Evan Wood, PhD, Thomas Kerr, PhD (candidate), Patricia M. Spittal, PhD, Mark W. Tyndall, ScD, MD, Michael V. O'Shaughnessy, PhD, and Martin T. Schechter, MD, PhD

The health care and fiscal costs of the illicit drug use epidemic: The impact of conventional drug control strategies, and the potential of a comprehensive approach

Our current approach to the epidemic has been an utter failure. Here is an alternative.

ABSTRACT: In 1997 a public health emergency was declared in Vancouver's Downtown Eastside by the local health authority. To date, the response by provincial and federal health policymakers has been remarkably lacking in scope and magnitude, with the overwhelming majority of new resources going toward enforcement-based initiatives. This review outlines some of the health and fiscal costs of the injection drug use epidemic. Furthermore, the review summarizes research to date on the impact and limitations of two of British Columbia's primary conventional approaches to address the drug problem: law enforcement and needle exchange. Finally, we review the available research on more controversial programs (such as heroin prescription and safer injecting facilities) that have successfully been employed elsewhere, and argue that a comprehensive approach that incorporates harm reduction programs and expanded drug treatment are required to reduce the fiscal and social costs of the drug use epidemic.

A public health crisis

Illicit drug use is associated with costly health, social, and community impacts. The effects of the drugs themselves, mental health issues, high rates of childhood abuse, homelessness, social marginalization, and poverty, all hinder drug users' abilities to reduce the behaviors that put them at risk of disease and death.[1,2] The health of drug users is further complicated by avoidance and erratic use of primary care services and over-reliance on emergency rooms and costly acute care.[3,4]

Locally, the Downtown Eastside of Vancouver, British Columbia, has been the epicentre for illicit drug use in the province since the 1970s, and since the mid-1990s has experienced an endemic level of overdose fatalities. In recent years overdoses have been a leading cause of death in the province.[5] The neighborhood is the most impoverished urban area in Canada, and an explosive and ongoing HIV epidemic among injection drug users has also occurred there since the mid-1990s.[6] However, this health crisis is not unique to Vancouver. Many North American cities are currently experiencing ongoing HIV

Dr Wood is a research associate at the British Columbia Centre for Excellence in HIV/AIDS, St. Paul's Hospital, University of British Columbia (UBC). Mr Kerr is a research associate at the BC Centre for Excellence in HIV/AIDS. Dr Spittal is a research associate at the BC Centre for Excellence in HIV/AIDS and assistant professor in the Department of Health Care and Epidemiology, UBC. Dr Tyndall is an infectious disease specialist at St. Paul's Hospital, a research associate at the BC Centre for Excellence in HIV/AIDS, and an assistant professor in the Department of Health Care and Epidemiology, UBC. Dr O'Shaughnessy is the director of the BC Centre for Excellence in HIV/AIDS and professor in the Department of Pathology and Laboratory Medicine, UBC. Dr Schechter is the director of Epidemiology at the BC Centre for Excellence in HIV/AIDS and head of the Department of Health Care and Epidemiology, UBC.

epidemics as a result of injection drug use,[7,8] and overdose deaths are among the leading causes of death in many large US cities.[2,5] In Baltimore, for example, overdose deaths increased by more than 425% between 1990 and 1997.[9]

This review outlines some of the health and fiscal costs of the illicit drug use epidemic, and summarizes research to date on the impact and limitations of two of British Columbia's primary conventional approaches to address the injection drug use problem: law enforcement and needle exchange. Finally, we review the available research on more controversial programs, such as heroin prescription and safer injecting facilities, that have successfully been employed to address the harm of drugs in other settings.

A fiscal crisis

Illicit drug use takes a massive financial toll on Canadian society. For instance, it is estimated that the lifetime medical costs (i.e., direct taxpayer-funded dollars) of each case of HIV infection among injection drug users is approximately $150 000.[10] The burden of providing inpatient care for endocarditis, abscesses, and other drug-related infections is crippling to inner city hospitals.[3,4] At St. Paul's Hospital, for instance, approximately 15% of admissions are attributable to injection drug use despite the fact that injection drug users account for only a tiny fraction of the population served by the hospital. Similarly, approximately $500 000 is spent annually by ambulances responding to overdoses in Vancouver alone, and brain injuries due to delayed resuscitation have substantial downstream health costs.

