
SUBSTANCE ABUSE DEPARTMENT

OPIOID OVERDOSE
Trends, Risk Factors,
Interventions and Priorities
for Action



SOCIAL CHANGE AND MENTAL HEALTH
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Abstract

International illicit production of opioids has increased in recent years, as has illicit opioid use in many countries, especially the injection of heroin. The number of opioid overdose deaths, though difficult to assess, appears to have risen in a number of countries over the past decade but lack of agreement on the definition and classification of opioid overdoses and other drug-related deaths hampers comparisons between countries. There are many difficulties in defining and recording overdose and other drug-related deaths. Reliable cause-specific mortality data for opioid users is particularly lacking.

Research from a number of countries suggests that individual variations in tolerance and polydrug use are contributory factors to fatal and non-fatal opioid (primarily heroin) overdoses. Despite this evidence the view persists that opioid purity is the sole cause of opioid overdose deaths. This diverts attention away from potentially modifiable factors that may reduce overdose deaths. It also de-emphasizes the fact that overdoses often occur in the company of others which provide an opportunity to intervene. Delays in response to overdoses may be a major remediable cause of overdose deaths.

Deaths from heroin and other opioid overdose could potentially be reduced by: educating opioid users about the risks of polydrug use and injecting alone through, for example, peer outreach and social networks; improving their responses to the overdose of others, for example, by reducing fears of seeking emergency or medical assistance; teaching basic skills in cardiopulmonary resuscitation (CPR) to keep overdose victims alive until help arrives, and increasing the number of opioid users in treatment, particularly older heroin users, in methadone maintenance treatment.

Priorities for action include: better definitions and recording of opioid overdose and other drug-related deaths; the implementation and evaluation of preventive interventions based upon available knowledge; and more studies of risk factors for non-fatal and fatal opioid overdoses to improve preventive interventions.

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Contents

Page

1.	Introduction	1
2.	Nature and extent of opioid use	1
3.	Opioid-related mortality	4
3.1.	Overall mortality rates among opioid users	4
3.2.	Cause-specific mortality	6
4.	Methadone-related overdose	8
5.	Difficulties in defining and recording overdose and other drug-related deaths	10
6.	Risk factors	12
6.1	Opioid purity and individual tolerance	12
6.2.	Consumption of alcohol, benzodiazepines and other drugs	13
6.3	Contaminants and adulterants	13
6.4	General health status of opioid users	14
6.5	Other factors	14
7.	Interventions	14
7.1	Risk assessment and management	15
7.2	Outreach, peer education and social network interventions	15
7.3	Strategies targeting individual risk reduction	16
7.4	Increasing access to emergency and other health services	17
7.5	Creating “safer” drug using environments	17
7.6	Opioid antagonists	18
7.7	Drug treatment	18
7.8	Drug and policing policies	19
8.	Priorities for action	20
8.1	Improved quality of information	20
8.2	Identify risk factors	21
8.3	Design and evaluate effective interventions	21
9.	Related WHO activities	21
10.	Conclusions	22
11.	References	23
	Appendix ICD-10 Codes	33

1. Introduction

This document briefly reviews international data on trends in illicit opioid use and opioid overdose deaths, in order to identify research priorities and strategies for preventing such. It was prompted by an International Symposium on illicit opioid overdose deaths, which was held in Sydney, Australia, in August 1997 and hosted by the National Drug and Alcohol Research Centre, a World Health Organization Collaborating Centre. Overdose from illicit opioid use was selected as a focus for the International Symposium because opioid use (and heroin use in particular) has increased in many developed and developing countries over the past decade. In many of these countries, opioid overdose deaths are a major cause of premature death related to illicit drug use and make a major contribution to the total number of deaths among certain populations in some countries. In Australia in 1995, for example, opioid overdose deaths accounted for 76% of all deaths due to illicit drug use, and 9% of all deaths, among young adults aged 15 to 44 years (*Hall & Darke, 1997*). In Glasgow (Scotland), just under one-third of all deaths among young adults aged 15-35 years were drug-related and the majority of these were opioid-related (*Frischer et al., 1997*).

