

SUBSTANCE ABUSE IN CANADA:
Current Challenges and Choices



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Introduction

SUBSTANCE ABUSE HAS LONG BEEN, AND REMAINS TODAY, AN IMPORTANT PUBLIC HEALTH CONCERN, BOTH in this country and elsewhere. The Government of Canada underscored its commitment to addressing this issue when it renewed Canada's Drug Strategy (CDS) in May, 2003, with an investment of \$245 million over five years. Through the revitalized CDS, Canada continues to pursue a goal of significantly reducing the harm associated with alcohol and other drugs using a comprehensive four-component approach that includes education, prevention, harm reduction, and enforcement.

In the wake of the CDS renewal, the Canadian Centre on Substance Abuse (CCSA)—Canada's national addictions agency—embarked on a major initiative to draw attention to a series of key contemporary issues in substance abuse in Canada. The idea was to present some new perspectives on these concerns, and their policy implications, in the form of an annual “snapshot” of substance abuse in Canada. CCSA didn't undertake this challenge alone. The Centre consulted widely, gathering ideas and suggestions from across Canada, not only from individuals and organizations working in the substance abuse field, but also from government officials and elected representatives with access to the policy-making process.

Many different issues and challenges fall under the general rubric of substance abuse, including—to name just a few— injection drug use and HIV/AIDS, cannabis decriminalization, clandestine drug labs and grow operations, drugs in prison, street use of prescription drugs, methamphetamine abuse, and a host of problems uniquely associated with women, youth, the elderly, and Aboriginal peoples. Through its consultation process, CCSA set out to learn which issues people thought were most relevant and pressing in 2004. What does the research tell us about the impact of each problem on the health and well-being of Canadians and about effective interventions? What are the “need to know”

issues for politicians and other decision-makers? This report begins to try to address these questions.

Based on its analysis of feedback from the consultation process, including more than 100 detailed individual responses, CCSA chose six themes to cover in the 2004 report. The Centre then identified a team of Canadian experts to write and review the chapters. Each author and reviewer is a prominent researcher working in Canada and a leading international expert in his or her respective field of study. To engage a broad readership, authors were asked to present their thoughts in a readable and non-technical manner, and to include only key references to research. In all cases, however, statements of fact are backed up by empirical evidence. Each chapter begins with a relevant case study, and includes point-form summaries of key information.

The six themes are presented below with their relevant authors and reviewers:

New directions in alcohol policy

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Harm reduction

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Drugs and driving

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Reviewer: Dr. Robert Mann, Centre for Addiction and Mental Health

Availability and use of evidence-based treatment

Authors: Dr. Thomas Brown and Dr. Maurice Dongier, Douglas Hospital and McGill University, and Greg Graves, Canadian Centre on Substance Abuse
Reviewer: Darlene James, Alberta Alcohol and Drug Abuse Commission

Abuse of prescription drugs

Authors: Dr. Jürgen Rehm, Centre for Addiction and Mental Health and Dr. John Weekes, Canadian Centre on Substance Abuse
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Alternative sanctions for cannabis use and possession

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The contribution of these authors and reviewers is gratefully acknowledged, as is the work of the following CCSA personnel in bringing this report to fruition: Patricia Begin, Director, Research and Policy; Dr. John Weekes, Senior Research Analyst; and Richard Garlick, Publisher and Editor in Chief. ■



Gerry is 28 years old, single and a full-time worker at the local mill. For the past few years, Gerry and his friends have made a habit of hitting the downtown bar scene on weekends. While hanging out at a crowded bar where he consumed seven or eight beers, Gerry is elbowed hard by another young man. There is an exchange of angry words and a fight quickly breaks out. Gerry punches the other man repeatedly in the face, giving him a black eye and breaking his nose and jaw. As he falls to the floor, the man hits his head on the bar and is knocked unconscious. Other patrons intervene and hold Gerry until the police arrive. Gerry is arrested and charged with aggravated assault. He is later convicted and sentenced to three years in a federal prison.

New directions in alcohol policy

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A new approach to prevention

In the past, initiatives to prevent alcohol problems focused on population-based controls such as taxation and restrictions on alcohol availability. More recently, there has been a movement toward measures aimed less at restricting affordability or access to alcohol and more at reducing the likelihood that problems will result when drinking takes place. These are sometimes referred to as “harm reduction” measures.

An example of the harm reduction approach was the introduction in the 1990s of special early opening hours for a retail outlet of the Alberta Liquor Control Board in downtown Edmonton. The objective of the early opening was to reduce the use of potentially lethal non-beverage alcohol by skid-row alcoholics. The measure was not intended to reduce their consumption—in fact, it was expected to *increase* their consumption of *potable* alcohol. The only objective was to reduce adverse consequences from drinking shoe polish and other such substances.

Other examples of harm reduction measures include changes to licensed establishments to minimize injuries that may result if a fight breaks out. These changes may include dividing up large open spaces and padding furniture. Now there is even special glassware that crystallizes into dust rather than breaking into shards that could be used as weapons.

One of the most important harm reduction initiatives has been the introduction of training programs for serving staff and operators of licensed establishments throughout Canada. These programs teach operators how to prevent problems by avoiding “happy hours” and other cheap drink promotions and by developing safe transportation strategies for customers who drink too much. Servers are taught to recognize the signs of intoxication and to politely steer an over-indulging customer toward low-alcohol or non-alcoholic alternatives. Other examples of a harm reduction approach include impaired driving countermeasures and the use of controlled drinking strategies as a treatment option.

Comparing prevention strategies

Harm reduction approaches to prevention are directed at specific individuals or situations. The more traditional approach to alcohol problems has been the use of population-based measures such as alcohol tax policy or restrictions on availability to reduce overall levels of alcohol consumption. These measures have certain advantages: they are easy to implement, they produce significant government revenue and there is reasonably good evidence that they can reduce levels of alcohol problems.^{1,2,3,4} It has also been argued—although this is difficult to quantify—that population-based measures have symbolic value by signalling to the public that government is seriously concerned about alcohol misuse and related problems.⁵

However, population-based measures have certain disadvantages. First, they are far from being totally effective. Every year about 6,700 Canadians die from alcohol use and another 86,000 are hospitalized.⁶ Alcohol misuse accounts for more than \$7.5 billion in losses to the Canadian economy.⁷ Harm reduction measures emerged largely as a way of trying to reduce this toll by adding to and complementing traditional population-based approaches.

Second, population-based measures are not well targeted to individuals who are most at risk for alcohol problems. Availability controls and alcohol taxes generally apply to everyone, including people who are not problem drinkers. These controls make it more difficult to get alcohol, but they do not reduce the chances that drinking will lead to a problem.

Finally, population-based prevention measures that restrict overall consumption may inadvertently reduce the public health benefits associated with moderate alcohol use. These benefits are significant: as noted below, it has been estimated that the number of lives saved by moderate alcohol use actually exceeds the number of deaths caused by alcohol misuse in Canada and elsewhere.^{6,8}

Despite the shortcomings of population-based approaches, support for alcohol taxation measures and reasonable controls over availability should not be abandoned. Relatively high alcohol taxes indexed to inflation can be justified on the grounds of cost recovery (compared with other prevention programs whose implementation costs cannot be recouped), and controls are clearly required for underage drinking and excessive promotion of alcohol. Harm reduction measures and population-based controls are not necessarily in conflict, and the task of public policy on alcohol is to find the appropriate balance between these two complementary strategies for managing alcohol problems.*

The key difference between harm reduction and population-based measures lies in the primary goals of each.⁹ The principal aim of population-based approaches is to reduce alcohol consumption and its related risks. The message for all drinkers is generally identical and unequivocal: *drinking less is better*.

Harm reduction focuses instead on lowering the risk and severity of adverse consequences arising from drinking without necessarily reducing consumption. The message is somewhat different: *avoid problems when you drink*. It is a highly practical approach—the standard of success is not some ideal level of consumption, but is based instead on whether an intervention reduces adverse consequences.

Harm reduction recognizes that drinking will take place, that drinkers are not abnormal, and that drinkers are responsible for their actions. Harm reduction takes a neutral position on the long-term goals of intervention, which may or may not include abstinence for some drinkers.

What the evidence tells us

There is much research to support decisions about the appropriate balance between population-based and harm reduction strategies for alcohol problems. It is important to remember that we are not

* It should be further noted that the distinction between population-based and harm reduction measures is often unclear. Some harm reduction measures involve reducing alcohol consumption. For example, server intervention programs entail the cessation of service to intoxicated patrons and impaired driving countermeasures can reduce overall alcohol consumption. Similarly, effective population-based measures can reduce the risk of harm in specific drinking situations by reducing overall levels of drinking.

Figure 1: Key aspects of population-based approaches versus harm reduction measures and evidence favouring increased focus on the latter.

Key Aspect	Population-based approaches	Harm reduction approaches	Evidence favouring focus on harm reduction
Focus of intervention	Level of drinking	High-risk drinking patterns	Relatively high impact of drinking patterns on problem indicators
Major type of problems addressed	Dependence and chronic disease	Acute consequences	Relatively high proportion of alcohol-related death and illness attributable to acute consequences
Impact on moderate drinkers	Considerable and intended	Incidental and not intended	Health benefits of drinking are significant

talking about evidence that would lead to the adoption of one approach over the other, but rather evidence that indicates where the balance of effort should be placed.

Figure 1 shows three key aspects where population-based strategies differ from harm reduction approaches: the focus of interventions, the major types of problems addressed, and the impacts on non-problem drinkers. First, whereas population-based approaches target the overall level of drinking, harm reduction measures generally aim to reduce drinking to the point of intoxication or drinking in conjunction with activities requiring care and skill—without necessarily reducing the extent of drinking itself. Therefore, it is important to consider the relative impact of drinking *levels* versus drinking *patterns* on alcohol problems when deciding on an appropriate balance between population-based and harm reduction strategies.

