Our Committees

No Further Harm

British Columbians are now learning about the unprecedented health crisis involving an epidemic of intravenous drug addiction in B.C. The media has been reporting extensively on the most serious aspects of the crisis, including the rapidly increasing prevalence of HIV infection among intravenous drug users (IDUs), the extremely high level of hepatitis C infection among IDUs, and the high death rate due to drug overdoses.

Despite a Task Force Report prepared by former B.C. Chief Coroner Vince Cain, and mounting public concern, effective direction for addressing this complex emergency has been elusive. Because of this, in 1996 the Professional Advisory Committee (PAC) of the B.C. Medical Association (BCMA) established a Temporary Advisory Sub-Committee (TASC) on Narcotics Harm Reduction to study the problem and provide recommendations in a report.

TASC Terms of Reference:

- *To review the nature and causes of untimely and unnatural deaths resulting from the use of illicit narcotic drugs.*
- *To review existing treatment and education programs in the prevention of injury and death in people using illicit narcotic drugs (i.e. heroin vs. methadone).*
- *To review the "Cain" report, entitled "Report on the Task Force Into Illicit Narcotic Overdose Deaths in British Columbia (1994)", with particular emphasis on the recommendations pertaining to the reduction of harm done by illicit drug use.*
- *To review any other pertinent literature that might be helpful in reducing harm done by illicit narcotic use.*
- *To recommend strategies to the PAC that might help reduce harm that comes*

from the use and abuse of illicit narcotic drug use.

- *To review the functional, financial, and security impact on hospital utilization.*
- *To recommend valid testing procedures.*
- *To review the Methadone Maintenance Program.*
- *To review the role of the B.C. Centre for Disease Control with respect to injection drug use and HIV transmission.*

Executive Summary

During a crisis, there is a natural tendency to take precipitous action. But as we examine the current epidemic of morbidity and mortality associated with intravenous use of illicit drugs in British Columbia, it is important to put the problem in its proper context.

This TASC Report on Narcotics Harm Reduction is a scientific analysis of the problems associated with addictions in B.C., reviewing existing resources to address the problem and offering a series of recommendations designed to reduce the harm associated with intravenous drug use in this province.

The report notes that:

- Addictive disorders are biological, psychological, and spiritual in their etiology and manifestations.
- Addictive disorders constitute a continuum, from smoking nicotine and drinking alcohol to injecting heroin and cocaine. To effectively address the later, more severe stages of the continuum, we must identify etiologic factors and intervene at early stages of the problem.
- Treatment also constitutes a continuum, from primary prevention, to screening with brief intervention, all the way to harm reduction — the palliative care of addiction medicine.
- There is a rapidly growing body of scientific and clinical knowledge in the field of addiction medicine, which includes new information about neurobiology and new effective modalities of pharmacological and psychosocial treatment.
- Eradication or control of this epidemic will only be possible with a coordinated, interministerial public health approach addressing both the demand for, as well as the supply of, drugs.

This report does not address the problems of poverty and unstable housing in Vancouver's Downtown Eastside. Although these are very real problems, intricately associated with drug use, the TASC focused on evidence-based solutions directed at addictions and related behaviours. That said, if basic human needs for shelter, food,

and safety are not met, any attempts at prevention or treatment of addictive disorders will be doomed to failure.

It will be important to proceed cautiously in dealing with this crisis. But the principles of effective approaches to management of addictions are already known. This report outlines a blueprint for applying those principles in British Columbia, where effective action is urgently needed.

Consequences of Addiction in BC

In British Columbia, there has been an epidemic of illicit drug deaths throughout the 1990s. More than 1,200 people, many of whom lived in or near Vancouver's Downtown Eastside, have died of illicit drug overdoses in B.C. since 1993. In 1996, 297 illicit drug overdose deaths were reported. This is the highest number since 1994 when there were 312 deaths. The peak was in 1993 when 356 deaths were reported. In 1996, the province also had the highest ever number of overdose deaths among persons under 20 years of age, surpassing even 1993.

Most deaths are the result of poly-drug use, and in particular, the combined use of injectable heroin and cocaine, with alcohol often playing a role. Over the past three years, overdose deaths involving cocaine as a contributing factor have become more prevalent, but at the same time, heroin has continued to be a potent contributing factor. In 1996, cocaine was a contributing factor in almost 60 percent of the deaths. This is almost double the rate for 1993 when cocaine contributed to only 32 percent of the deaths. In contrast, in 1996, heroin was a contributing factor in 81 percent of the deaths, down from 90 percent in 1993.

Perhaps the most important statistic is the increase in deaths involving the combined use of heroin and cocaine, from 26 percent in 1993 to 43 percent in 1996. The percentage of overdose deaths attributed to methadone either alone or in combination with other drugs was two percent in 1996, the same as in 1993. The lack of percentage increase in deaths attributable to methadone is encouraging given that the number of methadone patients almost doubled between 1993 and 1996.

In 1995, intravenous drug users (IDUs) became the group with the highest incidence for HIV infection in B.C., surpassing the rate for gay men.4 Despite the significant expansion of the B.C. Methadone Maintenance Program and provincial needle exchange programs, in mid-1997 the Vancouver Injection Drug Use Study (VIDUS) reported an HIV prevalence rate of 25 percent among the cohort's more than 1,000 participants. VIDUS has estimated HIV incidence in the IDU population to be 15 percent. This is among the highest incidence rates reported in North America, and one of the highest rates reported in the developed world. The estimated hepatitis C seroprevalence among VIDUS participants is 90 percent.

A review of international literature confirms that illicit drug overdose deaths are a global phenomenon. This is not surprising given the multinational scope and size of the international illicit drug trade. The World Health Organization estimates the international retail sale of illicit drugs to be US$500 billion per year, second only to the international arms trade.6 Despite the ubiquitousness of the international drug trade, HIV infection rates vary tremendously from country to country and region to region. Frequent cocaine injection, often in "shooting gallery" environments, may be an important factor in western countries, while absence of sterile injection equipment may be a more important factor in under-developed countries.

Because of the serious health implications of both the epidemic of illicit injection drug overdose deaths and infections associated with illicit drug use, there is a critical need for not only an expansion of addictions services in B.C., but an examination of whether services are being offered in the most effective way. Before assessing the effectiveness of different treatment approaches, it is necessary to consider the underlying scientific context of substance dependence.

Nature of Addiction and Recovery

Substance dependence is a primary and chronic disorder with genetic, psychosocial, spiritual, and environmental factors influencing its development and manifestations. Addictions to mood-altering substances are often progressive and fatal. Addiction or dependence is characterized by continuous or periodic behaviour, including: impaired control over the use of mood-altering drugs; preoccupation with drugs; use of drugs despite adverse consequences; and distortions in thinking, most notably denial.

