

# The DAWN Report

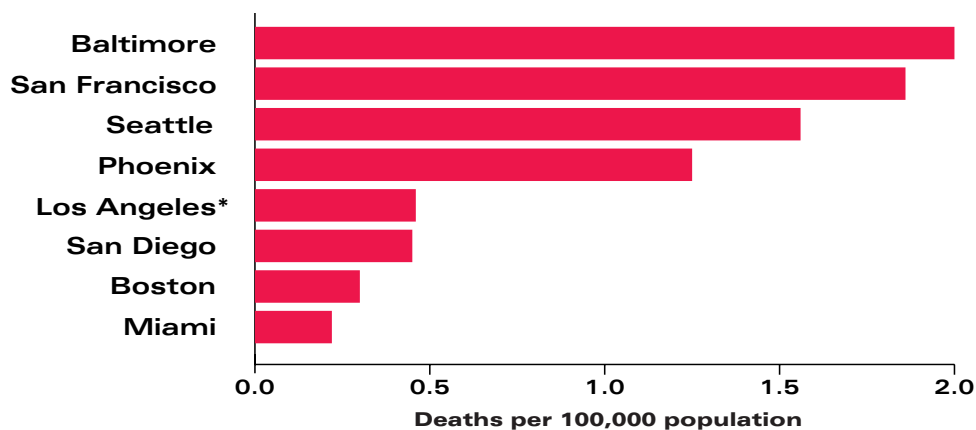
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## Methadone-Involved Deaths in 8 Metropolitan Areas: 1997-2001

### In Brief

- Methadone is a synthetic opiate used to treat opiate addiction and chronic pain.
- In 8 metropolitan areas—Baltimore, Boston, Miami, Los Angeles, Phoenix, San Diego, San Francisco, and Seattle—few deaths reported to the Drug Abuse Warning Network (DAWN) by medical examiners and coroners were attributed to methadone alone. Nearly all of the deaths involved methadone in combination with other drugs.
- Among the 8 metropolitan areas, Baltimore had the highest rate of methadone-involved deaths in 2001, with 2.0 deaths per 100,000 population. Miami's rate, 0.2 per 100,000 population, was the lowest (Figure 1).
- From 1997 to 2001, increases in methadone-involved deaths in these 8 metropolitan areas were primarily the result of increases in polydrug deaths involving methadone.

**FIGURE 1**  
**Methadone-involved death rates in 8 metropolitan areas: 2001**



\* Los Angeles County did not submit mortality data for 2001. Therefore, data for 2000 are presented here.

NOTE: Although the data do not allow us to determine whether these deaths are related to methadone prescribed for pain or to treat addiction, it should be noted that the metropolitan areas listed above have varying access to opioid treatment programs. For more information about treatment programs, see <http://www.findtreatment.samhsa.gov/facilitylocator/doc.htm/>. Source: Office of Applied Studies, SAMHSA, Drug Abuse Warning Network, 2001 (9/2002 update).

### Background

Methadone is a synthetic opiate used to treat chronic pain and opiate addiction. Recent accounts of a surge in deaths involving methadone have renewed discussion about the safety of methadone, its potential for abuse, and whether it was obtained from an opiate addiction treatment program or by a doctor's prescription.

Methadone suppresses withdrawal symptoms in individuals who are physically dependent on opiates.<sup>1</sup> Although most commonly used to treat heroin addiction, it is also used to treat addiction to other opiates, such as codeine, hydrocodone, oxycodone, and morphine.

Methadone is also an effective painkiller and is increasingly being prescribed for this purpose.

According to the Automation of Reports and Consolidated Orders System (ARCOS-2) administered by the Drug Enforcement Administration (DEA), the amount of methadone dispensed by retail pharmacies from 1997 to 2000 increased from 397 to 1,600 kilograms per year.<sup>2</sup>

The Drug Abuse Warning Network (DAWN) can help provide insights into this issue. The mortality component of DAWN monitors deaths resulting from illicit drugs and from the non-medical use of prescription and over-the-counter medications and dietary supplements. Medical examiners and coroners from approximately 40 metropolitan areas report drug abuse-related deaths to DAWN each year.

