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## **ADDICTION TREATMENT**

Research and anecdotal evidence testify that some treatments can help addicts overcome or reduce drug dependence. This paper examines past and current approaches to drug addiction treatment and evidence about the effectiveness of a range of established, experimental and even unauthorized therapies.

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## **ADDICTION TREATMENT**

From street level in Vancouver's Downtown Eastside, at the epicentre of illicit drug addiction in British Columbia, the prospects of treatment and recovery appear remote.

This is the neighborhood where Dr. Gabor Maté works as house doctor at the non-profit Portland Clinic. In his book, *In the Realm of Hungry Ghosts*, he describes how one patient overdosed fatally after months of abstinence in a recovery home, another injected crystal meth while on methadone maintenance and another went back to street drugs when a pilot project that supplied free pharmaceutical heroin came to an end.<sup>1</sup> Maté writes, "the inconvenient truth is that most of our clients will remain addicts."<sup>2</sup>

As hopeless as the prospects seem for the population Maté serves in the Downtown Eastside, research and anecdotal evidence testify that some treatments can help addicts overcome or reduce drug dependence.<sup>3</sup> This paper examines past and current approaches to drug addiction treatment and evidence about the effectiveness of a range of established, experimental and even unauthorized therapies.

## **THE COST OF ADDICTION**

Open drug use, homelessness and related crime in Vancouver, Victoria and other B.C. cities are the most public markers of the addictions which grip an estimated 33,000 B.C. residents.<sup>4</sup>

Drug addiction is estimated to be responsible for 2 per cent of the burden of illness in British Columbia, compared to 10 per cent for alcohol.<sup>5</sup> The most recent study on the dollar-cost of illegal drug addictions in Canada puts the toll at more than \$8.2 billion annually.<sup>6</sup> In British Columbia alone the cost was estimated at more than \$1.5 billion.<sup>7</sup>

Former Provincial Health Officer Dr. John S. Millar's 1998 report, "HIV, Hepatitis and Injection Drug Use in B.C. — Pay Now or Pay Later?" found injection drug use was responsible for direct government costs of nearly \$100-million annually.<sup>8</sup> (A 2001 study in Toronto estimated the annual cost to society of an untreated heroin user on the street at about \$45,000.)<sup>9</sup>

The British Columbia Coroners Service reported that illicit drugs were directly responsible for 213 deaths in B.C. in 2006.<sup>10</sup> Dr. Millar, the former Provincial Health Officer, noted that overdoses aren't the only deaths resulting from drug use: "They are also dying of communicable diseases that are transmitted through sharing injection equipment and unprotected sexual contact."<sup>11</sup>

The rate of illicit drug deaths has been about three times higher among the Status Indian population than for the general population.<sup>12</sup> Another concern is the rate of Human Immunodeficiency Virus (HIV) transmission among First Nations through drug use. In Downtown Eastside Vancouver, it was double the rate of non-Aboriginal residents. The mortality rate for female First Nations intravenous drug users, from overdose, HIV/AIDS and homicide, was found to be nearly 50 times higher than the general female population.<sup>13</sup>

## **A HISTORY OF ADDICTION TREATMENT**

Until the mid to late 1920s no drug abuse treatment programs existed in Canada. Illicit drug users were classed as criminals by the federal government, though some provinces viewed them as suffering from mental illness.<sup>14</sup>

By 1927 the federal Department of Health instituted a prohibition on doctors providing prescriptions for maintenance doses of narcotics for addicts. The same year, the federal deputy minister of health called on the provinces to create treatment facilities where addicts could be held for treatment.<sup>15</sup>

In the 1950s the debate over treatment reignited with a drug scare involving teenaged users in Vancouver. The Community Chest and Council of Greater Vancouver (precursor to the United Way) appointed Dr. Lawrence Ranta as chair of an independent committee to examine drug abuse in the city. The committee's report in 1952 recommended a pilot medical treatment and rehabilitation centre for drug users and provincial clinics that would provide maintenance doses of narcotics for addicts.<sup>16</sup>

In 1955, the B.C. government announced a grant for the creation of the first centre in Canada for addicts voluntarily seeking treatment.<sup>17</sup> The Narcotic Addiction Foundation of British Columbia reported it took until 1958 to find a site for the clinic and open for business, mostly because of strong public opposition.<sup>18</sup> In 1960 the centre's first clinical director, Dr. Robert Halliday, began dispensing the synthetic narcotic methadone as a heroin substitute. The long-term inpatient withdrawal program he started in 1963 might have been the first methadone treatment program in the world.<sup>19 20</sup>