Risk factors for the development of addiction include genetic predisposition, early use of mood-altering drugs, adverse environmental experiences or stressors, and certain psychiatric conditions. Use in early adolescence of gateway drugs, such as nicotine, alcohol, and marijuana is associated with later alcohol and drug dependencies, including heroin and cocaine addiction.8 It is often the case that substance dependent people experimented as youth with available substances. As their addictive disorders progressed, they selected their drugs of choice, again based upon availability and desired effects.

There is a dynamic balance both in the individual and in society between demand side and supply side factors. The individual will seek a drug if it is cheap; if there are few negative consequences from using it; if there are benefits or rewards from using it; and if society views drug use as an acceptable behaviour. On the supply side, more drug will be consumed if a ready, affordable supply is available.

Once addiction or substance dependence occurs in an individual, a series of alterations in function and structure occur. These are permanent neurochemical, neurophysiologic, and even neuroanatomic changes involving several parts of the

brain. Areas affected include the mesolimbic dopaminergic reward circuitry; centres for learning and memory including the hippocampus; and the locus ceruleus responsible for alertness, anxiety, and the fight-flight response, with projections from these lower centres to higher areas of the cerebral cortex. When these changes occur, removal of the original cause for the drug use will not fix the problem: addictive behaviour has become a primary drive state.

The biomedical abnormalities must often be addressed with pharmacologic treatment of withdrawal and of associated psychiatric symptoms. But it is only when the addict perceives that the discomfort of ongoing drug use is greater than the reward provided by this behaviour, that the individual will consider changing the addictive behaviour.9 As long as the person remains unaware of the magnitude of the negative consequences, or is prevented from experiencing the negative consequences of the behaviour, the reward of the addictive behaviour will be worth seeking.

The key to recovery is taking personal responsibility and making the commitment to improve one's health. It is not the addict's fault for becoming addicted, since most people in this country use mood-altering drugs (although most do so without becoming addicts). But once addicts become aware that they have this condition, they are totally responsible — just like the diabetic — for deciding to obtain help if necessary to recover. That means they must stop blaming others or their difficult environmental situation, denying, rationalizing, and intellectualizing, and start asking for help. Looking at the disenfranchised, it seems logical to think, 'If I had all those problems, I might use drugs like they do to decrease the pain.' Dispiriting social conditions do exacerbate addictive behaviour. On the other hand, there are many in those difficult circumstances because of the progressive deterioration caused by addiction.

As with nicotine addiction, a significant number of substance dependent people stop on their own. There are no data available on this interesting group. Large numbers of addicts also successfully utilize mutual support groups, such as Alcoholics Anonymous (AA), Narcotics Anonymous (NA), or Rational Recovery (RR) to stop using drugs and to develop non-chemical coping skills with support from other recovering alcoholics and addicts.

A recent major research project demonstrated that brief directive counselling by health professionals for alcoholic clients combined with twelve-step program (AA) involvement by the client resulted in very high rates of ongoing abstinence, comparable to more expensive and intensive psychotherapeutic modalities of treatment.10 The study documented the effectiveness of therapy to help the client overcome the resistance to attending meetings, usually based upon faulty reasoning resulting from ambivalence and powerful psychological defence mechanisms. Mutual support groups combine many essential elements of effective recovery, and are free.

Many churches offer pastoral and lay counselling for problems including addictive disorders. There are a large number of private, fee-for-service counsellors, some with no formal qualifications, many with addictions counselling certification (e.g. ICADC), social workers, and psychologists who offer a wide variety of modalities of counselling and psychotherapy for people with addictive disorders. Many workplaces offer employee and family assistance programs with trained counsellors who offer brief assessments, focused counselling, and referral to community resources for addictions treatment.

There are a growing number of physicians who are able to assess and treat their patients' addiction, withdrawal, and early recovery, while liaising with other community treatment resources. There are also a large number of poorly regulated, unfunded recovery homes, usually directed by people recovering from their own addictions, relying on the welfare cheques of their residents, and supplemented by the occasional paying clients.

The provincial government administers an alcohol and drug program costing close to $60 million a year.11 The backbone of the program is a network of government agencies and government-funded agencies providing outpatient addictions treatment services. They offer education, assessment, counselling, and referral of people with addictive disorders and their family members. There are approximately 195 of these agencies in B.C., with 17 in Vancouver where most of the intravenous drug users in the province live. There are approximately 20 detoxification centres in the province, providing several hundred beds.

In 1993/94, 38,751 clients accessed B.C. alcohol and drug services including outpatient, detoxification, residential, and day and supportive recovery services.13 The current range of government services are free, with the exception of residential treatment, for which recipients are charged approximately $1,000 a month for inpatient treatment. The government funds several supportive group recovery homes and residential treatment centres in the province. These are abstinence-based, utilizing a variety of modalities and philosophies of treatment. Usually the client must be drug-free for a period of time before being accepted into residential treatment. These centres offer psychosocial treatment only; they do not have the capacity to offer treatments to clients with significant medical or psychiatric co-morbidity.

At present, because of insufficient detox, outpatient counselling, and residential treatment spots available, there are significant waiting lists for potential clients wanting services from government funded programs. Most detox centres place limits on the number of times an individual can be re-admitted in a given period of time and enforce mandatory waiting periods before re-admission is permitted. The nature of addictions is such that a window of opportunity can open, usually due to a crisis causing the threshold of discomfort to be breached in the addict. If there is a significant delay, then the window will close and the opportunity for lasting

behavioural change will have been lost until the next crisis. Currently, the Community Health Division of the B.C. Ministry of Health has responsibility for the funding and coordination of B.C.'s needle exchange programs.

There are some specialized treatment resources available. Several B.C. hospitals have interdisciplinary teams, called Chemical Dependency Resource Teams (CDRTs). They provide consultations, education, treatment recommendations, early treatment planning, and referral to community resources for hospitalized patients with substance use disorders. There are several inpatient and outpatient adolescent treatment programs. B.C.'s Women's Hospital and Health Centre offers both inpatient and outpatient treatment programs to women with addictions. There are special culturally sensitive programs for First Nations people with addictions, offered through outpatient community agencies and several inpatient treatment centres.

The recent reorganization, moving alcohol and drug services from the Ministry of Health to the Ministry for Children and Families, has unfortunately resulted in confusion and could reduce the accessibility of much-needed services for adults with addiction. The majority of potential clients for addictions services are adult. Parents with substance use disorders are reluctant to ask for help from the same agency which is responsible for apprehending children from unsafe homes. Addictions are illnesses — diseases of the brain — which like many other complex illnesses, have etiologic factors and psychosocial manifestations. The government ministry most responsible for medical matters — in B.C., the Ministry of Health — should coordinate and provide funding for addictions services. At the same time, there is a need to coordinate ministries responsible for families, social services and housing, justice, corrections, education, and labour in assisting the prevention, intervention, and treatment of people with these disorders.

