

OREGON PUBLIC HEALTH DIVISION • DEPARTMENT OF HUMAN SERVICES

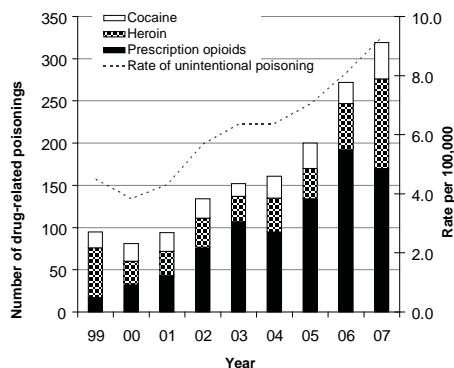
OPIOID-RELATED POISONING DEATHS IN OREGON

Death by poisoning may conjure up an image of a young child drinking Drano® from under the kitchen sink. However, the truth is far different—most poisoning deaths occur among adults (99%) and are associated with drugs and medications (95%). In decades past, most drug poisonings tended to be due to illicit drugs, such as heroin and cocaine. However, the current epidemic of deaths due to prescription drugs is far greater in magnitude than the crack cocaine or heroin mortality epidemics in the past. This *CD Summary* reviews the scope of the problem, the characteristics of those at highest risk, and strategies that can be used to address the issue.

THE PROBLEM

From 2003 through 2007, 1,320 people in Oregon died from unintentional drug poisoning (including all types of prescription medications and illicit drugs), according to Oregon death certificate data. Since 1999, the rate of unintentional poisoning deaths has more than doubled, from 4.5 to 9.3 deaths per 100,000 (line; figure 1).

Figure 1 Rate and number (for select drugs) of unintentional drug deaths in Oregon



Although drug poisoning deaths associated with illicit drugs (e.g. heroin, cocaine) have increased in recent years, prescription opioid analgesics are increasingly implicated in drug poisoning deaths (bars; figure 1). In

fact, nearly 700 poisoning deaths from 2003 through 2007 were associated with prescription opioid analgesics. Chronic pain affects about 15% of the adult population,¹ and prescription opioid analgesics are useful for treatment of pain. However, the increasing availability of opioids closely parallels increasing mortality from opioid overdose.

WHO IS AT RISK?

In Oregon, unintentional drug poisoning deaths due to prescription opioids occur most often among middle-aged persons: (35%) are among persons 45–54 years of age. More people in the 35–54 year old age group die of unintentional drug poisoning deaths than motor vehicle traffic fatalities.

Between 2003 and 2007, most (57%) prescription opioid-related deaths were among men; however, the number of deaths among women doubled during this time period. Ninety-six percent of prescription drug poisoning deaths occur among Caucasians. However, the rate is highest among American Indians/Alaska Natives at 4.1 deaths per 100,000; followed by 3.8 deaths among Caucasians and 2.9 among African Americans (the number of deaths among Asians is too small to calculate a reliable rate).

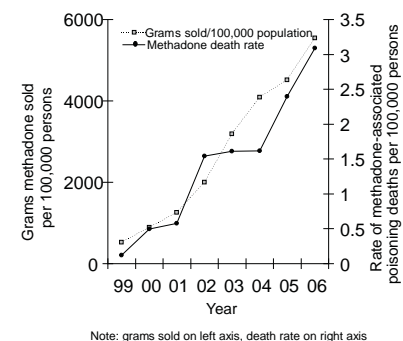
THE ROLE OF METHADONE

Although many types of opioid analgesics are implicated, methadone is disproportionately affecting the increase in deaths. Prior to 1999, methadone-related poisoning deaths seldom occurred in Oregon; however, since 2003, more than 400 unintentional poisoning fatalities have been associated with methadone. Overall, the rate of methadone-associated poisoning has increased more than six-fold between 2000 and 2007—from 0.5 to 3.1 deaths per 100,000 (figure 2).

Recent data from the US Drug Enforcement Agency show that Oregon distributes more methadone per capita through pharmacies than any other

state in the US (www.deadiversion.usdoj.gov/larcos/retail_drug_summary/index.html). Methadone is a safe analgesic when used properly but also has a complex pharmacology; it is a powerful analgesic with a long yet variable half-life which can be affected by patient-specific factors. The combination of low cost and high effectiveness of methadone probably contributes substantially to its high per capita distribution. Unfortunately, the amount of methadone distributed by pharmacies closely parallels the death rate (see figure 2).