The report begins with an overview of international trends in the nature and extent of the illicit use of opioids. A description is then given of mortality related to illicit opioid use and the difficulties in defining and recording drug overdoses. An analysis is provided of the risk factors that have been identified to date for illicit opioid overdose deaths. Most of these risk factors have been identified in recent studies of fatal and non-fatal opioid overdoses. They include: variations in opioid tolerance; variations in heroin and other opioid purity; polydrug use; contaminants and adulterants; and other risk factors related to the social environments in which opioid use occurs.

The analysis of these risk factors suggests a number of potential interventions that may reduce opioid overdose deaths. These include measures to reduce the incidence of opioid overdoses (e.g. outreach, the use of social networks and peer education about risk factors) and those that aim to reduce the fatality rate (e.g. better peer responses to opioid overdoses). The document concludes with priorities for action to better define and record overdose and other drug-related deaths and to reduce the toll of overdose deaths due to the illicit use of opioid drugs.

2. Nature and extent of illicit opioid use

The challenges presented by drug use epidemiology, particularly when the drugs concerned are opioids such as heroin, are well known and will not be repeated here. Accurate information on the nature and extent of heroin and other opioid use is difficult to obtain and interpret. The available evidence, however, suggests that there has been a global increase in the illicit production, transportation and consumption of opioids, especially heroin (*Childress, 1994; UNDCP, 1997*).

Heroin use has become increasingly common in some developed countries in North America and Europe and in Australia since the 1960s. More recently traditional patterns of opium use (mostly smoking) in some developing countries of southeast Asia (e.g. China, India, Nepal, Pakistan,

Thailand, and Viet Nam) have been replaced by the injection of opium solutions, heroin and buprenorphine (*Stimson et al., 1996; Stimson & Choopanya, 1998*). Opioid use and injection are also being reported in countries and regions where the illicit use of opioid drugs and opioid injection were previously unknown. This has been associated with new illicit opioid production in Colombia and Mexico (*International Narcotics Control Board, 1996*), and the establishment of new trafficking routes, such as through western and southern Africa and eastern Europe (*Adelekan & Stimson, 1997; International Narcotics Control Board, 1996*).

While illicit opioid use has generally been reported as increasing in recent decades, historical patterns of heroin use in some countries have been cyclical, with increases in illicit use being followed by periods of relative stability or even a decline in use. In Australia, an epidemic of heroin use occurred in the late 1960s and early 1970s which led to the establishment of methadone maintenance treatment for dependent heroin users (*Manderson, 1993; Ward et al., 1992*). A second Australian epidemic began in the early and mid-1980s and a new epidemic may be unfolding today (*Hall & Darke, 1997; Maher, 1996*). In the United Kingdom, there was also a well-reported heroin epidemic in the mid-1980s, following a period in the 1970s when the heroin using population was generally stable and ageing (*Power, 1994*). The UK epidemic in the 1980s was in part the result of the availability of cheap, high purity heroin from southwest Asia, notably Pakistan. This form of heroin, which could be smoked, was attractive to young non-injecting users and fuelled an epidemic of heroin smoking (*Pearson, 1987*). There is recent evidence to suggest a new interest in heroin among the young in the UK (*Parker et al., 1998*). Recent evidence also suggests that the use of heroin has again become increasingly common in the United States of America. Unlike an earlier epidemic of heroin injecting in the US from 1964 to 1972 (*Boyle & Brunswick, 1980*), these increases in heroin use have occurred among younger users taking the drug intra-nasally (snorting) rather than injecting (*National Institutes of Health, 1997a*). This new "epidemic" of heroin use in the United States of America is in part associated with the availability of cheap, high purity heroin from South America (*National Institutes of Health, 1997a*). In Europe and the United States of America, the role of the media has come under some scrutiny for glamourizing heroin use and creating a climate in which heroin use is more socially acceptable, although there is no scientific evidence to prove that the media has encouraged increased use. Availability, price and purity are important influences on the extent and nature of illicit opioid use.

Heroin use is not increasing in all countries. In some European countries, for example the

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