Overdoses are injuries too

Leonard J Paulozzi

Drug overdose should be treated as an injury to which prevention strategies should be applied

In 2002, poisoning passed falls to move into second place behind motor vehicles in the league table of causes of fatal unintentional injury in the USA.¹ Unintentional drug overdose mortality rose by 68% between 1999 and 2004.² In 2004, almost 21 000 people died from unintentional poisoning in the USA. Almost all these deaths were due to acute overdoses of illegal drugs and legal drugs that were being abused. Drug-related deaths are also a major cause of death among young people in Europe and Australia.^{3,4} Despite the significance of the drug overdose problem worldwide, many injury prevention professionals working in public health do not consider overdoses to be injuries. Why they do not and why we all should are questions that deserve comment.

It is easy to find evidence that drug overdoses are unpopular subjects for study or intervention by injury professionals. *Index Medicus* reveals that to date *Injury Prevention* has published only one article with the word "overdose" or the phrase "drug poisoning" in its title or abstract. A search of the Centers for Disease Control and Prevention flagship publication, *Morbidity and Mortality Weekly Report* (<http://www.cdc.gov/mmwr>, accessed 16 Jan 2007), uncovered only 53 citations using the word "overdose" since 1982. In contrast, a search for "lead poisoning" in *MMWR* returned 1531 references. Scanning the 53 articles mentioning overdose reveals that overdoses are not the focus of most of them. Instead, many describe outbreaks of unusual cases, such as lead poisoning among methamphetamine users.⁵ Topics such as endemic use of methamphetamine, cocaine, heroin, and narcotic analgesics receive relatively little attention in the injury literature despite their large contribution to morbidity, mortality, and healthcare costs.

This neglect is not the result of jurisdictional barriers. The drug overdose is now the dominant member of the poisoning branch of the family tree of injury, the members of which share a common ancestry in exposure to too much energy.⁶ Poisoning is part of the external causes of injury mortality matrix developed by the National Center for Health Statistics.⁷ Drug

overdoses also fit neatly into well-established injury models. Overdoses have recognizable hosts, agents, and environments. In theory, educational, enforcement, and environmental measures can be used against them, and they can be addressed using Haddon's strategies.⁸

So why are unintentional drug overdoses overlooked? For one thing, most adult drug abusers voluntarily expose themselves to dangerous doses, and there are some who would group such willful injuries with suicide and homicide as social problems rather than injuries. Most injury professionals, however, will agree that self-inflicted injuries can be legitimately addressed in an injury framework.⁶ Moreover, most drug users intend to take a drug but do not intend to harm themselves, and drug use epidemiology resembles a risky recreational activity such as motorcycle riding or smoking in bed more than a suicide attempt. For example, most fatal drug overdoses occur in middle-aged men,² whereas most drug-related suicide attempts occur in young women.⁹

A difference that undeniably exists between drug overdoses and other types of injury is that recreational drug use is a crime under most systems of law, a sin in most holy books, and a stigma in most societies. Given the choice, many injury professionals might place more importance on addressing poisoning from pharmaceuticals in children, for example, because children are "blameless" for the consequences of their behavior. This preference for helping blameless victims, however, ignores the fact that poisoning among children is a much smaller problem than overdoses of drugs used recreationally in terms of deaths and demand for medical care.¹⁰

Perhaps the most common rationale among injury professionals for the neglect of recreational drug overdoses is the belief that in the USA we can address the problem no better than with the primary approach already used: supply reduction, demand reduction, and rehabilitation. Those holding this belief place their trust in people adhering to laws regarding the trafficking of drugs, heeding warnings about drug use, and sticking with

substance abuse treatment programs. Unfortunately, this approach has had no measurable effect on the incidence of drug overdoses, at least in the USA, where drug overdose death rates have grown steadily through the 1980s and explosively since 1990.¹¹

Do injury prevention specialists have something valuable to offer to this intractable problem? First of all, at the very least, we offer a population-based epidemiologic approach that can help measure the problem in a standardized way and identify high-risk groups. In the recent clusters of hundreds of fatal overdoses involving street drugs contaminated with the synthetic narcotic fentanyl in the USA,¹² for example, the Centers for Disease Control and Prevention played a key role early on by conducting a case-control study of the deaths in Detroit, Michigan, and carrying out national surveillance for other cases.

Secondly, injury prevention professionals can help to solve problems by sharing what has been learned from both successful and unsuccessful approaches to addressing other types of poisoning. For instance, the history of childhood poisoning prevention offers some instructive parallels to the current adult drug-poisoning problem. For years, pediatricians and health departments took a behavioral approach toward preventing childhood poisoning. They attempted to educate care givers about putting away poisons (supply reduction), to scare kids away from poisons with pictorial stickers (demand reduction), and to treat the "accident-prone" child. However, it was not until regulators modified the agent by incorporating child-resistant packaging, one of Haddon's strategies, that significant progress was made.¹³ Eliminating lead from gasoline¹⁴ and using catalytic converters to reduce carbon monoxide in motor vehicle exhaust¹⁵ are other examples of successfully modifying the agents of poisoning.

The current dominance of prescription drugs among the causes of fatal overdoses in the USA¹¹ presents an opportunity to apply a similar product-modification strategy to the adult drug poisoning problem. Unlike street drugs, prescription drugs can be modified to reduce their potential for abuse. For example, the painkiller pentazocine was reformulated with a drug that blocked its euphoric effect when the pentazocine was injected by drug abusers rather than swallowed, thus reducing its abuse.¹⁶ In contrast, an exclusively educational campaign to reduce the use of another analgesic, propoxyphene, was as unsuccessful as childhood poisoning educational campaigns have been in the past.¹⁷

Finally, in the area of secondary prevention, public health professionals can offer a realistic, non-judgmental approach to drug

abuse that tries to minimize the damage from risky behaviors when primary prevention strategies fail. The current grass-roots movement in the USA and elsewhere to distribute a narcotic antidote to lay people and train them to revive dying opiate users¹⁸ is akin to other movements supported by public health professionals to increase adolescent access to contraceptives or drug user access to clean needles. If advanced by health professionals such as emergency medicine specialists and injury epidemiologists, such harm reduction programs might lessen the considerable toll in lives and healthcare costs that drug overdoses now impose on many societies. There is much to do; it is time we made this a priority.

Injury Prevention 2007;**13**:293–294.
doi: 10.1136/ip.2007.016113

Correspondence to: Dr L J Paulozzi, Division of Unintentional Injury Prevention, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, 4770 Buford Highway NE, MS-K63, Atlanta, GA 30341, USA; lbp4@cdc.gov

Accepted 3 July 2007

Competing interests: None.

The findings and conclusions in this report are those of the author and do not necessarily represent the views of the Centers for Disease Control and Prevention.

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LACUNAE

Advert startles public safety officials. Spa's invitation is bad suggestion for drivers

A billboard advertisement intended to prompt visions of pampered relaxation, has provoked displeasure on the part of public safety officials in Lee County, Florida. The words “unfasten your seat belt” grace the top of the ad. A towel-draped, partial torso is to the left of that script, with the name of the advertiser. The officials say the invitation to unbuckle runs counter to efforts to promote traffic safety in the county and decried the ad's placement at one of the county's busiest intersections. “It contradicts everything that we've been preaching so far as people wearing their seat belts and not unfastening them,” said David Kainrad, administrative manager for Lee County emergency medical services and a member of the county's injury prevention coalition.

News-Press, 16 June 2007. Contributed by Barry Pless.

Editor's note: we asked Hyatt for permission to print the picture of the bill board but this was refused.