or chief complaint: white powder; syringes; drug paraphernalia; drug paraphernalia; more responsive; began breathing; more alert; loc improved; improved loc; improvement in loc; positive response to Narcan®)</i></p>										

HEROIN OVERDOSE		
EMS run is considered a heroin overdose if the following criteria are met:		
Primary/Secondary Impression	Overdose Term in Narrative or Chief Complaint	Narcan® Given
Primary Impression (drop-down) is: <ul style="list-style-type: none"> <li>Poisoning by heroin, undetermined (T40.1X4);</li> </ul> OR Secondary Impression (multi-select) contains the following: <ul style="list-style-type: none"> <li>Heroin</li> </ul>	Narrative OR Chief Complaint contains one of the following strings: <ul style="list-style-type: none"> <li>Heroin, herion, speedball, speed ball, spheroin</li> </ul> Or, one of the following words: <ul style="list-style-type: none"> <li>hod</li> </ul>	Narcan® listed as Medication Administered OR narrative/chief complaint contains one of the following strings: <ul style="list-style-type: none"> <li>Narcan®</li> <li>Naloxone</li> </ul>
✓	✓	✓
✓	✓	
✓		✓
	✓	✓

Note: Data are unduplicated by incident number, vehicle unit number, and agency name.

**Table 2: NEMSIS Version 2.2.1**

OPIOID OVERDOSE			
EMS run is considered an opioid overdose if the following criteria are met:			
Primary/Secondary Impression:	Naloxone in medication given dropdown	Medication response	Naloxone AND unresponsive term in narrative*:
<ul style="list-style-type: none"> <li>Overdose – Drug/Medication</li> <li>Overdose – Inhalant</li> <li>Poisoning/Drug Ingestion</li> </ul>			<ul style="list-style-type: none"> <li>One of the following naloxone terms: Narcan®, Naloxone</li> </ul> AND <ul style="list-style-type: none"> <li>One of the following unresponsive search terms: unresponsive, apneic, apenia, semi-cons, semi cons, uncons, agonal</li> </ul>
MEETS CASE DEFINITION FOR OPIOID OVERDOSE			
✓	✓		
✓			✓
	✓	= "Improved"	
		= no value entered	✓
DOES NOT MEET CASE DEFINITION FOR OPIOID OVERDOSE			
✓			
	✓	=No Change or =Worse or =""	

\* Excludes EMS runs if the narrative contains one of the following search terms: no Narcan, no naloxo, narcan not, naloxone not, denies having to use narcan

<b>DRUG OVERDOSE</b>		
EMS run is considered a drug overdose if the following criteria are met:		
<b>Primary/Secondary Impression</b>	<b>Overdose Term in Narrative or Chief Complaint</b>	<b>Narcan® Given</b>
Primary OR Secondary Impression (dropdown) is: <ul style="list-style-type: none"> <li>• Overdose – Drug/Medication</li> <li>• Overdose – Inhalant</li> <li>• Poisoning/Drug Ingestion</li> </ul>	Narrative OR Chief Complaint contains one of the following strings: <ul style="list-style-type: none"> <li>• Overdose, opiod, opioid, opiate, opium, fentanyl, heroin, herion speedball, speed ball, spheroin, hod</li> </ul> Or, one of the following abbreviations: <ul style="list-style-type: none"> <li>• OD, O.D., O/D, OD/, ODED, HOD</li> </ul>	Narcan® listed as Medication Administered OR narrative or chief complaint contains one of the following strings: <ul style="list-style-type: none"> <li>• Narcan®</li> <li>• Naloxone</li> </ul>
✓	✓	✓
✓	✓	
✓		✓
	✓	✓
		✓ <i>(ONLY if Medication Response indicates that patient "Improved" OR Medication Response does not indicate "Unchanged" or "Worse" and one of the following terms is found in the narrative or chief complaint: white powder; syringes; drug paraphernalia; drug paraphernalia; more responsive; began breathing; more alert; loc improved; improved loc; improvement in loc; positive response to Narcan®)</i>

<b>HEROIN OVERDOSE</b>		
EMS run is considered a heroin overdose if the following criteria are met:		
<b>Primary/Secondary Impression</b>	<b>Overdose Term in Narrative or Chief Complaint</b>	<b>Narcan® Given</b>
Primary OR Secondary Impression (dropdown) is: <ul style="list-style-type: none"> <li>• Overdose – Drug/Medication</li> <li>• Overdose – Inhalant</li> <li>• Poisoning/Drug Ingestion</li> </ul>	Narrative OR Chief Complaint contains one of the following strings: <ul style="list-style-type: none"> <li>• Heroin, herion, speedball, speed ball, spheroin,</li> </ul> Or, one of the following words: <ul style="list-style-type: none"> <li>• hod</li> </ul>	Narcan® listed as Medication Administered OR narrative or chief complaint contains one of the following strings: <ul style="list-style-type: none"> <li>• Narcan®</li> <li>• Naloxone</li> </ul>
✓	✓	✓
✓	✓	
	✓	✓

Note: Primary and secondary impression in NEMESIS version 2.2.1 are not specific to opioid/heroin. Data are unduplicated by incident number, vehicle unit number, and agency name.