Overall, more funding should go towards addictions services. The international experience has shown that treatment of addictions is extremely cost effective. Every dollar spent on treatment results in savings of between $7 and $11. For street addicts supporting their habit through crime, treatment pays for itself as it is being delivered — the cost savings to society immediately offset treatment costs.[14] [15] [16] In 1992, the total costs resulting from illicit drug addiction in B.C. reached $207.53 million, with the costs per capita at $60.

The B.C. Centre for Disease Control (BCCDC) has four principal divisions: STD/AIDS Control; Communicable Disease Epidemiology; Tuberculosis Control; and Provincial Laboratory. The divisions have a number of functions that are relevant to the epidemic of death and disease resulting from the use of illicit narcotic drugs. Relevant STD/AIDS Control functions include roles such as surveillance, management, and control of HIV (and STDs), policy development, and consultation. Communicable Disease Epidemiology also has surveillance responsibilities. The Provincial Laboratory processes all HIV testing in B.C. and much of the testing for

various forms of hepatitis.

For long-standing opiate dependence, methadone maintenance programs (MMP) providing both medically supervised methadone with careful adherence to therapeutic guidelines and psychosocial counselling, offer by far the greatest reduction in morbidity and mortality of all available modalities of treatment.[18] It has also been shown that opiate dependent patients, many of whom have concurrent cocaine dependence, decrease their cocaine use while on a MMP.

In June 1995 the Bureau of Drug Surveillance officially transferred administration of the B.C. MMP to The College of Physicians & Surgeons of British Columbia. The primary objective of the program is to maintain high quality methadone maintenance services and to increase the number of physicians providing methadone maintenance, particularly in outlying areas of the province. In June 1995 there were 120 physicians authorized to prescribe methadone in B.C. As of September 1997, 311 physicians were authorized to prescribe methadone. Of the total number of methadone prescribers, 69 percent were in the Lower Mainland, with the rest located on Vancouver Island, the northern part of the province, and the Okanagan. The more than 100 percent increase in authorized physicians has resulted in a rise in the number of patients receiving methadone maintenance, from 1,400 patients to 3,100 patients. The number of patients receiving methadone maintenance increases by approximately 50 every month.

The Pharmanet computer network and the Triplicate Prescription Program are used to closely monitor methadone patients and provide immediate communication to treating physicians. The College of Physicians and Surgeons offers an education program for methadone-prescribing physicians. The program includes practice audits, educational workshops involving simulated patient interviews, and a mentoring program. Methadone maintenance involves more than physicians prescribing drugs. The community pharmacist is involved in witnessing ingestion, providing feedback to physicians, and encouraging all methadone patients to participate in addictions counselling programs provided either by the methadone program or by community resources.

All in all, B.C. has the most comprehensive MMP in Canada, and one of the best in North America. But the program isn't without deficiencies. Since the B.C. Medical Services Plan does not cover methadone clinics for providing psychosocial counselling, the patient must pay between $30 and $65 per month after an initial assessment fee of $50 to $100. The lack of medical insurance coverage is a disincentive for clinics to offer psychosocial counselling. As well, patients who get off welfare and obtain employment are expected to pay either a daily or twice weekly dispensing fee at the pharmacy. These costs can deter patients from accessing methadone maintenance.

Entry to the B.C. MMP requires a very comprehensive assessment to identify medical and psychiatric co-morbidity, and other problems which should be addressed in treatment. The assessment takes at least several days, during which the window of opportunity for change may be lost for the new potential client. A low-dose, low-threshold, temporary induction program for engaging new cases might effectively address this problem.

Finally, despite rapid growth over the past three years, there are still insufficient methadone treatment slots to meet the needs of opiate dependent people, especially in Vancouver's Downtown Eastside. Further expanding the MMP will give the estimated 10,000 to 20,000 IDUs in B.C. greater access to treatment, which will ultimately reduce the incidence of HIV, hepatitis C, and criminality.

In some ways cocaine is a special drug. One way cocaine is unique is that it is likely the most powerfully reinforcing drug, causing the user during a binge to take enormous risks in order to continue the experience. Experiments have shown that rats will self-administer cocaine to the point of death. This powerful reward, combined with the extremely short half-life of the drug, requiring re-administration of the drug many times per day, accounts for the rapid spread of parenteral infection.

While cocaine requires unique treatment approaches, it is important to remember that all of the favourable outcome studies on treatment of chemically dependent patients by inpatient and outpatient programs in North America include a substantial number of cocaine dependent people, now in abstinence-based recovery because of the treatment. As well, cocaine addicted people usually meet the criteria for alcohol, marijuana, or opiate dependence prior to, and often concurrent with, their addiction to cocaine. So, if they cannot locate cocaine, they will settle for one of the other drugs which will activate the reward circuity in their mesolimbic regions. For this reason, biopsychosocial treatment modalities are effective for all addictive drugs, including cocaine.

As many IDUs are poly-addicted to heroin and cocaine, treatment for dependence on both drugs is closely linked. At St. Paul's Hospital, addictions specialists typically treat patients' opiate dependence with methadone. Methadone maintenance is viewed as a prerequisite for dealing with concurrent cocaine addiction. One of the hospital's most effective interventions for reducing or eliminating cocaine use has been ensuring that these poly-addicted patients are discharged to safe and supportive cocaine-free environments such as recovery homes. However, there are few recovery homes which permit patients to be on methadone maintenance. Funding for these homes is also in short supply. This model, of methadone maintenance co-existing with supportive residential recovery, needs to be developed and expanded.

When there is an element of either negative reinforcement (such as the

coercive effect of a conditional discharge or probation rather than incarceration, provided that assessment and treatment for addiction is undertaken) or positive reinforcement (awarding take-home doses of methadone for the patients who have no cocaine in their urine samples), good treatment outcomes occur.21 Community reinforcement programs which incorporate positive incentives for abstinence have shown promising outcomes.22 23 These programs reward successful compliance, and involve family, friends, and community members in the recovery process. Some studies have shown that mandatory treatment can have at least as high rates of positive outcomes as voluntary self-referral for treatment.

In these days of politicization of addictions treatment, harm reduction is 'in' and comprehensive abstinence-based treatment is 'out'. This is a false dichotomy often perpetuated by people who misunderstand the rapidly growing body of scientific knowledge surrounding treatment of addictive disorders. For large numbers of opiate dependent and cocaine dependent people, abstinence-based treatment approaches have been and continue to be very effective. As physicians, harm reduction is something we practice every time we make a therapeutic intervention with the patient. For patients with breast carcinoma, harm reduction might be a lumpectomy followed by chemotherapy for early stage disease, or palliative care for late stage widely metastasized terminal illness. For intravenous poly-drug dependent people living in unstable conditions and involved in crime or the sex trade to support their drug habits, harm reduction can include providing clean needles and information on safe injection techniques, and possibly admitting them to a methadone maintenance program.