In 1973 the use of prescribed heroin to treat heroin addicts who had failed other treatments was recommended by the federal commission of inquiry headed by Gerald Le Dain.<sup>21</sup> The report of the Commission of Inquiry into the Non-Medical Use of Drugs also recommended continuation of methadone maintenance programs, more research on illicit drugs and sharing and gathering of data by governments.<sup>22</sup>

In 1978 the B. C. government of the day passed the Heroin Treatment Act, which empowered an expert panel to commit a person suspected of being an addict to three years of involuntary treatment if approved by court order.<sup>23</sup> The B.C. Branch of the Canadian Bar Association opposed the legislation as a violation of individual rights. The compulsory program was dropped after the legislation was struck down in B.C. Supreme Court, which found the Act turned narcotic addiction itself into a criminal offence.<sup>24</sup>

In 2001 Canada's second drug treatment court opened in Vancouver (the first was in Toronto in 1997.) Addicts who pled guilty to non-violent crimes could avoid prison time by successfully completing a drug treatment program.<sup>25</sup>

In British Columbia, addiction and mental health services were merged in a single division within the Ministry of Health Services in 2003. Spending on addictions programs in B.C. was about \$64 million in 2003-2004.<sup>26</sup>

Treatment is part of the "four pillars" approach to addictions adopted by the City of Vancouver as well as cities such as Toronto, Regina and London, Ont.<sup>27 28</sup> The harm-reduction "pillar" has commanded headlines with debate over the future of the Insite supervised injection site in Vancouver's Downtown Eastside, and the eviction of Victoria's needle exchange service from its downtown location. Meanwhile, one review found that in 2004/2005 enforcement received 73 per cent of Canada's federal anti-drug strategy funding while treatment received about 14 per cent.<sup>29</sup>

## **CURRENT TRENDS IN ADDICTION**

The 2004 Canadian Addiction Survey found British Columbians have the country's highest rate of illicit drug use. The proportion of the B.C. population who had used heroin in their lifetime was 1.8 per cent, double the national average of .9 per cent.<sup>30</sup> Among B.C. residents, 16.3 per cent had used cocaine in their lifetime and 2.6 per cent used cocaine or crack over the previous year.

The stereotype of the typical illicit drug user as a heroin addict is no longer the reality in Canada, according to leading addictions researchers in a study published in 2006. They found that "most opioids reported for illicit use are prescription opioids and thus originate directly or indirectly from the medical system."<sup>31</sup> Across North America the abuse of prescription drugs such as Oxycontin (nicknamed "hillbilly heroin") have become well-known. Other widely abused prescription drugs include hydromorphone (Dilaudid), codeine, meperidine (Demerol), morphine and hydrocodone (Vicodin).<sup>32</sup>

The 2006 study found that outside of British Columbia a higher proportion of illicit drug users favoured prescription drugs, while in Vancouver 91 per cent of the study subjects still used heroin, and 87 per cent used crack cocaine. The study found most illicit drug users combine different drugs, such as heroin and cocaine or methamphetamine, a practice known as polydrug use.<sup>33</sup> By 1998, then-Provincial Health Officer Dr. John Miller observed that the epidemic of intravenous drug use and overdose deaths "is now being driven more by the injection use of cocaine than heroin."<sup>34</sup>

The growth in methamphetamine use in British Columbia generated particular concern in recent years. From 1999 to 2003 amphetamine users grew from 4 to 11 per cent of those seeking help with addictions in B.C.<sup>35 36</sup> In 2005 methamphetamine was a cause or factor in 32 deaths in B.C.<sup>37</sup>

Nationally, the 2002/03 First Nations Regional Longitudinal Health Survey found a higher proportion of drug users among the First Nations population, compared to the general population.<sup>38</sup> The use of prescription drugs such as codeine, morphine and opiates among First Nations individuals over the previous year was 12.2 per cent, and the use of sedatives was 3.1 per cent. Illicit substances were used by 7.3 per cent of the First Nations population, more than double the rate of the general population.<sup>39</sup>

Solvent abuse is also a major concern, particularly among young First Nations people in rural and remote areas. The prevalence of sniffing among First Nations youth is not known, although a 2003 study of one Manitoba reserve concluded that half of the children under the age of 18 abused volatile solvents.<sup>40</sup>

## **TREATMENTS AND OUTCOMES**

### **First Nations treatment programs**

The motto at Round Lake Treatment Centre near Vernon is "Culture is Treatment."<sup>41</sup> The facility uses the Medicine Wheel concept of healing, talks with elders, morning smudges and twice-weekly sweat-lodge ceremonies. It is nationally recognized for its innovation and leadership in developing First Nations treatment programs.