By analyzing national survey data from Australia,¹⁰ Canada¹¹ and the United States,¹² we learn that it may be more efficient to focus on heavy drinking occasions than on individual levels of overall alcohol consumption. In all of these analyses, the number of heavy drinking occasions (five drinks or more on a single occasion) was a better predictor of drinking problems than the level of overall consumption.

*Indeed, the likelihood of experiencing an acute drinking problem was greater for a low- or moderate-level drinker who occasionally drinks to excess than for a high-level consumer who rarely or never drinks excessively.*¹⁰

Heavy drinkers may experience fewer problems because of their accumulated physical tolerance for alcohol or because of their tendency to develop social supports and other mechanisms to minimize the adverse consequences of their drinking. Over time, of course, high-volume drinking will greatly increase the risk of chronic health consequences such as alcohol dependence or cirrhosis.^{2,3,8,11}

Nonetheless, for many acute problems such as impaired driving, alcohol-related family dysfunction or employment difficulties, relatively low-level drinkers who occasionally drink too much represent a substantial concern.

As noted in Figure 1, the second key aspect of the empirical evidence that can help determine the balance between harm reduction and population-based approaches concerns the extent to which chronic versus acute conditions contribute to overall levels of alcohol-related problems. Population-based approaches have a greater impact on chronic conditions while harm reduction measures are designed to reduce acute problems arising from drinking.

Only a decade ago, it was thought that approximately 80% of alcohol-related deaths in Canada were due to chronic disease.¹³ More recent estimates using improved methodology now indicate lower rates of chronic disease attributed to alcohol misuse and a correspondingly higher proportion of alcohol-related deaths resulting from acute causes, particularly accidents and suicides.⁶ Acute causes account for half of all alcohol-related deaths and because the victims are often relatively young, they also account for more than two-thirds of years of potential life lost due to alcohol misuse.

Figure 1 also shows a third type of evidence to inform decisions about the use of population-based versus harm reduction strategies. This evidence points to the beneficial effects of moderate drinking, which are not accounted for in population-based approaches aimed at reducing overall alcohol consumption, and which may undermine the net effectiveness of these approaches.

An accumulation of evidence over the past two decades indicates that low-level alcohol consumption confers significant cardiovascular benefits on middle-aged and older adults. Studies in Australia,⁸ New Zealand,¹⁴ Canada⁶ and Finland¹⁵ all found that moderate alcohol use prevented a significant number of deaths. Indeed, in

Australia, New Zealand and Canada, it was found that alcohol actually prevented more deaths than it caused. The bad news is that there are many more hospitalizations caused by alcohol misuse than avoided by moderate use, and there are also more years of life lost due to alcohol than years of life saved. Nonetheless, the finding that alcohol prevents more deaths than it causes calls for a shift in attention from population-based approaches to harm reduction measures that have less impact on low-level drinking.

Conclusions and implications for Canada

Three of the most significant findings to emerge from the study of alcohol use over the past two decades have been as follows:

1. Drinking patterns play a major role in determining levels of alcohol problems.
2. Acute consequences of alcohol consumption contribute much more to death and illness than previously thought.
3. There are significant health benefits from moderate alcohol consumption.

Each of these three major findings supports the adoption of a greater focus on harm reduction strategies to prevent alcohol problems. Harm reduction measures focus on high-risk drinking patterns rather than on level of alcohol consumption. They have their greatest impact on levels of acute problems such as impaired driving and alcohol-related violence rather than chronic disease. And harm reduction measures are less likely to inadvertently reduce the health benefits of moderate drinking.

The balance of evidence indicates that the most efficient approach to preventing alcohol problems would be to maintain reasonable controls over alcohol availability while increasing harm reduction measures to reduce the adverse consequences of excessive drinking in specific situations. Reasonable controls over the availability of alcohol can still be supported on the basis of preventing problems and alcohol taxation can be justified on the grounds of cost recovery.

Nonetheless, with the emergence of new evidence concerning the importance of drinking patterns, the acute consequences of drinking and the cardiovascular benefits of drinking, it is likely that policies aimed at preventing alcohol problems will increasingly focus on reducing the harmful consequences of alcohol use rather than on simply controlling overall levels of consumption within the Canadian population. ■

At a glance: prevention strategies compared

- Population-based approaches such as taxation and controls over alcohol availability are relatively easy to implement, they produce significant government revenue and there is reasonably good evidence that they can reduce levels of alcohol problems.
- Harm reduction focuses on lowering the risk and severity of adverse consequences arising from drinking without necessarily reducing consumption. The key message in population-based approaches is “*Drinking less is better*”; the key message in harm reduction is “*Avoid problems when you drink.*”
- The number of lives saved by moderate alcohol use exceeds the number of deaths caused by alcohol misuse in Canada. The existence of significant health benefits from low-level drinking may undermine the net effectiveness of population-based strategies aimed at reducing overall alcohol consumption.
- Reasonable controls over the availability of alcohol can still be supported on the basis of preventing problems, and alcohol taxation can be justified on the grounds of cost recovery. However, new evidence supports an increased focus on reducing the harmful consequences of alcohol use rather than simply controlling overall consumption.

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Mike, a homeless alcoholic, spends a bitterly cold winter night in the city's "wet hostel," where he is allowed to consume the alcohol he has brought along. He will continue drinking throughout the night, but he is unlikely to become hopelessly drunk and risk freezing to death.

Gilles is a heavy tobacco smoker. He and his doctor develop a plan to gradually contain his smoking through a strategy of "controlled smoking" supported by nicotine patches. This way, Gilles will not give up his nicotine intake, yet will reduce his exposure to dangerous tobacco smoke.

Graham is one of dozens of injection drug users who regularly inject street heroin or cocaine in the local supervised injection facility, observed by medical staff and protected from the stressors of street drug use. They continue to use illicit drugs, yet are less likely to share needles—risking the transmission of infectious disease—or to die of an overdose.

Harm reduction

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Harm reduction in Canada

The three scenarios on page 10 provide examples of substance use interventions currently in use in Canada—all controversial, all aiming to increase users' health, and all illustrating the concept of “harm reduction” in practice. Over the past 20 years, harm reduction has played an increasingly prominent and explicit role in substance use policy and interventions in Canada. Although this concept has struggled with both conceptual clarity and ideological opposition since its inception, its fundamental significance is that it departs from the dominant approach by which the severity of substance use problems is defined by the extent of use within a population and the amount consumed. This definition has a corollary that says abstinence must be the principal goal of substance use policy.

Although the principles of harm reduction reach back many decades, a symbolic re-invention of harm reduction practice took place during the early phase of the HIV/AIDS epidemic among injection drug users (IDUs) in the 1980s. This was a time when health workers started providing clean syringes to IDUs—rather than enforcing abstinence from drug use—in order to halt the spread of infectious disease. Since then, harm reduction models have been established for all areas of substance use (see below), but not without difficulty or opposition.

Critics of harm reduction have charged that the concept of “harm” is not objectively defined, and therefore does not provide a strong empirical basis for the implementation and evaluation of harm reduction measures.¹ Further, it has been suggested that harm reduction approaches *appear* to sanction or even enable substance use, and therefore may facilitate the “legalization” of illicit substances, or may send “the wrong message.”² Finally, an often-cited argument is that harm reduction measures contravene international drug control treaties, although such criticisms have been rejected both in theory and practice.³ For each of the main substantive substance use areas, there are distinct harm reduction debates and initiatives; a few key ones are summarized briefly below.

Alcohol consumption: Alcohol is widely accepted and enjoyed socially, and recent evidence has determined that moderate use of alcohol can have actual health benefits for certain users.* Therefore, abstinence is not a necessary or realistic principal policy goal. Harm reduction policy applied to alcohol focuses instead on high-risk populations and behaviours, and on the consequences of drinking as influenced by social and environmental factors.

For example, alcohol-related harms often result when drinking is combined with risky activities; environmental factors can be manipulated to effectively target those situations.⁴ Alcohol-related automobile accidents, for example, are most effectively addressed by enforcement of drinking and driving laws. Similarly “server intervention” or changes to the design of drinking establishments to reduce alcohol-related violence can prevent situation-specific harms.⁵

Direct negative health consequences from drinking are most effectively reduced by balanced, moderate drinking patterns—primarily the avoidance of “binge” drinking.⁶ In practice, this knowledge calls for targeted interventions in key risk populations (for example, college students).⁷ While “controlled drinking” is often dismissed as a potential intervention for dependent drinkers, controlled alcohol consumption has been accepted in certain populations and contexts as a harm reduction practice^{8,9} One of our opening scenarios describes such a situation—“wet hostels” that permit drinking.