Because DAWN does not have a nationally representative sample of medical examiners and coroners, it is not possible to develop national estimates of drug abuse-related deaths. It is possible, however, to examine drug abuse-related deaths for individual metropolitan areas. This report focuses on deaths involving methadone in 8 metropolitan areas: Baltimore, Boston, Los Angeles, Miami, Phoenix, San Diego, San Francisco, and Seattle.<sup>3</sup>

## Defining methadone-involved deaths

In this report, methadone-involved deaths include those deaths where the medical examiner/coroner determined that the death was related to drug abuse, and the investigation revealed the presence of methadone. If other drugs were taken in addition to methadone (polydrug abuse), the death could have been caused by 1 drug or the interaction of several drugs. Furthermore, it is possible that the methadone was taken as prescribed, but the other drugs were abused.

## Trends in methadone-involved deaths

Because these metropolitan areas vary greatly in population size, it is inappropriate to make direct comparisons between the number of deaths involving methadone. However, comparisons can be made of rates, which take into account the size of the metropolitan area population as well as the number of deaths. Figure 1, which provides the methadone-involved deaths per 100,000 population for each of the 8 metropolitan areas, shows that Baltimore had the highest death rate in 2001, with 2.0 deaths per 100,000 population. Miami's rate of 0.2 deaths per 100,000 population was the lowest.

In each of the 8 metropolitan areas, total drug abuse-related deaths involving methadone increased from 1997 to 2001. However, there were very few methadone-only deaths; the increases were driven by deaths where other drugs were combined with methadone (Figure 2).

## Polydrug use and methadone

Most drug abuse-related deaths involve more than 1 drug, and methadone-related deaths are no exception. In each metropolitan area examined here, deaths involving other drugs in combination with methadone (polydrug deaths) outnumbered methadone-only deaths.

The drugs most frequently mentioned in methadone-related deaths were from the following categories:

- Alcohol,
- Illicit drugs (heroin/morphine,<sup>4</sup> cocaine, etc.),
- Narcotic analgesics,
- Antidepressants,
- Benzodiazepines, and
- Other psychotherapeutic drugs.

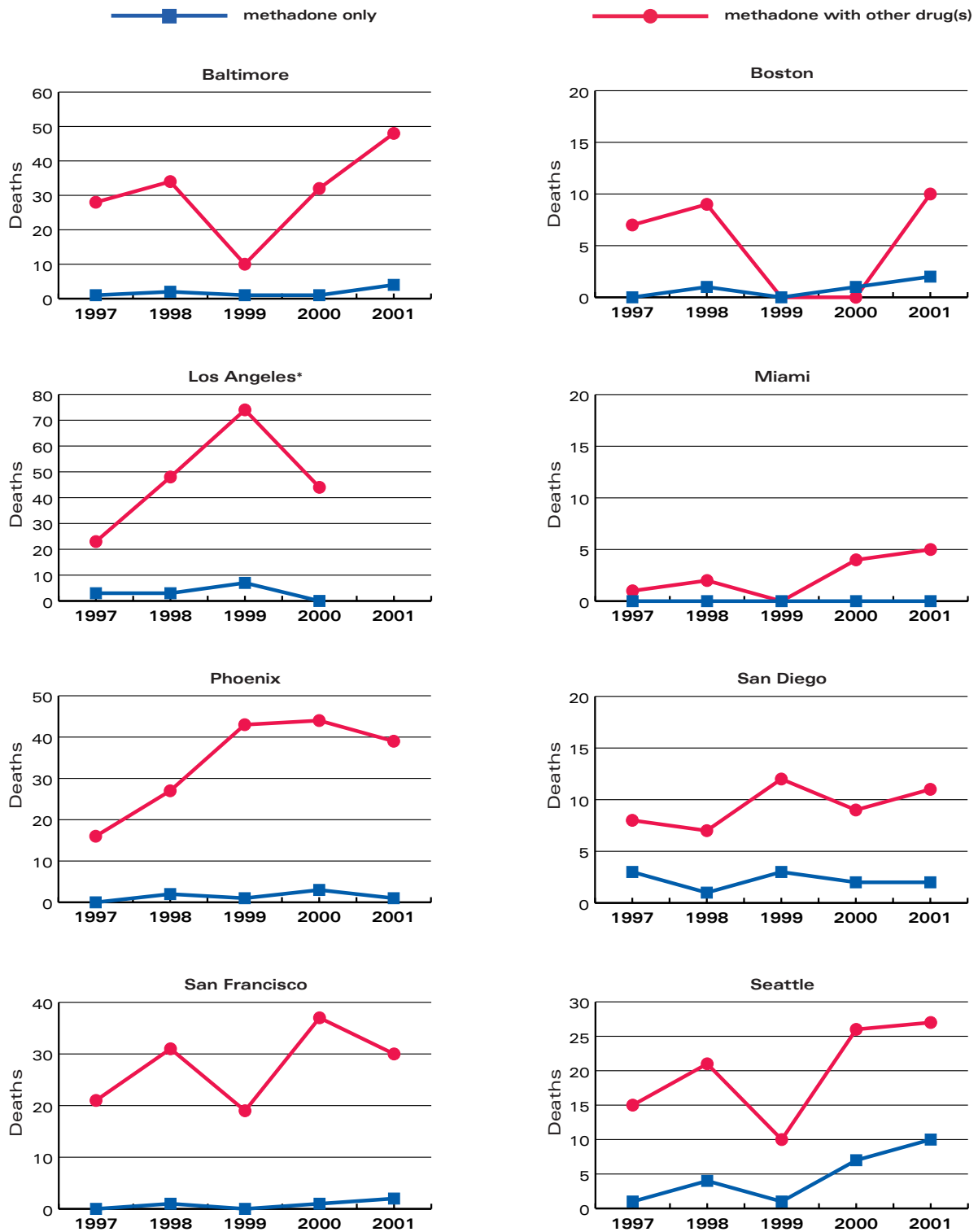
<sup>1</sup> Hardman, J.G., Limbird, L.E. and Gilman, A.G. (2001) *Goodman & Gilman's The Pharmacological Basis of Therapeutics, Tenth Edition*. New York, NY: McGraw-Hill Medical Publishing Division.