Incorporation of cultural and spiritual practices reflects the growth of an aboriginal healing movement across Canada in recent decades.<sup>42</sup> Since 1981 the infrastructure of First Nations addictions treatment programs in Canada has been mainly independently operated and staffed by First Nations.<sup>43</sup> Health Canada provides funding to First Nations and Inuit communities which operate treatment programs with a total of

about 695 beds through the National Native Alcohol and Drug Abuse Program (NNADAP). The services include 10 centres in First Nations communities in British Columbia. Ten more centres with 120 spaces specifically for inpatient treatment of First Nations solvent abusers are operated across Canada by the Native Youth Solvent Abuse Program (NYSAP). They include the Nenqayni Treatment Centre Society in the Cariboo, a six-month live-in program for female solvent abusers aged 13 to 17.<sup>44</sup> Along with the residential treatment centres, outpatient treatment services are provided through individual bands and tribal councils.<sup>45</sup>

A study of two NYSAP solvent abuse programs found the incorporation of First Nations culture and values and traditional healing practices played an important role in treatment success.<sup>46</sup> A 1998 review of treatment programs run by the NNADAP showed high success rates for programs such as the one at Round Lake.<sup>47</sup> Author Marie Wadden, in her 2008 book, *Where the Pavement Ends*, said NNADAP programs are credited with halving the rate of alcoholism in First Nations Communities (no estimates are provided for drug use.)<sup>48</sup> However, the federal review of NNADAP programs raised concerns about the strong reliance on AA-style 12-step treatment models that rely on total abstinence. The review suggested newer treatments that are less dogmatic, as well as better training in current research for staff.<sup>49</sup>

### **Methadone maintenance treatment**

Methadone remains the main treatment for heroin addiction and it is often called the “gold standard.” It blocks the euphoric effect of heroin and prevents withdrawal symptoms. An estimated 25,000 to 30,000 individuals, or 20 to 30 per cent of the estimated population of heroin users in Canada are enrolled in methadone maintenance programs at any one time.<sup>50</sup> In B.C. prisons in 2002/2003, methadone accounted for 28 per cent of all Medical Services Plan billings for inmates.<sup>51</sup>

Methadone’s benefits for many heroin addicts are widely confirmed in research, but so are its limitations. A review for the Canadian Centre on Substance Abuse published in 2005 found methadone reduces intravenous drug use, HIV infection risk, improves employment and social functioning and decreases deaths and criminal activity.<sup>52</sup> In the United States, the National Institute on Drug Abuse found methadone treatment led to 70 per cent less heroin use,<sup>53</sup> 57 per cent less criminal activity, and a 24 per cent increase in full-time employment.<sup>53</sup>

While methadone maintenance programs have generally required clients to remain drug-free and provide proof through urine samples, there is growing recognition of the value of “low-barrier” methadone treatment that does not require abstinence.<sup>54 55</sup> One study in Toronto showed a reduction in sharing needles, injecting drugs, and using shooting galleries by participants in a low-barrier methadone program.<sup>56</sup>

Concerns about methadone maintenance treatment include possible links to drug overdoses and questions about its effectiveness in keeping addicts off heroin.<sup>57</sup> A review of international studies found the program is often is a revolving door, with “patients moving in and out of treatment” within a year or two.<sup>58</sup>

A growing question is whether methadone has declining value as a treatment for the majority of street drug users, because of the growing use of drugs other than heroin, or in combination with heroin. “Various studies have documented that many MMT patients increase their cocaine or crack use in an attempt to countervail methadone's

undesirable side effects, resulting in questionable overall treatment benefits,” according to a 2006 research report.<sup>59</sup>

### **Buprenorphine**

Buprenorphine was first approved for use in Canada in 2005 as an alternative to methadone for treatment of opioid addiction. In the United States it has become the most commonly prescribed treatment for opioid addiction since it was approved for use in that country in 2000.<sup>60</sup> It is the first drug for treating addiction to heroin and other opioids that can be prescribed in a doctor’s office instead of being taken under supervision in a specialized methadone clinic or pharmacy. As a result it creates the possibility of expanding maintenance treatment beyond the limited number of spaces available in methadone maintenance programs.<sup>61</sup> In addition its effectiveness as a treatment for addiction to prescription opioids such as Oxycontin is under study.<sup>62 63</sup>

Buprenorphine is taken as a pill dissolved under the tongue. It produces less of a euphoric effect than methadone, and lasts longer in suppressing heroin withdrawal symptoms, with less potential for overdose. To prevent patients from abusing buprenorphine it is usually combined with naloxone, which causes withdrawal-like effects if it is injected.