Tobacco smoking: Many have argued that harm reduction cannot be applied to tobacco smoking since smoking even small quantities of tobacco is associated with significant health risks.¹⁰ However, changing realities have led to a new focus on harm reduction and smoking.^{11,12,13} In most Western countries smoking is increasingly concentrated in a population of “hard-core” smokers who often have symptoms of depression¹⁴ and are economically disadvantaged.¹⁵ Such people may not be able to quit, but may be good candidates for harm reduction measures that lower the risks associated with their smoking. As well, harm reduction may offer less punitive alternatives to the stigmatization of smokers in an increasingly harsh “anti-smoking” climate.¹⁶

Much attention has been given to alternative or “safer” nicotine delivery models that eliminate the highly carcinogenic effects of smoking by means of “cleaner” forms of nicotine intake.¹⁷ These range from various culture-specific forms of chewed tobacco products to nicotine gum or patches. Some have pointed out that “controlled” or “reduced” smoking for certain users would at least reduce exposure to harmful tobacco smoke and its consequences.^{18,19} A recent key target of harm reduction measures in smoking has also become the protection of non-smokers from second-hand smoke in workplaces, restaurants, and even homes and cars.²⁰

Illicit drug use: The harm reduction approach has perhaps been most controversial and important in the field of illicit drugs. An accumulation of evidence over the past couple of decades points to the substantial risks of death and disease associated with illicit drug use and specifically underlines the crucial role that behavioural, social and environmental factors play in aggravating or mitigating those risks.²¹ Various harm reduction measures have been used to pragmatically reduce drug-related risks, including needle exchange programs that are known to reduce transmission risks for both HIV and hepatitis B and C among IDUs.²² Supervised injection facilities—including many in Europe and Australia, and one pilot site in Vancouver that opened in 2003—aim to reduce overdose, infectious disease and public order problems among IDUs by offering a protected and medically supervised drug injecting environment.²³

Recent research has pointed to an increasing prevalence of “crack” smoking and the fact that sharing of crack pipes can transmit infectious diseases. This has led to a call for risk-reducing interventions, including “safer crack kits” that consist of safe, non-toxic crack pipes, screens, other tools, and information on safer crack use. So far policy support has been lacking on this issue.²⁴ Distinct harm reduction measures are also required for drug users in correctional institutions. Canadian and international research has highlighted the fact that this special risk population has among the highest prevalence of substance abuse problems in general, and injection drug use in particular.²⁵ Despite this highly elevated risk, correctional authorities in Canada have so far resisted offering needle exchange or other key programs in prisons.^{26,27}

* See the previous chapter entitled “New Directions in Alcohol Policy” for a more detailed discussion.

At a glance: key principles of harm reduction^{37,38,39}

- Harm reduction focuses attention on the consequences of substance use, not on use itself. This inevitably involves deciding which harms need to be addressed and in what order of priority. These decisions must be made in an environment of accountability based on what we know about individual patient welfare, public health and the severity of the problem.
- Some substance users cannot or will not stop use in the short-term. Harm reduction approaches focus on the pragmatic and effective minimization of use-related harms.
- Harms related to substance use are not caused by user behaviour in isolation, but are influenced by distinct social and environmental factors. Meaningful and realistic efforts must be made to actively understand and consider this social and environmental context in order to reduce harms.
- Education, knowledge and informed decision-making by substance users and potential users are key pillars of the harm reduction approach.
- Misinformed or ineffective interventions or policy can be as important as user behaviour and the contexts of use as the source of substance-related harms, and therefore must also be targeted for “harm reduction” interventions.

Harm reduction is also relevant in more ordinary contexts of drug use currently considered illegal—for example, cannabis or ecstasy use—as this use frequently occurs with young people. Research has indicated that frequent and long-term use, or the presence of unknown ingredients in substances, is associated with increased health risks for users.^{28,29} Harm reduction programs aim to lower these risks through the use of preventive education that focuses on specific risk behaviours. Similarly, the interaction of drug use and other activities—such as drug use and driving³⁰—can produce risks similar to those associated with alcohol and is therefore a behaviour that requires targeted interventions.

Conclusions and implications for Canada

Currently, harm reduction initiatives in Canada and elsewhere are strongly influenced by politics and ideology. This makes it essential for harm reduction to be consistently aligned with “evidence-based” standards and measures, both conceptually and in practice, so that initiatives can be clearly implemented and evaluated. At the same time, there are instances where policy makers and programmers have ignored the evidence of beneficial harm reduction interventions.^{31,32,33} This calls for increased accountability from those who make policy and program decisions.

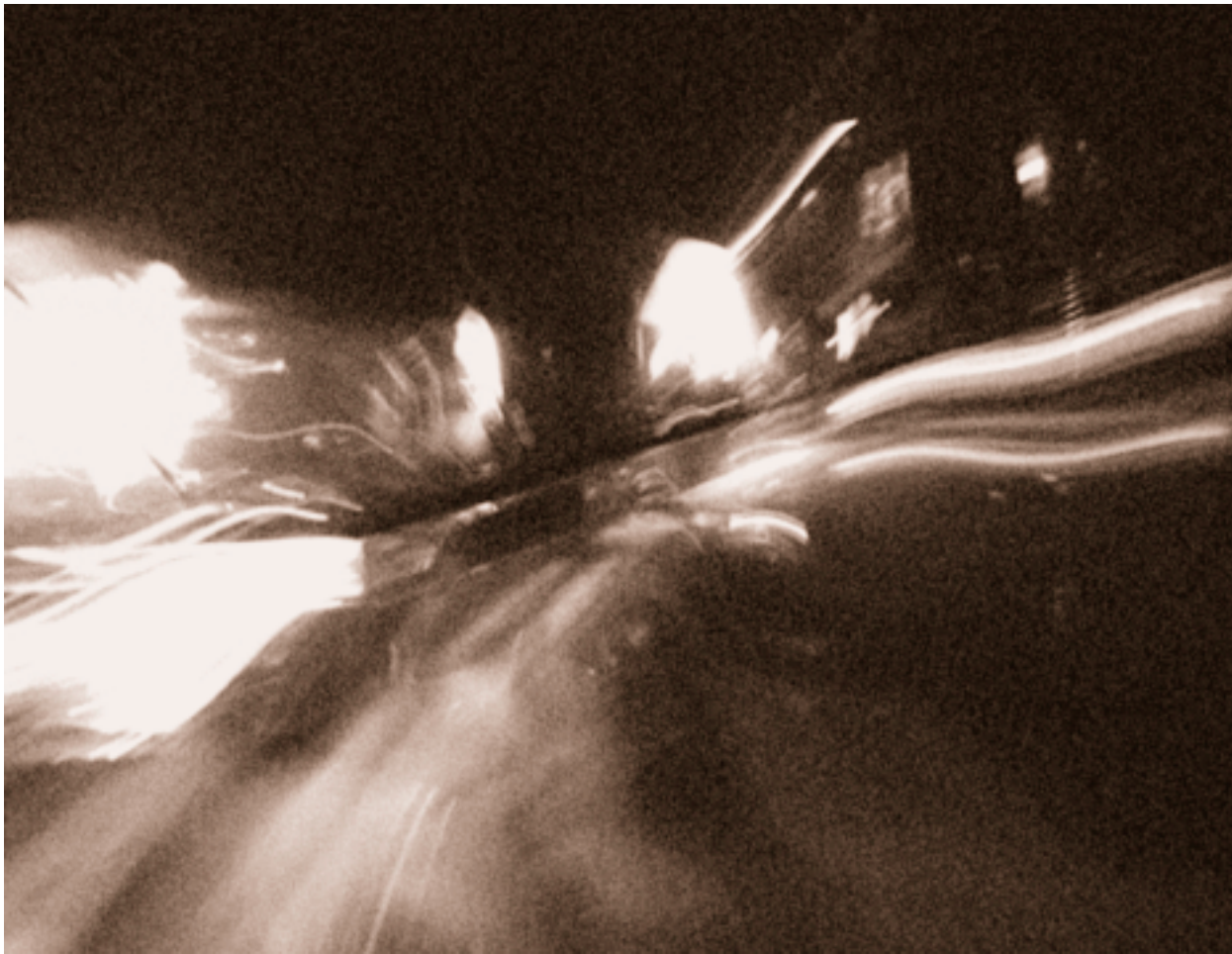
Even when harm reduction philosophy is enshrined in pre-eminent policy frameworks such as Canada’s Drug Strategy,³⁴ its value is limited if it is forced to operate in a wider context that fundamentally contradicts harm reduction goals. For example, the criminalization of illicit drug users under current drug control legislation in Canada stands in stark opposition to the objectives of public health, and, in fact, *contributes* to many of the drug-related problems that harm reduction tries to alleviate. For example, the prevention of infectious disease transmission or overdose risk among IDUs is strongly hampered by the criminalization of users.³⁵

At the same time, experience elsewhere, including Western European and Australia, has shown that harm reduction measures work best when they are part of a multi-pillar policy mix that includes prevention, treatment and enforcement.³⁶ Therefore, the task for policy makers in Canada should be to support the scientific evaluation of new harm reduction measures and to ensure implementation of such measures when the evidence clearly points to their effectiveness. Their job must also include responsibility for guaranteeing that the larger socio-political environment in Canada allows for coherent substance use policy in which harm reduction has an appropriate and consistent place. ■

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Mary, age 32, and a male friend are driving fast on the outskirts of town at night after a party where she has consumed a large quantity of methamphetamine (“Ice”). The drug has seriously compromised her coordination and ability to concentrate. As she approaches an intersection, she tries to run a yellow light. Her car broadsides a mini-van in which a family of four are returning from an evening with friends. The husband, who is driving, and an eight-year-old son are killed instantly; his wife and three-year old daughter sustain minor injuries. Mary’s nose and sternum are broken and several of her internal organs are severely bruised after hitting the steering wheel. Like Mary, her passenger is not wearing a seatbelt and suffers massive head injuries after hitting the windshield. He is now in a coma.

Drugs and driving

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Drugs and driving in Canada

The situation presented on page 16 is not an unusual occurrence on Canadian roadways—but neither is it commonplace. Road safety professionals have long been aware of the potential problems associated with operating a motor vehicle after using certain types of drugs and medications. But in many ways, the public has only recently discovered the problem—in some cases, tragically.

Following two decades of progress on the alcohol-crash problem, safety advocates, policy makers, legislators, and the police have begun to express greater concern about the use of drugs by drivers. Although the misuse of drugs has long been considered a major social problem, the acute and devastating consequences of driving while under the influence of drugs has only recently come to the forefront of public attention. Unfortunately, research on drugs and driving has lagged considerably behind research on alcohol and driving. Consequently, there remain far more questions than answers. This chapter examines what is known about the drugs and driving problem—and what is not known—and explores potential ways to address this issue.