Effective addictions treatment is based on a continuum, not an either-or approach. Once addicts are engaged in care at some point on the continuum between drug use and abstinence, we can address their substance dependence and offer help for other medical and psychosocial problems. Ultimately they may choose to move towards becoming drug-free. Even if abstinence is not achieved, taking this tolerant approach ultimately reduces harm. But a therapeutic and ethical dilemma arises for the treating physician when an intervention, such as the provision of a potentially fatal drug, might actually expose the patient to greater harm. A similar dilemma comes up for the counsellor who takes responsibility for clients by shielding them from consequences of

their behaviour and potentially removing the only incentive for effective change. That is called 'enabling', or 'killing with kindness'.

As long as well-meaning people unnecessarily shield substance dependent people from the negative consequences of their behaviour, addicts are less likely to take responsibility for getting help. Allowing people to experience the discomfort caused by their dependence creates a powerful incentive for recovery in many addicted individuals. The dramatic emergence of HIV and hepatitis C, however, has compelled the addictions field to adapt the 'tough love' approach. These infections are only two of the serious medical consequences of intravenous injection of heroin and cocaine, including fatal overdose, endocarditis, stroke, fatal cardiac arrrhythmia, and trauma. While building up their threshold of pain, addicts are accumulating irreversible negative consequences. So a fine balance must be struck, between supportingly engaging patients regardless of their behaviour, and empathically moving them towards changed behaviour using motivational enhancement techniques.

- *Decrease waiting times for initial contact or triage visit by addiction treatment professionals to a maximum of 48 hours.*
- *Ensure adequate numbers of treatment spots in detox, outpatient assessment and counselling, and supportive recovery homes are available to avoid long waiting lists.*
- *Increase services for street youth with substance dependence.*
- *Increase system sensitivity about the fear of child custody situations for addicted parents seeking treatment.*
- *Provide more treatment for addictions within the corrections system.*
- *Alter policies and capabilities of existing inpatient and outpatient treatment programs to accept people with active physical dependence. Ensure treatment agencies are able to engage the client in care, even if the client is not at that time willing to be entirely abstinent from all mood-altering drugs.*
- *Provide inpatient and outpatient treatment facilities with the capability of handling severe cases of dual diagnosis (addictions plus psychiatric co-morbidity).*
- *Provide inpatient treatment facilities capable of handling serious medical co-morbidity (ASAM Patient Placement Criteria level IV).*
- *Couple full medical care (including administration of AIDS treatments) with methadone maintenance in physicians' offices and community clinics.*
- *Ensure the Methadone Maintenance Program encourages more physician involvement by offering training and incentives.*
- *Develop and fund supportive recovery homes willing to accept opiate dependent people receiving methadone maintenance.*

- *Ensure the Methadone Maintenance Program includes support for psychosocial and addictions counselling, and incentives such as carries for decreasing use of/abstaining from drugs such as cocaine.*
- *Increase dissemination of information explaining the scientific basis for methadone maintenance to overcome the stigma and bias against this approach influencing people in the community, including treatment professionals.*
- *Remove the financial barriers to accessing methadone maintenance.*
- *Increase detox and treatment facilities, both inpatient and outpatient, in areas of greatest needs.*
- *Develop detox facilities with the flexibility to accommodate patients on a short-term, methadone tapering protocol for situations such as heroin withdrawal.*
- *Remove limits on the number of times a person may re-enter detox.*
- *Establish residential treatment centres offering nursing, medical, and psychiatric care (ASAM levels III and IV) to supplement the psychosocial residential treatment currently available.*
- *Offer residential treatment facilities specializing in care of HIV-infected substance-dependent patients.*
- *Increase funding for addictions prevention and treatment services in B.C.*
- *Return responsibility for managing and funding alcohol and drug services to the Ministry of Health, and have an arms-length organization, distanced from politics, administer the funds.*
- *Educate staff in the ministries responsible for families, social services and housing, justice, corrections, education, and labour about the management of addictions.*
- *Coordinate ministries responsible for families, social services and housing, justice, corrections, education, and labour in assisting the prevention, intervention, and treatment of addictions.*
- *Increase training for all physicians in screening, diagnosing, and motivating for further treatment patients with substance use disorders, and then provide patients with relapse prevention counselling.*
- *Encourage all physicians to utilize "Substance Use Disorders: Guidelines For The Care Of Patients", listed in the College of Physicians and Surgeons June 1995 Policy Manual S 4:1-3. (See page 20.)*
- *Encourage physicians, therapists, and counsellors to use twelve-step facilitation therapy and motivational enhancement techniques to motivate their patients and clients to engage in mutual support groups such as Alcoholics Anonymous, Narcotics Anonymous, Cocaine Anonymous, and*

Rational Recovery.

- *Provide incentives for physicians to receive training and accreditation in addiction medicine.*
- *Have the B.C. Centre for Disease Control provide epidemiologic data on patterns of drug use, drug using behaviour, and concurrent complications of addictions including infections and other morbidity and mortality.*

For opiate dependence, research has focused on three classes of treatment medications: nonopiates that alleviate withdrawal symptoms; opiate agonists other than methadone; and opiate antagonists, partial agonists, and mixed agonists/antagonists, which can block or competitively inhibit opiates at their receptors.

Clonidine, an alpha-2 adrenergic agonist, modulates many of the symptoms due to overactivity of the locus ceruleus during opiate withdrawal. Clonidine combined with a sedative drug such as oxazepam is often successfully used in the detoxification of opiate withdrawal.

Levo-alpha-acetyl-methadol (LAAM), a derivative of methadone, is a long-acting opiate which acts like methadone but is administered on alternate days or three times per week in an oral pill form. While methadone has a half-life of 30 hours, LAAM is metabolized to two active drugs, nor-LAAM with a half life of 48 hours and dinor-LAAM with a half-life of 96 hours. Both randomized, blinded controlled studies and open-label studies have shown LAAM to have similar favourable outcomes to methadone.[25] Used like methadone, in combination with psychosocial counselling or treatment, it offers the advantage of fewer trips to the pharmacy, and avoidance of some of the stigmas and methadone myths.

Naloxone and naltrexone are short and long-acting mu-receptor antagonists with high receptor affinity. They displace opioids and opiates from their receptors and block their actions. Addicts resist taking these drugs, as there is no agonist or reward activity from them. Naltrexone is found to be effective in recovering opiate dependent health care professionals who must resume work in high-risk settings.

Buprenorphine, a long-acting partial agonist, has 25 to 50 times the potency of morphine but since it antagonizes the kappa receptor while acting as a partial agonist at the mu receptor, it does not cause respiratory depression with overdose, as occurs with other pure mu opioids. Although it is a viable alternative to methadone or LAAM for opioid maintenance therapy, it is an abusable drug with significant street value. Recently, a combination product containing buprenorphine and naloxone for sublingual administration has been developed.[26] If this drug were injected, the naloxone, which is not absorbed through the buccal mucosa, would block the effects of the iv opiate.