Figure 2 Methadone distributed; methadone mortality rate.



A preliminary look at methadone-related poisoning deaths in Oregon found that the number of people with licit (prescribed) versus illicit access to the drug was about the same—a 4 year average of about 35% for both groups (remaining 30% had unknown access type). Diversion is clearly a major problem, but may not entirely explain the increase in methadone-related poisoning deaths.

STRATEGIES FOR REVERSAL

Drug poisoning is a complex social issue, we doubt that any single intervention or strategy will interrupt the recent epidemic. Some of the most important aspects of mitigating the problem are as follows.

Increasing awareness is the first obstacle to overcome. Prescription drugs are rarely recognized as the most



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common substances associated with unintentional poisoning deaths. Even with high profile celebrity prescription drug deaths, many among the public, government agencies, and the health care community are unaware of the magnitude of the problem.

The US Department of Health and Human Services (HHS), the Substance Abuse and Mental Health Administration's (SAMHSA) Center for Substance Abuse Treatment (CSAT), and the Food and Drug Administration (FDA) recently launched a public awareness campaign specifically targeting methadone. The campaign aims to educate consumers and healthcare professionals about the safe use of methadone. Materials, including fact sheets for patients are available on the website (www.dpt.samhsa.gov/methadonesafety/index.aspx).

Improving clinical practices are clearly an integral part of a broader strategy for preventing poisonings.

- Assess whether patients prescribed opioid analgesics are at risk for substance abuse. The Drug Abuse Screening Tool (DAST) can be used to screen patients, and followed by intervention and referral (<http://sbirt.samhsa.gov>). The University of Washington maintains a clearing-house of tools (including DAST) for physicians (<http://lib.adai.washington.edu/instruments/>).
- Assess whether patients are at risk for adverse effects from painkillers. Both oxycodone and methadone have had public health advisories issued by the FDA (www.fda.gov/Drugs/DrugSafety/PublicHealthAdvisories/ucm124346.htm) an expert

panellater issued 5 recommendations for cardiac safety in methadone treatment (www.annals.org/cgi/content/full/150/6/387).

Educating patients regarding safe use and storage of drugs. Counsel patients on maintaining control of prescriptions to prevent diversion; including that they not be shared, borrowed, or sold under any circumstances. In a recent national survey, more than 55% of non-medical users of prescription painkillers indicated that they receive drugs from friends and family for free (www.oas.samhsa.gov/nsduh/2k8nduh/2k8Results.cfm#2.16).

- Educate patients to take drugs exactly as prescribed. Patients may be unaware that methadone stays in the body longer than the analgesic effects of the drug may last.
- Review clinical guidelines—opioid guidelines are available from sources such as the US Veteran's Administration, and the American Society of Interventional Pain Physicians (www.healthquality.va.gov/cot/cot_full-text.pdf and www.painphysicianjournal.com/2006/january/2006;9;1-40.pdf). Good pain management assures that chronic pain patients get the help they need while reducing the risk of misuse.
- Closely monitor patients who receive methadone, especially during treatment initiation and dose adjustments.

Implementing a prescription monitoring program (PMP). PMPs have been around for decades (California's began in 1939), and 40 states currently

have such programs. Oregon was the latest to pass PMP legislation, and it is scheduled to be in operation by late 2010. PMPs aim to prevent diversion by providing prescribers a tool for determining their patient's history of prescriptions for controlled substances, while supporting access to legitimate medical use. In addition, PMPs may facilitate identifying, referring or treating persons with substance abuse issues.

Other population-level approaches have mainly focused on preventing adverse legal outcomes—serialized prescription forms to reduce prescription forgery, drug courts to prevent re-incarceration. It isn't clear how much of an effect these approaches have on drug poisoning mortality.

There is a notable shortage of evidence-based population-level strategies to reduce prescription drug deaths, yet some strategies are known to impact poisoning outcomes. Every call to a poison control center saves in medical costs and frees up medical resources (i.e. ambulance dispatches, 911 calls, hospital visits).² Increasing public awareness of the Oregon Poison Center will have an impact on poisoning in general.

REFERENCES

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2. T.Miller, D.Lestina . Costs of poisoning in the United States and savings from poison control centers: A benefit-cost analysis. *Annals of Emergency Medicine*; 1997;29: 239-245.