

# **METHODOLOGY FOR IDENTIFYING DRUG-RELATED OVERDOSE DEATHS**

## **December 2012**

The methodology for identifying drug-related overdose deaths in Maryland was developed by the DHMH Vital Statistics Administration with assistance from the DHMH Alcohol and Drug Abuse Administration, the Office of the Chief Medical Examiner (OCME) and the Maryland Poison Center. Assistance was also provided by authors of a Baltimore City Health Department report on intoxication deaths.<sup>1</sup> Currently, this methodology is used to identify all drug-related overdose deaths, as well as deaths that are opioid, heroin, or prescription opioid-related.

### **Source of data**

Data used to identify overdose deaths are obtained from OCME. Maryland law requires OCME to investigate all deaths occurring in the State that result from violence, suicide, casualty, or take place in a suspicious, unexpected or unusual manner. In these instances, information compiled during an investigation is used to determine the cause or causes of death. Depending on the circumstances, an investigation may involve a combination of scene examination, witness reports, review of medical and police reports, autopsy, and toxicological analysis of autopsy specimens. Toxicological analysis is routinely performed when there is suspicion that a death was the result of a drug or alcohol overdose.

### **Identification of drug-related overdose deaths**

A death is considered to be a drug-related overdose death if:

1. The cause of death includes the string “intox” (short for intoxication, which is likely to indicate an overdose); and
2. The cause of death identifies the death as drug-related; and
3. The manner of death is accidental or undetermined.

### **Identification of opioid-related deaths**

Opioids include heroin, an illicit drug, and prescription drugs such as morphine, oxycodone, hydrocodone, hydromorphone, methadone, fentanyl, tramadol and codeine. An opioid is considered to be associated with a death if a specific opioid drug is indicated in the cause of death. If the cause of death does not identify a specific drug (e.g., the cause of death indicates “narcotic overdose”), toxicology results are reviewed to determine whether the presence of

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<sup>1</sup> Office of Epidemiology and Planning, Baltimore City Health Department. Intoxication Deaths Associated with Drugs of Abuse or Alcohol. Baltimore City, Maryland: Baltimore City Health Department. January 2007.

any opioid drug was detected. If so, the cause of death is considered to be opioid-related, regardless of the level of the drug.

### **Identification of heroin-related deaths**

Cause of death information, toxicology results, and scene investigation reports are reviewed to identify deaths that are heroin-related. These deaths are classified as either “confirmed” or “suspected.” A death is considered to be a confirmed heroin-related death if:

1. “Heroin” is mentioned in the cause of death; or
2. The toxicology screen shows a positive result for 6-monacetylmorphine; or
3. The toxicology screen shows positive results for both morphine and quinine; or
4. The death is identified as heroin-related through scene investigation.

Since heroin is rapidly metabolized into morphine, deaths that do not meet the criteria above, but are associated with morphine through either cause of death information or toxicological results, are considered to be heroin-related. Since it is likely, but not certain, that these deaths are heroin-related, they are considered to be ‘suspected’ heroin deaths.

### **Identification of prescription opioid-related deaths**

Prescription opioid-related deaths are defined as deaths that involve one or more prescription opioids, as identified through cause of death information when a specific drug is indicated, and through toxicology results when the cause of death is nonspecific. This includes deaths that involve both a prescription opioid and heroin, but not deaths that result from heroin alone.

Since a death may be associated with both heroin and prescription opioids, the sum of the number of prescription opioid deaths and the number of heroin deaths is greater than the overall number of opioid-related deaths.