A study in Zurich, Switzerland suggests that prescribing heroin to opiate addicts (who have been offered methadone maintenance), as an adjunctive modality of treatment in a carefully controlled setting, results in measurable benefits. The most important benefit of medicalizing heroin seems to be attracting and engaging in the system of care the opiate addict who was unwilling to go on methadone maintenance despite adequate treatment spots.

Although these results are encouraging, it is important to note that the contexts here and in Zurich are significantly different. Zurich has a methadone maintenance program that accommodates all addicts who qualify for and are willing to participate in the program. Although the situation is improving in B.C., there are still not enough methadone treatment spots for the number of eligible and motivated potential patients in the province. To allow the medical prescription of heroin at this time would undermine our high quality methadone program, as many new candidates — given the choice — would prefer to go on heroin maintenance.

As well, heroin does not meet the pharmacological criteria for an ideal maintenance drug to be used in addictions treatment. An ideal drug has a slow onset of action and long duration. While meeting the needs of the upregulated neuroreceptors, the ideal drug avoids the rush, oversedation, and craving responsible for the relentless drive to structure one's daily life around securing a drug. Heroin has rapid onset, resulting in a wave of euphoria and a period of oversedation followed by gradual decrease in sedation and satiety as CSF levels drop and neuroreceptors become vacated over three to six hours. At this time the person feels the beginning of withdrawal with craving, emotional dysphoria, and early sympathetic and parasympathetic symptoms.

The idea with maintenance therapy is, as with selective serotonin reuptake inhibitors (SSRIs) in the treatment of depression, to replace the inadequate supply of neurotransmitter, and allow the person to function normally. With heroin, the focus would remain on getting the high, and avoiding craving and drug-sickness.

An alternative to heroin maintenance would be to pilot a short duration, low-threshold methadone program. This would permit the opiate addict, during a brief and temporary window of motivation, to immediately access the program. The addict would then progress to the assessment phase and be offered treatment to address biological, psychological, and social problems identified in the assessment.

There is no evidence to suggest that cocaine prescription would be beneficial for addicts. Pharmacotherapy to block the craving and reward of cocaine has been the subject of research lately. But dopamine agonists and antagonists have proven disappointing.

Combining pharmacological maintenance and abstinence-based treatment in both

inpatient and outpatient settings is not common current practice, but this approach is needed. In this type of program the methadone maintained person could receive treatment for alcohol or cocaine addiction, just as a person on antidepressant medication is now able to do.

Positive therapeutic results have been documented when delta-tetrahydrocanabinol, the major active metabolite of marijuana, is used in the treatment of glaucoma, anorexia and wasting of HIV/AIDS patients, and nausea of cancer chemotherapy recipients. But there are safe and effective pharmacologic alternatives to treat all of these conditions. Since smoking the cannibus sativa plant results in respiratory harm and release of a virtual pharmacopoeia of bioactive chemicals, many of them toxic, with poor control over doses of active drug, this method of drug delivery is unsatisfactory. Other therapeutic compounds that exhibit these problems would never be approved for release. Interestingly, while oral forms of THC (Marinol) are available, they are not favoured by individuals advocating medicalization of marijuana.

- Cautiously explore research projects utilizing LAAM, buprenorphine, and other experimental drugs.
- Pilot a short duration, low-threshold methadone program.
- Encourage further research on pharmacotherapy for cocaine dependence.

Intravenous drug addiction will not be eradicated through treatment. As with all medical epidemics, it will require a public health approach and consistent application of effective prevention techniques. Substance abuse prevention approaches have been developed and studied. Surprisingly, some of the methods shown to be ineffective are still widely used. These include education about the adverse consequences of using drugs, affective education (increasing self-esteem, responsible decision-making, interpersonal growth), and alternative approaches (offering viable alternatives to drug use, reducing boredom and alienation). On the other hand, there are effective techniques which are taught in elementary and high schools, including resistance skills, making personal commitment, and personal and social skills training (assertiveness to resist drug use influences).

A public health approach to primary prevention entails setting achievable goals around societal drug use (including tobacco and alcohol), influencing pricing and availability of drugs, educating and shaping public opinions around normative drug taking behaviours (as has happened with smoking), influencing lawmakers about sanctions on

the production, distribution, sale, and use of drugs, and influencing the demand side of the equation through education and development of refusal skills. Socioeconomic causes of disenfranchisement and resultant dysphoria need to be addressed with a coordinated interministerial community and provincial approach. Healthier, stronger families have fewer adolescents with substance use disorders.31 Delaying the first cigarette, the first alcoholic drink, or first marijuana joint is effective in decreasing future incidence of intravenous drug use and related harms. Any changes in laws that destigmatize illegal drugs or make them more readily available will affect the demand side of the equation and will most profoundly affect adolescent use of those drugs.

Once addiction begins, first with nicotine, alcohol, and marijuana, the earliest possible identification, intervention, and treatment results in the most cost-effective and easiest treatment strategy. School programs designed like employee and family assistance programs, with the ability to provide intervention, assessment, and referral, have been shown to be effective in preventing the progression of addictive disorders.

In the face of later stages of addiction, treatment aimed at abstinence and improving the overall medical and psychological health of the addict is effective. However, for those unwilling or unable at the time of entry into the system of care to attempt abstinence, harm reduction techniques coupled with comprehensive psychological and medical care have been shown to be effective means of tertiary prevention.

Needle exchanges are an important prevention component of the harm reduction approach. The main needle exchange in Vancouver has, in the past, significantly limited the number of syringes given out at one time. With cocaine injectors, during a binge, they might inject 10 or 20 times in a day. If clean syringes are unavailable they will use whatever they or their companions have available. Shared needles provide the major vector for infections including HIV and hepatitis C. So there is a strong relationship between the frequency of injection and the likelihood of transmission of infection.

Cognitive therapy is useful as a technique to alter distorted patterns of thinking resulting in emotional dysphoria. Behavioural therapy is essential to establish healthy alternative activities, including nutrition, exercise, socialization, and relapse prevention measures. Absent coping skills, such as interpersonal communication, identifying and dealing with negative emotions, managing money, marketable skills, and marriage and parenting skills must be identified and developed. Establishment of a social support network to provide accountability, reinforcement, and hope is very helpful.

Since addictions are chronic and relapsing, a long-term relapse prevention program should be established. Often the primary care physician can play a role in helping to hold the recovering patients accountable while providing reinforcement and support for their new, healthy behaviours.