The vast majority of resources aimed at addressing the problems stemming from illicit drug use have been directed toward criminal justice interventions. As a result, courts have become clogged with addicted people; in Canada over 50 000 people were charged with drug offences in 1999 and an estimated 400 000 court appearances were related to illicit drug use.[11] The reliance on criminal justice interventions was highlighted in a recent auditor general's report, which found that of the $454 million directed annually to Canada's drug strategy, $426 million (94%) is devoted to enforcement.[11] The report also emphasized that there currently is no evidence to suggest that these interventions are generating benefit of any kind. Locally it is estimated that 82% of the money spent on controlling BC's escalating drug problem is spent on law enforcement efforts that have so far been unable to curtail the burgeoning rates of crime, addiction, and infectious diseases.[12] Together, the health and enforcement costs are estimated to cost Canadians in excess of $5 billion annually.[11]

Illicit drug use also places considerable burden on local communities, and public drug use is commonplace in Vancouver's Downtown Eastside.[5,13] Public drug use, particularly injecting, is associated with the spread of infectious disease and overdoses[14] and creates a potentially hazardous litter, including discarded syringes, and often results in congregations of drug users that are widely regarded by the public as dangerous and intimidating.[15] Public drug use and property crime among addicts also threatens the vitality of business communities and tourism. For instance, recent media reports have suggested that the health and social problems in the Downtown Eastside have contributed to the city being overlooked as a cruise ship destination.[16]

Conventional strategy 1: Law enforcement

The primary response to the public health and social emergency resulting from illicit drug use has been to intensify law enforcement in an effort to limit the supply and use of illicit drugs in the Downtown Eastside. While funding to police in the Downtown Eastside's district increased from $6.7 million in 1995 to $11.2 million in 2001, the drug problem has not improved, and the neighborhood continues to be plagued by high levels of public drug use and high HIV and overdose incidence.[17] This sad reality is perhaps not surprising given that previous studies have found no evidence that law enforcement affects the price, purity, or perceived availability of illicit drugs.[18]

Much like the US, Canada has more than 66 000 kilometres of coastline, much of which is remote and uninhabited.[19] Furthermore, more than 9 million commercial shipments enter Canadian ports each year. Given that the vast majority of resources are already directed to supply reduction efforts, it is difficult to imagine the extent to which efforts to reduce the importation of drugs would have to be increased to effectively limit supply and use of drugs. As an example, the growing budget of the US Office of National Drug Control Policy is projected to be US$19 billion.[20] Despite this level of expenditure, studies of US heroin purity and affordability

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The authors presented this document at "Saving Money—Saving Lives—Exploring the Case for an Integrated Approach to Vancouver's Drug Problems," a conference held 17–18 September 2002 at the Simon Fraser University Morris J. Wosk Centre for Dialogue.

found that heroin prices have decreased threefold between 1998 and 2000 due to increased supply, whereas purity has dramatically increased.[21,22] Further evidence of the futility of over-reliance on supply reduction comes from a recent report by the World Customs Organization, which found that post-September 11, security measures had a "negligible" impact on the influx of illicit drugs into the US.[23] Locally, a recent study investigating the largest heroin seizure in Canadian history demonstrated that it had no public health benefit, and the price of heroin actually dipped slightly, suggesting that many other shipments easily compensated for the seizure.[24]

America has 100 000 more people behind bars for non-violent drug offences than the European Union (EU) has incarcerated for all offences combined, despite the fact that the EU has 100 million more citizens. Despite these unprecedented levels of incarceration, the drug problem in the US is not diminishing.

Among the most concerning features of the US reliance on criminal sanctions is the record incarceration levels that have been observed in the United States. For instance, America has 100 000 more people behind bars for non-violent drug offences than the European Union (EU) has incarcerated for all offences combined, despite the fact that the EU has 100 million more citizens.[25] Despite these unprecedented levels of incarceration, the drug problem in the US is not diminishing.

Conventional strategy 2: Needle exchange

A wealth of studies have shown that providing injection drug users with access to clean needles substantially reduces the transmission of HIV-1[8,26] as well as HIV risk behaviors.[27-29] Independent evaluations of needle exchange have led to endorsements by the US National Institutes of Health Consensus Panel, US National Research Counsel, American Public Health Association, the American Medical Association, the World Health Organization, and the US National Academy of Sciences, among others.