Background

In many respects, the issue of drugs and driving is more complex than drinking and driving. The types of drugs with the potential to impair driving can include illegal substances, prescription medications, and some over-the-counter remedies. The pharmacokinetics (that is, how drugs are absorbed, distributed, metabolized, and eliminated) and pharmacodynamics (how drugs produce their effects) of these substances can be considerably more complicated than for alcohol.

For example, whereas the effective concentration of alcohol in the body can be easily and reliably measured from breath samples, the presence and quantity of other types of drugs must be determined from samples of blood, urine, or saliva. Furthermore, metabolites of some commonly used drugs—including marijuana—can be detected in urine samples days or even weeks after use. The relevance of the drug levels obtained from such samples for determining the extent of driver impairment and the cause of a collision is questionable.

Whereas the reductions in performance associated with increasing levels of alcohol are well known, the effects of other drugs may involve different skills.

Research on drugs and driving

A complete understanding of drugs and driving requires evidence from two complementary research approaches—experimental (laboratory) research and epidemiological research.¹ The role of experimentation is to document the nature and extent of the psychomotor and cognitive impairment produced by specific dosages of particular drugs. Epidemiological research documents the extent of drug use in various populations of road users to provide an indication of the magnitude of the drug-driving problem, to determine which drugs are risk factors for road safety, and to quantify the risk.

Do drugs affect the ability to drive safely? Research studies using a wide variety of drugs have demonstrated impairment of a number of psychomotor and cognitive tasks that relate to the safe operation of a motor vehicle. In general, drugs with a sedative/hypnotic effect (for example, narcotics, benzodiazepines and other minor tranquillizers), barbiturates, as well as some antihistamines and anti-depressants have high potential to impair driving performance. In low doses, stimulants are less likely to cause impairment and may improve certain aspects of performance, such as reaction time; higher doses are associated with serious impairment of driving performance.²

Caution is warranted in interpreting the results of experimental studies. Whereas the reductions in performance associated with increasing levels of alcohol are well known (for example, tracking deficits, longer choice reaction times, longer movement times, ataxia or loss of body control), the effects of other drugs may involve different skills. For example, some studies of closed-course driving have demonstrated that drivers who had ingested cannabis drove more slowly, avoided passing, and reduced other risk-taking behaviours.³

While some might argue that these changes in performance associated with cannabis suggest “safer” driving performance, other studies have demonstrated deficits in other aspects of performance following marijuana use (for example, slower information processing, increased reaction time, poorer tracking) that have a negative impact on the ability to operate a vehicle safely.⁴ So, it is important to recognize that the types of “impairments” produced by some drugs may differ from those typically associated with alcohol.

In addition, the use of drugs in combination with alcohol or other drugs can also produce effects greater than either one alone.⁵ In some cases, the mixing of medications with alcohol may be unintentional and a result of ignorance; in others, the combination is intentional. In both cases, the results can be an unexpected increase in the degree of impairment.

How many crashes involve drugs? In one of the first epidemiological studies of drugs and driving in Canada, researchers conducted toxicological tests on blood samples collected from 401 fatally injured drivers in Ontario.⁶ Drugs were detected in 26% of cases; alcohol was found in 57%. In 54% of drug-positive cases, alcohol was also present. The most commonly detected drugs were cannabis (16% of all cases) and minor tranquillizers (benzodiazepines, 6%).

More recent studies report comparable results. A study of 227 fatally injured drivers in British Columbia found drugs in 20% of cases.⁷ Cannabis (18%), benzodiazepines (5%) and cocaine (4%) were the most commonly detected drugs. Alcohol was also found in more than half (55%) of drug-positive cases.

A major case-control study conducted in Quebec found drugs in 32% of urine samples collected from a sample of fatally injured drivers. Once again, cannabis (20%), benzodiazepines (10%) and cocaine (8%) were the most commonly detected drugs. In 47% of drug-positive cases, alcohol was also present.^{8,9}

A study of seriously injured drivers admitted to a regional trauma unit in Toronto found that 41% of drivers were positive for various drugs.¹⁰ Forty percent of drug-positive cases also tested positive for alcohol. The most commonly found drugs were cannabis (14% of all cases), benzodiazepines (12%), and cocaine (5%).

Together, these findings indicate that drugs are not uncommon among fatally and seriously injured drivers. Interpreting these findings, however, is complicated by the fact that the presence of a drug is not sufficient indication that it was causally related to the crash. Further epidemiological studies specifically designed to assess the extent of collision risk as a result of drug use are necessary.^{11,12,13,14}

How many people drive after using drugs? A recent telephone survey found that about 18% of Canadian drivers reported driving

within two hours of taking some type of drug or medication—including over-the-counter medicine, prescriptions, and illegal drugs—that could potentially affect their ability to operate a vehicle safely. Driving after using marijuana (1.5%) and other illegal drugs (0.9%) was relatively rare.¹⁵

Similarly, an Ontario study found that 1.9% of drivers in the province had driven within an hour of smoking cannabis at least once in the previous 12 months.¹⁶ Driving after using marijuana was considerably more common among Ontario high school students: 19.7% of drivers admitted driving within one hour of using marijuana or hashish in the past year.¹⁷

Another approach to determining the extent of drug use among drivers involves obtaining fluid samples from drivers at the side of the road. This roadside survey technique is commonly used to collect information about alcohol use from breath samples provided by drivers. In a unique study conducted in Quebec,¹⁸ 11.8% of drivers who provided urine samples tested positive for drugs.* Cannabis was the most commonly found substance (7%) followed by benzodiazepines (3.6%), opiates (1.2%) and cocaine (1.1%). Only 6% of drug-positive cases also tested positive for alcohol.

Who drives after using drugs? Males aged 16 to 25 who have never been married are most likely to drive after using drugs.^{19, 20} The issue, however, is more complex than simple demographics reveal. The use of illegal drugs, while not uncommon, is largely confined to a relatively small portion of the population. On the other hand, prescription medications and over-the-counter remedies are widely available and commonly used to treat a variety of ailments. Older people tend to use more medications than younger people and this may place them at higher risk of driving-related problems.

Understanding the characteristics of the various sub-populations who drive under the influence of drugs is essential to developing effective countermeasure programs. For example, prevention measures targeted at young marijuana users are likely to be very different from those directed at users of prescription tranquilizers.

At a glance: the challenge of dealing with drugs and driving

- The relationship between drug use and driving is more complex than between alcohol and driving because of the variety of illicit, prescription, and over-the-counter drugs available and the wide range of signs and symptoms of impaired thinking and behaviour. There is no equivalent tool such as the alcohol breathalyser for identifying drug use.
- There is evidence from toxicological blood tests of fatally injured drivers that drugs and combinations of drugs and alcohol are detected in a significant number of cases, but relatively little is known about the true nature and magnitude of the problem of drugs and driving in Canada.

* This study involved the use of portable toilets to facilitate the collection of roadside urine samples. This methodology is impractical for use as part of an enforcement program.

Those who use illegal drugs are most likely a select population that differs from the general population along a variety of social and behavioural lines that go beyond simply age and sex. A different approach may be needed for this group.

Conclusions and implications for Canada

Our understanding of the drugs and driving problem is still in its infancy. The most urgent need is for fundamental epidemiologic research in Canada to determine the nature and magnitude of the problem—that is, how many crashes involve a driver who is impaired by drug use, which drugs pose the greatest risk, and who are the high-risk groups. The results of this research will not only help guide the development of countermeasure programs and policies, but will also help determine the scope of the effort necessary to deal effectively with the issue.

Early indications suggest that the drugs and driving issue is an important one requiring an extensive investment of time, energy and resources to understand its nature, magnitude and dynamics. Only then can programs and policies be developed to deal with it effectively. But the development of programs and policies to deal with drugs and driving should not be undertaken at the expense of current countermeasures directed at drinking and driving. Such

a misguided approach could prove to be a setback to some of the progress achieved to date on the alcohol and driving problem.

Although there are some general similarities between drinking and driving and drug use and driving, it is important to understand that the issues are different. In this context, we cannot simply assume that the same techniques, policies, procedures and countermeasures that were developed for the drinking and driving problem can be readily adapted or transferred to deal with drugs and driving. In many respects, drugs and driving is a more complex issue.

For example, whereas alcohol is a legal substance and its use permeates many aspects of society, most of the drugs of concern are either illegal to possess or restricted to those who require them for therapeutic purposes. The exception is over-the-counter medications—such as certain antihistamines—which are widely available to treat specific ailments. Each of these three types of drugs—illegal drugs, prescription medications, and over-the-counter remedies—represents a distinct area within the broad issue of drugs and driving. Each may involve a somewhat different population and the extent of overlap among the various groups is not known. As a result, several different strategies may be required, each with a unique perspective on prevention, enforcement, sanctions, and rehabilitation. ■

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After undergoing a standard medical check-up, including some basic questions about his alcohol and drug use, Jean, aged 43, is shocked when his doctor suggests he has a drinking problem. Jean was a moderate drinker for most of his life, but in his 40s has become a steady drinker who admits enjoying three or four cocktails every day. Jean has noticed that his wife has been nagging him about his drinking lately and this has resulted in some heated arguments. His doctor tells him he must stop all drinking, and refers him to Alcoholics Anonymous. He protests, but his doctor and his wife (who has never drunk) are insistent. They both agree that Jean is denying his problem—a sure sign that he is an “alcoholic.” He digs in his heels and refuses to go.

Availability and use of evidence-based treatment

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Evidence-based treatment in Canada

A visit to the family doctor or other health professional is a good opportunity for early detection and timely intervention for an alcohol or other drug use problem (AOD). The earlier AOD is detected, the fewer the consequences and the more effective the intervention. Unfortunately, many health professionals feel ill-prepared to undertake screening and intervention, or perceive that dealing with AOD is unnecessary, troublesome or time-consuming.¹ Indeed, the general public also has entrenched notions about AOD that do not always reflect the most recent scientific developments in the area.