Addictive disease does not occur in a vacuum. Social and economic conditions result in persistent stress and dysphoria. Although these contexts do not cause addictions, they exacerbate drug use in those already using drugs to numb pain. We live in a drug-using society; use of alcohol and tobacco are considered relatively normal behaviours. Physical and emotional discomfort are to be avoided or treated with the 'Take something' approach. As Sir William Osler said, "The desire to take medicine is perhaps the greatest feature which distinguishes man from animals."[32] The more available and affordable, the less stigma associated with drugs, and the more likely we are to take them. Canadians are, for the most part, law-abiding. The reason we use the drugs we do is partly because they are legal. If we legalize currently illicit drugs, we give the message they are safe and we condone their use. Children who model their behaviour on ours will use the drugs because it is an adult thing to do.

Decriminalization advocates often cite the failure of prohibition in the U.S. when arguing for a change in drug laws. But prohibition did, in fact, "work". Well-documented epidemiological data collected before, during, and after prohibition showed a dramatic decrease in alcohol-related medical complications such as deaths due to cirrhosis and Korsakoff's psychosis during the period legislation was in place.[33] Following removal of prohibition there was a gradual increase in alcohol consumption and alcohol-related consequences. In B.C., it is interesting to note that alcohol is by far the main substance used by clients accessing alcohol and drug services. In 1993/94, 67.1 percent of clients reported a primary alcohol dependence, while 11.5 percent reported a primary cocaine/crack dependence.

Holland was one of the first countries to experiment with easing enforcement of the laws on possession and personal consumption of marijuana. Between 1984 and 1992, Dutch adolescent marijuana use increased 250 percent; in the same period, marijuana use among American adolescents dropped 66 percent.

Those arguing for decriminalization of drug laws say drug use should be seen as a health matter, and not a criminal one. There is an alternative to changing the laws on drug possession: de facto decriminalization, a scenario in which the police and the courts use discretion in exempting prosecution of minor drug possession offences. But this has been selectively applied across the country, contributing to a concentration of drug users in certain regions including B.C. A cautiously and more uniformly applied de facto decriminalization could work in concert with addictions treatment. In some parts of the U.S., an effort is made to engage individuals who have committed drug law infractions. Disposition of these cases occurs in drug courts where people facing drug charges are offered diversion or conditional discharge depending on attendance and compliance with assessment and treatment for addiction.[36] Programs utilizing diversion, coupled with long-term contingency behavioural contracts, have been shown to be effective in increasing rates of long-term relapse prevention.

For every complex problem there is a solution which is quick, easy, and wrong. To

solve a problem mainly affecting Vancouver's Downtown Eastside we might be tempted to make some sweeping changes in law and policy. Before we make changes in the delicate and dynamic balance of factors affecting drug use, which in turn affect the whole continuum of addictive behaviours right up to harms due to intravenous drug use, we must first very carefully consider the possible implications on all the people of B.C., especially youth.

- ***Ensure that any initiatives to change existing drug laws carefully take into account whether harm is reduced or created by the presence or absence of specific laws.***
- ***Consider establishing drug courts with the power to give conditional discharges contingent on changed behaviour.***
- ***Promote the utilization of evidence-based prevention programs in B.C. schools.***
- ***Increase needle distribution sites and the number of needles distributed.***
- ***Remove limits on the number of needles that can be exchanged at one time.***

The number of IDUs seen in British Columbia hospitals has been increasing over the past decade. The average number of beds occupied by IDUs at St. Paul's Hospital in Vancouver rose from eight in 1992 to 25 in 1995. The total average days per month that beds were occupied by IDUs increased from 217 to 642 during the same period.37 IDUs make up about 90 percent of the patients in the hospital's AIDS ward.

Data from the Vancouver Hospital CDRT shows a nearly fourfold increase from 1991/92 to 1995/96 in the number of referrals of narcotics users (including oral narcotics users). The number of HIV-positive narcotics users referred to the team increased from nine in 1992/93 to 78 in 1995/96.

The problem of drug use, particularly intravenous drug use, increased in prevalence, severity, and complexity even before the arrival of HIV in this population. The health care system, including a variety of disciplines, urgently needs to take a coordinated approach. Partly in response to this issue, St. Paul's Hospital initiated a diversified community forum which became a working group in 1995. This group developed a strategy to improve the hospital's management of patients who are drug users. Community representatives (providers and users) and a number of hospital departments including medicine, nursing, pharmacy, social work, hospital planning, health records, and security provided input.

In 1996, the Council of University Teaching Hospitals (COUTH) formed a Task Force

on Management of Substance Users in Vancouver Hospitals. The task force met several times to discuss the St. Paul's IDU protocols and to develop a comprehensive, integrated approach to treating IDUs in all Lower Mainland teaching hospitals. COUTH developed a philosophy statement outlining an approach to the issue of substance users in hospital which was distributed to member hospitals for review and action. As a result of the group's work, protocols were devised for the care of IDU inpatients for various departments. Other protocols have been developed in other hospitals.

This group addressed a specific problem involving management of opiate withdrawal. Substitution of oral methadone, by a physician with methadone prescribing authorization from the College of Physicians and Surgeons of B.C., has been considered the only acceptable approach to opiate replacement in treating heroin dependence. COUTH approached the College to obtain approval for use of oral morphine in a holding protocol until a physician able to prescribe methadone, where appropriate, may assess the patient.

But while COUTH's efforts have contributed to a more comprehensive approach to treating IDUs, more work needs to be done. The BCMA Committee on Alcohol and Other Drugs has recommended that the "BCMA, College of Physicians & Surgeons of B.C., Ministry of Health and Community Addiction Medicine practitioners develop practice guidelines for the screening, diagnosis, detoxification, assessment, and treatment of substance dependent patients in British Columbia hospitals."

- *Destigmatize addictions in hospital departments so that people with this disorder receive as much dignity and humane care as patients with conditions such as schizophrenia, diabetes, or cancer.*
- *Establish standards of care and education programs for screening, diagnosis, assessment, and treatment of patients with substance use disorders, especially IDUs.*
- *Encourage formation of in-hospital centres of excellence, using interdisciplinary consulting/teaching teams to serve as role models.*
- *Ensure all hospitals have identified physicians with expertise in treating substance use disorders with methadone.*
- *Ensure hospitals skilfully refer (using motivational enhancement) people with addictions to community agencies for further treatment.*
- *Change policies that force opiate dependent patients to go into*

withdrawal, simply because they are in a hospital.

- *Ensure that in medical management of withdrawal, the clinician utilizes a standardized symptom-driven withdrawal assessment instrument.*

British Columbia is experiencing a major epidemic of substance dependence. Addictions represent a continuum of illness, starting with respiratory and oral ingestion of nicotine and alcohol, and extending to intravenous use of opiates and stimulants. Many medical, psychological, and social consequences result from this epidemic. We have already put together many of the pieces of the difficult addictions puzzle. Since the problem is biological, social, psychological, and even spiritual, the approach to solving it must also be comprehensive and well-coordinated.