However, the advantages of buprenorphine over methadone are questioned in recent research, in terms of both effectiveness and cost. Its cost is estimated at six to 10 times the cost of methadone maintenance treatment.<sup>64</sup>

Despite its popularity in the United States, buprenorphine does not appear to have caught on as a treatment here. Subutex, which contains buprenorphine, is no longer available in Canada because too few physicians received the mandatory training in its use to warrant its commercial release. Suboxone, which contains buprenorphine and naloxone, is available but there is little or no demand for it in British Columbia so far, according to the College of Pharmacists of British Columbia.

### **Cognitive-behavioural therapy**

Cognitive therapy attempts to change an addict’s ways of thinking by using exercises such as problem-solving, relaxation therapy and correcting false assumptions. Behavioural therapy involves learning alternatives to undesirable behaviour with tools such as social skills training and coping strategies. These are often used in group treatment programs.<sup>65</sup>

A 2005 report on availability and use of evidence-based treatment for the Canadian Centre on Substance Abuse found “reasonably good empirical support” for cognitive-behavioural treatment for drug problems as well as alcoholism.<sup>66</sup> The review suggested the structure and efficiency as well as the use of manuals in this type of therapy help ensure treatment quality. In another review of drug treatment for offenders in U. K. and North American prisons cognitive behavioural therapies was one of two treatments that showed the best results in reducing relapses into addiction and repeat criminal offenses which are often motivated by the need to obtain drug money.<sup>67</sup>

For methamphetamine addiction, the 2004 “Integrated B.C. Strategy” identified cognitive-behavioural therapy as the most promising treatment approach. Methamphetamine users appeared benefit from the types of treatment that work for addiction to cocaine, another stimulant.<sup>68</sup> It recommended treatment including cognitive restructuring and motivational interviewing to help change the user’s thinking, behaviour

and coping skills. The U.S. National Institute on Drug Abuse also recommends behavioural therapies as the most effective existing treatments for methamphetamine addiction.<sup>69</sup> The 2005 Western Canadian Summit on Methamphetamine concluded in its report that cognitive-behavioural therapies showed the best evidence of effectiveness.<sup>70</sup> It recommended three types in particular: Contingency management, which uses rewards for abstinence; motivational interviewing, which employs a non-judgmental, non-confrontational interviewing style to encourage a person to explore their own resistance to change; and the Matrix Model, which combines behavioural therapy, family education, individual counselling, social support groups, 12-step program meetings and weekly testing for use of alcohol or drugs.<sup>71 72</sup>

### **Other psychosocial treatments**

The community reinforcement approach encourages the client to make changes in aspects of life such as work, recreation and family so that a healthy lifestyle becomes more rewarding than continued drug abuse. One approach gives vouchers for drug-free urine samples that can be used to purchase retail goods or services. It has been shown to be particularly effective with cocaine users.<sup>73</sup>

Behavioural marital therapy focuses on changing couples' interactions that are believed to reinforce alcohol or drug use. It has shown consistent evidence of effectiveness.<sup>74</sup>

Self-help programs such as Narcotics Anonymous and Cocaine Anonymous lack empirical evidence of their effectiveness or clear understanding of how they work, although they are widely recognized as benefitting many people who use them.<sup>75</sup>

A review of drug treatment studies focusing on U.K. and North American correctional systems found that the least effective treatments included boot camps, group counselling and behavioural therapy without a cognitive component.<sup>76</sup>

### **Residential versus outpatient treatment**

The Minnesota Model is a 21- to 28-day residential program that uses Alcoholics Anonymous 12-step principles. Until recently it was the dominant approach to addiction treatment, according to a 2005 review of treatment outcomes for the Canadian Centre on Substance Abuse. However the review found little formal research exists to assess its actual effectiveness.<sup>77</sup>