AOD is not a single entity, but encompasses a broad range of substances, patterns of use, and different degrees of problem severity. As well, AOD is often accompanied by other health and psychiatric problems, which further complicate detection, assessment and treatment. Finally, AOD can affect people from all walks of life and at any time. Most people understandably feel stigmatized when terms such as “alcoholic” or “drug addict” are applied to them. It seems obvious that one treatment approach cannot be adequate for all possible forms of AOD, or all of those affected.

This chapter briefly summarizes approaches to the treatment of AOD that scientific evidence tells us are the most effective. After reviewing these approaches, we will return to our case study to explore a revised scenario. The challenges of providing evidence-based treatment to the individuals who can derive the greatest benefit from it are also discussed.

Psychosocial approaches

Cognitive-behavioural treatment (CBT). There is reasonably good empirical support for the effectiveness of a number of cognitive-behavioural treatment (CBT) interventions in addressing specific AOD problems.^{2,3,4} Typically, the highly structured and efficient nature of CBT interventions and their reliance on manuals for guidance ensure treatment quality. Interventions are usually delivered in group settings and can be provided as stand-alone treatments, or integrated into a more comprehensive overall treatment infrastructure. Following is a brief overview of the conceptual and technical aspects of the “cognitive”

and “behavioural” components of this model to demonstrate the practical application of the overall approach.

Cognitive component. Cognitive therapy is based on the principle that destructive behaviours, emotions, and thoughts can be modified or altered by learning new ways of thinking about oneself and the world. The theory is that thoughts and attitudes create moods and not events themselves: emotions are the way we interpret events. Some common cognitive techniques include problem solving, relaxation therapy, showing by example (modelling), changing distorted ways of thinking, challenging incorrect assumptions, and replacing destructive thoughts with productive thinking.

Behavioural component. Behaviour therapy is based on the principle that you can replace undesirable behaviours by teaching clients new, more desirable ones. Behaviour therapy focuses on the client’s responsibility for change and the development of an effective, working therapeutic relationship. Some common behavioural techniques are social skills training, modelling, relaxation techniques, and self-management methods such as rehearsal of new coping strategies.⁵

When the cognitive and behavioural components are blended into a single approach, treatment sessions are typically offered in a group setting, led by a treatment provider who models the acquisition of thinking and behavioural skills to the participants. Group members are given the opportunity to learn new skills by engaging in interactive exercises, discussion, individual and group work, case studies, and role plays. Post-treatment maintenance sessions, ongoing monitoring and aftercare help participants with continued behaviour change and new challenges. Emphasis in aftercare is placed on assisting participants to learn to cope with high-risk situations such as negative emotional states or peer pressure through structured relapse prevention.

Structured relapse prevention (SRP) is a cognitive-behavioural treatment that involves about 10-12 individual or group sessions followed by maintenance sessions.^{6,7} Program participants are taught

to recognize and anticipate their high-risk situations for substance use (for example, when out socializing or feeling lonely) and to implement effective coping strategies to either avoid a slip or relapse,* or to minimize its impact. A recent review⁸ of the research on relapse prevention suggests that SRP is most effective with alcohol problems, when several substances are being abused, and when offered in conjunction with pharmacotherapy. Other behaviour skills training approaches—often part of the treatments described above—have been effective in treating AOD.

Brief intervention. In Canada, several recent studies have shown that treatment of shorter duration is as effective as that of longer duration. This is consistent with a shift in public health policy away from the traditional belief that everyone with a substance abuse problem needs extensive treatment toward a view of alcohol and drug problems as points along a risk continuum ranging from lower to higher severity. Placing individuals along such a continuum during assessment allows for a cost-effective approach to treatment that reserves the most expensive treatment services for those with the most severe problems.⁹

Motivational interviewing¹⁰ is a brief (one to four sessions) clinical method that addresses motivational struggles in behaviour change. The spirit of MI is characterized by a counselling style in which a partnership is established between the client and counsellor that honours the client’s perspective and strengths. Counselling is client-centred, empathetic and built on reflective listening that conveys the counsellor’s acceptance of the client. The client is viewed as possessing the resources and motivation for change and the counsellor’s task is to bring out that motivation in the client. Change comes about by focusing on the differences between current behaviour and important goals and values.

Research supports MI as a cost-effective intervention for drinkers and drug users. It has been shown to provide benefits for alcohol and drug problems that are consistently better than no treatment or placebo, and that compare well with much longer, more costly treatment.¹¹

* A “slip” is differentiated from a “relapse” because the slip refers to the initial use of the substance immediately following a period of abstinence while the relapse refers to returning to the previous frequency and quantity of use. Different strategies are employed to cope with each situation.

Motivational interviewing has been shown to provide benefits for alcohol and drug problems that are consistently better than no treatment or placebo, and that compare well with much longer, more costly treatment.

Community reinforcement approach (CRA)¹² acknowledges the role of a variety of social and environmental events and influences on AOD, and focuses on the development of positive alternative resources in the social environment. CRA puts emphasis on changing important aspects of life, such as work, recreation, and family involvement to promote a lifestyle that is more rewarding than substance abuse. A specific CRA strategy that has been thoroughly researched involves a voucher-based incentive program to promote abstinence.¹³ An individual who has submitted substance-free urine samples receives vouchers that can be exchanged for retail items or services. Research¹⁴ suggests that CRA can reduce drinking (especially in combination with disulfiram, or Antabuse, a drug that produces an unpleasant reaction to alcohol) and is particularly effective for treating cocaine abuse.

Behavioural marital therapy (BMT)¹⁵ offers a highly structured series of 15-20 sessions for couples and is aimed at reducing substance abuse directly and through restructuring the dysfunctional couple interactions that are thought to reinforce continued AOD. BMT attempts to engage the family's support in the change process, and to alter couple and family interactions to reinforce sustained abstinence. There is consistent evidence for the effectiveness for BMT compared with other family approaches, at least for couples in committed relationships.¹⁶ Improvements in other areas of couple interactions, such as domestic violence, have also been documented.

Self-help and Minnesota model programs. There are a number of very popular treatment approaches that, while not possessing the same degree of empirical support for their effectiveness as the treatments described above, have nevertheless been associated with positive outcomes. Attendance in self-help support services such as Alcoholics Anonymous (AA), Narcotics Anonymous (NA), and Cocaine Anonymous (CA) is associated with benefits for many individuals, although how it works and the relative effectiveness of these services compared with other types of treatment has yet to be clarified.¹⁷

AA principles are at the core of a 21-28 day residential treatment regime known as the Minnesota model that until recently was the dominant approach to substance abuse treatment. Many publicly funded and private rehabilitation centres in North America use this model to guide clients through AA's 12-step program and to

encourage them to make a lifelong commitment to AA and complete abstinence following treatment. Despite its popularity, few controlled trials have been conducted to determine the effectiveness of the Minnesota model.¹⁸

Psychopharmacological treatment

Until recently, pharmacological treatments for AOD were mostly used to treat intoxication and withdrawal, or, as in the case of disulfiram (Antabuse), an agent that induces an unpleasant reaction to alcohol use, to encourage short-term abstinence. However, evidence suggests that disulfiram may be no better than placebo in maintaining abstinence and there are now pharmacological treatments for AOD with more compelling empirical support. One of these is naltrexone (ReVia), which was approved by the U.S. Food and Drug Administration (FDA) in 1995 and is now available in Canada. This is an opioid "antagonist" that reduces the rewarding effects of alcohol consumption such as euphoria. Clinical trials show that naltrexone significantly delays relapse and increases abstinence,¹⁹ especially when combined with cognitive-behavioural therapy. For opioid drugs such as heroin, naltrexone may reduce the reinforcement value of consumption, but it is not as effective in the long term because of poor patient compliance.

Calcium acetyl homotaurinate (Acamprosate, Campral) has been used in Europe for 15 years and was recently approved for use in the U.S. This treatment appears to be particularly useful in promoting treatment completion, extending the time to a first drink or relapse, and achieving a higher abstinence rate than placebo. Methadone maintenance, as a substitute for heroin addiction, has been found to reduce intravenous drug use, lower risk of HIV infection, improve social and occupational functioning, and decrease criminal activity and mortality.²⁰ Buprenorphine, another opiate substitute—usually combined with naloxone (Narcan), a narcotic antagonist—has been useful in the treatment of opioid drug abuse, and can be administered in a doctor's office.²¹

"Research-to-practice" gap

Since 1999, Health Canada has produced a series of in-depth evidence-based reports on alcohol and drug treatment. These publications explore best practice treatment models as applied to a wide range of treatment groups, including the general population, women, seniors, and youth, as well as specialized populations such

When individuals play an active role in planning their own treatment, their motivation for active participation—and their likelihood of being helped—is increased.

as individuals with substance abuse and mental health problems (concurrent disorders), impaired drivers, and people with severe opioid dependences. Health Canada has followed up these reports with workshops and consultations in the field to promote the adoption of research-based treatment services.

Many health disciplines are plagued by a “research-practice gap” where the treatments being provided do not necessarily represent the best practices available. This gap is particularly evident in the alcohol and drug field where the workforce is generally regarded as being underdeveloped compared with other health care sectors, such as mental health.²² In terms of professional development, the Canadian addiction workforce is relatively weak and is not represented by a national addiction organization or a national accreditation or certification system.

Some reasons for the gap between knowledge production and transfer can be identified. Canada currently has no mechanism comparable to the Addiction Technology Transfer Centers in the United States, which were established by the Center for Substance Abuse Treatment—part of the Substance Abuse and Mental Health Services Administration (SAMHSA)—specifically to improve knowledge transfer in the field.