Despite the wealth of scientific evidence, much attention has been drawn to the fact that Vancouver has experienced a well-documented HIV epidemic in the presence of an established needle exchange program.[30,31] The inability of the exchange program to prevent the epidemic has been attributed to specific local factors including the high prevalence of injection cocaine and difficulty accessing sterile syringes.[32,33] Although needle exchange has recently been found to play a major role in reducing syringe sharing,[34] the ongoing HIV and overdose epidemics demonstrate that more comprehensive prevention strategies are required than simply providing access to sterile syringes and safe syringe disposal. For instance, needle exchange programs provide only fleeting contact with drug users and are extremely limited in their ability to provide addicts with additional resources, such as health care and drug treatment.[5] Furthermore, needle exchange in no way addresses the problems of public drug use or other impacts of illicit drug use such as overdose.

The potential of a comprehensive strategy

In other settings where similar health crises have emerged, comprehensive programs have successfully addressed the public health, fiscal, and community concerns noted above by coupling enforcement strategies with treatment and prevention services. The success of these programs has been attributed to the provision of a wide array of treatment options and comprehensive harm reduction programs.

Prevention

Prevention is the most cost-effective intervention and should provide the framework for a comprehensive approach to minimizing the drug problem. Prevention must seek pragmatic strategies for the reduction of harm to the community, the individual, and the health care system by targeting active problem drug use with programs for which there is ample evidence of their effectiveness. Prevention should be considered as a broad range of interventions with two specific aims. The first aim should be to prevent the initiation of illicit drug use among those at risk of engaging in this risk behavior. While certain educational programs such as DARE have been shown to be ineffective,[35,36] educational programs have the potential to be highly effective, especially when targeted toward those at highest risk. Unfortunately, to date, education-based prevention programs have not been particularly effective in Canada. During the late 1980s and early 1990s,

education-based programs were a primary focus of Canada's National Drug Strategy. Despite considerable investment in this area, the Canadian Centre on Substance Abuse reported that illicit drug use among youth actually increased during this period.[37] In addition, others have argued that in order to be effective, prevention programs for intravenous drug use must go well beyond education and harm reduction to address social determinants of injection drug use such as poverty, homelessness, and child abuse.

Second, and equally important, is the prevention of harm among active drug users. Prevention programs of this nature have been shown to have a great deal of potential to reduce harm to drug users and the community at large and are outlined below under the heading "Low threshold harm reduction services."[38]

Drug treatment services

Studies have shown that providing illicit drug users with access to addiction treatment can be among the most effective strategies for combating the harms of drugs. A recent study comparing the cost-effectiveness of addiction treatment and enforcement found that treatment was by far the most cost-effective.[39] In North America, methadone maintenance therapy is commonly used to treat opiate addiction and has been found to reduce the costs associated with untreated opiate addiction among patients attracted into and successfully retained in methadone treatment.[40,41] However, methadone has some major limitations and is most effective only when offered as part of the addiction treatment continuum. For instance, studies have found many addicts will refuse methadone outright, or will drop out of treatment soon after it is initiated. Among methadone programs that are able to successfully attract patients, approximately one-third of patients are lost within the first 12 months and another third within the following 24 months.[42-44]

In light of methadone's limited ability to attract and retain drug users in treatment, several European countries broadened their drug treatment strategies and have initiated heroin substitution programs, where heroin is provided legally through medical clinics.[45-47] The most rigorously evaluated of these programs is Switzerland's heroin prescription program that has been ongoing since 1994.[46,47] The Swiss program was found to maintain 69% of its original sample of hard-core and treatment-resistant drug users for the first 18-month study period. Of those who dropped out of heroin-assisted treatment in the Swiss study, more than half switched to methadone or became abstinent. Among patients in this program, the proportion of participants with unstable housing fell during the 18 months (43% on admission to 21%). Similarly, the rate of employment doubled from 14% to 32%. Decreases in criminal activity were also observed, with a decrease in illegal sources of income of 69% to 10%. There was also a greater than 50% reduction in criminal offences registered by the police among participants in the study during the first 18 months. A subsequent cost-benefit analysis of the study suggested that the outcomes were cost-effective at a ratio factor of almost 2 to 1.[48]

Much has been made about the validity of the Swiss study, as a result of it not being conducted as part of a randomized controlled trial.[49-51] In response to criticisms, the results of the Swiss study have been evaluated by an independent panel hired by the World Health Organization (WHO). The WHO panel supported the Swiss findings and issued a call for continued exploration into the effectiveness of heroin therapy, including randomized studies.[52] The feasibility of a randomized trial is currently being explored in British Columbia.