Health Canada's review of best practices in substance abuse treatment found that outpatient treatment was more cost-effective than residential programs. However it found inpatient programs were valuable for the stability they could provide, for example in cases where a substance abuser was homeless.<sup>78</sup>

A report of the U.S. National Conference of State Legislatures notes that inpatient and residential treatment programs are the most expensive form of treatment with the highest level of supervision and medical staffing. There, they are reserved for cases with medical complications or patients in acute distress, or for evaluations of those with multiple disorders.<sup>79</sup>

## **Prescribed heroin**

Results are expected in late 2008 on the first trials in North America of heroin maintenance treatment. The 253 longtime heroin addicts participating in the North American Opiate Medication Initiative (NAOMI) received pharmaceutical-grade heroin under supervision, instead of methadone, to determine whether it provided better stability and quality of life. For 12 to 15 months half the study participants in Montreal and Vancouver received either oral methadone, while the other half received an injection of heroin, or dilaudid, another powerful opioid. All the participants had failed other attempts at treatment. (Proponents of the NAOMI trial emphasized the study does not explore legalizing heroin but the use of medically prescribed heroin for a limited number of chronic addicts who have not succeeded in other treatments.)<sup>80</sup>

Preliminary results were not yet available at the time of this publication but an update in March 2008 reported that 50 per cent of the study subjects receiving methadone and 85 per cent of those receiving heroin remained in the pilot program. The treatment was found to be safe and did not lead to security or neighborhood problems.<sup>81</sup> An ongoing study in Switzerland has shown benefits in reduced crime, more employment, better health and less illicit drug use among study subjects.<sup>82</sup>

## **Therapeutic communities**

In December, 2007, the New Hope Recovery Society outside Prince George opened with the arrival of its first five “guests.” The three-year recovery and skills-training program was founded by Vancouver-Burrard MLA Lorne Mayencourt for addicts who have failed other attempts at rehabilitation.<sup>83</sup> It is inspired by the treatment and recovery model used by the San Patrignano therapeutic community in Italy. Supporters of San Patrignano claim a dramatically higher success rate than conventional short-stay residential treatment programs.<sup>84</sup>

San Patrignano is the largest addiction treatment facility in Europe with 1,500 to 2,000 recovered or recovering addicts residing there at a time. It was just one of hundreds of therapeutic communities, with a combined total of more than 20,000 residents, when a 1994 article in the *Journal of Drug Issues* examined this “great social experiment” in drug addiction recovery.<sup>85</sup>

San Patrignano runs its own hospital and schools as well as enterprises which make products such as wine, home décor and show-jumping horses. It functions with the unpaid labour of recovering addicts who live there for an average of three to four years.<sup>86</sup> In the 1980s founder Vincenzo Muccioli attracted criticism for his advocacy of harsher drug laws in Italy, his alliance with the political right and complaints of mistreatment and abusive punishment of residents, which led to investigations of the facility.<sup>87</sup> The current head of San Patrignano, Vincenzo’s son Andrea Muccioli, has blamed a lack of individual values as the root of drug addiction, and said the program treats “the soul, not the drugs.”<sup>88</sup>

The therapeutic community model is not new in Canada, according to Health Canada’s review of best practices in substance abuse treatment. That review found such communities were common in Canada during the 1970s, though most had shut down by the 1990s.<sup>89</sup>

The Portage Program for Drug Dependencies Inc. was one therapeutic-community operator from the 70s that survived and expanded to include treatment programs for

youth, adults, mentally ill substance abusers and women who are pregnant or with children. They operate in Quebec, Ontario and New Brunswick.<sup>90 91</sup> The Portage program is also slated to operate a long-term residential addictions treatment centre for 14-to-24-year-olds in Keremeos, at the site of a former Outward Bound school. The B.C. government has announced capital and operating funding support for the proposed facility.<sup>92</sup>

Other groups are also proposing additional therapeutic-community programs in B.C. The John Howard Society wants to open a commune for up to 30 recovering addicts in Nanaimo. Residents would learn job skills working in construction, which would generate revenue to help offset the costs of the one- to two-year treatment.<sup>93</sup> Some groups have encountered strong opposition to efforts to set up therapeutic communities.<sup>94 95 96</sup>

Health-Canada's review of best practices found limited evidence of therapeutic communities' effectiveness. Success rates were good for those who remained at least one-third of the way through the programs but dropout rates were up to 90 per cent.<sup>97</sup>