At the clinical level, evidence-based treatments tend to be highly structured, and many clinicians are reluctant to relinquish their professional freedom to provide treatment as they feel fit.²³ New treatments must also compete with entrenched, but scientifically unsupported beliefs. For example, current AOD treatment recommendations based on empirical evidence have trouble gaining ground against the commonly held fiction that all AOD clients require intensive care and a lifelong commitment to abstinence. As a result, brief intervention is neglected and over-treatment is common.²⁴

Despite the established benefits of methadone maintenance for heroin addiction, access to this form of treatment is limited by a small number of programs and strict admission criteria.²⁵ Naltrexone, although available in the U.S. and Canada for some time, is hardly used and many clinicians are unaware of the strong evidence for its effectiveness in preventing relapse. Unlike antidepressants, naltrexone is not a highly profitable medication and

commercial reasons may help to explain why it isn't used more. Finally, medication that blocks or replaces some of the rewards of substance use may be dismissed as a “crutch.”²⁶

Knowledge transfer, the process that targets dissemination and utilization of innovative, evidence-based practices, is increasingly stressed as an integral part of treatment research and practice for AOD. Finding more effective knowledge transfer strategies is becoming itself a subject of growing research interest. Innovative new approaches to knowledge transfer may enhance the uptake and practice of evidence-based AOD treatment. These approaches include the use of the Internet to educate the public in AOD and to encourage self-screening and change,²⁷ and the development of computer-assisted decision support technology to encourage busy and non-specialist clinicians to engage in screening and brief intervention.²⁸

Case study revisited

If we apply an evidence-based standard to Jean's situation in our opening scenario, we conclude that his drinking behaviour probably falls into a low to moderate problem level and that he is not an “alcoholic” (that is, dependent on alcohol). To determine a valid and reliable measure of his alcohol problem, we recommend asking a nurse or other health professional to quickly administer and score an objective assessment instrument and to share the results with his physician.

The physician would then meet with Jean for 15-20 minutes to offer non-judgmental and objective feedback on his alcohol use behaviour. The feedback session would include a review of the risk factors linked to Jean's drinking pattern compared with an average group of drinkers in his age group. In this clinical setting, individuals are often motivated to change their behaviour when they compare themselves and their problematic drinking with people who drink safely. The physician would invite his patient to interpret his alcohol use patterns and to explore risk factors further.

If Jean acknowledges his risky pattern of use, the physician could explore goal-setting options of drinking within safe limits or abstaining. The responsibility for change is left to Jean. The physician shares a menu of options with Jean for gaining control over his alcohol use and lifestyle. This could include self-help, guided

self-change, or a brief intervention. The session ends with the doctor's summary of Jean's circumstances, his consumption patterns, cost and benefit factors, acknowledgment of strengths and a basic negotiated plan of action.

An empathetic style tends to build therapeutic rapport and client willingness to accept responsibility for behaviour change. We view this approach as superior to the confrontational style described at the outset.

Conclusions and implications for Canada

The AOD treatment field in Canada and elsewhere is evolving from reliance on models with little theoretical and research support toward a range of treatment models based on extensive theory and empirical evidence. Similar advances have also been made in the use of medical treatments for substance abuse. This is important because no single treatment approach has unequivocally shown itself more effective than another for all individuals.

It is also increasingly evident that when individuals play an active role in planning their own treatment, their motivation for active participation—and their likelihood of being helped—is increased. Canada needs a diverse, efficient and evidence-based therapeutic infrastructure that allows the informed AOD treatment consumer to confidently select from a menu of credible alternatives. This is essential to optimize the benefit they derive from their treatment.

Along with developments in effective AOD treatments, methods for detecting and assessing problematic alcohol and drug use patterns have also undergone significant refinement. When coupled with brief intervention approaches, these methods can result in important and cost-effective benefits, particularly in front-line health settings where AOD is often first encountered. Active engagement of various health professions in screening for AOD problems is as relevant for population health as successful screening programs for other common health issues such as smoking. ■

At a glance: closing the research-to-practice gap

- Various alcohol and other drug assessment and treatment models are available in Canada whose effectiveness is supported by theory and empirical evidence.
- Treatments of any kind that are based on theory and supporting evidence and are conducted by specifically trained and adequately supervised therapists using a manual as a guide yield better outcomes than no treatment or nonspecific treatment such as counselling with no theoretical base and poorly defined therapeutic processes and goals.^{29,30}
- Substance abuse problems fall on a continuum of severity and treatment responses should be developed based on the assessed severity of each individual's problem. In general, the most intensive, lengthy, and expensive services should be reserved for those with the most serious, chronic problems. Many people with less severe problems can benefit greatly from brief "low intensity" treatment.
- A "research-to-practice" gap exists in Canada and elsewhere with evidence-based programs continuing to be under-used. Many of the AOD treatment services available to Canadians have not been developed from solid theory and have little or no scientific evidence to support them.
- The Canadian addiction workforce is loosely connected; there is currently no national organization of service providers and no national body responsible for accreditation and certification.
- Increased public and professional awareness and political commitment to addressing AOD are vital to the success and improved quality of the assessment and treatment services available to people in need of help.

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Ned, 33, is single and currently living on social assistance in a men's shelter in the downtown core. He has been using prescription opioids ("pain killers") recreationally about four or five days a week for the past 10 years. Typically, Ned uses prescription drugs such as Percocet, Percodan, MS Contin, and OxyContin, although he also uses Tylenol 3 and methadone depending on what's available on the street and what he can afford. Ned makes a living from small-scale drug dealing, panhandling and occasional thefts. Some of the medication Ned uses was prescribed for his back pain and comes from a doctor in a walk-in clinic. He supplements this supply with drugs from a street dealer who gets them by "doctor shopping"—faking symptoms of chronic pain to obtain multiple prescriptions for pain medication from a number of doctors and various local pharmacies.

Abuse of controlled prescription drugs

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Abuse of controlled prescription drugs in Canada

In Canada, as in many other parts of the world, the problem of prescription drug abuse is not new. Twenty-five years ago, an editorial in the *Canadian Medical Association Journal*¹ pointed out the problem of abuse of narcotic pharmaceuticals and highlighted the need for more knowledge and better control. From an examination of current statistics, it appears the words of the editorialists are more relevant today than they were in 1979.

The Compendium of Pharmaceuticals and Specialties (CPS), published by the Canadian Pharmacists Association, lists hundreds of licit drugs, medications, and pharmaceutical preparations.² This chapter will restrict its focus to the non-medical or recreational use of drugs with *psychotropic* properties; that is, substances governed by the United Nations international conventions on narcotics and psychotropic substances. These include opiate-based drugs for pain relief, tranquilizers such as benzodiazepines, stimulants and amphetamines, and sedatives and barbiturates. In Canada, such “controlled” substances are subject to the Controlled Drugs and Substances Act (CDSA), which divides them into various categories or schedules.³

Extent of prescription drug abuse in Canada

There are no accurate statistics on the number of people in Canada who engage in the non-medical use of prescription drugs or who experience dependence on prescription drugs. Currently, there are no national monitoring systems or comprehensive surveillance mechanisms in place to record and track the extent of non-medical use of prescription drugs. As a result, the extent and nature of prescription drug abuse can only be measured indirectly by analyzing distribution and sales statistics, and year-to-year trends in prescription practices for specific classes of drugs.

These sources tell us that Canadians are among the heaviest consumers of psychotropic medications in the world. For example, in 2002, Canada reported the fourth highest per capita use of prescription narcotics in the world, the second highest use of sedative-hypnotics (including benzodiazepines), and was among the top 15 countries in the use of prescription

Despite big mark-ups on the street, it may still be cheaper and easier for individuals with substance abuse problems to get their hands on prescription drugs than to buy an illegal drug such as heroin.

amphetamines.^{4,5} These high per capita consumption rates have been reflected in various surveys, but no domestic survey has attempted to determine or estimate the extent of non-medical use or abuse of prescription drugs. National consumption rates of psychotropic medications are relatively poor indicators of abuse. Other indirect indicators of prescription drug abuse include reported thefts and fraud (forgery and fraudulent alteration of prescriptions) from pharmacies, hospitals, clinics, and doctors' offices.

The extent and nature of prescription drug abuse can also be estimated by examining admissions data from detoxification centres, treatment programs and emergency departments, by reviewing coroners' reports on overdose deaths, and by analyzing the type and severity of substance abuse problems within the prison population.⁶ Toronto's Centre for Addiction and Mental Health (CAMH) studied admissions to treatment in Ontario in 1999-2000 and found that as many as 11% of individuals reported prescription drugs as part of their substance abuse problem.⁷

Some countries have mounted national surveys and monitoring systems—including the National Household Survey on Drug Abuse,⁸ and the Drug Abuse Warning Network (DAWN)⁹ in the United States, and the National Drug Household Survey¹⁰ in Australia—that directly measure prescription drug abuse. For example, the 2001 U.S. National Household Survey on Drug Abuse revealed that more than 11 million people (8% of the U.S. population over the age of 12) had engaged in the non-medical use of drugs. The results of these surveys also indicate that non-medical use has been increasing over the past 10 years for all major groups of prescription drugs.^{11,12}

In Atlantic Canada, a task force examined the abuse of the semi-synthetic opioid analgesic, OxyContin, and found that a small number of physicians were responsible for writing prescriptions for large quantities of OxyContin and other controlled substances such as benzodiazepines.¹³ For example, data generated in Newfoundland and Labrador by the province's pilot prescription monitoring program revealed that while 68% of physicians wrote fewer than 100 prescriptions during a 16-month period, 2% wrote more than 2,500 prescriptions, and 1% wrote more than 5,000 prescriptions for controlled substances.¹⁴

How does diversion of prescription drugs occur?

