**Supplementary Appendix S4:** Definition of non-fatal opioid overdose

A non-fatal overdose could be identified using either ICD-9 codes from the case mix database or using emergency medical services (EMS) data.

*ICD-9 codes for identifying non-fatal overdose from (hospital and emergency department) case mix data.*

|  |  |
| --- | --- |
| ICD-9 Code | ICD-9 Description |
| 96500 | Poisoning by opium (alkaloids), unspecified |
| 96501 | Poisoning by heroin |
| 96502 | Poisoning by methadone |
| 96509 | Poisoning by other opiates and related narcotics |
| E8500 | Accidental poisoning by heroin |
| E8501 | Accidental poisoning by methadone |
| E8502 | Accidental poisoning by other opiates and related narcotics |

*Suspected drug overdose EMS incidents were identified through a three-stage process.*

**Stage 1: Defining EMS incidents included**

Only EMS incidents meeting the following criteria were included in the analysis:

* In order to include only emergency responses and exclude incidents between health facilities, only EMS incidents involving 911 calls were included in the analysis.

**Stage 2: Define EMS incidents that are not suspected drug overdose visits**

In order to reduce false positive, an EMS incident was not classified a drug overdose visit if it met any of the following criteria:

* Do not classify as a drug overdose when the EMS transport is not related to an emergency, but involves transporting a patient or a Section 12. (Note: These transports are listed incorrectly as 911 responses)
  + “section 12” or “sec 12” (narrative, chief complaint, secondary complaint)
  + “transport only” (chief complaint, secondary complaint)
* Do not classify as a drug overdose when EMS incident is primarily related to a traffic issue/crash
  + “traffic” (chief complaint, secondary complaint)
* Do not classify as a drug overdose when EMS incident is primarily needed to address withdrawal symptoms or help a person detox
  + “withdraw” (chief complaint, secondary complaint)
  + “detox” (chief complaint, secondary complaint)
* Do not classify as a drug overdose when the EMS incident is responding to a suspected alcohol poisonings
  + The words “poison” occurs AND either of the following two words are present “Alcohol” and “etoh” (chief complaint)
* Do not classify as a drug overdose if the only reason the incident was selected was the narrative and the patient denied using illegal drugs.
  + “denies illegal drug” (Narrative)
  + “denied illegal drug” (Narrative)

**Stage 3: Prioritizing criteria**

* Priority indicates which criteria is run first (i.e., cases are selected based on Priority 1 and then cases not selected are examined using priority 2