And above all, we must do no further harm.

Appendix A

- *Decrease waiting times for initial contact or triage visit by addiction treatment professionals to a maximum of 48 hours.*
- *Ensure adequate numbers of treatment spots in detox, outpatient assessment and counselling, and supportive recovery homes are available to avoid long waiting lists.*
- *Increase services for street youth with substance dependence.*
- *Increase system sensitivity about the fear of child custody situations for addicted parents seeking treatment.*
- *Provide more treatment for addictions within the corrections system.*
- *Alter policies and capabilities of existing inpatient and outpatient treatment programs to accept people with active physical dependence. Ensure treatment agencies are able to engage the client in care, even if the client is not at that time willing to be entirely abstinent from all mood-altering drugs.*
- *Provide inpatient and outpatient treatment facilities with the capability of handling severe cases of dual diagnosis (addictions plus psychiatric co-morbidity).*
- *Provide inpatient treatment facilities capable of handling serious medical co-morbidity (ASAM Patient Placement Criteria level IV).*
- *Couple full medical care (including administration of AIDS treatments) with methadone maintenance in physicians' offices and community clinics.*
- *Ensure the Methadone Maintenance Program encourages more physician involvement by offering training and incentives.*

- *Develop and fund supportive recovery homes willing to accept opiate dependent people receiving methadone maintenance.*
- *Ensure the Methadone Maintenance Program includes support for psychosocial and addictions counselling, and incentives such as carries for decreasing use of/abstaining from drugs such as cocaine.*
- *Increase dissemination of information explaining the scientific basis for methadone maintenance to overcome the stigma and bias against this approach influencing people in the community, including treatment professionals.*
- *Remove the financial barriers to accessing methadone maintenance.*
- *Increase detox and treatment facilities, both inpatient and outpatient, in areas of greatest needs.*
- *Develop detox facilities with the flexibility to accommodate patients on a short-term, methadone tapering protocol for situations such as heroin withdrawal.*
- *Remove limits on the number of times a person may re-enter detox.*
- *Establish residential treatment centres offering nursing, medical, and psychiatric care (ASAM levels III and IV) to supplement the psychosocial residential treatment currently available.*
- *Offer residential treatment facilities specializing in care of HIV-infected substance-dependent patients.*
- *Increase funding for addictions prevention and treatment services in B.C.*
- *Return responsibility for managing and funding alcohol and drug services to the Ministry of Health, and have an arms-length organization, distanced from politics, administer the funds.*
- *Educate staff in the ministries responsible for families, social services and housing, justice, corrections, education, and labour about the management of addictions.*
- *Coordinate ministries responsible for families, social services and housing, justice, corrections, education, and labour in assisting the prevention, intervention, and treatment of addictions.*
- *Increase training for all physicians in screening, diagnosing, and motivating for further treatment patients with substance use disorders, and then provide patients with relapse prevention counselling.*
- *Encourage all physicians to utilize "Substance Use Disorders: Guidelines For The Care Of Patients", listed in the College of Physicians and Surgeons June 1995 Policy Manual S 4:1-3. (See page 20.)*
- *Encourage physicians, therapists, and counsellors to use twelve-step facilitation therapy and motivational enhancement techniques to motivate*

their patients and clients to engage in mutual support groups such as Alcoholics Anonymous, Narcotics Anonymous, Cocaine Anonymous, and Rational Recovery.

- *Provide incentives for physicians to receive training and accreditation in addiction medicine.*
- *Have the B.C. Centre for Disease Control provide epidemiologic data on patterns of drug use, drug using behaviour, and concurrent complications of addictions including infections and other morbidity and mortality.*
- *Cautiously explore research projects utilizing LAAM, buprenorphine, and other experimental drugs.*
- *Pilot a short duration, low-threshold methadone program.*
- *Encourage further research on pharmacotherapy for cocaine dependence.*
- *Ensure that any initiatives to change existing drug laws carefully take into account whether harm is reduced or created by the presence or absence of specific laws.*
- *Consider establishing drug courts with the power to give conditional discharges contingent on changed behaviour.*
- *Promote the utilization of evidence-based prevention programs in B.C. schools.*
- *Increase needle distribution sites and the number of needles distributed.*
- *Remove limits on the number of needles that can be exchanged at one time.*
- *Destigmatize addictions in hospital departments so that people with this disorder receive as much dignity and humane care as patients with conditions such as schizophrenia, diabetes, or cancer.*
- *Establish standards of care and education programs for screening, diagnosis, assessment, and treatment of patients with substance use disorders, especially IDUs.*
- *Encourage formation of in-hospital centres of excellence, using interdisciplinary consulting/teaching teams to serve as role models.*
- *Ensure all hospitals have identified physicians with expertise in treating substance use disorders with methadone.*
- *Ensure hospitals skilfully refer (using motivational enhancement) people with addictions to community agencies for further treatment.*
- *Change policies that force opiate dependent patients to go into withdrawal, simply because they are in a hospital.*
- *Ensure that in medical management of withdrawal, the clinician utilizes a standardized symptom-driven withdrawal assessment instrument.*

CAIN REPORT

The extensive report of the Task Force Into Illicit Narcotic Overdose Deaths in British Columbia, chaired by former Chief Coroner Vince Cain, was released in 1994. The report is an important document highlighting the problems associated with illicit drug use in B.C. While the report contains enlightening, first-hand anecdotal description of the effects of substance dependence, it does not incorporate much of the evidence-based knowledge regarding the biological, psychological, and societal areas of prevention and treatment of substance use. The intention of this TASC Report is to contribute the science in a comprehensive analysis of B.C.'s addiction epidemic.

As to diseases, make a habit of two things — to help, or at least to do no harm. - Hippocrates

1. Components of Care Management should include performance of comprehensive assessment, investigations, diagnosis, treatment plan, medically supervised detoxification when indicated, appropriate referrals, supportive follow-up, and relapse prevention measures.

2. Assessment Assessment should include: medical history and physical exam; alcohol, tobacco, and other drug history; psychosocial history; mental status exam; evidence of criteria for DSM III-R diagnosis: negative consequences in major life areas, episodic loss of control, obsessive thinking, compulsive behaviour, and possibly changes in tolerance and/or evidence of withdrawal.

3. Diagnosis Comprehensive diagnoses, such as the multiaxial system utilized in DSM III-R, should include psychiatric, medical, and psychosocial stressors as part of the problem list (biopsychosocial).

4. Treatment Plan A treatment plan should be developed, based upon the diagnoses and problem list.

5. Referral Referral may be necessary for assessment, diagnosis, and treatment as indicated, depending upon the skills of the primary care physician. It is important to recognize one's limitations and enlist the help of other caregivers in management of patients with substance use disorders.