The diversion of prescription drugs away from their intended use occurs in a variety of ways. The following list summarizes some of the more common ways by which prescription drugs may become available for non-medical use.^{15,16,17}

- “Doctor shopping” or “double doctoring”—obtaining multiple prescriptions from different doctors
- Theft from doctors' offices, pharmacies and wholesalers, clinics, and hospitals
- Prescription pad theft and tampering resulting in forged or altered prescriptions
- Physician fraud—fraudulent prescriptions written by doctors in return for money
- Purchases from friends, relatives, or dealers for whom the drug has been legitimately prescribed
- Theft during break-and-entry robbery of private premises; robbery of individuals leaving a pharmacy
- Diversion at the wholesale or retail level (including theft during transportation and distribution)
- Diversion of drugs from substance abuse treatment programs (for example, methadone)
- Purchase of drugs on the Internet

Who abuses prescription drugs?

Overall, research indicates that prescription drug abuse occurs in many segments of society, and adolescents and young adults, older adults, women and the Aboriginal population seem to be particularly at risk. For example, the U.S. National Household Survey on Drug Abuse found the highest rates of non-medical use of prescription drugs among adolescents and young adults. Younger prescription drug abusers often use multiple substances, both legal and illegal.¹⁸

The OxyContin task force in Atlantic Canada found that a growing number of young people were abusing OxyContin. In a six-month period, about 50 of these young people were admitted to an outpatient mental health counselling service in St. John's, NL.¹⁹ Non-medical use of prescription drugs seems to start in adolescence and may evolve into abuse of multiple substances during adulthood. There are indications that the risk for overdose deaths is higher if prescription drug abuse is involved.²⁰

Women were shown to be 50% more likely than men to abuse prescription drugs in an analysis of U.S. data,^{21,22} while men were more prone to engage in heavy alcohol use along with their non-medical use of prescription drugs.²³

Abuse of prescription drugs has long been a problem for Aboriginal peoples in Canada²⁴ and remains so today,²⁵ although accurate prevalence data are scarce.

Data suggest that as many as 20% of Canadian adults aged 60 or older may be involved in long-term continuous use of pain relief medications.²⁶ A sizeable proportion of these engage in prescription misuse, especially in the form of overuse and incorrect use of medications. In general, the elderly tend to use psychotropic prescription drugs more often than younger people and may receive higher doses of benzodiazepines (tranquillizers) for longer periods of time than is medically necessary. Long-term use has a variety of negative consequences, including higher risks for dependence, falls and other accidents, and impaired thinking. In a Quebec study, it was found that among benzodiazepine users, the elderly used the most prescriptions and were the least informed about the effects and potential side effects.²⁷

Why are prescription drugs diverted for non-medical purposes?

A number of factors explain the popularity of prescription drug diversion. First, trafficking in prescription drugs can be highly lucrative. A 1998 study in Vancouver confirmed that there are huge mark-ups (and profit margins) in the street value of various drugs. For example, a 60mg tablet of MS Contin (slow-release morphine) cost \$1.70 in a pharmacy, but on the street sold for an average of \$35 (a 2,059% mark-up). A 4mg Dilaudid tablet cost \$0.32 in the pharmacy and had an average street value of \$32 (a 7,800% mark-up).²⁸ In fact, trafficking in prescription drugs is a rare case of contraband gaining value at the “retail” level. By contrast, a stolen TV or VCR would rarely sell for more than its retail price. And drugs are much easier to conceal and transport than TVs and VCRs.

Despite big mark-ups on the street, it may still be cheaper and easier for individuals with substance abuse problems to get their hands on prescription drugs—either through double-doctoring or

paying the dealer mark-up—than it is to buy an illegal drug such as heroin.²⁹ Prescription drugs that wind up being used for non-medical purposes are sometimes paid for by drug plans or social assistance.

Prescription drug diversion may also be popular because non-medical users believe that drugs produced legally by reputable pharmaceutical companies are somehow better and safer than drugs created illegally in dirty underground labs with questionable ingredients by untrained individuals who may have direct links with organized crime. While this may be true in principle, the high rate of problematic use, dependence, and overdose from the abuse of prescription drugs suggests that it is a serious societal problem. Users may also believe they are less likely to be hassled by police if they get caught with prescription drugs than they would be with drugs such as heroin or crack.

Finally, the production, distribution and administration of prescription drugs nationally employs literally tens of thousands of people. There are also thousands of pharmacies, hospitals, clinics, and doctors’ offices across the country. Despite the professionalism and ethical conduct of the overwhelming majority of individuals involved in this process, it only takes a handful of corrupt individuals driven by greed to supply large geographical regions of the country with prescription drugs for non-medical use.

What can be done to address prescription drug abuse?

The typical response to this question has been to call for better education and training—for the prescribing physician, the dispensing pharmacist, and the patient. For example, physicians can be taught to recognize patients’ drug-seeking behaviour and other warning signs, to educate patients about their drug regimens, and to set firm but reasonable prescribing guidelines.³⁰ Other forms of public education may focus on the effects of various substances.

While the goals of education and training for both medical professionals and patients have merit, research indicates that unless these efforts are accompanied by formal notification to physicians about their prescribing practices, they have *little or no effect* on physician behaviour.³¹

Other possible preventive measures include better regulation of prescribing and dispensing for physicians and pharmacists.

At a glance: solutions to prescription drug abuse

- In 2002, the House of Commons Special Committee on Non-Medical Use of Drugs called for the development of real-time databases to track prescribing and dispensing of commonly misused prescription drugs.³⁸ The PharmNet system in British Columbia could provide a sophisticated model for monitoring the use of prescription drugs.
- Cost-effective solutions to prescription drug abuse require a comprehensive, permanent system that accurately captures the nature, extent, and consequences of abuse. Occasional surveys cannot accurately provide the kind of information we need to address the abuse of pharmaceutical drugs in Canada.
- Economic incentives for the diversion and illegal sale of prescription drugs are so overwhelming that a highly effective regulation and enforcement system is required; otherwise, virtually any response will be ineffective.
- Even the smallest break in the production, distribution, and administration chain has the potential to flood large geographical regions of the country with prescription drugs that can be purchased for non-medical consumption.

However, such regulations have only been shown to work if they are enforced and there are consequences for misconduct.³² Regulations require monitoring by government and diversion control programs similar to the electronic tracking systems in place in several U.S. states³³ and some Canadian provinces.

Electronic monitoring and tracking of prescriptions looks promising as a way to reduce double-doctoring and the risk to patients of problematic use. The PharmNet system in British Columbia was singled out by the House of Commons Special Committee on Non-Medical Use of Drugs as a comprehensive prescription tracking and monitoring system that could serve as a model for the rest of Canada. Further, the OxyContin task force in Atlantic Canada recommended that Health Canada implement a formal reporting system for all prescription narcotic drugs.³⁴

To date, five Canadian provinces (British Columbia, Alberta, Saskatchewan, Manitoba, and Nova Scotia) have implemented multiple copy prescription tracking programs in an effort to reduce the diversion of certain drugs that are at high risk for diversion and abuse. Although these programs have not been extensively researched, available studies suggest that the introduction of multiple copy prescription programs results in some physicians substituting drugs that fall outside the program,³⁵ and may lead to increased prescribing of less appropriate drugs.³⁶

Finally, concerns about the abuse of certain medications could prompt the medical community to consider alternative therapeutic practices for pain management, and for other medical conditions that are being routinely treated with drugs. However, this would have to be done in a way that does not deprive patients of pain medication if they need it.

Conclusions and implications for Canada

Although exact figures are not yet available, the abuse of prescription drugs constitutes a significant public health problem in Canada. A recent report by the Auditor General of Canada calls for improved analysis and dissemination of information on patterns of drug use in Canada.³⁷ Clearly, there is an illegal street market for many prescription drugs in Canadian cities and there are real monetary incentives for trafficking in these products.

It also appears that some doctors are too quick to prescribe drugs that have a potential to be abused. We learned that a small number of doctors in Atlantic Canada, for example, write disproportionately large numbers of prescriptions for pain relief medication and other controlled substances. We also understand that even the smallest break at any point in the production, distribution, and administration chain can flood entire regions of the country with prescription drugs for non-medical use.

Prescription drug abuse in Canada is a complex issue that imposes serious costs on society, yet at the moment we have no way to measure how big the problem is. Future research needs to focus

on understanding the extent of the problem and its consequences for the health, social and economic well-being of Canadians. This research is also critical for developing evidence-based interventions to reduce harm from prescription drug abuse.

Addressing prescription drug abuse should be a major focus of future Canadian drug policy. However, policy development in this area needs to carefully and directly target the abuse of prescription drugs while ensuring that there is no threat to the supply and availability of these important medications for the legitimate treatment of pain and illness. ■

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Barry is 21 years old, single and has a job in the service sector. He lives at home with his parents. His experience in the summer of 2004 is typical of how marijuana use can lead to an arrest. Barry smokes marijuana two or three times a week, and has done so since first trying it when he was 15. On his way home after work one day in June, Barry stops to share a joint with some friends in a small downtown parking garage. Police notice the activity and intervene, laying a charge of simple possession of approximately one gram of cannabis. This is the first time Barry has been arrested. He is given a summons to appear in court in a month.

Alternative sanctions for cannabis use and possession

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Cannabis possession in Canada

Readers may assume that what happens next to Barry is quite predictable. After all, cannabis use has been prohibited for more than 80 years under Canada’s federal drug law.¹ Those who break this law are subject to criminal sanctions that are identical across the country.

However, criminal law is not necessarily a constant, especially where psychoactive substances are concerned, and is subject to change. And laws are not always applied in a consistent manner. As this review will indicate, what happens to Barry in court is the product of many factors beyond the law itself.

In the Canadian context, we will review past alternative sanctions and speculate about future ones, and we will also consider what options have been tried in other countries. Readers will see that there is tremendous diversity in sanctions for cannabis possession around the world,² representing many possible options for future consideration.

In the 1960s, when a growing number of cannabis users began showing up in court, someone in Barry’s position had about a 50/50 chance of being sent to jail.³ The only other option was probation, with or without a fine. At the time, the maximum penalty for simple possession under the Narcotic Control Act was six months imprisonment and a \$1,000 fine—the same as it was under the Opium and Narcotic Drug Act when cannabis was banned in 1923.