More recent reviews have been more positive. A review of what works in substance abuse treatments for offenders in the correctional system found therapeutic communities were one of two types of treatment that showed the best results in reducing relapses into addiction and repeat criminal offenses.<sup>98</sup>

One study on treatment outcomes of therapeutic community graduates in the United States showed a 67 per cent reduction in weekly cocaine use, a 13 per cent reduction in unemployment, a 46 per cent decline in suicidal thoughts and a 61 per cent reduction in illegal activity.<sup>99</sup>

## **Ibogaine**

An unregulated private clinic on the Sunshine Coast and another operation in Vernon have attracted attention for treating heroin, cocaine and other drug addictions with ibogaine, a hallucinogenic drug derived from an African shrub. Iboga Therapy House charges up to \$4,900 plus GST for five days of treatment.<sup>100</sup> For 20 to 36 hours after taking ibogaine the user experiences flashbacks and visions that are purported to help an addict understand and overcome his or her dependency. Ibogaine proponents claim it cures drug cravings for weeks or months.<sup>101</sup> The drug is illegal in the United States but not in Canada.

One study published in 2008 found that the use of ibogaine to treat addictions has spread to unsanctioned clinics around the world, and its use quadrupled over a five-year period with at least 3,400 and as many as 4,900 addicts trying it by 2006. Its safety is in question, though, with the deaths of at least 11 ibogaine users within 72 hours of taking the drug.<sup>102</sup>

A 1999 study published in *The American Journal on Addictions* recommended further systematic research after it found ibogaine stopped heroin cravings and withdrawal symptoms in 25 of 33 subjects who were observed in treatment. (One of the subjects in the study died.)<sup>103</sup>

In April 2008, the Vancouver Coastal Health Authority indicated it planned to send health inspectors to review operations of the Iboga Therapy House on the Sunshine Coast.<sup>104</sup>

## CHALLENGES

Information on the effectiveness of drug treatment services in Canada has been hard to find, according to a 2005 report for the Canadian Centre on Substance Abuse. It found that few jurisdictions in Canada are collecting useful and detailed data about addictions treatment, with the exceptions of Alberta, Manitoba, Ontario and the Correctional Service of Canada.<sup>105</sup> A survey of mental health and addictions experts for the Canadian Institute for Health Information in 2000 found dissatisfaction with the availability of information on effectiveness, coordination and utilization of treatment services.<sup>106</sup>

A 2005 report by the Health Officers Council of British Columbia Council concluded that existing treatment options and availability are inadequate, and federal and provincial governments should be budgeting for a level of services more in line with the high cost of illicit drug abuse to society.<sup>107</sup> (In 1998 the Provincial Health Officer estimated the cost of reducing injection drug-related deaths, disease and crime was small, and \$6 million spent in expanding methadone availability would reduce direct government costs by as much as \$36 million annually.)<sup>108</sup>

Another challenge is the growing prevalence of methamphetamine, cocaine and crack as well as prescription opioid and polydrug use. While methadone maintenance treatment is recognized as effective for many heroin users, there continues to be no proven drug treatment for cocaine addiction, even as injection cocaine use has driven up overdose deaths, Hepatitis C and HIV rates.<sup>109 110</sup>

The U.S. National Institute on Drug Abuse also notes there are no specific medications to treat methamphetamine addiction, although recent study of the anti-depressant bupropion, marketed as Wellbutrin, found it reduced the effects of methamphetamine and drug cravings.<sup>111</sup>

The 2004 B.C. government strategy on methamphetamine use also recognized a lack of effective treatments for that growing segment of drug use. It noted that there are no available substitution therapies and even the withdrawal process for methamphetamine and cocaine was not as extensively researched or well-understood as heroin withdrawal.<sup>112</sup>

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<sup>1</sup> Gabor Mate, M. D., *In the Realm of Hungry Ghosts*, Alfred A. Knopf Canada, 2008, p. 17, 27, 321.

<sup>2</sup> Gabor Mate, M. D., *In the Realm of Hungry Ghosts*, Alfred A. Knopf Canada, 2008, p. 12.

<sup>3</sup> Health Canada, "Best Practices: Substance Abuse Treatment and Rehabilitation," Health Canada, p. 3, [http://www.hc-sc.gc.ca/hl-vs/pubs/adp-apd/bp-mp-abuse-abus/intro\\_e.html](http://www.hc-sc.gc.ca/hl-vs/pubs/adp-apd/bp-mp-abuse-abus/intro_e.html) (last modified December 31, 2007. Accessed June 5, 2008).

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