Low threshold harm reduction services

Despite highly effective treatment systems in Europe, soon after their implementation it was observed that many drug users did not avail themselves of treatment even when it was widely available. Low threshold services were then implemented with the aim of minimizing public health problems and public order problems among out-of-treatment drug users by meeting users on their own turf. Low threshold services include street outreach nursing, needle exchange, contact centres, and supervised injecting facilities.

Among the most successful of these programs has been supervised injecting facilities, which are centres where injection drug users can inject pre-obtained illicit drugs under medical supervision.[15,53] Supervised injecting facilities vary widely in their design and the ancillary services they offer, however, at a minimum they have a clean hygienic space where intravenous drug users can sit and inject street-obtained drugs under the supervision of a health care provider. Within supervised injecting facilities injection drug users are provided with sterile injecting equipment, medical attention in the event of overdose, as well as access to health care and other services.[5,53] Because of their ability to prevent health and community costs, supervised injecting facilities now operate in 26 European cities, and an ongoing evaluation of a supervised injecting facility in Sydney, Australia,

has recently reported substantial public health benefits.[54,55] After supervised injecting facilities were initiated, it was observed that the sustained contact with health care professionals enabled substantially higher uptake of treatment services.[53]

Supervised injecting facilities are more than simply safer places to inject, and are most effective when offered as one part of a comprehensive intervention including primary medical care to treat minor infections before they require hospitalization and substantial investment in drug treatment to help addicts to become abstinent. Such facilities have been credited with improving the health and social functioning of their clients[53] while reducing overdose deaths,[56] HIV risk behavior,[57] improperly discarded syringes,[58] and public drug use.[53]

Due to the ongoing health crisis among injection drug users in many Canadian cities, a federal task force has been established to examine the feasibility of a multisite pilot study of supervised injecting facilities.[59] The intervention appears to have considerable potential to reduce the public health and community impacts of injection drug use in the Downtown Eastside as well as the enormous downstream medical costs. For instance, a recent study demonstrated that Vancouver injection drug users who expressed willingness to attend supervised injecting facilities, were they available, were significantly more likely to be at highest risk of infectious disease and overdose, as well as to be more likely to inject in public spaces.[60] These data suggest that making safe injection sites available would both help contain health care costs and address the community impacts of drug use.

Enforcement reoriented for a comprehensive system

Previous studies have shown that law enforcement officers are in direct contact with the highest-risk drug users.[1,5] In settings where law enforcement is applied as an isolated intervention, however, legal and enforcement experts have presented compelling arguments suggesting the current emphasis on criminal justice interventions has worsened the health and social consequences of drug use.[61-63] In contrast, in settings where targeted law enforcement has been coupled with comprehensive harm reduction interventions, including supervised injecting facilities, police have been able to play a crucial role in restoring public order by steering illicit drug users into harm reduction services that can improve uptake of drug treatment and other health care interventions.[15,53]

Four pillars working together

In the spring of 2001, the Vancouver City Council released its final proposal for a comprehensive drug strategy.[64] The strategy stressed the importance of the four pillars of enforcement, treatment, prevention, and harm reduction. Since this time there has been little action with regard to implementing the drug strategy, with the exception of the enforcement pillar, which was already in place. Given the sound scientific evidence in support of comprehensive drug policies, and the dearth of evidence supporting the effectiveness of criminal justice interventions, a failure to move forward on this sound evidence-based policy would amount to negligence and, undoubtedly, an ongoing public health and fiscal emergency.

Competing interests

None declared.

Acknowledgments

The authors wish to acknowledge the Saving Money—Saving Lives conference organizers for their helpful suggestions during the development of this manuscript. Evan Wood is supported by the Canadian Institutes of Health Research (CIHR) and the BC Health Research Foundation. Martin Schechter is a Canadian Institutes of Health Research senior investigator.

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