However, in 1969 the possible outcomes of a court appearance for simple possession began to multiply.⁴ The “fine only” option quickly became the preferred choice of judges in nearly three-quarters of possession cases. The absolute and conditional discharge became a sentencing option in 1972, but it was applied nationally to no more than a quarter of cases; judges still preferred the fine option. Jail was less common, but was still the outcome in 3-5% of cases.

Both here and abroad, cannabis use by young people is widespread and shows little relationship to national control policies.

With the range of alternatives available, it is not surprising that sentencing patterns began to diverge, both among and within provinces. For example, a study in five large jurisdictions in Ontario found that the proportion of cannabis possession offenders who were convicted and fined ranged from 8% to 55%.⁵ Another study in Toronto indicated that there were no significant differences in personal or legal case characteristics among those receiving a fine, or an absolute or conditional discharge.⁶ This indicates that judges were exercising sentencing discretion and the result was widespread inconsistency.

In 1997, the Controlled Drugs and Substances Act (CDSA) continued the tradition of maximum penalties of six months imprisonment and a \$1,000 fine for simple possession. The one change affecting simple possession was that the usual prosecutor's choice of proceeding with the less serious legal option was enshrined in law for amounts of less than 30 grams of marijuana or one gram of hashish.⁷

A new federal diversion policy, announced in the wake of the CDSA, allowed first-time offenders to accept responsibility for their offence in order to avoid a criminal record, providing yet another option that could be applied to cannabis possession.⁸ A study in Toronto examined the files of more than 600 individuals who participated in the cannabis diversion program in 1998-1999 and concluded that more than 90% successfully completed its requirements (mainly community service hours) and only 5% had been re-arrested after six months.⁹ Most offenders interviewed for a study in the summer of 1998 said they preferred diversion to conviction, and appreciated the benefit of not having a criminal record; however, the majority also said they intended to continue using cannabis in the next year.¹⁰

Another alternative was proposed and reviewed by a parliamentary committee in 2003, but has yet to move forward in legislation. The draft Bill (C-38) would amend the CDSA and create, under the Contraventions Act, a non-criminal federal offence of cannabis possession for amounts not exceeding a specified weight—15 grams or less of marijuana and one gram or less of hashish. The offence would be subject to a fine of \$150-\$400 for adults through a ticketing system.¹¹ The fine would be smaller for juveniles. The maximum fine would be fixed, but provinces could lower it.

Although no court appearance would be required and no criminal record would result when the fine was paid, it is not clear what the consequences of non-payment would be. Amounts of marijuana or hashish exceeding those specified for the new offence—up to 30 grams—would continue to be handled under the CDSA, according to police discretion. Larger amounts would still be subject to the fine of \$1,000 or six months imprisonment.

An important point of clarification in the use of a non-criminal federal offence of possession as an alternative sanction centres on how it would differ from the current discharge provision, which many (incorrectly) believe imposes no criminal record. People who harbour this misconception may feel that the non-criminal fine option is harsher than a discharge that currently imposes no monetary penalty. However, a fine may be a small price to pay for avoiding a criminal record under the new alternative sanction.

Both here and abroad, cannabis use by young people is widespread and shows little relationship to national control policies.¹² The options for cannabis users may be that no offence exists in law (Spain, Portugal), that only an administrative penalty is imposed (Denmark, Italy), that only use in public places is penalized (Colombia) that the law is not enforced by police (Netherlands) or by the prosecutor (Germany) or that the option of cautioning rather than charging is preferred (UK).¹³

Some countries are more like Canada and continue to lay criminal charges regardless of amount and circumstances (France, Sweden, Norway). The United States imposes both civil and criminal penalties for possession, depending on the state.¹⁴ While several countries (Canada, Australia, Scotland and Ireland) have adopted drug courts for opiate and cocaine users, the U.S. also utilizes the drug court option to require treatment for cannabis users.¹⁵ Unlike Canada, Australia has different laws and penalty structures in different states, including cautioning, civil penalties and criminal sanctions.¹⁶

Conclusions and implications for Canada

The fate of the young man charged with simple possession in our opening scenario is by no means certain. His sentence could range from jail to a fine to an absolute or conditional discharge with probation, all of which impose a criminal record. Because he lives

in a town where there is no access to the federal diversion program, he may not be able to avoid that consequence, although in some cases the federal prosecutor may propose an informal diversion scheme that would side-step a criminal record. Even his arrest itself was subject to police discretion and is not automatic.¹⁷

If he is charged in the future under some amendment to the CDSA and the Contraventions Act as described above, he may be ticketed with a fixed amount and receive no criminal record. His counterparts in other countries experience options ranging from

no charge at all to imprisonment, but the overall trend is toward removal or lessening of penalties.

Canada is once again at a crossroads with a potential for positive change in its laws governing the possession and use of cannabis. If we follow the trend in other countries, we will tailor our national policies to suit the political and cultural climate rather than international drug treaties that call for a uniform application of sanctions regardless of local priorities. The result will be a wide range of alternative sanctions. ■

At a glance: the case for reform

- Historically Canada has been a leader in drug prohibition, but also in health promotion and innovative policies. A continued punitive approach to cannabis sets our country at odds with its reputation for evidence-based health policies and is out of step with most western democracies.¹⁸
- Public acceptability of alternative sanctions for cannabis use and possession will vary by age, sex, region, and other factors, but overall, attitudinal surveys support less punitive, more health-directed policies towards cannabis.¹⁹
- A cost-benefit analysis suggests that police and court resources would be saved by a ticketing system for possession. Evidence from other jurisdictions supports the view that use levels and related harms will not increase if penalties are reduced.²⁰
- The de-stigmatization of cannabis use has been occurring gradually through social processes, but the removal of the criminal offence and resulting record is a much more significant step on the road to reducing stigma and other adverse consequences.²¹
- Principles of fairness and justice demand a more consistent approach to cannabis offenders than is currently found within and among jurisdictions. Since most users do not accept the validity of cannabis law, even diversion or the creation of a non-criminal offence is unlikely to reduce levels of use.²²
- Research on cannabis users at various points of time during the past 30 years has repeatedly shown how poorly users understand the law or its consequences. This suggests a need for widespread education on any future changes in Canada's cannabis law.²³
- More than half a million Canadians have criminal records for the offence of cannabis possession; the stigma experienced by these offenders will continue to operate unless legal measures are introduced to nullify their records.²⁴
- Since the impact of changes in sanctions for cannabis possession is likely to vary, as shown in studies in other countries, it is important to track these impacts through rigorous evaluation of the Canadian experience.²⁵

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Conclusions

HISTORICALLY, THE FIELD OF SUBSTANCE ABUSE HAS NOT RECEIVED THE SAME FOCUSED ATTENTION BY the research and scientific community as other fields of study. The reasons for this are not entirely clear, particularly when the abuse of alcohol and other drugs has been recognized as a problem in one way or another for centuries. In many respects, it is only within the last several decades that a significant growth has occurred in the development of theory and empirical work in this important area of public health both here and around the world. The chapter themes selected for inclusion in this document reflect key issues for substance abuse in Canada; each discussion emphasizes the importance of considering evidence-based approaches when engaging in public policy development and decision-making.

There are three major messages conveyed in this report. These messages are echoed in the themes and issues discussed in the various chapters.

Message 1: The field of substance abuse is evolving rapidly: we are building a comprehensive base of integrated theory and supporting research as a foundation for effective services to Canadians with substance abuse problems, and we are moving rapidly in the direction of drug policy that treats substance abuse as a public health issue.

Chapter 4, which deals with the availability and use of evidence-based treatment, highlights these points. Many of the treatment programs currently available to Canadians lack any solid theoretical framework or supporting research. Yet, as the authors contend, there are programs available that have met these strict criteria, but for a variety of reasons are not being used as much as they could be. The challenge is to find out why and to look for more effective ways to transfer best practice knowledge.

Message 2: In a global environment where accountability in all areas of public and private endeavour has become critically important, there appears to be an increased understanding of the importance of using evidence-based information to guide decision-making in the area of substance abuse policy.

Chapter 1 stresses the need to update our thinking about policy around alcohol use and abuse despite the considerable attention this issue has already received over the years. Accumulating evidence tells us that harm reduction measures such as server training and changing the physical layouts of bars and pubs can be more effective at reducing intoxication and injury than traditional policies aimed at convincing everyone to drink less.

Chapter 6 on alternative sanctions for cannabis possession explores some of the issues and challenges that policy makers must contend with in determining how the criminal justice system should deal with individuals who are found to be in possession of marijuana. This issue will continue to be at the centre of considerable debate as the government moves forward—based on the evidence of two parliamentary studies—to change the Criminal Code regarding the possession and use of small amounts of marijuana.

Message 3: While it is clear from this document that considerable empirical evidence has amassed to guide policy development and decision-making, much work remains to be done to implement databases and tracking systems that can provide basic information about the harms associated with substance abuse.

Chapter 3 on drugs and driving and chapter 5 on the abuse of prescription drugs both address important gaps in our knowledge and the need for more research on prevalence of use. Relatively little is known about the nature and extent of drugged driving in

Canada. And while reliable technologies exist for detecting and measuring driver impairment due to alcohol (for example, the breathalyzer), no comparable technology exists for measuring impairment due to a broad range of drugs and their combined effect with other drugs and with alcohol.

Recently, Canadian media reports have focused considerable attention on the issue of prescription drug abuse and concerns around addiction and overdose deaths linked to pain killers. It would seem an obvious first step in understanding this potentially serious issue is to develop methodologies for monitoring, tracking and determining the extent and characteristics of this problem. At the moment, no such systems exist. This is clearly an area where more work is required. ■