6. Treatment Team A multidisciplinary approach to care should be used where possible, utilizing counsellors, support groups, outpatient and inpatient treatment resources, therapists, and specialists, as indicated and determined by the primary care physician's level of competence.

7. Benzodiazepines and Substance Use Disorders Avoid, if at all possible, use of

benzodiazepines in management of chemically dependent patients other than during medical detoxification (period not to exceed one month).

8. Opiates, Substance Use Disorders, Acute Pain Management a) For pharmacological detoxification of opiate-addicted patients, the only acceptable opioids in addition to methadone are: codeine for codeine dependence, pentazocine for pentazocine dependence, and propoxyphene for propoxyphene dependence.

b) When possible, avoid prescribing addictive drugs for the management of chronic, non-malignant pain.

9. Coordination of Care Establish one physician as the prescribing physician in cases where more than one doctor is involved. In cases of methadone maintenance, opiates other than methadone, as well as benzodiazepines, are generally contraindicated. Regular communication and cooperation are necessary to coordinate the efforts of both physicians.

10. Psychiatric Conditions Psychoactive drugs should be prescribed only when accepted indications for their use exist.

In the case of dual diagnosis, the treatment plan and treatment team should include comprehensive management techniques and personnel for thorough management of both disorders.

11. Prevention Physicians should question a patient's use of addictive substances, through the use of screening questionnaires for substance use disorders, and offer brief interventions in the form of education and advice about health risks associated with the use of these drugs. Educational efforts directed at the public, industry, and government by physicians with knowledge of addictions is to be encouraged.

(From College of Physicians & Surgeons of British Columbia Policy Manual, June 1995)

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1 Office of the Chief Coroner, Province of British Columbia.
2 Ibid.
3 Ibid.
4 *A report on the health of British Columbians: Provincial Health Officer's annual report 1996.* Victoria, B.C.: Ministry of Health and Ministry Responsible for Seniors.
5 B.C. Centre for Excellence in HIV/AIDS.
6 *Illicit Drugs: Social Impacts and Policy Responses.* United Nations Research Institute for Social Development (UNRISD) briefing paper series 2. Geneva: UNRISD, 1994.
7 *Public policy statement on definition of substance dependence.* Washington: American Society of Addiction Medicine, 1990.
8 *Cigarettes, alcohol, marijuana: gateways to illicit drug use.* New York: The National Centre on Addiction and Substance Abuse at Columbia University, 1994.
9 Miller WR, Rollnick S. *Motivational interviewing: preparing people to change addictive behaviour.* New York: Guilford Press, 1991.
10 Project MATCH Research Group. Matching alcoholism treatments to client heterogeneity: Project MATCH post-treatment drinking outcomes. *J Stud Alcohol* January 1997;58(1):7-29.
11 British Columbia Ministry for Children and Families.
14 Calof J. *A study of four voluntary treatment and rehabilitation programs for New York City's narcotic addicts.* New York: Community Service Society of New York, 1967.
15 Gerstein DR, Hohnson RA. *Evaluating recovery services: the California drug and alcohol treatment assessment (CALDATA).* Calif. Dept. Alc. Drug. Prog, 1994.
16 Hoffman ND, Miller NS. Perspective of Effective Treatment for Alcohol and Drug Disorders. *Psyc Clin N Am.* March 1993; 16(1):127-140.
17 *Review of alcohol and drug services in Vancouver.* British Columbia Ministry for Children and Families, Vancouver/Richmond Health Board, 1997.
18 Butt JC, Rose A. *The effectiveness of methadone maintenance treatment: patients, programs, services and outcomes.* New York: Springer-Verlag, 1991.
19 Magura S, Siddiqui Q, Freeman R, et al. *Changes in cocaine use after entry to methadone treatment.* New York: Narcotic and Drug Research, Inc., 1991.
20 Butt JC, Ross A. *The effectiveness of methadone maintenance treatment: patients, programs, services and outcomes.* New York: Springer-Verlag, 1991.
21 Stitzer, MA, Iguchi MY, Felch LJ. Contingent take-home incentive: effects on drug use of methadone maintenance patients. *J Consult Clin Psychol* 1992;60:927-934.
22 Galanter M. Social network therapy for cocaine dependence. *Adv Alcohol Subst Abuse* 1987;6:159-175.
23 Sisson RW, Azrin NH. The community reinforcement approach, in: Hester RK, Miller WR (eds.), *Handbook of alcoholism treatment approaches.* New York: Pergamon, 1989.
24 Lawental E, McLellan AT, Grissom GR, et al. Coerced treatment for substance abuse problems detected through workplace urine surveillance: is it effective? *J Subst Abuse* 1996;8(1):115-128.
25 Ling W, Charuvastra C, Kam SC, et al. Methadyl acetate and methadone as maintenance treatments for heroin addicts. *Arch Gen Psych* 1976;33(6):709-720.
26 Hawks R, Chiang CN. Buprenorphine-naloxone combination drug for the treatment of drug addiction. *NIDA Res Monogr* 1995;153-165.
27 Uchtenhagen Ambros. *Programme for a medical prescription of narcotics, final report of the research*

representatives, summary of the synthesis report. Zurich, 1997.
28 Dr. David Smith, Haight-Ashbury Free Clinics, San Francisco, personal communication, 1996.
29 Schaps E, Moskowitz JM, Malvin JH, et al. Evaluation of seven school-based prevention programs: a final report on the Napa Project. *Int J Addict* Sept-Oct 1986;21(9-10):1081-1112.
30 Pentz MA. Prevention of adolescent substance abuse through social skill development. *NIDA Res Monogr* 1983;47:195-232.
31 Botvin GJ, Botvin EM. Prevention: school-based programs, in: Lowinson JH, Ruiz P, Millman RB, Langrod JG (eds.), *Substance Abuse.* Baltimore: Williams & Wilkins, 1997.
32 Cushing, H. *Life of Sir William Osler.* Oxford: Clarendon Press, 1925.
33 *Legalization: Panacea or Pandora's Box.* Centre on Addiction and Substance Abuse at Columbia University (CASA) white paper #1. New York: CASA, September 1995.
34 British Columbia Ministry for Children and Families.
35 *Legalization: Panacea or pandora's box.* Centre on Addiction and Substance Abuse at Columbia University (CASA) white paper #1. New York: CASA, September 1995.
36 Dr. Sheila Blume, Medical Director, Alcoholism, Chemical Dependency and Compulsive Gambling Programs, South Oaks Hospital, Amityville, New York, personal communication, 1996.
37 St. Paul's Hospital Planning Department. Unpublished data, 1996.
38 St. Paul's Hospital AIDS program.
39 Rugg, M, Shenton, T, Dickson B, Chemical Dependence Resource Team, Vancouver Hospital and Health Sciences Centre. Unpublished data, 1997.
40 Graham D. Presentation to TASC on Narcotics Harm Reduction. February 7, 1997.

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