<sup>2</sup> Trachtenberg, A. "Methadone-Associated Mortality." In *Epidemiologic Trends in Drug Abuse Volume II: Proceedings of the Community Epidemiology Work Group*. Bethesda, MD: National Institute on Drug Abuse (in press).

<sup>3</sup> These 8 metropolitan areas were selected because of consistent participation by medical examiner jurisdictions from 1997 to 2001 (1997 to 2000 for Los Angeles). Jurisdictions were as follows: Baltimore: Baltimore City, Baltimore, Carroll, Harford, Howard, and Queen Anne's Counties. Boston: Essex, Middlesex, Norfolk, Plymouth, and Suffolk Counties. Los Angeles: Los Angeles County. Miami: Dade County. Phoenix: Maricopa County. San Diego: San Diego County. San Francisco: Marin, San Francisco, and San Mateo Counties. Seattle: King and Snohomish Counties.

<sup>4</sup> Heroin metabolizes to morphine, but not all participating medical examiners/coroners test for the heroin metabolite. Therefore, DAWN groups heroin and morphine together in its mortality data.

**FIGURE 2**  
**Trends in methadone-involved deaths in 8 metropolitan areas:**  
**1997-2001 (scales differ across graphs)**



\*Los Angeles County did not submit mortality data for 2001. Therefore, data for 2000 are presented here.

**NOTE:** Population sizes for these 8 metropolitan areas vary widely; therefore, comparisons of death counts between metropolitan areas may be misleading. To compare methadone deaths between metropolitan areas, the rates (deaths per 100,000 population) should be used.

Source: Office of Applied Studies, SAMHSA, Drug Abuse Warning Network, 2001 (9/2002 update).

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## About DAWN

The **Drug Abuse Warning Network (DAWN)** is a national public health surveillance system that measures drug abuse-related visits to emergency departments and drug abuse-related deaths reviewed by medical examiners and coroners.

Deaths are reportable to DAWN if the drug abuse caused or contributed to the death, and if the decedent was between the ages of 6 and 97. Drug abuse is defined as the use of illegal drugs or the nonmedical use of legal drugs for the purpose of suicide, psychic effects or dependence. During the period described in this report, DAWN only collected data on drug abuse-related deaths.

Deaths related to the abuse of prescription and over-the-counter medications are reportable. Adverse reactions associated with appropriate use of these drugs and accidental ingestion or inhalation of any drug are not reportable.



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